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Technical Appendix

Branston Locks, Burton upon Trent

Tree Survey Report

Nurton Developments (Quintus) Ltd

14 November 2012

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1 Introduction

1.1 Terms of Reference

In April 2009 Atmos Consulting Ltd was commissioned by Nurton Developments (Quintus) Ltd to provide a Tree Survey Report in connection with the proposed mixed use development of employment and residential land and associated infrastructure on a site referred to in this report as 'Branston Locks', located on land off Branston Road, Burton upon Trent.

The tree survey was undertaken by a qualified Arboriculturist, who recorded details of all trees/tree groups on site within the layout of the proposed development in accordance with the then-current **British Standard BS 5837: 2005 Trees in relation to construction: Recommendations.** The assessment of tree retention values was undertaken on the day of survey without reference to the development layout plan. This report therefore provides the baseline information on the trees present within the Branston Locks site, independent from the development proposals. The potential effects of the development footprint on the trees present are described in the Environmental Statement.

It should be noted that this report is not a Tree Risk Management Report or a Hazard Analysis Report, and should not under any circumstances be used as such.

The results of the survey were re-verified on 30th August 2012. Due to the changing nature of trees and other site circumstances, this report and any recommendations made are limited to a 12 month period. Any alteration to the application site or any development proposals could change the current circumstances and may invalidate this report and any recommendations made. Should this be the case this report will require revision to reflect the development proposals.

1.2 Site Description

The Branston Locks site is approximately 136.19ha in size and is situated to the north west of Burton upon Trent, adjacent to the A38 trunk road, which forms the eastern boundary. It is a generally linear site which is at its widest in the south west where it is bounded by Branston Road, and tapers to the north east where it ends at Shobnall Road.

The site supports large flat arable fields which are surrounded by mostly intact hedges with standard trees, and occasional ditches. It is bisected by the Trent and Mersey Canal and the private access road Anglesey Street, which leads to Lawns Farm, the main farmstead on the site, and adjacent 'The Bungalows'.

The open fields rise in the west up as the Needwood Scarp to Battlestead Ridge, which is a steep-sided spine of wooded land running adjacent to and parallel with the site boundary. The highest point on the ridge, known as Battlestead Hill supports a small area of mature secondary sycamore *Acer pseudoplatanus* woodland on an Ancient Woodland site. To the north of this woodland the ridge supports dense plantations of mainly deciduous tree species, which were planted in 1996 under a Woodland Grant Scheme as part of the National Forest initiative, known as the Bass Millennium Wood; and further north is a mixture of self-sown scrub and secondary woodland known as The

Thorns and The Rough. Pockets of grassland, bramble scrub and tall ruderals are also present, as well as three ponds, situated on the top of ridge.

2 Methodology

At the commencement of work, Nurton Developments (Quintus) Ltd team provided a topographical map, in electronic format. The tree surveyor used this plan to locate the centres of individual trees within the application site having a trunk diameter of 300mm or more at 1.5m above adjacent ground level. As there were large numbers of standard trees along the field boundaries of the site, the majority have been recorded as individuals, with a further six areas on the site and one off-site recorded as woodland/tree groups.

The trees were visited on 8th April 2009 by a suitably experienced team, comprising an arboriculturist (M.J. Boardman, MSc MICFor) and bat ecologists (Mr A. Nyul, MIEEM and Dr W Sims, MIEEM) who completed the tree survey through the following actions:

- assigning each tree (or group) a number;
- identifying each tree's species;
- measuring the girth of each tree;
- measuring the branch spread in metres to approximate spatial crown coverage;
- estimating tree height;
- assigning each tree to an age class;
- recording noteworthy aspects of physiological and structural condition;
- recording Perceived Safe Useful Life Expectancy (PSULE) in years;
- assigning a grade to each tree, A – C, or R, relating to its pre-development retention value.

The trees were not climbed, with inspections made from the ground, so there is potential for hidden defects to be present and to have gone undetected in this survey. This is an inevitable risk associated with any relatively rapid, ground-based survey technique, but is considered to be an acceptable limitation, given the purpose of this Tree Survey Report.

