Arboricultural Impact Assessment

The Courtyard, 74 Church Road, Barnes

On behalf of:
Basinghall Estate Ltd

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(FdSc Arboriculture, BSc Ecology)
7th July 2016

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Author	AD
Reviewer	CC
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Summary

An arboricultural survey has been carried out, and this report prepared to support a planning application for five commercial units and two residential flats with adequate parking.

All trees that could be affected by the proposals were identified and inspected, with their details listed in Appendix 2.

This report seeks to provide information in accordance with British Standard *BS 5837:2012, Trees in relation to design, demolition and construction.*

3 trees of low quality and value will require removal to accommodate the proposed development layout.

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

If the recommendations made within this report are followed, the development should be achievable in arboricultural terms and should be acceptable to the local planning authority.

Contents

1.0 Introduction

1.1 Instruction

Southern Ecological Solutions Ltd has been instructed to produce an Arboricultural Impact Assessment for five commercial units and six residential flats with adequate parking at The courtyard, Church road, Barnes. It has been produced in accordance with the principles of British Standard *BS 5837:2012, Trees in relation to design, demolition and construction - Recommendations* and includes the following information to accompany a planning application:

- *details of significant trees including an assessment of condition using BS 5837 categorisation;*
- *a plan showing tree survey information, retention categorisation and root protection areas;*
- *an assessment of the impact of the proposal on trees and any wider impact that has on local amenity and any impact trees may have on the proposed development;*
- *an arboricultural method statement dealing with the protection and management of the trees to be retained; and*
- *a schedule of tree works to facilitate construction.*

1.2 The proposal

The proposal is for five commercial units and six residential flats with adequate parking at the courtyard, Church road, Barnes.

Image 1: Extent of proposed works.

1.3 Scope and purpose of this report

This report covers trees on the site and those adjacent to the site which could be affected by any development. It is concerned with the impact the development may have on trees and the effect retained trees may have on the development. Its purpose is to allow the Local Planning Authority to assess the tree information as part of the planning submission.

1.4 Legal constraints

A search was undertaken with the London Borough of Richmond upon Thames website and was not conclusive to whether any of the trees on site are the subject of Tree Preservation Orders (TPOs) or if any of the site falls under any local conservation areas (CA).

Anyone wishing to undertake works to prune or remove a tree with a Tree Preservation Order or within a Conservation Area will require written authorisation from the Local Planning Authority before any works can proceed.

1.5 Other information included in this report

The following information is included in Appendix 1:

- *documents and information provided;*
- *legal constraints and liabilities;*
- *survey methodology;*
- *contacts; and*
- *reference documents.*

2.0 Site Visit and Observations

2.1 Site visit

A site visit was undertaken on 6th July 2016 by Southern Ecological Solutions Ltd. The weather was sunny with blue skies.

2.2 Site description

The proposal site comprises a courtyard with surrounding semi-permanent units with access onto Church road.

2.3 The subject trees

A total of three individual trees were identified as the subject of this report. These comprise 3 'C' category individual trees and were identified in accordance with section 4.5 and table 1 of BS3837:2012 'Trees in relation to design, demolition and construction – Recommendations' (see Appendix 1).

2.4 Comments on specific trees

2.4.1 T1 is a triple stemmed birch of low amenity value.

2.4.2 The tree cover on site was limited due to the nature of the site and the location. T2 is an olive tree which was in a large, raised wooden planter situated in the courtyard.

2.4.3 T3 was a self-set buddleia which presented limited if not any arboricultural value and was not in an ideal location in relation to the surrounding buildings.

3.0 Arboricultural Impact Assessment

3.1 Generic summary of the impact on trees

Development can adversely impact on trees by causing them to be removed to facilitate the development, or in the future, by adversely affecting their potential for retention through disturbance in Root Protection Areas (RPAs)[1] or through post development pressures to prune or remove.

At the design stage, disturbance within the RPA should be avoided. If unavoidable, (which may need demonstrating), consideration must be given to any construction activity such as demolition, including removal of existing hard surfaces, changing soil levels and the provision of services where within RPAs, as well as new surfaces and structures.

