

Trees and Construction

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

Site: Land at Roundwood Road, Wythenshaw,
Manchester, M22 4SB;

Ref: 19196/A2_AIA/AMS

Client: ISG plc



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- May 2020 -

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Revision	Description	Date
/	BS5837 tree survey & baseline advice	10/2019
/A2_AIA	Formal scheme review & report release	17/02/2020

1. INTRODUCTION

- 1.1 **Instruction:** This advice has been prepared for LSG (hereafter; client) and is in respect of the tree related planning considerations at the Land at Roundwood Road Manchester M22 4SB (hereafter; site).

As the proposal relates to development works at site, 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 process. 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 on the 30th Sept 2019 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. A further inspection of the trees within G6 and its dripline using GPs positioning equipment on the 26th May 2020. This added trees T32 to T52
- 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 and the tree survey data table are at Appendix III. The TCP now has an overlay of the proposed scheme to enable review, to inform this assessment and is used as a base layer for the '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 was occupied by an educational establishment which has been demolished leaving little evidence of structures or hard standing. The site now resembles an open field. There are residential properties in the vicinity in a sub urban setting. Mature woodland is to the west of the site.

2.2 **Proposal:** At the time of writing the initial tree survey advice, it was understood that a proposed scheme involved the construction of a new education building on site. This was to include a new designated school access off Roundwood Road, parking, close surrounding amenity / play space, pedestrian connectivity to sports pitches were proposed.

This is now confirmed as per the client's proposal for a new detached education building inset to the site. This concentrates on the previous build location, and follows a similar footprint and orientation, utilising the front of site for the new access, parking, side amenity / play space. As per provided plan ref: RWD-EWA-ZZ-XX-DR-L-79001-Landscape Masterplan.

2.3 The site requires consideration from an arboricultural perspective due to the presence of trees on and around the site; these were included on the supplied topographical plans and are either on site and/or are deemed to be within impacting distance of the existing buildings, accesses and/or the potential construction area.

2.4 The trees -

2.4.1 The tree survey and assessment resulted in the BS5837 quality/retention categories of 'A' - Good, 'B' - moderate' and 'C' - low' being attributed to trees/tree groups; it is also worth noting that the BS5837 circular RPAs are considered to halt at the extents of existing property.

2.4.2 There are established features of the most dominant of which are the 'B' class trees to the western boundary and the eastern boundary. The area of offsite woodland to the north and east is also a dominant feature. Other on site trees on site are 'C' class due to their condition or that they are self-seeded pioneer species only recently established.

2.4.3 No council search/contact has been requested and hence confirmation as to whether any tree is protected by Tree Preservation Order was unavailable at the time of writing this advice- please advise if this detail is at your disposal and/or confirm whether a conservation area and TPO check is to be made on your behalf as part of this advice.

3. FINDINGS & RECOMMENDATIONS

3.1 The following information, as with the prior contents of this report, should be read with the appended tree data table and tree constraints plan (Scheme Overlay) (19196/TCP/01); this information is included here as an objective overview of the arboricultural constraints and considerations, and reflects the basis of the initial tree survey advice.

3.2 The overview it supplemented with comments in review of the proposed scheme where relevant as 'NOTE', and is followed by the corresponding Arboricultural Method Statement 'considerations' (section 4).

3.3 General Considerations for Tree Retention / Removal

3.3.1 Due to the poor form, decline, structural failure and/or limited safe remaining life expectancy of T12 and T25, these trees are categorised as 'U - poor'. In the context of an education site with existing and maintained high frequency use, the removal of these trees is recommended as a preventative measure.

3.3.2 Following the above in reference to poor quality trees, tree work recommendations are included within the tree survey data table as 'management'. These recommendations are made objectively on the basis of tree risk management, not arising as a result of proposed development or to facilitate a scheme.

3.3.3 The small scale, self seeded growth, scrubby habit, defects, limited amenity or limited remaining life expectancy has resulted in low quality 'C' being attributed to some trees, i.e. T14, T21, T22, T26 etc. Whilst it is considered that these trees should not significantly constraint or guide a scheme, some are suitable for retention for tree maturity, although the limited anticipated remaining life expectancy will factor in deciding retention vs removal and replacement within the scheme, i.e. low vigor of T26.

