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Arboricultural Impact Assessment & Method Statement (BS5837:2012)

Site

2 Flower Lane
London
NW7 2JB

Client

Congregation of the Mission

Date of Report:

February 2021

Report Reference:

AIA/MF/020/21

Report Prepared by:

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1.0 Introduction

1.1 This report has been instructed by Will Saxby on behalf of Congregation of the Mission to survey, assess and provide an Arboricultural Impact Assessment & Method Statement for the 12 x trees (T1-T12) sited at and within close proximity of proposed development works at 2 Flower Lane, London, NW7 2JB.

1.2 A site visit was conducted on 2nd February 2021 to survey and assess the trees. The weather at the time of inspection was overcast and with trees in full dormancy at mid winter point.

1.3 The tree survey, report and recommendations have been compiled for the 12 x trees (T1-T12) surveyed within the site and neighbouring as appropriate; trees have been surveyed as follows:

2 Flower Lane: Trees T5 & T6
6 Flower Lane: Tree T7
Sacred Heart Church: Trees T4, T8 - T10
Flower Lane (Public highway): Trees T1 - T3
The Broadway (Public highway): Trees T11 & T12

1.4 The details of the subject trees are set out in the tree survey table in *Appendix A*. The trees were surveyed on the date and time shown above and the tree survey assessment information for the tree describing size, condition and surroundings are found within this appendix.

1.5 The trees located within the site are shown in site plans T001-T003, *Appendix B*, and these correspond to the tree survey results table, *Appendix A*. Photographs of the trees can also be found in *Appendix C*.

1.6 This report and the opinions within it have been produced by Marcus Foster, a qualified arboriculturist and Professional Member of the Arboricultural Association with over 19 years experience and holding a National Diploma in Arboriculture, the Arboricultural Association's Technicians Certificate, Professional Tree Inspection Certificate (LANTRA) as well as a degree in History and Society. Work experience within the industry includes work as a Contracts Manager for an Arboricultural Association Approved Company, a Local Authority Tree Preservation Officer and an independent Arboricultural Consultant. As a consultant many of projects undertaken are in the inner London Boroughs of Islington, Hackney, Westminster, Camden, Southwark and RBKC, making Marcus Foster familiar with the most recent requirements of development and constraints on urban trees.

1.7 No additional documentation has been referred to relating to the trees or the property for the compilation of this report.

2.0 Survey Details and Scope

2.1 The site survey included the 12 x trees (T1-T12) as shown in the survey, *Appendix A*, and also highlighted on the site plans, *Appendix B*.

2.2 The trees were surveyed from ground level from within the site. The diameter of the trunks have been measured using a DBH tape at 1.5m height where within the site and estimated for those off site. The height of the trees have been estimated.

2.3 The following information was recorded for the tree and is shown in the Tree Schedule included in *Appendix A*:

- Number: an identity number which cross-references locations shown on the plan in *Appendix A* with the schedule in *Appendix B*.
- Species: listed by common names
- Tree Height: height in metres (m)
- Tree Spread: spread in metres (m)
- Stem diameter: measured in millimetres (mm) and taken at 1.5m above ground level
- Age Class: Y (young); EM (early-mature); M (mature); OM (over-mature)
- Vigour: G (good); F (fair); P (poor); D (dead)
- Structural Condition: G (good); F (fair); P (poor); D (dead)
- General Condition Specific comments relating to each tree
- Estimated Remaining Contribution (years)
- BS5837 Category Grading
- Protection Distance m² Area (where applicable – BS5827: 2012)
- Protection Distance Radius (where applicable – BS5827: 2012)

2.4 Information recorded in the tree survey, *Appendix A* is expanded in the report findings and preliminary recommendations have been made in *Section 5*.

2.5 Findings as shown within *Appendix A* and discussed within *Section 4* are also highlighted within *Appendix B* which incorporates the Tree Constraints Plan (TCP) - drawing T001 addressing areas where arboricultural solutions are required. The Tree Protection Plan (TPP) - drawing T002 provides outline tree protection measures.

3.0 Survey Limitations

3.1 No soil excavations have been carried out.

3.2 This report only considers the trees and conditions at the time of inspection. As the inspection was only visual no guarantee can be given concerning the condition of the wood at present in any of the trees inspected and furthermore that no future problems or deficiencies may arise.

3.3 The survey has been undertaken as a survey of the trees without prior influence of the development and implicating factors.

3.4 No invasive tools were used during this site survey.

4.0 Tree Survey Summary

4.1 The trees have been surveyed in accordance with BS5837: 2012 'Recommendations for trees in relation to construction' (BS5837: 2012) and have been rated as follows:

Category 'A' trees

Trees of high quality with an estimated remaining life expectancy of at least 40 years. Trees have been categorised as 'A' trees for one of the following reasons:

- Mainly arboricultural qualities
- Mainly landscape qualities
- Mainly cultural values including conservation

Within the Site Plan (Appendix B) those trees rated as 'A' category trees have a **green** outline as denoted within the site plan key / survey.

N/A

Category 'B' trees

Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Trees have been categorised as 'B' trees for one of the following reasons

- Mainly arboricultural qualities
- Mainly landscape qualities
- Mainly cultural values including conservation

Within the Site Plan (Appendix B) those trees rated as 'B' category trees have a **blue** outline as denoted within the site plan key.

T1, T2, T11, T12

Category 'C' trees

Trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Trees have been categorised as 'C' trees for one of the following reasons

- Arboricultural qualities - unremarkable trees of very limited merit
- Mainly landscape qualities
- Trees with no material conservation or cultural value

Within the Site Plan (Appendix B) those trees rated as 'C' category trees have a **grey** outline as denoted within the site plan key.

T3, T4, T5, T6, T7, T8, T9, T10

Category 'U' trees

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.

Within the Site Plan (Appendix B) those trees rated as 'U' category trees have a **red** outline as denoted within the site plan key.

N/A

4.2 The trees have been surveyed taking into account condition, general health and form without the development process influencing the survey. In addition they have also been surveyed taking account of amenity value that is offered in relation to both the landscape and surrounding buildings and streetscape. This report outlines the impact that the proposed development will have on the overall treescape and landscape; it provides recommendations to ensure that long-term amenity value for the area is retained.