Construction of hard surfaces and other construction may be acceptable within RPAs providing specialist methods of design and construction are used. This will often result in the use of minimal or no-dig methods which result in higher finished levels which must be allowed for during design due to the effect on access thresholds and structure heights etc.

The ability of trees to tolerate some disturbance depends on individual circumstances including prevailing site conditions, tree species, age and condition and this will be assessed by the project arboriculturist.

Protection measures, usually a combination of barriers and ground protection must be in place before any works, including site clearance, begin, and stay in place for as long as a risk of damage remains (Please refer to the Tree Protection Plan - TPP). The protection of trees must take account of the buildability of the proposal, including services, and ensure that all activities such as storage of materials, parking and the use of plant and vehicles can be accommodated outside of RPAs. Particular care and planning is necessary in the operation of excavators, lifting machinery and cranes to ensure all vehicle movement and lifting operations will not impact on retained trees. It is common practice for an Arboricultural Method Statement (AMS) to be produced following planning consent to address these issues, and may form part of planning conditions in relation to trees.

3.2 Tree survey plan (TSP)

The plan found at appendix 4 shows the existing trees numbered and categorised in accordance with BS 5837. Below ground constraints are represented by the RPA. The above ground constraints are represented by the trees crown spread and height where appropriate. The survey plan is an aid to design and should not be used post consent on site; the tree protection plan is to be used for this purpose.

[1] *Root Protection Area (RPA) - A layout design tool indicating the minimum area surrounding the tree that contains sufficient rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. Assessed according to the recommendations set out in clause 4.6 of BS 5837. It is calculated by multiplying the radius squared by 3.142. Clause 4.6.2 of BS 5837 states that the RPA may be changed in shape, taking into account local site factors, species tolerance, condition and root morphology.*

3.3 Tree protection plan (TPP)

Stems and crown spreads are coloured based on their categories for trees to be retained whilst trees to be removed have red hatched/shaded. Tree protection is shown as barriers and/or ground protection defining the Construction Exclusion Zone (CEZ)[2] and any areas requiring non-standard methods of demolition or construction are shown.

3.4 Trees to be removed

With the proposed design layout provided by the client it is indicated that 3 'C' category tree (T1 – T3) will require removal to accommodate the proposals.

[2] *Construction Exclusion Zone. An area based on the RPA in m^2 identified by an arboriculturist, to be protected during development, including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long-term retention of a tree.*

4.0 Preliminary Arboricultural Method Statement

4.1 Introduction

This section is a preliminary arboricultural method statement specifying the methodology to be used for the protection of trees and works close to trees that have the potential to result in the loss of or damage to a tree. It includes details of site management and supervision required for successful tree retention.

Following planning consent, a detailed arboricultural method statement may be required, and secured by an appropriately worded planning condition.

4.2 Site clearance and set-up

4.2.1 Site clearance

Damage can easily be caused to trees to be retained during initial site clearance, therefore tree protection barriers must be in place before site clearance to protect trees identified in Section 3.

4.2.2 Site and fuel storage, cement mixing and washing points

All site storage areas, cement mixing and washing points for equipment and vehicles and fuel storage must be outside RPAs. No discharge of potential contaminants should occur within 10m of a retained tree stem or where there is a risk of run-off into RPAs.

4.2.3 Tree protection barriers

Appendix 7 includes guidance for protective barriers based on BS 5837:2012. The approximate location of the barriers and the CEZs is shown on the TPP. The precise location of the barriers and other protective measures should be confirmed at the pre-commencement meeting before any demolition or construction activities, including site clearance, start.

4.3 Ground protection

In areas where it is not possible to erect protective barriers, ground protection must be used to protect the CEZ of trees. Where it has been agreed during the design stage that vehicular or pedestrian access for the construction operation may take place within the CEZ, the possible effects of construction activity should be addressed by a combination of barriers and ground protection. The position of the barrier may be within the CEZ at the edge of the agreed working zone but the soil structure beyond the barrier to the edge of the CEZ should be protected with ground protection.

4.4 Precautions when working in CEZs

Only work agreed with the local planning authority can be carried out within CEZs**.** Any works must be carried out in accordance with the details as set out in Appendix 6 which are summarised below.