NOTE.1: *For the new boundary fence arrangement*, the removal of G1, G2, G3, G4, G5, G7 and G10 will be required

The loss of trees of this scale and remaining life will have little impact on the site's canopy cover, and little/no impact on the long term amenity. However, this will require mitigation tree planting. These trees are only considered to require 1 : 1 replacement, as is also considering of the site's high volume of trees and dense boundary canopy cover.

NOTE.2: Thereafter, the remaining 'C' category trees are clear of the scheme will be protected by avoidance, staged works and temporary tree protection site hoarding / barrier fences.

- 3.3.4 Further to the above consideration for individual and collective canopy of 'C' and 'B' category trees, and based on the individual prominence and/or collective contribution of the larger and better quality trees, these trees are categorised as 'A'. Their retention and protection is recommended, which should utilise sensitive measures and designed construction solutions where possible for tree protection, and, proposed tree removals will require a greater scale of nursery stock selection for more instant mitigation.

NOTE.1: *For the new site access*, RE: the street tree 'Lime' (see; TCP scheme overlay) The new proposed site access is clear of T20 and it can successfully be retained by avoidance and protective fencing as per the TPP

- 3.3.5 The proposed building and hard surface treatments are outside of the RPA's of trees within G6 T31 - T52 therefore once the tree protection is in place as per the TPP there should be no restrictions on operations outside of this area. The only operations envisaged are boundary and internal fencing. This is to be carried out by hand in the landscaping phase and only when construction is complete.

3.4 Tree Protection

- 3.4.1 The process of site operations will be an important aspect to confirm by way of a construction layout plan, i.e. showing storage areas, parking, delivery area, access routes etc., all outside of RPAs or with a provision for ground protection.
- 3.4.2 As a basis for tree protection the following points will need to be considered:
- Removal of all agreed trees and any agreed pruning works prior to works commencing by a suitably qualified arboricultural contractor;
 - Induction of construction personnel regarding the exclusion of works (including access and storage) from the retained trees' RPAs;
 - Prior to works commencing, secure temporary barrier fencing to exclude the retained tree's crowns and RPAs from the working site; in location as per the TPP
 - The storage of materials clear of all retained trees and conditions to ensure no contamination/run-off into soils in proximity to trees or on higher ground;
 - For any approved landscape works within RPAs, to follow the approved landscape scheme and subject specification with approved cross sections.

3.5 Tree Works

3.5.1 Based on the above scheme assessment as 'NOTE', the following tree works are considered necessary in conjunction with the proposed new build footprint, access and parking arrangement.

3.5.2 The approved tree works would need to be undertaken prior to any site works commencing. This will ensure that works are undertaken only to those trees approved for removal and/or pruning, and all retained trees will be protected, thus

TREE WORK SUMMARY

NUMBER	TREE REMOVALS / PRUNING WORKS	
T12, T25	Remove	<i>Removal for H&S tree risk management</i> (declining condition, 'U' category trees with limited remaining life), and plant new trees in conjunction with the proposed scheme.
T21 T22	Remove	<i>Removal for new access</i> , replacement / mitigation tree planting to include new tree within school grounds of 'extra-heavy standard' nursery stock.
G1, G2, G3, G4, G5, G7, G10	Remove	<i>Removal for new fencing</i> , replacement / mitigation tree planting to include new trees within school grounds of 'light-heavy standard' nursery stock.
T14	Remove	<i>Removal for new car park</i> , replacement / mitigation tree planting to include new trees within school grounds of 'light-heavy standard' nursery stock.
Retained trees		Protection by placement of fixed Heras panels around the crown / RPA extents to have no access during construction.

3.6 Further to the above, the tree protection methods which are considered necessary and achievable as part of the proposed scheme for the surveyed trees are outlined as the AMS at s.4; these are intended to demonstrate that the proposed scheme is reviewed and considered in line with the recommendations of BS5837.

