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ARBORICULTURAL, LANDSCAPE & MANAGEMENT CONSULTANTS

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Arboricultural Impact Assessment

- Tree Survey
- Tree Protection Plan
- Arboricultural Method Statement

At:-

42 Kingstown Street
Primrose Hill
London
NW1 8JP

On behalf of:-

Ms Kathryn McCusker
42 Kingstown Street
Primrose Hill
London
NW1 8JP

Prepared by:

Simon Stephens MA Oxon, Dip Arb(RFS), MArborA, C Env. MICFor
Email: [redacted]

Survey Date: 27th November 2018
Report Date: 7th November 2018
Project no: 1240

CONTENTS

1 BACKGROUND

1.1 This Arboricultural Impact Assessment relates to the proposed construction of a single storey rear extension to 42 Kingstown Street and provides recommendations for the management of the trees on the site. It has been instructed by the owners.

1.2 The tree survey was undertaken, and this report has been prepared, by Simon Stephens MA Oxon, Dip Arb (RFS), MArborA, C Env, MICFor a Registered Consultant with the Arboricultural Association, with over 20 years relevant experience.

1.3 This survey and report have been prepared in accordance with recommendations provided in BS 5837:2012, Trees in relation to design, demolition and construction - Recommendations.

1.4 Documentation supplied:

- Vernon Architects, Proposed Site Plan: drawing no VA(PL)-105

2 SURVEY DETAILS AND SCOPE

2.1 The site survey included trees and shrubs, within influencing distance of the proposed development, with a stem diameter over 75mm at 1.5m height, located within the area shown on the Tree Protection Plan, included as Appendix A.

2.2 Tree inspection took place from ground level with the use of binoculars, sounding hammer and metal probe using the Visual Tree Assessment method (Mattheck & Breloer 1994). The presence and condition of bark and stem wounds, cavities, decay, fungal fruiting bodies and any structural defects that could increase the risk of structural failure were noted.

2.3 Tree details have been added to the plan received, which is included as Appendix A. Tree locations have been taken from the topographical survey provided. Where not included on the topographical survey, they have been determined by measuring distances from features shown on the plan, using a laser measuring device. The following information was recorded for each tree, and is shown in the Tree Schedule included as Appendix B:

- **Number:** an identity number for each tree, prefixed with a "T", which cross references locations shown on the plan with the schedule in Appendix B. Where a number of trees, normally of the same species, are located close together and are similar in character and requirements, they have been treated as a Group under a single Number, prefixed with a "G".
- **Species**: common name.
- **Tree height**: approximate height in metres.
- **Stem diameter**: diameter in millimetres, taken at 1.5m above ground. Where there are a number of stems, stem diameters are recorded in the condition column.
- **Branch spread**: approximate spread in metres to N,S,E and W of the trunk. The approximate branch spread is drawn on the plan.
- **Canopy clearance**: approximate height of the canopy above ground. Where a significant, low lateral branch is present, its height and direction of growth is included in the Condition column.
- **Age class**: Young, Semi-mature, Early mature, Mature, Over-mature, Veteran.
- **Condition**: features that affect the safe useful life expectancy and amenity of the tree, including the presence of decay or any physical defect.
- **Management Recommendations**: recommendations to ensure the health and safety of the tree, within the future development.
- **Estimated Remaining Contribution**: <10 years, 5-15 years, 10-20 years, 15-30 years, 20-40 years, >40 years.
- **Category grading**: tree classification taken from BS 5837:2012, Trees in relation to design, demolition and construction (see Appendix C for details), as follows:
    - Category U: Unsuitable for retention, trees with less than 10 years life expectancy, normally recommended for removal (Red)
    - Category A: high quality trees, able to make a substantial contribution for at least 40 years, normally retained unless there is an over-riding reason for removal and appropriate mitigation. (Green)

- Category B: moderate quality trees, able to make a significant contribution for at least 20 years, normally retained. (Blue)
- Category B/C: an intermediate category between categories B and C (not specifically described in BS5837). Trees, which should be retained wherever possible, providing retention does not unreasonably constrain the layout. (Blue)
- Category C: low quality, in adequate condition to remain for at least 10 years, or young trees <150mm stem diameter. Trees which can be removed to allow the desired layout or new planting. (Grey)

For category A, B and C trees, a subcategory has been allocated, providing information on the reasons for selection of a specific category, as follows:

- Subcategory 1: mainly arboricultural values.
- Subcategory 2: mainly landscape values.
- Subcategory 3: mainly cultural values, including conservation.

