



STATION ROAD, HOOK NORTON

TREE SURVEY REPORT and ARBORICULTURAL IMPACT ASSESSMENT

In accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'

Prepared for Nursery Ground Ltd

by

Hankinson Duckett Associates

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1 INTRODUCTION

1.1 Background

1.1.1 This report describes the results of a Tree Survey and Arboricultural Impact Assessment (AIA) undertaken in accordance with BS5837:2012 within areas potentially affected by proposed development at land north of Station Road, Hook Norton herein after referred to as 'the site'. The extent of this area is shown on the Tree Survey Plan in Appendix A. The survey was undertaken by Don Newling of Hankinson Duckett Associates (HDA), and commissioned by Nursery Ground Ltd in July 2014.

1.2 Scope and purpose of report

1.2.1 The report is intended to inform the planning process in accordance with the guidelines set out in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations' (BSI, 2012). This standard provides recommendations and guidance on the principles to be applied to achieve a satisfactory juxtaposition of trees, including larger shrubs and hedgerows, with structures.

'This British Standard gives recommendations and guidance on the relationship between trees and design, demolition and construction processes. It sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures. The standard is applicable whether or not planning permission is required.' (BSI, 2012)

1.2.2 The guidance recommends a three-stage approach incorporating: (i) initial tree survey and report; (ii) Arboricultural Impact Assessment and (iii) Arboricultural Method Statement, which details the specific tree protection measures to be adopted in relation to construction activity across the site, and in particular in the vicinity of retained trees. This report fulfils the first two stages in this process.

1.3 Aims

1.3.1 Specifically, the aims of the study are:

- To conduct a ground-based visual survey of all trees within the site, along with any trees situated on adjacent third party land that have the potential to be impacted upon by development within the site;
- To record the nature, extent and condition of the existing tree cover, and assign a retention category to each tree or group of trees, in accordance with BS5837:2012;
- To compile the survey results in a Tree Data Schedule (Appendix B) and produce an accompanying Tree Survey Plan (Appendix A) which provides information on the retention category, crown spread, Root Protection Area (RPA) and location of each tree or group of trees; and
- To assess the implications of the development in relation to existing trees.

1.4 Date of survey

1.4.1 The tree survey took the form of a visual inspection carried out from ground-level by Don Newling on 25th July 2014.

2 METHODOLOGY

2.1 Information recorded

2.1.1 All trees were surveyed from ground-level using the *Visual Tree Assessment (VTA)* technique developed by Mattheck and Broeler (1994). No climbed inspections or specialist decay detection was undertaken. In accordance with BS5837:2012, the following data was gathered for each tree surveyed:

- Tree, group or hedge number (sequentially and separately for trees, groups and hedges)
- Tree species (English names follow Stace (2010) for higher plants)
- Life stage (expressed within a defined 'age-class' category)
- Tree height (in metres)
- Existing height above ground level of,
 - First significant branch and direction of growth.
 - Canopy (height of crown clearance above ground within the site, in metres)
- Stem diameter (measured at 1.5m above uppermost ground-level)
- Branch spread (measured at the four cardinal points)
- Observations on tree position, form, condition, and comments on any significant defects
- Recommendations for arboricultural works
- The physiological and structural condition of the tree(s)
- Estimated Remaining Contribution expressed within defined categories
- BS5837 retention category

2.1.2 Category definitions in relation to the above are described fully in Appendix C.

2.2 Observed tree defects and recommendations

2.2.1 Where appropriate and with due regard to the limitations of this survey outlined in *Section 2.3* below, recommendations have been provided on arboricultural works which should be undertaken in the interests of safety or as part of sound management practice.

2.2.2 It should be noted that recommendations for tree works identified within the Tree Data Schedule and summarised in Section 4.5 are provided in accordance with the guidance set out in BS5837:2012, and not in connection with the proposed development. Under the Occupiers Liability Act (1957 and 1984), responsibility for ensuring the safety of individual trees in relation to the statutory 'duty of care' rests with the relevant owner/occupier. Specific details of any tree works which will be required in order to facilitate the proposed development are included in Section 5 of this report.

2.3 Limitations

- 2.3.1 This survey and the results contained within this report represent a preliminary assessment from ground-level. No climbed inspections or specialist decay detection was undertaken and detailed (measured) survey of a number of trees was not possible due to dense vegetation and access restrictions.
- 2.3.2 Observations have been made for the purposes of assessment in terms relevant to planning and development, and not tree safety. No climbed inspections, invasive or non-invasive decay detection devices have been used in assessing tree condition. As such, the survey conducted and results presented should not be used as a tree safety evaluation, which would require a *Tree Safety Survey*, designed to provide a more detailed appraisal of the risk and liability associated with specific individual trees or groups of trees.
- 2.3.3 Whilst efforts have been made to detect significant defects within inspected trees, no guarantee can be given as to the safety or otherwise of surveyed trees. Climatic conditions including storms, droughts, and temperature changes can and do cause failure in apparently healthy trees. In addition to this restrictions on access and the presence of dense undergrowth, ivy and other climbing plants can obscure defects from view. It should also be noted that the presence of tree pests and diseases can be affected by the time of year and climatic conditions.
- 2.3.4 All tree observations, and any recommendations, are based upon the site conditions, levels and patterns of usage observed at the time of survey only. Alterations in these factors will affect any evaluations made, and would require a re-assessment of both the trees and site.
- 2.3.5 The location of the individual trees is taken from the topographical survey provided by the client, however, five trees (T13, G2, G3, G5 and G10) were omitted from the topographic survey and have therefore been plotted manually.
- 2.3.6 In addition to this the following groups and hedgerows were only partially plotted on the topographical survey (G1, G4, G6, G7, H3 and H4) and this has been amended manually on the Tree Survey Plan to reflect how they appear on site.
- 2.3.7 The tree resource of the site and adjacent land is dominated by homogenous areas of self-set native and naturalized trees which have not been managed in recent years. In several instances it was not possible to enter these areas due to dense growth and the ground conditions. These areas were however circumnavigated to gather the necessary information and confirm uniform character across the group. This limitation is therefore

not considered to be an overall constraint on the robustness of the survey and subsequent assessment. In accordance with BS5837, where appropriate trees have been surveyed as groups or hedgerows rather than individual trees where one or more of the following points apply:

- there was little discernible difference between individuals within the group;
- the trees have a collective value but would have little or no individual merit;
- not all of the trees were included in the topographical survey and lack of access prevented them being accurately plotted manually; and/or
- the trees were not included in the topographical survey and were too numerous to plot manually.