4. METHOD STATEMENT

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 (hereafter; TPP):

- a) Tree works are to be completed prior to any and all site works: no tree works not specified within this AIA/AMS (or leaning against or attaching of objects to a tree) are permitted unless agreed in writing by the council (subject to standard exemptions).
- b) A site compound is to be set up around the construction extents, thus excluding the surveyed trees as per the TPP.
- c) Following the installation of PBF the fenced off section is to act as a Construction Exclusion Zone (hereafter; CEZ).
- d) No chemicals/materials are to be transported/stored/used/mixed within the CEZ.
- e) No fires are to be lit and no machinery, plant or vehicles are to be washed down within 10m of the tree's canopy or in a CEZ.
- f) During construction processes the RPA/CEZ may not be breached, i.e. no surfacing works, without the prior advice of the consultant and the consent of the council.
- g) No mechanical digging or scraping is permitted within a RPA/CEZ.
- h) Only following construction completion can protective barrier fencing be removed and any remaining soft landscape works undertaken within the CEZ (ground levels to be retained within the CEZ and works undertaken manually with non driven machinery).

4.2 Arboricultural Site Monitoring / Supervision

- 4.2.1 The council will typically request '*a scheme of supervision for the arboricultural protection measures*' which is considered necessary to confirm tree protection and adherence to approved working methods for trees.
- 4.2.2 The appointed site contractor and/or project manager will be provided with this AMS and the TPP and will be briefed as to the prohibited works and tree protection.
- 4.2.3 A record of each site visit will be kept and a summary letter drafted for the client, the site manager and the local authority (to be sent to the client for distribution), thus -
- (1) ***Pre-commencement*** to confirm the approved tree works, site hoarding / tree protection fence alignment and construction restrictions for tree protection;
 - (2) ***1st construction quarter*** through the programme to confirm maintained tree protection, no tree damage and exclusion of RPA access;
 - (4) ***Half way*** through the programme to confirm maintained tree protection, no tree damage and exclusion of RPA access;
 - (5) ***3rd construction quarter*** through the programme to confirm maintained tree protection, no tree damage and exclusion of RPA access;
 - (6) ***After-construction*** to confirm construction completion, protection of surveyed trees, and discuss tree protection requirements with the landscape team; and all fence construction within RPA to be carried out by hand
 - (7) ***Development completion*** after all hard landscape works and tree and shrub planting is complete to sign off the site as having adhere to the AMS.

4.3 Protective Barrier Fencing (PBF) Specification

- 4.3.1 Barrier fencing is to be installed (and signed off by way of arboricultural supervision) prior to any site works, material delivery or construction commencing. It is illustrated on the Tree Protection Plan (TPP) to ease installation and is to remain for the entire duration of construction processes unless otherwise agreed in writing by the council.
- 4.3.2 The PBF is to consist of a series of Heras panels secured in place by driven scaffold posts or a scaffold frame to ensure that the fencing lines are well braced to resist impact and prevent access to the RPAs of retained trees as the CEZ.

4.6 Landscape Detail

- 4.6.1 Illustrative new tree planting and landscaping are shown on the proposed site plan, as supported by a landscape scheme which will need final and approved supplementary details. This will include new tree planting locations, species and nursery selection, planting method and maintenance.
- 4.6.2 Each new tree will be illustrated in a location which suits the ultimate scale of the chosen species. Planting pits are to be properly prepared with adequate drainage and future growth room (as per the planting design within BS8545) thus -
- a) Each planting pit is to be excavated to a sufficient width and depth to accommodate the root-ball, allowing a minimum of 1.0m clearance, with the additional breaking up of the planting pit's sides (not base).
 - b) The tree is to be planted at the same depth as in the nursery (not above the root collar). It will have an irrigation system ($\geq 5\text{cm}$ diameter perforated pipe laid around the root ball 10cm below the surface) and be back-filled with high grade soil and firmed in.
 - c) The tree is to have a non-intrusive and adjustable supportive system installed as a stake or above/underground guy and a bark/wood-chip mulch layer applied around the base of the planted tree to be at least a 2m radius and $< 5\text{cm}$ depth.
 - d) A suitable maintenance program, i.e. additional watering, fertilizing, weed control and mulching, is essential to ensure the tree establishes successfully

4.7 Report Handling

- 4.7.1 This report is produced to demonstrate that the scheme is considered and reviewed in respect of the arboricultural constraints and is achievable in line with the guidance of BS5837. The recommendations herein can be approved by the council as a means of authorised tree protection of which the planning team are to have access to a copy.
- 4.7.2 This report is released to the client and architect to be distributed at their discretion. The consultant is available for any queries relating to this report and/or trees.

