

Trees and Construction

BS5837:2012 Tree Survey, Arboricultural Impact Assessment & Method Statement

Site: Dalton Ellis Hall External Lighting
(University of Manchester)

Ref: 13986.23 / A2_AIA_Rev.B

Client: University of Manchester



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- September 2024 -

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Revision	Description	Date
/	/	/

1. INTRODUCTION

- 1.1 **Instruction:** This advice has been prepared for the University of Manchester (hereafter; client) and is in respect of the tree related considerations at Dalton Ellis Hall & Ewings Buidling, Manchester University (hereafter; site).

As the site is subject to ongoing improvements, the advice herein is produced in accordance with the British Standard 5837 : 2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*' (hereafter; BS5837).

- 1.2 **BS5837:** The scope of BS5837 is to provide guidance on how trees and other vegetation can be integrated into construction and development design schemes. The overall aim is to ensure the protection of amenity by trees which are appropriate for retention.
- 1.3 **Scope of this advice:** This advice has been produced in accordance with BS5837 and is intended to demonstrate the site's realistic arboricultural constraints and assist with the design considerations. The objective is to systematically assess and provide suitable recommendations regarding the proposal's potential impact on trees and vice versa.
- 1.4 Following instruction the consultant surveyed the site in May 2023 where a site walkover and BS5837 tree survey were carried out; all trees on site and around the application boundary were surveyed from ground level and plotted as either an individual or a tree group.
- 1.5 This advice is subject to caveat at Appendix I, outlines relevant terms and definitions at Appendix II and constitutes the findings of the preliminary site assessment and associated arboricultural recommendations.
- 1.6 The survey data and site observations use the supplied topographical survey to illustrate the surveyed trees in plan format as a 'Tree Constraints Plan' (hereafter; TCP).

The TCP was supplied with baseline arboricultural advice and has an overlay of the proposed scheme to enable review. The TCP informs this assessment and is used as a base layer for the appended 'Tree Protection Plan' (hereafter; TPP); the TCP, tree survey data table and TPP are at Appendix III.

2. SITE INFORMATION & TREE ASSESSMENT

- 2.1 The site currently comprises in use university buildings with associated walkways and amenity areas. The surveyed site section consists of a section of the exiting access.
- 2.2 **Proposal:** It is understood that a proposed scheme involves the installation of external lighting at site (see; TCP).
- 2.3 The site requires consideration from an arboricultural perspective due to the presence of trees on and around the site; these trees are deemed to be within impacting distance of the existing property and potential construction area.
- 2.4 The trees -
- 2.4.1 The tree survey and assessment resulted in the BS5837 quality/retention categories of 'A - high', 'B - moderate' and 'C - low' being attributed to trees/tree groups.
- 2.4.2 The BS5837 tree survey is a means of objective assessment and reflects the trees' condition, quality contribution, remaining life expectancy and spatial considerations (stem, crown and roots). On this basis and in order to consider the trees' accurate constraints, the survey data has the crown extents for north, south, east west, the stem diameter measurement, and the calculated root protection areas (hereafter; RPAs). Hereafter, the trees are therefore reviewed and considered on their own merits and in line with the guidance of BS5837.

3. SCHEME / IMPLICATIONS ASSESSMENT

- 3.1 For the purpose of this assessment, the proposed site plan is used as a basis for consideration. This takes account of anticipated tree removals, tree protection options and potential alterations to account for arboricultural features; as per s.1.6 and s.2.2 herein, the TCP shows the '*proposed site plan*' as an overlay for review.
- 3.2 The proposed new lighting columns encroach the crown of the T165, T181, T184, T186, T188, T195, T196 and T208. These will need to be pruned to provide suitable ground to crown clearance and lateral clearance i.e. 6-8m ground to crown clearance and 1.5-2m lateral clearance to the proposed columns. For T165, T181, T184, T186, T195, T196 and T208, the pruning required is minor to achieve the suitable ground to crown clearance or at the outer extents of the crown.
- 3.3 The proposed new lighting column footings encroach the RPAs of T181, T184, T185, T186, T188, T193, T196, T197, T202, T205, T207 and T208. This will require sensitive ground works to minimise the ground and RPA impact i.e. manual excavations under arboricultural supervision, retain large roots (>25mm diameter roots) and large clumps of smaller roots and footing to be polythene lined to prevent soil contamination.
- 3.4 Further to the above, the following tree works are required prior to site works.

