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BS5837:2012 TREE SURVEY AND ARBORICULTURAL IMPACT ASSESSMENT: 48 Mornington Terrace, London, NW1 7RT

Dated: 20th February 2024

Our reference: GHA/DS/333160:24

CONTENTS

Arboricultural Impact Assessment

Location: 48 Mornington Terrace, London, NW1 7RT
Our reference: GHA/DS/333160:24
Client: SG Structures
Dated: 20th February 2024
Prepared by: Glen Harding MICFor, MSc (Forestry), MArborA
Date of Inspection: 18th February 2024

Instructions

Issued by – SG Structures

TERMS OF REFERENCE – GHA Trees were instructed to survey the subject trees within and adjacent to 48 Mornington Terrace, London, in order to assess their general condition and to provide a planning integration statement for the indicative proposed development that safeguards the long term wellbeing of the retained trees in a sustainable manner.

Executive Summary

The proposal for the site is to renovate the existing structure, works that will include a new rear extension and lower ground floor extension. The proposed scheme requires the removal of a small number of relatively insignificant (C and U category) trees / shrubs, which will not significantly impact the local or wider landscape. The retained trees require protection in accordance with industry best practice and BS 5837: 2012 – Trees in relation to design, demolition and construction – recommendations, in order to ensure their longevity.

Documents Supplied

The client supplied the following documents:

- Existing layout plans
- Proposed layout plans

Scope of Survey

1.1 The survey is concerned with the arboricultural aspects of the site only.

1.2 The planning status of the subject property was not investigated in detail.

1.3 A qualified Arboriculturist undertook the report and site visit and the contents of this report are based on this. Whilst reference may be made to built structure or soils, these are only opinions and confirmation should be obtained from a qualified expert as required.

1.4 No discussions took place between the surveyor and any other party.

1.5 The trees were inspected on the basis of the Visual Tree Assessment method expounded by Mattheck and Breleor (The body language of tree, DoE booklet Research for Amenity Trees No. 4, 1994)

1.6 The survey was undertaken in accord with British Standard 5837: 2012 – Trees in relation to design, demolition and construction – recommendations.

1.7 Underground services near to trees will need to be installed in accord with the guidance given in BS5837.

1.8 The client's attention is drawn to the responsibilities under the Wildlife and Countryside Act (1981).

Survey Method

2.1 The survey was conducted from ground level with the aid of binoculars if needed.

2.2 No tissue samples were taken nor was any internal investigation of the subject trees undertaken.

2.3 No soil samples were taken.

2.4 The height of each subject tree was estimated using a clinometer and recorded to the nearest half metre.

2.5 The stem diameter for each tree was measured in line with the requirements set out in BS 5837: 2012 – Trees in relation to design, demolition and construction – recommendations.

2.6 The crown spreads were measured with an electronic distometer and recorded to the nearest half metre. Where the crown radius was notably different in any direction this has been noted on the Plan (appendix A) and within the tree table (Appendix B). The crowns of those trees that are proposed for removal, or trees where the crown spread is deemed insignificant in relation to the proposed development are not always shown on the appended plan; however their stem locations are marked for reference.

2.7 The Root Protection Area (RPA) for each tree is included in the tree table, both as an area, and as the radius of a circle.

2.8 The crown clearance was measured using a clinometer and recorded to the nearest half metre. Where it is significantly lower in one direction, this is noted within the tree table at appendix B.

2.9 All of the trees that were inspected during the site visit are detailed on the plan at Appendix A; this plan was produced in colour and **MUST** only be scanned or reproduced in colour. The trees on this plan are categorised and shown in the following format:

COLOUR CODING AND RATING OF TREES:

Category A – Trees of high quality with an estimated remaining life expectancy of at least 40 years. Colour = light green crown outline on plan.

Category B – Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Colour = mid blue crown outline on plan.

Category C – Trees of low quality with an estimated remaining life expectancy of at least 10 to 20 years, or young trees with a stem diameter below 150mm. Colour = uncoloured crown outline on plan.