2.3.8 The groups were identified on site by an outer canopy line and the RPA then estimated from a combination of this polyline with the measurements of the largest tree in that group multiplied by the number of trees in the group.

2.3.9 A TPO and conservation area search were carried out as part of this report and Cherwell District Council confirmed that the trees were not protected. Other legal restrictions relating to existing trees on the site such as historic planning conditions, restrictive covenants and lease clauses were not investigated. Before any recommended tree work is undertaken it should be ensured that all legal obligations are fully met.

3 LOCATION AND DESCRIPTION OF SURVEY AREA

3.1 Location

3.1.1 The site is located to the north of Station Road, Hook Norton. The site centre is located by National Grid Reference SP362462 33707.

3.2 Description of survey area

3.2.1 The site is shown on the Tree Survey Plan included in Appendix A. The site consists of arable land bordered by trees on the northern, western and southern boundaries. The trees are a mix of native and naturalized trees species and the majority of them are located on the top or sides of the banks above the site.

3.2.2 The survey includes several off-site trees including T8, T9, T13, T14, T15, T16 and T17 to the south of the site which were considered large enough to be a potential constraint to development.

3.2.3 All the trees to the west and north of the site are off-site and although they are on the top of a steep bank they have been included in the survey to enable any potential above ground constraints to be considered. Please note however that in view of the significant

change in ground levels and the historic and current use of the site the Root Protection Area (RPA) of the trees is not believed to encroach into the field.

3.3 Topography

3.3.1 The site is predominantly flat throughout and slopes gently to the north/north-east, however, the majority of the trees are on land that is approximately 2m above the field.

3.4 Soils

3.4.1 The geological data identifies the soil as freely draining slightly acid but base rich soils. The site was previously quarried for ironstone, however, given its current use as arable land, the low level of existing hard surfacing or structures and the extent of vegetation cover present on the site the soil appears to be capable of supporting new planting although it is recommended that a soil assessment should be carried out to determine soil structure, composition and pH in advance of developing detailed landscape design and planting proposals.

4 TREE SURVEY RESULTS

4.1 Summary of trees within survey area

4.1.1 The surveyed trees are located around the northern, western and southern boundaries of the site.

4.1.2 The majority of the trees are on higher ground than the field due to the ironstone quarrying that has taken place in the past.

4.1.3 The trees along the southern boundary include some individual specimen trees that have been planted alongside the road and a mix of native and naturalized trees that form or have spread from the original boundary hedge.

4.1.4 The trees adjacent to the western boundary consist predominantly of regrowth from coppice stools.

4.1.5 The trees along the northern boundary include a number of multi-stemmed Sycamore and an Ash tree that appear to have been coppiced although the original coppice stools are not visible. There are also a number of individual trees within the remnants of the unmanaged hedgerow.

4.1.6 Tree locations are shown on the Tree Survey Plan provided in Appendix A and a description of all trees located within the site is given in the Tree Data Schedule provided in Appendix B.

4.1.7 The Root Protection Area (RPA) of individual trees and groups is shown in Appendix A. The RPA of trees along the northern and western boundary of the site has been off-set to take account of the significant change in ground level caused by the quarrying which would have restricted root growth. In addition to this the site's subsequent use for arable farming would also have inhibited root growth.

4.2 Off-site trees

4.2.1 The precise extent of the site boundaries will need to be confirmed on site, but the following trees are understood to be off-site (T1, T2, T3, T4, T5, T6, T8, T9, T13, T14, T15, T16 and T17) but were considered to be of sufficient size to be included in the survey.

4.2.2 One off-site hedgerow (H2) was also noted as it overhangs the western site boundary and has developed into a significant screen.

4.2.3 Locations of off-site trees are shown on the Tree Survey Plan provided in Appendix A and a description of all surveyed trees located adjacent to the site is given in the Tree Data Schedule provided in Appendix B.

4.3 Tree quality assessment

4.3.1 Trees and groups within and adjacent to the site have been graded in accordance with the retention categories described in BS5837:2012. *Table 1* provides an at-a-glance overview of the quality of tree cover within and adjacent to the site, with reference to BS5837 Retention Categories. An explanation of these categories is provided below:

- Category A: Trees of high quality, in such a condition as to make a substantial contribution. Retention is highly desirable.
- Category B: Trees of moderate quality, in such a condition as to make a significant contribution. Retention is desirable.
- Category C: Trees of low quality, currently in adequate condition to remain until new planting is established, or young trees with a stem diameter below 150mm.
- Category U: Trees which for reasons of public safety or good arboricultural practice have been identified for removal.

4.3.2 No Category A trees were identified within the tree survey.

4.3.3 Twelve trees, five groups and three hedgerows were classified within Retention Category B, representing 65% of the surveyed tree cover on or adjacent to the survey area. Where possible, Category B features should be retained and, where appropriate, managed to improve their future value.

