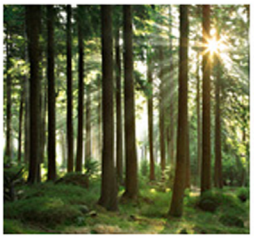
BRITISH STANDARD 5837 TREE SURVEYS ARBORICULTURAL IMPLICATION STUDIES TPO/PLANNIG ADVICE/ PROJECT MANAGEMENT
TREE INVENTORIES AND RISK ASSESSMENTS WOODLAND MANAGEMENT PLANS TREE PLANTING SCHEMES TPO RE-SURVEY






ARBORICULTURAL IMPLICATIONS ASSESSMENT

PROPOSED DEVELOPMENT

AT

LEY HOUSE
MARPLE BRIDGE
STOCKPORT

Author: R. Pearce
Date: 10 January 2021
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1.0 Introduction

1.1 Mulberry Tree Management were instructed by Eden Planning, to carry out an arboricultural survey of trees at their site at Ley House, Marple Bridge, Stockport.

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 11 November 2020 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- 10693 / 001 / 1 – Topographical survey
- Drawing- 0628-P3A-ST-XX-DR-A-02001.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 damp 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	$20m^2$ = circle with a radius of 4.2m	12.30	19.10	Yes
T2	$209m^2$ = circle with a radius of 8.16m	12.46	16.35	Yes as outlined in section 5.2 & 5.3 below
T3	$118m^2$ = circle with a radius of 6.12m	18.65	22.84	Yes
G4	$41m^2$ = circle with a radius of 3.6m	5.15	9.6	Yes as outlined in section 5.2 & 5.3 below
G5	$31m^2$ = circle with a radius of 3.12m	20.94	22.42	Yes
G6	$46m^2$ = circle with a radius of 3.84m	0.9	8.8	Yes as outlined in section 5.3 below, x2 trees to be removed for development.
G7	$94m^2$ = circle with a radius of 5.46m	3.75	10.50	Yes as detailed in section 5.2 & 5.4 below
T8	$100m^2$ = circle with a radius of 5.64m	11.45	11.85	No
G9	$137m^2$ = circle with a radius of 6.6m	14.18	17.10	Yes – x1 tree to be removed for development.
T10	$652m^2$ = circle with a radius of 14.4m	27.70	31.64	Yes
T11	$191m^2$ = circle with a radius of 7.8m	32.40	36.20	Yes
T12	$113m^2$ = circle with a radius of 1.36m	29.60	32.70	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.	T1, T3, G5 Part of G9, T10, T11 & T12	T2, G4, part of G6 & G7	T8	Part of G6 & Part of G9

5.0 Mitigation Proposals

5.1 Compensatory Planting

5.1.1 Due to the loss of the trees identified in section 3.4 it is proposed that along with the general soft landscaping for the development supplementary tree planting will support the application.

5.1.2 This will have a number of benefits for the development and the character of the area. These being:-

- Give a greater diversity of age class on the site; increasing sustainability.
- Give a greater diversity of species and therefore wildlife habitat.

5.1.3 The trees proposed are listed in the schedule below: -

Tree Species	Tree Size
Acer campestre	12 – 14 cm girth
Betula pendula	12 – 14 cm girth
Pinus sylvestris	12 – 14 cm girth
Quercus robur	12 – 14 cm girth

5.1.4 The extent of mitigation planting required will need to be confirmed in agreement with the Local Planning Authority once the development proposal is finalised. Requirements usually involve replacement of trees on a two for one basis.

5.2 Access facilitation pruning:

5.2.1 To accommodate the proposals, it will be necessary to prune some of the retained trees, in order to provide suitable access and working distances for pedestrians and vehicles. This is known as ‘access facilitation pruning’ this is relevant to T2, G4 and G7 all of which require 3m crown lifts.

5.3 Driveway Construction

5.3.1 As shown above, the Impact Table raises concern of the proximity of the development driveway and car parking to T2, T3, G4, G5 and G6 and the effect the proposals would have on the Safe Useful Life Expectancy of the trees.

5.3.2 Proposed hard surfaces are present within the RPA of T2, T3, G4, G5 and G6. In this case the proposed surface is situated within the footprint of existing hard surfacing. Where this is applicable, the existing surface should be retained in situ to prevent damage to tree roots. If required, it may then be resurfaced as appropriate, providing that the base is retained and no excavation takes place within the RPA.