4.3 The report has been written with close reference to the British Standard Guidance, British Standard 5837: 2012 'Recommendations for trees in relation to construction' (BS5837: 2012), which addresses the juxtaposition between trees and structures. The Arboricultural Impact Assessment highlights areas where the trees will require protection which should be addressed within the Arboricultural Method Statement (AMS) and/or Tree Protection Plan (TPP) specific to the site and proposed scheme, and corroborating with all construction and landscape method statements as relevant.

4.4 The report specifies precautions which shall be taken when working close to retained trees. Important terms include:

Root Protection Area (RPA)

The area defined as requiring protection from development from retained trees within BS5837 (2012). Using a calculation provided within BS5837 a radius distance is provided based on a measurement of the main stem taken at 1.5m height.

Also within the British Standard (paragraph 4.6.2) it states that RPA's should reflect the morphology and disposition of the roots where historic site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced, often with agreement from the Local Authority and using all available historical information of the site and specific tree / area. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution by a qualified arboriculturist.

Construction Exclusion Zone (CEZ)

This is the RPA where no construction activity should occur and damage is prevented by either installing fencing to restrict access or installing ground protection that allows limited access above the ground, while protecting the rooting environment below.

Due to site constraints and the encroaching nature of development for an area within the RPA outside the CEZ where works are proposed, works must be carried out with care to minimise any impact on the tree rooting environment.

Tree Protection Plan (TPP)

The document which defines the extent and methodology of tree protection for the entire development process. This should be referred to AT ALL TIMES by the principal contractor and shall ensure safe protection of all retained trees on site.

5.0 Findings and Discussion:

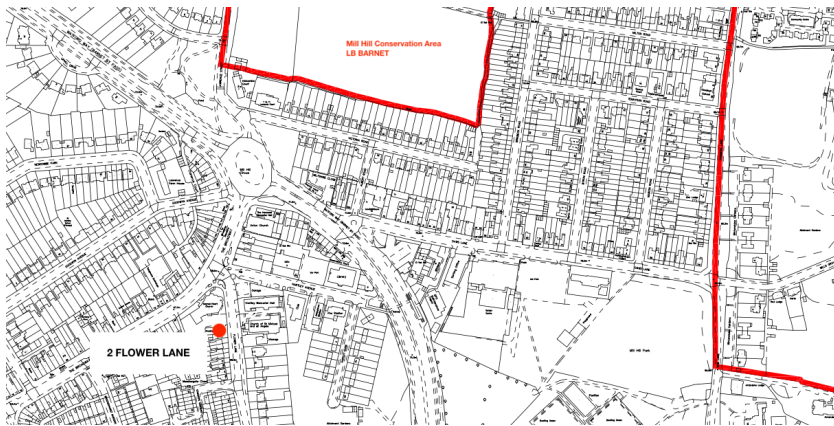
Site Overview

5.1 The 12 x trees (T1-T12) located within close proximity of the proposed development works are sited within the London Borough of Barnet. The trees are not protected by statutory protection as confirmed below:

Conservation Area status: None

Tree Preservation Order (TPO) status: None

5.2 The following extract from the Mill Hill Conservation Area Appraisal shows the property to be located outside of the Conservation Area:

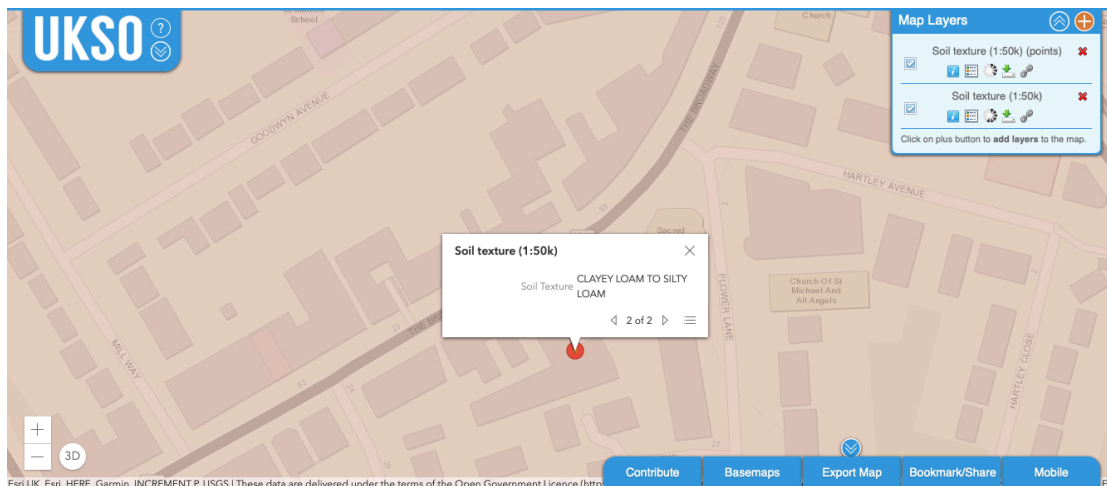


<https://www.barnet.gov.uk/sites/default/files/assets/citizenportal/documents/planningconservationandbuildingcontrol/MillHill.pdf>

5.3 The site comprises the Sacred Heart Church and 2 Flower Lane. Aerial imagery shows the site and limited canopy cover within the site:



5.4 The underlying soil to this area is classified as 'clayey loam to silty loam' within the UK Soil Observatory (www.ukso.org) - a varied soil mix being medium to heavy.



Extract from Soil Observatory - 02/12/20 - www.ukso.org

5.5 The presence of a clay element within the soil is significant in terms of both tree protection and foundation design. Clay soils can experience substantial volume changes when vegetation extracts moisture from the ground and they are also prone to compaction when wet. On this basis it is essential that all recommended tree protection measures are implemented in full and are not relaxed at any point throughout the course of the development. Any foundations should also be designed in accordance with the recommendations contained within NHBC Chapter 4.2 (National House Building Council, 2010) and should account for the possibility of both subsidence and heave.

5.6 For the purposes of this report, reference has been made to the following plans for the proposed development:

Matthew Lloyd Architects
VP_049-EXISTING SITE PLAN
VP_050-PROPOSED SITE PLAN

5.7 The trees and the impact from the proposed development are evaluated within this section to determine overall arboricultural impact from the proposed development. Where trees are retained the Root Protection Area (RPA) for each tree is evaluated in relation to proposed development works and protection measures required.