4.4.1 Installation of new surfacing

Full details of the new surfacing proposed is not known at the time of writing. However, if resurfacing is required within the RPAs of any trees it will be necessary to use non-standard methods of construction, ideally new substrates and finished surfaces should be of a porous design to allow water and air passage in and out.

4.4.2 Installation of new services

The exact location of services is often difficult to establish until construction is in progress. Where existing services within RPAs require upgrading or new services have to be installed in RPAs, conventional excavation techniques are unacceptable and great care must be taken to minimise any disturbance. Trenchless installation should be the preferred option but if that is not feasible, any excavation must be carried out by hand or using a compressed air lance. Methodology must comply with *NJUG Volume 4: Guidelines for the Planning, installation and Maintenance of Utility Apparatus in Proximity to Trees.*

4.4.3 Tree works

Recommendations for tree works can be found in the tree works schedule in Appendix 6. All works shall be in accordance with British Standard *BS 3998:2010 Tree work: Recommendations,* or in accordance with current best practice. The use of a competent tree surgery contractor is necessary to comply with this (follow link for a list of Arboricultural Association approved contractors (Directory of Tree Surgeons - Arboricultural Association). The main contractor and tree surgery contractor must ensure that any necessary consents have been received from the local authority regarding planning constraints in regards to trees, and that no protected species or habitats are harmed whilst carrying out site clearance or tree surgery works.

5.0 Conclusions

5.1 The tree population across the site was limited due to the nature of the site and its location.

5.2 With the proposed design layout provided by the client it is indicated that 3 'C' category tree (T1 – T3) will require removal to accommodate the proposals.

5.3 T2 an olive tree positioned in a large wooden planter should be able to be relocated without this compromising the trees health resulting in the retention of this tree but if this is not possible the tree will require removal.

6.0 Recommendations

6.1 The trees identified for retention should be protected during the development phase in accordance with BS 5837:2012 'Trees in Relation to design, demolition and construction – recommendations' (Figure 2) to exclude construction activity within the root protection areas. Barrier fencing, ground protection or a combination of both should be used (see Tree Protection Plan in Appendix 2).

6.2 T1, T2 & T3 should be removed to facilitate the proposed layout but the re location of T2 may be suitable for retention as it is planted in a wooden planter.

6.3 In order to reduce the risk of damage to T2 if the tree is moved in its dormant stage (throughout winter) this should be the best possibly time for this tree.

6.3 The plan details that new trees will be planted, therefore this provides the opportunity to improve the tree cover on site by selecting the right trees for suitable locations. In doing this reducing the risk of future conflicts between the trees and neighbouring buildings.

6.4 Provided tree protection and methods of work close to trees outlined in this report are followed, the impacts on the remaining trees will be negligible.

6.5 If the recommendations made within this report are followed this scheme should be achievable in arboricultural terms and should be acceptable to the local planning authority.

Appendix 1 - Survey and Background Information

1.0 Limitations

1.0.1 A detailed topographical plan showing the locations of individual trees was provided by the client, and used for the tree survey, so the positions of the trees was understood to be accurate and SES Arboriculture Ltd accepts no liability for the accuracy of any tree survey drawings based on the topographical plan supplied by the client.

1.0.2 Trees are living organisms whose health and condition can change rapidly and all trees, even healthy ones, are at risk from unpredictable climatic and manmade events. The assessment of risk for any tree is based upon factors evident at the time of the inspection and the interpretation of those factors by suitably qualified inspectors. The health, condition and safety of trees should be checked on a basis commensurate with the level of risk and preferably on an annual basis.

1.0.3 **Methodology**

The trees were surveyed from ground level without detailed investigations. All trees with a trunk diameter of 75mm or above[3] were surveyed. All dimensions were estimated unless otherwise indicated. Obvious hedges and shrub masses were identified where appropriate. Information collected is in accordance with recommendations in subsection 4.4.2.5 of BS 5837 and includes species, height, diameter, branch spread, crown clearance, age class, physiological condition, structural condition and remaining contribution. Each tree was then allocated one of four categories (U, A, B or C) to reflect its suitability as a material constraint on development.