This concludes our advice.

Appendix I

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 Plan: (TCP / Scheme Overlay)	As appended (19196/TCP/Scheme Overlay/01)
Tree Protection Plan: (Application Stage)	As appended (19196/TPP/01)

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

CLIENT: ISG

PROJECT REF: 19168

SITE: Land at Roundwood Road, Wythenshaw, Manchester, M22 4SB

CONTACT: /

SURVEY DATE: 30/09/2019 26/05/20

ARB CONSULTANT: Rod Benzie ND Arb BSc Forestry

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
T1	Cherry, Prunus spp	M	12	6	5	5	8	560	6.7	1	3	Norm	20-40	Co-dominant branch structure. included bark in main fork. Crossing branches in crown	B	1	
T2	Pedunculate Oak, Quercus robur	M	12	7	10	10	8	1000	12.0	3	3	Norm	40+	Co-dominant branch structure. included bark in main fork. Crossing branches in crown. Situated within neighbouring property. Restricted view Of Trunk. Restricted assessment Due To undergrowth	A	1	
T3	Lombardy Poplar, Populus lombardii	M	27	3	3	3	3	1000	12.0	2	2	Norm	40+	Situated within neighbouring property. Restricted view Of Trunk. Restricted assessment due to undergrowth	B	2	
T4	Lombardy Poplar, Populus lombardii	M	27	3	3	3	3	500	6.0	2	2	Norm	40+	Situated within neighbouring property. Restricted view Of Trunk. Restricted assessment Due To undergrowth	B	2	
T5	Lombardy Poplar, Populus lombardii	M	27	3	3	3	3	400	4.8	2	2	Norm	20-40	Situated within neighbouring property. Restricted view Of Trunk. Restricted assessment Due To undergrowth. Not on TOPO	B	2	
T6	Lombardy Poplar, Populus lombardii	M	27	3	3	3	3	650	7.8	2	2	Norm	20-40	Situated within neighbouring property. Restricted view Of Trunk. Restricted assessment Due To undergrowth. Not on TOPO	B	2	

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
T7	Lombardy Poplar, <i>Populus lombardii</i>	M	27	3	3	3	3	650	7.8	2	2	Norm	20-40	Situated within neighbouring property. Restricted view Of Trunk. Restricted assessment Due To undergrowth. Not on TOPO	B	2	
T8	Ash, <i>Fraxinus excelsior</i>	M	15	4	6	7	4	530	6.4	0	2	Norm	20-40	Situated within neighbouring property. Restricted view Of Trunk. Restricted assessment due To undergrowth. Not on TOPO	B	2	
T9	Pedunculate Oak, <i>Quercus robur</i>	M	15	4	6	8	6	530	6.4	0	2	Norm	40+	Situated within neighbouring property. Restricted view Of Trunk. Restricted assessment due to undergrowth. Not on TOPO. woodland area	B	2	
T10	Goat Willow, <i>Salix caprea</i>	EM	7	2	2	2	2	190	2.3	2	2	Norm	40+	Cavities in main stem	C	3	
T11	Ash, <i>Fraxinus excelsior</i>	Y	7	2	2	2	2	190	3.2	2	2	Norm	40+	Situated within neighbouring property. Restricted view Of Trunk. Restricted assessment Due To undergrowth. Not on TOPO. woodland area	C	3	
T12	Ash, <i>Fraxinus excelsior</i>	EM	9	2	2	2	2	220; 140	2.6	3	2	Low	<10	Ash dieback possible	U		
T13	Silver Birch, <i>Betula pendula</i>	M	16	3	3	3	3	290	3.5	2	2	Norm	40+	Good overall condition	B	1	