Category U – Those in such a condition that they cannot realisitically be retained as living trees in the context of the current land use for longer than 10 years. Colour = red crown outline on plan.

All references to tree rating are made in accordance with BS 5837: 2012 – Trees in relation to design, demolition and construction – recommendations', Table 1.

The Site

3.1 The proposal for the site is to renovate the existing structure, works that will include a new rear extension and lower ground floor extension.

The Subject Trees

4.1 The details of the subject trees / shubs are set out in the Schedule at Appendix B.

4.2 Of the twelve individual trees / shrubs surveyed, eleven have been assessed as BS category C with the remaining tree being assessed as BS 5837 category U.

Category C	1 trees
Category U	1 tree

4.3 All of the surveyed trees / shrubs are tree ferns which have been left to grow and now make the garden unusable as shown in the photo below:

Below: existing trees / shrubs

The Proposal

5.1 The proposal for the site is to renovate the existing structure, works that will include a new rear extension and lower ground floor extension.

5.2 The proposed location of the above structures can be seen on the appended plan.

Arboricultural Impact Assessment

PROPOSED TREE REMOVAL / RETENTION:

6.1 The following trees are proposed for removal as part of the new development, as these specimens could not be effectively retained as they are located within the outline of the new structures, or located too close to make their retention feasible / sustainable.

T1, T2, T3, T4, T5, T6, T7, T8, T9 and T10

6.2 All of the trees to be removed have been given either a C or U category grading in accordance with BS 5837. It is therefore felt that these trees should not act as a limitation on the effective use of the site, or impose any significant constraints on the layout (see table 1 BS5837).

6.3 The assessed grading (as per BS5837 table 1) of each of the trees to be removed, as well as any relevant comments on their condition can be seen in the tree table at appendix B.

TREE PRUNING TO ACCOMODATE THE PROPOSAL OR ACCESS TO THE SITE

6.4 The implementation of the proposal does not lead to the requirement to prune any of the retained trees, or shrubs.

6.5 There is no part of the new structure which will have tree canopies (from trees to be retained) overhanging it and the building works can progress safely without the need for any facilitation pruning.

ASSESSMENT OF RETAINED TREES ROOT PROTECTION AREAS

6.6 Section 4.6.3 of BS 5837: 2012 states that the Root Protection Area (RPA) of each tree should be assessed by an arboriculturalist considering the likely morphology and disposition of the roots, when known to be influenced by past or existing site conditions.

6.7 The RPAs of several trees have been amended to take account of the existing structures; these adjustments can be seen on the appended plan.

ASSESSED IMPACT ON RPAS BY PROPOSED STRUCTURES & PROPOSED MITIGATIONS

6.8 There is a small encroachment into the RPAs of T10, T11 and T12; these encroachments all equate to less than 5% and are therefore assessed to be within acceptable levels, especially as all of these trees have been graded as a C category tree in accordance with BS 5837: 2012 – Table 1, and should therefore not act as a limitation on the effective use of the site, or impose any constraints on the layout.

INSTALLATION OF SERVICES

6.9 The full details of existing and proposed new services have not been made available at the time of writing.

6.10 New services must be routed to avoid all RPAs of retained trees on site and within nearby sites. From an assessment of the subject site, undertaken in conjunction with the project architect, there is no reason to assume this isn't possible. Inspection chambers must also be sited outside the RPAs of any nearby trees.

Post Development Pressure

FUTURE TREE AND STRUCTURE RELATIONSHIPS

7.1 The retained trees are at a satisfactory distance from the proposed new building outline and highly unlikely to give rise to any inconvenience.

Tree Protection Measures and Preliminary Method Statement for Development Works

8.1 TREE PROTECTION BARRIERS

The position of the fence **MUST** be marked out with biodegradable marker paint on site and agreed with appropriate representatives from the LPA and contractor. The fencing **MUST** be erected **prior** to any works in the vicinity of the trees and removed only when all development activity is complete. The protective fencing **MUST** be as that shown in BS 5837 (see Appendix C). The herras panels **MUST** be joined together using a minimum of two anti-tamper couplers which **MUST** be installed so they can only be removed from the inside of the fence. The panels **MUST** supported by stabilizer struts, which **MUST** be installed on the inside and secured to the ground using pins or appropriate weights.