TREE WORK SUMMARY

NUMBER	TREE REMOVALS / PRUNING WORKS	
T165, T181, T184, T186, T188, T195, T196, T208	Prune	Prune to provide 6-8m ground to crown clearance and /or lateral branch reduction to provide 1.5 - 2.5m crown clearance to the proposed new lighting column.

- 3.5 Following the above considerations, the trees are clear of the active construction area. However, the installation of temporary tree protection will be required to ensure no impact on trees from access, vehicles and material storage.
- 3.6 Further to the above review and in consideration for the need to protect retained trees, the following section contains said details as an Arboricultural Method Statement (Application Stage).

4. METHOD STATEMENT (Application Stage)

4.1 Arboricultural Construction Restrictions

- 4.1.1 The following restrictions are considered relevant for tree protection purposes which are illustrated on the appended Tree Protection Plan:
- a) Tree works; are to be completed prior to any site works: additional tree works are not permitted unless agreed in writing by the council.
 - b) Material Handling; no chemicals/materials are to be transported/stored/used/mixed within exposed grounds on site; all chemical / cement storage, transport or use will be pre-prepared with impermeable liner and detail within a Construction Management Plan.
 - c) Site Management; no fires are to be lit and no machinery, plant or vehicles are to be washed down within 10m of a tree's canopy, within a RPA and the RPA may not be breached, i.e. no mechanical digging or scraping is permitted within a RPA/CEZ.

4.2 Arboricultural Site Monitoring / Supervision

- 4.2.1 The site should be checked by a qualified arboriculturist throughout the construction processes to ensure the tree protection measures are adhered to, thus -
- (a) pre-commencement to confirm tree works; and
 - (b) during excavations for lighting column footings.

4.3 Ground Protection

- 4.3.1 In this instance the ground within RPAs is to be protected by retained hard surfaces.

4.4 Sensitive Ground Works within RPAs

- 4.4.1 The proposed lighting column footings are within retained trees' RPAs, and will require sensitive installation methods to minimise ground and RPA impact.
- 4.4.2 Excavations within a RPA or designated CEZ (the area enclosed by PBF) must:
- Be undertaken under Arboricultural supervision; and
 - Use sensitive excavation techniques to protect the tree roots and their existing growing conditions i.e. manual excavations, retain large roots (>25mm dia.) and large clumps of smaller roots.

4.5 Underground utilities

4.5.1 Underground utilities are to be installed as per a dedicated plan and be clear of RPA by design. Otherwise, and if RPAs cannot be avoided, the following restrictions are recommended for underground utilities within RPAs:

- Any necessary excavations to be undertaken sensitively using either a no-dig method (e.g. Air-Spade) and/or under arboricultural supervision;
- Any exposed roots shall be packed with a clean damp sand (not builders sand) and wrapped in hessian sacking to protect them;
- Small roots which are identified (those less than 25mm diameter) may be carefully pruned back with a clean sharp tree saw; and
- Larger roots which are identified (those greater than 25mm in diameter) are to be retained and protected as they may be necessary for a tree's health and stability.

4.6 Landscape Detail

4.6.1 The finer details of the site landscaping proposals are to be illustrated on a landscape plan. This is to include the exact proposals for hard and soft landscaping together with the details for any new trees' planting locations, species and stock selection, installation and maintenance; this is to be undertaken by the appointed landscape architect who will have the full support of the arboricultural consultant where required.