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
T14	Rowan, Sorbus aucuparia	EM	6	2	2	2	2	200	2.4	2	2	Norm	20-40	Multi stem	C	1	
T15	Sycamore, Acer pseudoplatanus	EM	12	3	3	3	3	220; 230	3.7	0	2	Norm	20-40	Multi stem. Telecom wire	C	2	
T16	Horse-Chestnut, Aesculus hippocastanum	M	13	6	5	5	5	530	6.4	2	2	Norm	10_20	Co-dominant branch structure. bark fluxing/signs of stress. Bark splitting in areas	C	1	
T17	Horse-Chestnut, Aesculus hippocastanum	Y	4	3	3	3	3	180	2.2	2	2	Norm	20-40	Co-dominant branch structure	C	2	
T18	Silver Birch, Betula pendula	M	12	4	4	4	4	340	4.1	1	3	Norm	20-40	Co-dominant branch structure. Part of contiguous group	B	2	
T19	Silver Birch, Betula pendula	M	12	5	4	6	4	430	5.2	1	3	Norm	20-40	Co-dominant branch structure. Part of contiguous group. Telecom wire	B	2	
T20	European Lime, Tilia europaea	M	18	7	7	7	7	560	6.7	3	3	Norm	40+	Council maintained street tree	A	2	

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
T21	Prunus, Prunus spp	EM	8	3	3	3	3	210	2.5	1	0	Norm	20-40	Council maintained street tree	C	1	
T22	Prunus, Prunus spp	M	4	3	3	3	3	240	2.9	1	1	Norm	20-40	Co-dominant branch structure	C	1	
T23	Crab Apple, Malus Spp	M	4	3	3	3	3	240	2.9	1	1	Norm	20-40	Co-dominant branch structure. Council maintained street tree	C	1	
T24	Cherry, Prunus spp	M	6	4	5	4	4	240	2.9	2.5	2	Norm	20-40	Co-dominant branch structure. Council maintained street tree. Multistemmed from 1.2m	C	1	
T25	Horse-Chestnut, Aesculus hippocastanum	EM	6	4	5	4	4	240	2.9	2.5	2	Low	<10	Co-dominant branch structure. bark fluxing/signs of stress. Bark splitting in areas	U		
T26	Magnolia, Magnolia	EM	4	3	3	3	3	260	3.1	0	2	Norm	20-40	Co-dominant branch structure. Low squat tree	C	1	
T27	Magnolia, Magnolia	EM	4	3	3	3	3	200	2.4	0	2	Norm	20-40	Co-dominant branch structure. Low squat tree	C	1	

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
T28	Crab Apple, Malus Spp	M	5	3	3	3	3	200	2.4	0	2	Norm	20-40	Co-dominant branch structure. Council maintained street tree	B	1	
T29	Rowan, Sorbus aucuparia	M	6	3	3	3	3	200	2.4	0	2	Norm	20-40	Co-dominant branch structure. Council maintained street tree	B	1	
T30	Silver Birch, Betula pendula	M	8	3	3	3	3	200	2.4	0	2	Norm	20-40	Co-dominant branch structure. Leaning N	C	1	
T31	Hornbeam, Carpinus betulus	M	15	5	5	5	5	450	5.4	1	2	Norm	40+	Council maintained street tree, fastigiata habit	B	1	
T32	Sycamore; Acer psuedoplatanus; Aceraceae	M/OM	23	7	8	8	8	970	11.6	3	3	Norm	40+	Sucker growth around base. Part of contiguous group. Estimated measurements. 6m from boundary	A	3	
T33	Common Ash; Fraxinus excelsior; Oleaceae	M/OM	5	2	2	9	1	280	3.4	1	1	Norm	20-40	Part of contiguous group. Estimated measurements. Ivy on stem affecting VTA. Growth affected by adjacent mature trees. 3m from boundary	C	2	
T34	Sycamore; Acer psuedoplatanus; Aceraceae	Y	5	2	2	5	1	200	2.4	1	1	Norm	20-40	Sucker growth around base. Part of contiguous group. Estimated measurements	C	2	