The Fence must be marked with a clear sign reading:

"Construction Exclusion Zone – No Access"

8.2 GROUND PROTECTION – LIGHTWEIGHT ACCESS ONLY

Where any additional ground protection is required, these areas **MUST** be covered with a permeable membrane, with 150mm layer of compressible woodchip overlaying it; an 18mm marine ply boards will then be secured on top of the woodchip to allow a 1.5tonne mini-digger to access the area without causing major compaction or soil erosion.

8.3 MIXING OF CONCRETE

All mixing of cement / concrete **MUST** be undertaken outside of the RPA of all of the retained trees.

8.4 OTHER TREE PROTECTION PRECAUTIONS

- **NO** fires lit on site within 20 metres of any tree to be retained.
- **NO** fuels, oils or substances with will be damaging to the tree shall be spilled or poured on site.
- **NO** storage of any materials within the root protections zone.

8.5 HARD / SOFT LANDSCAPING NEAR RETAINED TREES

All new pathways and hard landscaping areas within the Root Protection Areas (RPA's) of the retained trees **MUST** be designed using no-dig, up and over construction techniques, and be specified in close co-ordination with the retained Arboriculturalist. Porous materials **MUST** also be used when surfacing near the trees. No machinery will be used for this work, which **MUST** all be done by hand.

Conclusion

9.1 In conclusion, no significant or important trees will be lost to facilitate the proposed scheme.

9.2 Subject to precautionary measures as detailed above, the proposal will not be injurious to trees to be retained.

Recommendations

10.1 Site supervision – An individual e.g. the Site Agent, must be nominated to be responsible for all arboricultural matters on site. This person must:

a. Be present on the site the majority of the time.
b. Be aware of the arboricultural responsibilities.
c. Have the authority to stop any work that is, or has the potential to cause harm to any tree.
d. Be responsible for ensuring that all site personnel are aware of their responsibilities towards trees on site and the consequences of the failure to observe those responsibilities.
e. Make immediate contact with the local authority and / or retained arboriculturalist in the event of any related tree problems occurring whether actual or potential.

10.2 It is recommended, that to ensure a commitment from all parties to the healthy retention of the trees, that details are passed by the architect or agent to any contractors working on site, so that the practical aspects of the above precautions are included in their method statements, and financial provision made for these.

20th February 2024
Signed:

[redacted]

Glen Harding MICFor, MSc (Forestry), MArborA
For and on behalf of GHA Trees

Appendix A
TREE PLAN
(see separate PDF)