4.7 Report Handling

4.7.1 This report is released to the client and architect to be distributed at their discretion and the consultant is available for queries relating to this report and/or trees.

4.7.2 The proposed scheme is reviewed in respect of the arboricultural constraints and is considered to be achievable in line with the BS5837 guidance. The recommendations herein may be approved by the council as a means of authorised tree works and tree protection.

4.7.3 This AMS and the TPP may be approved by the council in support of the application, subject to a conditioned final AMS and TPP as a means of authorised tree protection measures; all site personnel will have access to a copy and the tree work and protection details are to be inspected as per s.4.2 for '*Arboricultural Monitoring / Supervision*'.

This concludes our advice.

Caveat

Any and all information supplied to Indigo Surveys Ltd by/on behalf of the client is assumed to be accurate unless otherwise informed. | This advice is limited to the observations made on the date of inspection as detailed herein and any deletion, editing or alteration will result in the advice being null and void in its entirety. | This advice in its entirety may be deemed null and void if remedial works are undertaken on any area of the site, on or after the date of the survey. | No liability is assumed by the author or by Indigo Surveys Ltd for any misuse, misinterpretation or misrepresentation of this advice. | This advice is not valid in adverse or unpredictable weather conditions or for any failure due to 'force majeure' or unpredictable events. | No responsibility is assumed either by the author of this advice or by Indigo Surveys Ltd for any legal matters that may arise as a consequence. | Neither the author nor Indigo Surveys Ltd will be required to attend court or give testimony as part of this agreement. | The responsibility for any works undertaken on the basis of the recommendations of this advice does not form part of this agreement.

Appendix II

Terms and Definitions

“Arboriculturist” - person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.

“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.

“Topographical survey” - an accurately measured land survey undertaken to show all relevant existing site features. *A method of carrying out topographical surveys is given in RICS specification* Surveys of land buildings and utility services at scales of 1:500 and larger.

“BS5837 Tree survey” - should be undertaken by an arboriculturist to record information about the trees on or adjacent to a site. The results of the tree survey, including material constraints arising from existing trees that merit retention, should be used (along with any other relevant baseline data) to inform feasibility studies and design options. For this reason, the tree survey should be completed and made available to designers prior to and/or independently of any specific proposals for development.

“Tree categorisation method” - trees should be categorised in accordance with the BS5837 cascade chart by an arboriculturist. This is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.

“Root protection area (RPA)” - layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure is treated as a priority, shown as an arboricultural constraint in m². The radius is calculated using the BS5837 calculation method. An arboriculturist may change the shape of an RPA but not reduce its area.

“Arboricultural implications assessment” - a study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

“Arboricultural method statement” - methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.

“Tree protection plan” - a scale drawing, informed by descriptive text where necessary, based upon the finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures.

Appendix III

Data Table:	As appended (BS5837 Tree Survey Key & Table)
Tree Constraints Plans:	As appended (13986.23.EL/TCP/01_Rev.B)
Tree Protection Plans:	As appended (13986.23.EL/TPP/01_Rev.B)

