The Ecology Consultancy

Middlesex Hospital Annex / Arboricultural Survey Report and Impact Assessment / **Report for Llewelyn Davies**

The Ecology Consultancy

Middlesex Hospital Annex

Arboricultural Impact Assessment and Method Statement

Report for Llewelyn Davies

Job Number	7013.1			
Author	James Potts BSc (Hons) MArborA			
Version	Checked by	Approved by	Date	Type
V1.0	Wendy McFarlane MA MSc MCIEEM	Mark Cannon BA (Hons) DipLA MArborA	04/05/18	Final
V2.0	Wendy McFarlane MA MSc MCIEEM	Mark Cannon BA (Hons) DipLA MArborA	04/05/18	Final

The Ecology Consultancy, Tempus Wharf, 33a Bermondsey Wall West, London, SE16 4TQ
T 020 7378 1914 **E**. enquiries@ecologyconsultancy.co.uk **W**. www.ecologyconsultancy.co.uk

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Executive Summary

The Ecology Consultancy was commissioned by Llewelyn Davies to undertake an Arboricultural Impact Assessment and develop an Arboricultural Method Statement for future works associated with the development of land at the proposed Middlesex Hospital Annex, Westminster. A qualitative assessment of each tree was carried out according to British Standard BS 5837:2012, Trees in Relation to Design, Demolition and Construction–Recommendations, focusing on arboricultural values (categories A1, B1, C1)[1] and landscape values (categories A2, B2, C3)[2].

The main findings of the survey are as follows:

- There were a total of two individual trees situated directly adjacent to the proposed development site.
- A tree constraints check was carried out with London Borough of Camden and it was confirmed that no trees located adjacent to or in the proposed development site were the subject to Tree Preservation Order. However trees T1 and T2 were subject to Conservation Area restrictions.
- Root protection areas were calculated in accordance with BS 5837:2012 for both trees and ranged from 4.5m^2 to 1.6m^2 for T1 and T2 respectively.
- Installation of the proposed hoarding line encompassing the pavement to the west of the site, has the potential to impact the stem and canopy of both T1 and T2.
- Both T1 and T2 will require lateral branches in their lower canopy crown lifted to a height of 3m above ground level, to facilitate access for the installation of the hoarding line.
- Methodologies for the installation of the proposed hoarding line follow recommendations provided in paragraph 4.3 to ensure that no accidental damage is caused to T1 and T2 during its construction.

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1 Categorisation grading in accordance with BS 5837 2012. Trees suitable for retention: - Category A. Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category B. Trees of moderate quality with an estimated life expectancy of at least 20 years.
Category C. Trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm.
Category U. Trees of very low quality normally with a life expectancy of less than 10 years or requiring immediate removal due to health and safety concerns.

2 British Standard BS 5837 2012 recommends that these categories may be further broken down into sub categories A1 A2 A3 pertaining to Arboricultural, Landscape or Cultural values respectively.

1 Introduction

BACKGROUND

1.1 The Ecology Consultancy was commissioned on 3 April 2018 by Llewelyn Davies to carry out an arboricultural survey of trees at the Middlesex Hospital Annex, Cleveland Street and provide a report to inform future design proposals and tree protection. The survey is required to assess the condition of trees that could be affected by future development of the site, and provide sufficient information for the development of site layouts and construction exclusion zones to enable the protection of existing trees.

SCOPE OF REPORT

1.2 This report has been produced in accordance with British Standard BS 5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations (hereafter referred to as BS 5837:2012). It provides information on the current condition of trees at the site, their suitability for retention, and the above and below ground constraints to development.

1.3 Any clear flaws or hazards have been identified in the Schedule of Trees provided in Appendix 1. Preliminary recommendations for the management of retained trees are provided, but a full hazard risk assessment comprising a more comprehensive analysis of tree condition and potential risk to target areas is beyond the scope of this report. Any recommendations relating to the management of potentially hazardous trees should be carried out as soon as possible[3].