5.8 The proposed development comprises demolition of the existing property and re-construction, including additional 1 no. car parking space. The potential arboricultural impact is as follows:

- Removal of 2 x 'C' category trees
- Potential impact to the root plate of retained public highway trees within close proximity of development process and final landscape process
- Potential impact to the root plate of retained off site tree (T2) from development and landscape process including hard landscapes
- The use of and storage of materials and chemicals on site within close proximity of the trees has the potential to cause damage
- The long-term impact of associated works of the proposed development

5.9 For the purposes of this report reference has also been made to:

Barnet's Local Plan (Core Strategy)
Development Plan Document (September 2012)

Tree Survey Notes in Relation to Development

Tree T1 - T3: Public Highway, Flower Lane

5.10 The Ash tree (*Fraxinus excelsior*), T1 rated as Category 'B1', has the following characteristics being sited to the north of the development site:

- Public highway tree with exposed buttress roots
- Raised public highway pavement; selectively re-surfaced.
- Reduced within past season (2020). 2.2m distance from boundary wall

The tree shall remain unaffected by the proposed development. No tree protection measures are required in relation to this tree.

5.11 The Cherry tree (*Prunus spp*) T3, rated as Category 'C1', has the following characteristics being sited to the south of the development site:

- Leaning to west with *Gannoderma spp* at base to west and south
- Limited lifespan

5.12 The Ash tree (*Fraxinus excelsior*), T2 rated as Category 'B1', has the following characteristics being sited directly to the east of the development site:

- Public highway tree with exposed buttress roots
- Raised public highway pavement; selectively re-surfaced
- Crown reduced within past season (2020)
- 2.4m from boundary wall to site

5.13 The tree requires protection from the following development activities:

- (i) General development process
- (ii) Final hard landscape works / car parking updates

5.14 The proposed landscape updates to the east of the proposed building shall be achievable based on existing site features including low boundary wall with associated features and limited extent of works proposed. To ensure tree protection the following measures must apply as outlined within the AMS

- Reduction in levels to maximum 200mm depth using hand tools only for selective soft landscape area within RPA being updated to hard landscape / car parking area
- Full adherence to 'Precautionary Area' works as highlighted within AMS & TPP

5.15 The following tree protection measures shall be carried out during construction works as outlined within drawing T002 (TPP) to ensure retention for the long term of tree T2:

TREE PROTECTION FENCING

BS5837 or basal shuttering tree protection fencing to enclose the RPA where access is not required for the duration of development works

PRECAUTIONARY AREA WORKS

For the precautionary area / RPA of tree T2 in relation to development works precautionary area is highlighted for tree protection measures as outlined within the AMS (Section 6 of this report)

Trees T5 & T6: 2 Flower Lane

5.16 Trees T5 & T6 comprise 2 x fair to poor plantings with the following key characteristics:

- T5, a Bay laurel, poorly sited, growing against existing property; limited lifespan in location
- T6 large shrub form
- Both trees inappropriately sited

5.17 The impact of the development with proposed tree removal has been assessed and the scheme provides mitigation for the tree removal with planting previously undertaken including T4 (Judas tree) and T8 (Birch). Additionally there is the provision of soft landscape amenity area.

Tree T4, T8 - T10: Sacred Heart Church:

5.18 Tree T4 is a newly planted Judas tree (*Cercis siliquastrum*) to the north of the development site within newly refurbished church area. The tree shall remain unaffected by the proposed development. The following shall apply which will also enclose the RPA of tree T1 where incursion within the site exists:

TREE PROTECTION FENCING

BS5837 or basal shuttering tree protection fencing to enclose the RPA where access is not required for the duration of development works

5.19 Trees T8-T10 comprise trees to the north of the site which have been surveyed due to location within the site boundary. The trees have the following key characteristics:

- T8 a newly planted *Betula spp* tree
- T9 a poorly managed Cherry with significant decay and limited lifespan
- T10 a heavily managed Apple with limited form

The trees shall remain unaffected by the proposed development. No tree protection measures are required in relation to these trees.

Tree T7: 6 Flower Lane:

5.20 The Cypress tree, T7 within rear garden area of 6 Flower Lane is located a significant distance from the site and shall remain unaffected by proposed development works with no overhanging canopy growth or encroaching RPA. Therefore no protection measures are required.

Trees T11 & T12: The Broadway (Public highway)

5.21 The 2 x Birch trees to the north of the site are located a significant distance from any development works; the trees have been surveyed due to location within close proximity of the site boundary and shall remain unaffected by proposed development works with no overhanging canopy growth or encroaching RPA to the site. Therefore no protection measures are required.

Summary

5.22 The overall arboricultural impact is limited and requires tree protection measures for tree T2 and mitigation for loss of trees T5 & T6. The tree protection shall ensure that the development does not detrimentally impact the amenity value and canopy cover of the area.

5.23 In summary the arboricultural impact as outlined within drawing T001 (TCP) shall require for the following tree protection measures as outlined within drawing T002 (TPP):

TREE PROTECTION FENCING *applicable for T1, T2 & T4*
Basal shuttering or BS5837 tree protection fencing

PRECAUTIONARY AREA WORKS *applicable for T2*
For the precautionary area / methodology refer to AMS (Section 6)

5.24 Recent planting undertaken (T4 and T8) within the wider site ensures continuation and enhancement of the green infrastructure for the long term. Additionally there is the provision of a soft landscape amenity area as part of the proposed development and soft landscape planting.

6.0 Arboricultural Method Statement

6.1 The following tree protection measures require close adherence AT ALL TIMES with full supervision from the consulting arboriculturist as outlined within this report. The measures are outlined within Tree Protection Plan (TPP) - drawing T003.