1.1 Documents and information received

- *Topographical plan*
- *Proposed plan*

1.2 Contacts

Name	Company/organisation	Tel. no.
-	Basinghall Estate Ltd	-
Adam Dayman	Southern Ecological Solutions Ltd	01268 711021

1.3 Reference documents

- *British Standards Institution (2012) BS 5837: Trees in relation to design, demolition and construction – Recommendations;*
- *British Standards Institute (2010) BS 3998: Tree work – Recommendations;*
- *DETR Tree Preservation Orders – A Guide to the Law and Good Practice;*
- *National Joint Utilities Group (2007) Volume 4, Issue 2: Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees;*
- *DTLR (2001) Principles of Tree Hazard Assessment and Management - David Lonsdale.*

[3] *BS 5837recommends that in most circumstances all trees over 75mm stem diameter should be included in a pre-planning land and tree survey*

1.4 Legal Constraints and Liabilities

1.4.1 **Tree Preservations Orders:** A search was undertaken with the London Borough of Richmond upon Thames website and was not conclusive to whether any of the trees on site are the subject of Tree Preservation Orders (TPOs) or if any of the site falls under any local conservation areas (CA).

1.4.2 **Occupiers Liability 1957 and 1984:** The Occupiers Liability Act places a duty of care to ensure that no reasonably foreseeable harm takes place due to tree defects. Therefore, this report includes recommendations within the tree tables for work required for safety reasons. 'Common sense risk management of trees (National Tree Safety Group 2012)' states that *'the owner of the land on which a tree stands, together with any party who has control over the tree's management, owes a duty of care at common law to all people who might be injured by the tree. The duty of care is to take reasonable care to avoid acts or omissions that cause a reasonably foreseeable risk of injury to persons or property.'*

1.4.3 **Common Law:** This enables pruning back of the crown and roots of trees on adjacent land where they overhang neighbouring property, providing the work is reasonable and does not cause harm. This right does not override TPO and CA legislation.

1.4.4 **Ecological Constraints:** The Wildlife and Countryside Act 1981, as amended, The Conservation of Habitats and Species Regulations 2010 and the Countryside and Rights of Way Act 2000, provide statutory protection to species of flora and fauna including birds, bats and other species that are associated with trees. These could impose significant constraints on the use and timing of access to the site. It is the responsibility of the main contractor and tree surgery contractor to ensure that no protected species are harmed whilst carrying out site clearance or tree surgery works. Unless competent to do so, the advice of an ecologist must be sought.

Appendix 2 - Key to Tree Survey Sheets

2.0 Tree Survey Schedule - Key to terms

T = Tree **G** = Group **H** = Hedge **S** = Shrub mass

Age Class:

NP	Newly planted
Y	Young - an establishing tree that could be easily transplanted
SM	Semi-mature - an established tree still to reach its ultimate height and spread and with considerable growth potential
EM	Early mature - a tree reaching its ultimate height and whose growth is slowing however it will still increase considerably in stem diameter and crown spread
M	Mature - a tree with limited potential for further significant increase in size although likely to have a considerable safe useful life expectancy
OM	Over mature - a senescent or moribund tree with a limited useful life expectancy
V	Veteran - a tree older than typical for the species and of great ecological, cultural or aesthetic value

Abbreviation:

Dia	Diameter of stem in millimetres at 1.5m above ground level for single-stemmed trees or in accordance with Annex C of BS 5837 for multi-stemmed trees or trees with low forks or irregular stems
Stems	Numbers of stems or M/S = multi-stemmed
Ht	Height in metres
Crown clear	Height of first significant branch above ground level and direction of growth
NSEW	Crown spread at the four cardinal points. Ø = average crown radius
Cond	Physiological condition. G = good; F = fair; P = poor; D = dead
Life exp	Estimated remaining contribution in years
RPR	Root protection radius in metres based on stem diameter
RPA	Root protection area. A layout design tool indicating the minimum area surrounding the tree that contains sufficient rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. Assessed according to the recommendations set out in clause 4.6 of BS 5837. It is calculated by multiplying the radius squared by 3.142. Clause 4.6.2 of BS 5837 states that the RPA may be changed in shape, taking into account local site factors, species tolerance, condition and root morphology
CEZ	Construction exclusion zone. An area based on the RPA in m^2 identified by an arboriculturist, to be protected during development, including site clearance, demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long-term retention of a tree

BS cat: Category in accordance with Table 1 and section 4.5 of BS 5837.