SITE CONTEXT AND STATUS

1.4 The site is situated in the City of Westminster, approximately 110m south-east of the BT Tower and 230m west of Goodge Street Station. The site comprises internal and external areas of Cleveland Street Workhouse and measures approximately 0.35ha in extent, its northern boundary is formed by the Windeyer Institute of Medical Sciences, with Middlesex House to the south, UCL Halls of residence to the east and Cleveland

[3] All tree works should be undertaken by a suitably qualified Arboricultural Contractor. No arboricultural works to trees subject to planning constraints shall be carried out without the written consent of the relevant Local Planning Authority (LPA). Any proposed tree works should be undertaken in accordance with British Standard BS 3998:2010 Treework - Recommendations. Works to trees that are the subject of a Tree Preservation Order or within a Conservation Area which are deemed to be dangerous under Regulation 14 of the Town and Country Planning (England) (Regulations) 2012 may under certain circumstances be undertaken without needing to seek the prior written consent of the LPA.

Street to the west. The Ordnance Survey National Grid reference for the centre of the site is TQ 29278 81823.

DESCRIPTION OF THE PROPOSALS

1.5 The design proposals comprise the construction of 50 residential units, 5,000sqm of B1 office floor space, new public space and private communal gardens.

2 Methodology

TREE SURVEY

2.1 The tree survey was conducted in accordance with BS 5837:2012 the results of which are presented in the Schedule of Trees (Appendix 1) and include a sequential numbering of each tree, species listed by common name; tree dimensions including overall height, canopy spreads measured against the cardinal compass points; crown height; age class; physiological condition; structural condition, life expectancy; root protection areas and preliminary management advice.

2.2 Each tree has been assigned a category grade in accordance with BS 5837:2012 categories A, B, C and U ranging from high to low quality. Definitions of tree quality are provided in Table 3, Appendix 1.

2.3 For the purposes of this report, arboricultural as well as landscape sub-categories have been used in the Schedule of Trees. BS 5837:2012 points out that each sub-category should be given equal weighting when grading trees against these criteria.

2.4 A tree constraints plan is presented in Appendix 2 showing the recommended root protection areas (RPA) for all surveyed trees, and highlighting each grading category using the colour key system as described in BS 5837:2012.

2.5 The site was visited on 18 April 2018, weather conditions were dry and sunny. All trees likely to be affected by works inside the red line boundary of the site were visually assessed using the Visual Tree Assessment Method (VTA) (Mattheck and Beloer, 1994)

2.6 Stem diameters were measured using diameter tape. Canopy spreads were estimated by pacing and where possible, verified using a laser range finder. Height measurements were taken using a laser clinometer.

2.7 No soil samples or soil analysis were undertaken.

DESK STUDY

2.8 A tree constraints check was carried through email correspondence with the London Borough of Camden Trees and Landscape Officer.

SUPPORTING DOCUMENTS

2.9 Drawing Reference: 13514_02_P_rev1 (Greenhatch Group, 2008) and LD 15 078 - MIDDLESEX HOSPITAL ANNEXE - CONSTRUCTION-LGR were provided for the

purposes of compiling this report. They include the layout of existing site features, along with a footprint overlay of the proposed development.

PERSONNEL

2.10 The tree survey was carried out by Mark Cannon BA (Hons) Dip. LA, Tech Cert (ArborA) MArborA, an arboriculturalist with over 20 years' experience in the arboricultural and built environment sectors. Mark has experience in providing professional expert arboricultural advice and recommendations in relation to trees and development. Mark is a professional member of the Arboricultural Association as well as gaining a BA (Hons) Degree and Post Graduate Diploma in Landscape Architecture at the University of Greenwich.

LIMITATIONS

2.11 Only preliminary recommendations for tree management are provided. A full hazard risk assessment comprising a more comprehensive analysis of the condition and potential risk to target areas is beyond the scope of this report.

2.12 The trees were inspected at ground level and no decay detection equipment was used. There is therefore a risk that any internal decay that may be present has gone undetected.

3 Results

TREE SURVEY

3.1 The results of the tree survey are provided in the Schedule of Trees in Appendix 1. A Tree Constraints Plan illustrating the BS 5837:2012 categories of each tree, their crown spread and RPA is presented in Appendix 2 and photographs of the site are provided in Appendix 5.

3.2 The survey recorded two individual field maple *Acer campestre* trees located in the pavement directly adjacent to the proposed development site.

3.3 Both T1 and T2 were assessed to be at a young life stage[4] and were both attributed Category C status.

3.4 A summary of the condition and value of both trees is provided below, based on information presented in Appendix 1.

- Field maple T1, was situated adjacent to the western boundary of the site, 12.5m north of the eastern end of Foley Street. The tree was young, was 6m in height, had a single stem and a maximum canopy radius extending 2m to the north, south and west. The tree appeared to be in good structural and physiological condition requiring no immediate remedial works.
- Field maple T2, was situated 10m north-west of T1. The tree was young, was 7m in height, had a single stem and a canopy radius extending 2m in all direction. The tree appeared to be in good structural and physiological condition, requiring no immediate remedial works.