6.2 Tree Works

6.2.1 The removal of trees T5 & T6 shall be undertaken at pre-commencement stage of works.

6.3 Tree Protection Fencing

6.3.1 Protection of the trees highlighted for retention must be implemented as explained below and as specified within the TPP - drawing T003:

- (i) To provide Construction Exclusion Zone (CEZ)
Specified as BS5837:2012 or basal shuttering specification - see Appendix E

6.3.2 These measures must remain for the entire construction process in order to provide a comprehensive barrier from the trees

- The areas surrounding the trees must be surrounded by protective fencing as outlined in TPP - T003
- The protective fencing used must be suitable for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees.
- This barrier must remain rigid and complete during the entire construction process.
- The type of fencing used must be that as described in the current British Standard 5837: 2012 'Recommendations for trees in relation to construction'. This consists of a scaffold framework as outlined in the British Standard, comprising a vertical and horizontal framework, well braced to resist impacts, with the vertical tubes spaced at a maximum of 3m. A weldmesh panel should be securely fixed with wire or scaffold clamps to the framework.

- Once the Exclusion Zones have been protected by fencing all weather notices as included in *Appendix D* must be put onto the barrier warning that the area is a construction exclusion zone.
- No heavy plant should come into contact with any part of the canopies of the trees.
- No building materials or chemicals are stored within the tree protection zone as indicated on the TPP

6.4 Manual excavation within RPAs

6.4.1 BS5837 (2012) makes provision for undertaking excavations in RPAs, explaining that all excavation must be carried out carefully using spades, forks and trowels, It is important not to damage the bark and wood of any roots. For this area, these tools should be used with no machinery used for the preliminary works.

6.4.2 For the 'Precautionary Area' works - highlighted for manual excavations within the TPP - which require manual excavation within the RPA of retained trees the following must apply:

- Removal of existing surface to 200mm depth by hand where hard landscapes are proposed within soft landscape only
- Removal of existing hard landscape features such as low retaining wall with low pneumatic tools only
- Where excavations are required these are to be hand dug only and where beyond existing levels these must be undertaken with a scheme arboricultural supervision

6.4.3 For hand dug excavations the following tools are appropriate with methodology described below:



- The severance of any larger roots encountered up to 25mm diameter should then be undertaken by the supervising arboricultural consultant to ensure clean severance

- Where tree root severance is not feasible due to size (significant root density in excess of 25mm diameter size) and nature structural engineering solutions / bridging of tree roots as agreed with consulting arboriculturist must be applied.

6.5 Precautionary Area Works - tree T2

6.5.1 For the precautionary area highlighted within RPA of retained tree T2 the following methodology must apply:

6.5.2 For the construction of proposed hard surface that encroaches within the RPA damage will be avoided by undertaking works using hand tools only, and limiting excavations to 200mm depth to match surface with existing car parking space. The locations where these measures will be required are marked clearly on the TPP.

6.5.3 Where excavations are required the arboricultural consultant shall be appointed to supervise with strict adherence to guidelines highlighted within *Section 6.4*. Due to the limited encroachment of the RPA and relative small tree size encountering significant roots in excess of 25mm diameter is unlikely. However the supervising arboriculturist shall provide guidance and consultation during this stage of the ground works.

6.5.4 For the 'Precautionary Area' the following methodology shall be applied:

(i) Installation of tree protection fencing



(ii) Main development works



(iii) Removal of tree protection fencing



(iv) Undertaking of final landscape works using low pneumatic or hand tools only



(v) Arboricultural supervision where excavations to 200mm depth are required / significant roots are encountered

6.5.5 No updates to drop kerb / crossover are permitted without approval of the LB Barnet Tree Officer.

6.6 Storage of Construction site related materials, plant and spoil

6.6.1 A designated storage area must be confirmed at pre-commencement stage which is located outside of the RPA of retained trees. Strict adherence to this area must be made to this area and any amendment would require approval from the supervising arboriculturist.

6.7 Site Welfare & Site Office

6.7.1 Site welfare and the site office must be confirmed at pre-commencement stage outside of the RPA of retained trees - no provision within the site is therefore required in relation to trees.

6.8 Location of drainage associated with proposed development

6.8.1 The location of a soakaway / associated drainage features for the updated hard landscapes must not be within the RPA of retained tree T2.

6.9 Final Hard Landscape Works

6.9.1 For final landscaping works the following must apply where carried out within the RPA of retained trees

- Close adherence with detailed root protections specifications as outlined within this report: - *Section 6.4*
- No compaction of soils for establishing level base

6.10 Fires

6.10.1 There must UNDER NO CIRCUMSTANCES be fires within this site.

6.11 Installation of Utility Services

6.11.1 For the development, no amendments or updates to utility services are proposed within the RPA of retained trees. However the tree officer shall be notified of all utility proposals which have the potential to impact trees within the scheme of supervision.

6.11.2 If for any reason installation of utility services within the RPA of this trees is required, the consulting arboriculturist and Local Authority must be notified. The following methodology shall apply:

- (i) The supervising arboricultural consultant shall confirm in writing the finalised utilities plan where services require updating
- (ii) Should services require updating or installation within the RPA of retained trees these shall be confirmed in writing with the Local Authority Tree Officer for agreement of methodology prior to the scheduling or commencement of any works

6.11.3 Where installation is required, and only as agreed with Local Authority Tree Officer the, any ground tree protection / fencing and barrier removal shall only be carried out with the following details adhered to:

- Trenching for the installation of underground services severs any tree roots present and can have a detrimental impact on the structural integrity of affected trees. When services are required to pass through a Tree Protection Area, detailed plans showing proposed routes should be drawn up in conjunction with the consulting arboriculturist to avoid long term health and anchorage problems for retained trees
- The preferable method for trenching is to use a 'Air Spade' or similar to remove soil with compressed air, therefore minimising damage to roots in the process

6.11.4 Further reference can be made to National Joint Utilities Group (Volume 4, Issue 2) for guidance but any works within the RPA of retained trees must be approved by both the consulting arboriculturist and Local Authority tree officer.

7.0 Communication, Monitoring and Compliance

7.1 In ensuring that all tree protection specifications as highlighted within this AMS are closely adhered to at all times, it is important to set out, communication details for key individuals and tasks that require monitoring.

7.2 The key individuals appointed for advising and complying with tree protection specifications must adhere to the following at all times:

- Relevant parties / key individuals must be advised of any changes in personnel or contractor during the development process.
- Relevant parties / key individuals must be responsible for relaying information regarding tree protection within work force where deemed applicable / relevant

7.3 An Arboricultural Supervision Visit is specified should roots be encountered to ensure tree protection measures as outlined within this report are fully enforced.