Appendix B
TREE TABLE

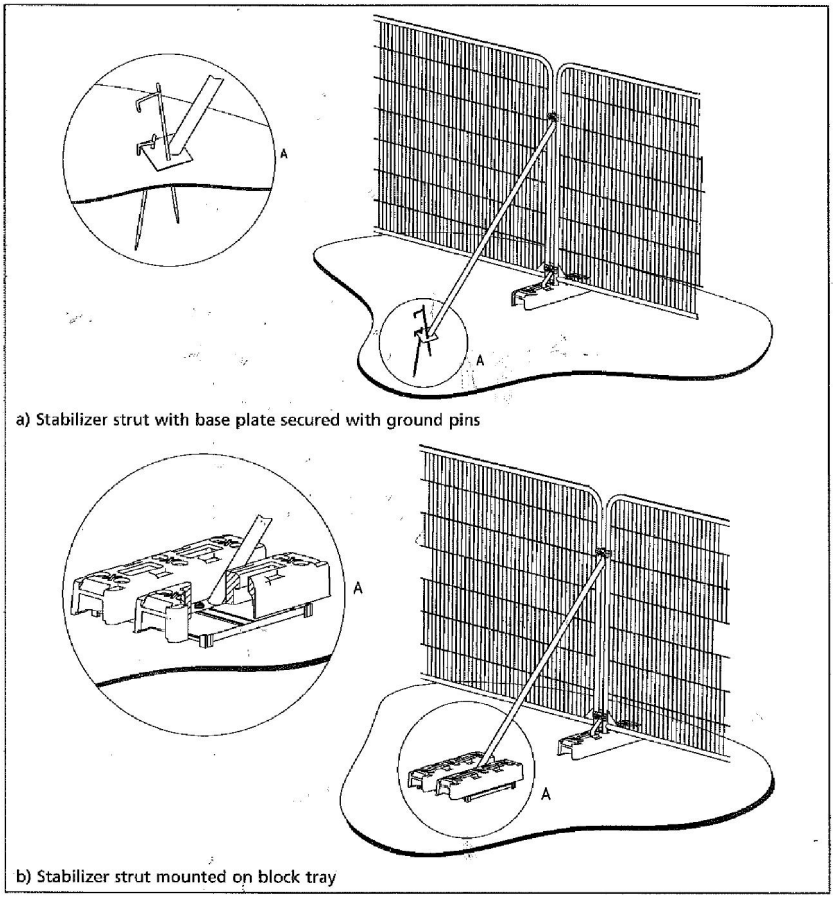
Tree Number	Tree Name (species)	Ht (m)	Calculated Stem Diameter (mm)	Number of Stems	Root Protection Area (Radius, m)	N (m)	E (m)	S (m)	W (m)	Age Class	Clearance (m)	Estimated life expectancy	BS Category	Comments / Recommendations
T1	Dicksonia soft tree fern	3	240	1	2.88	2	2	2	2	Mature	1.0m, all directions	10-20 years	C2	A mature soft tree fern. Recommend: to be removed.
T2	Dicksonia soft tree fern	3	220	1	2.64	1	1	1	1	Mature	0.7m, all directions	10-20 years	C2	A mature soft tree fern. Recommend: to be removed.
T3	Dicksonia soft tree fern	3	250	1	3.00	1	1	1	1	Mature	0.8m, all directions	10-20 years	C2	A mature soft tree fern. Recommend: to be removed.
T4	Dicksonia soft tree fern	3	270	1	3.24	2	2	2	2	Mature	1.8m, all directions	10-20 years	C2	A mature soft tree fern. Recommend: to be removed.
T5	Dicksonia soft tree fern	3	270	1	3.24	1	2	2	2	Mature	1.6m, all directions	10-20 years	C2	A mature soft tree fern. Recommend: to be removed.
T6	Dicksonia soft tree fern	1	140	1	1.68	1	1	1	1	Mature	0.4m, all directions	10-20 years	C2	A mature soft tree fern. DBH measurement taken at 0.8m due to foliage/fronds at 1.5m. Recommend: to be removed.
T7	Dicksonia soft tree fern	3	260	1	3.12	2	2	2	2	Mature	1.6m, all directions	10-20 years	C2	A mature soft tree fern. Recommend: to be removed.
T8	Dicksonia soft tree fern	2	190	1	2.28	1	1	1	1	Mature	1.4m, all directions	10-20 years	C2	A mature soft tree fern. DBH measurement taken at 0.8m due to foliage/fronds at 1.5m. Recommend: to be removed.

Tree Number	Tree Name (species)	Ht (m)	Calculated Stem Diameter (mm)	Number of Stems	Root Protection Area (Radius, m)	N (m)	E (m)	S (m)	W (m)	Age Class	Clearance (m)	Estimated life expectancy	BS Category	Comments / Recommendations
T9	Dicksonia soft tree fern	1	200	1	2.40	0.5	0.5	0.5	0.5	Mature	0.4m, all directions	<10 years	U	A small dead tree fern. DBH measurement taken at 0.7m due to foliage/fronds at 1.5m. Recommend: to be removed.
T10	Dicksonia soft tree fern	4	240	1	2.88	2	2	2	2	Mature	1.8m, east	10-20 years	C2	A mature soft tree fern.
T11	Dicksonia soft tree fern	3	240	1	2.88	2	2	2	2	Mature	1.6m, all directions	10-20 years	C2	A mature soft tree fern.
T12	Dicksonia soft tree fern	4	250	1	3.00	2	2	2	2	Mature	1.8m, all directions	10-20 years	C2	A mature soft tree fern.