- Trees have been classified irrespective of the possible proximity to future construction. The BS 5837 category is colour coded, as indicated above, on the plan included as Appendix A.
- **Protection Distance:** the protection distance in metres required to provide the Root Protection Area recommended in BS 5837, assuming a circular area centred on the tree.
- **Root Protection Area (RPA):** the area in m^2, as recommended in BS 5837, to provide sufficient rooting area to ensure tree survival and which, in most situations, should be fenced off to prevent root damage from construction activities.

3 SURVEY LIMITATIONS

3.1 No internal decay devices, or other invasive tools to assess tree condition, were used.

3.2 No soil excavation or root inspection was carried out.

3.3 This survey has not considered the effect that trees or vegetation may have on the structural integrity of future building through subsidence or heave.

3.4 The tree survey has been undertaken for planning purposes. Although any obvious structural defects have been noted, a Tree Hazard Assessment has not been carried out. Mature trees close to highly populated areas or public highways should normally be checked for safety annually, by a suitably qualified person.

4 LEGAL PROTECTION OF TREES

4.1.1 The Camden Council website was viewed on 27-11-2018, showing that the site falls within a Conservation Area. The presence of Planning Conditions currently attached to the site, was not checked.

4.1.2 Since the site is covered by a Conservation Area, six weeks notification must be given to the Local Planning Authority of any intended tree surgery works, to allow them the option of placing a Tree Preservation Order.

5 ARBORICULTURAL METHOD STATEMENT

5.1 Site Overview

5.1.1 The proposal is for the construction of a single storey rear extension. The proposed site plan is included as Appendix F and is also shown, along with tree details, on the Tree Protection Plan attached as Appendix A.

5.1.2 All services for the extension will come from the existing building, so no trenching around the extension will be required.

5.1.3 There is a lime tree (T1) in the rear garden, shown in the photos included in Appendix E. This is growing close to the brick boundary wall and has been reduced at various times in the past. It is prominent in the street scene and is of high amenity value.

5.2 Tree Work

5.2.1 No tree works is proposed.

5.3 Root Protection Areas

5.3.1 Root Protection Areas are shown for all trees in the tree schedule attached as Appendix B. They are also shown for all retained trees, as circular areas centred on the trunk, on the Tree Protection Plan attached as Appendix A. This shows the distance that construction must normally be kept back from a tree, to provide the Root Protection Area recommended in BS 5837.

5.3.2 Although the boundary wall and road construction are likely to have prevented root growth to the south, rooting conditions under the lawn and raised beds will be significantly better than under the existing patio. In addition, past crown reductions have resulted in a tree with a relatively large stem diameter for the size of the crown. The Root Protection Area, which relates directly to the stem diameter, is therefore somewhat over generous for the size of the canopy. For these reasons the Root Protection Area has not been offset, as would be the case in other circumstances.

5.4 Tree Protection Fencing

5.4.1 Tree Protection Fencing must be erected where shown on the Tree Protection Plan, attached as Appendix A. This will provides full protection of the Root Protection Areas of all retained trees, other than for:

- areas hatched in blue on the Tree Protection Plan, where No-Dig Construction must be used, as described in section 5.5 below, to protect underlying roots.
- areas shaded cyan on the Tree Protection Plan, indicating Ground Protection Areas, where roots must be protected, as described in section 5.6 below.
- areas cross hatched red on the Tree Protection Plan, where there will be excavation required at the edge of Root Protection Areas, but where hand excavation must be used, as described in section 5.7, to minimise potential root damage.

