



Marcus Foster

Arboricultural Design & Consultancy

BA (Hons) | NDArb | Techcert (AA) | MArborA

Arboricultural Impact Assessment & Method Statement Report (BS5837:2012)

Site

City House
Sutton Park Road
Sutton
SM1 2AE

Client

Macar Living (City House) Ltd

Date of Report:

January 2024

Report Reference:

AIA/MF/015/24

Report Prepared by:

Marcus Foster
BA (Hons) NDArb. TechCert (AA) MArborA



Marcus Foster
Arboricultural Design & Consultancy
Tel: + 44 (0) 7812 024 070
mail@marcus-foster.com
www.marcus-foster.com

Contents

1. Instructions
2. Introduction
3. Survey methodology
4. Survey Limitations
5. Tree Survey Summary
6. Arboricultural Impact Assessment
7. Arboricultural Method Statement
8. Communication Monitoring & Compliance
9. Tree Works Schedule

Appendices

- A: Tree Survey*
- B: Tree Survey Plans: DWG T001-T003*
- C: Tree Survey Photographs*
- D: Tree Protection Notice*
- E: Tree Protection Fencing Specifications*
- F: References*

1.0 Instructions

1.1 This report has been commissioned by Macar Living (City House) Ltd to survey, assess and provide an Arboricultural Impact Assessment and Method Statement for the trees sited within close proximity of proposed development works at City House, Sutton Park Road, Sutton, SM1 2AE in accordance with the British Standard BS5837: 2012 - Recommendations for trees in relation to design, demolition and construction.

2.0 Introduction

2.1 A site visit was conducted on 19th July 2023 to survey and assess the trees. The weather at the time of inspection was mild with trees in mid summer season.

2.2 The tree survey, report and recommendations have been compiled for the 11 no. trees (T1-T11) assessed within the site and neighbouring sites where relevant.

2.3 The details of the subject trees are set out in the Tree Survey Schedule within *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.

2.4 The trees located within the site are shown in tree survey drawings 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*.

2.5 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 20 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.

3.0 Survey Details and Scope

3.1 The tree survey included the 11 no. trees (T1-T11) as shown in the survey, *Appendix A*, and also highlighted on the site plans, *Appendix B*.

3.2 The following information was recorded for each 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)

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

3.4 Findings as shown within *Appendix A* and assessed within *Section 5* are also highlighted within *Appendix B* which incorporates the Tree Constraints Plan (TCP) - drawing T002 addressing areas where arboricultural solutions are required. The Tree Protection Plan (TPP) - drawing T003 provides outline tree protection measures.

4.0 Survey Limitations

4.1 No soil excavations have been carried out.

4.2 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.

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

4.4 No invasive tools were used during this site survey.

4.5 It should be noted that vegetation including shrubs within this / the neighbouring sites have not been included in the survey as none were within close or relevant proximity .

4.6 The survey has been undertaken from within the subject site and public highway.

4.7 No additional documentation unrelated to the property or development has been referred to for the trees or the property for the compilation of this report.

5.0 Tree Survey Summary

5.1 The trees have been surveyed in accordance with BS5837: 2012 - Recommendations for trees in relation to design, demolition and construction (BS5837: 2012) which enables trees to be rated via the following categories:

BS5837:2012 KEY



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.



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.



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.



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.

5.2 The trees have been rated as follows adhering to the key above:

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.

T5

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, T4, T6, T8, T9

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, T7, 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

5.3 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.

5.4 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.

5.5 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.

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.

Precautionary Area

An area where works must be undertaken with direct consultation with methodology as specified within the AMS report and / or scheme of Arboricultural supervision

6.0 Arboricultural Impact Assessment

Site Overview

6.1 The 11 no. trees (T1 - T11) are located within the site and adjoining site. The trees are sited as follows:

City House, Sutton Park Road: T2, T3, T6, T7

Sutton Baptist Church: T1

Sutton Park Road - public highway: T8, T9, T10, T11

Cheam Road - public highway: T4, T5

6.2 The following statutory checks have been made for the site:

LOCAL PLANNING AUTHORITY

London Borough of Sutton

CONSERVATION AREA STATUS

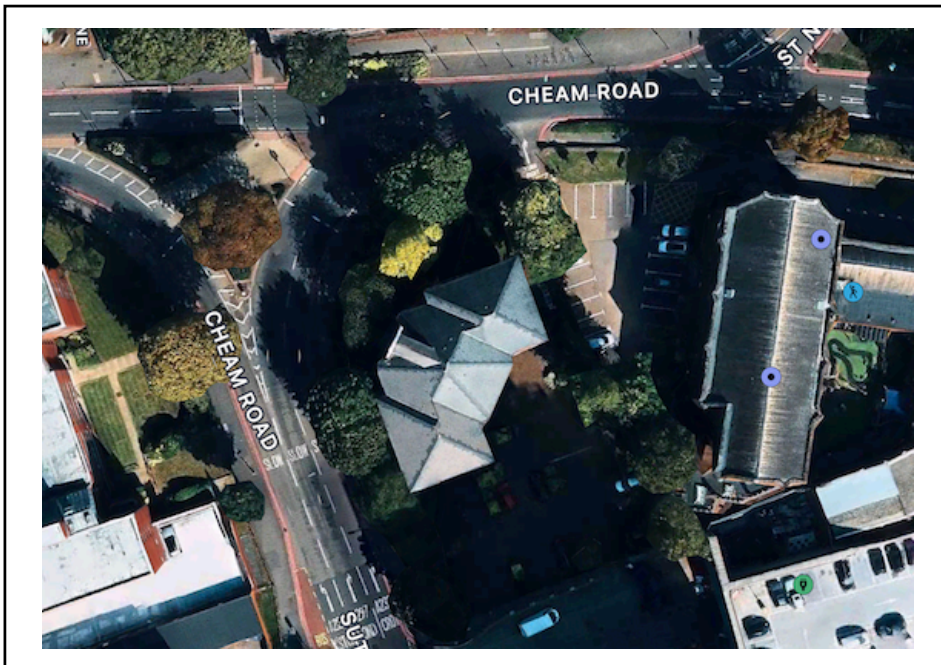
Adjoining tree T1: Sutton Town Conservation Area