KEY :
Tree No: (T= individual tree, G= group of trees, W= woodland)
Age class: Young (Y), Middle aged (MA), Mature (M), Over mature (OM), Veteran (V)
Height (Ht): Measured in metres +/- 1m

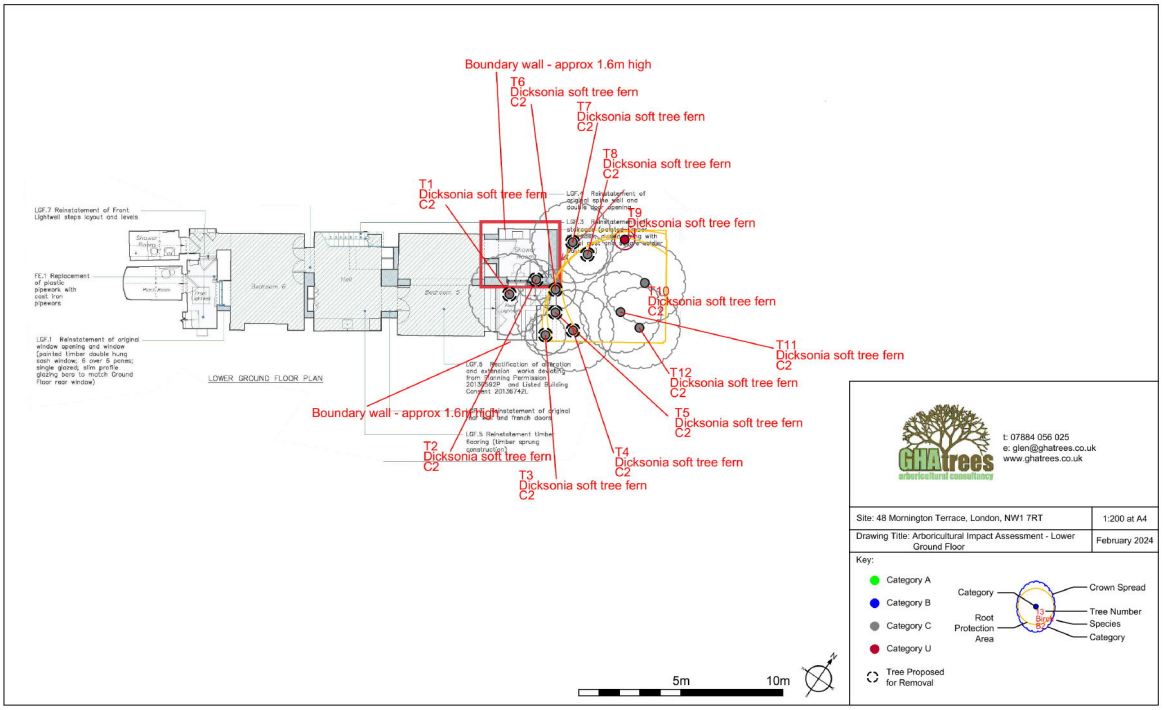
Appendix C
TREE FENCING DETAIL

Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray


Boundary wall - approx 1.6m high
T6
Dicksonia soft tree fern
C2
T7
Dicksonia soft tree fern
C2
T8
Dicksonia soft tree fern
C2
T1
Dicksonia soft tree fern
C2
T9
Dicksonia soft tree fern
T10
Dicksonia soft tree fern
C2
T11
Dicksonia soft tree fern
C2
T12
Dicksonia soft tree fern
C2
T5
Dicksonia soft tree fern
C2
T4
Dicksonia soft tree fern
C2
T3
Dicksonia soft tree fern
C2
T2
Dicksonia soft tree fern
C2
Boundary wall - approx 1.6m high
LGF.7 Reinstatement of Front Lightwell steps layout and levels
FE.1 Replacement of plastic pipework with cast iron pipework
LGF.1 Reinstatement of original window opening and window (painted timber double hung sash window, 6 over 6 panes; single glazed, slim profile glazing bars to match Ground Floor rear window)