5.4.2 Tree Protection Fencing must be from weldmesh panels, at least 2m high, securely fixed, with wire or scaffold clamps, to a rigid framework. This framework must be constructed from scaffold tubes with vertical tubes, at a maximum interval of 3m and driven into the ground at least 0.6m. The structure must be well braced to resist impacts, constructed as per Figure 2 of BS5837:2012, which is reproduced in Appendix D. Alternatively, weldmesh panels can be supported on blocks, providing the blocks are pinned to the ground with road pins, or similar, and the panels are braced, as per Figure 3 of BS5837:2012, which is also reproduced in Appendix D.

5.4.3 To protect the stem of T1 heavy-duty plywood must be used to construct a solid 2m tall box, around the stem of the tree. No part of the box must be in contact with the tree, however polystyrene blocks can be wedged between the box and the tree stem to absorb any impact and to help keep the box in place.

5.4.4 After erection of Tree Protection Fencing and installation of ground protection, 2 days notice must be given to the Local Planning Authority before construction, including any ground work, starts on site. Tree Protection Fencing must be maintained and retained for the duration of the works, or until such time as agreed in writing with the Local Planning Authority.

5.4.5 Notices must be fixed to the Tree Protection Fencing stating:- "Tree Protection Fencing – No construction activity to take place within this area".

5.5 No-Dig Construction Areas

5.5.1 The No-Dig area, shown hatched blue on the drawing included as Appendix A, must be constructed without excavation apart from the removal of turf/organic matter, which must be carried out by hand. Excavators, dumpers and other site traffic must not be allowed to track on the No-Dig areas until roots are protected by the No-Dig surfacing or ground protection.

5.5.2 Engineering details must avoid localised compaction, using both a two dimensional geogrid, and a three dimensional cellular confinement system as integral components of the sub-base. A typical section is shown on the Tree Protection Plan included as Appendix A. As well as being fit for purpose, the design and methodology must protect tree roots, by ensuring the following:-

- topsoil/turf can be removed carefully by hand to a maximum of 75mm, but less if roots are found nearer the surface.
- following leveling with soil or sand, a permeable, non-woven geotextile membrane, must be laid.
- a suitable two dimensional geogrid, such the TriAx Geogrid supplied by Tensar International (www.tensar.co.uk), or the Biaxial Geogrid supplied by Geosynthetics Ltd (www.geosyn.co.uk), must be laid over the entire area and underneath the edging.
- pressure treated timber edging boards, supported by driven stakes must be used.
- a suitable cellular confinement system must then be laid to manufacturers instructions on top of the geogrid. Products that might be considered include Geoweb, supplied by Greenfix (www.greenfix.co.uk) or Cellweb, supplied by Geosynthetics Ltd (www.geosyn.co.uk). The depth of the system must be adequate to take the maximum axle weight, as per manufacturers guidance.
- the cellular confinement system must be filled with clean (no fines), washed angular, 4/20mm, stone to provide load support, while allowing air and moisture to permeate to the root zone.
- a further permeable, non-woven geotextile membrane, such as TreetexT300, or an alternative approved product, must be laid over the cellular confinement system.
- a porous, surfacing material, free from contaminants, must then be laid. Sand bedding and paving would be suitable.
- removed turf/topsoil can be used to grade surrounding ground levels.

5.5.3 No-Dig construction will result in an increase in levels. This must be fully taken account of in all other aspects of the design.

5.6 Ground Protection Areas

5.6.1 The Ground Protection Area, which is shaded cyan on the Tree Protection Plan, contains an area of hard surfacing, raised beds and lawn.

5.6.2 Initially ground protection must be laid over the lawn, while the concrete retaining walls to the raised beds are demolished and soil removed to bring the raised bed areas down to levels. This must be carried out by hand retaining any roots found. On completion, ground protection must be laid over these areas.

5.6.3 The existing patio can be retained where preferred to protect any underlying roots. However, as soon as this has been removed by hand, ground protection panels must be laid so that the entire Ground Protection Area, shown shaded, cyan is protected.

5.6.4 Trakmats, as supplied by either the Marwood Group, (www.marwoodgroup.co.uk) or Ground-Guards, (www.ground-guards.co.uk) or a similar approved product, must be used, laid on a compressible layer of sand or woodchips, laid onto a geotextile, with adjacent panels held together with connectors.