7.4 The local authority tree officer shall have free access to the site and forward any concerns / recommendations directly to the consulting arboriculturist.

7.5 The key contacts are as follows:

ARBORICULTURAL CONSULTANT

Name - Marcus Foster Arboricultural Design & Consultancy Telephone - 07812024070

Contact - Marcus Foster

Mobile Telephone - 07812024070

Email - mail@marcus-foster.com

LB BARNET - TREE OFFICER

Name - Arboricultural Services - London Borough of Barnet

Address - Barnet House, 1255 High Road, Whetstone, London, N20 0EJ

Telephone - 020 8359 2000

Email - planningtrees@barnet.gov.uk

8. Appendices

Appendix A

Tree Survey Schedule (BS5837:2012)

2 Flower Lane
London
NW7 2JB

Colour Key: BS5837: 2012 (see Section 2.6)

-  Category A
-  Category B
-  Category C
-  Category U

MARCUS FOSTER - ARBORICULTURAL DESIGN & CONSULTANCY
BS5837:2012 Tree Survey Schedule - 02/02/21 - 2 Flower Lane, London, NW7 2JB

Tree No	Species	Height (m)	Stem Diameter (mm)	Spread (m)	Age	Structural Condition	Vigour	BS5837 (2012) Rating	Remaining Contribution (years)	Height of first branch (m)	Height of canopy (m)	Comments / Structural Condition	Root Protection Area (RPA) m2	Root Protection Area (RPA) Radius
T1	Ash	13	470	N: 4 E: 4 S: 4 W:5	EM	F	G	B1	20 years +	3.5	-4	Public highway tree with exposed buttress roots. Raised public highway pavement; selectively re-surfaced. Reduced within past season (2020). 2.2m from boundary wall to site	99.95	5.6
T2	Ash	13	510	N: 4 E: 4 S: 4 W:5	EM	F	G	B1	20 years +	5.0	5.0	Public highway tree with exposed buttress roots. Raised public highway pavement; selectively re-surfaced. Reduced within past season (2020). 2.4m from boundary wall to site	117.68	6.1
T3	Cherry	6	450	N: 3 E: 3 S: 4 W:4	M	P	F	C1	10 years +	2.5	3.0	Leaning to west with <i>Gannoderma spp</i> at base to west and south. Limited lifespan	91.62	5.4
T4	Judas tree	3	80	N: 1 E: 1 S: 1 W:1	Y	G	G	C1	10 years +	2.0	2.0	Young newly planted tree; developing form	2.9	1.0
T5	Bay laurel	4	80	N: 1 E: 1 S: 1 W:1	Y	F	G	C1	10 years +	1.5	1.5	Poorly sited, growing against existing property; limited lifespan in location	/	/
T6	Tamarisk	5	m/s 100	N: 2 E: 2 S: 2 W:2	SM	F	F	C1	10 years +	1.5	1.5	Large shrub form over-extended over garage	/	/
T7	Lawsons cypress	12	300 (estimate)	N: 2 E: 2 S: 2 W:2	M	F	F	C1	10 years +	2.0	2.0	Off site with columnar form; no overhang to site	40.72	3.6
T8	Himalayan birch	4	80	N: 1 E: 1 S: 1 W:1	Y	G	G	C1	10 years +	2.0	2.0	Young newly planted tree; developing form	2.9	1.0
T9	Cherry	3	180	N: 1 E: 1 S: 1 W:0	SM	P	P	C1	10 years +	1.5	1.5	Significant and excessive pruning history; limited lifespan. Large wound to north west on main stem at 0.8-1.8m. limited lifespan	14.66	2.2
T10	Crab apple	4	190	N: 2 E: 1 S: 1 W:1	SM	F	F	C1	10 years +	1.5	1.5	Storm damage to eastern main leader at 1.8m height with limited reaction growth. Lateral spread to north west remains. Heavily pollarded form; limited lifespan	16.33	2.3

