



Arboricultural Method Statement

Plus Arboricultural Impact Assessment & Tree Survey

**Land off New Smithy Avenue,
Thurstone**

Report reference: AR-4006-05 AMS
December 2022

Report Title:	Arboricultural Method Statement Land off New Smithy Avenue, Thurlstone
Report Reference:	AR-4006-05
Written by:	Victoria Black FdSc Arb Principal Arboricultural Consultant
Technical review:	Victoria Black FdSc Arb Principal Arboricultural Consultant
QA review:	Victoria Black FdSc Arb Principal Arboricultural Consultant
Approved for issue:	Victoria Black FdSc Arb Principal Arboricultural Consultant
Date:	12.12.2022



Unit A, 1 Station Road, Guiseley, Leeds, LS20 8BX
Phone: **01943 884451**
01943 879129
Email: admin@brooks-ecological.co.uk
www.brooks-ecological.co.uk
Registered in England Number 5351418



Contents

CONTENTS.....	3
SUMMARY STATEMENT.....	4
INTRODUCTION.....	4
IMPACT SCHEDULE	5
SITE PREPARATION PRIOR TO ANY DEVELOPMENT COMMENCING	11
DEVELOPMENT PHASE	13
MITIGATION.....	15
POST DEVELOPMENT PHASE.....	15
GENERAL PRINCIPLES FOR TREE PROTECTION	15
TIMESCALE OF WORKS	16
RELEVANT CONTACT DETAILS	17
TREE SURVEY &AIA.....	18
Tree Survey including Tree Constraints Plan DR-4006-01	
Tree Protection Plan DR-4006-04	

Summary Statement

This survey assessed nine individual trees and two groups of trees. Eight of the trees surveyed are situated in adjacent private land and, resulting in their inspection being limited. One tree requires annual monitoring due to a small section of included bark at its union. All trees and groups surveyed were identified as retention category 'C'.

This report should be read in conjunction with the attached Tree Constraints Plan Ref: DR-4006-01, Tree Survey & AIA AR-4006-04 and Tree Protection Plan Ref: DR-4006-03.

The recommendations in this Arboricultural Method Statement are of a preliminary nature and are subject to comments from the local Council, in line with the current planning application.

The proposed development consists of a mixture of 21 residential plots with associated access road from the existing New Smithy Avenue access point, garages and private gardens. Ground level changes are proposed across the Site.

Introduction

Purpose of the report

1. This report has been commissioned to provide professional independent, detailed arboricultural advice on all relevant trees present at Land south of New Smithy Avenue, Thurlstone.
2. The report has been undertaken in accordance with BS 5837:2012 'Trees in relation to construction – Recommendations'.
3. A topographical plan has been supplied by the client. A proposed Site layout was provided by the client Ref: S100C Planning Layout 21 Unit.dwg
4. Plans have been provided by the architect/client to enable an impact assessment of the proposed works on the existing relevant trees within the Site.

Impact Schedule

The following schedule identifies the individual tree and its retention category with the main feature(s) of the proposed works likely to cause an impact. The tree references are shown on the tree constraints plan and the tree protection plan. Any mitigation measures are noted.

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
G1	Goat willow group	C	In garden space of Unit 12 1.8m boundary feature	Canopy and RPA incursions not expected.	Tree protection barrier to BS5837:2012. No ground level changes Possible crown lift to east required. Arboricultural supervision required. In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground. Care to be taken when removing the grass.
T2	Sycamore	C	Possible boundary feature	Canopy incursions not expected.	Tree protection barrier to BS5837:2012. No ground level changes

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
					<p>Arboricultural supervision required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p> <p>Care to be taken when removing the grass.</p>
G3	Hawthorn	C	Proposed footpath	Small section of group will be required to be removed	<p>Tree protection barrier to BS5837:2012.</p> <p>No ground level changes</p> <p>Arboricultural supervision required.</p> <p>Small section requires removal – mitigation planting required on site.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p>

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
					Care to be taken when removing the grass.
T4	Sycamore	C	In the garden of Unit 11 Possible boundary feature	Canopy and RPA incursions not expected.	<p>Tree protection barrier to BS5837:2012.</p> <p>No ground level changes</p> <p>Arboricultural supervision required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p> <p>Care to be taken when removing the grass.</p>
T5	Ash	C	In the garden of Unit 10 & 11 Possible boundary feature	Canopy and RPA incursions not expected.	<p>Tree protection barrier to BS5837:2012.</p> <p>No ground level changes</p> <p>Arboricultural supervision required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs</p>

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
					<p>requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p> <p>Care to be taken when removing the grass.</p>
T6	Sycamore	C	<p>In garden space of Unit 9 & 10</p> <p>Possible boundary feature</p>	Canopy and RPA incursions not expected.	<p>Tree protection barrier to BS5837:2012.</p> <p>No ground level changes</p> <p>Arboricultural supervision required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p> <p>Care to be taken when removing the grass.</p>
T7	Ash	C	None	Off-Site tree. Canopy and RPA incursions not expected.	No protection required

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
T8	Holly	C	None	Off-Site tree. Canopy and RPA incursions not expected.	Tree protection barrier to BS5837:2012.
T9	Eucalyptus	C	Possible boundary feature	Off-Site tree. Canopy and RPA incursions not expected.	<p>Tree protection barrier to BS5837:2012.</p> <p>No ground level changes</p> <p>Arboricultural supervision required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p> <p>Care to be taken when removing the grass and landscaping within this area.</p>
T10	Deodar cedar	C	Possible boundary feature	Off-Site tree. Canopy and RPA incursions not expected.	<p>Tree protection barrier to BS5837:2012.</p> <p>No ground level changes</p> <p>Arboricultural supervision required.</p> <p>Some very minor root pruning may be required.</p>

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
					<p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p> <p>Care to be taken when removing the grass and landscaping within this area.</p>
T11	Himalayan birch	C	Possible boundary feature	Off-Site tree. Canopy and RPA incursions not expected.	<p>Tree protection barrier to BS5837:2012.</p> <p>No ground level changes</p> <p>Arboricultural supervision required.</p> <p>Some very minor root pruning may be required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p>

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
					Care to be taken when removing the grass and landscaping within this area.

Site preparation prior to any development commencing

5. The proposed development consists of a mixture of 21 residential plots with associated access road from the existing New Smithy Avenue access point, garages and private gardens. Ground level changes are proposed across the Site.
6. To facilitate the proposed development a small section of G3 has been earmarked for removal.

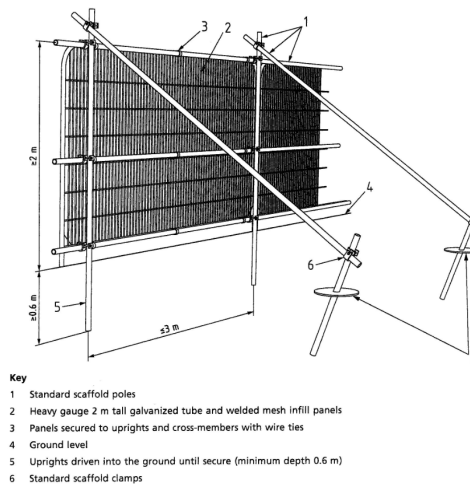
Tree Works

7. Prior to any development commencing on site the first operation will be to carry out the necessary tree works. All tree works should conform to BS 3998:2010 – Recommendations for tree works. All tree works should be formally approved from the local planning authority before beginning.
8. Those trees which overhang the public footpaths or public highways, shall require future maintenance to maintain clearance heights for vehicular or pedestrian traffic. These heights should be 5.6m above a road and 2.5m above a footpath.

Tree protection barriers

9. Once the necessary tree works are complete, the protective barriers should be fully installed. No other work should commence until this happens – this includes movement of materials, supplies or machinery onto the site and any excavations or soil stripping. Once the barriers are properly erected in their correct positions, they should not be removed or altered in any way without prior approval from the local planning authority.

10. All tree protection barriers should be constructed in accordance with BS 5837:2012 default specification fencing (example shown below) and should be located as shown in on DR-4006-03 Tree Protection Plan.
11. The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts. The vertical tubes should be spaced at a maximum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed.
12. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots.
13. If the presence of underground services precludes the use of driven poles, an alternative specification should be prepared. Details any existing underground services should be provided by the client and this AMS revised.
14. This fencing will create construction exclusion zones in order to protect the retained trees root protection areas. No pedestrians, vehicles, materials or equipment should be allowed within these fenced areas at any time.
15. Clear notices are to be fixed on the outside of the barriers with wording such as: 'NO ACCESS PROTECTED AREA – NO STORAGE OR WORK WITHIN THIS AREA'.
16. All construction and other relevant personnel are to be informed at site induction of the role of the exclusion barriers and their importance.
17. All tree protective fencing should remain intact until ALL works within the relevant area are completed.



Site inspection

18. Once the necessary tree works have been carried out and the protection barriers are fully installed, it is recommended that no work should commence until the local planning authority and/or Brooks Ecological are invited to carry out a site visit to ensure that it meets all requirements.
19. Regular brief reports, including photos, should be submitted to the local Council's tree officer.

Development phase

Ground level changes

20. We can confirm that the development proposals do not propose any level changes within proximity any of the trees located either on or adjacent to the site boundary.

Demolition

21. In this case, there is no demolition to take place on this site.

Drainage and utilities

22. Drainage and utilities are expected to be included within the proposed Site works and should not involve digging or trenching within RPA's.

Proposed footpath

23. The proposed encroachment into the RPA of G3, for the proposed footpath, is very minimal and does not require any special construction technique. It is recommended that prior to any mechanical machinery entering this area, the roots (if found) are cut back using clean, straight cuts with sharp tools. This will minimise the extent of wounding and save unnecessary root ripping with heavy machinery.
24. These proposed works should be carried out with Arboricultural supervision to ensure no major roots are lost.
25. If required roots smaller than 25mm diameter may be pruned back where necessary, making a clean cut with a suitable sharp tool, except where they occur in clumps. Roots in clumps or larger than 25mm diameter should be severed only following consultation with an Arboriculturist, as such roots may be essential to the health and stability of the tree.
26. Great care must be taken when removing the grass or hard standing within this area. Hand tools only. This should be supervised by an Arboricultural Consultant.

Boundary features

27. Proposed boundary fencing is proposed within the RPA's of some of the retained trees on site. In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.
28. All works within RPA's should supervised by Brooks Ecological.

Mitigation

- 29. It should be noted that the proposed compound area and plantroom are located away from any retained tree.
- 30. Any cultivation operations within these RPA's should be undertaken carefully by hand with the use of no heavy mechanical machinery.
- 31. All works within RPA's should supervised by Brooks Ecological.
- 32. Regular brief reports, including photographs, should be submitted to the local Council.
- 33. There is opportunity within the scheme to plant trees and enhance wildlife potential.

Post development phase

Removal of protective barriers

- 34. Once every aspect of the construction is complete within the specific zone and all machinery and materials are off site, the protective barriers can be dismantled.

Completion meeting

- 35. Upon completion of all the works specified, it is recommended that the local planning authority are invited to meet on site to check that all works are completed satisfactorily and to discuss any remedial works as required.

General principles for tree protection

- 36. A copy of this Arboricultural Method Statement and appendices should be retained on site at all times.
- 37. If 360 degree excavators are to be used on this site during construction, at no time should the excavating arm encroach over the position of the protective barriers.

38. No fires at all on site.
39. A designated storage area should be created away from the root protection areas of any retained tree on site. All materials should be stored within this compound.
40. Care must be taken to avoid leakage of any noxious materials on to the soil.

Timescale of Works

41. The timescale for arboricultural requirements are summarised below:

Timescale	Action
Stage 1	All requirements listed in the planning consent are approved by the Local Authority planning office.
Stage 2	Undertake the tree works
Stage 3	Install the protective barrier around the trees as detailed on DR-4006-03 Tree Protection Plan.
Stage 4	Brooks Ecological to inspect the barrier prior to any on site construction. Once inspected, the protective barrier must not be moved or breached until ALL works have been completed. Regular brief reports, including photos, should be submitted to the local Council's tree officer.
Stage 5	Undertake the construction
Stage 6	Following the completion of the construction phase and when all site traffic and machinery has left, the protective barrier and can be removed.
Stage 8	Post construction remedial tree works to be undertaken, if required, including tree planting and landscaping.

Relevant Contact Details

Contact Name	Company	Contact Number
Victoria Black - Arboricultural Consultant	Brooks Ecological	01943 884451

Tree Survey &AIA



Tree Survey and Arboricultural Impact Assessment

**Land off New Smithy Avenue,
Thurlstone**

Report reference: AR-4006-04
December 2022

Report Title:	Arboricultural Impact Assessment Land off New Smithy Avenue, Thurlstone
Report Reference:	AR-4006-04
Written by	Laura Buckley BA(Hons) Dip LA CMLI MSc Arb & Urb For TechArborA Victoria Black FdSc Arb Principal Arboricultural Consultant
Technical review:	Victoria Black FdSc Arb Principal Arboricultural Consultant
Approved for issue	Victoria Black FdSc Arb Principal Arboricultural Consultant
Date	12.12.2022



Unit A, 1 Station Road, Guiseley, Leeds, LS20 8BX
 Phone: **01943 884451**
01943 879129
 Email: admin@brooks-ecological.co.uk
www.brooks-ecological.co.uk
 Registered in England Number 5351418



CONTENTS

SUMMARY	21
INTRODUCTION	21
SITE VISIT	22
TREE SURVEY DATA.....	23
FINDINGS.....	26
IMPLICATIONS FOR POTENTIAL DEVELOPMENT	26
PROPOSED TREE REMOVAL TO FACILITATE DEVELOPMENT	32
PROTECTION OF TREES TO BE RETAINED/OFF-SITE TREES	33
APPENDIX 1: PHOTOGRAPHS.....	36
APPENDIX 2: EXPLANATION OF TREE DESCRIPTIONS	37
APPENDIX 3: GENERAL RECOMMENDATIONS	39
APPENDIX 4: TREE CONSTRAINTS PLAN	41
APPENDIX 5: TREE PROTECTION PLAN	42

Summary

This survey assessed nine individual trees and two groups of trees. Eight of the trees surveyed are situated in adjacent private land and, resulting in their inspection being limited. One tree requires annual monitoring due to a small section of included bark at its union.

Introduction

Purpose of the Report

42. This report has been commissioned to provide professional independent, detailed arboricultural advice on all relevant trees present at Land south of New Smithy Avenue, Thurlstone. The Arboricultural Impact Assessment aims to offer professional advice and necessary recommendations with regards to proposed development design, evaluating the direct and indirect effect it will have on the existing tree cover.
43. This report replaces an earlier report (AR-4006-01.02) dated July 2021, due to scheme layout revisions. An earlier preliminary tree survey and arboricultural impact report by Brooks Ecological Limited was carried out, dated January 2017 (R-2736-02). The scheme proposals have been used as a basis for this revised report are:
 - S100C Planning Layout 21 Unit.dwg
44. The report has been undertaken in accordance with BS 5837:2012 'Trees in relation to construction – Recommendations'.
45. A topographical plan has been supplied by the client. A proposed Site layout was provided by the client (dwg. no. S100C Planning Layout 21 Unit.dwg)

Legal implications

46. Due to the large potential penalties for illegally carrying out work to protected trees, it is recommended that a check is carried out prior to any works being undertaken to ensure the trees on site are not protected by a Tree Preservation Order or are within a Conservation Area. A search for TPO's or Conservation Areas has not been undertaken as part of this report.

47. Every tree owner has a general duty of care to ensure their tree(s) does not pose an unacceptable risk to other people on or adjacent to their land. The landowner will only be liable for injury or damage caused by trees if they are found to be negligent.
48. There is no legal obligation for a tree owner to cut back growth from a neighbouring property. However, under Common law of tort of nuisance, an affected neighbour has the right to cut back roots or branches that encroach onto a neighbouring property back to the boundary of the land owned by the person abating the nuisance without the neighbour's consent (with the exception of TPO's or CA's). The person abating the nuisance has a duty to exercise reasonable care in carrying out work as a failure to do so may lead to liability in negligence (for example where removal of roots makes a tree unstable).

Site Visit

Site Description

49. Land Use –The land is currently enclosed unused pasture in a rectangular-shaped field. The site is located within the small village of Thurlstone. To the north, east and south of the site are residential properties with associated garden space. To the west of the site lies a large pasture with a large detached property.
50. Topography - The site is gently sloping to the south-east within a small valley landscape. Directly to the south of the site side the land is at a lower level and the stone wall boundary along the south side of the Site may be part retaining wall.
51. Treescape - The area has poor tree cover, however the opposite valley side includes more trees.
52. Visual amenity - The trees on this site have a low impact on the local treescape, however the trees surveyed are likely to have visual amenity when viewed across the small valley from the opposite side.
53. Species diversity – Species surveyed on site include: sycamore, hawthorn, goat willow, holly and ash. Neighbouring trees include eucalyptus, deodar cedar and small fruit trees.

Survey Conditions

54. The survey was carried out on 2nd April 2019 in cold, overcast conditions.

Limitations

55. The boundary features and private property limited the survey and estimates of data were made where necessary and noted in the schedules below. All findings and recommendations are based on visual observations conducted from ground level during the site visit only. No other diagnostic procedures were used to establish any extent of internal decay nor was a climbing inspection undertaken. Four off-Site trees (T8, T9, T10 and T11) have estimated positions on the plans included in this report.
56. All measurements were obtained with the use of a clinometer and an electronic distometer.

Tree survey data

The schedule below contains the tree data obtained from the Site survey.

Ref	Species	Life stage	Ht (m)	Can Ht (m)	Lowest branch	Stem diam (mm)	Canopy spread (m)	Physio logical	Structural condition	Recommendations	Life exp. (yrs)	Ret cat
G1	Goat willow group	M	14	0.5	2m+	160 175	N 1-3# E 3# S 1-3# W 3#	Fair	Poor. Approx. 10 trees beside western boundary. Closely-spaced with some broken branches.	None at present.	10-20	C 3
T2	Sycamore	EM	16	3	2m+	345	N 2 E 5# S 4 W 4#	Fair	Fair. Twinned stem at 1.8m. Growing on stone rubble. Minor dead wood evident. Crown lifted W side with non-calloused wounds.	None at present.	20	C 2
G3	Hawthorn	Y	2.5-3	GL	<0.2m	<100	N 1.5# E 1.5# S 1.5# W 1.5#	Fair	Fair. Double planted row of hawthorns - hedge-like though now unmanaged.	None at present.	20+	C 1
T4	Sycamore	SM	12	2.5	Not measured.	300 est	N 4.5 E 3 S 4# W 4	Fair	Fair. Outside south Site boundary, overhangs Site. Stems fork tightly though base of stem is not visible below stone wall. Root protection area (RPA) probably affected by topography.	Monitor fork union.	10-20	C 2
T5	Ash	SM	8	2	2m	100# 150# 130#	N 4.5 E 4.5 S 4.5# W 5	Fair	Fair. Outside south Site boundary. The base is not visible below the stone wall and may be one tree or 3 separate trees. Overhangs Site up to 3m. RPA probably affected by topography.	None at present. Monitor for ash dieback disease.	10-20+	C 1

Ref	Species	Life stage	Ht (m)	Can Ht (m)	Lowest branch	Stem diam (mm)	Canopy spread (m)	Physiological	Structural condition	Recommendations	Life exp. (yrs)	Ret cat
T6	Sycamore	SM	7	2	Not measured	100#	N 2 E 2.5 S 2# W 3#	Fair	Fair. Outside south Site boundary. 5 stems between stone wall boundary and a large trailer which branches are leaning onto and rubbing. Overhangs Site by approx. 1.5m. RPA probably affected by topography.	None at present.	10-20	C 1
T7	Ash	M	9.5	2	2m#	100 x7#	N 3.5# E 4# S 3.5 W 3.5#	Fair	Fair. Outside north Site boundary. Multi-stem. Overhangs Site by 0.5m approx. Slight bias to E.	None at present.	10-20	C 2
T8	Holly	M	5	1.8	2m S	200#	N 3# E 3# S 3# W 3#	Good	Fair. Outside north boundary overhangs Site by 1m approx. Ivy on stem Pruned to shape.	None at present.	10-20+	C 1
T9	Eucalyptus	M	7.5	1	1m W	150 x4	N 2.5 E 2# S 1 W 1.5	Fair	Fair. Outside east boundary. 4 stems outwards from bole. Pruned back over Site with a 1m approx. overhang.	None at present.	10-20+	C 1
T10	Deodar cedar	M	8	<1	E	175#	N 2.5 E 2.5# S 2.5 W 2.5	Good	Good-fair#. Outside east boundary. Typical conical form.	None at present.	10-20+	B 1
T11	Himalayan birch	EM	4.5	<1m	Not measured	75 x3#	N 2# E 2# S 2# W 2#	Fair.	Fair. Outside east boundary. Crown topped at 4-4.5m.	None at present.	10-20+	C

Findings

Tree descriptions and recommendations

57. The tree survey revealed a total of nine individual trees and two groups of trees.
58. All trees and tree groups surveyed were identified as retention category 'C' (low quality) with the exception of T10, assessed as retention category 'B' (moderate quality). No retention category 'A' (high quality) or 'U' (not viable for more than ten years) trees identified. Please refer to Appendix 2 for retention category and definition criteria.
59. The root protection areas (RPA's) of off-Site trees to be south, T4, T5 and T6, are likely to be influenced by the difference in ground level between the lower rooting level and the higher ground level of the Site. The difference in height has not been identified on the topographic plan, however it is unlikely that roots from these trees extend up into the Site area.
60. It has been recommended that neighbouring tree T4 is monitored annually, if possible, to assess if its condition is still acceptable. T4 has a small section of included bark at its union.

Implications for potential development

61. The proposed development consists of a mixture of 21 residential plots with associated access road from the existing New Smithy Avenue access point, garages and private gardens. Ground level changes are proposed across the Site.

Impact Schedule

62. The following schedule identifies the individual tree and its retention category with the main feature(s) of the proposed works likely to cause an impact. The tree references are shown on the tree constraints plan and the tree protection plan. Any mitigation measures are noted.

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
G1	Goat willow group	C	In garden space of Unit 12	Canopy and RPA incursions not expected.	Tree protection barrier to BS5837:2012.

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
			1.8m boundary feature		<p>No ground level changes</p> <p>Possible crown lift to east required.</p> <p>Arboricultural supervision required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p> <p>Care to be taken when removing the grass.</p>
T2	Sycamore	C	Possible boundary feature	Canopy incursions not expected.	<p>Tree protection barrier to BS5837:2012.</p> <p>No ground level changes</p> <p>Arboricultural supervision required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly</p>

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
					severed) or the posts may be driven into the ground. Care to be taken when removing the grass.
G3	Hawthorn	C	Proposed footpath	Small section of group will be required to be removed	Tree protection barrier to BS5837:2012. No ground level changes Arboricultural supervision required. Small section requires removal – mitigation planting required on site. In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground. Care to be taken when removing the grass.
T4	Sycamore	C	In the garden of Unit 11 Possible boundary feature	Canopy and RPA incursions not expected.	Tree protection barrier to BS5837:2012. No ground level changes Arboricultural supervision required.

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
					<p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p> <p>Care to be taken when removing the grass.</p>
T5	Ash	C	<p>In the garden of Unit 10 & 11</p> <p>Possible boundary feature</p>	Canopy and RPA incursions not expected.	<p>Tree protection barrier to BS5837:2012.</p> <p>No ground level changes</p> <p>Arboricultural supervision required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p>

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
					Care to be taken when removing the grass.
T6	Sycamore	C	In garden space of Unit 9 & 10 Possible boundary feature	Canopy and RPA incursions not expected.	Tree protection barrier to BS5837:2012. No ground level changes Arboricultural supervision required. In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground. Care to be taken when removing the grass.
T7	Ash	C	None	Off-Site tree. Canopy and RPA incursions not expected.	No protection required
T8	Holly	C	None	Off-Site tree. Canopy and RPA incursions not expected.	Tree protection barrier to BS5837:2012.
T9	Eucalyptus	C	Possible boundary feature	Off-Site tree. Canopy and RPA incursions not expected.	Tree protection barrier to BS5837:2012. No ground level changes

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
					<p>Arboricultural supervision required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p> <p>Care to be taken when removing the grass and landscaping within this area.</p>
T10	Deodar cedar	C	Possible boundary feature	Off-Site tree. Canopy and RPA incursions not expected.	<p>Tree protection barrier to BS5837:2012.</p> <p>No ground level changes</p> <p>Arboricultural supervision required.</p> <p>Some very minor root pruning may be required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly</p>

Tree ref.	Species	Retention category	Proposal feature	Impact	Mitigation
					<p>severed) or the posts may be driven into the ground.</p> <p>Care to be taken when removing the grass and landscaping within this area.</p>
T11	Himalayan birch	C	Possible boundary feature	Off-Site tree. Canopy and RPA incursions not expected.	<p>Tree protection barrier to BS5837:2012.</p> <p>No ground level changes</p> <p>Arboricultural supervision required.</p> <p>Some very minor root pruning may be required.</p> <p>In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.</p> <p>Care to be taken when removing the grass and landscaping within this area.</p>

Proposed tree removal to facilitate development

63. A small minor section of G3 will require removal to facilitate the proposed footpath.

Tree works

64. Prior to any development commencing on site the first operation will be to carry out the necessary tree works. All tree works should conform to BS 3998: 2010 – Recommendations for tree works. All tree works should be formally approved from the Local Planning Authority before beginning.

Protection of trees to be retained/off-Site trees

Protection

65. It is recommended that temporary protective barriers to BS5837:2012, Figure 1, are erected to protect the canopies and root protection areas of neighbouring trees extending into the Site, as shown in the Tree Protection Plan. No other work should commence until this happens – this includes movement of materials, supplies or machinery onto the site and any excavations or soil stripping. Once the barriers are properly erected in their correct positions, they should not be removed or altered in any way without prior approval from the Local Planning Authority.
66. The tree barriers are intended to form construction exclusion zones and no pedestrians, vehicles, materials or equipment should be allowed within these fenced areas at any time. All-weather notices should be attached to the barrier with words such as: “Construction exclusion zone – no access”.

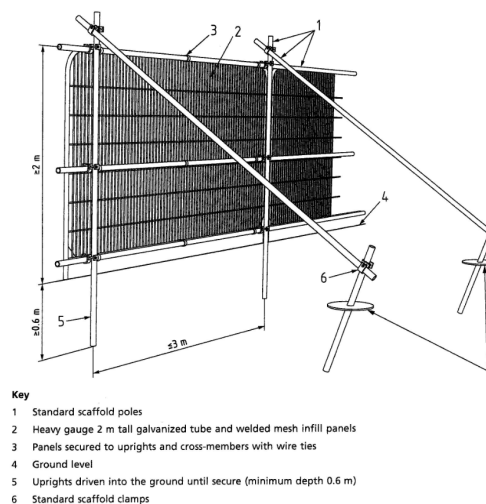


Figure 1

Boundary features

67. Proposed boundary fencing is proposed within the RPA's of some of the retained trees on site. In order to minimise root damage to these trees, excavation must be kept to a minimum. A fence designs requiring intermittent posts will be acceptable and the post holes must not be excavated by mechanical means but may be either dug by hand (with any roots found cleanly severed) or the posts may be driven into the ground.
68. All works within RPA's should supervised by Brooks Ecological.

Demolition

69. In this case, there is no demolition to take place on this site.

Drainage and Utilities

70. It is our understanding that any drainage and utilities will not be installed within the root protection area of any tree on this site.

Proposed footpath

71. The proposed encroachment into the RPA of G3, for the proposed footpath, is very minimal and does not require any special construction technique. It is recommended that prior to any mechanical machinery entering this area, the roots (if found) are cut back using clean, straight cuts with sharp tools. This will minimise the extent of wounding and save unnecessary root ripping with heavy machinery.
72. These proposed works should be carried out with Arboricultural supervision to ensure no major roots are lost.
73. If required roots smaller than 25mm diameter may be pruned back where necessary, making a clean cut with a suitable sharp tool, except where they occur in clumps. Roots in clumps or larger than 25mm diameter should be severed only following consultation with an Arboriculturist, as such roots may be essential to the health and stability of the tree.
74. Great care must be taken when removing the grass or hard standing within this area. Hand tools only. This should be supervised by an Arboricultural Consultant.

Appendix 1: Photographs



Figure 1

Looking north-west to tree group G1, with closely-spaced stems and canopies beside the western boundary fence,



Figure 2

Tree group G2 goat willows. (Neighbouring small conifer to the right).



Figure 3

Trees in the south-west area of the Site boundary. Off-Site, larger field trees are in the background.



Figure 4

Trees along the western and southern sides as seen looking west from the eastern side of the Site. A drop in ground level is evident to the left (south) side.

Appendix 2: Explanation of Tree Descriptions

Measurements

Tree height is calculated in metres from ground level to the highest point of the tree.

Stem diameter is measured and rounded down to the nearest ten millimetres at 1.5m above ground level using a specialist measuring tape. Where a tree divides into multiple stems each stem will be measured.

Canopy spread is measured from the centre of the stem base to the tips of the branches in all four cardinal points using an electronic distometer.

Crown clearance is estimated in metres and is an indication of the lowest significant live branches of the crown.

Age Class is divided into young (Y), semi-mature (SM), early-mature (EM), mature (M), over mature (OM), and veteran (V).

Physiological condition is an assessment of the health and vigour of the tree.

Structural condition is an indication of the structural integrity of the tree. This is given as good, average or poor.

The observations column will include a brief description of each tree and provide further information as relevant.

The remaining contribution is a rough estimate of the number of years a tree is expected to survive in a structurally sound condition.

Retention Categories

Category ratings are allocated based on the current quality and value of a tree in its current surroundings assuming the recommendations of this report are carried out. No consideration is given to any specific development proposal when allocating category ratings.

Category A trees are those which are of high quality and value, are in good structural and physiological condition and are expected to contribute for at least another 40 years.

Category B trees are those which would be considered as category A trees but which are of lower quality and value, poorer structural condition, and which are expected to contribute for at least 20 years.

Category C trees are those which are of low quality and value, are in poor condition, and are expected to contribute for at least 10 years.

Category U trees are those which are expected to contribute for less than 10 years due to serious defects. As is common in risk management, where there is doubt, the precautionary principle may be applied.

Sub-categories

Sub- categories of 1, 2 or 3 are included in the tree data tables and are defined as follows:

Sub-category 1 trees are those with 'mainly arboricultural value'

Sub-category 2 trees are those with 'mainly landscape value'

Sub-category 3 trees are those with 'mainly cultural or conservation value'

Appendix 3: General Recommendations

All work must be to BS 3998: 2010 - '*Recommendations for tree work*'.

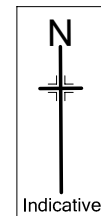
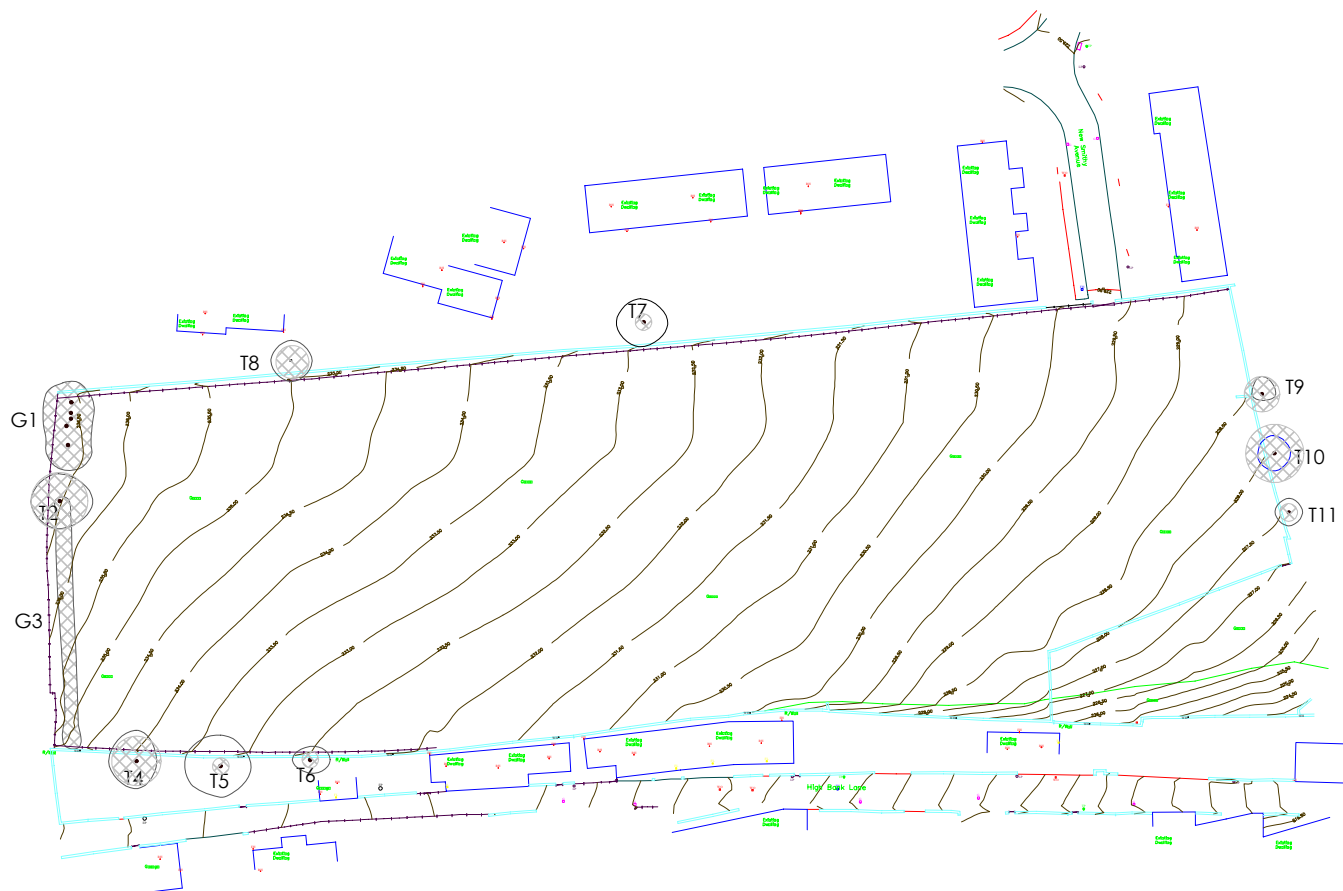
This report is based upon a visual inspection. The consultant shall not be responsible for events which happen after this time due to factors which were not apparent at the time, and the acceptance of this report constitutes an agreement with the

guidelines and the terms listed in this report.

Any defects seen by a contractor or the employer that were not apparent to the consultant must be brought to the consultant's attention immediately.

It is advisable to have trees inspected by an arboricultural consultant regularly.

Appendix 4: DR-4006-01 Tree Constraints Plan



Brooks
Ecological

Email: vb@brooks-ecological.co.uk
Tel No: 0113 250 6101
www.brooks-ecological.co.uk

DR-4006-01 TREE CONSTRAINTS PLAN

Site: Land adjacent New Smithy Avenue,
Thurstone.

Paper Size: A2

Scale: 1:500

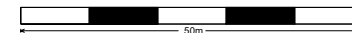
BS 5837: 2012 Retention Categories

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U

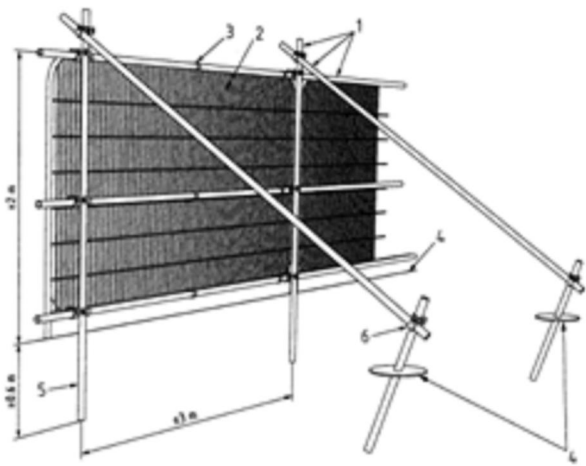
	ROOT PROTECTION AREA
	TREE STEM

Please note:
The plan is for guidance only
and should not be scaled from.

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

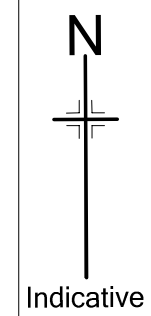
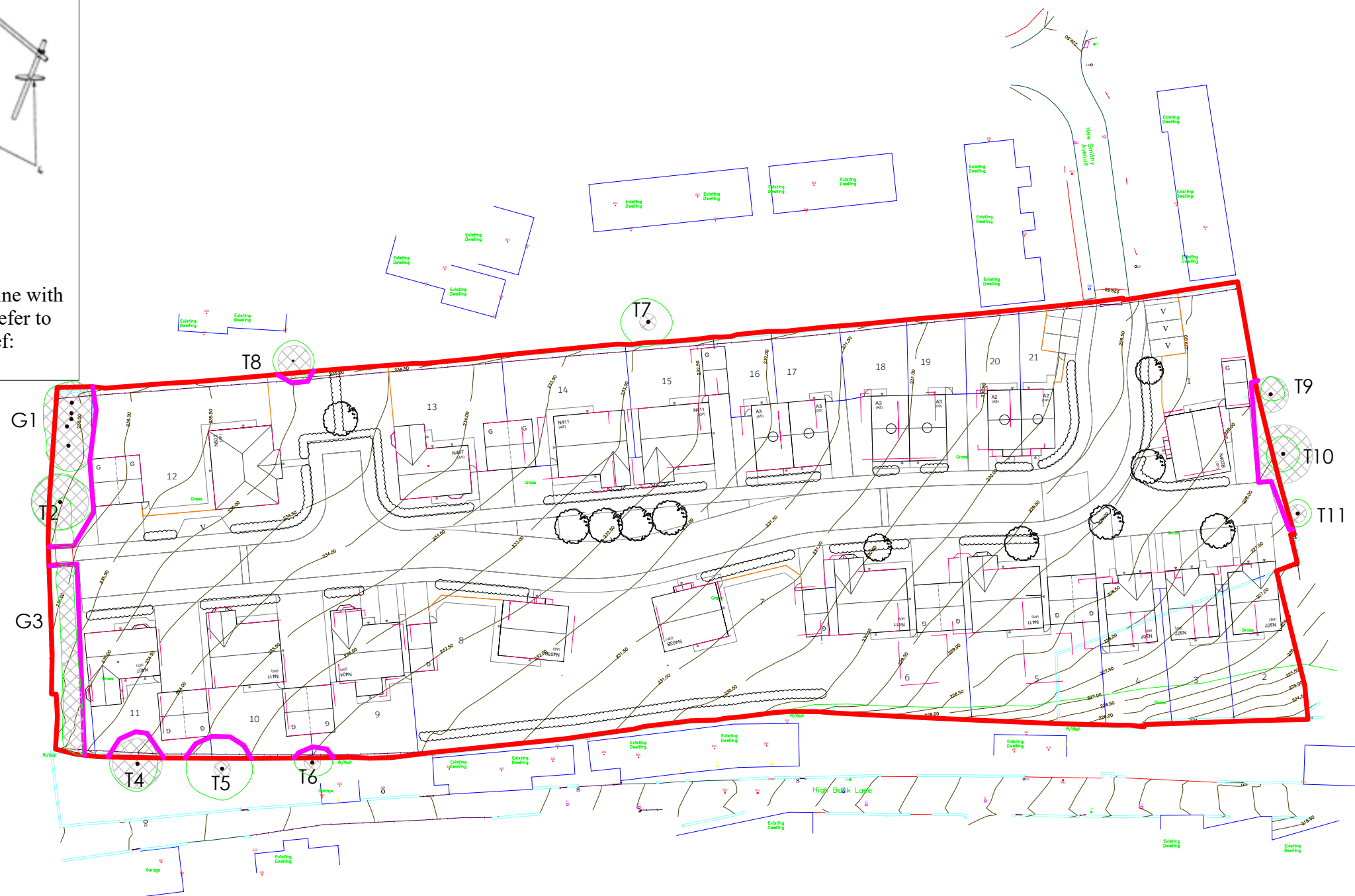


Appendix 5: DR-4006-03 Tree Protection Plan



- 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

An example of tree protective fencing in line with BS 5837:2012. For further details please refer to paragraphs 9-17 of the submitted AMS Ref: AR-4006-05.



Email: vb@brooks-ecological.co.uk
Tel No: 0113 250 6101
www.brooks-ecological.co.uk

DR-4006-04 TREE PROTECTION PLAN

Site: Land adjacent New Smithy Avenue,
Thurlstone.

Paper Size: A2 Scale: 1:500

	Tree to be retained
	Tree to be removed
	Protective fencing in line with BS 5837:2012

	ROOT PROTECTION AREA
	TREE STEM

Please note:
The plan is for guidance only
and should not be scaled from.

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