5.7 Hand Dig Area

5.7.1 The Hand Dig trenches, shown cross-hatched red on the Tree Protection Plan, must be dug to formation level /a depth of 1m by hand, neatly severing any roots found, using secateurs or a hand saw. Any further excavation required, either to a greater depth or outside the hand dug trenches, can be carried out with an excavator, since it is unlikely that significant live roots will be found.

5.7.2 Heavy-duty polythene must be used to line the side of the trench adjacent to the trees, before concrete is poured, to avoid the toxic affects of cement on tree roots.

5.7.3 On no account must use of an excavator be used in the top 1m of the Hand Dig areas, which would rip any roots and cause unnecessary damage.

5.8 General measures

5.8.1 No construction activity whatsoever, including routing of underground services, storage of materials or on-site parking, must be allowed within Root Protection Areas, other than that specifically described above.

5.8.2 No mixing of cement, or concrete, or storage of fuel must take place within 10m of retained trees, nor in any position where the slope of the ground could lead to contamination of the Root Protection Area.

5.8.3 Fires must not be lit.

5.8.4 Landscape works carried out within Root Protection Areas must be undertaken with great care so as not to damage shallow roots. Heavy mechanical cultivation must not be used within the Root Protection Areas.

5.8.5 A copy of the Tree Protection Plan must be kept on site and must be fully understood by the Site Agent.

5.9 Arboricultural Supervision

5.9.1 A qualified Arboricultural Consultant must be retained during the period of construction to carry out the following:

- to meet with/ liaise with the contractor, prior to construction or demolition starting on site, to ensure this Arboricultural Method Statement is fully understood and can be complied with in full. If any revisions are required, a revised Arboricultural Method Statement must be approved by the Local Planning Authority, prior to construction or demolition starting on site.

- to inspect Tree Protection Fencing and ground protection, prior to construction or demolition starting on site.

- as necessary, to advise on any issues at the request of the local planning authority, the client, architect or contractor.

The details of each site visit must be recorded using a site visit proforma, with copies circulated to the contractor, developer and the local authority Tree Officer.