T2 - T11: None applicable - outside of the Conservation Area

TREE PRESERVATION ORDER (TPO) STATUS

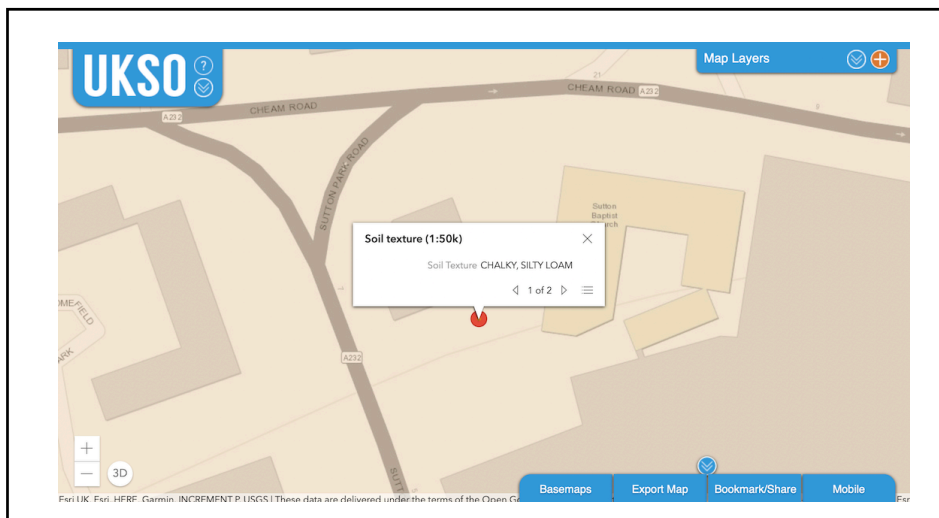
TPO protection check has not been undertaken. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order, and those trees without. This is principally because a detailed planning consent overrides any TPO protection

6.3 The site location is confirmed as below:



Extract from: *GoogleMaps*

6.4 The underlying soil to this area is classified as 'chalky silty loam' within the UK Soil Observatory (www.ukso.org) - a soil mix of medium texture. The absence of a clay element within the soil is significant in terms of both tree protection and foundation design. Whilst clay soils can experience substantial volume changes when vegetation extracts moisture from the ground they are also prone to compaction when wet; the soil is deemed as being of moderate texture with lesser susceptibility to compaction and volumetric change than a clay based soil. 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. The soil profile is confirmed as below:



Extract from Soil Observatory - 24/09/23 - www.ukso.org

6.5 The site, 0.18 hectares size, comprises existing commercial premises with associated car parking and landscaping. Development proposals are for:

Demolition of existing building; redevelopment to provide circa 255 sq.m of commercial floorspace on the ground floor and 70 residential apartments on the upper floors within a building of part 5 and part 13 storeys.

6.6 For the preparation of this AIA & AMS Tree Report reference is made to the following plans:

Topographical Survey - Survey Solutions

42439BMLS-02

Architectural Drawings - Wimshurst Pelleriti

0816-WPA-0111 P0 Basement Plan

0816-WPA-0110 P0 Ground floor

0816-WPA-0112 P0 1st-3rd Floor Plan

0816-WPA-0113 P0 4th floor plan

0816-WPA-0114 P0 5th floor plan

0816-WPA-0115 P0 6th-12th floor plan

0816-WPA-0202 P0 Proposed West elevation

0816-WPA-0203 P0 Proposed east elevations
0816-WPA-0205 P0 Proposed south elevation
0816-WPA-0206 P0 Proposed north elevation

6.7 The summary of arboricultural impact which shall be assessed is as follows:

- Loss of 2 trees comprising 1 no. 'C' Category tree - T10 & 1 no. 'B' Category tree - T11
- Potential compaction and damage of the root plates of retained trees in relation to the development and landscape process
- Potential damage to canopies of the retained trees surrounding the site during development and landscape process
- The use of and storage of materials and chemicals on site within close proximity of the retained tree
- Impact of development upon trees via future occupancy / updated layout of the site
- Replacement tree planting strategy which shall incorporate 12 no. replacement trees

6.8 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. The following is assessed within this section:

- (i) Where tree protection measures are deemed appropriate these are highlighted
- (ii) Mitigation for tree loss where trees are proposed for removal

6.9 Reference is also made to the Local Authority's Local Plan and wider relevant policy:

- (i) National Planning Policy Framework February 2023 Ministry of Housing, Communities and Local Government
- (ii) London Plan, Chapter 8 Green Infrastructure and Natural Environment - Policy G7 Trees & Woodlands, 2021
- (iii) Sutton Local Plan 2016-2031, London Borough of Sutton

Arboricultural Impact Assessment

6.10 The trees surveyed which are sited within the subject site and where neighbouring are of the following species:

Acer platanoides (Norway maple)
Acer platanoides 'Crimson King' (Norway maple 'Crimson King')
Acer pseudoplatanus (Sycamore)
Alnus glutinosa (Alder)
Cercis siliquastrum (Judas tree)
Robinia pseudoacacia 'Frisia' (False acacia 'Frisia')

6.11 The trees surveyed exhibit the following main attributes:

- (i) Tree T1, Sycamore - off site to the east within the Sutton Baptist Church; a twin-stemmed tree - limited overhang to site
- (ii) Tree T2, Sycamore - early mature, historically crown lifted over the subject site for development footprint; soft landscapes within development site infrastructure area
- (iii) Trees T4 & T5, 2 Maples, 1 no. 'A' category and 1 no. 'B' category tree within the highway. Low overhanging crown within site for southern crowns. Existing boundary treatment formalising boundary
- (iv) Trees T3 & T6 within the site; generally crown lifted. Offering good amenity value being 'B' category trees
- (v) Tree T7 - 'C' category Judas tree with mature to over-mature form Low growth developing
- (vi) Trees T8 - T11 of mixed form within highway off site to west. Generally managed form. 'B' category trees with exception of T10 Alder which has poor form - rated as 'C' category

6.12 Within the Local Plan, specifically section 28P (v) it states that

The council will require compliance with latest arboricultural or silvicultural standards in respect of any tree works or development near to trees.

This report sets out tree protection measures and mitigation to ensure that compliance with this policy is demonstrated from the development proposal.

Arboricultural Impact Assessment - Trees Retained

6.13 For those trees surveyed within close proximity the potential impacts for the trees surveyed are as follows:

- (i) For trees T1 - T3, the RPA's are within the subject site where construction activities associated with the development process shall occur
- (ii) Trees T4-T7 off site and within the site to northern boundary within close proximity of the development process including infrastructure
- (iii) Trees T8-T11 off site within the highway close to western boundary within close proximity of the development process including construction activities as follows:
 - General development site activities including storage of spoil and materials
 - Use of heavy machinery, welfare, site offices and installation of utilities / drainage, not exhaustive of other practice
 - Site access & Welfare
- (iv) General development works with potential for damage to crowns for all retained trees where extending within the site

6.14 Where the RPA of tree T9 incurs within the site and beyond the existing building footprint the RPA has been modified¹. This modification means that demolition works shall not incur within the RPA. Furthermore, the RPA modified is outside of the proposed development footprint The incursion has been applied for this trees where located off site to the west for the following reasons:

- Significant existing structure footprint
- Further barrier of boundary wall with associated foundations

6.15 Where the crowns extend within the site, minor facilitative pruning works shall ensure that the trees are not impacted by the development process and / or future occupancy of the site with updated use and layout.

¹ 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

6.16 Protection of all retained trees is justified based on the following:

- (i) Application of general tree protection measures for development process including:
 - Ground protection
 - Tree protection fencing
- (ii) Facilitative tree works schedule including pruning works to retained trees to avoid damage to crowns
- (iii) Construction Management Plan (CMP) to corroborate with final AMS & TPP prepared at pre-commencement stage

6.17 In relation to future occupancy of the proposed development it is clear that the site shall not be detrimentally impacted from the shading of those trees retained due to historic existence of trees and the subject site being a significant structure. Additionally the development footprint shall be more positive in relation to existing treescape where trees are retained.

