ARBTECH

BS5837:2012
Trees in relation to design, demolition and construction – Recommendations

Tree Survey

Linton House,

2a Wellington Road,

Fallowfield,

Manchester,

M14 6EQ.

12 October 2018

Author: Alan Thompson FdSc (Arb) M.ArborA

ARBTECH

David Garner,
Union Chapel of Fallowfield (Baptist),
2a Wellington Road,
Fallowfield,
Manchester,
M14 6EQ.

12/10/18

Tree Survey Report
Linton House, Wellington Road, Fallowfield, M14 6EQ.

Arbtech Consulting Limited (Arbtech) received written instruction on 3rd October 2018 from Mr David Garner to attend Linton House, Wellington Road, Fallowfield, Manchester, M14 6EQ (site) to undertake an arboricultural survey a to BS5837:2012 guidance to assess trees, hedges and major shrub groups growing on and within influencing distance of the site and to produce a Schedule of trees and Tree Constraints Plan.

Our arboricultural consultant, Mr. Alan Thompson undertook the survey on the 9th October 2018; weather conditions were warm and bright. Subsequently we have produced this summary of our findings. Mr. Alan Thompson FdSc has over 9 years arboricultural experience in both local authority and private practice environments and also holds the LANTRA Professional Tree Inspection certificate.

The advice below and appended is underwritten by our Professional Indemnity insurance for the business practice of Arboricultural Consultancy in the sum of one million Pounds Sterling in each and every claim.

Tree Survey Executive Summary

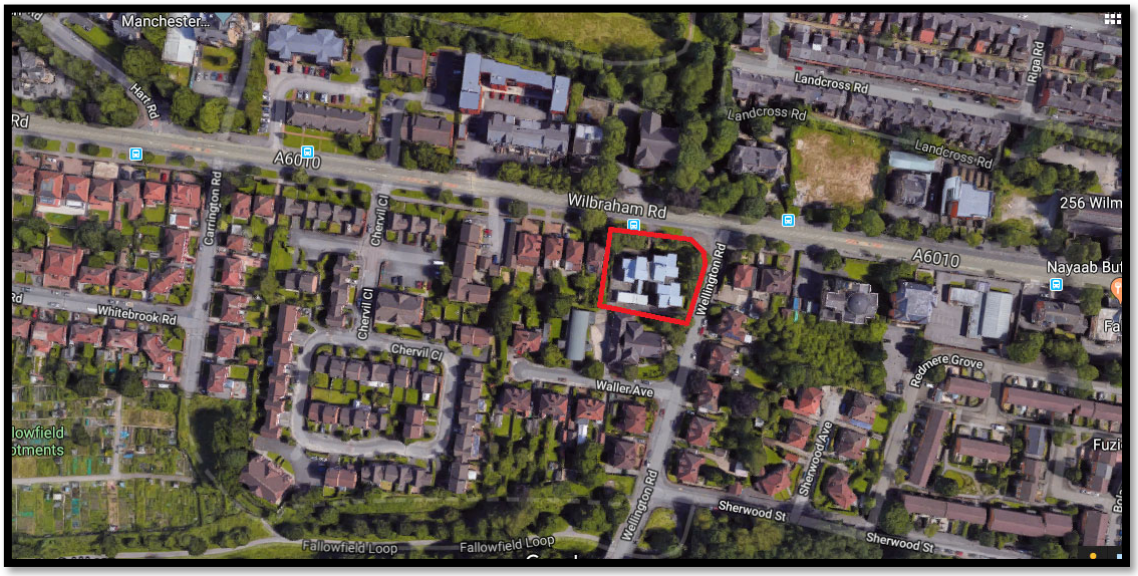
A total of 14 No. individual trees and 1 No. hedgerow of trees were surveyed.

During the survey I categorised the group of trees using “Table 1 – Cascade chart for tree quality assessment” of the BS5837:2012.

All of the trees surveyed were in an acceptable or good condition at the time of the survey.

Individual notes on the tree’s structural and physiological condition are found in the Notes section of the survey schedule.

Figure 1: Aerial Image (Google Maps)



Individual notes on each tree's structural and physiological condition are found in the Notes section of the survey schedule.