5.4 Construction of hardstanding within RPA and Root Pruning

5.4.1 As shown above, the Impact Table raises concern of the proximity of the proposed widening of drive access to G7 and the effect the proposals would have on the Safe Useful Life Expectancy of the trees.

5.4.2 Section 7.5.3 of BS 5837:2012 advises that where new hardstanding is to be formed within the RPA it should not exceed 20% of any existing unsurfaced ground. The table below details the amount of encroachment within the RPA.

Tree No	Total Area m2 of RPA	Total m2 of Structure within the RPA	Percentage of Structure within the RPA
G7 (1 Tree)	94	14.41	13.55

5.4.3 As you can see form the table above the proposed structure does not exceed 20% of the RPA.

5.4.4 To facilitate the development and prevent significant damage to any tree roots within the RPAs of these trees. Supervised excavation and root pruning should be undertaken by the arboricultural consultant.

5.4.5 If the following points are adhered to then the long-term health and retention of G7 (1 tree) will not be adversely affected.

- Excavation must be carried out using hand tools to avoid direct damage to the bark of the roots. It may be possible in some instances to use specialised equipment such as high air pressure machinery to excavate the soil with minimal disturbance to roots.

- Exposed roots will be wrapped in dry, clean Hessian to prevent the roots from drying out. In hot or dry weather, the hessian should be kept moist. The hessian must be removed before backfilling.

- Roots less than 25mm diameter may be pruned back, preferably to a growing point. A sharp cutting tool such as bypass secateurs or a handsaw should be used to leave the smallest wound possible. Roots greater than 25mm in diameter should be retained wherever possible.

- Root pruning should be carried out under the supervision of the Arboricultural Consultant.

- Backfilling of any excavation must be carried out by hand to avoid direct root damage or compaction, where possible. Builder sand must not be used in the backfill material.

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.

6.3 Following site development, regular (annual or biennial) 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

Arboricultural Data Sheet: Ley House, Marple Bridge						Date of Survey: 11/11/2020						Surveyor: Russell Pearce		
Tree No.	Species	DBH (mm)	RPA (m^2) Per tree	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	Crataegus monogyna	350	55	6.5	EM	6	4.5	5	4.5	2	B	**Minor deadwood throughout crown. Pruning wounds with some cavitation.**	20+	**B 1**
T2	Cedrus libani	680	209	15.5	SM	5	4	3.5	4.5	2.5	A	**Trifurcation between 0.5m - 1m. Minor deadwood in crown.**	40+	**B 1**
T3	Acer pseudoplatanus	510	118	14	SM	5	5	5.5	5	3	A	**Straight single stemmed tree with no noted defects.**	40+	**B 1**
G4	Mixed	300 avg	41	8-10	SM	3	3	3	3	1	B	**x3 trees – Picea sitchensis, Chamaecyparis lawsoniana and Fraxinus excelsior. Minor deadwood throughout crowns. Cypress has acute included union at 3m.**	20+	**B 2**
G5	Chamaecyparis lawsoniana	260 avg	31	8	Y	1	1	1	1	0	A	**A line of x3 trees all with acute included unions and slender stems.**	40+	**C 1 / 2**
G6	Chamaecyparis lawsoniana	320 avg	46	6-8	SM	1.5	1.5	1.5	1.5	0	B	**Multi-stemmed at base with acute included unions.**	40+	**C 1 / 2**
G7	Tilia x europea	455 avg	94	12-14	SM	5	5	5	5	1.5	A	**x4 limes with pruning wounds from previous crown lifts. x1lime has surface level changes within RPA at approx. 2m from stem (see plan)**	40+	**B 1 / 2**
T8	Quercus petraea	470	100	6	SM	5	4.5	2.5	6.5	2	C	**Limited access due to fencing and dense hedgerow – values estimated. Tree is in decline, with large deadwood in crown. Heavily suppressed by adjacent tree, with imbalanced asymmetric crown.**	<10	**U**

