BRITISH STANDARD 5837 TREE SURVEYS ARBORICULTURAL IMPLICATION STUDIES TPO/PLANNIG ADVICE/ PROJECT MANAGEMENT
TREE INVENTORIES AND RISK ASSESSMENTS WOODLAND MANAGEMENT PLANS TREE PLANTING SCHEMES TPO RE-SURVEY




ARBORICULTURAL IMPLICATIONS ASSESSMENT

PROPOSED DEVELOPMENT

AT

BINGSWOOD ROAD
WHALEY BRIDGE

Author: C. Salisbury
Date: 16 May 2017
Ref: TRE/BR/Rev A

Mulberry
Adamson House, Towers Business Park, Wilmslow Road, Didsbury, M20 2YY

T 0161 955 3628
F 0161 955 4201
E info@mulberrytmc.co.uk

www.mulberrytmc.co.uk

1.0 Introduction

1.1 Mulberry Tree Management were instructed by Property Alliance Group Ltd, to carry out an arboricultural survey of trees at their site in Bingswood Road, Whaley Bridge.

1.2 This report details the arboricultural implications of developing the site, including:

- a survey of the trees on and near the development which may impact the proposal from ground level, noting their location, species and all relevant parameters, i.e. stem diameter, height, crown spread, condition etc;
- providing advice on the removal, retention and management of trees;
- assessment of the potential effects of the proposal on retained trees and vice versa;
- assessment of the requirement for tree protection for the duration of the works;
- mitigation for any loss;
- preparation of a tree schedule;
- and report on the above matters.

1.3 The survey was carried out on 19 September 2016 by means of inspection from ground level by an experienced and qualified arboriculturalist. The inspection can be restricted in cases where trees were Ivy clad or surrounded by vegetation.

1.4 Under *BS5837: 2012 Trees in Relation to Construction - Recommendations*, the assessment of trees is made objectively. The tree categorisation method identifies the quality and value of the existing tree stock, allowing informed decisions to be made concerning development design layout.

1.5 The following documents have been made available by the client:

- Drawing- 16039_01_Site Layout.dwg

1.6 The supplied drawing included some tree positions plotted. Any dimensions regarding tree positions and protective fencing must be checked on site.

1.7 Weather conditions during the survey were dry and still.

1.8 The survey was carried out noting the conditions of the trees at the time of inspection. As trees are part of the natural environment, conditions can naturally change; therefore the contents of this report are valid for one year only. After this period, re-inspection may be necessary.

2.0 Survey Methodology

2.1 The trees were surveyed (prefixed T, or G for group) and recorded in the tree schedule in appendix one. Where groups are recorded, average height and diameter at breast height (DBH) of the trees in the group are reported. Where access to the base of any trees was limited, stem size was estimated.

2.2 All the trees were assessed using: a grading A to C (retention) and U (removal); condition and age class as defined in appendix two.

2.3 Where appropriate, canopy spread for each tree was recorded at four cardinal points in order to reproduce an accurate representation of the crown shape of the tree on the tree plan in appendix three.

2.4 The survey included all trees within the proposal area and trees near to the proposal.

3.0 Development Proposals

3.1 Due to the proposed development and its associated infrastructure there are a number of locations where the proposals are in close proximity to the trees surveyed. The Site Layout Plan within appendix three identifies the trees in relation to the proposed development.

3.2 In order to fully assess the impact of the proposals an Impact Table has been created detailing each tree, which shows the proximity of the associated works to the tree.

3.3 This can then be assessed in accordance with BS 5837:2012 to determine whether the development will have a detrimental impact on the health of each tree. Once this has been determined remedial measures can be detailed to reduce the impact the proposals will have on the treescape.