A	High quality and value (non-fiscal) with at least 40 years remaining life expectancy
B	Moderate quality and value with at least 20 years remaining life expectancy
C	Low quality and value with at least 10 years remaining life expectancy, or young trees with a stem diameter below 150 mm
U	Unsuitable for retention. Existing condition is such that they cannot be realistically retained as living trees in the context of the current land use for longer than 10 years. Note, category U trees can have existing or potential conservation value which it might be desirable to preserve

A, **B** and **C** category trees are additionally graded into: **1**) Mainly arboricultural values; **2**) Mainly landscape values; **3**) Mainly cultural values including conservation.

Appendix 3 - Tree Survey Sheets

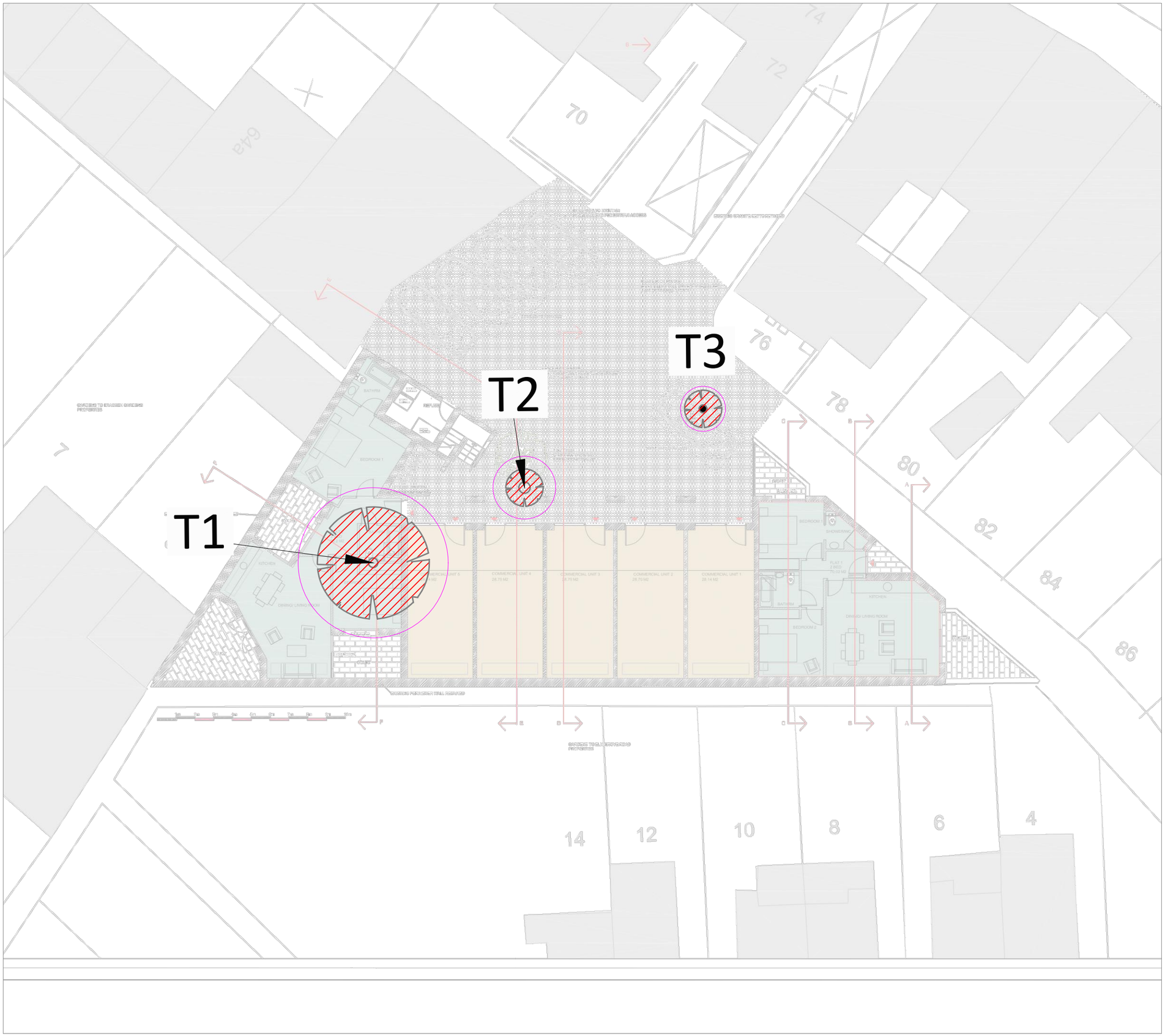
Tree Survey Schedule

Client: Basinghall Estate Ltd **Surveyed by**: Adam Dayman

Site: The Courtyard, 74 Church Road, Barnes **Date**: 6th July 2016

Tree ref no.	Species	Stem Ø (mm) at 1.5m	Ht (m)	Crown spread (m)				Crown clear (m)	Age class	Condition: (P) Physiological (S) Structural	Preliminary management recommendations	Est life span (yrs)	Grade	Radii single stem	RPA
				N	E	S	W								
T1	Silver birch	250 170 150	7	3	3	3	3	1.5	SM	(P) Fair (S) Fair: Amenity tree, Tri stemmed from base with no obvious major defects. Crown in contact with the building.	No Work Required	20+	C1	4	52
T2	Olive	320	2.5	1	1	1	1	1	EM	(P) Fair (S) Fair: Planted in raised wooden planter in the centre of the courtyard. Previously pruned to 1.5m where it has regrown from. Large wound on the northern side of the stem.	No Work Required	20+	C1	1.8	46
T3	Buddleia	90	4	1	1	1	1	0	SM	(P) Fair (S) Fair: Self-set tree which is multi stemmed from the base and has no obvious major defects.	No Work Required	10+	C1	1.2	5

Appendix 4 - Tree Survey Plan and Tree Protection Plan (TSP/TPP)



Key

- Category A - trees of high quality and value
- Category B - trees of moderate quality and value
- Category C - trees of low quality and value
- Category U - trees of unsuitable for retention