Table 1: Number of trees (groups and hedgerows) have been counted as one entity in each retention category

Retention Category	Description	Number
A	Trees of high quality and value, in such a condition as to make a substantial contribution. Retention is highly desirable.	0
B	Trees of moderate quality and value, in such a condition as to make a significant contribution. Retention is desirable.	20
C	Trees of low quality and value, in adequate condition to remain until new planting is established, or young trees.	8
U	Trees which cannot realistically be retained for longer than 10 years.	3
Total		31

4.3.4 Four trees, three groups and a hedgerow were classified within Retention Category C, representing 26% of the surveyed tree cover on or adjacent to the survey area. These represent poor quality trees, lower value specimens, or young trees, which could readily be replaced by new planting.

4.3.5 One tree and two groups have been identified as Category U (9% of surveyed trees). These include trees which cannot realistically be retained for longer than 10 years and have been recommended for removal, either for arboricultural reasons, reflecting their poor form and condition, or for reasons of health and safety. However, two of these trees (G2 and G9) appear to be outside the boundaries of the site and would therefore be retained. Removal of these trees and their replacement with appropriate new planting as part of the landscape design for the proposed development would increase the arboricultural value of the survey area.

4.3.6 The Tree Data Schedule (Appendix B) provides further details of all individuals, groups of trees and hedgerows.

4.4 Tree protection status

4.4.1 The site is not within a Conservation Area and was not included in a Tree Preservation Order (TPO) at the time of writing this report.

4.5 Tree condition assessment and summary

4.5.1 *Table 2* provides an overview of the trees surveyed and highlights any tree work which is recommended in accordance with good arboricultural practice subject to the limitations set out in Section 2 (above). All work should be carried out in accordance with 'BS3998:2010 Tree Work – recommendations' (BSI, 2010). The Tree Data Schedule in Appendix B provides further details on each of the trees listed here.

4.5.2 Specific recommendations for all works, or any monitoring inspections, are recorded under individual entries in the Tree Data Schedule.

Recommendations for works to TPO Trees

4.5.3 None of the trees surveyed were protected by TPOs at the time of preparing this report. Should a tree or trees at the site be subject to any future TPO, where recommendations have been made for works to trees covered by a TPO written consent from the Local Authority is required before they can be carried out. Section 70 of the Town and Country Planning Act (1990) and The Town and Country Planning (Tree Preservation)(England) Regulations 2012 gives Local Planning Authorities powers to deal with applications for consent to carry out works on or remove trees protected by TPOs, to make decisions and issue consents with or without conditions. The 'Application for tree works: works to trees subject to a tree preservation order (TPO)' form should be completed, submitted and approval received prior to the commencement of any works to trees protected by a TPO. However, if the works are permitted by virtue of a valid planning permission no additional consent is required under this legislation.

Table 2: Summary of tree recommendations by category

Works Recommendations	No. of Trees / Groups	Tree Numbers
Dead and/or potentially hazardous trees which require removal for health and safety reasons.	1	T10
Trees identified for removal due to poor structural condition or form, or for reasons of good arboricultural practice	2	G2, G3
Potentially hazardous trees which require arboricultural works for health and safety reasons	0	-
Trees works identified for reasons of good arboricultural practice	0	-
Trees where access, vegetation or a covering of ivy prevented detailed inspection of the tree	19	T1, T2, T3, T4, T5, T6, T8, T11, T15, T16, G1, G3, G5, G6, G7, G8, H1, H2, H3
Trees requiring specialist decay detection	0	-

5 ARBORICULTURAL IMPACT ASSESSMENT

5.1 Overview of the development

5.1.1 The proposed development is described as follows:

'Outline planning application for the erection of 48 residential dwellings with new vehicular access, open space and other ancillary works.'

5.1.2 This Arboricultural Impact Assessment is based upon the illustrative layout plan in the Design & Access Statement. Where detail has been shown or sufficient information is known the effects have been assessed. Although some design elements would not be finalised at this stage it is considered that this allows an adequate assessment of the likely effects of the proposed development on existing trees. In the event that planning permission is granted, it is recommended that the Arboricultural Impact Assessment is reviewed against the detailed design of the proposed development to ensure constraints relating to trees have been avoided wherever possible. Where impacts on retained trees are unavoidable this information can be used to identify appropriate mitigation and working practice. Where such incursions are necessary it is likely that the Local Authority would require the submission of an Arboricultural Method Statement to demonstrate that any significant encroachment into the root protection area (RPA) of retained trees can be practically achieved.

5.2 Implications of tree removal

5.2.1 The trees to be removed are illustrated on the Tree Protection Plan (Appendix D). A summary of the trees to be removed (in addition to those listed for removal in Table 2) is shown in Table 3 below.

5.2.2 Trees to be removed in order to facilitate the proposed development as currently shown on the illustrative masterplan include four Category B trees (including part of a hedge), one Category C group and one Category U tree.

5.2.3 It should, however, be noted that the detail design of the proposed access has not been prepared at this stage and the detailed design should be reviewed at a suitable stage to determine whether there are additional tree losses in this area due to the change in ground levels between the existing road and the development site.

Table 3: Summary of trees requiring removal to facilitate construction of the proposed development (based on the illustrative layout plan in the Design & Access Statement)

Tree / Group Category and Number of trees to be removed to facilitate construction	Tree numbers
A (0)	-
B (4)	T7, T11, 50% of G6, 25m of H3
C (1)	G5
U (1)	T10
Total	6

5.3 Implications of tree pruning

5.3.1 In order to facilitate the development, some trees may require additional pruning works to provide adequate ground clearance for vehicles associated with construction. However, this will be restricted to the proposed vehicular access route and would need to be maintained for subsequent use of delivery and emergency vehicles. All tree work shall be carried out in accordance with BS3998:2010 – ‘Tree work. Recommendations’.