3.4 Impact Table:-

Tree No.	Root Protection Area identified in Table 2 of BS 5837:2012	Distance to Proposed Hard Standing (m)	Distance to Proposed Development (m)	Can the Tree/s be Successfully Retained
T1	163m^2 = Circle with a radius of 7.20m	N/A	5.60	No
T2	Fell Due to Condition			
T3	41m^2 = Circle with a radius of 3.60m	11.00	14.00	Yes
T4	55m^2 = Circle with a radius of 4.20m	14.80	13.40	Yes
T5	41m^2 = Circle with a radius of 3.60m	N/A	12.20	Yes
T6	55m^2 = Circle with a radius of 4.20m	N/A	11.10	Yes
T7	18m^2 = Circle with a radius of 2.40m	9.30	11.00	Yes
T8	18m^2 = Circle with a radius of 2.40m	6.10	10.50	Yes
T9	55m^2 = Circle with a radius of 4.20m	3.80	10.90	Yes as outlined in section 5.1 below
T10	18m^2 = Circle with a radius of 2.40m	3.70	12.70	Yes
T11	18m^2 = Circle with a radius of 2.40m	6.60	10.50	Yes
T12	55m^2 = Circle with a radius of 4.20m	7.10	8.70	Yes
T13	72m^2 = Circle with a radius of 4.80m	N/A	12.40	Yes
T14	222m^2 = Circle with a radius of 8.40m	N/A	20.10	Yes
T15	707m^2 = Circle with a radius of 15.00m	N/A	24.00	Yes

Tree No.	Root Protection Area identified in Table 2 of BS 5837:2012	Distance to Proposed Hard Standing (m)	Distance to Proposed Development (m)	Can the Tree/s be Successfully Retained
G1	41m^2 = Circle with a radius of 3.60m	7.00	10.20	Yes

4.0 Impact Assessment

4.1 To assess the implications of the Impact Table each tree can be categorised in the following way: -

	Trees to be retained		Trees to be removed	
	With No Impact	With detailed construction	Due to Condition	Due to Development
Tree No.	T3 to T15 & G1	N/A	T2	T1

5.0 Mitigation Proposals

5.1 Development Construction

5.1.1 The impact table below shows the proposed development having a minor encroachment into the root protection area of T9. It is felt that due to the species, condition and limited extent of encroachment the proposal will not have a detrimental impact on the safe useful life expectancy of T9.

6.0 Conclusions and Arboricultural Recommendations

6.1 The tree categorisation method identifies the quality and value of the existing tree stock but it is not meant to be interpreted rigidly and is presented in order to form a balanced judgement on tree retention and removal.

6.2 A precautionary method of working near trees is detailed in the accompanying Arboricultural Method Statement in Appendix Four.

6.3 Following site development, regular (annual or biannual) inspections of all retained trees should be undertaken by a qualified Arboricultural Consultant.

6.4 It is considered that in following the advice in this document, any negative factors affecting trees on the site will be minimised.

Appendix One

Tree Survey Schedule

TREE SURVEY SCHEDULE

Arboricultural Data Sheet: Bingswood Road, Whaley bridge											Date of Survey: 19/09/16	Surveyor: P Pollard
Tree No.	Species	DBH (mm)	Height (m)	Age	Crown Spread (m)				Crown clearance	Condition rating	Comments and preliminary management recommendations	Estimated remaining contribution	Tree quality category rating
					N	E	S	W					
T1	Ash	600	16	M	6	7	6	7	2	Fair	No particular significance, could be felled for development	40+	C1
T2	Goat willow	200	7	MA	3	2	2	3	1	Poor	Fell, due to poor condition	20+	U
T3	Leylandii	300	10	MA	2	2	2	2	3	Good	No work required, possible retention	40+	B1
T4	Whitebeam	350	12	M	5	5	1	3	3	Fair	On adjacent land – may need to crown lift for development	20+	B1
T5	Whitebeam	300	13	M	3	4	2	2	3	Fair	On adjacent land – may need to crown lift for development	20+	B1
T6	Whitebeam	350	13	M	3	4	2	3	3	Fair	On adjacent land – may need to crown lift for development	20+	B1
T7	Cherry	200	6	M	0	4	3	3	2	Poor	On adjacent land – Suggest landowner removes	10+	C1
T8	Whitebeam	200	7	M	1	3	2	2	2	Poor	On adjacent land – Suggest landowner removes	>10	C1
T9	Norway maple	350	16	M	3	6	4	4	2	Fair	On adjacent land – may need to crown lift for development	40+	C1