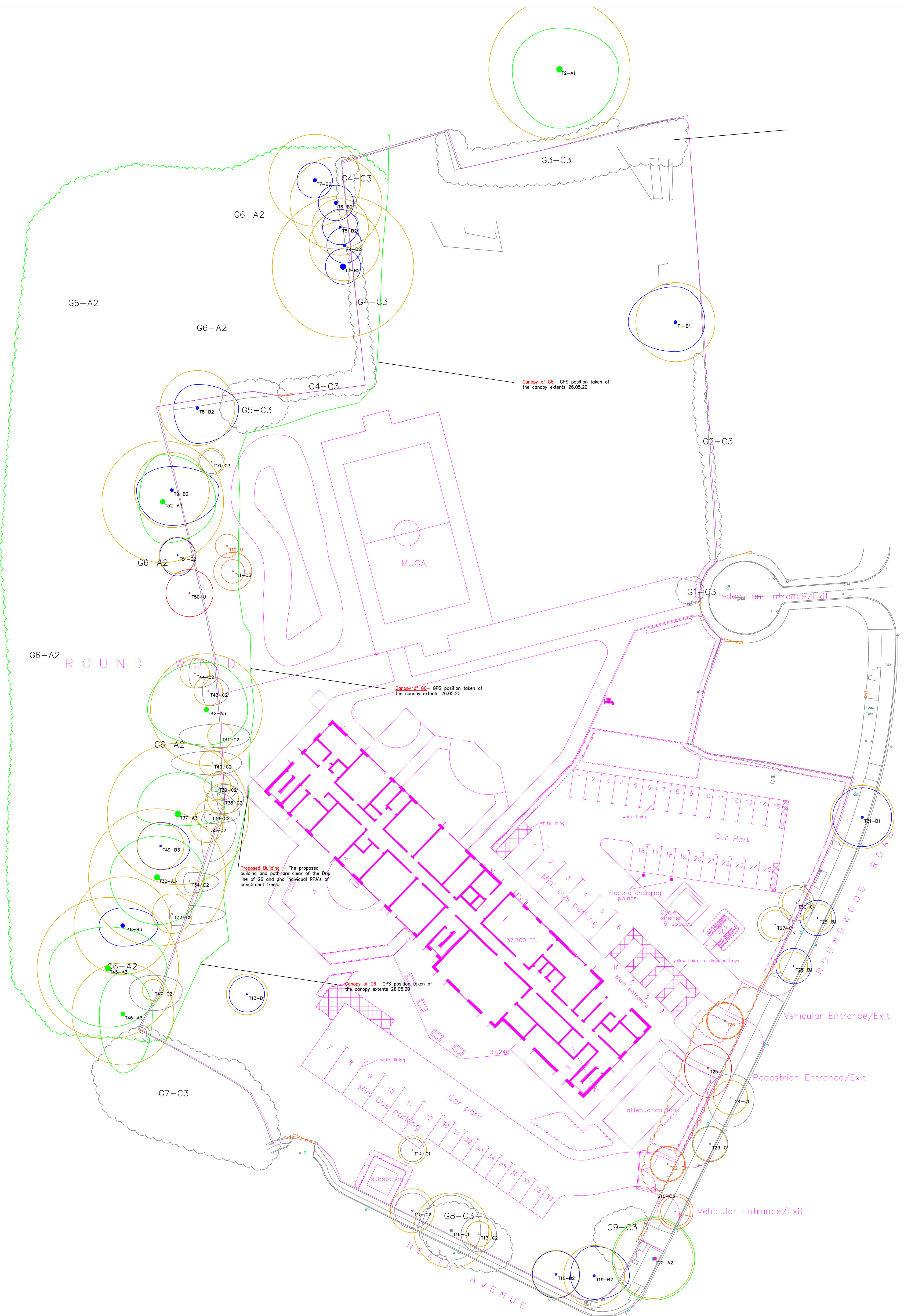
TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W				STEM (in mm)	RPA (in m)	CLEARANCE (in m)	1st BRANCH (in m)	VITALITY	LIFE EXPEC.	NOTES	BS CAT.		MANAGEMENT
T35	Sycamore; Acer psuedoplatanus; Aceraceae	Y	13	3	6	1	5	160, 160,	2.7	1	4	Norm	20-40	Growth affected by adjacent mature trees. Ivy on stem affecting VTA. 1.75 away from fence	C	2	
T36	Sycamore; Acer psuedoplatanus; Aceraceae	Y	13	4	2	1	5	160, 150, 100	2.9	1.75	4	Norm	20-40	Part of contiguous group. Ivy on stem affecting VTA. Estimated measurements. Growth affected by adjacent mature trees	C	2	
T37	English Oak; Quercus robur; Fagaceae	M/OM	21	7	2	7	8	1000	12.0	8	8	Norm	20-40	Part of contiguous group. Estimated measurements. Old pruning wounds.. Possible veteran tree. 8m from fence	A	3	
T38	Sycamore; Acer psuedoplatanus; Aceraceae	Y/SM	8	3	3	1	4	160, 150,	2.6	2	3	Norm	20-40	Ivy on stem affecting VTA	C	2	
T39	Sycamore; Acer psuedoplatanus; Aceraceae	Y/SM	8	3	3	1	4	100, 110, 120	2.3	2	3	Norm	20-40	Part of contiguous group. Understory woodland edge young tree	C	2	
T40	Common Ash; Fraxinus excelsior; Oleaceae	Y/SM	13	2	2	7	5	180	2.2	1	1.75	Norm	20-40	Part of contiguous group. Understory woodland edge young tree. Ivy on stem affecting VTA. 2m from fence	C	2	
T41	Common Ash; Fraxinus excelsior; Oleaceae	Y/SM	13	2	2	7	5	180	2.2	1	1.75	Norm	20-40	Part of contiguous group. Understory woodland edge young tree. Ivy on stem affecting VTA. 2m from fence	C	2	

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
T42	English Oak; Quercus robur; Fagaceae	M/OM	13	6	8	7	10	790	9.5	8	7	Norm	40+	Part of contiguous group. Understory woodland edge young tree. Ivy on stem affecting VTA. Large pieces of deadwood. 5m from fence	A	3	
T43	Sycamore; Acer psuedoplatanus; Aceraceae	Y/SM	13	3	3	1	4	100, 130, 120	2.4	2	3	Norm	40+	1m from fence. Ivy on stem affecting VTA. Estimated measurements	C	2	
T44	Sycamore; Acer psuedoplatanus; Aceraceae	Y/SM	13	3	3	1	4	100, 130, 130	2.5	1	2.5	Norm	40+	Understory woodland edge young tree. Estimated measurements. 3.5m from fence	C	2	
T45	English Oak; Quercus robur; Fagaceae	M/OM	23	7	10	10	10	1000	12.0	4	9	Norm	40+	Some storm damage branch tears. Possible veteran tree	A	3	
T46	English Oak; Quercus robur; Fagaceae	M/OM	19	7	10	4	1	720	8.6	4	9	Norm	40+	Prolific bud proliferation galls. Sub dominant tree on woodland edge	A	3	
T47	Sycamore; Acer psuedoplatanus; Aceraceae	Y	5	3	4	1	4	150	1.8	1	1.25	Norm	20-40	Growth affected by adjacent mature trees. Understory woodland edge young tree. Embedded in boundary fence	C	2	
T48	Common Ash; Fraxinus excelsior; Oleaceae	M/OM	23	3	4	4	6	690	8.3	6	6	Low	20-40	Extensive storm damage branch drop. Part of contiguous group. Ivy on stem affecting VTA. Buttress hollows at base. Crown appears sparse	B	3	

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
T49	Sycamore; Acer psuedoplatanus; Aceraceae	M	21	4	4	4	5	330	4.0	6	6	Norm	20-40	Part of contiguous group. Ivy on stem affecting VTA	B	3	
T50	Elm; Ulmus (species); Ulmaceae	SM/EM	17	4	4	4	4	260	3.1	1.75	2	Dying	<10	Part of contiguous group. Dying of DED	U		
T51	Cherry; Prunus (species); Rosaceae	SM/EM	17	3	4	3	3	260	3.1	1.75	2	Norm	20-40	Part of contiguous group	B	3	
T52	English Oak; Quercus robur; Fagaceae	M/OM	23	8	7	4	9	860	10.3	8	7	Norm	40+	Ivy on stem affecting VTA. Significant stem loss by storm	A	3	
G1	Acer pseudoplatanus	Y	3	0	0	0	0	75	0.9	0	3.5	Norm	20-40	Natural regeneration	C	3	
G2	Acer pseudoplatanus; Ligustrum vulgare	Y	4	0	0	0	0	100	1.2	0	3.5	Norm	20-40	Screen Hedge	C	3	
G3	Acer pseudoplatanus; Ligustrum vulgare	;M;	4	0	0	0	0	100	1.2	0	3	Norm	20-40	Overgrown. Screen planting	C	3	

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
G4	Fraxinus excelsior;Acer pseudoplatanus	Y	7	0	0	0	0	100	1.2	0	0	Norm	40+	Not on TOPO. Natural regeneration	C	3	
G5	Fraxinus excelsior	EM	16	0	0	0	0	270	3.2	0	0	Low	20-40	Cavities in main stem. Coppice stool	C	3	
G6	Mixed woodland	M;O	20	0	0	0	0	700	8.4	0	2	Norm	40+	10m away From fence. Mixed species woodland edge. mixed woodland mix of trees contains veterans	A	2	
G7	Mixed species; Crataegus monogyna	Y;E	4	0	0	0	0	100	1.2	0	2	Norm	20-40	Situated within neighbouring property	C	3	
G8	Laburnum anagyroides; Crataegus monogyna	Y	4	0	0	0	0	120	1.4	0	2	Norm	20-40		C	3	
G9	Mixed species	M	3	0	0	0	0	100	1.2	0	0	Norm	20-40	Scrubby undergrowth	C	3	
G10	Mixed species	Y;E	5	0	0	0	0	130	1.6	0	2	Norm	20-40	Natural regeneration. Sucker Growth	C	3	

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
TREE SURVEY 'KEY' - BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'													
	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, EM - Early-Mature, SM - semi 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 a tree will continue to contribute 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 useful life expectancy);										
		-	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 10+ years;										
	MANAGEMENT	-	Standard retention sub-category, mainly due to: 1 - Arboricultural values, 2 - Landscape values, 3 - Cultural values, including conservation;										
		-	Preliminary management recommendations (as appropriate);										
	' * '	-	Within the survey schedule denotes an estimate										



KEY

Tree Crown Spread

Root Protection Area (RPA)

Tree Stem

T1 Tree No.

Removed Tree

Tree Condition Category

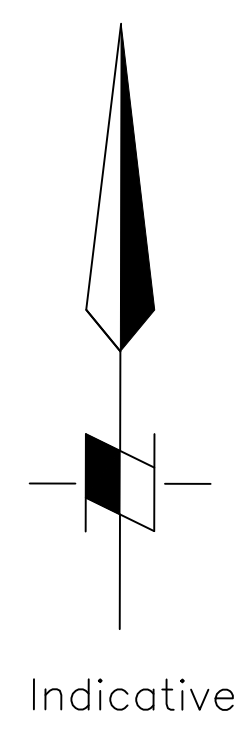
A

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'



DO NOT SCALE
FROM DRAWING

The original of this drawing was produced in colour – a monochrome copy should not be relied upon.

	Based on TCP and RWI-DW-ZZ-ZZ-DK-L-79001-Landscape Masterplan PS	RB	AT	26/05/20
REV.	DESCRIPTION	DWN	CHK'D	DATE

CLIENT

ISG

PROJECT

19196/A1
Land at Roundwood Road
Manchester M22 4SB

TITLE

Tree Constraints Plan
Scheme Overlay

DWN	DATE	CHK'D	DATE	APP'D	DATE	SCALE
RPHB	26/05/2020	AT	26/05/2020			1–300

(Mail) Second Floor, 1 Hunter's Walk, Canal Street, Chester. CH1 4EB
Telephone: 0333 123 7080 www.indigosurveys.co.uk

Drawing Number

19196/A1/TCP/01

AO

REV.

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