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						N	**E**	**S**	**W**					
G9	Quercus petraea	550 avg	137	11.5	SM	7	7	7	7	2.5	A	**Limited access to x2 trees due to dense hedgerow. Deadwood within crowns.**	40+	**B 1**
T10	Fraxinus excelsior	1200	652	17	EM	7	7	7	8	2.5	B	**Historically lapsed pollard at 8m. Extensive regrowth with open decay cavities present at old pruning locations. Multiple large pruning wounds on stem, many of which have occluded. Re-pollard or aerial inspection of open decay cavities required.**	20+	**B 1**
T11	Quercus robur	650	191	14	EM	7	9	9	9	4	A	**Tree on 3rd party land. Foliage is obstructing streetlight. Large wound with some cavitation at crown break – good wound wood present.**	40+	**B 1**
T12	Quercus robur	500	113	7	EM	8.5	4.5	6.5	7	3.5	A	**Suppressed tree with asymmetric crown due to proximity of adjacent tree. Multiple tear out wounds over road – likely from impacts. Deadwood throughout.**	40+	**B 1**

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

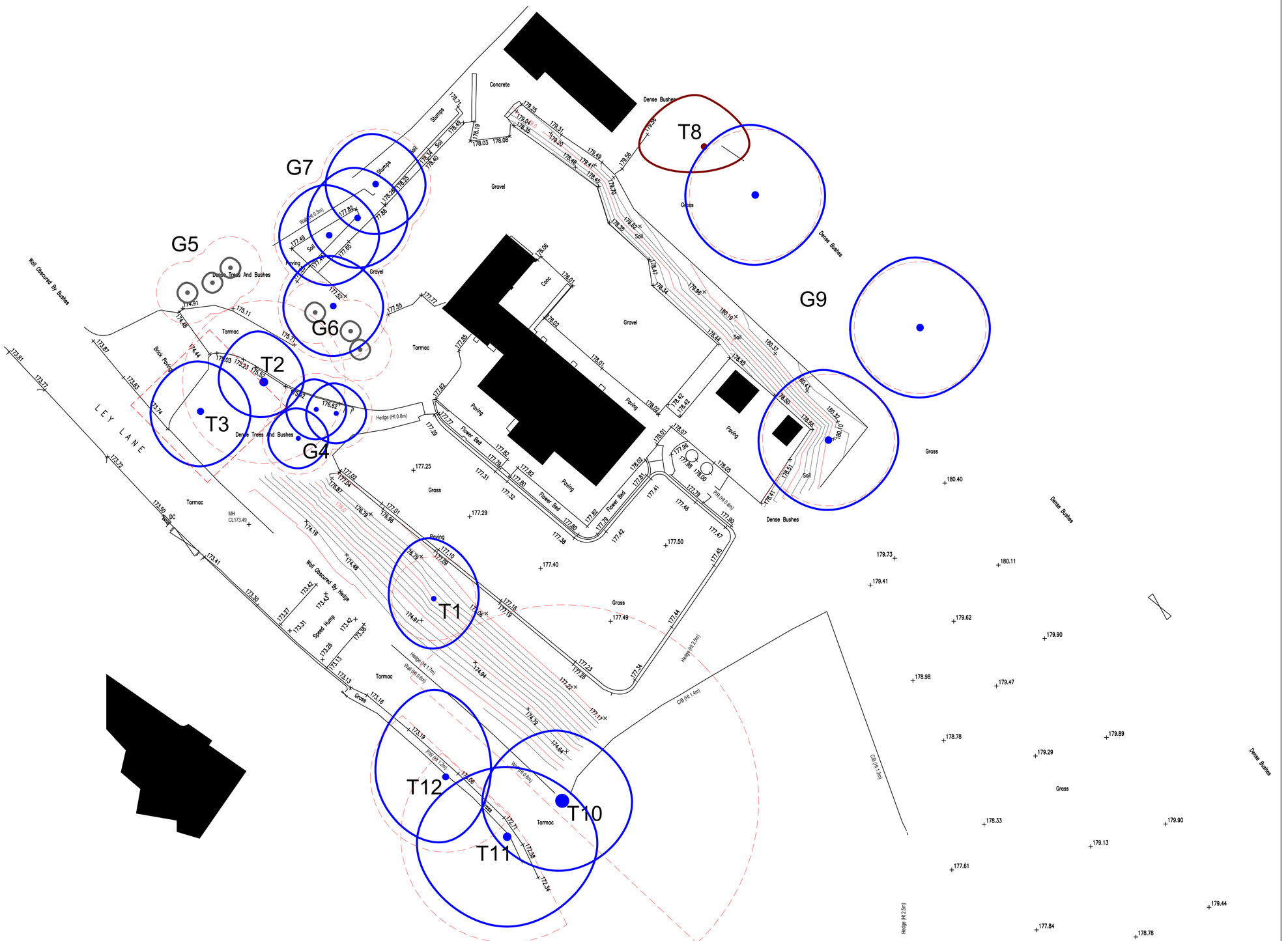
Y	Young	Trees that have not yet established
SM	Semi-Mature	Established trees up to 1/3 of expected height and crown
EM	Early mature	Between 1/3 and 2/3 expected height and crown
M	Mature	Between 2/3 and full expected height and crown
FM	Fully Mature	Full expected height and crown
OM	Over-Mature	Crown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