Arboricultural Data Sheet: Bingswood Road, Whaley bridge													Date of Survey: 19/09/16		Surveyor: P Pollard
Tree No.	Species	DBH (mm)	Height (m)	Age	Crown Spread (m)				Crown clearance	Condition rating	Comments and preliminary management recommendations	Estimated remaining contribution	Tree quality category rating
					N	**E**	**S**	**W**					
T10	Whitebeam	200	7	MA	1	2	2	2	3	Poor	On adjacent land – Suggest landowner removes	>10	**C1**
T11	Cherry	200	7	M	2	3	5	2	2	Fair	On adjacent land – may need to crown lift for development	20+	**B1**
T12	Norway maple	350	16	M	5	5	5	4	3	Fair	On adjacent land – should not require work	40+	**B1**
T13	Cherry	400	16	M	4	4	5	3	3	Fair	On adjacent land – should not require work	20+	**B1**
T14	Goat willow	700	14	M	5	6	2	0	3	Poor	On adjacent land – multi-stemmed, with one stem already snapped out, suggest landowner fells	10+	**C1**
T15	Sycamore	1400	18	M	5	6	6	6	4	Fair	On adjacent land – four stemmed, no work required	40+	**B1**
G1	Beech & Ash	300 avg.	18	M	-	-	-	-	1	Fair	Mature woodland belt situated within adjacent site	40+	**B1**

Appendix Two

Tree Survey Key

Trees for removal			
Category and definition	Criteria		
Category U Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	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 R 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, and irreversible overall decline Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality **Note** – Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree).		