5.3.2 Tree works required to facilitate the proposed site access are limited to the removal of five trees (G5, G6, T7, T10 and T11) and a 25m section of H3. The precise extent of tree removal is not known as the individual trees within G5 and G6 were not picked up in the topographical survey and it may be possible to retain some trees within these groups, however, the trees are predominantly self-set Sycamore which are generally of a lower category grading when assessed as individuals.

5.3.3 No additional tree works are likely to be required to facilitate the proposed development.

5.3.4 The pruning works are minimal and will not have a significant effect on the character of the area.

5.3.5 In view of the proposed use of the land within the site it is recommended that significant retained trees are subject to a full *Tree Safety Survey* at an appropriate stage to determine whether any additional tree works (or removal) are required.

5.4 Proposed mitigation planting

5.4.1 Details of proposed landscaping have not been prepared at this stage and are likely to be required as a Condition of any planning permission granted for the site. However, it is

anticipated that reinforcement planting will be carried out within the site adjacent to the road frontage to enhance the screening/softening effect provided by soft landscaping. In addition to this, in view of the variety of known economic, social and environmental benefits trees provide opportunities for new tree planting should be included within the landscaping proposals where appropriate.

5.5 Implications of demolition

5.5.1 No demolition works are required as there are no existing structures on site.

5.6 Implications of foundations

5.6.1 As the geological data identifies the soil as freely draining slightly acid but base rich soils it is unlikely to be a shrinkable soil. Nevertheless further on site investigations should be carried out to ensure that the foundation design avoids the potential effects of water uptake by trees (including any new planting).

5.7 Implications of ground level changes

5.7.1 With the exception of the proposed access no significant changes in ground level in relation to the RPA of retained trees are expected to arise as a result of the proposed scheme. Should any unavoidable ground level changes within the RPA of a retained tree be identified during detailed design, suitable mitigation and/or working practices should be incorporated into the Arboricultural Method Statement.

5.8 Implications of changes in ground surfacing

5.8.1 The location and details of any proposed changes to surfacing within the site would be determined at the detailed design stage. It is recommended that any unavoidable proposed changes within the RPA of the retained trees should be addressed in an Arboricultural Method Statement.

5.8.2 The proposed buildings and hard surfacing will result in an increase in ground water run-off although subject to suitable surface water drainage design this is not expected to affect the retained trees. Soakaways, attenuation basins and associated ground modelling should, where possible, be located outside the RPA of retained trees. In addition to this, as trees are known to reduce storm water run-off, the landscape proposals should include appropriate new tree planting wherever practicable.

5.9 Implications of underground services and drainage

5.9.1 In order to avoid impacts on existing trees, all new services required in connection with the proposed development should be located outside the RPA of any retained tree, as shown on the Tree Survey Plan (Appendix A). Where essential service provision intrudes on the RPA of any retained tree, all works should be conducted in accordance with the

NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (NJUG, 2007), details of which would be finalised in the technical design stage and where necessary covered by an Arboricultural Method Statement.

5.10 Implications of over ground services

5.10.1 All new over ground services required in connection with the proposed development should be located outside and a suitable distance away from the canopies of retained trees. Where new planting is to be established, consideration should be given to providing adequate clearance from over ground services to allow for future growth without the need for regular pruning.

5.11 Boundary treatment

5.11.1 Details of proposed boundary fencing would be determined at the detailed design stage. Where appropriate the need for measures to reduce the effect of fence erection on retained vegetation such as flexibility of the location of upright posts, should be reviewed at an appropriate stage and detailed in the Arboricultural Method Statement.

5.12 Implications of construction activity

Existing trees

5.12.1 All RPAs of the retained trees should be protected by tree protection fencing and, where appropriate, ground protection prior to the commencement of any works. All temporary tree protection should be installed and approved by the relevant planning authority prior to any works taking place thus ensuring their protection throughout the construction phase. This fencing would protect the construction exclusion zone. Within the construction exclusion zone the following rules should apply:

- No construction activity;
- No tree works without prior written consent from the Council;
- No excavation or alteration to ground levels or conditions (apart from those outlined for soft or hard landscape works and drainage works);
- No temporary structures;
- No storage of materials;
- No vehicles or machinery to be used or parked;
- No fixtures of any kind attached to trees; and
- No fires within 15m of the canopy of any tree or hedge.

5.12.2 Fencing details, construction exclusion zones and construction phasing for vehicular access routes, hard and soft landscape areas should be finalized in the technical design stage and should be covered by an arboricultural method statement.

New areas of landscape planting

- 5.12.3 Construction activity, including the passage of vehicles and storage of materials has the potential to effect soil conditions through ground compaction and contamination. Throughout the construction phase, these activities should be avoided in areas proposed for new landscape planting, thereby avoiding the need for ground remediation prior to planting.

5.13 Retained trees

- 5.13.1 The retained trees are situated around the site boundaries and the illustrative layout indicates how the potential effects of these trees on the proposed buildings, including their future growth potential, can be accommodated within the proposed development.

- 5.13.2 Future growth may impede pedestrian access and visibility splays but this can be avoided by appropriate tree management.

5.14 Issues to be address by Arboricultural Method Statement

- 5.14.1 Prior to construction the effects of the final detailed scheme on retained trees should be reassessed and, if necessary, this Arboricultural Impact Assessment (AIA) updated. The AIA should then be used to inform the preparation of an Arboricultural Method Statement (AMS) along with an updated Tree Protection Plan. The Arboricultural Method Statement should include the following information:

- Details of all proposed tree works;
- Installation of temporary fencing and ground protection;
- Construction methodologies for installation of new hard surfacing with the RPA of retained trees;
- Methodologies for preparatory works for new landscape works and planting works; and
- An auditable/audited system of arboricultural site monitoring, including a schedule of specific site events requiring input or supervision.