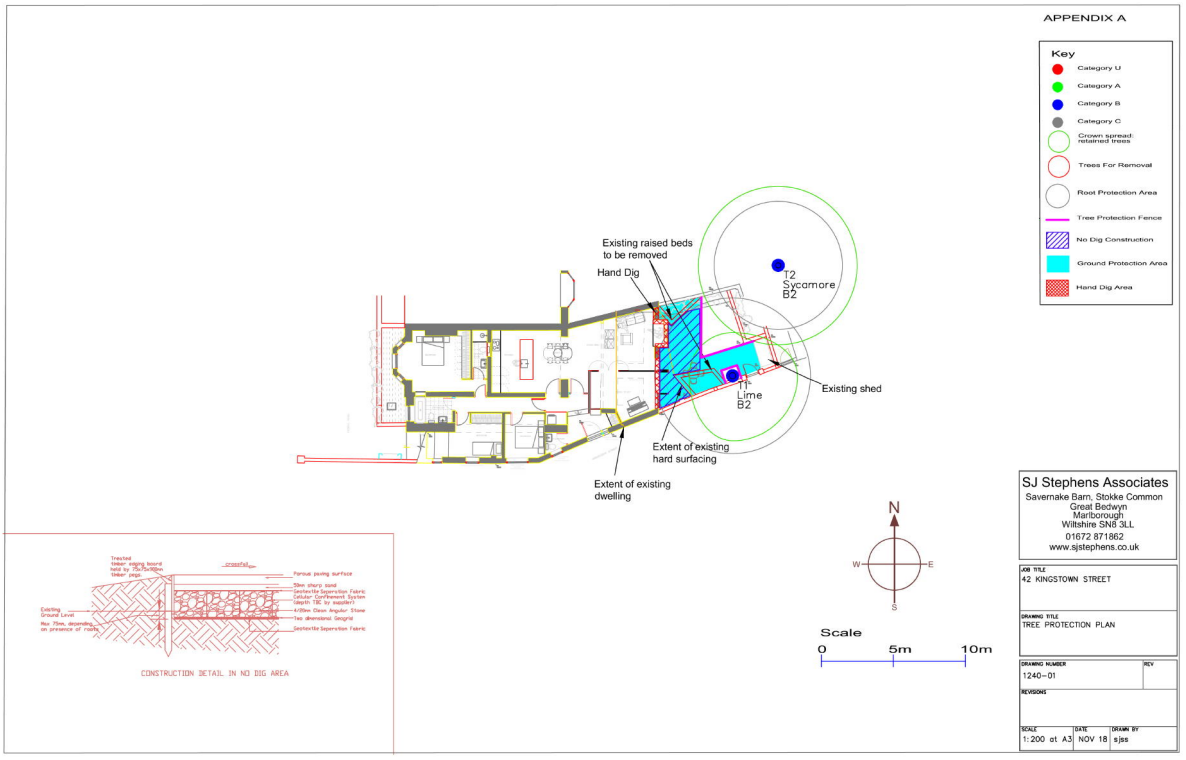
6 ARBORICULTURAL IMPACT ASSESSMENT

6.1 No tree work is proposed.

6.2 Tree protection measures have been specified and arboricultural supervision included. Hand digging of a trench along the building line closest to the tree has been included, although it is unlikely any roots will be found at this distance from the tree, under the existing hard surfacing.

6.3 Provided the recommendations in this report are followed, there is unlikely to be any significant impact on the health of the lime tee (T1).

APPENDIX A



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JOB TITLE
42 KINGSTOWN STREET

DRAWING TITLE
TREE PROTECTION PLAN

DRAWING NUMBER	REV
1240-01	

REVISIONS

SCALE	DATE	DRAWN BY
1:200 at A3	NOV 18	sjss

Tree/ Group No.	Species	Height (m)	Stem Diam. at1.5m (mm)	Branch Spread (m)				Canopy Cleara -nce (m)	Age Class	Observations	Management Recommendations	Estimated Remaining Contribution (years)	BS 5837 Category Grading	Protect ion Distnce (m)	Root Protect. Area (m2)
				N	S	E	W								
T1	Lime	9.5	450	3	4.5	4.5	3	3	Early mature	Growing immediately adjacent to brick boundary wall, (with edge of stem 100mm from brick pier). Main stem bifurcates at 2.3m. Reduced to 3.2m in past and subsequently to 8.5m. Showing reasonable vigour. Various minor cavities in previous pruning wounds.	Remove organic matter from around base, which could increase risk of basal decay.	20-40	B2	5.4	92
T2	Sycamore	13.5	370	5.5	5.5	5.5	5.5	2.5	Early mature	Twin stem from base - est 220 and 300mm. Growing the other side of 2 boundary walls. Previously reduced. Attractive tree.		20-40	B2	4.4	62

BS 5837:2012, Table 1 Cascade chart for tree quality assessment

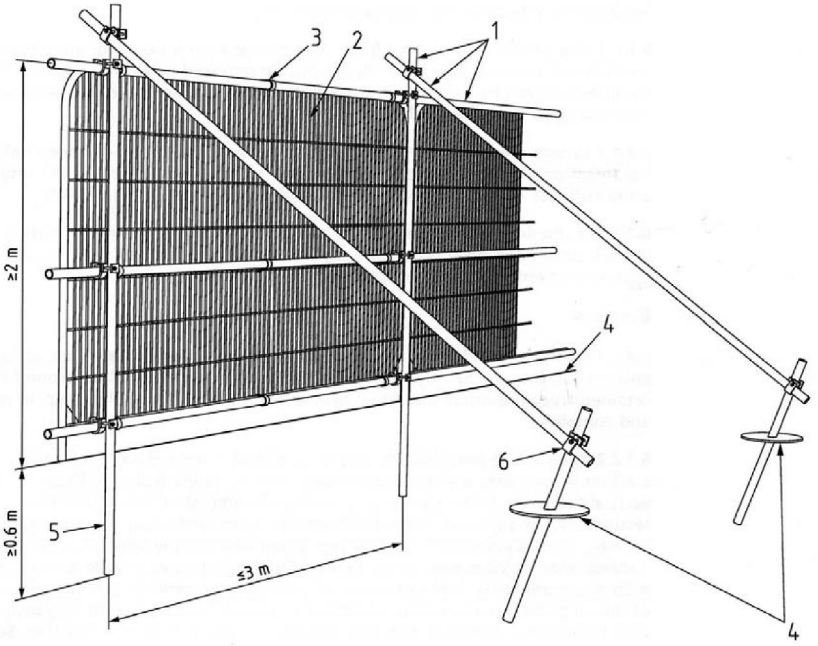
Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• 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 *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7**.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