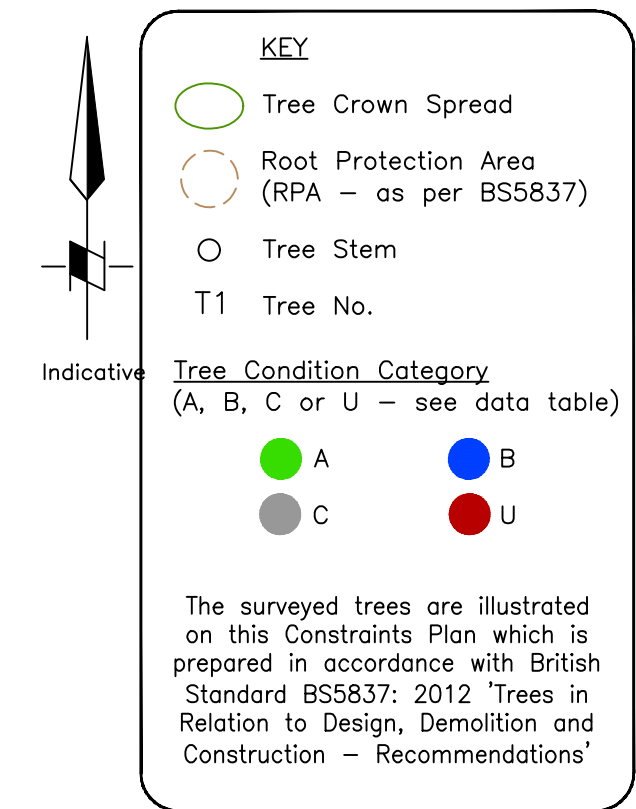
TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'																	
CLIENT: University of Manchester			PROJECT REF: 13986.EL			SITE: Dalton Ellis External Lighting Manchester University											
CONTACT: /			SURVEY DATE: April 2023			ARB CONSULTANT: Rod Benzies NDip Arb & Andy Turnbull FDS <i>c</i> Marbor <i>A</i>											
TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W				STEM (in mm)	RPA (in m)	CLEARANCE (in m)	1st BRANCH (in m)	VITALITY	LIFE EXPEC.	NOTES	BS CAT.		MANAGEMENT
T165	Italian Alder; <i>Alnus cordata</i>	M	15	6	5	3	5	480	5.8	3.5	3	Normal	20-40	Crown asymmetry / growth influence. In proximity to structure.	C	2	
T166	Pear; <i>Pyrus</i> , Rosaceae	EM	7	1	1	1	1	160	1.9	3.5	3	Normal	10-20	Upright growth habit.	C	2	
T167	Tree removed since previous survey																
T168	Ash; <i>Fraxinus</i> , Oleaceae	M	15	4	3	5	5	420	5.0	3.5	3	Normal	20-40	Co-dominant branch structure from below 4m. Unreadable tag. Old pruning wounds on the stem.	B	2	Monitor tree's condition.
T169	Sycamore; <i>Acer</i> , Aceraceae	M	16	6	3	5	5	520	6.2	4	4	Normal	20-40	Multiple stems.	B	2	
T170	Tree removed since previous survey																
T171	Lime; <i>Tilia</i> , Tiliaceae	M	16	3	4	5	5	520	6.2	4	4	Normal	20-40	Crown asymmetry / growth influence.	C	2	Monitor tree's condition.
T172	Cherry; <i>Prunus</i> , Rosaceae	EM	7	3	5	2	2	250	3.0	4	4	Normal	20-40	Crown asymmetry / growth influence. In proximity to structure.	C	2	Monitor tree's condition.
T173	Beech; <i>Fagus</i> , Fagaceae	Y	5	1	3	1	1	150	1.8	2	2	Normal	20-40	Upright growth habit.	C	2	
T174	Italian Alder; <i>Alnus cordata</i>	Y	16	1	3	1	1	170	2.0	2	2	Normal	20-40	Co-dominant branch structure from below 4m. Unreadable tag. Old pruning wounds on the stem.	C	2	Monitor tree's condition.
T175	Italian Alder; <i>Alnus cordata</i>	Y	16	1	3	1	1	170	2.0	2	2	Normal	20-40	Co-dominant branch structure from below 4m. Unreadable tag. Old pruning wounds on the stem.	C	2	Monitor tree's condition.
T176	Beech; <i>Fagus</i> , Fagaceae	Y	3	1	1	1	1	100	1.2	2	2	Normal	20-40	Multiple stems.	C	2	
T177	Beech; <i>Fagus</i> , Fagaceae	Y	3	1	1	1	1	100	1.2	2	2	Normal	20-40	Multiple stems. Leaning South. Co-dominant branch structure. In proximity to structure.	C	2	Monitor tree's condition.
T178	Lime; <i>Tilia</i> , Tiliaceae	M	12	3	4	2	4	300	3.6	2	2	Fair	20-40	Crown asymmetry / growth influence.	C	2	Monitor tree's condition.