Trees to be considered for retention			
Category and definition	Criteria - Subcategories		
	1 Arboriculture values	2 Landscape values	3 Conservation values
Category A **Those of high quality and value**: in such a condition as to be able to make a substantial contribution (a minimum 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboriculture features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture)
Category B **Those of moderate quality and value**: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	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 form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboriculture features (e.g. trees of moderate quality within avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits
Category C **Those of low quality and value**: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits
	Note - Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation		

Age Class

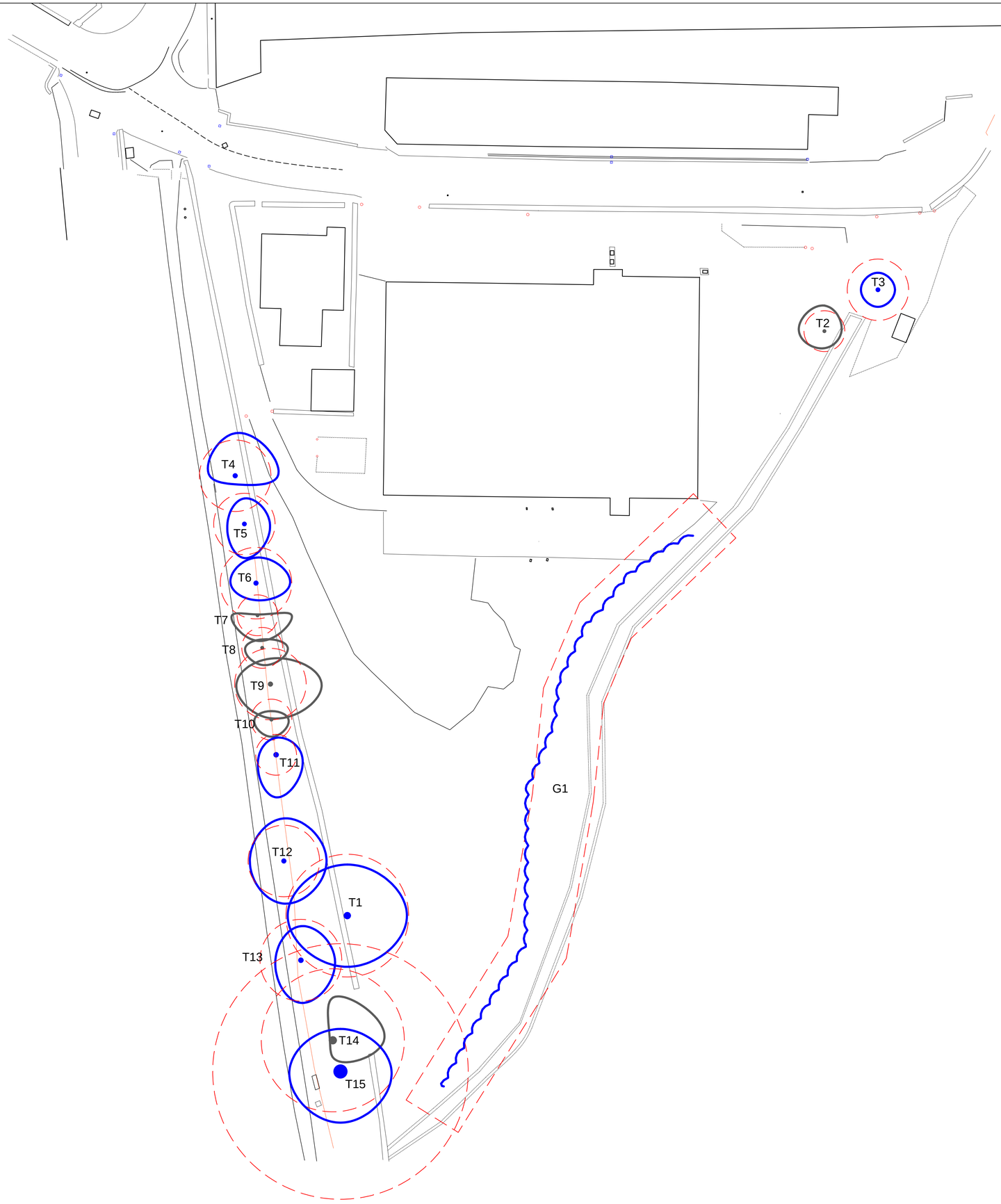
Y	Young	Trees that have not yet established
SM	Semi-Mature	Established trees up to 1/3 of expected height and crown
EM	Early mature	Between 1/3 and 2/3 expected height and crown
M	Mature	Between 2/3 and full expected height and crown
FM	Fully Mature	Full expected height and crown
OM	Over-Mature	Crown beginning to break up and decrease in size
S	Senescent	Crown in advanced stage of break-up