It should be noted that, with the issue of the most recent version of the relevant British Standard (BS 5837: 2012) the reference to trees being within the category 'R' would now be denoted instead as 'U', based on their being unsuitable for retention. However, the criteria applied in both cases is essentially the same. The other aspects of tree survey that have been amended in the 2012 edition of the British Standard would not be considered material for a survey undertaken in the current context and of this scale.

In addition to recording the characteristics above for each individual tree/group, notes were taken by the ecologists on the potential for roosting bats to be present, with features such as rot holes or cracked branches being of particular interest and checked with binoculars for signs of bat occupancy, e.g. staining of bark with fur oils, urine or bat droppings.

3 Survey Results

The survey data are provided in the Tree Survey Schedule at Appendix 1.

The tree numbers and their current retention value grade are plotted on an electronic plan of the site (see Figure), with coloured spots/shading indicating the grade assigned in the Tree Survey Schedule. Where trees are assessed as groups, one overall canopy extent is shown for the group.

3.1 Terms Used in Appendix 1

3.1.1 Age Class

Trees may be assigned to the following age classes:

- Young (approximately first third of life)
- Early mature (approximately second third of life expectancy)
- Mature (approximately final third of life expectancy)
- Over-mature (final third of life and showing signs of decline)
- Veteran
- Dead

3.1.2 Physiological Condition

Under BS 5738: 2005 trees were categorised as to whether they were in excellent, acceptable, unacceptable or dead/dying/dangerous condition.

3.1.3 Structural Condition

Trees are dynamic structures that can never be fully guaranteed safe: even those in good condition can suffer damage or decay under average conditions. As the trees were surveyed from the ground the potential for there to be hidden defects cannot be entirely ruled out. Structural features that were noted in the schedule at Appendix 1 are those where the presence of significant decay or damage was evident at the time of survey.

3.1.4 Retention Grade

The retention grade indicated in the Schedule refers to the advantages of retaining trees in the context of the current land use, taking into consideration a range of factors including life expectancy, cultural value and contributions to wildlife, landscape and amenity. The grades are defined as follows:

- A – High value – most desirable to retain in pre-development context
- B – Moderate value - desirable to retain in pre-development context
- C – Low value – could be retained in pre-development context
- R (U) – Remove – unsuitable for retention in pre-development context, including where recommended for removal for the benefit of adjacent trees.

3.1.5 Comments

This section has been used to denote whether or not the tree or group has been assessed as having potential to support roosting bats, on the basis of it having a high, medium or low potential; or no risk, of bats being present.

3.2 Summary of Survey Findings

The trees on site consist of predominantly mature and early mature oak *Quercus robur* and ash *Fraxinus excelsior* in association with hedgerows and field boundaries across the application site. Pockets of mature white and crack willow *Salix alba* and *S. fragilis* were found characteristically in association with the Trent and Mersey Canal or networks of ditches, and landscaping belts of Lombardy poplar *Populus nigra* var. *Italica* and Leyland cypress *Cupressus x leylandii* near houses and farmsteads.

In total 15 species are recorded in the tree survey, as follows:

- Oak
- Ash
- Sycamore
- Field maple *Acer campestre*
- Silver birch *Betula pendula*
- Alder *Alnus glutinosa*
- Horse chestnut *Aesculus hippocastanum*
- Poplar
- Crack willow
- White willow
- Hawthorn *Crataegus monogyna*
- Leyland cypress
- Scot's pine *Pinus sylvestris*
- Sitka spruce *Picea sitchensis*
- Larch *Larix x intermedia*

Trees are numbered from 001 to 165, with tree groups within the site numbered G1 – G6 and the off-site roadside planting along the verges of the A38 trunk road. Most of the trees – 161 – are within the application site; the exceptions being T46 (in a private garden); and T105 – 107 inclusive (mature trees, one of which is dead) incorporated into the Bass Millennium Wood.

The majority of the trees surveyed, 106 (including four off-site trees) and two groups – G1 and G4, are classed as having moderate retention value, i.e. are grade B, shown in blue on the Tree Survey Plan and Schedule. These incorporate individuals of all tree species listed above which are in acceptable physiological condition and considered to be desirable to retain within development proposals where possible due to their landscape/amenity value and/or form. Also included in this grade are most of the veteran ash trees along the southern foot of Needwood Scarp known as The Rough.