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Site Address:
Ley House
Marple

Drawing Title:
BS5837 Plan

Drawing No:
LHM/BS/01

Date:	Scale:	Drawn by:
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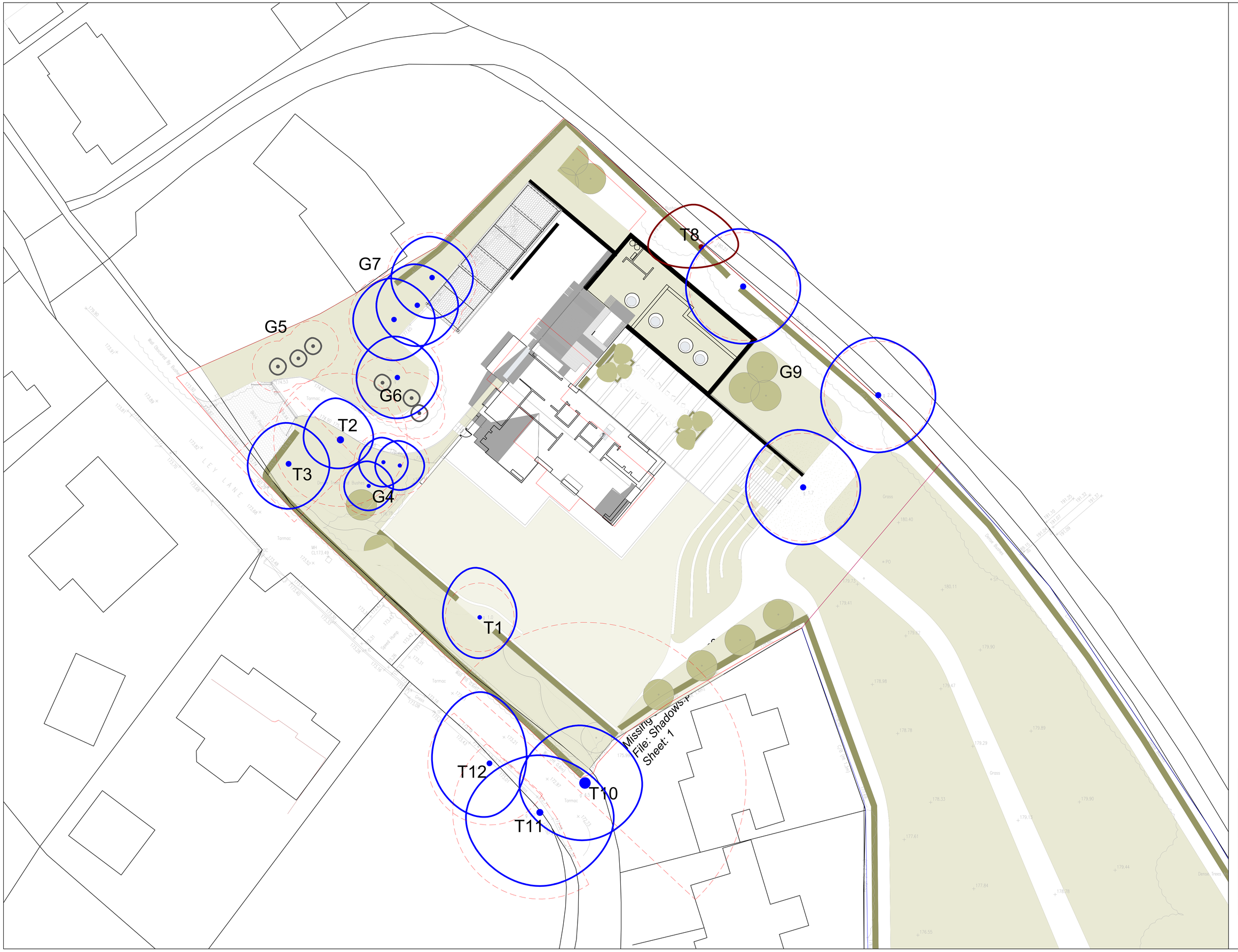

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