6.18 The following tree protection measures shall be applied as specified within Section 6, AMS and the TPP which shall mitigate against any potential damage ensuring all trees remain protected:

- (i) TREE PROTECTION FENCING
Fencing to create Construction Exclusion Zones as shown within the AMS & TPP
- (ii) GROUND PROTECTION
Ground protection tree protection measures as outlined within the AMS & TPP
- (iii) ARBORICULTURAL SCHEME OF SUPERVISION
Scheme of supervision for tree protection measures applied to ensure a suitably qualified arboriculturist ensures delivery of all tree protection measures throughout the development process
- (iv) PROTECTION FROM SITE STORAGE, INFRASTRUCTURE & WELFARE
Site storage, mixing of chemicals and site welfare shall be sited outside of the RPA of retained trees
- (v) FACILITATIVE TREE WORKS
Minor pruning works set out within Tree Works Schedule

Arboricultural Impact Assessment - Tree Removal

6.19 The proposed development requires loss of the following trees:

- A Category tree: None applicable
- B Category trees: T11 - Norway maple
- C Category trees :T10 - Alder
- U Category trees: None applicable

6.20 The tree removal comprising 2 no. public highway trees shall be mitigated with a robust replacement tree planting scheme which will deliver an enhanced site for canopy cover and amenity value for the long term delivering in accordance with the Local plan and The London Plan. Within the Local Plan, Policy 28P (vi) states that the type and quantity of trees should also be considered with regard to a changing climate and the need to provide mitigation for that change.

6.21 The loss of 2 no. trees comprising 1 no. 'B' and 1 no. 'C' category tree are relevant for CAVAT² valuation as per requirements set out within the London Plan³. The trees has been valued as follows:

T10 - Alder: £1,469.00

T11 - Norway maple: £16,327.00

TOTAL: £17,796.00

For removal of T10 & T11 as follows at time of valuation - 23/12/23 the calculations are shown below:

Date: 23.12.23			Date: 23.12.23		
Name: Marcus Foster			Name: Marcus Foster		
Tree ID: T10			Tree ID: T11		
Tree Species: Alder			Tree Species: Norway maple		
Location: City House, Sutton			Location: City House, Sutton		
CAVAT Steps	Data Input	Calculated Values	CAVAT Steps	Data Input	Calculated Values
1. Base Value			1. Base Value		
Stem Diameter (cm)	12 - <15		Stem Diameter (cm)	40 - <50	
Unit Value Factor	£24.59		Unit Value Factor	£24.59	
Link to latest Unit Value Factor			Link to latest Unit Value Factor		
Base Value		£3,560.39	Base Value		£39,581.79
2. CTI Value			2. CTI Value		
Community Tree Index (CTI) Factor	150		Community Tree Index (CTI) Factor	150	
Link to CTI Factors spreadsheet			Link to CTI Factors spreadsheet		
Community Tree Index (CTI) Value		£5,341	Community Tree Index (CTI) Value		£59,373
3. Functional value			3. Functional value		
Functional Factor	50		Functional Factor	50	
Functional Value		£2,670	Functional Value		£29,686
4. Life Expectancy			4. Life Expectancy		
Life Expectancy	10 - <20 years		Life Expectancy	10 - <20 years	
CAVAT VALUE		£1,469	CAVAT VALUE		£16,327

² Capital Asset Value for Amenity Trees (CAVAT)

³ London Plan, Chapter 8 Green Infrastructure and Natural Environment - Policy G7 Trees & Woodlands

6.22 The tree planting strategy shall mitigate for those trees removed by providing as follows a robust replacement plan which shall deliver enhanced canopy cover for the site and treescape:

- Total 12 no. replacement tree plantings
- Tree plantings to account for the loss of the 2 no. highway trees which where retained would otherwise be incongruous within the streetscape and landscape where viewed in the context of the updated building layout and massing
- Tree replacement proposals as mitigation to provide significantly greater than 1:1 ratio of replacement to significantly increase CAVAT valuation of trees lost - total £17,796 via removal
- Species mix to be pest & disease and climate change resilient species
- Landscape scheme to provide further mitigation with enhanced shrub and soft landscape / planting areas

6.23 In mitigating the loss the improved green infrastructure of the site and highway adjoining shall provide an important landscape feature for the long term. The replacement planting proposal comprising 12 no. trees shall provide a significant uplift in tree planting across the site and adjoining, providing an improvement to amenity value and canopy cover for the long term. The proposal increases the canopy cover by greater than 10%, achieving and improving on the Greater London Authority's commitment to increasing tree canopy cover by 10 per cent by 2050⁴.

⁴ <https://www.london.gov.uk/what-we-do/environment/parks-green-spaces-and-biodiversity/trees-and-woodlands/tree-canopy-cover-map>

Summary of Arboricultural Impact

6.24 The proposed development requires tree protection measures and mitigation for the implementation of development as follows:

Tree Protection applicable to the following trees:

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

Mitigation applicable for the removal of the following trees:

Loss of 1 no. 'C' Category tree - T10 & 1 no. 'B' Category tree - T11

6.25 The tree protection measures and mitigation via replacement planting shall ensure that the development does not detrimentally impact the amenity value and canopy cover of the site, but provides improvement of amenity value and biodiversity value for the long term.

6.26 In summary the arboricultural impact as outlined within drawing T003 - Tree Protection Plan (TPP): require the following tree protection measures and mitigation:

- (i) TREE PROTECTION FENCING
- (ii) GROUND PROTECTION
- (iii) PROTECTION FROM SITE STORAGE, INFRASTRUCTURE & WELFARE
- (iv) ARBORICULTURAL SCHEME OF SUPERVISION
- (v) FACILITATIVE TREE WORKS

6.27 The landscape scheme with mitigation for loss of removed trees shall include replacement planting to include 12 no. trees providing long term canopy cover in accordance with the Local Plan and London Plan; this shall ensure that the development does not detrimentally impact the amenity value and canopy cover of the site but enhances for the long term by providing increased canopy cover beyond GLA commitments.

7.0 Arboricultural Method Statement

7.1 The following tree protection measures require close adherence AT ALL TIMES as outlined within this report. The measures are outlined within Tree Protection Plan (TPP) - drawing T003.