There are five trees categorised as being of high retention value on the site as these were of excellent form and/or of amenity significance in their current context. These

grade A trees are all within the application site and are shown in green on the Tree Survey Plan and Schedule. Two are mature oak trees (T23 and T26), situated along a field boundary (T23) and the main ditch (T26) respectively; and three Scot's pine (T34 – 36) are in a row forming the setting to the farmhouse at Lawn's Farm. Additionally, the trees outside the application site but on the verges of the A38 trunk road are also assessed as justifying an 'A' retention grade as the majority of the trees are in their early mature stage, acceptable condition and the group as a whole plays an important role in screening the road from users on surrounding land.

19 trees are recommended for removal. These are largely over-mature with limited longevity and include an oak (T4) and ash (T5) along the central road; one veteran ash tree at the foot of The Rough (T10); two ash trees (T17 and T25) along the main ditch; an oak beside the dry pond in the centre of the site (T33); a white willow (T51) to the east of the canal, three oak trees (Ts 76 – 78) to the west of the canal; a row of crack willow along the main ditch (Ts 87 – 88; 97 – 102) and a dead tree (T105) at the foot of the Needwood Scarp in the Bass Millennium Wood.

The remaining 35 trees are considered to be of low retention value (C1-3, shown in grey on the Tree Survey Plan), where they are neither of landscape value nor in good form, but could be retained as they do not present a hazard or indicate signs of disease that may lead to a short lifespan.

4 Recommendations

The Branston Locks site supports at least 161 individual trees, most of which being mature broadleaved species which are worthy of retention.

A Root Protection Area (RPA) is defined in BS5837: 2012 as the area on the ground surrounding the tree that contains sufficient rooting volume to ensure its survival. This RPA takes into consideration factors which may influence the tree's rooting environment, such as species, age, proximity to other trees, topography and drainage. It is the minimum area in m^2 which should be left undisturbed around each retained tree. The RPA has not been calculated for the trees on the Branston Locks site at this stage, but it is recommended that as each stage of the development is brought forward for Reserved Matters applications the findings of this Tree Survey are revisited and RPAs calculated for all trees that are in proximity to proposed future development plots.

4.1 Tree Protection Measures

Trees to be retained should be protected throughout the construction activities by the installation of protective fencing. The area enclosed within the fencing should include the root systems of the vegetation affected. Fencing should be fit for purpose ('Netlon' or similar is not generally considered suitable) and be clearly visible to the driver(s) of the large construction vehicle(s). 'Heras' type temporary fencing would be suitable in cases where works are proposed close to retained trees. No human access, materials storage or fires should be permitted within the fenced areas. The fences should be checked and maintained to ensure their continued function throughout the construction stage, but should be removed from site on completion of the works.

5 Summary

The Branston Locks site is comprised of large open arable fields bounded by hedgerows with trees. Standard trees are also present within the fields, particularly in the south of the site. Patches of hawthorn and willow scrub are recorded along the Trent and Mersey Canal, whilst landscaping belts are present around the properties within the site – Lawns Farm, the Bungalows and Shobnall Grange.

All the individual trees on the site with a trunk diameter of 300mm or more at 1.5m above adjacent ground level have been surveyed in accordance with British Standard BS 5837: 2005 "Trees in relation to construction: Recommendations", by a suitably experienced arboriculturist. This assigned the trees grades according to their retention value, with 'A' being of high retention value, 'B' of moderate value, 'C' of low value and 'R' (U) recommended for removal due to poor form or condition.

Most of the trees present are broadleaves, with small numbers of conifers. In total, 15 tree species are recorded – oak, ash, sycamore, field maple, silver birch, white willow, crack willow, hawthorn, alder, horse chestnut, Lombardy poplar, Leyland cypress, larch, Sitka spruce and Scot's pine, which are classed as being young, early mature, mature or over-mature. A small number of veteran ash trees are also present along the boundary between the application site and The Rough.