DESK STUDY

3.5 It was confirmed that T1 and T2 were situated inside Charlotte Street Conservation Area, however were not subject to Tree Preservation Order restrictions

[4] Young. Establishing; usually with good vigour, but as of limited significance within the landscape.
Semi-Mature. Established; normally vigorous and increasing in height. Of increasing landscape significance.
Early Mature. Fully established trees around the middle half of their life span retaining good vigour. Not yet achieved full height and retaining apical dominance.
Mature. Fully established trees retaining moderate vigour. Apical dominance lost but crown still spreading.
Over Mature. Fully mature trees in the last quarter of their usual life expectancy; vigour declining.

ARBORICULTURAL IMPACT ASSESSMENT

3.6 Based upon Drawing Reference: Construction Access Plan LD 15 078 - MIDDLESEX HOSPITAL ANNEXE - CONSTRUCTION-LGR (Llewelyn Davies, 2018) received from the client on the 26 April, 2018, the impact of the proposal on the existing trees has been assessed.

3.7 The Ecology Consultancy were informed by Llewelyn Davies that the proposal will require the installation of a hoarding line to form part of the pedestrian entrance to the site. The hoarding line is proposed to extend around the south-west edge of the pavement, adjacent to trees T1 and T2.

3.8 It has been confirmed by Llewleyn Davies, that no further demolition or construction activity will occur in the vicinity of T1 or T2 during the duration of the project.

Trees which could sustain damage from construction operations

3.9 The installation of the proposed hoarding has the potential to damage the stem and canopies of trees T1 and T2 through accidental impacts during its construction.

Trees pruning

3.10 The proposed hoarding line to be installed is approximately 2.5m in height. In order to facilitate access for its installation, it is recommended that T1 and T2 have their lower canopies crown lifted up to a height of 3m above to achieve a suitable clearance.

Impact on visual amenity and local character

3.11 Both T1 and T2 were attributed Category C status for their small size and moderate condition. T1 had a canopy clearance of 2m while T2 had a clearance of 2.5m. The proposal to crown lift these trees by 1m and 0.5m respectively is not considered to present a significant impact to visual public amenity.

4 Recommendations

TREE WORKS

4.1 The following tree works are recommended to facilitate access for the installation of the proposed hoarding line.

- Field maple T1, should have lower branches in its western and northern canopy quadrants, crown lifted to a height of 3m above ground level.
- Field maple T2 should have lateral branches in its southern and western canopy quadrants, crown lifted to a height of 3m above ground level.

SITE SPECIFIC ISSUES

4.2 T1 and T2 are located within Charlotte Street Conservation Area. As such, the Local Planning Authority must be notified in the form of a Section 211 Notification of any intended works to T1 or T2, unless full planning permission, clearly outlining works to trees as part of the larger scheme has been approved. The Section 211 Notification will be reviewed by the Local Planning Authority and must be submitted six weeks prior to the proposed commencement of the works.

ISSUES FOR THE ARBORICULTURAL METHOD STATEMENT

4.3 Prior to the installation of the site hoarding, it is recommended that a toolbox is delivered to all staff involved in its construction to ensure they are made aware of tree protection measures to be implemented.

4.4 During installation of the hoarding, no tools or construction materials should be leant up against or tied to the stems or canopies of T1 and T2

4.5 Care should be taken while installing the hoarding to avoid any impacts with the stem or canopy of trees T1 and T2. It is recommended that photographic evidence of the trees, prior to, during and after the works, be recorded to ensure that no accidental damage occurs.

5 Arboricultural Method Statement

5.1 This arboricultural method statement details how existing trees to be retained will be protected during the site development where required.