British Standard BS 5837:2012 — Appendix D
Default specification for protective barrier

Figure 2

Key

1. Standard scaffold poles
2. Heavy gauge 2 m galvanised tube and welded mesh infill panels
3. Panels secured to uprights and cross-members with wire ties
4. Ground level
5. Uprights driven into the ground until secure (minimum depth 0.6 m)
6. Standard scaffold clamps



Examples of above-ground stabilising systems

Figure 3a

Stabiliser strut with base plate secured with ground pins

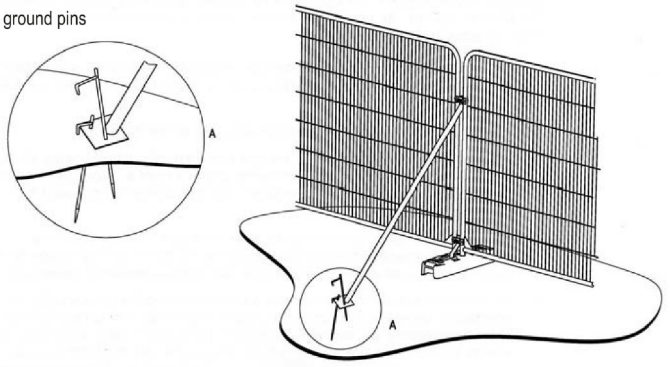
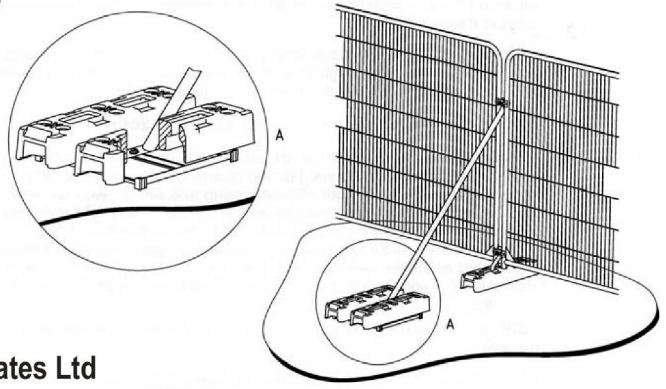
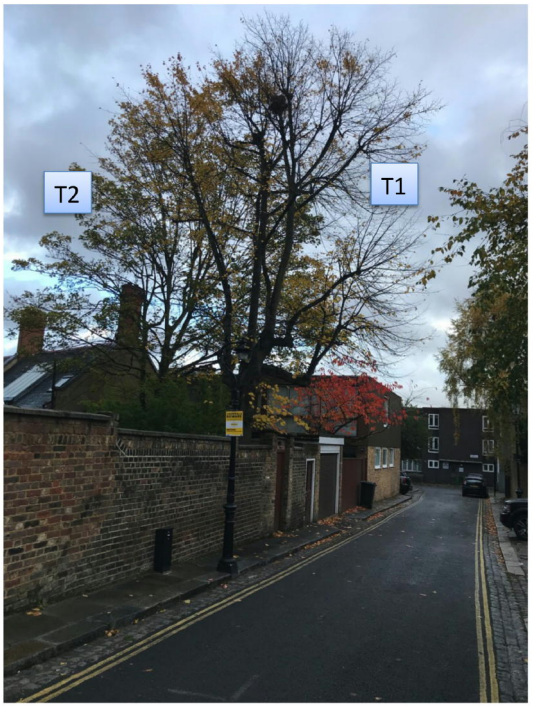