The most abundant classification assigned to the trees is 'B', where 106 of the trees are considered to be of moderate value for retention. These are typically trees in good health which form part of the landscape and biodiversity of the site. A small number of trees (five) are classed to be of high value (A). These are in the centre of the site and comprise three Scot's pine and two mature oak trees which are in excellent form and a significant landscape feature on the site. The remaining trees are classed either as low value or recommended for removal because they are unsuitable for retention: mainly over-mature specimens which have a limited lifespan.

It is recommended that the trees of A and B value are retained on the site as far as possible, whilst those recommended for removal should be removed if they present a risk to the public or the health of adjacent trees.

Appendix 1 : Tree Survey Schedule

TREE SURVEY SCHEDULE

Tree number on Tree Survey Plan	Species	Approx Height (m)	Stem diameter (m)	No of stems	Crown spread North (m)	Crown spread South (m)	Crown spread East (m)	Crown spread West (m)	Height of lowest branch (m)	Age class	P.S.U.L.E. (Estimated longevity in yrs)	Physiological condition	Structural condition	BS5837 Retention value A, B, C, or R (U)	Comments
1	Oak *Quercus robur*	12	1.1	1	2	6	3	4	2	M	20-30	6/10	7/10	**B3**	Bats low
2	Field maple *Acer campestre*	8	0.6	1	3	4	4	4	2	M	20-30	7/10	7/10	**B3**	No bat potential
3	Oak *Quercus robur*	10	1	1	5	5	5	5	3	M	20-30	6/10	5/10	**B3**	Bats low
4	Oak *Quercus robur*	9	1.1	1	3	6	9	6	2	OM	<10	3/10	1/10	**R (U)**	Bats med
5	Ash *Fraxinus excelsior*	12	1.1	1	5	5	7	3	2	OM	<10	3/10	1/10	**R (U)**	Bats med
6	Ash *Fraxinus excelsior*	16	0.8, 0.9	2	7	10	10	10	2.5	V	<20	3/10	2/10	**B2**	High ecology value
7	Ash *Fraxinus excelsior*	14	0.7	1	4	5	5	5	2	V	<20	3/10	3/10	**B2**	High ecology value
8	Ash *Fraxinus excelsior*	16	1.1	1	6	15	12	6	5	V	<20	3/10	3/10	**B2**	High ecology value
9	Ash *Fraxinus excelsior*	18	1.5	1	10	15	15	10	4	V	<20	3/10	3/10	**B2**	High ecology value
10	Ash *Fraxinus excelsior*	18	1	1	2	2	10	2	Ground	V	<10	2/10	1/10	**R (U)**	Unsafe – bats high
11	Ash *Fraxinus excelsior*	18	1.2	1	8	10	10	10	5	V	<20	3/10	3/10	**B2**	High ecology value
12	Silver birch Betula pendula	10	0.3	1	3	3	3	3	1.5	EM	40+	7/10	7/10	**C**	No bat potential
13	Ash *Fraxinus excelsior*	10	0.5	1	3	3	3	3	1.5	M	20-30	6/10	4/10	**C**	No bat potential
14	Ash *Fraxinus excelsior*	12	0.5	2	5	5	5	5	2	EM	40+	6/10	6/10	**B2**	No bat potential
15	Ash *Fraxinus excelsior*	10	0.4	1	4	4	4	4	2	EM	40+	6/10	6/10	**B2**	No bat potential
16	Ash *Fraxinus excelsior*	10	0.4	1	4	4	4	4	2	EM	40+	6/10	6/10	**B2**	No bat potential
17	Ash *Fraxinus excelsior*	16	1.2	1	10	5	5	7	5	OM	10-20	5/10	1/10	**R (U)**	Bats high
18	Oak *Quercus robur*	12	1.3	1	5	5	5	7	2	M	20-30	5/10	6/10	**B2**	Bats med
19	Oak *Quercus robur*	12	1.2	1	7	7	5	6	2.5	M	20-30	6/10	4/10	**B1**	Bats low
20	White willow *Salix alba*	5	0.3	5	7	2	4	1	1	EM	20-30	6/10	6/10	**B1**	No bat potential
21	Oak *Quercus robur*	12	0.6	1	5	5	2	5	4	EM	30-40	6/10	6/10	**B1**	Bats low
22	Oak *Quercus robur*	10	0.6	1	3	4	4	4	1	M	20-30	7/10	7/10	**B3**	Bats low
23	**Oak** ***Quercus robur***	**12**	**1.2**	**1**	**5**	**5**	**5**	**10**	**1**	**M**	**20-30**	**7/10**	**7/10**	**A1**	**Bats low**
24	Hawthorn *Crataegus monogyna*	5	0.5	5	2	2	5	5	1.5	M	10-20	7/10	7/10	**B1**	No bat potential