GENERAL PRECAUTIONS TO BE TAKEN ON SITE

5.2 The following precautions should be maintained at all times:

- Where specified within the AMS, all retained trees shall be protected by the erection of protective barriers and or ground protection prior to the commencement of any works and shall remain in place during the entire course of the development.
- No items will be stored next to, leant up against or tied to trees to be retained over the course of the development.
- No fires shall be lit within 10m of the canopies of trees to be retained.
- Designated Construction Exclusion Zones (CEZ) will be suitably identified and maintaned to ensure that trees remain protected. Storage or stockpiling areas are to be located outside of RPAs, inside designated sites away from retained trees and all care must be taken to prevent the leakage or spilling of harmful materials into the soil.
- No excavations or soil stripping or general disturbance and compaction of the existing soil strata shall be carried out within the RPA of any tree to be retained.
- A copy of the method statement shall be made available and retained on site at all times and shall be included in the site induction for all contractors and operatives so that they are familiar with its content and requirements.

PRE COMENCEMENT MEETING

5.3 It is recommended that the generic precautions listed above are included as part of the site induction to ensure that all operatives are aware of the tree protection measures to be implemented on site.

PRELIMINARY TREE WORKS

5.4 Prior to the installation of the proposed hoarding line, tree works as recommended in section 4.1 of this report should be completed in order to facilitate access.

ERECTION OF PROTECTIVE BARRIERS AND GROUND PROTECTION MEASURES

5.5 The installation of the proposed hoarding line should follow recommendations laid out in Paragraph 4.3 of this report to ensure that no accidental damage is caused to T1 and T2.

5.6 The design proposal does not require any works in or adjacent to the RPAs, stems or canopies of trees in or adjacent to the development site. As such, no tree protection fencing or root protection measures will be required.

REMOVAL OF EXISTING BUILDINGS AND HARDSTANDING

5.7 The design proposal does not require the removal of existing hardstanding from inside the RPAs of any trees to be retained in or adjacent to the development site.

COMMENCEMENT OF GROUND WORKS INCLUDING EXCAVATIONS FOR FOUNDATIONS, INSTALLATION OF SERVICES AND NEW HARDSTANDING

5.8 The development proposal does not require installation of new foundations or hardstanding inside the RPAs of any trees in or adjacent to the site.

CARRYING OUT OF MITIGATION TREE PLANTING AND SOFT AND HARD LANDSCAPING

5.9 All tree planting undertaken should be in accordance with BS 8545:2014 Trees: from nursery to independence in the landscape – Recommendations.

SITE SPECIFIC RECOMMENDATIONS

5.10 If adjustments are made to the design proposal prior to the commencement of works, this method statement may require amendments to ensure the protection of trees to be retained.

CONTACT DETAILS

5.11 This method statement is accompanied by a list of known contact details for all relevant parties and is included in Table 5.

Table 5: List of contact details for all relevant parties

Contact	Name	Company or Local Authority name	Contact Number	Report Issued Yes/No
Client	Cathal Nicholas	Llewelyn Davies	-	Yes
LPA Tree Officer	Planning Department	London Borough of Camden	020 7974 4444	No
Arboricultural Consultant	James Potts	The Ecology Consultancy	020 7378 1914	Yes

References

British Standard Institute (BSI) (2012). *BS 5837:2012 Trees in Relation to Design Demolition and Construction-Recommendations*. BSI, London.

British Standard Institute (BSI) (2010). *BS 3998:2010 Recommendation for Tree Works*. BSI, London.

British Standard Institute (BSI) (2014). *BS 8545:2014 Trees: from nursery to independence in the landscape - Recommendations*. BSI, London.

Department for Communities and Local Government (2014). *Planning Practice Guidance on Tree Preservation Orders and trees in conservation areas.*

Lonsdale, D. (1999). *Research for Amenity Trees No.7: Principles of Tree Hazard Assessment and Management*. HMSO

Llewelyn Davies, (2018). *Construction Access Plan LD 15 078 - MIDDLESEX HOSPITAL ANNEXE - CONSTRUCTION-LGR*

Mattheck and Beloer (1994). HMSO London. Research for Amenity Trees No 4; *The Body Language of Trees.*

Town and Country Planning Act 1990 (as amended).

Town and Country Planning (Tree Preservation) (England) Regulations 2012.