LOWER GROUND FLOOR PLAN
LGF.6 Rectification of alteration and extension works deviating from planning Permission 2013/5929/P and Listed Building Consent 2013/6742/L
LGF.5 Reinstatement timber flooring (timber sprung construction)
5m
10m
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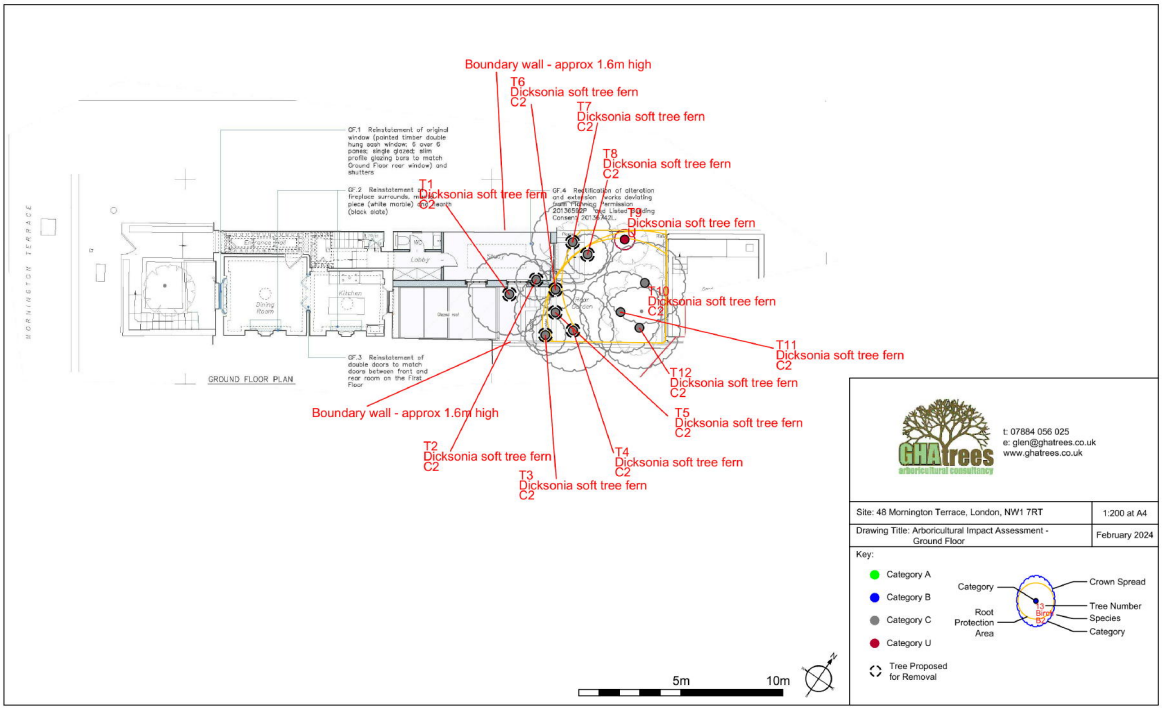
Site: 48 Mornington Terrace, London, NW1 7RT
1:200 at A4
Drawing Title: Arboricultural Impact Assessment - Lower Ground Floor
February 2024
Key:
Category A
Category B
Category C
Category U
Tree Proposed for Removal
Category
Root Protection Area
Crown Spread
Tree Number
Species
Category



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Site: 48 Mornington Terrace, London, NW1 7RT	1:200 at A4
Drawing Title: Arboricultural Impact Assessment - Ground Floor	February 2024

Key:

- Category A
- Category B
- Category C
- Category U
- Tree Proposed for Removal