Condition

A	Good
B	Fair
C	Poor
D	Dead

Appendix Three

Plans



Category A Trees

Category B Trees

Category C Trees

Category U Trees

Root protection area

Mulberry TMC
Adamson House
Towers Business Park
Wilmslow Road
Didsbury
M20 2YY

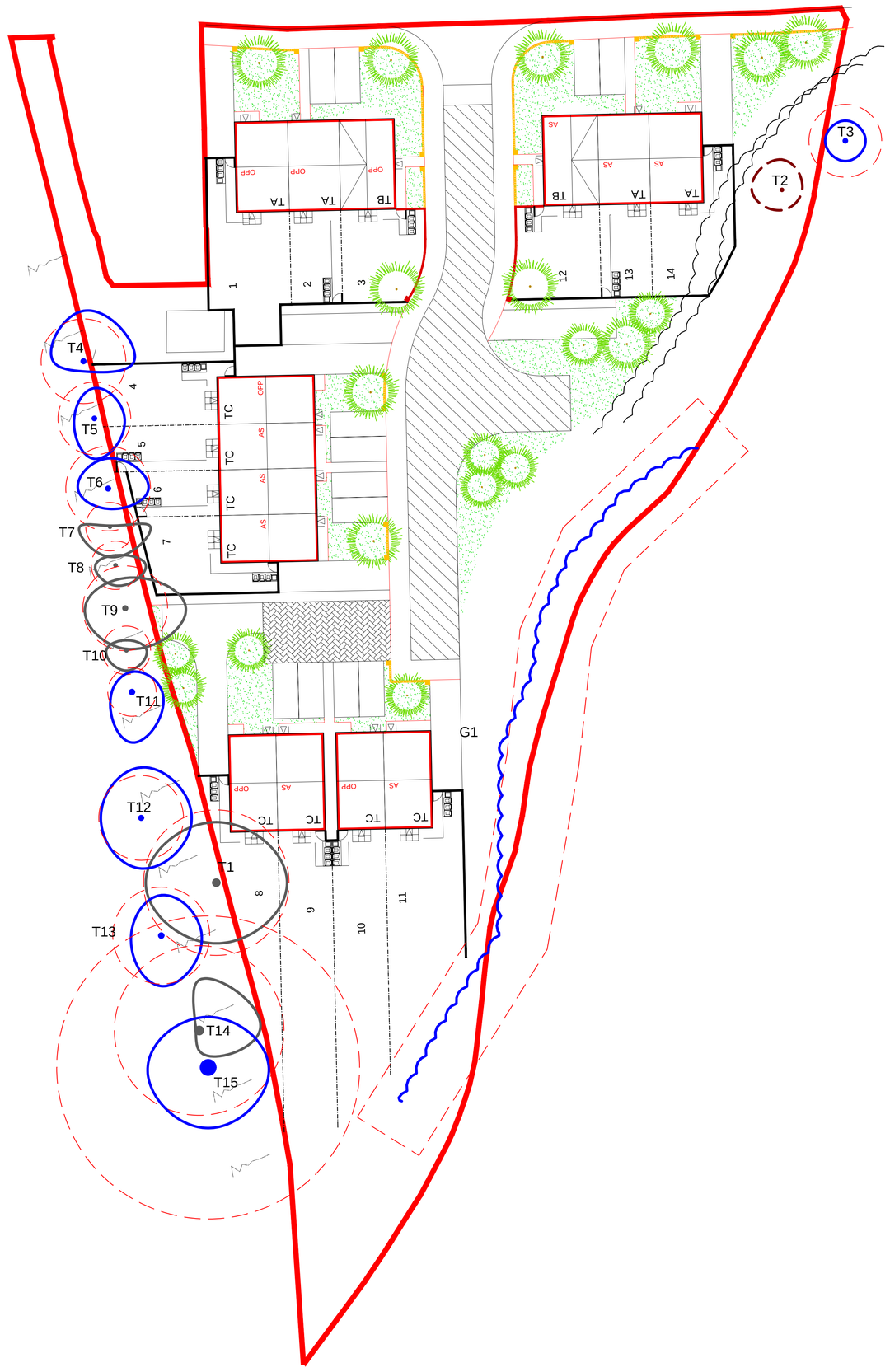
Tel: 0161 955 3628
Email: info@mulberrytmc.co.uk

Site Address:
Bingswood Road
Whalley Range

Drawing Title:
BS5837 Plan

Drawing No:
BRWR/TS/01

Date:	Scale:	Drawn by:
28/09/2016	1:250@A1	CS



Root protection area

Category A Trees

Category B Trees

Category C Trees

Category U Trees

Mulberry TMC
Adamson House
Towers Business Park
Wilmslow Road
Didsbury
M20 2YY

Tel: 0161 955 3628
Email: info@mulberrytmc.co.uk

Site Address:
Bingswood Road
Whaley Bridge

Drawing Title:
AIS Plan

Drawing No:
BRWR/AIS/01 Rev. A

Date:	Scale:	Drawn by:
16/05/2017	1:250@A1	CS

Appendix Four

Arboricultural Method Statement

BRITISH STANDARD 5837 TREE SURVEYS ARBORICULTURAL IMPLICATION STUDIES TPO/PLANNIG ADVICE/ PROJECT MANAGEMENT
TREE INVENTORIES AND RISK ASSESSMENTS WOODLAND MANAGEMENT PLANS TREE PLANTING SCHEMES TPO RE-SURVEY




ARBORICULTURAL METHOD STATEMENT

PROPOSED DEVELOPMENT

AT

BINGSWOOD ROAD
WHALEY BRIDGE

Author: C. Salisbury
Date: 16 May 2017
Ref: TRE/BR/Rev A

Mulberry
Adamson House, Towers Business Park, Wilmslow Road, Didsbury, M20 2YY

T 0161 955 3628
F 0161 955 4201
E info@mulberrytmc.co.uk

www.mulberrytmc.co.uk

1.0 Discussion

1.1 The majority of the root system, of a tree, is in the surface 600mm of the soil, extending radially for distances frequently in excess of the trees height. Beyond the main structural roots (close to the base of the trunk), the root system rapidly sub-divides into smaller diameter roots: off this main system, a mass of fine roots develops.