T179	Beech; <i>Fagus</i> , Fagaceae	LM	19	0	8	8	7	760	9.1	2	2	Normal	20-40	Crown asymmetry / growth influence. In proximity to structure.	B	2	
T180	Lime; <i>Tilia</i> , Tiliaceae	M	12	2	8	3	3	420	5.0	4	4	Fair	10-20	Upright growth habit.	C	2	
T181	Sycamore; <i>Acer</i> , Aceraceae	LM	17	6	5	6	10	690	8.3	4	4	Fair	10-20	Co-dominant branch structure from below 4m. Unreadable tag. Old pruning wounds on the stem.	B	2	Monitor tree's condition.
T182	Sycamore; <i>Acer</i> , Aceraceae	EM	15	6	5	4	3	260	3.1	4	4	Fair	20-40	Co-dominant branch structure from below 4m. Unreadable tag. Old pruning wounds on the stem.	C	2	Monitor tree's condition.
T183	Tree removed since previous survey																
T184	Sycamore; <i>Acer</i> , Aceraceae	EM	13	4	3	2	3	310	3.7	4	4	Fair	10-20	Slightly suppressed tree with sparse crown.	C	2	Monitor tree's condition.
T185	Lime; <i>Tilia</i> , Tiliaceae	EM	10	2	2	2	2	160	1.9	4	4	Normal	10-20	Crown asymmetry / growth influence.	C	2	
T186	Lime; <i>Tilia</i> , Tiliaceae	M	15	4	4	5	5	470	5.6	4	4	Normal	20-40	Crown asymmetry / growth influence. In proximity to structure.	B	2	
T187	Cherry; <i>Prunus</i> , Rosaceae	EM	8	2	3	2	2	170	2.0	4	4	Normal	20-40	Upright growth habit.	C	2	
T188	Horse Chestnut; <i>Aesculus</i> , Aesculaceae	LM	18	4	8	7	7	750	9.0	4	4	Normal	10-20	Co-dominant branch structure from below 4m. Unreadable tag. Old pruning wounds on the stem.	C	2	Maintenance required and monitor tree's condition.
T189	Tree removed since previous survey																
T190	Lime; <i>Tilia</i> , Tiliaceae	Y	7	2	2	2	2	160	1.9	2.5	2.5	Normal	20-40	Multiple stems.	C	2	
T191	Sycamore; <i>Acer</i> , Aceraceae	EM	10	3	3	4	3	290	3.5	2.5	2.5	Normal	20-40	Multiple stems. Leaning South. Co-dominant branch structure. In proximity to structure.	C	2	
T192	Holly; <i>Ilex</i> , Aquifoliaceae	Y	4	2	2	2	2	160	1.9	2.5	2.5	Normal	20-40	Crown asymmetry / growth influence.	C	2	
T193	Lime; <i>Tilia</i> , Tiliaceae	M	16	5	4	4	4	550	6.6	4	4	Normal	20-40	Crown asymmetry / growth influence. In proximity to structure.	B	2	Monitor and maintain epicormic growth rates.
T194	Lime; <i>Tilia</i> , Tiliaceae	M	16	2	3	3	3	300	3.6	4	4	Normal	20-40	Upright growth habit.	B	2	Monitor and maintain epicormic growth rates.
T195	Lime; <i>Tilia</i> , Tiliaceae	M	16	4	3	3	5	500	6.0	4	4	Normal	20-40	Co-dominant branch structure from below 4m. Unreadable tag. Old pruning wounds on the stem.	B	2	Monitor and maintain epicormic growth rates.

TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'																	
CLIENT: University of Manchester						PROJECT REF: 13986.EL						SITE: Dalton Ellis External Lighting Manchester University					
CONTACT: /						SURVEY DATE: April 2023						ARB CONSULTANT: Rod Benzies NDip Arb & Andy Turnbull FDS Sc ArborA					
TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W				STEM (in mm)	RPA (in m)	CLEARANCE (in m)	1st BRANCH (in m)	VITALITY	LIFE EXPEC.	NOTES	BS CAT.		MANAGEMENT
T196	Sycamore; Acer, Aceraceae	M	16	4	4	5	6	510	6.1	5	5	Fair	10-20	Co-dominant branch structure from below 4m. Unreadable tag. Old pruning wounds on the stem.	C	2	Maintenance required and monitor tree's condition.
T197	Beech; Fagus, Fagaceae	M	14	3	3	3	3	560	6.7	5	5	Normal	10-20	Multiple stems.	C	2	Monitor tree's condition.
T198	Tree removed since previous survey																
T199	Norway Maple; Acer platanoides	M	14	4	4	4	4	270	3.2	5	5	Normal	20-40	Close to boundary wall.	C	2	
T200	Oak; Quercus, Fagaceae	EM	10	3	3	3	3	160	1.9	4	5	Fair	10-20	Close to boundary wall.	C	2	Monitor tree's condition.
T201	Oak; Quercus, Fagaceae	SM	8	3	3	3	3	180	2.2	3	3	Normal	20-40	Current young form.	C	2	
T202	Beech; Fagus sylvatica	SM	8	3	3	3	3	180	2.2	3	3	Normal	20-40	Current young form.	C	2	
T203	Lime; Tilia, Tiliaceae	M	18	5	7	5	6	590	7.1	4	4	Normal	20-40	Close to wall, previously crown lifted.	B	2	Monitor tree's condition.
T204	Norway Maple; Acer platanoides	SM	8	2	2	2	2	170	2.0	4	4	Normal	20-40	Close to wall.	B	2	Monitor tree's condition.
T205	Beech; Fagus, Fagaceae	LM	16	8	4	4	8	620	7.4	5	5	Normal	20-40	Cavity in main stem (inert). Co-dominant branch structure	B	2	Monitor tree's condition.
T206	False Acacia; Robinia pseudoacacia	M	18	3	3	3	3	540	6.5	5	5	Normal	20-40	Close to wall, previously crown lifted.	B	2	Monitor tree's condition.
T207	False Acacia; Robinia pseudoacacia	M	18	3	3	3	3	540	6.5	5	5	Normal	10-20	Close to wall, previously crown lifted. Crown dieback noted, dead leader.	C	2	Monitor tree's condition.
T208	Turkey Oak; Quercus cerris	LM	20	10	8	10	12	880	10.6	6	5	Normal	20-40	Large tree near boundary wall, deadwood in crown.	A	1	Monitor tree's condition.
T209	Lime; Tilia, Tiliaceae	M	18	4	4	4	4	440	5.3	5	5	Normal	20-40	Close to wall, previously crown lifted.	B	2	