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BS5837:2012 Scope

This standard recognises that there can be problems for development close to existing trees which are to be retained, and of planting trees close to existing structures. This standard sets out to assist those concerned with trees in relation to construction to form balanced judgements. It does not set out to put arguments for or against development, or for the removal or retention of trees. Where development, including demolition, is to occur, the standard provides guidance on how to decide which trees are appropriate for retention, on the means of protecting these trees during development, including demolition and construction work, and on the means of incorporating trees into the developed landscape.

Definitions

Arboriculturist

An arboriculturist (or arboricultural consultant) is a person who has, through relevant education, training and experience, gained recognized qualifications and expertise in the field of trees in relation to construction.

Tree Survey

A tree survey should be undertaken by an arboriculturist and should record information about the trees on a site independently of and prior to any specific design for development. As a subsequent task, and with reference to a design or potential design, the results of the survey should be included in the preparation of a tree constraints plan, which should be used to assist with site layout design.

Tree Constraints Plan

A TCP is plan, typically delivered as an AutoCAD drawing (.dxf file format), prepared by an arboriculturist for the purposes of layout design showing the root protection area and representing the effect that the mature height and spread of retained trees will have on layouts through shade, dominance, etc.

Root Protection Area

An RPA is a layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m².

Construction Exclusion Zone (also termed Tree Protection Zone)

A construction exclusion or tree protection zone is an area based on the RPA (in m²), identified by an arboriculturist, to be protected during development, including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long-term retention of a tree.

Arboricultural Impact Assessment

This is 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.

Tree Protection Plan

A TPP is plan, typically delivered as an AutoCAD drawing (.dwg file format), prepared by an arboriculturist showing the finalized layout proposals, tree retention and tree and landscape

protection measures detailed within the arboricultural method statement, which can be shown graphically.

Arboricultural Method Statement

This is a methodology for the implementation of any aspect of development that has the potential to result in loss of or damage to a tree. The AMS is likely to include details of an on-site tree protection monitoring regime.

Methodology

The methodology used to assess the trees was the British Standard 5837:2012 'Trees in Relation to Construction' tree survey method. The aim of the survey is to establish which trees are moderate and good quality; suitable for retention and justifying protection. And, which trees are low or poor quality; either undesirable or unsuitable to retain and protect.

The tree survey includes all trees included in the land survey red line boundary plan, as well as any that may have been missed, and it should categorize trees or groups of trees, including woodlands for their quality and value within the existing context, in a transparent, understandable and systematic way. Where the arboriculturist has deemed it appropriate, the trees have been tagged with small metal or plastic tags, placed as high as is convenient on the stem of each tree.

Whilst master plan proposals for the development of the site might be available, the trees have been surveyed without taking these into consideration. All detailed design work on site layout should take into consideration the results of the tree survey (and the TCP).

Trees forming groups and areas of woodland (including orchards, wood pasture and historic parkland) are identified and considered as groups where the arboriculturist has determined that this is appropriate, particularly where they contain a variety of species and age classes that could aid long-term management. It is often expedient to assess the quality and value of such groups of trees as a whole, rather than as individuals. However, an assessment of individuals within any group has been undertaken if they are open-grown or if there is a need to differentiate between them.

The quality and value of each tree or group of trees has been recorded by allocating it to one of the four categories; A, B, C, or U (highest to lowest quality respectively). The categories are differentiated on the tree survey plan by colour, or by suffixing the category adjacent to the tree identification number on the TCP.

The survey schedule lists all the trees or groups of trees. The following information is also provided:

I. reference number (to be recorded on the tree survey plan);
II. species (common or scientific names);
III. height in metres (m);
IV. stem diameter in millimetres (mm) at 1.5 m above adjacent ground level or immediately above the root flare for multi-stemmed trees;
V. branch spread in metres taken at the four cardinal compass points;
VI. height of crown clearance above adjacent ground level in metres (m);
VII. age class (Newly planted, Young, Semi-mature, Early mature, Mature, Over mature);
VIII. physiological condition (e.g. good, fair, poor, decline and dead);
IX. structural condition (e.g. good, fair, poor and ivy);
X. preliminary management recommendations, including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat; and
XI. The retention category referring to the quality and useful contribution in years; U = <10yrs; A = >40yrs; B = >20yrs; C = >10yrs. The retention sub category referring to the type of amenity; 1 = Arboricultural; 2 = Landscape; 3 = Cultural including conservation (see Table 1 Cascade chart for tree quality assessment).

BS5837:2012 Trees in relation to design, demolition and construction – Recommendations

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories when appropriate			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. 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, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve; see 4.5.7.*			Dark red
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominate and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	Light green
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial defects, including unsympathetic management and storm damage), such that they are unlikely to be suitable for retention of beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing 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 value	Mid blue
Category C **Trees of low quality** with an estimated remaining expectancy of at least 10 years, or young trees with a stem diameter below 150mm	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 collective landscape value; and/or trees offering low or only temporary/transient landscape value	Trees with no material conservation or other cultural value	Grey

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Limitations

Trees were inspected from using visual observation from ground level only. Trees were not climbed or inspected below ground level. Inaccessible trees will have best estimates made about the location, physical dimensions and characteristics. Trees have been grouped where BS5837 guides us that it is expedient to do so. Trees have been excluded from the survey if they are found by us to be sufficiently far away from the proposed developable area or if they are outside of the red line boundary plan showing the expectations of our Client for the extent of the survey. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order ("TPO"), and those trees without. This is principally because a detailed planning consent overrides any TPO protection. Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

Appendices

The following documents were released to the Client as appendices to this report below:

- Survey Schedule (PDF)
- Tree Constraints Plan drawing (DWG & PDF)

If you require clarification of information contained herein, please do not hesitate to contact me on 07703 676 216

Yours Sincerely,



Alan Thompson FdSc (Arb.), M.ArborA

Arboricultural Consultant

Appendix 1: Schedule of Trees

BS5837:2012 Tree Survey

Client: Mr David Garner
Project: Linton House, Wellington Road, Manchester, M14 6EQ.
Survey Date: 09/10/2018
Surveyor: Alan Thompson

Artbech Consulting Ltd.

Unit 3, Well House Barns
Chester Road
Chester
Cheshire
CH4 0DH
Phone: 01244 66 11 70

Tree and Tag No / Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations / Survey Comment	Cat ERC
H1										Estimated Measurements	
Common Hawthorn	1.5	1	50	N 0.5	0.3	SM	A: 1.1	Good	C: Good		C.2
Crataegus monogyna				E 0.5	0.3		R: 0.59		S: Good	Well maintained Hawthorn hedgrow. Measurements given are estimated averages for the group.	20 to 40 yrs
				S 0.5	0.3				B: Good		
				W 0.5	0.3						
T1										Estimated Measurements	
Silver Birch	12.5	1	380	N 3.5	2	M	A: 65.3	Good	C: Good		B.1
Betula pendula				E 3	5		R: 4.55		S: Good	Cavity >80mm observed in tree's stem (north) at 1.2m. Off site tree could not be fully inspected and measurements given are estimated.	20 to 40 yrs
				S 3.5	2				B: Good		
				W 3.5	2						
T2											
Silver Birch	13.5	1	450	N 5	4	M	A: 91.6	Fair	C: Fair		B.1
Betula pendula				E 5.5	3		R: 5.39		S: Good	Tree's crown was slightly sparse at time of survey, possibly a result of recent drought conditions.	20 to 40 yrs
				S 5	2				B: Good		
				W 5	4						
T3											
Silver Birch	8	1	340	N 3	3	M	A: 52.3	Fair	C: Fair		C.1
Betula pendula				E 3.5	3		R: 4.08		S: Fair	Slight apical dieback observed in tree's crown. Bacterial infection (weeping lesions) observed in tree's stem (south). Numerous burrs observed throughout tree's stem.	10 to 20 yrs
				S 3	3				B: Good		
				W 3	4						

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)		Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T4												
Silver Birch *Betula pendula*	14.5	1	440	N E S W	3.5 4.5 3.5 4.5	6 4 5 3	M	A: 87.6 R: 5.28	Good	C: Good S: Good B: Fair	Tree's crown is slightly suppressed by neighbouring trees.	**B.1** 20 to 40 yrs
T5												
Silver Birch *Betula pendula*	12.5	1	380	N E S W	3.5 4 3 4	5 3 5 3	M	A: 65.3 R: 4.55	Fair	C: Fair S: Good B: Good	Slight apical dieback observed in tree's crown, possibly a result of recent drought conditions.	**B.2** 20 to 40 yrs
T6												
Silver Birch *Betula pendula*	12	1	480	N E S W	5 5 5 5	3 3 4 3	M	A: 104.2 R: 5.75	Good	C: Good S: Ivy B: Good	Thick ivy is spreading throughout tree's stem into crown preventing a full stem inspection. Ivy removal is recommended to aid future insepctions.	**B.1** 20 to 40 yrs
T7												
Silver Birch *Betula pendula*	8.5	1	310	N E S W	4 4 4 4	4 3 4 3	M	A: 43.5 R: 3.72	Fair	C: Fair S: Good B: Good	Slight apical dieback observed in tree's crown, possibly a result of recent drought conditions.	**B.1** 20 to 40 yrs
T8												
Silver Birch *Betula pendula*	7.5	1	200	N E S W	4 2 3 2.5	5 5 4 4	M	A: 18.1 R: 2.4	Decline	C: Fair S: Fair B: Good	Tree is in decline with 20% dieback observed in crown.	**C.1** 10 to 20 yrs
T9												
Silver Birch *Betula pendula*	13	1	410	N E S W	5.5 5.5 5.5 5.5	4 3 3 5	M	A: 76.1 R: 4.92	Fair	C: Fair S: Good B: Good	Tree's crown was slightly sparse at time of survey, possibly a result of recent drought conditions.	**B.1** >40 yrs

Age Classifications:
N Newly planted
Y Young
SM Semi-mature
EM Early Mature
M Mature
OM Over Mature

Condition:
C Crown
S Stem
B Basal area

Stems:
Ø Diameter
(Eq) Equivalent stem diameter using BS5837:2012 definition

Linton House, Wellington Road, Manchester, M14 6EQ.

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T10											
Silver Birch *Betula pendula*	14	1	370	N 5 E 4 S 5 W 3	4 5 3 5	M	A: 61.9 R: 4.43	Fair	C: Fair S: Good B: Good	Tree's crown was slightly sparse at time of survey, possibly a result of recent drought conditions. Tree's crown is partially suppressed by neighbouring trees.	**B.2** 20 to 40 yrs
T11											
Silver Birch *Betula pendula*	14.5	1	480	N 5 E 3.5 S 4 W 5	5 5 5 5	M	A: 104.2 R: 5.75	Fair	C: Fair S: Good B: Good	Tree's crown was slightly sparse at time of survey, possibly a result of recent drought conditions. Tree's crown is partially suppressed by neighbouring trees.	**B.1** 20 to 40 yrs
T12											
Common Ash *Fraxinus excelsior*	14	1	390	N 2 E 5 S 5 W 4.5	6 4 4 5	SM	A: 68.8 R: 4.67	Good	C: Fair S: Good B: Good	Tree's crown is partially suppressed by neighbouring tree.	**B.1** >40 yrs
T13										Estimated Measurements	
Silver Birch *Betula pendula*	6	1	150	N 2 E 2 S 2 W 2	3 3 3 3	Y	A: 10.2 R: 1.8	Good	C: Good S: Good B: Good	Unable to access tree. Measurements given are estimated. Tree of limited amenity value.	**C.1** >40 yrs
T14										Estimated Measurements	
Silver Birch *Betula pendula*	6	1	150	N 2 E 2 S 2 W 2	3 3 3 3	Y	A: 10.2 R: 1.8	Good	C: Good S: Good B: Good	Unable to access tree. Measurements given are estimated. Tree of limited amenity value.	**C.1** >40 yrs