1.2 The shape of the main structural roots develops in response to the need for the tree to have physical stability. Beyond these major roots, root growth and development is influenced by the availability of water and nutrients. Unless conditions are uniform around the tree, which would be unusual, the extent of the root system will be very irregular and difficult to predict. It will not generally show the symmetry seen in the branch system.

1.3 The parts of the root system, which are active in water and nutrient uptake, are very fine, typically less than 0.5mm diameter. They are short lived, developing in response to the needs of the tree, with the majority dying each winter. It is *essential* that conditions in the soil remain conducive to the healthy growth of these fine roots so that the water and nutrients necessary for healthy tree growth can be absorbed.

1.4 All parts of the root system, but especially the fine roots, are vulnerable to damage. Once they are damaged, water and nutrient uptake will be restricted until new roots have regenerated. Vigorous young trees will be capable of rapid regeneration but over mature trees will respond slowly, *if at all*.

1.5 In order to live and grow, roots need oxygen from the soil. Respiration by the roots and other soil organisms depletes this oxygen and increases carbon dioxide levels in the soil; a correct balance of these gases is normally maintained by diffusion between the soil and the atmosphere. Anything, which disturbs this balance, will affect the condition of the root system.

1.6 The factors that most commonly affect this diffusion adversely, and therefore damage roots, are the following: -

a) Compaction of the ground, which reduces the space between soil particles. This is particularly important on clay soils. A single passage by heavy equipment on clay soils or storage of heavy materials can cause significant damage.
b) Changing soil levels, even for a few weeks.
c) Covering the root area with impervious surfaces.
d) A rise in the level of the water table. Roots can tolerate submersion for short periods. But a permanent rise will deplete the soil of oxygen.

1.7 Serious damage is often caused during preliminary site works by stripping the topsoil. For this reason, such works should be avoided until protective fencing has been erected.

1.8 Excavations in the rooting area can severe roots. As the majority of roots are in the surface 600mm, even shallow excavations can cause damage.

1.9 Excavations for foundations, landscaping or service trenches are usually sufficiently deep to severe most of the roots, and it should therefore be assumed that all parts of the root system beyond the excavation would no longer serve the tree.

1.10 Excavation or soil stripping which severe or damage the roots may impair the stability of the tree and make it dangerous.

2.0 Method Statement

Before any form of development commences on the site the following works should be undertaken: -

2.1 Tree Works

Tree No.	Proposed Works
T1 & T2	Fell

2.2 Protective Fencing

All fencing used on the site should fully comply with BS 5837:2012 (Trees in Relation to Construction – Recommendations).

2.2.1 The fencing should be strong and suitable for local conditions. It should also take into account the degree of construction activity on the site.

2.2.2 The fencing should be at least 2.3m in height and should be erected with both a vertical and horizontal scaffolding framework capable of withstanding impact, with vertical tubes spaced at a maximum of 3 m. This should support either weldmesh panels which should be securely fixed with wire or scaffold clamps.

2.2.3 Notices should also be erected on the fencing stating ‘Protected Area - No operations within fenced area’.

2.2.4 The positioning of the protective fencing is also very important and should be erected in the proposed location identified in Appendix One. Once the fence has been erected it should never be crossed and particular care should be taken not to store any materials or soil within the protected area.

2.3 Additional Precautions Outside Fences Areas

2.3.1 Oil, bitumen, cement or other material likely to cause damage to the tree will not be stacked or discharged within 10m of the trees stem or within the protective area. Also materials in general will not be stacked or discharged within the exclusion zone.