TREE SURVEY 'KEY' - BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'

FIELD KEY:

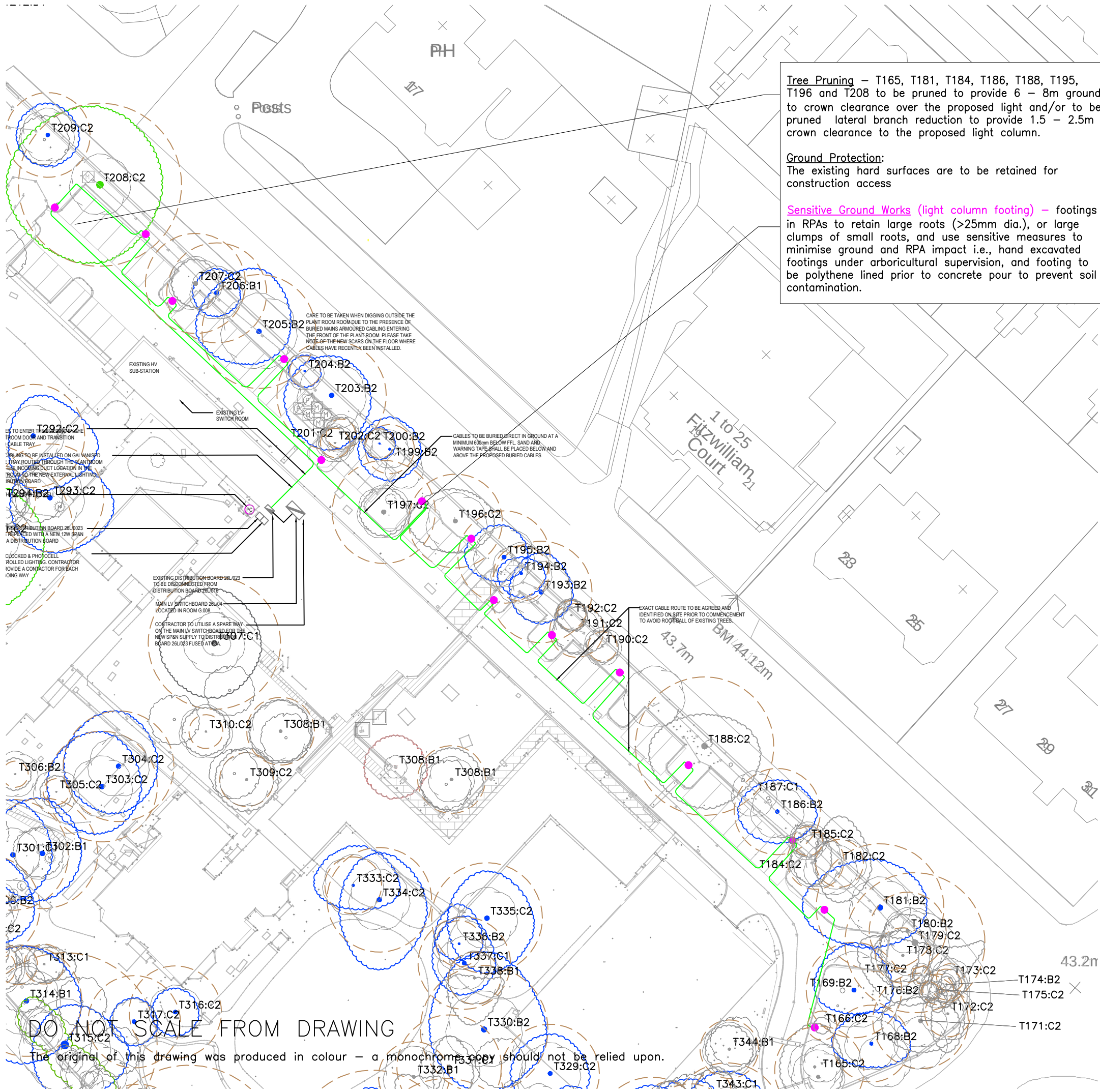
TPO/CA	-	On client request: presence of Tree Preservation Orders (TPO) / site location within a Conservation Area (CA) & date checked;
TREE REF. #	-	Tree reference number: tag or plan number (T - individual tree, G - group of trees/shrubs, H - hedge);
SPECIES	-	Genus, species and/or common name;
AGE	-	Age classification (NP - new planting, Y - young, SM - semi mature, EM - early mature, M - mature, LM - late mature, OM - over mature);
HEIGHT (in m)	-	Approximate height of tree in metres;
CANOPY (in m) N - S - E - W	-	Approximate branch spread in metres of the four principal compass points;
STEM (in mm)	-	Stem diameter in millimetres: measured in accordance with s.4.6 of BS5837;
RPA (in m)	-	Circle radius of the Root Protection Area: calculated using the stem diameter (single/multiple stem variant, as outlined within BS5837);
CLEARANCE (in m)	-	Crown clearance in metres above the adjacent ground level;
1ST BRANCH (in m)	-	Clearance in metres to first significant branch and direction of growth (where relevant);
VITALITY	-	Physiological condition typically gauged from canopy cover and annual extension growth (good, fair, poor, dead);
ESTIMATED REMAINING CONTRIBUTION	-	Approximate number of years the tree will continue to make a contribution without the need for oppressive arboricultural intervention, categorised in years as <10, 10-20, 20-40 and >40;
NOTES	-	Structural and physiological condition observations;
BS CAT.	-	BS5837 tree quality assessment category: resulting from structural/physiological condition and remaining contribution (approximate Standard retention category U : in such a condition that any existing value would be lost within 10 years; Standard retention category A : high quality and value, in such a condition as to be able to make substantial contribution of 40+ years; Standard retention category B : moderate quality and value, in such a condition as to make a significant contribution of 20+ years; Standard retention category C : low quality and value, currently in adequate condition to remain until new planting could be established Standard retention sub-category, mainly due to: 1 - Arboricultural values, 2 - Landscape values, 3 - Cultural values, including conservation;
MANAGEMENT	-	Preliminary management recommendations (as appropriate);
* * *	-	Within the survey schedule denotes an estimate