- T1 — Tree is not identified on TOPO, therefore, location of the tree is not accurate
- Group of trees / hedge
- Root protection area
- Trees to be removed
- Tree protective barriers
- Construction Exclusion Zone - area requiring a special consideration - refer to report

This drawing was produced in colour - a monochrome copy should not be relied upon. Contractors must check all dimensions on site. Any discrepancies must be reported to the arboricultural consultant before proceeding. ©SES 2016.

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Rev	Amendment	Date
A	Proposed layout update	16.01.17

Site
The Courtyard, 74 Church Road, Barnes

Client
Basinghall Estate Ltd

Drawing title
Tree Survey & Protection Plan

Drawing no.	Scale	Date
1	1:200@A3	16.01.17

Revision	Drawn by	Orientation
A	AD	N

Appendix 5 - Tree Work Schedule

5.0 Tree Work Schedule

All tree works to be undertaken in accordance with *BS 3998:2010 Recommendations for tree works,* or industry best practice.

Tree no.	Species	Proposed works	Reason	Grade
T1	Silver birch	Fell	To facilitate the proposed layout	C1
T2	Olive	Fell	To facilitate the proposed layout	C1
T3	Buddleia	Fell	To facilitate the proposed layout	C1

Appendix 6 - Specific Report Caveats

6.0 Specific Report Caveats

6.0.1 The survey was based on drawings provided by the client, however a topographical plan identifying accurate tree locations was not available during the survey and all trees were plotted by hand.

6.0.2 No internal diagnostic equipment was used other than a sounding mallet and probe.

6.0.3 The survey is concerned solely with arboricultural issues.

6.0.4 Any work with trees will discharge the due diligence requirements of all relevant wildlife and countryside legislation.

6.0.5 Trees are dynamic living organisms whose health and condition can change rapidly. Any changes to the tree or conditions close to the tree may change the stability and condition of the tree and a further examination would be required and may affect the validity of this report.

6.0.6 This report is valid for 12 months.

6.1 Copyright and non-disclosure

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