2.3.2 Concrete mixing and washing will not be carried out within 10m of any retained trees.

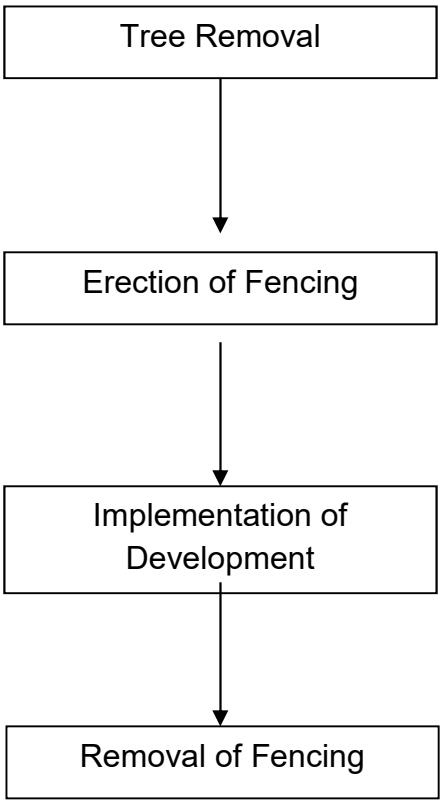
2.3.3 Fires will not be lit beneath the foliage or in a position where the flames could extend to within 5m of the foliage, branches or trunk. If the fire is large then this may necessitate a distance of at least 20m.

2.3.4 Trees that are to be retained will not be used as anchorage for equipment.

2.3.5 Notice boards, telephone cables, or other services will not be attached to any part of the retained tree.

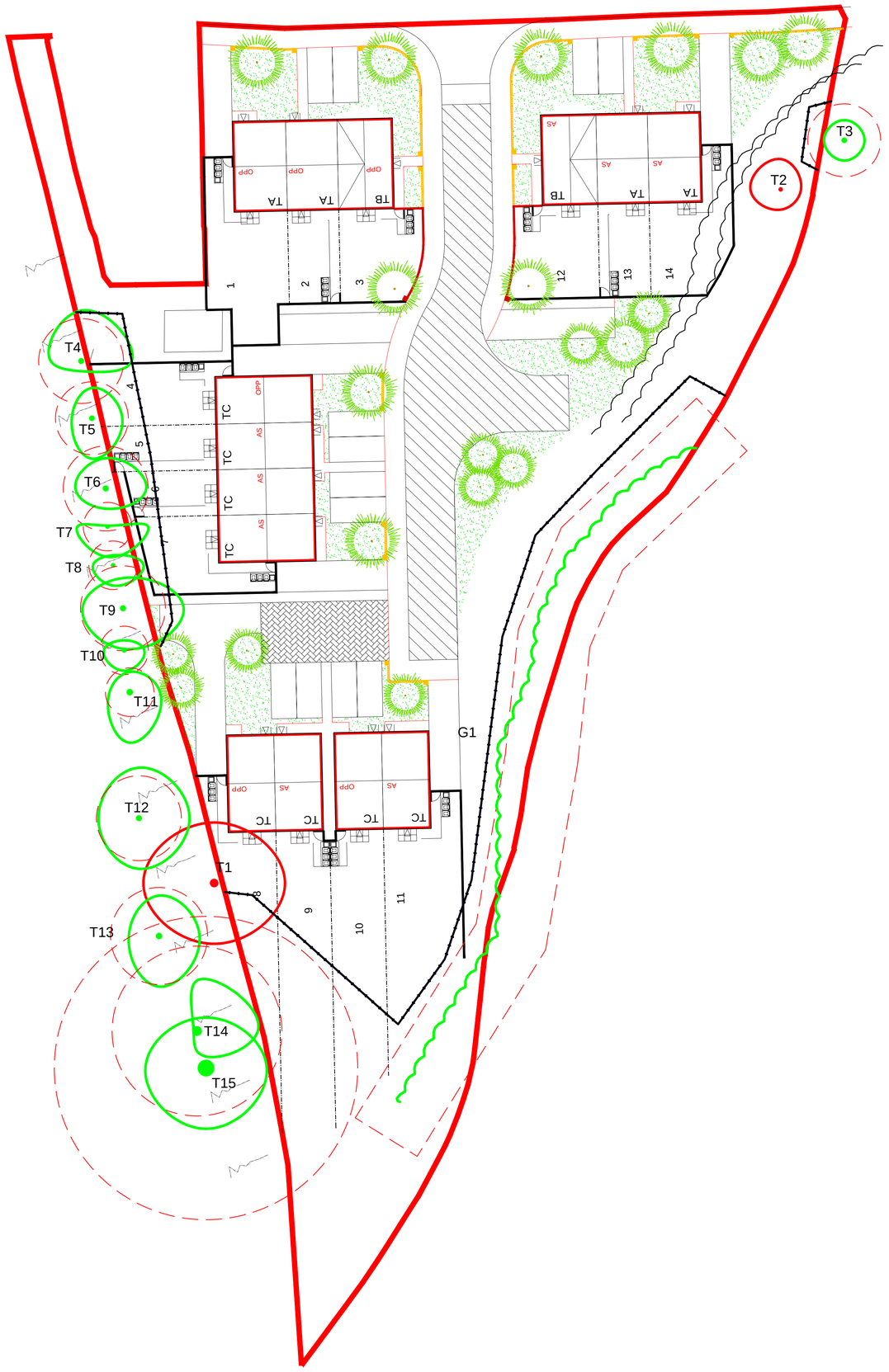
2.3.6 Care should be taken when using cranes or other equipment near the canopy of the retained trees. Also any trees to be felled in proximity to the retained trees should be done so with particular care.