B	Revised scheme overlay	TB	AT	24/09/24
A	Revised scheme overlay	TB	AT	23/02/24
/	Proposed scheme overlay	TB	AT	07/07/23
REV.	DESCRIPTION	DWN	CHK'D	DATE

CLIENT University of Manchester External Lighting						
PROJECT 13986.23.EL Victoria Campus (Manchester University)						
TITLE Tree Constraints Plan						
DWN	DATE	CHK'D	DATE	APP'D	DATE	SCALE
TB	5/5/2023	AT	5/5/2023			1:500
 Indigo Surveys Ltd						
(Mail) Second Floor, 1 Hunter's Walk, Canal Street, Chester. CH1 4EB Telephone: 0333 123 7080 www.indigosurveys.co.uk						
Drawing Number						A3
13986.22.EL/TCP/01						REV. B

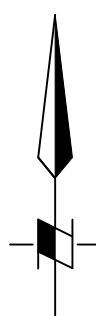
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Tree Pruning – T165, T181, T184, T186, T188, T195, T196 and T208 to be pruned to provide 6 – 8m ground to crown clearance over the proposed light and/or to be pruned lateral branch reduction to provide 1.5 – 2.5m crown clearance to the proposed light column.

Ground Protection:
The existing hard surfaces are to be retained for construction access

Sensitive Ground Works (light column footing) – footings in RPAs to retain large roots (>25mm dia.), or large clumps of small roots, and use sensitive measures to minimise ground and RPA impact i.e., hand excavated footings under arboricultural supervision, and footing to be polythene lined prior to concrete pour to prevent soil contamination.



Indicative

KEY

- Tree Crown Spread
- Root Protection Area (RPA – as per BS5837)
- Tree Stem
- T1 Tree No.

Tree Condition Category
(A, B, C or U – see data table)

A	B
C	U

The surveyed trees are illustrated on this Constraints Plan which is prepared in accordance with British Standard BS5837: 2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'

B	Revised scheme overlay	TB	AT	24/09/24
A	Uses TCP_Rev.A as base layer	TB	AT	26/02/24
/	Proposed scheme overlay	TB	AT	07/07/23
REV.	DESCRIPTION	DWN	CHK'D	DATE

CLIENT

University of Manchester
External Lighting

PROJECT

13986.23.EL
Victoria Campus
(Manchester University)

TITLE

Tree Protection Plan

DWN	DATE	CHK'D	DATE	APP'D	DATE	SCALE
TB	5/5/2023	AT	5/5/2023			1:500



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