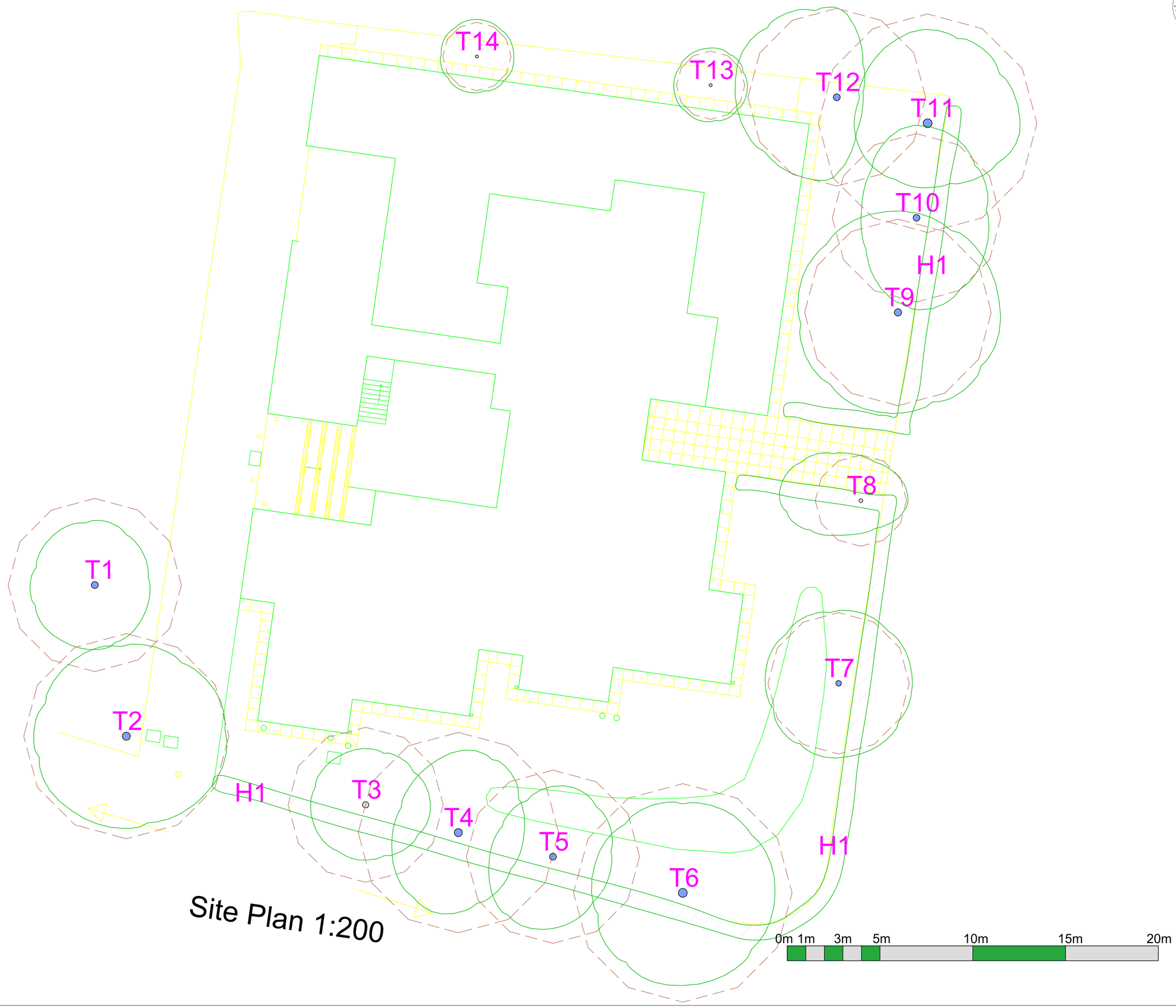
Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

Linton House, Wellington Road, Manchester, M14 6EQ.

Appendix 2: Tree Constraints Plan



Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.
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 remaining 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.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Areas (RPAs) should be plotted around each of the category A, B and C trees. This is a minimum area in m² which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations.

The calculated RPA is capped to 707m², which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Tree Survey Report

Please refer to Arbtech Consulting Ltd. Tree Survey Report and Tree Schedule for full details on all surveyed trees, hedgerows and major shrub groups.
All trees were surveyed and categorised in accordance with the guidance as set out in the British Standard BS5837:2012 Tree in relation to design, demolition and construction - Recommendations.

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https://arbtech.co.uk, 01244 661170

Project:
Linton House,
Wellington Road,
Fallowfield,
Manchester

Client:
Mr David Garner

Drawing:
Tree Constraints Plan

Based on:
Linton House Block Site

Drawing No:		Rev:
Arbtech TCP 01		
Date:	Scale:	Drawn:
Oct 2018	1:100 @ A1	AST

Key:

Tree Nos.:	T1	Tree Canopies:		Trunks:	
RPAs:		Category 'B' trees:		Category 'C' trees:	
Category 'C' groups:					

All dimensions should be checked on site. No dimensions are to be scaled from this drawing.
Please notify us of any discrepancies found. Arbtech Consulting Ltd. cannot be held responsible for inaccuracies in the base drawing in which this plan is based.
This drawing is designed to reflect the principles of the layout or design only, and relates only to the protection of retained trees.
This drawing is not to be read as a definitive part of the engineering or construction designs or method statement. An architect or structural engineer should be contacted over any matters of construction, detailing or specification and for any standards or regulatory requirements relating to proposed structures, hard surfacing or underground services.
This drawing was produced in colour - a monochrome copy should not be relied upon.

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Document Production Record

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