Figure 3b

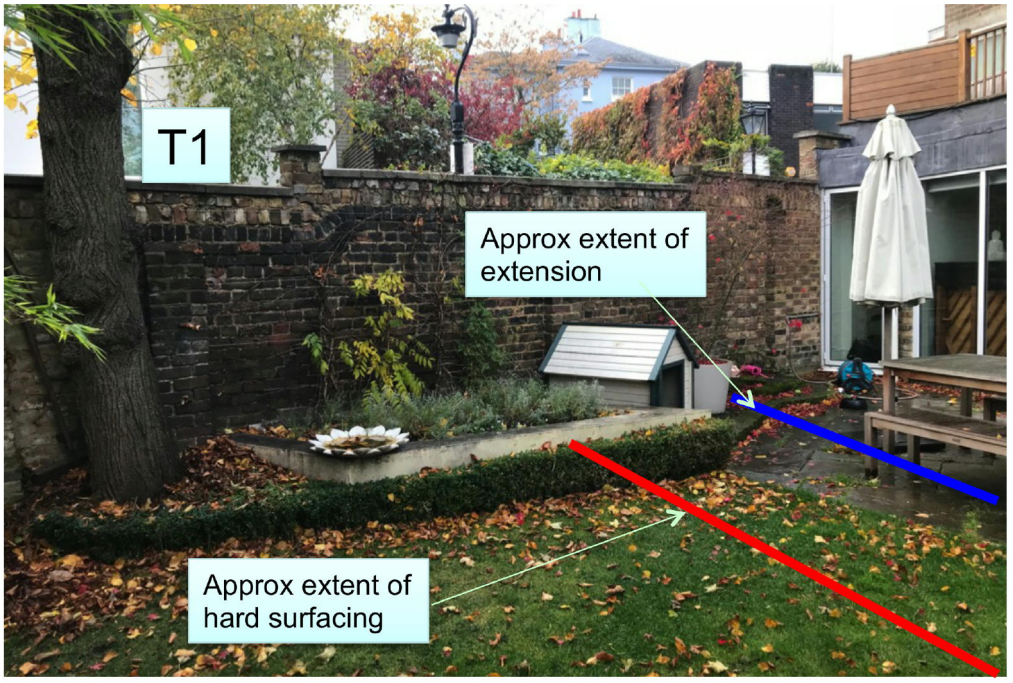
Stabiliser strut mounted on block tray

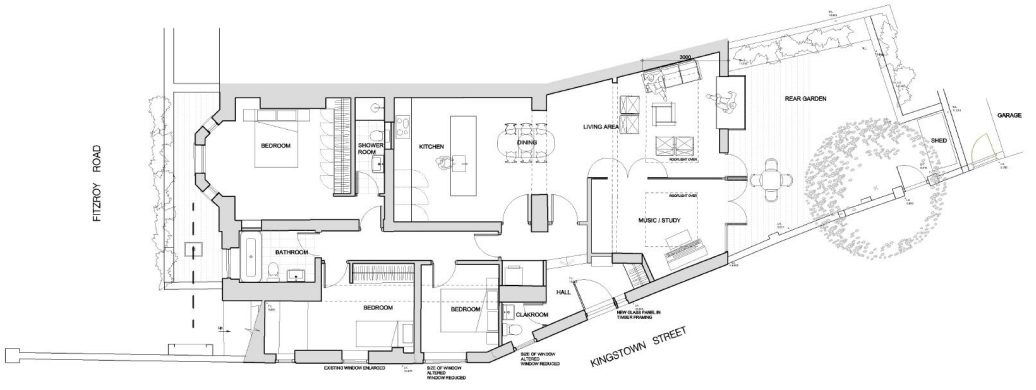


Appendix Ei)



Appendix Eii)





APRIL 2018-ISSUED FOR PLANNING

0 1 5

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Project: 42 KINGSTOWN STREET

Title: PROPOSED FLAT LAYOUT including garden

Project Number: 17.05.01

Date: FEB. 2018

Scale @ A3: 1:100

Sketch Number: VA(PL)-105