Appendix 1: Schedule of Trees

Table 1: Schedule of Trees and Tree Quality Assessment*

* See Table 3 for key to terms
** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5 m	Canopy Spread				Cr. Cl	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm ^{2}	RPA *r*
					N	S	E	W										
T1	Field maple	6	1	100	2	2	1.5	2	2	Y	Good	Good	2m from access road 500 from curb in concrete block paving	No immediate	40+	C1	4.5	1.2
T2	Field maple	7	1	60	2	2	2	2	2.5	Y	Good	Good	2m from access road 500 from curb in concrete block paving	No immediate	40+	C1	1.6	0.7

Table 2: BS: 5837 2012 Tree Quality Assessment Definitions

TREES FOR REMOVAL		
Category & Definition	**Criteria**	**Identification on Plan**
Category U Those in such a condition that they cannot realistically be retained as a living trees in the context of the current land use for longer than 10 years.	• Trees that have a serious, irremediable structural defect such that their early loss is expected due to collapse, including those that will become unviable after removal of other U category trees (i.e. Where for whatever reason the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant immediate or irreversible overall decline. • Trees infected with pathogens of significance to the health and or safety of other trees nearby by or very low quality trees suppressing adjacent trees of better quality.	RED

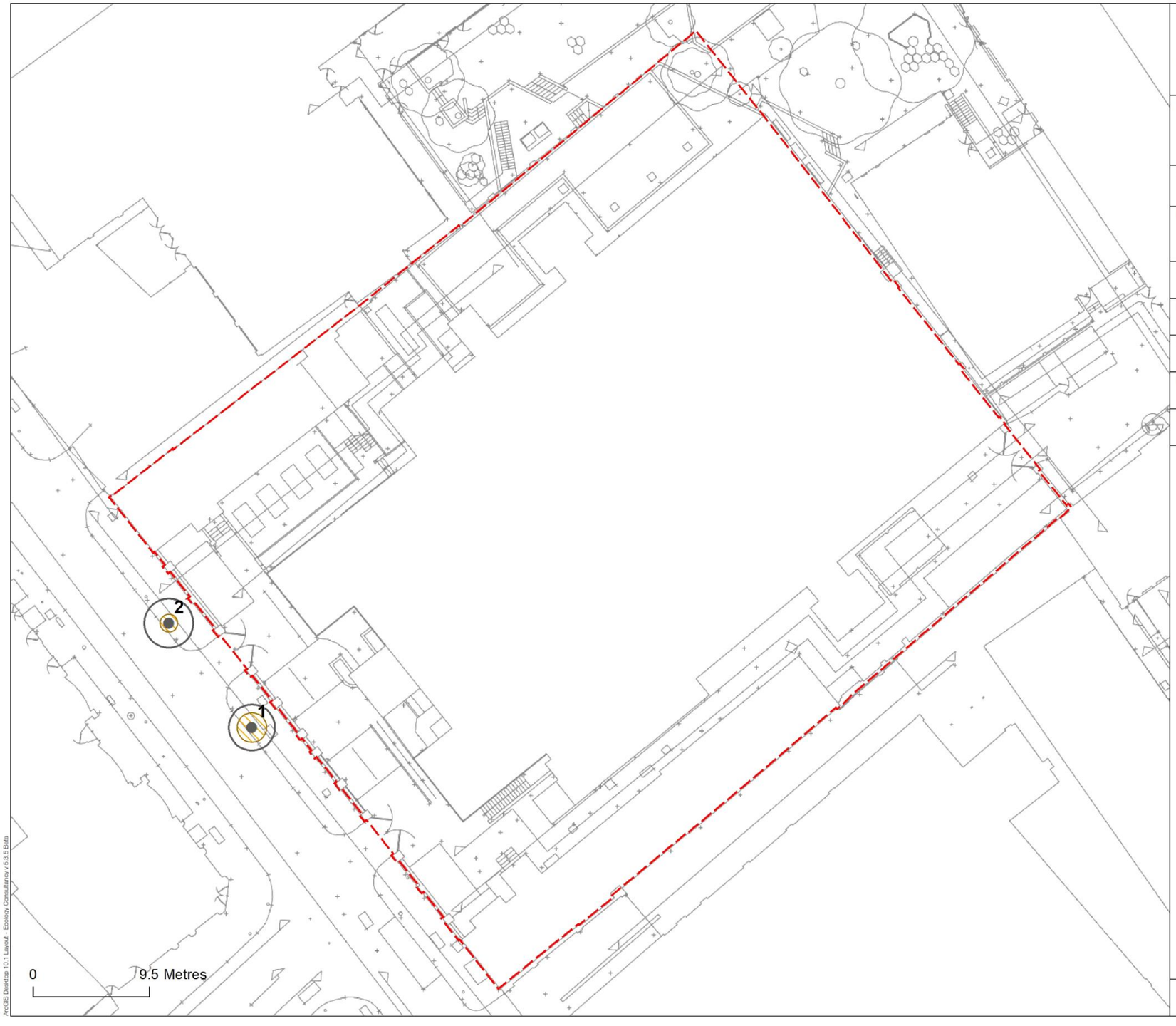
TREES TO BE CONSIDERED FOR RETENTION				
Category & Identification	**1 Mainly arboricultural values**	**2 Mainly landscape values**	**3 Mainly cultural values including conservation**	**Identification on plan**
Category A Trees of High Quality with an estimated remaining life expectancy of at least 40 years	Trees that are a particularly good example of their species, especially if rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features e.g. the dominant and/or principal trees in an avenue)	Tree groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Tree groups or woodlands of significant conservation historical , commemorative or other value (e.g. veteran trees or wood pasture)	GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	Trees that might be included in the high category but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage).	Trees present in numbers, usually as groups or woodlands such that they attract a higher collective rating than they might as individuals : or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees with material conservation or other cultural benefits.	BLUE
Category C Trees of a low quality with an estimated remaining life expectancy of at least 10	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	Trees present in groups or woodlands but without this conferring on them significantly greater landscape value and/or	Trees with no material conservation or other cultural benefits.	GREY