2.4 Summary of Methodology for the Protection of the Trees



Appendix One

Tree Plan



Trees to be retained

Trees to be removed

Protective fencing

Root protection area

Mulberry TMC
Adamson House
Towers Business Park
Wilmslow Road
Didsbury
M20 2YY

Tel: 0161 955 3628
Email: info@mulberrytmc.co.uk

Site Address:
Bingswood Road
Whaley Bridge

Drawing Title:
Method Statement Plan

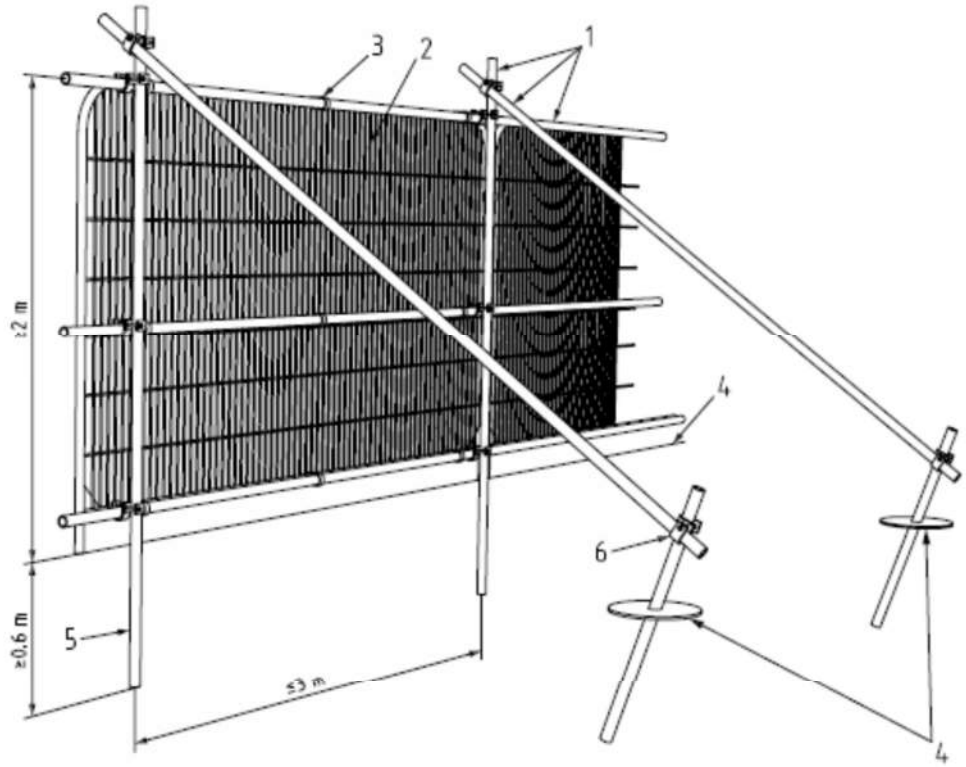
Drawing No:
BRWR/MS/01 Rev A

Date:	Scale:	Drawn by:
16/05/2017	1:250@A1	CS

Appendix Two

Tree Protection Fencing

Tree Protection Fencing (BS5837: 2012)



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps