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WASTE RESOURCE MANAGEMENT



**GALLAGHER ESTATES LTD**

**WYKHAM PARK FARM, OXFORDSHIRE**

**Tree Survey**

**November 2014**

*your earth our world*



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**GALLAGHER ESTATES LIMITED**

**WYKHAM PARK FARM, OXFORDSHIRE**

**Tree Survey**

**November 2014**

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**APPROVED BY:**

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## 1 INTRODUCTION

1.1.1 Treetec Consultancy Limited (Treetec) has been instructed by consultants Wardell Armstrong LLP, on behalf of Gallagher Estates Limited, to identify and assess the significant trees that may be affected by proposed construction 1.7 kilometres to the south of Banbury town centre in Oxfordshire.

1.1.2 It is intended that this report will be used to inform design proposals aimed at minimising, where possible, damage to existing trees identified as being of amenity value and supports the planning application for development of the site.

1.1.3 An Arboriculturalist from Treetec visited the site on the 10th October 2012 and surveyed all the significant trees which are at risk of being influenced by the proposed work. In total 13 groups and 49 individual trees fall into this category.

1.1.4 A further tree survey was undertaken on the 30th July 2014 to include an additional area added within the red line at the eastern end of the site.

1.1.5 The surveys support a planning application that seeks outline planning permission for residential development of the Site, and seeks detailed approval for the roundabout access off Bloxham Road. This survey therefore targets in detail the potential impact on significant trees from the proposed roundabout and also makes reference to the remainder of the site.

1.1.6 The weather conditions during the visit were overcast and cold during the initial visit but warm and sunny during the second visit

### 1.2 Scope

1.2.1 The survey identifies and reports on the general condition and amenity value of significant trees and vegetation situated within the influence of the proposed development, including any adjacent trees that may be affected.

1.2.2 British Standard BS5837:2012 "*Trees in Relation to design, demolition and construction-Recommendations*" has been used as the basis for the assessment. It is

intended that the information contained in this report will be used to ensure the decisions made in respect of future development proposals take into account the tree resource. Trees worthy of retention that are beneficial to the screening and the softening of the site have been identified. Conversely, less valuable trees, which are of lower importance due to their poor condition or for other reasons, have also been identified; these trees may be considered as suitable candidates for removal.

1.2.3 Due to the composition of the trees within and immediately adjacent to the site they have been surveyed as individuals and groups. Where trees are located on third party land or are found to be inaccessible due to ground conditions all measurements are estimated.

1.2.4 Guidance as to the stand-off distances required to prevent damage to trees worthy of retention during the construction phases have been calculated and are shown on the Tree Constraints Plan (TCP). These areas are referred to as the Root Protection Areas (RPAs).

1.2.5 It is important that prior to any site excavation and construction works commencing an Arboricultural Impact Assessment (AIA) and an Arboricultural Method Statement (AMS) is provided. The main priority being the protection of trees identified within this survey which are considered to be of amenity value or are in third party ownership and where they are found to be designated with a Tree Preservation Order (TPO).

1.2.6 In general, only individual trees that are in excess of 150 mm dbh are included in the survey.

1.2.7 Trees considered to be outside of the zone of influence of the development, based on the information provided by the client, have not been included in the survey and are not recorded on the associated tree survey plans.

### 1.3 **Ash dieback disease**

1.3.1 Following reports of Ash dieback disease *Chalara fraxinea*, concern of the future health of Ash trees in the UK has been raised. Despite this categorisation of ash

trees within this survey are based around the tree condition at the time of the survey and life expectancy in a normal environment.

1.3.2 However at the time of inspection where ash trees are found to have the disease they will fall into the C or U categories (refer to Section 2). Trees that are infected will be reported to the Client and to the Forestry Commission.

1.3.3 Tretec will continue to monitor the situation and will react according to relevant research as it develops.

#### 1.4 **Personnel**

1.4.1 This report has been prepared by Mr Alex Finn Tech Cert (Arbor A), Principal Arboriculturalist at Tretec.

#### 1.5 **Brief Site Description**

1.5.1 The site, which covers an area of approximately 52 hectares (ha), is located to the east of the A361 Bloxham Road approximately 1.7 kilometres (km) to the south of Banbury town centre and 2km east of the M40 in Oxfordshire. It is located within an area of arable land within the curtilage of Wykham Park Farm.

1.5.2 Current access to the site is gained via a farm track from Bloxham Road that leads to Wykham Park Farm Cottages and eventually the farm itself to the south of the site. It is bordered to the west by the heavily tree lined rural road, Bloxham Road (A361) with Crouch Cottages and Wykham Park Lodge. A small, dense, triangular copse is present north of the north western corner of the site. Agricultural land, associated hedgerows and an historic hedged track/green lane known as Salt Way forms the northern boundary of the site with the boundary along the eastern edge comprising of a low field hedge. The southern site boundary comprises a narrow strip of a young plantation and within the boundaries there are 6 relatively large and regularly shaped arable fields, defined by straight hedges and a young woodland strip.

1.5.3 The western and majority of the site area is occupied by a plateau at approximately 130m AOD, falling gently south eastwards from a high point of 133m AOD on the

north western corner and steepening towards a low point of approximately 125M AOD on the south eastern corner. The plateau gradients vary broadly between 1: 45 and 1:50, whereas those on the land to the south steepen to 1:8.

## 1.6 Protective Status of Trees and Hedgerows

1.6.1 Trees may be legally protected by either a Tree Preservation Order (TPO) or by the fact that they are located within a Conservation Area.

1.6.2 There is a potential for large penalties to be attracted for illegally carrying out works on protected trees without formal permission to do so.

1.6.3 It is advised that if there is a requirement to remove or prune any trees before planning consent has been given, that enquiries are made with the LPA to confirm the status of the site.

1.6.4 It should be noted that where it is intended to fell in excess of 5 cubic metres of timber in any calendar quarter it will be necessary to obtain a Felling Licence from the Forestry Commission. There are some exemptions to this regarding dead, dying and dangerous trees and this will only be necessary prior to planning consent or where planning consent is given but there is a change in the proposals.

1.6.5 Under the 1997 Hedgerow regulations it is against the law to remove most countryside hedgerows without permission (pre planning consent). To obtain permission to remove a hedgerow, you must write to your local planning authority and if the Council decides to prohibit removal of an important hedgerow, it must let you know within 6 weeks. If you remove a hedgerow without permission (whether it is important or not) you may face an unlimited fine. You may also have to replace the hedgerow.

## 2 METHODOLOGY

- 2.1.1 All of the trees in this report have been assessed from ground level individually with the aid of the Cascade Chart for Tree Quality Assessment BS 5837:2012 (see Appendix 1).
- 2.1.2 Trees that have been recorded have been given a reference number or letter which can be found within the TCP (see Section 3 below).
- 2.1.3 Assessment is based mainly around the useful life expectancy of the tree(s) and their condition and contribution (amenity value) to the area, which has been categorised using four letters (U, A, B and C) and four colours (red, green, blue and grey), the values of which are shown on the Cascade Chart for Tree Quality Assessment (Appendix 1). The letters have then been divided further using one to three sub-categories under one of three sub-headings.
- 2.1.4 All the colour categories and reference numbers have been marked onto the TCP.
- 2.1.5 Branch spread in general has been measured on four sides and recorded together with confirmation on which side of the tree the measurement was taken.
- 2.1.6 Stem diameters has been measured at 1.5m above ground level.
- 2.1.7 Current tree heights have been measured using a SUUNTO Height Meter PM-5/1520, serial number 823208, except where trees are inaccessible when estimated measurements will have been recorded.
- 2.1.8 Where due to local constraints i.e. impenetrable vegetation or trees located in private properties, and it is not possible to gain direct access to the trees, field data will have been estimated. These trees can be identified by the use a letter reference rather than a number.
- 2.1.9 Where base topographical plans are not available or additional trees are added, it will sometimes be necessary to calculate the approximate position of these trees. Where this occurs trees will be mark with the letters "AP" (approximate position).



### **3 DRAWINGS**

#### **3.1 Tree Constraints Plan**

- 3.1.1 To accompany this report a Tree Constraints Plan (TCP) has been produced. All trees which have been the subject of the survey have been illustrated and colour coded by reference to the Cascade Chart for Tree Quality Assessment, as shown in Appendix 1.
- 3.1.2 Each colour which represents the assigned tree category has been marked onto the plan. This enables the reader to instantly see the trees and areas of highest or lowest merit and where they are located.
- 3.1.3 Where individual trees are not represented on the original topographical base plan, they have been illustrated in their approximate positions and marked "AP".
- 3.1.4 RPAs are calculated by using the tree's trunk diameter measured at 1.5m above ground level. The measurements are multiplied to provide a minimum area around the tree which should be left undisturbed during the development, in order to remove the risk of decline and ensure the survival of the trees.
- 3.1.5 There is also scope to carry out some construction works within the RPA using proven measures; where necessary.. Where these methods are required they will be recommended within an AMS which will be required once the detailed development design has been finalised.
- 3.1.6 Where tree canopies extend further than the RPA, care will be needed not to damage these during construction. Some pruning back may be accommodated where this is an issue. All work, however, should only be carried out after further assessment and advice from the qualified Arboriculturist and in accordance with BS 3998:2010 "*Tree work –project Recommendations*".
- 3.1.7 All boundaries are assumed.

## **3.2 Tree Protection Plan**

3.2.1 A Tree Protection Plan (TPP) has been included with this report which is represented on a separate plan to the TCP. This plan shows the indicative location and specification of the erection of protective barriers and any other relevant physical protection measures including ground protection to protect the RPA (construction exclusion zone).

3.2.2 Specifications in respect of recommended barrier fencing can be found in Appendix 2 at the end of the survey.

## **4 PROPOSED WORKS**

4.1.1 Up to 1000 dwellings are proposed, together with a local centre, a primary school, green infrastructure including formal and informal open space, amenity space, allotments, retained hedgerows, structural landscaping, supporting infrastructure (including gas, electricity, sewerage, water, telecommunications) sustainable urban drainage systems, new connection to the A361 Bloxham Road, pedestrian and cycling connections to the surrounding footpath and cycle network and any necessary demolition and ground remodelling.

## 5 OBSERVATIONS

- 5.1.1 The largest and most dominating trees are found along the western boundary adjacent to Bloxham Road. These consist of mainly category B mixed with a few A category trees of Sycamore *Acer pseudoplatanus*, Lime *Tilia ssp* Oak *Quercus robur* and Beech *Fagus sylvatica*. However two Beech trees at the southern end of this row, adjacent to Wykham Park Lodge, are considered to be unstable and should be removed as a matter of urgency.
- 5.1.2 Located to the south and west of the site are some isolated areas of woodland which have generally been planted within the last 15-20yrs. The only exception to this is a triangle area of mature woodland of Sycamore, Oak and Larch *Larix decidua* located in the north west of the site.
- 5.1.3 Within the site itself the land is divided into a number of field parcels by mature managed hedgerows and hedgerow trees mainly consisting of hawthorn *Crataegus monogyna*, field maple *Acer campestre*, blackthorn *Prunus spinosa*, elder *Sambucus nigra*, elm *Ulmus ssp* and hazel *Corylus avellana*.
- 5.1.4 The land is relatively flat but falls away to the south west and beyond the southern boundary. Due to the young plantations and the general trees and hedgerow resource around the boundaries of the site it is fairly well secluded.

## **6 TREE SURVEY**

6.1.1 All the site information used for the assessment and grading of the individual trees and groups has been recorded into the following Tree Survey Table using the Cascade Chart for Tree Quality Assessment BS 5837:2012 (Appendix 1) from which the table template has also been taken.

Tree reference number	Species	Latin name	Height (m)	Stem diameter (mm)	No of stems	Canopy Spread N (m)	Canopy Spread E (m)	Canopy Spread S (m)	Canopy Spread W (m)	First Significant branch (m agl)	Age class	Physiological condition	Structural condition	Preliminary management recommendations	Estimated remaining contribution	Category grading
G135	English oak	<i>Quercus robur</i>	13	350	1	5	5	5	5	2	SM	Good	Good	None	20+	B2
G135	Lime	<i>Tilia europaea</i>	13	350	1	5	5	5	5	2	SM	Good	Good	None	20+	B2
G135	Beech	<i>Fagus sylvatica</i>	13	350	1	5	5	5	5	2	SM	Good	Good	None	20+	B2
T136	Sycamore	<i>Acer pseudoplatanus</i>	26	1200	1	12	12	7	10	5	OM	Good	Good	None	20+	B2
T137	Lime	<i>Tilia europaea</i>	26	1300	1	6	10	10	9	10	OM	Good	Good	None	20+	A2
T138	Sycamore	<i>Acer pseudoplatanus</i>	18	400	1	2.5	7	5	6	4	M	Good	Good	None	20+	C2
T139	Sycamore	<i>Acer pseudoplatanus</i>	22	900	1	9	9	5	9	3	M	Good	Good	None	20+	B2
T140	Lime	<i>Tilia europaea</i>	22	1250	1	7	8	7	8	5	OM	Good	Good	None	20+	A2
T141	Sycamore	<i>Acer pseudoplatanus</i>	26	1000	1	6	7	6	8	5	OM	Good	Good	None	20+	A2
T142	Lime	<i>Tilia europaea</i>	24	1300	1	10	9	8	9	5	OM	Good	Good	None	20+	A2
T143	Sycamore	<i>Acer pseudoplatanus</i>	22	1000	1	5	14	10	13	5	OM	Fair	Good	None	20+	B2
T144	Norway maple	<i>Acer platanooides</i>	24	1000	1	6	10	10	8	5	OM	Good	Good	None	20+	B2
T145	Lime	<i>Tilia europaea</i>	20	1000	1	5	7	4	8	2	M	Fair	Good	None	10+	C2
T146	Sycamore	<i>Acer pseudoplatanus</i>	22	1100	1	7	10	10	9	1	OM	Good	Good	None	20+	B2
T147	Lime	<i>Tilia europaea</i>	21	800	1	6	6	6	9	5	M	Good	Good	None	20+	B2

Tree reference number	Species	Latin name	Height (m)	Stem diameter (mm)	No of stems	Canopy Spread N (m)	Canopy Spread E (m)	Canopy Spread S (m)	Canopy Spread W (m)	First Significant branch (m agl)	Age class	Physiological condition	Structural condition	Preliminary management recommendations	Estimated remaining contribution	Category grading
T148	Ash	<i>Fraxinus excelsior</i>	16	1000	1	4	5	9	4	6	OM	Poor	Poor	None	10+	C2
T149	English oak	<i>Quercus robur</i>	18	700	1	7	8	4	4	8	M	Good	Good	None	20+	B2
T150	Sycamore	<i>Acer pseudoplatanus</i>	21	830	1	8	4	6	11	8	M	Good	Good	None	20+	B2
T151	Sycamore	<i>Acer pseudoplatanus</i>	23	400	1	5	7	6	3	3	M	Good	Good	None	20+	C2
T152	Sycamore	<i>Acer pseudoplatanus</i>	23	400	1	5	7	5	10	4	M	Good	Good	None	20+	C2
T153	English oak	<i>Quercus robur</i>	23	900	1	5	7	6	8	5	M	Good	Good	None	20+	C2
T154	Sycamore	<i>Acer pseudoplatanus</i>	23	600	1	6	7	5	10	10	M	Good	Good	None	20+	C2
T155	Beech	<i>Fagus sylvatica</i>	25	900	1	9	11	9	12	10	OM	Good	Very poor	Fell	N/A	U
T156	Beech	<i>Fagus sylvatica</i>	25	1050	1	6	10	12	12	10	OM	Good	Poor	Fell	N/A	U
T157	Sycamore	<i>Acer pseudoplatanus</i>	19	470	3	6	5	5	6	2	M	Good	Good	None	20+	B1
G158	Sycamore	<i>Acer pseudoplatanus</i>	21	450	3	3	6	3	5	4	M	Good	Good	None	10+	C2
T159	English oak	<i>Quercus robur</i>	18	700	1	9	9	9	9	3	M	Good	Good	None	20+	B2
T160	English oak	<i>Quercus robur</i>	18	1000	1	6	6	6	6	3	OM	Good	Good	None	20-	B2
T161	English oak	<i>Quercus robur</i>	19	1000	1	7	8	9	2	3	OM	Good	Good	None	20+	B2

Tree reference number	Species	Latin name	Height (m)	Stem diameter (mm)	No of stems	Canopy Spread N (m)	Canopy Spread E (m)	Canopy Spread S (m)	Canopy Spread W (m)	First Significant branch (m agl)	Age class	Physiological condition	Structural condition	Preliminary management recommendations	Estimated remaining contribution	Category grading
T162	Sycamore	<i>Acer pseudoplatanus</i>	17	600	1	8	5	5	2	2	M	Good	Good	None	20+	B2
T163	Sycamore	<i>Acer pseudoplatanus</i>	18	800	1	5	8	5	7	2	M	Fair	Good	None	20+	B2
T164	Sycamore	<i>Acer pseudoplatanus</i>	18	700	3	6	6	7	5	2	M	Good	Good	None	20+	B2
T165	Sycamore	<i>Acer pseudoplatanus</i>	22	1570	1	10	12	10	7	4	OM	Good	Good	None	40+	A1
G166	Field maple	<i>Acer campestre</i>	10	300	1	2	2	2	2	0.1	Y	Good	Good	None	20+	C2
G166	English oak	<i>Quercus robur</i>	10	300	1	2	2	2	2	0.1	Y	Good	Good	None	20+	C2
G166	Cherry	<i>Prunus ssp</i>	10	300	1	2	2	2	2	0.1	Y	Good	Good	None	20+	C2
G166	Silver birch	<i>Betula pendula</i>	10	300	1	2	2	2	2	0.1	Y	Good	Good	None	20+	C2
G166	Hawthorn	<i>Crataegus monogyna</i>	10	300	1	2	2	2	2	0.1	Y	Good	Good	None	20+	C2
G166	Ash	<i>Fraxinus excelsior</i>	10	300	1	2	2	2	2	0.1	Y	Good	Good	None	20+	C2
G167	Field maple	<i>Acer campestre</i>	15	650	6	8	6	7	6	2	M	Good	Good	None	20+	B2
T168	English oak	<i>Quercus robur</i>	10	140	1	5	5	4	2	2.5	SM	Good	Good	None	20+	C2
T169	Sycamore	<i>Acer pseudoplatanus</i>	16	430	7	5	5	5	7	4	SM	Good	Good	None	10+	C2
T170	Sycamore	<i>Acer pseudoplatanus</i>	16	390	6	6	6	6	4	3	M	Good	Good	None	10+	C2

Tree reference number	Species	Latin name	Height (m)	Stem diameter (mm)	No of stems	Canopy Spread N (m)	Canopy Spread E (m)	Canopy Spread S (m)	Canopy Spread W (m)	First Significant branch (m agl)	Age class	Physiological condition	Structural condition	Preliminary management recommendations	Estimated remaining contribution	Category grading
T171	Sycamore	<i>Acer pseudoplatanus</i>	15	460	2	3	3	4	3	4	M	Good	Good	None	10+	C2
T172	Sycamore	<i>Acer pseudoplatanus</i>	15	450	1	5	5	5	5	4	SM	Good	Good	None	20+	B2
T173	Sycamore	<i>Acer pseudoplatanus</i>	14	430	2	4	4	2	4	3	SM	Good	Good	None	10+	C2
T174	Ash	<i>Fraxinus excelsior</i>	18	600	1	10	15	11	12	3	M	Good	Good	None	10+	B2
T175	Ash	<i>Fraxinus excelsior</i>	15	730	1	8	9	8	9	4	M	Fair	Good	None	20+	B1
G176	Ash	<i>Fraxinus excelsior</i>	18	450	1	5	5	5	5	0.1	M	Good	Good	None	20+	B2
G176	Field maple	<i>Acer campestre</i>	18	450	1	5	5	5	5	0.1	M	Good	Good	None	20+	B2
G176	English oak	<i>Quercus robur</i>	18	450	1	5	5	5	5	0.1	M	Good	Good	None	20+	B2
G176	Lime	<i>Tilia europaea</i>	18	450	1	5	5	5	5	0.1	M	Good	Good	None	20+	B2
T177	Sycamore	<i>Acer pseudoplatanus</i>	14	650	1	7	7	7	6	4	M	Good	Good	None	20+	B1
G178	Ash	<i>Fraxinus excelsior</i>	16	350	1	4	4	4	4	2	M	Good	Good	None	20+	B2
G178	Sycamore	<i>Acer pseudoplatanus</i>	16	350	1	4	4	4	4	2	M	Good	Good	None	20+	B2
T179	Ash	<i>Fraxinus excelsior</i>	18	700	1	10	10	10	10	4	OM	Good	Good	None	20+	B2
T180	Ash	<i>Fraxinus excelsior</i>	19	800	1	13	10	10	8	4	OM	Good	Good	None	20+	B2



Tree reference number	Species	Latin name	Height (m)	Stem diameter (mm)	No of stems	Canopy Spread N (m)	Canopy Spread E (m)	Canopy Spread S (m)	Canopy Spread W (m)	First Significant branch (m agl)	Age class	Physiological condition	Structural condition	Preliminary management recommendations	Estimated remaining contribution	Category grading
T181	Sycamore	<i>Acer pseudoplatanus</i>	16	620	5	5	6	7	5	0.1	M	Good	Good	None	20+	B2
T182	Sycamore	<i>Acer pseudoplatanus</i>	16	650	5	6	6	6	6	3	M	Good	Good	None	20+	B2
T183	Sycamore	<i>Acer pseudoplatanus</i>	16	400	1	1	7	7	0.5	3	M	Good	Good	None	20+	B2
G184	Field maple	<i>Acer campestre</i>	10	150	1	2	2	2	2	0.1	Y	Good	Good	None	20+	B2
G184	Ash	<i>Fraxinus excelsior</i>	10	150	1	2	2	2	2	0.1	Y	Good	Good	None	20+	B2
G184	Cherry	<i>Prunus ssp</i>	10	150	1	2	2	2	2	0.1	Y	Good	Good	None	20+	B2
G184	Scots pine	<i>Pinus sylvestris</i>	10	150	1	2	2	2	2	0.1	Y	Good	Good	None	20+	B2
G184	Beech	<i>Fagus sylvatica</i>	10	150	1	2	2	2	2	0.1	Y	Good	Good	None	20+	B2
G184	European Larch	<i>Larix decidua</i>	10	150	1	2	2	2	2	0.1	Y	Good	Good	None	20+	B2
G185	Field maple	<i>Acer campestre</i>	14	260	1	6	6	6	6	2	SM	Good	Good	None	20+	B2
G185	English oak	<i>Quercus robur</i>	14	260	1	6	6	6	6	2	SM	Good	Good	None	20+	B2
G185	Hawthorn	<i>Crataegus monogyna</i>	14	260		6	6	6	6	2	SM	Good	Good	None	20+	B2
G185	Ash	<i>Fraxinus excelsior</i>	14	260	1	6	6	6	6	2	SM	Good	Good	None	20+	B2
T186	English oak	<i>Quercus robur</i>	14	540	4	7	7	7	7	4	M	Good	Good	None	20+	B1
T187	Ash	<i>Fraxinus excelsior</i>	16	700	8	8	7	7	6	4	M	Good	Good	None	20+	B1

Tree reference number	Species	Latin name	Height (m)	Stem diameter (mm)	No of stems	Canopy Spread N (m)	Canopy Spread E (m)	Canopy Spread S (m)	Canopy Spread W (m)	First Significant branch (m agl)	Age class	Physiological condition	Structural condition	Preliminary management recommendations	Estimated remaining contribution	Category grading
T188	Ash	<i>Fraxinus excelsior</i>	15	540	9	8	6	6	6	3	M	Good	Good	None	20+	C1
G189	Douglas fir	<i>Pseudotsuga menziesii</i>	15	350	1	5	5	5	5	0.5	M	Good	Good	None	10+	C2
T190	Norway maple	<i>Acer platanoides</i>	11	350	1	5	5	5	5	2.5	SM	Good	Poor	None	10-	C1
T191	English oak	<i>Quercus robur</i>	24	1200	1	10	10	11	9	3	OM	Good	Good	None	40+	A1
W192	Ash	<i>Fraxinus excelsior</i>	20	600	1	9	9	9	9	5	M	Good	Good	None	20+	B2
W192	Sycamore	<i>Acer pseudoplatanus</i>	20	600	1	9	9	9	9	5	M	Good	Good	None	20+	B2
W192	European Larch	<i>Larix decidua</i>	20	600	1	9	9	9	9	5	M	Good	Good	None	20+	B2
G193	Ash	<i>Fraxinus excelsior</i>	12	300	1	3	3	3	3	2	SM	Good	Good	None	20+	B2
W194	Sycamore	<i>Acer pseudoplatanus</i>	24	500	1	10	10	10	10	4	M	Good	Good	None	20+	B2
W194	Horse chestnut	<i>Aesculus hippocastanum</i>	24	500	1	10	10	10	10	4	M	Good	Good	None	20+	B2
W194	Norway maple	<i>Acer platanoides</i>	24	500	1	10	10	10	10	4	M	Good	Good	None	20+	B2
W194	Ash	<i>Fraxinus excelsior</i>	24	500	1	10	10	10	10	4	M	Good	Good	None	20+	B2
G195	Sycamore	<i>Acer pseudoplatanus</i>	18	400	1	7	7	7	7	0.1	SM	Good	Good	None	10+	C2
G195	Ash	<i>Fraxinus excelsior</i>	18	400	1	7	7	7	7	0.1	SM	Good	Good	None	10+	C2

Tree reference number	Species	Latin name	Height (m)	Stem diameter (mm)	No of stems	Canopy Spread N (m)	Canopy Spread E (m)	Canopy Spread S (m)	Canopy Spread W (m)	First Significant branch (m agl)	Age class	Physiological condition	Structural condition	Preliminary management recommendations	Estimated remaining contribution	Category grading
G195	English oak	<i>Quercus robur</i>	18	400	1	7	7	7	7	0.1	SM	Good	Good	None	10+	C2
G196	Sycamore	<i>Acer platanoides</i>	4	150	1	4	4	4	4	1	SM	Good	Good	None	10+	C2
G196	English oak	<i>Quercus robur</i>	4	150	1	4	4	4	4	1	SM	Good	Good	None	10+	C2

## 7 ARBORICULTURAL IMPACT ASSESSMENT

7.1.1 After identifying the position of the trees and calculating the RPAs, the proposed footprint of the development has been overlaid onto the TCP to enable possible areas of conflict to be identified. Trees which could potentially be impacted upon by the proposed development have been identified using this approach.

7.1.2 The majority of the trees that are subject to this report are semi mature or mature and it can generally be considered that the older the tree the more they will be susceptible to disturbance and changes to their environment. Damage can be commonly caused by:

- Compaction around the trees, causing asphyxiation and a reduction in the availability of water and minerals to the roots;
- Ground level changes;
- Physical damage to the roots by cutting and severing or removal of bark;
- Spillage of contaminants; and
- Physical damage to the stem and branches.

7.1.3 The effects of the damage may not be immediately apparent and often it is the case that the tree does not show any symptoms until after the first year. Such symptoms may range from dieback in the crown, to deterioration and ultimate death, depending upon the severity of the damage and the ability of the roots to recover and regenerate.

7.1.4 It is likely that the health of some of a small number of trees to be retained is at risk of being affected by the development proposals due to the following activities:

- Construction of the new development, roundabout and associated roads;
- Level changes and earthworks;
- Canopies that extend into the site; and
- Installation and route of services.

7.1.5 It will therefore be necessary to carry out preventative measures to reduce and mitigate damage which may occur to those trees that are considered to be of value and are deemed practical to be retained.

7.1.6 The site falls into two areas these being; the extreme west of the site where detailed approval is sought for site access, with all other matters reserved. Therefore other than the roundabout and feeder roads, the detailed development footprint is indicative and it is not possible, at this stage, to comment in detail regarding the impact of the development, but only to comment generally, based on the areas of development as shown in the Development Framework Plan.

7.1.7 It will be necessary to address this area of the site in more detail once the submission of a full planning application is proposed and a final detailed masterplan is available.

## 7.2 Trees to be removed

7.2.1 It is apparent that despite the acknowledgement of the importance of the tree resource within and adjacent to the site at the design stage, a small number of trees will need to be removed on the western boundary to enable the construction of a new roundabout, feeder roads and re alignment of Bloxham Road. These are identified as:

- Category A Tree 142
- Category B trees 143, 144, 146, G193 (part) and G135 (part),
- Category C trees 145 and G189.

7.2.2 To the east, subject a detailed finalised masterplan, it is likely it will be necessary to remove the following trees:

- Category B trees 186,187,188, G185 (dependant on final road alignment) and a small section of G184,
- Category C sections of G196 (dependant on final road alignment and development footprint).

7.2.3 Where trees are to be removed great care will be required to avoid unnecessary damage to the retained trees identified as of merit. This will include removal of roots and stumps.

7.2.4 NB It is likely there will be a requirement to remove further sections of the internal tree groups and hedgerows, where this occurs this will be addressed further at the application stage for full planning consent.

### 7.3 **Trees to be retained**

7.3.1 It is observed the RPA of only one tree (A category T142) located on the western boundary is compromised directly by the development proposals. However due to the minor encroachment, it is considered this tree will not be affected by the works provided suitable protection is implemented to ensure the remainder of the RPA is not compromised further (ref 7.5).

7.3.2 Due to the proximity of the proposed development to the remaining trees and groups located on and adjacent to the site, it will be essential they are adequately protected prior to the commencing of works once any tree removal or tree surgery has been completed (ref 7.5,7.6 below). If it is found at a later date that further RPAs are likely to be compromised, then it will be necessary to consult with the project Arboriculturist to detail mitigating construction techniques. Where this is found impractical additional trees will need to be removed.

### 7.4 **Hedgerows to be removed**

7.4.1 It is likely that the majority of hedgerow H8 (refer to TCP Drawings 2 and 3) will need to be removed. Other small sections of hedgerows may need to be removed however these can only be identified at the detailed design stage.

7.4.2 Where hedgerows are to be retained, it will be necessary to ensure they are not damaged by means of a recommended minimum standoff of 3m and should be maintained for the duration of the construction period.

7.4.3 It is not considered practical or necessary to provide protective fencing for the entire length of the hedges but it is advised where it is proposed to carry out intense development close to the hedges, that temporary protection is considered.

## 7.5 Utilities

7.5.1 The exact location of any associated proposed and existing utilities was not available at the time of this report. It is advised that where possible these are located beyond the RPAs of all trees to be retained.

7.5.2 Where it is unavoidable and utilities are proposed to be sited within RPAs of retained trees it will be necessary to consider the effects of the installation may have on their health and only installed where approve mitigation can be adopted.

7.5.3 Where existing utilities are found within the RPAs of retained trees and it is required that they are removed, it will be necessary to consult further the project Arboriculturist to prevent damage to the trees.

## 7.6 Tree protection barriers

7.6.1 Before any materials or machinery are brought onto site and before any demolition, soil striping or construction work commences, it will be necessary to erect protective fencing (barriers) around the trees adjacent to the development area that are to be retained. The indicative positioning of the fencing (barriers) is shown on the Draft TPPs.

7.6.2 Once erected, barriers and any ground protection should not be removed or altered without the prior approval of an Arboriculturist or where appropriate the LPA, except where necessary to facilitate approved development. Where necessary, alternative routing for protective fencing barriers will be submitted.

7.6.3 The barrier should remain intact for the duration of the works and should any breaches occur during this period then work must be stopped until repairs can be completed.

7.6.4 Once construction has been completed, it will be necessary to temporarily remove barriers in order to facilitate soft landscaping. It is important to ensure that heavy machinery is not used within the RPAs unless suitable ground protection is adopted following further consultation with the project Arboriculturist.

## 7.7 Tree Surgery Work

7.7.1 Before construction work commences it will be necessary to produce a schedule which details the tree work that will be required in order to implement the proposed works. This work is likely to consist of the removal of low limbs that overhang the site or protective barrier, if they are found to be at risk of being damaged by machinery during construction works.

7.7.2 An assessment of tree work will need to be carried out by the project Arboriculturist, once the type and size of machinery has been confirmed.

7.7.3 If work is found to be required, then it will be necessary to inform the tree owner, where trees are located in private properties, and the LPA in writing. No work should be carried out until the LPA have approved the work and/or the owner has given their permission.

7.7.4 In certain circumstances it will be necessary to ensure that an ecology survey has been carried out to identify trees or hedgerows that have the potential to provide habitats for wildlife are identified. It is recommended therefore that an ecologist is engaged at an early stage to advise and carry out any survey work found to be necessary.

7.7.5 All work must be carried out by a competent tree surgeon to British standard recommendations BS 3998:2010 Tree work-Recommendations or as modified by more recent research. It is advisable to select a contractor from the local authority list and preferably one approved by the Arboricultural Association. Telephone 01242 522152, website [www.trees.org.uk/contractors.htm](http://www.trees.org.uk/contractors.htm). Their Register of Contractors is available free from The Malthouse, Stroud Green, Standish, Stonehouse, Gloucestershire GL10 3DL Telephone 01242 522152 website [www.trees.org.uk/contractors.htm](http://www.trees.org.uk/contractors.htm)

## 7.8 Summary of the identified constraints to be addressed by the AMS

7.8.1 In summary the following constraints should be addressed by an AMS following planning approval:



- Cutting back of tree canopies and tree removal where required.
- Location and installation methods of utilities where required.
- Final positioning and specification of protective fencing (barriers)

## 8 SCHEDULING OF WORK

- 8.1.1 It is advised that continued consultation with the developer, architects, planners and civil engineers is carried out during the development of the AMS which could form part of a CEMP.
- 8.1.2 It is recommended that pre-commencement meeting is held on site before any of the construction work begins.
- 8.1.3 All tree protection measures detailed in this report must be fully discussed so that all aspects of their implementation and sequencing are understood by all the parties. Any clarification or modifications must be recorded and circulated to all parties in writing. It may be appropriate for the tree surgery contractor to also attend this meeting.
- 8.1.4 It will be necessary thereafter to monitor and assess the development throughout the construction period. Provided the guidelines are followed then it is considered that trees of value around this site should be able to be retained with minimal damage.

**Table 1 Proposed scheduling of works in order to protect trees to be retained**

Timescale	Task	By whom/responsibility
Post Planning Approval	Submission of and AMS and final TPP as a condition agreed and approved by the LPA	To be arranged by the developer with the planning consultant and project Arboriculturist
Pre development	Pre commencement meeting with all relevant parties	To be arranged by the developer
	Preliminary tree work specification drawn up approved and sent for tender.	To be arranged by the developer with the project Arboriculturist and site manager
	Pre-construction tree work including tree removal implemented and supervised	As above

<b>Timescale</b>	<b>Task</b>	<b>By whom/responsibility</b>
	Erection of protective barriers and ground protection as agreed and approved	As above
	Carry out supervisory visits as agreed and report findings and recommendations	As above
During development	Carry out supervisory visits as agreed and report findings and recommendations	As above
Post development	Phased removal of protective barriers with soft landscaping	As above
	Inspect retained trees and carry out remedial tree work as necessary	To be arranged by developer and the project Arboriculturist

## 9 SUMMARY AND CONCLUSIONS

- 9.1.1 It is proposed to construct 1000 dwellings together with a local centre, a primary school and associated green infrastructure comprising formal and informal open space and sustainable urban drainage systems and associated infrastructure and utility services.
- 9.1.2 Careful planning and continued consultation during the preparation of the tree survey and development framework plan has minimised the need to remove trees of merit. It is therefore unlikely that the small number of trees which are to be removed would significantly change the amenity the area. Further mitigation may also be offered by a robust landscaping scheme.
- 9.1.3 Provided suitable protection is adopted during the construction phases and where RPAs are compromised and mitigation offered by means of an AMS, it is reasonable to conclude the proposed development will have minimal effect on the amenity of the area in respect of loss of trees.

## **10 CLOSURE**

10.1.1 This report has been prepared by Treetec with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

10.1.2 This report is for the exclusive use of Wardell Armstrong and Gallagher Estates Limited; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from Treetec.

10.1.3 Treetec disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

## APPENDICES

## APPENDIX 1

### Cascade Chart for Tree Quality Assessment BS 5837:2012

### CASCADE CHART FOR TREE QUALITY ASSESSMENT

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
<b>Trees unsuitable for retention (see Note)</b>		
<b>Category U</b> Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none"> <li>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 category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li> <li>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li> <li>Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li> </ul> <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p>	See Table 2
<p><b>1 Mainly arboricultural qualities      2 Mainly landscape qualities      3 Mainly cultural values, including conservation</b></p>		
<b>Trees to be considered for retention</b>		
<b>Category A</b> Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features
<b>Category B</b> Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality
<b>Category C</b> Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits
		Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
		Trees with material conservation or other cultural value
		Trees with no material conservation or other cultural value
		See Table 2
		See Table 2

BRITISH STANDARD

BS 5837:2012

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**BS 5837:2012**

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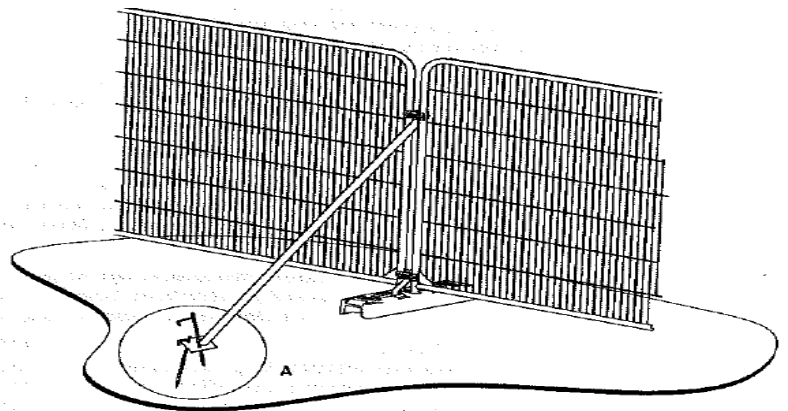
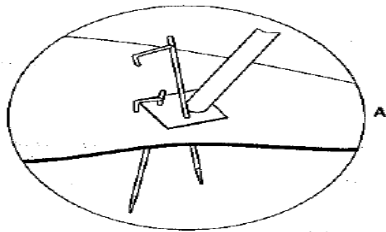
Table 2 **Identification of tree categories**

<b>Category (from Table 1)</b>	<b>Colour <sup>A)</sup></b>	<b>RGB code <sup>A)</sup></b>
U	Dark red	127-000-000
A	Light green	000-255-000
B	Mid blue	000-000-255
C	Grey	091-091-091

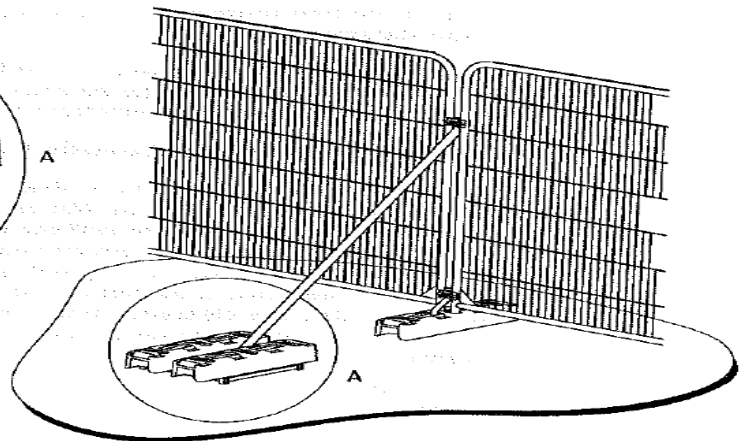
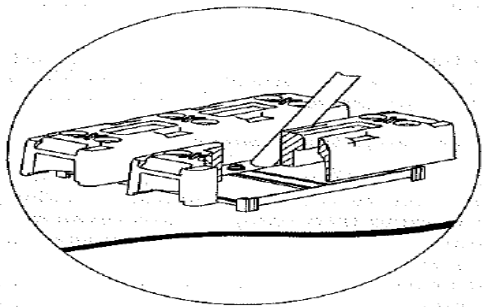
<sup>A)</sup> Colours verified against <http://safecolours.rigdenage.com/palettefiles.html#files> [viewed 2012-03-26].

**APPENDIX 2**  
**BS5837 recommended protective barriers**

## Fence A-Herras type fence

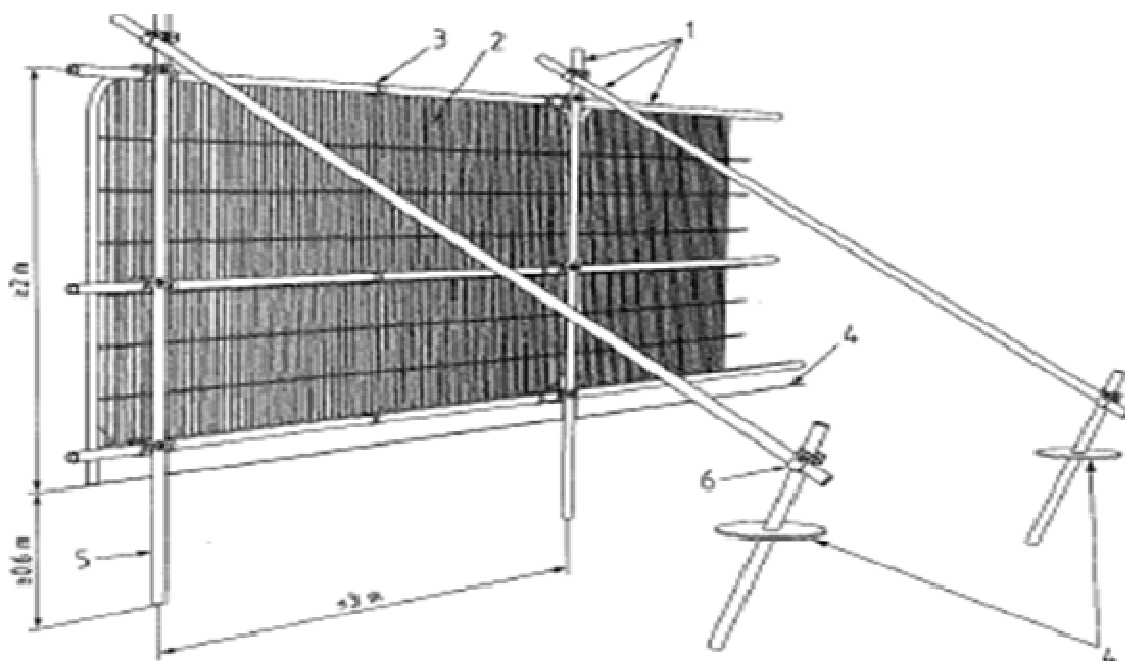


a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

## Fence B Scaffolding with wire mesh protective fence



### 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

### **APPENDIX 3 Glossary of Terms**

## **GLOSSARY OF TERMS**

**Arboricultural Impact Assessment (AIA)** A study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

**Arboricultural Method Statement (AMS)** The methodology for the implementation of any aspect of mitigation where the development has the potential to result in loss of or damage to a tree(s).

**Construction Exclusion Zone** Area based on the RPA (in m<sup>2</sup>), identified by an Arboriculturist, to be protected during development, including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long-term retention of a tree.

**Crown or Apron clearance** Height or spread in meters of the lowest significant branches above ground level.

**Diameter** Trunk diameter measured at 1.5 metres above ground level.

**DBH** Diameter at breast height.

**Height** The height of a tree measure using a clinometer.

**Management recommendations** General comments on the condition of the tree, group or woodland and recommendations for future work.

**Pruning** The removal of living or dead parts of a plant or tree. Such parts may be soft growth, branches, limbs or sections of the trunk or stem.

**Root Protection Area (RPA)** Layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m<sup>2</sup>

**Species** The species is based on visual field observation and lists the common name and the botanical name.

**Spread** Measurement of the largest extent of the trees branch growth.

**Structural condition** Description of any decayed or physical defects.

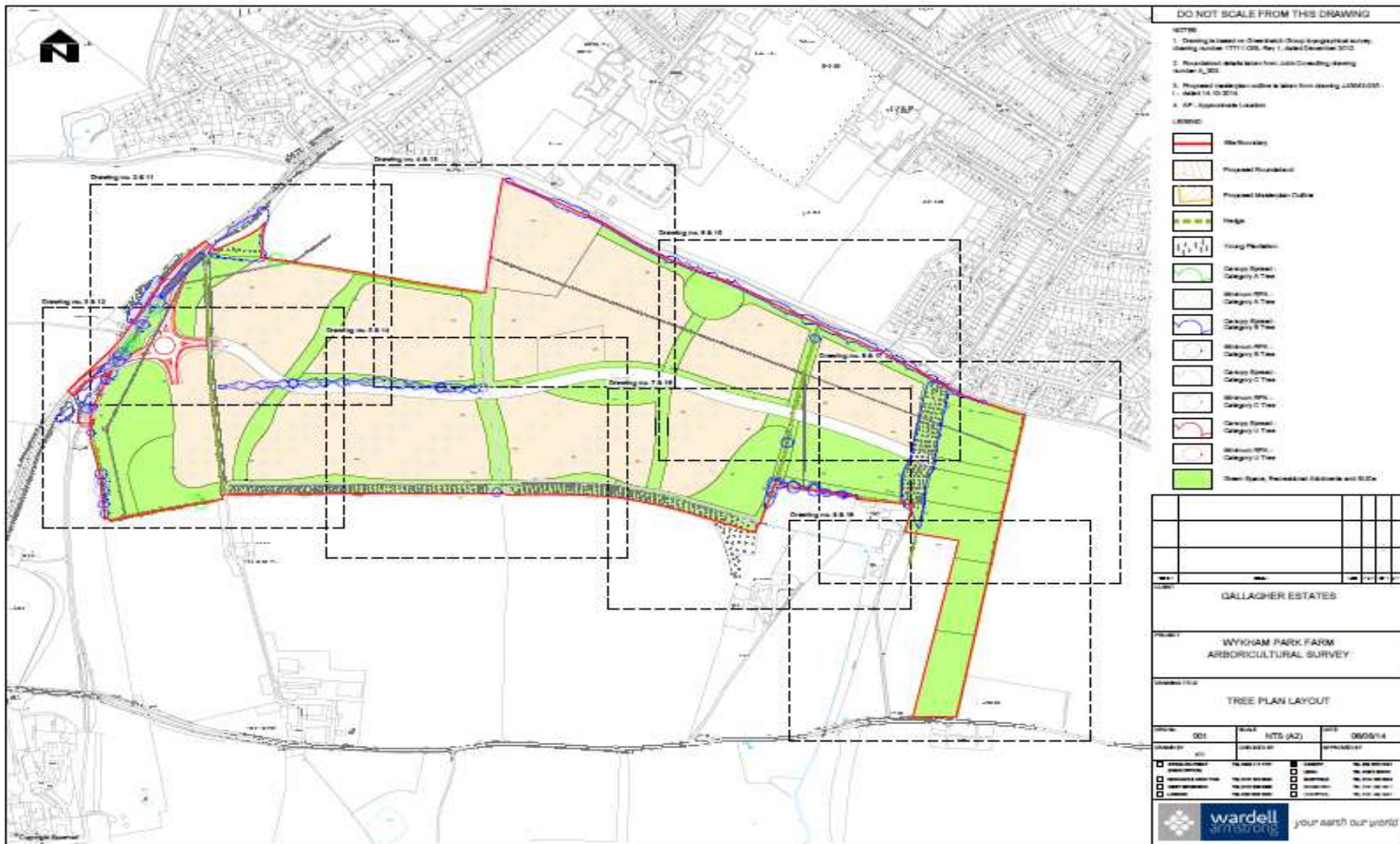
**Tree Constraints Plan (TCP)** Plan prepared by an Arboriculturist for the purposes of layout design showing the RPA and representing the effect that the mature height and spread of retained trees will have on layouts through shade, dominance, roots etc.

**Tree Protection Plan (TPP)** Scale drawing prepared by an Arboriculturist showing the finalised layout proposals, tree retention and tree and landscape protection measures detailed within the Arboricultural Method Statement (AMS), which can be shown graphically.

**Tree Root Preservation Service (TRPS)** A non-evasive foundation construction system designed to prevent damage to tree roots and adapted for specific site use in conjunction with an arboriculturist

**DRAWINGS**  
**Indicative Tree Protection Plans**



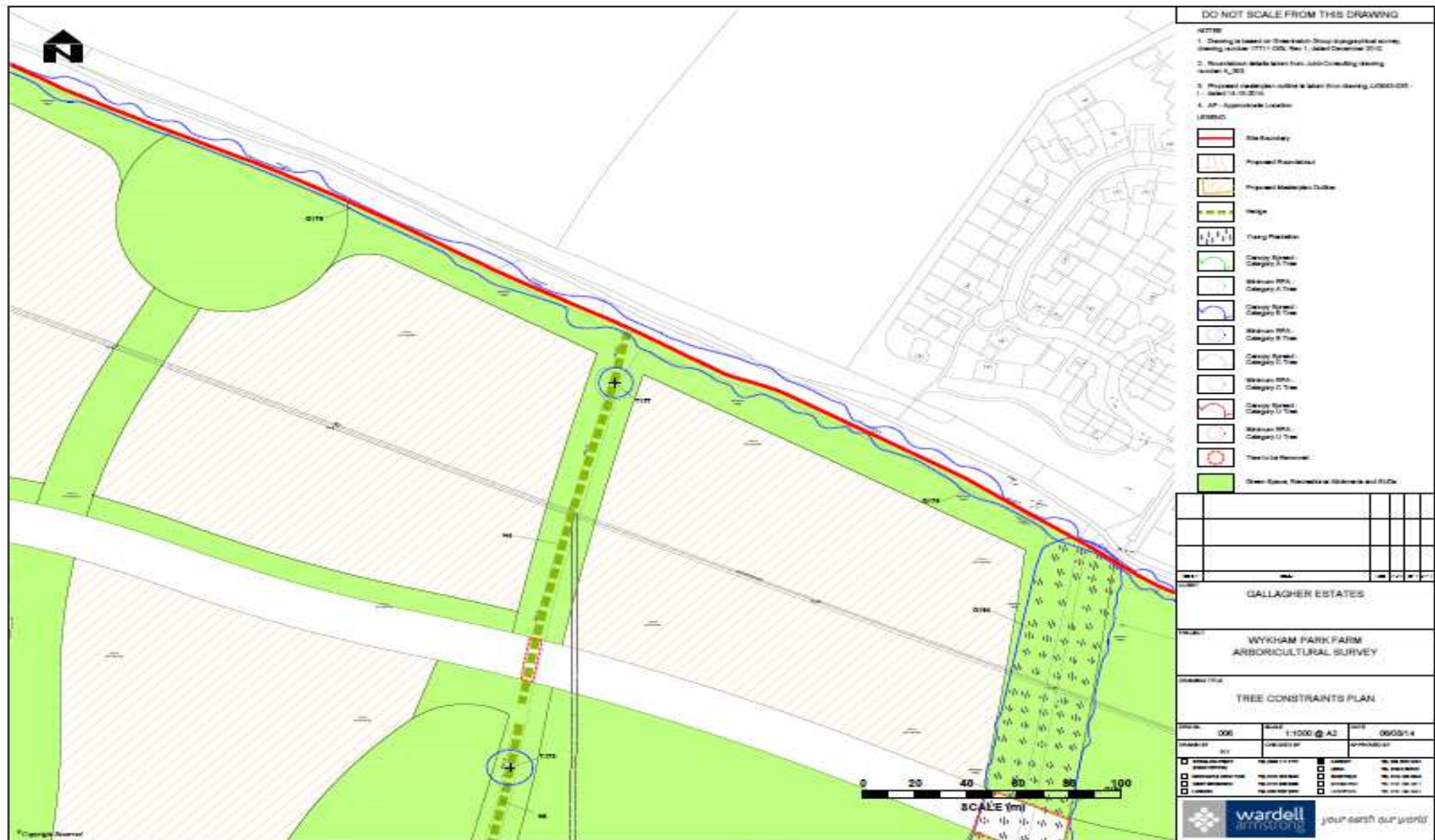


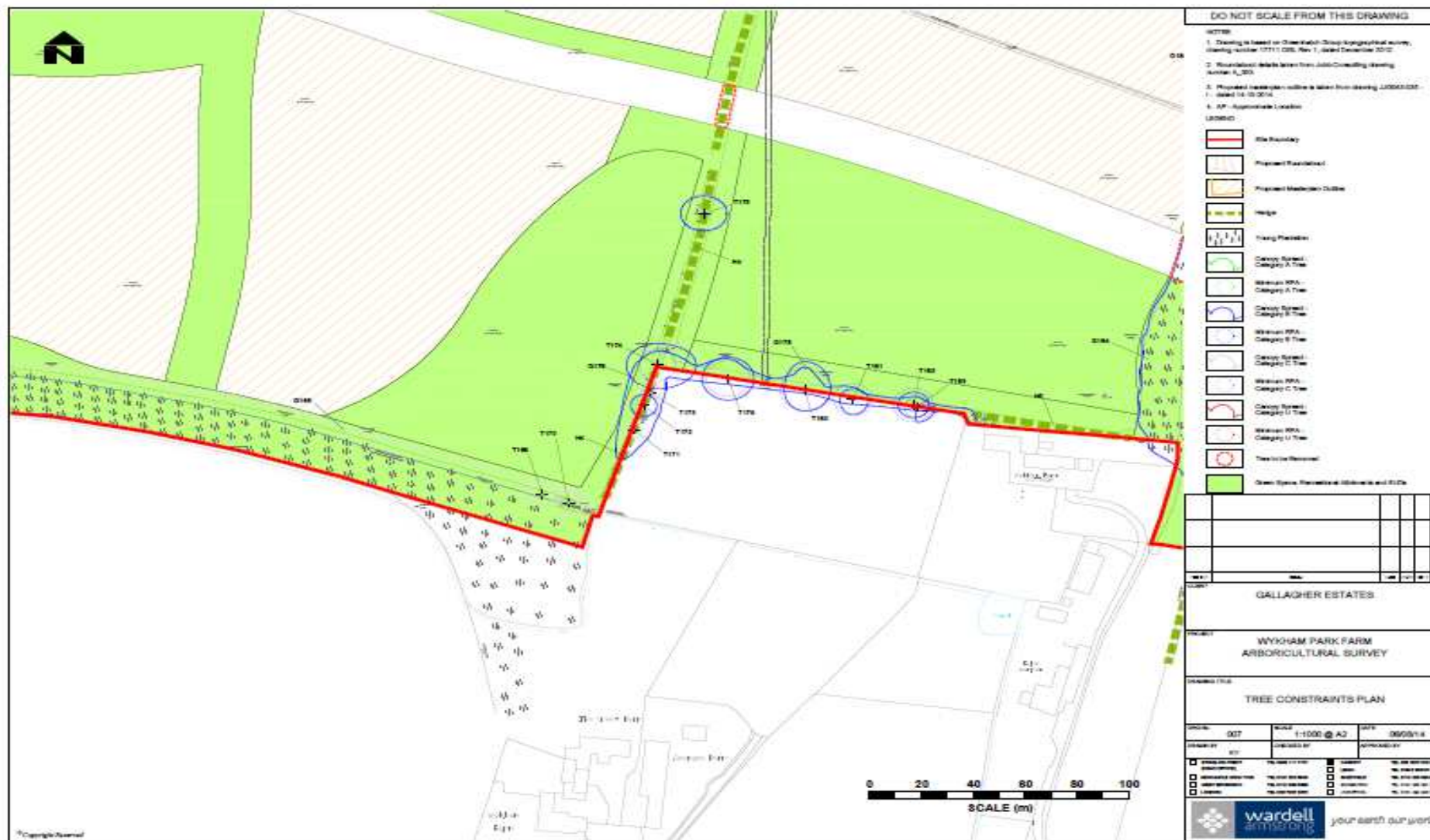
























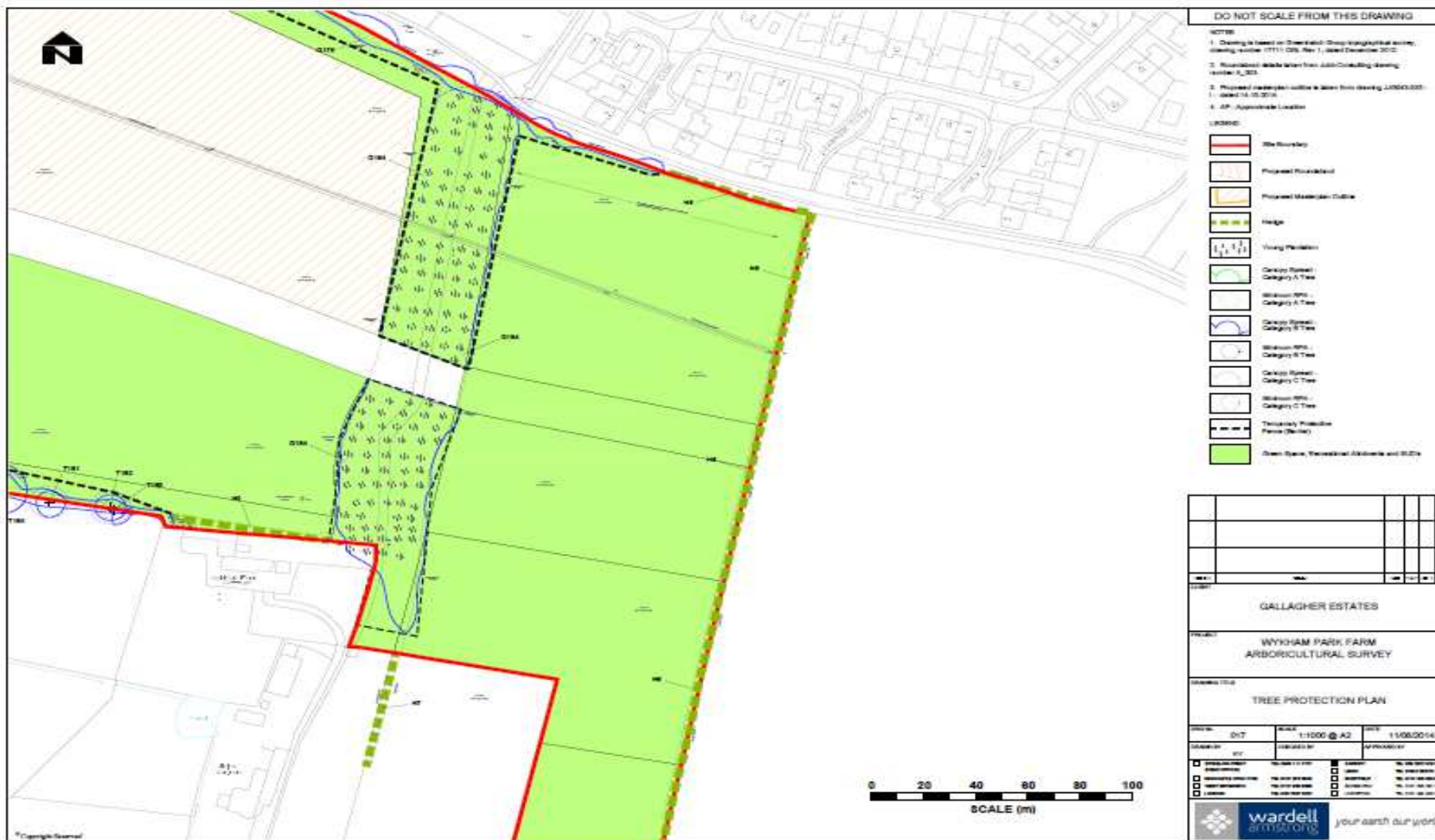


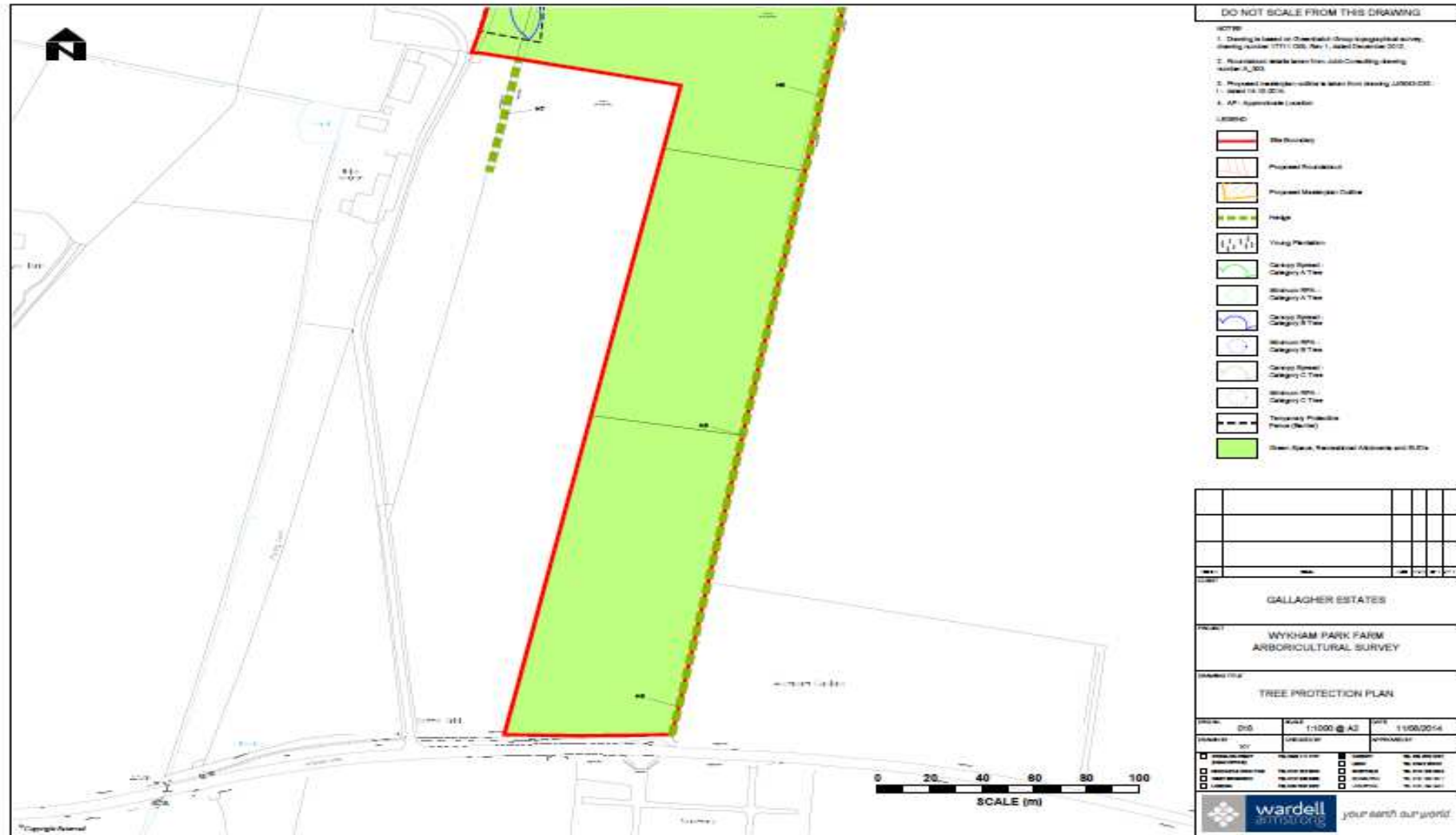














DO NOT SCALE FROM THIS DRAWING

Wykham Park Tree Schedule

Reference Number	Common Name	Height	DBH (cm)	Number of Stems	Canopy (WxD)	Column Clearance Height	Age Class	Physiological Condition	Mutational Condition	Phytosociological Condition	Estimated Date of Planting	Category	Notes
Ref 0180	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0181	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0182	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0183	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0184	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0185	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0186	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0187	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0188	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0189	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0190	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0191	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0192	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0193	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0194	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0195	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0196	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0197	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0198	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0199	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	
Ref 0200	Prunella spinosa	1.5	2.5	1	2.5 x 2.5	2.5	M	Good	Good	Good	20 Years	AO	

GALLAGHER ESTATES

WYKHAM PARK FARM  
ARBORENTAL SURVEY

TREE PROTECTION PLAN

Scale: 1:100 @ A3 Date: 11/06/2014

Drawn by: JCV Checked by: Approved by:

wardell armstrong your earth our world

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