TREES TO BE CONSIDERED FOR RETENTION				
Category & Identification	**1 Mainly arboricultural values**	**2 Mainly landscape values**	**3 Mainly cultural values including conservation**	**Identification on plan**
years or young trees with a stem diameter below 150mm		trees offering low or only temporary/transient landscape benefits.		

Table 3: Key Schedule of Trees

Column Heading	Explanation
Tree No	Sequential number corresponding to number on plan.
Species	English names.
Ht.	Height in metres.
S	Number of main stems.
St. 1.5 (Stem Diameter)	Stem diameter when measured in accordance with Annex C of BS 5837:2012.
NSEW	Crown radius in metres to cardinal points of the compass.
Cr. Cl. (Crown Clearance)	Height in metres between the ground and underside of canopy.
Ls.	Life stage definitions. Y= Young. SM = Semi-mature. EM = Early mature. M = Mature. OM = Over mature.
SC	Brief description of structural condition.
PC	Brief description of physiological condition.
Preliminary Advice	Preliminary tree works advice and recommendations.
LE	Estimated remaining useful life contribution in years. <10, 10+, 20+ and 40+ yr.
Cat. (Category)	Categorisation grading in accordance with BS 5837 2012. Trees suitable for retention: - Category A trees of high quality and amenity value. Category B trees of moderate quality and amenity value. Category C trees of low quality or amenity value. British Standards BS 5837:2012 recommends that these categories may be further broken down into sub-categories A1 A2 A3 pertaining to Arboricultural, Landscape or Cultural values respectively.
RPA m^2	Root Protection Area (RPA). Indicative area around a tree measured in m^2 and calculated in accordance with Annex C of BS 5837:2012 deemed to contain sufficient rooting volume to maintain the viability of a tree and where the protection of roots and soil structure is treated as a priority.
RPA *r*	Root Protection Area (RPA) radius calculation centred on the base of the tree and calculated in accordance with Annex C of BS 5837:2012

Appendix 2: Tree Constraints Plan



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Job title
Middlesex Hospital Annexe
TEC Job no. ET4624

Client
Llewellyn Davies

Drawing title
TREE CONSTRAINTS PLAN

Section:	Scale (at A3)
N/A	1:300

Date of survey: 19/04/2018

Surveyor: James Potts

Drawn	Checked
JD	MC

Approved	Date
JP	04/05/2018

KEY

- Site boundary
- Crown spread of category B - Trees with moderate quality and value
- Crown spread of category C - Trees with low quality and value
- Root Protection Area (RPA)

N

This plan is provided solely for the purpose of supporting the description of the ecological features of the site as contained in the accompanying report

Appendix 3: Tree Retention and Removal Plan

The Ecology Consultancy

Job title
Middlesex Hospital Annexe
TEC Job no. ET4624

Client
Llewellyn Davies

Drawing title
TREE RETENTION AND REMOVAL PLAN

Section:	Scale (at A3)
N/A	1:300

Date of survey: 19/04/2018

Surveyor: James Potts

Drawn	Checked
JD	MC

Approved	Date
JP	04/05/2018

KEY

- Site boundary
- Crown spread of category B - Trees with moderate quality and value
- Crown spread of category C - Trees with low quality and value
- Root Protection Area (RPA)

N

This plan is provided solely for the purpose of supporting the description of the ecological features of the site as contained in the accompanying report

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Appendix 4: Glossary of Terms

Glossary of Terms

Term	Explanation
Arboricultural Impact Assessment (AIA)	Evaluation of direct and indirect effects of a proposed design and/or construction.
Arboricultural Method Statement (AMS)	Methodology for the implementation of any aspect of development that is in the root protection area or has the potential to result in the loss of or damage to a tree to be retained.
Branch structure	Qualitative description of formation of main framework of limbs and branches.
Canopy face	Orientation of canopy relative to cardinal points of the compass
Canopy radius	A measurement taken from the centre of a tree to the furthest radial extension of tree canopy relative to the cardinal points of the compass.
Competent Person	Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.
Conservation Area	Local Planning Authority special designation generally prohibiting tree works without 6 weeks prior written notification.
Construction Exclusion Zone (CEZ)	Area based upon the calculated root protection area prohibiting access.
Cavity	Open and exposed aperture where wood tissue has internally degraded.
Constraints check	Formal search of local authority records to determine legal and statutory constraints on tree works.
Crown lifting	Removal of lower branches to achieve a stated vertical clearance above ground level or other surface.
Crown reduction	Pruning of a trees canopy in both height and width.
Decay	Deterioration and breakdown of tree wood fibres resulting in structural and/or physiological dysfunction of a tree.
Dieback	Continual decline and death of wood tissue including twigs and branches.
Failure	Description of structural failure or wood fibres including fracture of branches, limbs and main stems.
Fork	Area or point of union between one or more limbs or branches.
Hazard Risk Assessment	Qualitative and quantitative appraisal of the potential for tree failure and the possible risk of harm or damage to persons or property.
Local Planning Authority	Body responsible for the administration of Statutory duties relating to Development Management.
Multi-stem	A single tree formed from 2 or more codominant main stems
Occlusion	Wood development enclosing an extant wound or pruning cut.
Pruning	The targeted removal of branches or limbs using saws or other tools.
Physiological Condition	Observation relating to a trees physiology for example vigour, leaf area, growth rate, the presence of pests or disease.

Glossary of Terms

Term	Explanation
Root Protection Area	Root Protection Area (RPA). Indicative area around a tree deemed to contain sufficient rooting volume to maintain the viability of a tree.
Shelter belt	A wind break normally made up of one or more trees planted in such a way to provide cover from the wind.
Structural Condition	Observation relating to a trees structural integrity and the presence of any physical defects.
Suppressed	Where a trees development has been influenced or effected by the presence of competing vegetation.
Tree Constraints Plan	A scaled plan indicating above and below ground constraints relating to the protection of trees
Tree Preservation Order	A legal order made by the local planning authority protecting specific trees in the interests of amenity.
Visual Tree Assessment (VTA)	A method of assessment based upon the research developed to recognise dynamic responses of a tree to its surroundings.
'V' Shaped Branch Union	The union point between two branches that have grown at a tight angle, forming the 'V' shape. This structure is inherently weaker than the 'U' shaped union.
'U' Shaped Branch Union	The union point between two branches that have grown at a wider angle, forming the 'U' shape. This structure is considered to be the strongest and most optimised shape that a union can form.

Appendix 5: Photographs

Photograph 1

View looking north towards field maples T1 and T2

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London - Tempus Wharf, 33a Bermondsey Wall West, London, SE16 4TQ
T. 020 7378 1914 **W.** www.ecologyconsultancy.co.uk **E.** enquiries@ecologyconsultancy.co.uk

- **Sussex -** The Old Dairy, Barcombe Mills Road, Lewes, East Sussex BN8 5FF **T.** 01273 813739
- **East Anglia -** Thorpe House, 79 Thorpe Road, Norwich NR1 1UA **T.** 01603 628408
- **Midlands -** 9 The Mews, Trent Park, Eastern Avenue, Lichfield WS13 6RN **T.** 01543 728971
- **North -** Trinity Walk, Unit G37b, Market Walk, Wakefield, West Yorkshire WF1 1QR **T.** 01924 683558
- **Scotland -** 3 Coates Place, Edinburgh Scotland EH3 7AA **T.** 0131 225 8610