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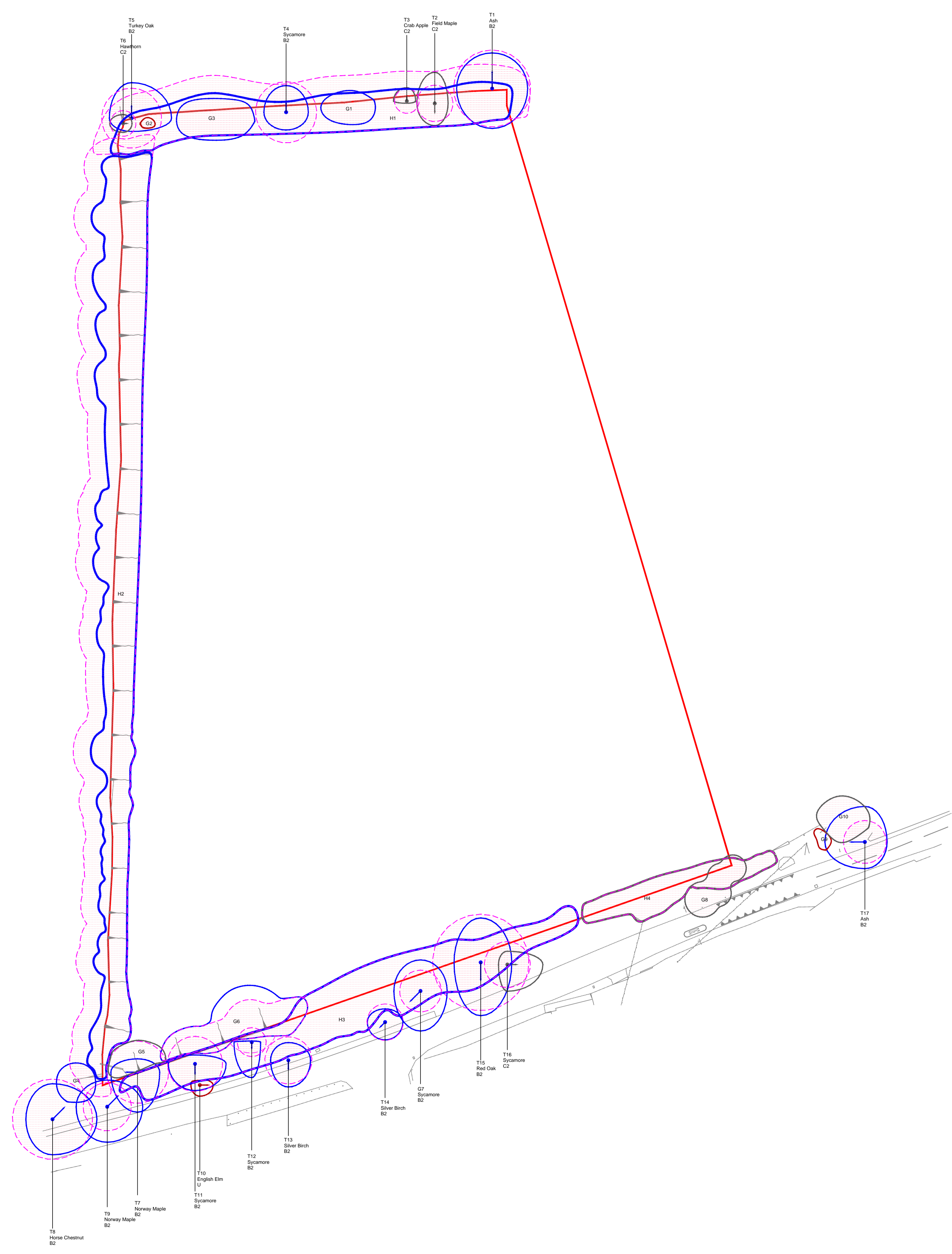
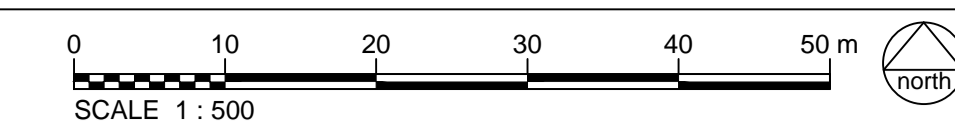
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Appendix A
Tree Survey Plan



- KEY**
- Site boundary
 - Stem / Tree number
 - Group number
 - Tree canopies
 - Group or Hedgerow
 - First significant branch and direction
 - Root Protection Area (RPA)
 - Root Protection Boundary

- BS5837:2012 Tree Categories**
- Canopy extent of tree: Category A - High quality
 - Canopy extent of tree: Category B - Moderate quality
 - Canopy extent of tree: Category C - Low quality
 - Canopy extent of tree: Category U - Unsuitable for retention

Notes
 A full qualitative analysis of tree cover (The Tree Data Schedule) accompanies this drawing.
 Do not scale off drawing - refer to Tree Data Schedule for accurate crown spread measurements.
 Depictions of tree canopies are based on measurements taken to four cardinal compass points.
 The original of this drawing was produced in colour - a monochrome copy should not be relied upon.
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CLIENT:
Nursery Ground Ltd.
 PROJECT:
Hook Norton Trees
 TITLE:
Tree Survey Plan
 SCALE AT A1:
1:500
 DATE:
October 2014
 723.3 / 01