7.2 Tree Works

7.2.1 Tree Works included within Schedule of Works - Section 9 - shall be undertaken at pre-commencement stage.

7.3 Tree Protection Fencing

7.3.1 Protection of the trees highlighted for retention must be implemented as explained below and as specified within the TPP - drawing T003 to provide Construction Exclusion Zone (CEZ). Specified as

- (i) *BS5837:2012 Figure 2 - see TPP & Appendix E*
- (ii) *Basal Shuttering- see TPP & Appendix E*

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

- The area 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. Protection is not required surrounding entire trees where boundary treatments intervene in RPA's as the remainder of the root plate will remain unaffected by virtue of being located within the neighbouring properties
- Once the Exclusion Zone has 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 shall come into contact with any part of the canopies of the trees.
- No building materials or chemicals shall be stored within the tree protection zone as indicated on the TPP

7.4 Ground Protection

7.4.1 Ground protection shall be required where the tree protection fencing requires removal and with written consent of the Local Authority Tree Officer and/or appointed Arboricultural Consultant:

(i) Retention of existing hard landscapes

(ii) Ground protection

- Implementation of 75mm bark mulch layer overlapped with minimum 15mm plyboard surface or load bearing ground protection boards to provide ground protection for development process
- No storage of spoil within this area
- No storage of chemicals within this area

7.4.2 Ground protection may also be applicable for areas where tree protection is required but fencing is not achievable.

7.4.3 Where applied, ground protection shall be removed for final landscapes works within the RPA of retained trees.

7.5 Storage of Construction site related materials, plant and spoil / Site Welfare & Site Office

7.5.1 A designated storage area / site welfare & office shall be located outside of the RPA of retained trees and within existing hard standing. Strict adherence to this area must be made to this area and any amendment would require written consent from the tree officer.

7.5.2 Site welfare and the site office shall be located outside of the RPA of retained trees. Strict adherence to this area must be made to this area and any amendment would require written consent from the tree officer.

7.6 Fires

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

7.7 Final Hard Landscape Works within RPA of Retained Trees

7.7.1 For final landscaping works the following shall apply where carried out within the RPA of retained trees

- No reduction in levels of the underlying soil surface will occur during final landscaping works within the RPA of retained trees
- Close adherence with detailed excavations and root protections specifications as outlined within *Section 5.8*
- No compaction of soils for establishing level base for hard landscapes
- No installation of drainage channels / landscape features without prior written consent of the Local Authority

7.7.2 BS5837 (2012) makes provision for undertaking ground works 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. Specialist tools for removing soil around roots using compressed air may be an appropriate alternative to hand digging, if access is available.

Final Landscape Works Tools & Methodology

7.7.3 Reference to the AMS & TPP must be made at all times and the following methodology applied and documented within the scheme of arboricultural supervision should minor excavations be required:

- For landscaping works appropriate tools for general landscape works removing debris may include a pneumatic breaker, crow bar, sledge hammer, pick, mattock, shovel, spade, trowel, fork and wheelbarrow
- Should roots be exposed they will be required to be wrapped in hessian fixed in place with duct tape and kept moist until the consulting arboriculturist can provide further guidance and recommendations
- Secateurs and a handsaw must also be available to deal with any exposed roots that have to be cut. Debris to be removed from RPA area shall be removed without disturbance of the RPA / CEZ
- The use of mechanical diggers / wheelbarrows / machinery is not permitted for the implementation of final landscape works within the RPA of retained trees

7.8 Installation of utility services

7.8.1 The installation and/or amendment of utility services within the RPA of retained trees is not required. However where an amendment is required and utilities are required within the RPA of any retained tree the consulting arboriculturist and Local Authority must be notified prior to any ground tree protection / fencing and barrier removal and 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 / CEZ, detailed plans showing proposed routes should be drawn up in conjunction with the consulting arboriculturist to avoid long term problems for related 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. Should hand dug excavations be required within the RPA this shall only be undertaken with arboricultural supervision.

7.8.2 Further reference can be made to National Joint Utilities Group (Volume 4, Issue 2) for guidance but any approach must be approved by both the consulting arboriculturist and Local Authority tree officer.

7.8.3 Where Air spade techniques are deemed appropriate these must be operated by qualified contractors. His spades utilise a two-tool air compressor and hand-held lance to dislodge soil, using highly pressurised jets of air. This allows trenches to be excavated without causing the significant root damage associated with the use of conventional digging techniques such as, spade or excavator buckets. Example imagery is shown below:



Example imagery of air spade use for implementing utilities beneath root plate (existing)

Reputable companies providing this service include as follows (list not exhaustive):

<https://www.ruskins.co.uk/airspade>

<http://www.goroots.co.uk/>

<http://www.dfclark.co.uk/bionomique-service/air-spade-investigation-and-remediation/>

8.0 Communication, Monitoring and Compliance

8.1 In ensuring that all Tree Protections Specifications as highlighted within this AMS are closely adhered to at all times, it is important to set out for the long term of the development, communication details for key individuals and tasks that require monitoring.

8.2 For all tree protection measures these must be considered as sacrosanct and should not be removed or altered without prior written consent from the Local Authority tree officer and/or consulting arboriculturist.

8.3 The local authority arboriculturist will have free access to the site and forward any concerns / recommendations directly to the consulting arboriculturist.

8.4 The following individuals and organisations are central to the delivery of the scheme in relation to the tree protection measures it requires:

CONSULTING ARBORICULTURIST

Name - Marcus Foster MArborA

Telephone - 07812024070

Contact - Marcus Foster

Email - mail@marcus-foster.com

LONDON BOROUGH OF SUTTON - TREE OFFICER

Name - Tree Officer - Planning

Telephone - /

Contact - Edward Buckton

Email - edward.buckton@sutton.gov.uk

8.5 The consulting arboriculturist shall be appointed to provide supervision of key tree protection measures for the duration of the development. The key phases of development which require arboricultural supervision are as follows:

- (i) Pre-Commencement
- (ii) Approval of tree protection measures
- (iii) Precautionary works within close proximity / within RPA of retained trees
- (iv) Approval of continued tree protection measures
- (v) Approval of removal of protection measures / final landscape works

9.0 Tree Works Schedule

9.1 All tree work shall be carried out to BS 3998; 2010 Recommendations for Tree Work.

9.2 Tree works shall be undertaken at pre-commencement stage.

9.3 Tree Removal Works Schedule

TREE WORKS SCHEDULE: TREE REMOVAL WORKS City House, Sutton Park Road, Sutton, SM1 2AE				
Tree No.	Common Name	BS5837 Category	Tree Works	Reasons for works
T10	Alder	C	Fell to ground level and grind out stump	To facilitate development
T11	Norway maple	B	Fell to ground level and grind out stump	To facilitate development

9.4 Tree Pruning Works Schedule

TREE WORKS SCHEDULE: PRUNING WORKS City House, Sutton Park Road, Sutton, SM1 2AE				
Tree No.	Common Name	BS5837 Category	Tree Works	Reasons for works
T4	Norway maple	B	Crown lift to 5.0m over site Crown reduce southern lateral spread over site 1.0-1.5m branch lengths	To facilitate development
T5	Norway maple	A	Crown lift to 5.0m over site Crown reduce southern lateral spread over site 3.0-3.5m branch lengths	To facilitate development
T7	Judas	C	Crown lift to 3.0m	To facilitate development

9.5 Wildlife & Habitat Protection Guidelines

The tree work specifications included within this report do not provide an exemption from the requirements to comply with the Wildlife and Countryside Act 1981, the Habitats Regulations 1994 and the Countryside and Rights of Way Act 2000, or any acts offering protection to wildlife. Of particular note is the protection offered to bats, birds and their nests, whilst being built or in use. It must be noted that failure to comply with the Acts may result in a criminal prosecution.

Appendices

Appendix A

Tree Survey Schedule (BS5837:2012)

City House
Sutton Park Road
Sutton
SM1 2AE

Colour Key: BS5837: 2012 (see Section 3.6)

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

Tree Survey Key: BS5837: 2012

- Number: an identity number which cross-references locations shown on the plans
- 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
m/s - denotes multi-stemmed with measurement taken of largest stem at base
t/s - denotes twin -stemmed with measurement taken of largest stem at base
(e) denotes estimated
- 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 - refer to key - Section 1
- First branch height (metres) / First canopy height (metres)
- Protection Distance m2 Area (where applicable – BS5827: 2012)
- Protection Distance Radius (where applicable – BS5827: 2012) - Root Protection Area (RPA)*

BS5837:2012 TREE SURVEY
SITE: City House, Sutton Park Road, Sutton, SM1 2AE | DATE OF SURVEY: 19th July 2023

Tree No	Species	Height (m)	DBH (mm)	Spread (m) N/E/S/W	Age	Structural Condition	Vitality	BS5837 (2012) Rating	Remaining Contribution (years)	Comments / Structural Condition	First branch height (m)	First canopy height (m)	Root Protection Area (RPA) m2	Root Protection Area (RPA) Radius (m)
T1	Sycamore	15	T/s 350 (e)	4 5 4 5	EM	F	G	B1	20+	Twin-stemmed at base. Ivy clad to eastern stem. Crown lifted to east to 8m / 6m over site. Previously reduced lateral spread of overhang to west	6	4	55.42	4.2
T2	Sycamore	12	400	4 4 3 5	EM	F	G	B1	20+	Off site to east. Absent crown to south. Low growth over site to 2.5m height. Overhang of 4.5m branch lengths at 2.5-7m height / 2-2.5m branch lengths at 7-10m height	3	2.5	72.39	4.8
T3	Norway maple 'Crimson King'	9	180	3 3 2 4	SM	F	F	C1	10+	One-sided crown to north / west. Dieback with limited lifespan	2.5	2.5	14.66	2.2
T4	Norway maple	9	240	4 5 3 3	SM	F	G	B1	20+	Off site. Highway tree; lesser specimen to dominant T5. One sided crown to east. Overhang of 1.5m branch lengths at 4-9m height. Crown dominant over highway	3	2	26.06	2.9
T5	Norway maple	11	390	4 6 6 6	EM	G	G	A1	40+	Off site. Highway tree; crown lifted / reduced over highway to north. Developing form. Overhang to site of 4-5m branch lengths at 2-9m height. Spreading branch framework	4	4.5	68.82	4.7
T6	False acacia 'Frisia'	12	280	4 3 3 3	SM	F	G	B1	20+	Reduced form with good regenerative growth. Damage at 2.5m to west	5	5	35.47	3.4
T7	Judas tree	7	M/s 280	3 2 3 3	M	P	F	C1	10+	Mature to over-mature form. Congested main union at 0.2-0.6m height with fused stems to 3m height. Limited lifespan in reduced form - dieback selectively to regenerative growth	2	2	35.47	3.4
T8	Norway maple	10	370	4 1 3 4	EM	F	G	B1	20+	Highway tree within 1m of boundary. Pruned cyclically, lapsed 1-2 yeays with clearance. Currently no overhan to site. Within 4m of building footprint	3	3	61.94	4.4
T9	Norway maple	11	390	2 1 3 4	EM	F	G	B1	20+	Highway tree within 1m of boundary. Pruned cyclically, lapsed 1-2 yeays with clearance. Currently no overhan to site. Within 4m of building footprint	3	3	68.82	4.7
T10	Alder	5	120	1 2 3	Y	P	F	C1	10+	Off site; highway tree. Pruned to west. Limited form	2	2	6.52	1.4
T11	Norway maple	10	400	4 1 4 5	EM	F	G	B1	20+	Off site. Pruned to boundary with no overhang to site. Crown within highway off site. Root plate within 2m of retaining wall within site	4	4	72.39	4.8

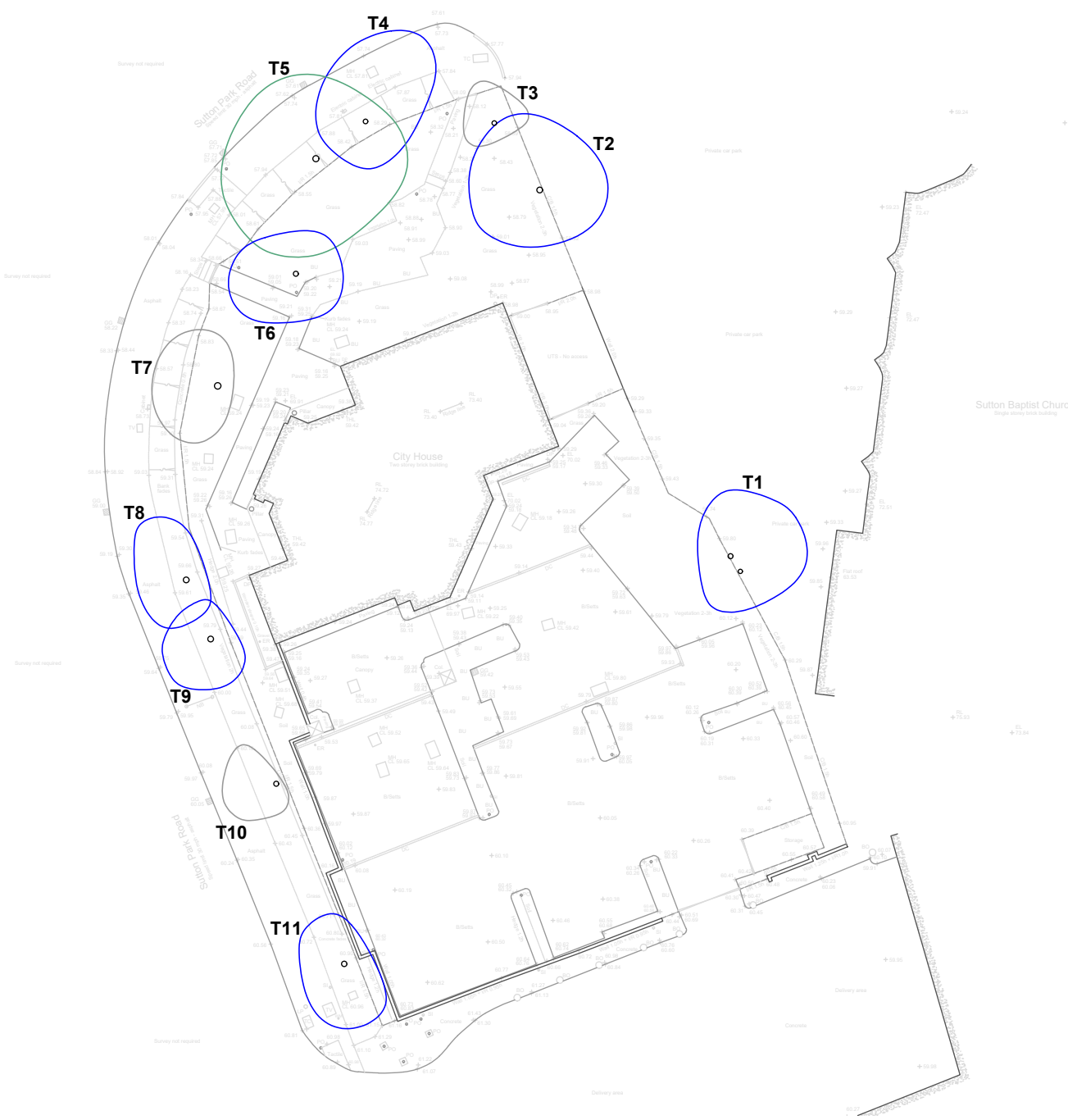
Appendix B

Existing Tree Survey (T001)
Tree Constraints Plan (T002)
Tree Protection Plan (T003)
(BS5837:2012)

City House
Sutton Park Road
Sutton
SM1 2AE

Colour Key: BS5837: 2012 (see Section 3.6)

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



KEY

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U
	TREES REMOVED
	RPA
	RPA INCURSION

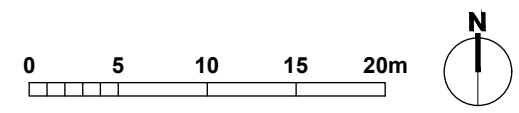
BS5837 (2012) Tree Survey Notes

- In accordance with BS5837(2012) this drawing is a colour coded schedule and should not be read in black and white
- If received electronically it is the recipients responsibility to print this drawing to correct scale. Only written dimensions should be used where not printed to scale.
- This drawing should be read in conjunction with all other relevant drawings and specifications
- 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
- Off site trees have been plotted based on site visit survey and locations are not based upon topographical survey

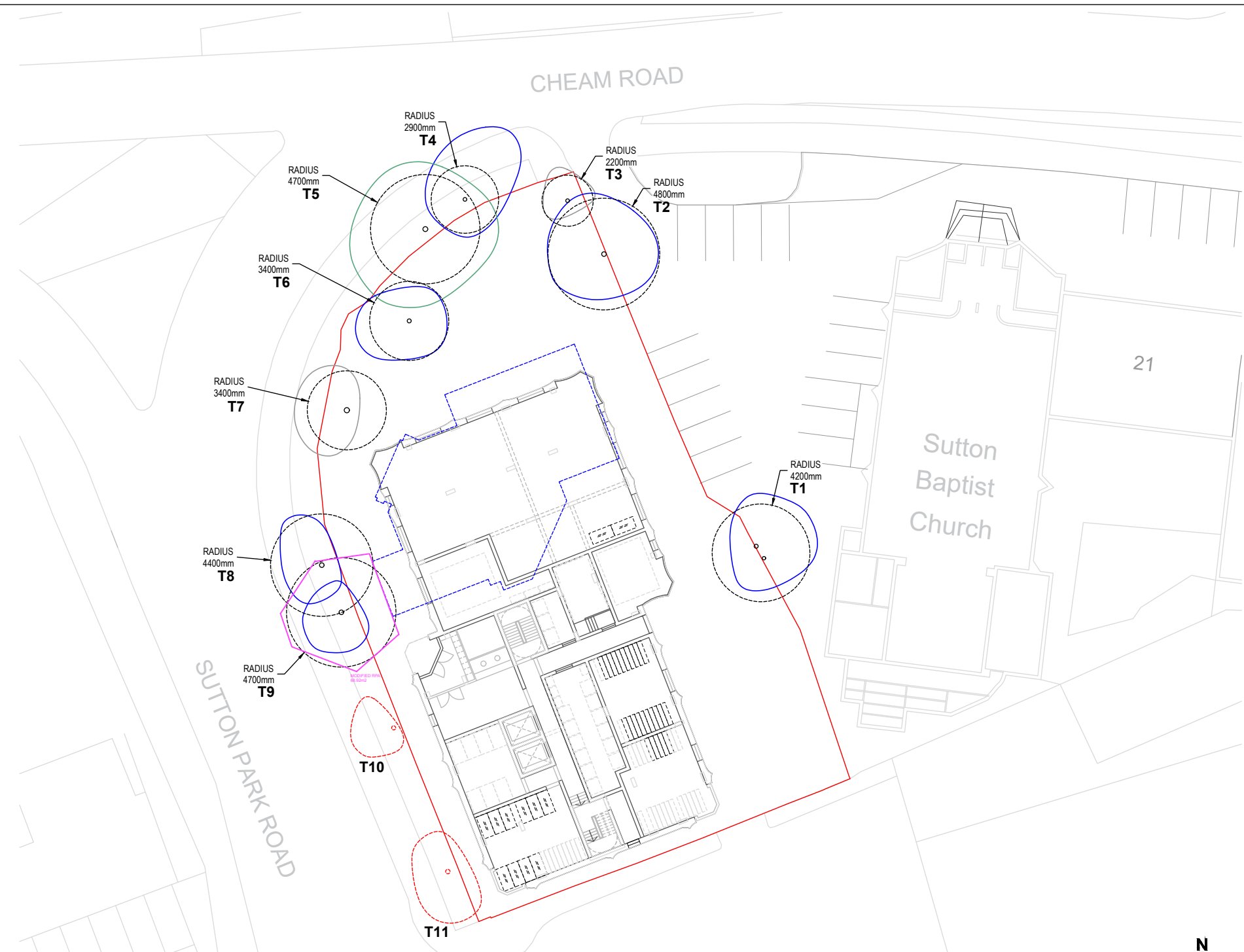
NOTE: Tree survey locations based on previous undertaken topographical surveys for design issue and additional GIS mapping has not been undertaken for the purposes of this survey
 All off site trees where not plotted within topographic survey information are plotted using on site survey tools from within the site only.

Revisions			
Rev.	Date	Checked	Checked
1	26.07.2023	ISSUED FOR INFORMATION	MF

SITE	City House, Sutton Park Road, Sutton, SM1 2AE
CLIENT	Macar Developments
DWG TITLE	Existing Tree Survey Plan
SCALE	DATE
1:300 @ A3	JUL 2023
JOB NO	DWG NO.
AIA/MF/015/24	T001



T: 0781 2024070
 mail@marcus-foster.com
 www.marcus-foster.com
Marcus Foster
 TREE CONSULTANCY



KEY

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U
	TREES REMOVED
	RPA
	RPA INCURSION
	MODIFIED RPA
	SITE BOUNDARY
	EXISTING BUILDING

BS5837 (2012) Tree Survey Notes

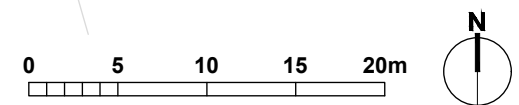
1. In accordance with BS5837(2012) this drawing is a colour coded schedule and should not be read in black and white
2. If received electronically it is the recipients responsibility to print this drawing to correct scale. Only written dimensions should be used where not printed to scale.
3. This drawing should be read in conjunction with all other relevant drawings and specifications
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. All off site trees where not plotted within topographic survey information are plotted using on site survey tools from within the site only.

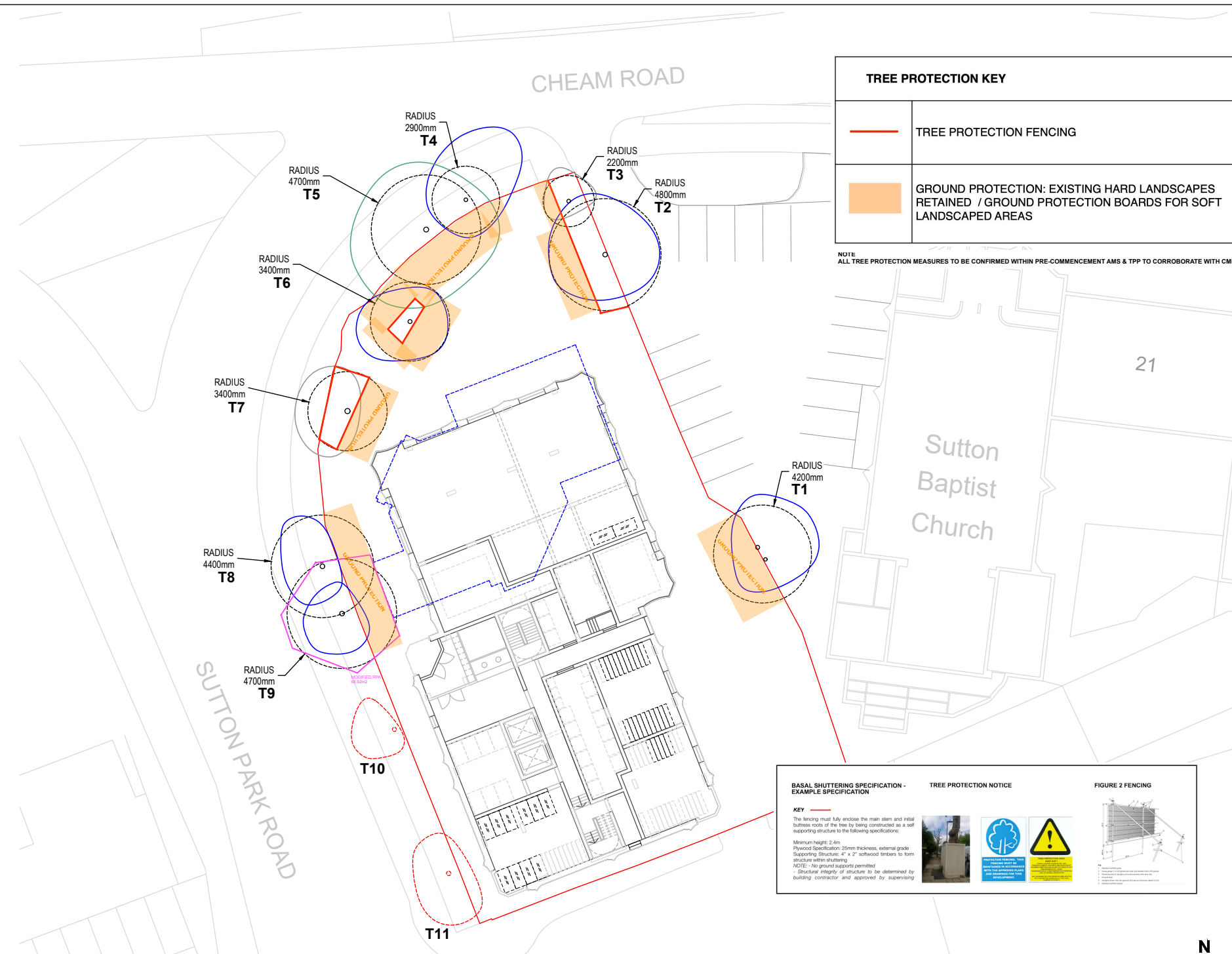
Revisions

Rev.	Date	ISSUED FOR INFORMATION	Checked
/	26.07.2023	ISSUED FOR INFORMATION	MF
/	15.12.2023	ISSUED FOR INFORMATION	MF
/	15.12.2023	ISSUED FOR INFORMATION	MF

SITE	City House, Sutton Park Road, Sutton, SM1 2AE		
CLIENT	Macar Developments		
DWG TITLE	Tree Constraints Plan		
SCALE	DATE		
1:300 @ A3	JUL 2023		
JOB NO	DWG NO.		
AAI/MF/015/24	T002		




T: 0781 2024070
 mail@marcus-foster.com
 www.marcus-foster.com
Marcus Foster
 TREE CONSULTANCY



TREE PROTECTION KEY	
	TREE PROTECTION FENCING
	GROUND PROTECTION: EXISTING HARD LANDSCAPES RETAINED / GROUND PROTECTION BOARDS FOR SOFT LANDSCAPED AREAS

NOTE
ALL TREE PROTECTION MEASURES TO BE CONFIRMED WITHIN PRE-COMMENCEMENT AMS & TPP TO CORROBORATE WITH CSM

KEY

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U
	TREES REMOVED
	RPA
	RPA INCURSION
	MODIFIED RPA
	SITE BOUNDARY
	EXISTING BUILDING

BS5837 (2012) Tree Survey Notes

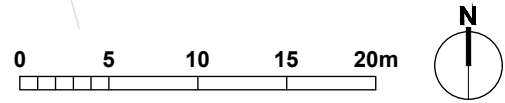
- In accordance with BS5837(2012) this drawing is a colour coded schedule and should not be read in black and white
- If received electronically it is the recipients responsibility to print this drawing to correct scale. Only written dimensions should be used where not printed to scale.
- This drawing should be read in conjunction with all other relevant drawings and specifications
- 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
- 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. All off site trees where not plotted within topographic survey information are plotted using on site survey tools from within the site only.

BASAL SHUTTERING SPECIFICATION - EXAMPLE SPECIFICATION	TREE PROTECTION NOTICE	FIGURE 2 FENCING
<p>KEY</p> <p>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:</p> <p>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</p>		

Revisions			
Rev.	Date	Issued For Information	Checked
1	26.07.2023	ISSUED FOR INFORMATION	MF
2	15.12.2023	ISSUED FOR INFORMATION	MF
3	16.12.2023	ISSUED FOR INFORMATION	MF

SITE	City House, Sutton Park Road, Sutton, SM1 2AE
CLIENT	Macar Developments
DWG TITLE	Tree Protection Plan
SCALE	1:300 @ A3
DATE	JUL 2023
JOB NO	AIA/MF/015/24
DWG NO.	T003



T: 0781 2024070
 mail@marcus-foster.com
 www.marcus-foster.com
Marcus Foster
 TREE CONSULTANCY

Appendix C:

Tree Survey Photographs

City House
Sutton Park Road
Sutton
SM1 2AE

Taken by M Foster_ July 2023



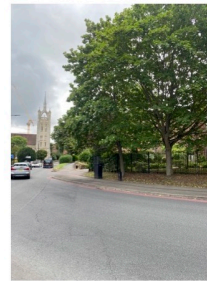
Tree T1 viewed to the north



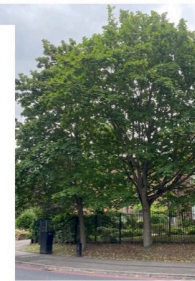
Tree T1 viewed to the south within off site location where tree is located



Front of site / western boundary trees T7-T11 viewed to south



Front of site / northern boundary trees T4-T6 viewed to east



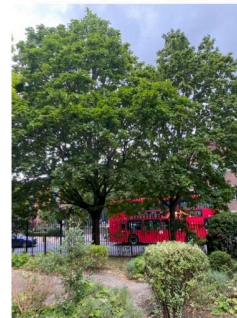
Tree T5 viewed to north



Trees T4-T7 viewed to west



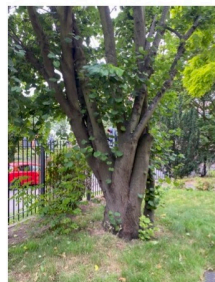
Trees T6-T7 viewed to west



Trees T3-T5 viewed to north



Trees T8-T9 viewed to south



Tree T7 - congested form



Tree T11 viewed to west



Tree T11 viewed to west



Trees T8-T9 viewed to south



Front of site / western boundary trees T7-T11 viewed to south

Taken by M Foster - 19/07/23

Appendix D: **Tree Protection Notice**

Generic Tree Protection Notice
(BS5837: 2012):

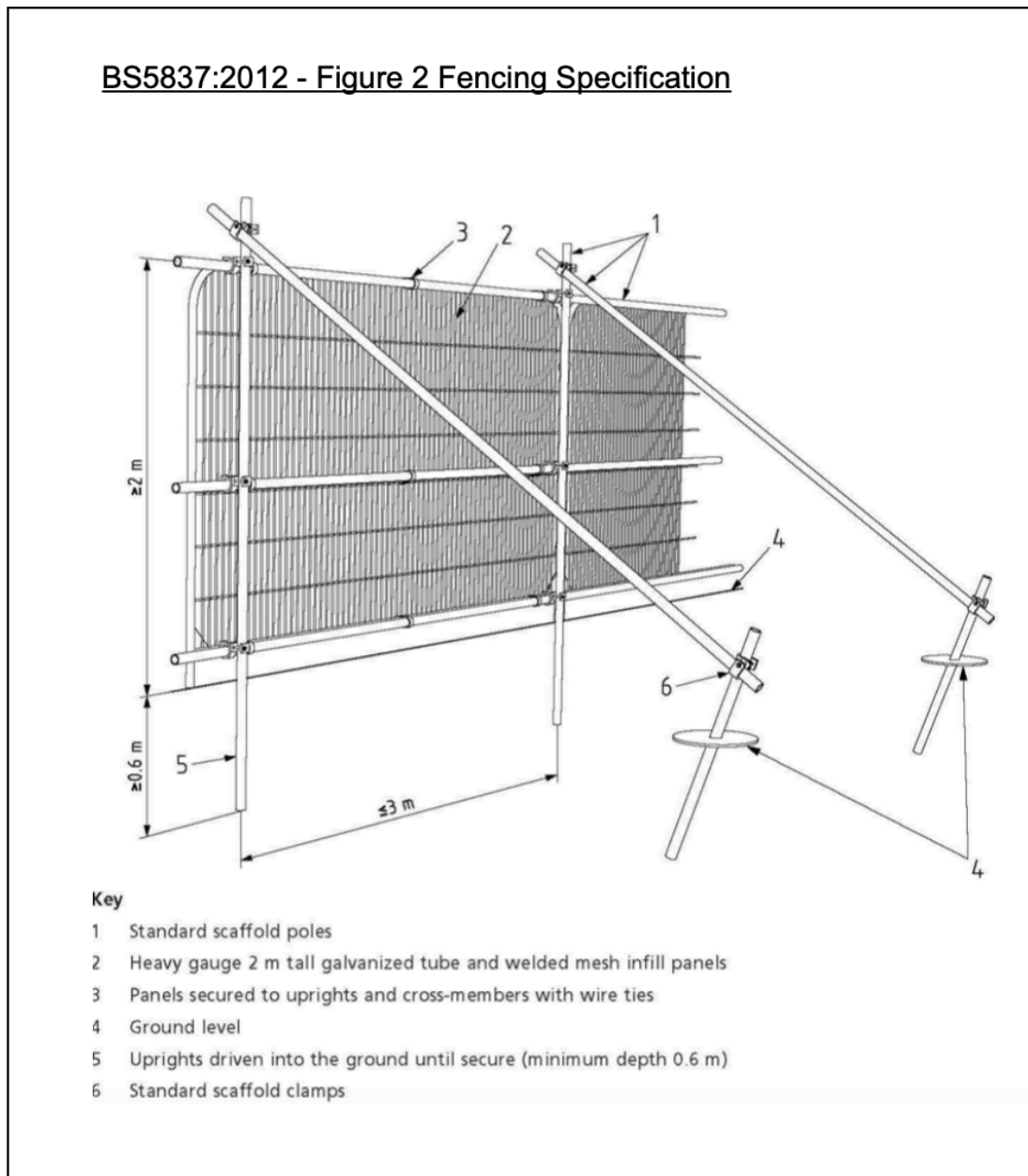
*Notice to be clearly shown on site where
fencing constructed
AT ALL TIMES*



Appendix E

Tree Protection Fencing Specifications

Figure 2 BS5837:2012 Fencing Specification



Basal Shuttering Fencing Specification

BASAL SHUTTERING

Specification of Basal Shuttering Tree Protection

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:

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 arboriculturist

Tree Protection Fencing Notices: 5 x Notices

Example of Basal Shuttering Tree Protection



Appendix F: References

1. BS5837: British Standard: Trees in relation to construction - Recommendations, British Standard (2012)
2. Principles of Tree Hazard Assessment and Management, Lonsdale, D. (Department for Transport, Local Government and the Regions, 1999)
3. The Body Language of Trees, Mattheck, C. and Breloer, H. (HMSO, 1994)
4. Trees in Britain, Philips, R. (Pan Books, 1978).
5. Diagnosis of Ill Health in Trees, Strouts, R. and Winter, (TSO, 1994)
6. National Planning Policy Framework February 2019 Ministry of Housing, Communities and Local Government
7. London Plan, Chapter 8 Green Infrastructure and Natural Environment - Policy G7 Trees & Woodlands, 2021
8. Sutton Local Plan 2016-2031, London Borough of Sutton
9. NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2), (November 2007)

PREPARED BY MARCUS FOSTER MArborA
END OF REPORT _ Page35/35