AS/MF/020/21

Site: 2 Flower Lane, London, NW7 2JB

Prepared for: Congregation of the Mission

Date: February 2021

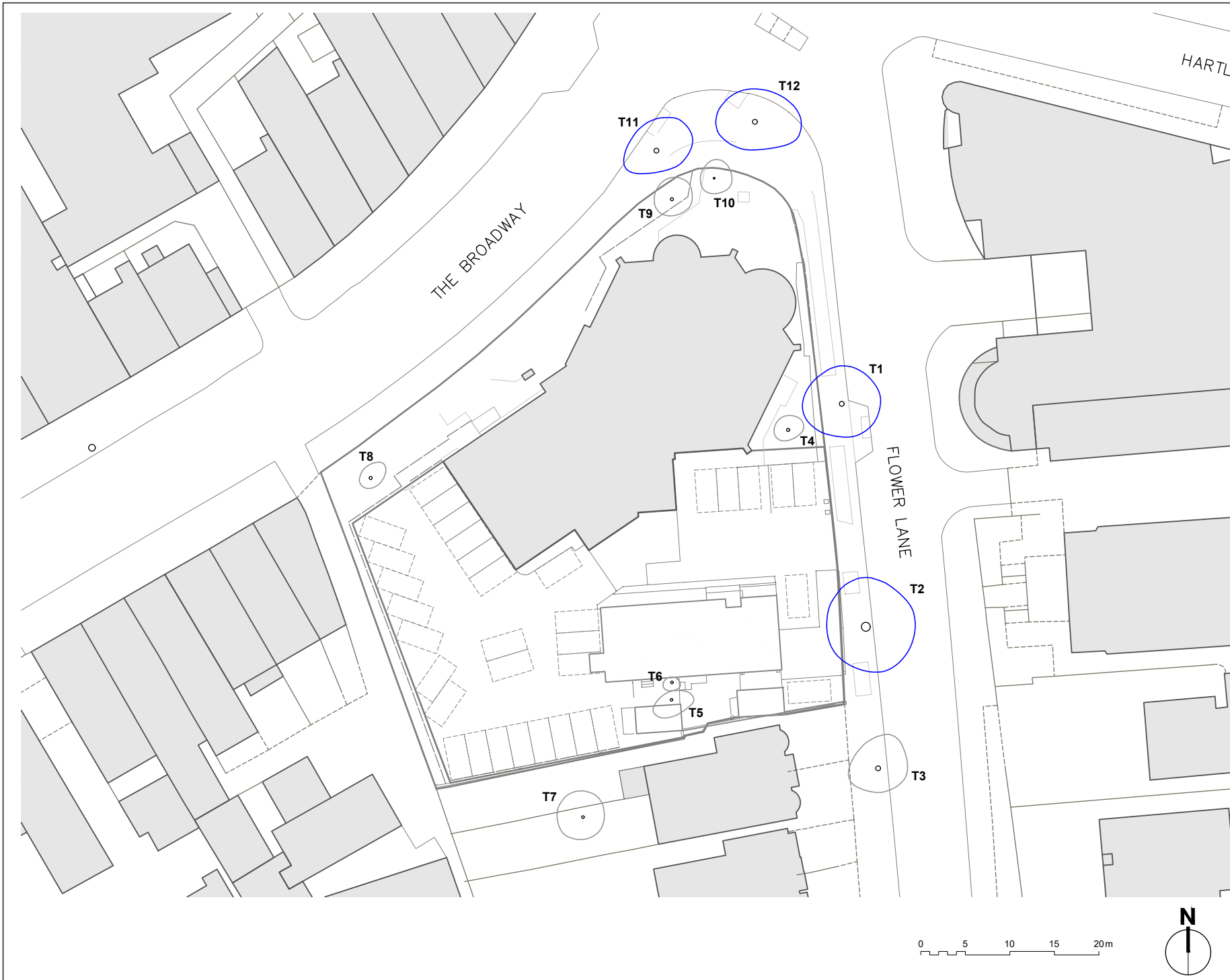
Tree No	Species	Height (m)	Stem Diameter (mm)	Spread (m)	Age	Structural Condition	Vigour	BS5837 (2012) Rating	Remaining Contribution (years)	Height of first branch (m)	Height of canopy (m)	Comments / Structural Condition	Root Protection Area (RPA) m ²	Root Protection Area (RPA) Radius
T11	Birch	8	220	N: 4 E: 3 S: 2 W:3	EM	F	F	B1	20 years +	3.0	4.0	Public highway tree within 200mm height raised retainer. Managed in relation to highway infrastructure	21.9	2.6
T12	Birch	8	210	N: 3 E: 4 S: 4 W:4	EM	F	F	B1	20 years +	3.0	4.0	Public highway tree within 200mm height raised retainer. Managed selectively	20.0	2.5

Appendix B

Tree Survey Plans
BS5837:2012

Tree Constraints Plan (T001)
Tree Protection Plan (T002)

2 Flower Lane
London
NW7 2JB



KEY

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U
	RPA
	SHADING ARC
	RPA INCURSION

BS5837 (2012) Tree Survey Notes

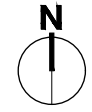
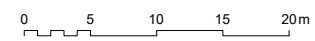
1. In accordance with BS5837(2012) this drawing is a colour coded schedule and should not be read in black and white
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4. Marcus Foster Arboricultural Design & Consultancy accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided
5. Off site trees have been plotted based on site visit survey and locations are not based upon topographical survey

NOTE: Tree survey locations based on previous undertaken topographical surveys for design issue and additional GIS mapping has not been undertaken for the purposes of this survey

Revisions

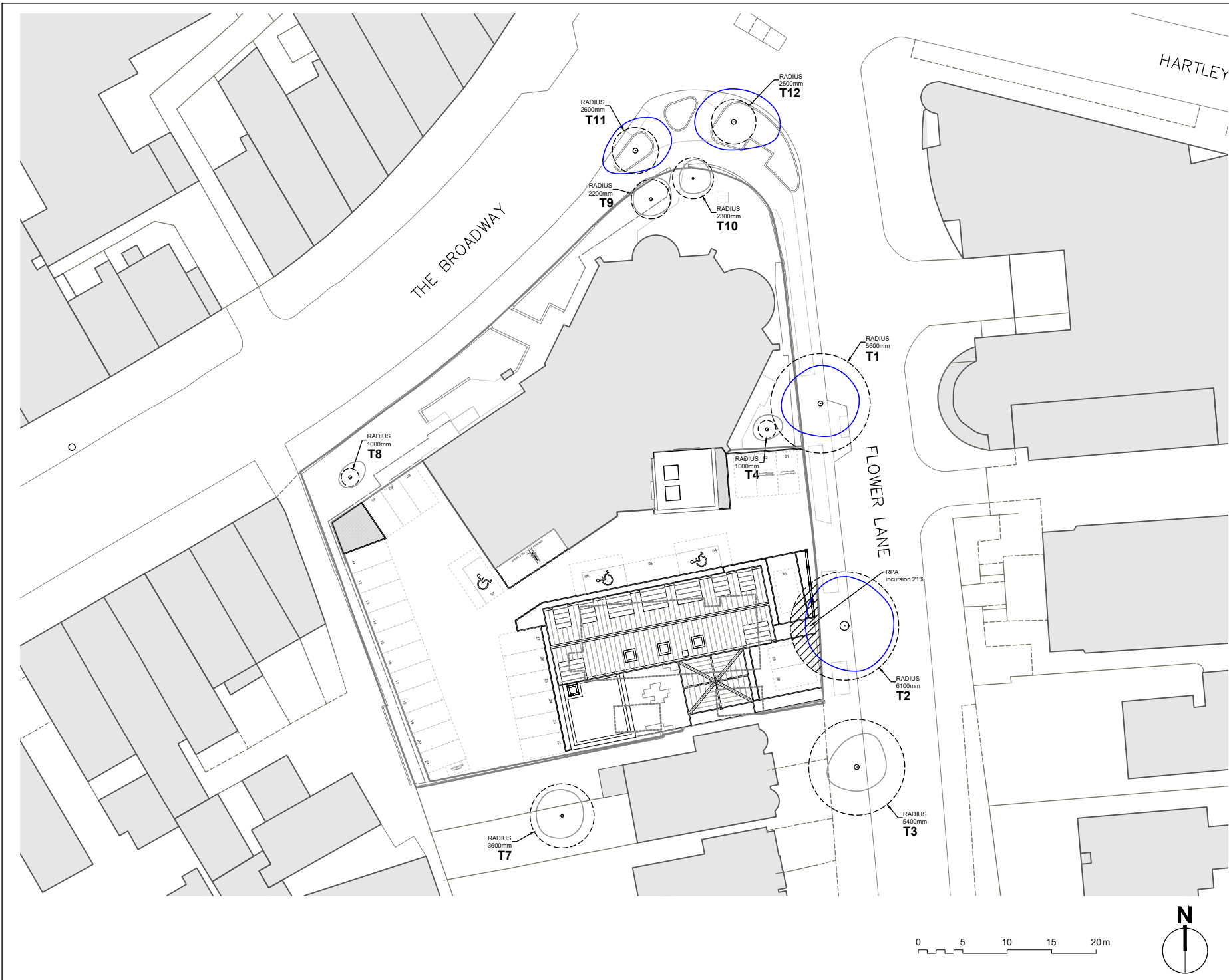
Rev.	Date	Issued For	Checked
1	15.02.2021	ISSUED FOR INFORMATION	MF

JOB TITLE	2 Flower Lane, London, NW7 2JB		
CLIENT	Congregation of the Mission		
DWG TITLE	Existing Tree Survey Plan		
SCALE	1:400 @ A3	DATE	FEB 2021
JOB NO	AIA/MF/020/21	DWG NO	T001



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KEY

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U
	RPA
	SHADING ARC
	RPA INCURSION

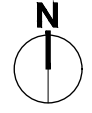
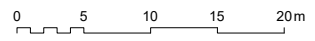
BS5837 (2012) Tree Survey Notes

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Revisions		
Rev.	Date	Checked
/	15.02.2021	MF
ISSUED FOR INFORMATION		

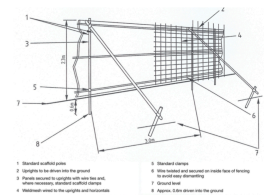
JOB TITLE	2 Flower Lane, London, NW7 2JB		
CLIENT	Congregation of the Mission		
DWG TITLE	Tree Constraints Plan		
SCALE	1:400 @ A3	DATE	FEB 2021
JOB NO	AIA/MF/020/21	DWG NO.	T002



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BS5837:2012 FENCING SPECIFICATION



BASAL SHUTTERING FENCING SPECIFICATION

The fencing must fully enclose the main stem and initial buttress roots of the tree by being constructed as a self supporting structure to the following specifications:

Minimum height: 2.4m
 Plywood Specification: 25mm thickness, external grade
 Supporting Structure: 4" x 2" softwood timbers to form structure within shuttering

NOTE: - No ground supports permitted
 - Structural integrity of structure to be determined by building contractor and approved by supervising



TREE PROTECTION KEY

	BASAL SHUTTERING / BS5837 TREE PROTECTION FENCING
	PRECAUTIONARY AREA ALL EXCAVATIONS TO BE UNDERTAKEN ACCORDANCE WITH SPECIFICATIONS WITHIN AMS & STRUCTURAL ENGINEERING METHODOLOGY. TREE ROOT SEVERANCE FOR ROOTS IN EXCESS OF 25MM TO BE UNDERTAKEN UNDER ARBORICULTURAL SUPERVISION ONLY

KEY

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U
	RPA
	SHADING ARC
	RPA INCURSION

PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

TREE PROTECTION AREA KEEP-OUT!
FROM A COUNTY PLANNED ACT TREE, THERE SHALL BE A TREE PROTECTION AREA, BOUNDARIES OF WHICH SHALL BE AS SHOWN ON THIS PLAN OR AS DETERMINED BY THE PRESIDENTIAL OFFICER. CONSTRUCTION OF A TREE PROTECTION COVER SHALL LEAD TO ORIGINAL PROSECUTION. ANY OBSTRUCTION INTO THE PROTECTED AREA SHALL BE WITHIN THE OFFICIAL JURISDICTION OF THE LOCAL PLANNING AUTHORITY.

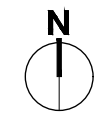
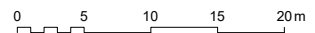
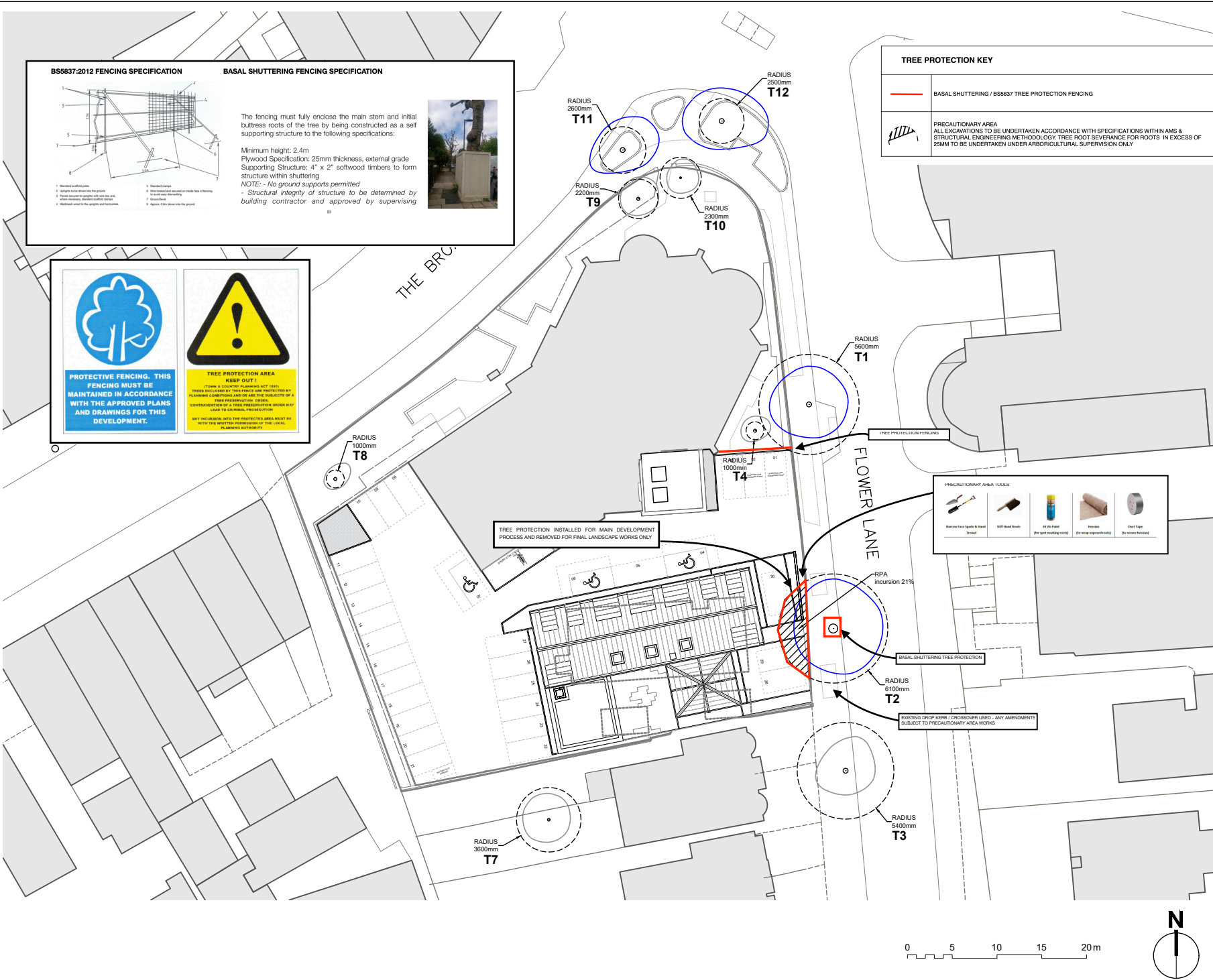
BS5837 (2012) Tree Survey Notes

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NOTE: Tree survey locations based on previous undertaken topographical surveys for design issue and additional GIS mapping has not been undertaken for the purposes of this survey

Revisions			
Rev.	Date	Checked	Checked
J	15.02.2021	ISSUED FOR INFORMATION	MF

JOB TITLE	2 Flower Lane, London, NW7 2JB
CLIENT	Congregation of the Mission
DWG TITLE	Tree Protection Notice
SCALE	DATE
1:400 @ A3	FEB 2021
JOB NO	DWG NO
A1A/MF/020/21	T003



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Appendix C

Site Photographs for: 2 Flower Lane, London, NW7 2JB



Tree T1, public highway tree as viewed in an easterly direction



Tree T1, public highway tree as viewed in a south easterly direction



Tree T4 as viewed in a southerly direction - newly planted tree



Tree T2, public highway tree as viewed in a northerly direction showing area of proposed crossover with existing hard landscape not updated (unlike that of tree T1)



Tree T1, public highway tree as viewed in a southerly direction showing existing hard landscape updated to accommodate raised surfaces



Tree T2, public highway tree as viewed in a southerly direction showing area of proposed crossover with existing hard landscape not updated (unlike that of tree T1)



Trees T5 & T6 proposed for removal - ornamental habit only



Trees at front of church - T9 & T10 - unaffected by proposed development



Off site tree T7 as viewed in a southerly direction

ALL PHOTOGRAPHS TAKEN BY M FOSTER JANUARY 2020

Appendix D: **Tree Protection Notice**

Generic Tree Protection Notice
(BS5837: 2012):

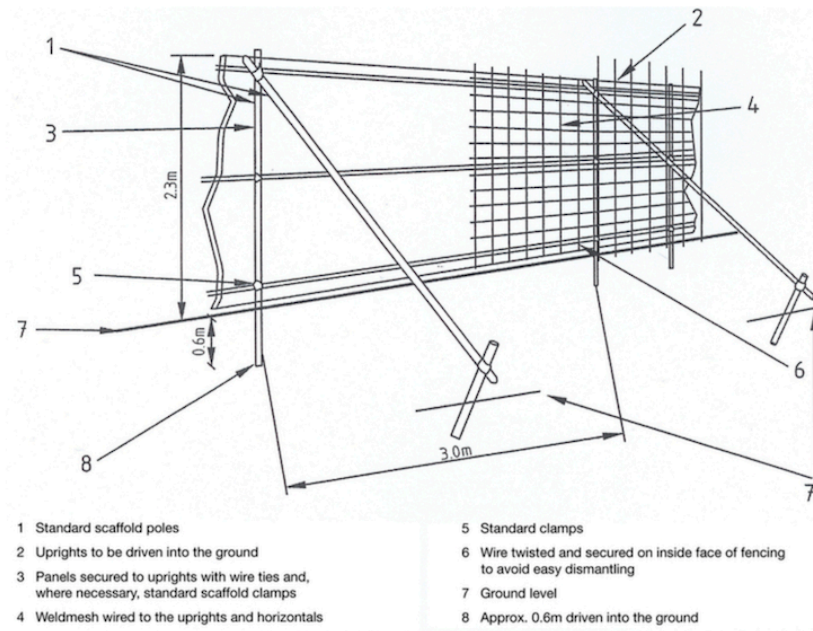
*Notice to be clearly shown on site where
fencing constructed
AT ALL TIMES*



Appendix E

Tree Protection Fencing Specifications

Tree Protection Fencing as outlined in BS5837 (2012) Specifications



Basal Shuttering Specifications

The fencing must fully enclose the main stem and initial buttress roots of the tree by being constructed as a self supporting structure to the following specifications:

Minimum height: 2.4m

Plywood Specification: 25mm thickness, external grade

Supporting Structure: 4" x 2" softwood timbers to form structure within shuttering

NOTE: - No ground supports permitted

- Structural integrity of structure to be determined by building contractor and approved by supervising



Appendix F: References

1. BS5837: British Standard: Trees in relation to construction - Recommendations, British Standard (2012)
2. Draft New London Plan, Chapter 8 Green Infrastructure and Natural Environment - Policy G5 Urban Greening (Greater London Authority, 2017)
3. Barnet's Local Plan (Core Strategy) Development Plan Document (September 2012)
4. Principles of Tree Hazard Assessment and Management, Lonsdale, D. (Department for Transport, Local Government and the Regions, 1999)
5. The Body Language of Trees, Mattheck, C. and Breloer, H. (HMSO, 1994)
6. Trees in Britain, Philips, R. (Pan Books, 1978).
7. Diagnosis of Ill Health in Trees, Strouts, R. and Winter, (TSO, 1994)
8. NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2), (November 2007)

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Prepared by M Foster MArborA