Appendix B
Tree Data Schedule

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB	Stem Diameter (mm)	Branch Spread			Observations	Preliminary management recommendations	Physio	Life Expectancy	BS5837 Ret. Cat.
				Ht (m)		W	N (m)	E			Dir		
T1	M Ash <i>Fraxinus excelsior</i>	14	1	0	719	8	8	8	On top of bank. Ivy on trunks prevented accurate measurements and inspection. Basal suckers.	No action required.	G	20+	B2
				N			9				Fair		
T2	M Field Maple <i>Acer campestre</i>	9	2	0	340	4	7	3	On top of bank. Ivy on trunk prevented detailed inspection. Basal suckers.	No action required.	F	20+	C2
				S			5				Fair		
T3	M Crab Apple <i>Malus sylvestris</i>	10	3	1	230	3	3	2	On top of bank. Ivy on trunk and restricted access prevented detailed inspection. Basal suckers. Trunk cavity. Crown die-back.	No action required.	F	10+	C2
				N			0.5				Poor		
T4	M Sycamore <i>Acer pseudoplatanus</i>	11	2	0	571	5	6	5	On top of bank. Ivy on trunk and restricted access prevented detailed inspection. Basal suckers.	No action required.	F	20+	B2
				N			4				Fair		
T5	M Turkey Oak <i>Quercus cerris</i>	17	2	3	560	5	8	9	On top of bank. Ivy on trunk prevented detailed inspection.	No action required.	G	40+	B2
				N			3				Fair		
T6	EM Hawthorn <i>Crataegus monogyna</i>	9	2	0.5	240	3	2	2	On top of bank. Ivy on trunk prevented detailed inspection.	No action required.	G	20+	C2
				E			2				Fair		
T7	M Norway Maple <i>Acer platanoides</i>	15	3	0.5	581	6	3	5	On top of bank. Squirrel damage throughout crown.	No action required.	G	20+	B2
				W			9				Fair		
T8	M Horse Chestnut <i>Aesculus hippocastanum</i>	15	1.5	2	750	6	8	10	Ivy on trunk prevented accurate measurements and inspection. Trunk wound from historic limb failure. Bleeding canker. Previously lifted and reduced.	No action required.	F	20+	B2
				NE			8				Fair		

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB	Stem Diameter (mm)	Branch Spread			Observations	Preliminary management recommendations	Physio	Life Expectancy	BS5837 Ret. Cat.
				Ht (m)		Dir	W	N (m)			E		
T9	M Norway Maple <i>Acer platanoides</i>	15	2	2.5	450	7	6	8	Mower damage to surface root. Deadwood in crown (north side). Previously lifted and reduced.	No action required.	F	20+	B2
				NE			8				Fair		
T10	EM English Elm <i>Ulmus procera</i>	6	1	0.5	180	2	1	3	Dead.	Remove tree.	D	<10	U
				E			2.5				Dead		
T11	M Sycamore <i>Acer pseudoplatanus</i>	15	2	2	515	6	2	7	Ivy on trunk and restricted access prevented detailed inspection.	No action required.	G	20+	B2
				S			6				Fair		
T12	EM Sycamore <i>Acer pseudoplatanus</i>	14	2	3	270	4	0	2	Partially suppressed.	No action required.	G	20+	B2
				S			8				Fair		
T13	M Silver Birch <i>Betula pendula</i>	18	3	4	440	4	4	5	Plotted manually. Basal wounds. Crown lifted.	No action required.	G	20+	B2
				S			6				Fair		
T14	M Silver Birch <i>Betula pendula</i>	11	2	3	340	4	3	4	Twin leader. Crown lifted.	No action required.	G	20+	B2
				SW			4				Fair		
T15	M Red Oak <i>Quercus rubra</i>	13	1	3	900	6	10	7	Ivy on trunk prevented accurate measurements and inspection. Significant deadwood.	No action required.	G	40+	B2
				S			12				Fair		
T16	EM Sycamore <i>Acer pseudoplatanus</i>	14	0.5	2	430	2	3	8	Ivy on trunk prevented accurate measurements and inspection. Partially suppressed.	No action required.	G	20+	C2
				E			6				Fair		

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB	Stem Diameter (mm)	Branch Spread			Observations	Preliminary management recommendations	Physio	Life Expectancy	BS5837 Ret. Cat.
				Ht (m)		Dir	W	N (m)			E		
T17	EM Ash <i>Fraxinus excelsior</i>	16	3.5	5	400	9	8	5	Self set adjacent to old brick bridge support. Twin leader.	No action required.	G	20+	B2
				W			6	Fair					
G1	M Sycamore <i>Acer pseudoplatanus</i>	12	2	0	584	2	9	2	On top of bank. Ivy on trunk and restricted access prevented detailed inspection. Basal suckers. Some basal wounds.	No action required.	F	20+	B2
				N			9	Fair					
G2	EM English Elm <i>Ulmus procera</i>	12	2	0.5	280	2	2	2	On top of bank. Ivy on trunk. Dead.	No action required.	D	<10	U
				E			2	Dead					
G3	M Sycamore <i>Acer pseudoplatanus</i>	12	1.5	0	547	2	6	2	On top of bank. Ivy on trunk and restricted access prevented detailed inspection. Basal suckers. Some basal wounds/cavity.	No action required.	G	20+	B2
				N			9	Fair					
G4	EM Holly <i>Ilex aquifolium</i>	12	0	0.5	320	5	4	5	On top of bank. Includes ash.	No action required.	G	20+	B2
				S			8	Fair					
G5	EM Ash <i>Fraxinus excelsior</i>	13	2	2	250	3	5	3	On top and side of bank. Ivy on trunk and restricted access prevented detailed inspection. Partially suppressed.	No action required.	G	10+	C2
				N			2	Fair					
G6	M Sycamore <i>Acer pseudoplatanus</i>	14	1	1	470	4	8	4	On lower side of bank. Ivy on trunk prevented detailed inspection.	No action required.	G	20+	B2
				N			4	Fair					
G7	EM Sycamore <i>Acer pseudoplatanus</i>	13	0.5	2	390	6	7	6	Ivy on trunk prevented accurate measurements and inspection.	No action required.	G	20+	B2
				SW			9	Fair					

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB	Stem Diameter (mm)	Branch Spread			Observations	Preliminary management recommendations	Physio	Life Expectancy	BS5837 Ret. Cat.
				Ht (m)		Dir	W	N (m)			E		
G8	SM Hawthorn <i>Crataegus monogyna</i>	8	0.5	0.5	150	2.5	2.5	2.5	Includes Elder. Ivy on trunk prevented accurate measurements and inspection. Unmanaged.	No action required.	G	20+	C2
				S			2.5				Fair		
G9	SM English Elm <i>Ulmus procera</i>	10	0.5	0.5	190	2	2	1.5	Unmanaged.	No action required.	G	<10	U
				S			3				Good		
G10	EM Hawthorn <i>Crataegus monogyna</i>	11	0.5	0.5	190	3	3	3	Includes elder, oak, elm. Ivy on trunks of several trees. Unmanaged. Partially suppressed.	No action required.	G	20+	C2
				NW			3				Fair		
H1	EM Field Maple <i>Acer campestre</i>	8	0	0	200	3	3	3	On top of bank. Includes hazel, elder, oak, elm, hawthorn, blackthorn, sycamore. Unmanaged.	No action required.	G	20+	B2
				N			3				Fair		
H2	EM Field Maple <i>Acer campestre</i>	10	0	0	279	3	3	3	On top of bank. Includes hazel, elder, oak, elm, hawthorn, blackthorn, sycamore, ash, laburnum. Unmanaged but previously coppiced.	No action required.	G	20+	B2
				N			3				Fair		
H3	EM Hawthorn <i>Crataegus monogyna</i>	8	0	0	180	3	3	3	On top of bank. Includes elder, elm, field maple, blackthorn, sycamore. Unmanaged.	No action required.	G	20+	B2
				N			3				Fair		
H4	SM Hawthorn <i>Crataegus monogyna</i>	3	0	0	90	1	1	1	Includes hazel, elder, elm, sycamore. Unmanaged.	No action required.	G	20+	C2
				N			1				Fair		

Appendix C
Explanation of Terms

Reference Numbering

Each tree, group of trees or hedgerow is given an individual reference, made up of sequential numbers prefixed by a letter where:

T = Individual Tree, **G** = Group, **H** = Hedge, **S** = Stump, **R** = Reference, **X** = Shrub, **JK** = Japanese Knotweed

Age and Species

Life Stage

Trees are assigned to one of five age classes as follows:

Young (Y)	Tree in establishment stage, normally up to 5-10 years old
Semi-mature (SM)	Establishing tree with potential for significant growth both in terms of tree height and crown spread. Typically having attained at least 25% of likely mature height and crown spread
Early Mature (EM)	Establishing tree with potential for significant growth both in terms of tree height and crown spread. Typically having attained at least 50% of likely mature height and crown spread
Mature (M)	Established tree, typically having attained at least 70% of likely mature height and crown spread
Over-mature (OM)	Extensive decline in physiological functions and/or structural integrity
Veteran (V)	A tree that shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species.

Species

Tree names and other plant names follow Stace (1997) and are provided as both Common (English) species names and scientific (Latin) names.

Size and Spread

Height

Current tree height in metres.

Stem Diameter

Stem diameter, measured in millimetres, at 1.5m above ground-level. On multi-stemmed trees this measurement is taken using the guidance in Annex C of BS5837:2012.

Branch Spread

Radial crown spread measured in four compass directions (north, south east, and west) using magnetic north.

First Significant Branch (FSB)

Height of first significant branch above adjacent site ground-level in metres and direction of growth measured in one compass direction using magnetic north.

Crown Height

Height of crown clearance above adjacent site ground-level in metres. Where this varies around the canopy, the height of the lowest point is recorded.

Observations

This section provides details, where relevant, pertaining to the tree's position, form, pruning history and an account of any significant defects observed. Access restrictions and other incidental observations are also noted here.

Recommendations

These are normally based upon remedial action to address any observed significant defects. These may be recommended for tree safety reasons, or for reasons of good arboricultural practice and tree management.

Condition and Value

Physiological Condition

Good	Healthy tree with no symptoms of significant disease
Fair	Tree with early signs of disease, small defects, decreased life expectancy, or evidence of less than average vigour for the species
Poor	Significant disease present, limited life expectancy, or with very low vigour for the species and evidence of physiological stress
Dead/dying	Tree is in advanced stages of physiological failure and is dying or dead

Structural Condition

Good	No significant structural defects observed
Fair	Some structural defects observed, including the presence of deadwood in otherwise healthy trees with a good life expectancy
Poor	Significant structural defects observed resulting in a tree which is likely to require either monitoring or remedial action
Dead/dying	Major defects which compromise the safety of the tree. Remedial works or tree removal are likely to be required in the majority of target locations

Life Expectancy or Estimated Remaining Contribution (ERC)

The estimated number of years before the tree may require removal is expressed as one of the following categories: (i) <10 years; (ii) 10+ years; (iii) 20+ years; (iv) 40+ years.

BS5837 Retention Category

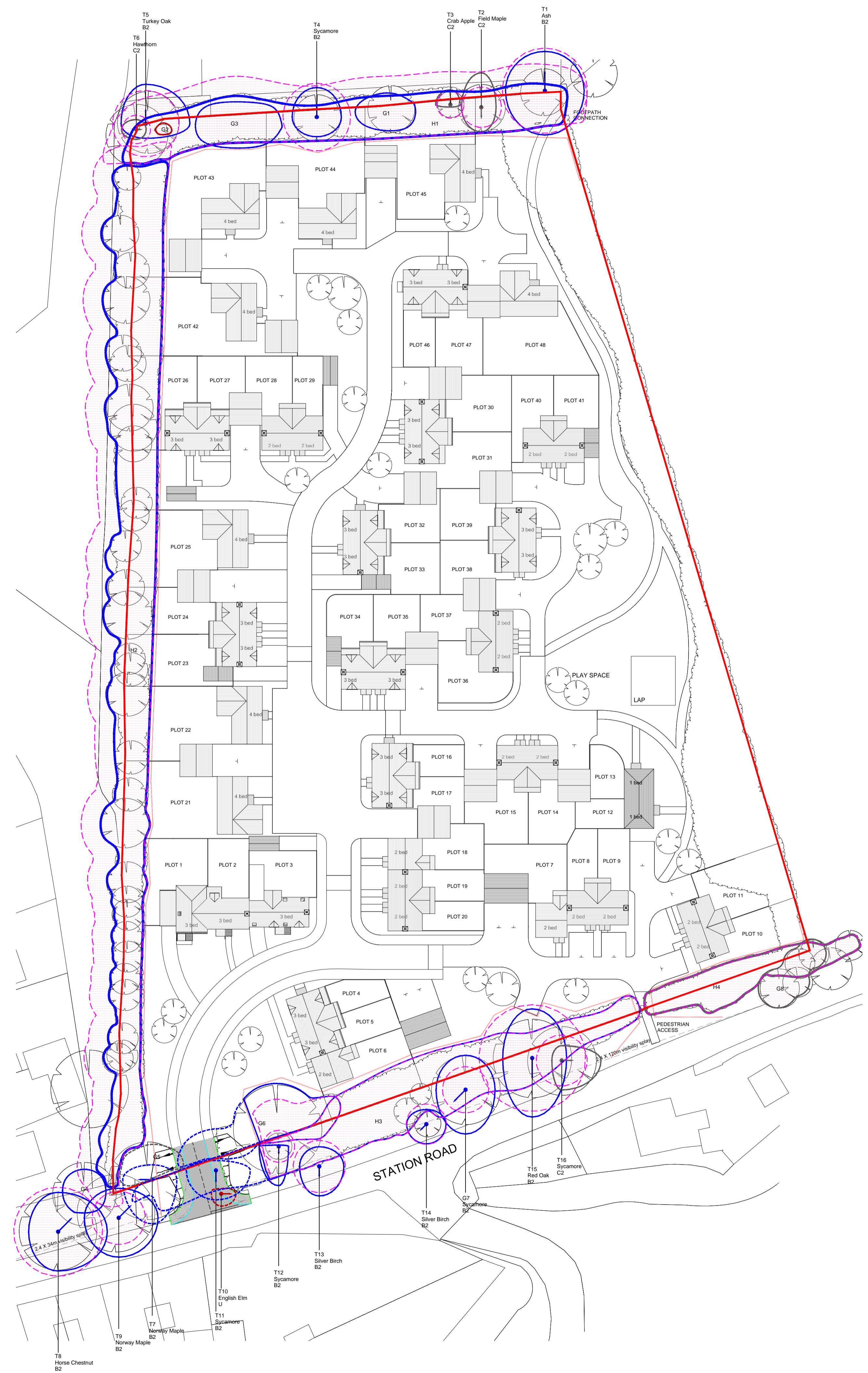
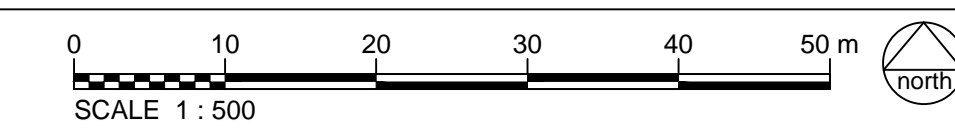
Each tree, group of trees or hedge is assigned to a retention category where:

A	Trees of high quality, retention is highly desirable
B	Trees of moderate quality where retention is desirable
C	Trees of low quality, or young trees with a stem diameter <150mm. Category C trees may be retained, replaced or relocated
U	Trees unsuitable for retention or trees which should be removed

In accordance with BS5837:2012, a numerical suffix is added to the retention category of each tree, which indicates the principal reason for the value of each tree or group of trees, where:

1	Mainly arboricultural values, including fine examples of the species
2	Mainly landscape values, including trees providing screening and/or softening effects to the locality, or trees of visual prominence
3	Mainly cultural values, including conservation, historical and commemorative values

Appendix D
Tree Protection Plan



- KEY**
- Site boundary
 - T8 Stem / Tree number
 - G4 Group number
 - Tree canopies
 - Group or Hedgerow
 - First significant branch and direction
 - Root Protection Area (RPA)
 - Root Protection Boundary
 - Tree protection fencing

- BS5837:2012 Tree Categories**
- Canopy extent of tree: Category A - High quality
 - Canopy extent of tree: Category B - Moderate quality
 - Canopy extent of tree: Category C - Low quality
 - Canopy extent of tree: Category U - Unsuitable for retention
- BS5837:2005 Tree Categories to be removed**
- Canopy extent of tree: Category A - High quality
 - Canopy extent of tree: Category B - Moderate quality
 - Canopy extent of tree: Category C - Low quality
 - Canopy extent of tree: Category R - Remove

Notes
 A full qualitative analysis of tree cover (The Tree Data Schedule) accompanies this drawing.
 Do not scale off drawing - refer to Tree Data Schedule for accurate crown spread measurements.
 Depictions of tree canopies are based on measurements taken to four cardinal compass points.
 The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

This drawing is based upon:
 1. Glanville drawing: Figure 4: Site Access Detail. Dwg no. 4140177-1014.
 2. Anderson I Orr Architects drawing: Proposed Site Plan. Dwg no. 14045 - PD1
 Please see original drawing for key details.

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CLIENT:
Nursery Ground Ltd.
 PROJECT:
Hook Norton Trees
 TITLE:
Tree Protection Plan
 SCALE AT A1:
1:500
 DATE:
October 2014
 723.3 / 02 A