Tree number on Tree Survey Plan	Species	Approx Height (m)	Stem diameter (m)	No of stems	Crown spread North (m)	Crown spread South (m)	Crown spread East (m)	Crown spread West (m)	Height of lowest branch (m)	Age class	P.S.U.L.E. (Estimated longevity in yrs)	Physiological condition	Structural condition	BS5837 Retention value A, B, C, or R (U)	Comments
25	Ash *Fraxinus excelsior*	4	0.3	1	3	2	1	2	4	OM	<5	1/10	1/10	**R (U)**	Bats med
26	**Oak** ***Quercus robur***	**8**	**0.5**	**1**	**6**	**5**	**8**	**6**	**1.5**	**M**	**20-30**	**6/10**	**6/10**	**A1**	**No bat potential**
27	Oak *Quercus robur*	10	0.8	1	3	5	7	3	3	EM	10-20	6/10	5/10	**C1**	Bats med
28	Ash *Fraxinus excelsior*	12	1.5	1	4	4	10	10	1.5	M	<10	6/10	4/10	**C**	Bats med
29	Oak *Quercus robur*	10	0.5	1	5	5	5	5	2	M	20-30	6/10	5/10	**B2**	Bats med
30	Field maple *Acer campestre*	8	0.4	1	2	3	3	3	0.5	EM	20-30	6/10	6/10	**B2**	No bat potential
31	Hawthorn *Crataegus monogyna*	6	0.3	1	2	2	3	3	0.3	EM	20-30	5/10	5/10	**B2**	No bat potential
32	Hawthorn *Crataegus monogyna*	6	0.3	1	1	2	3	3	2	EM	20-30	5/10	5/10	**B2**	No bat potential
33	Oak *Quercus robur*	8	1	1	4	3	6	4	3	OM	<5	2/10	1/10	**R (U)**	Bats med
34	**Scots pine** **Pinus sylvestris**	**12**	**0.5**	**1**	**5**	**5**	**3**	**3**	**5**	**EM**	**20-30**	**8/10**	**8/10**	**A2**	**No bat potential**
35	**Scots pine** **Pinus sylvestris**	**12**	**0.4**	**1**	**5**	**5**	**2**	**3**	**5**	**EM**	**20-30**	**8/10**	**8/10**	**A2**	**No bat potential**
36	**Scots pine** **Pinus sylvestris**	**12**	**0.4**	**1**	**3**	**3**	**2**	**3**	**4**	**EM**	**20-30**	**8/10**	**8/10**	**A2**	**No bat potential**
37	Leyland cypress *Cupressus x leylandii*	14	0.6	1	2	2	2	2	0.3	M	10-20	7/10	7/10	**B2**	No bat potential
38	Sycamore *Acer pseudoplatanus*	7	0.3	1	4	4	4	4	1.5	EM	10-20	5/10	5/10	**C**	Bats low
39	Sycamore *Acer pseudoplatanus*	12	0.3 – 0.4	5	4	5	4	4	1	EM	30-40	7/10	7/10	**B2**	No bat potential
40	Ash *Fraxinus excelsior*	12	0.3	2	5	3	2	6	0.5	EM	30-40	6/10	6/10	**B2**	No bat potential
41	Ashes	10	0.15 – 0.4	4	3	3	3	3	1	Y	40+	6/10	6/10	**B2**	No bat potential
42	White willow *Salix alba*	8	0.75	1	3	3	5	3	0.5	EM	20-30	5/10	5/10	**B2**	No bat potential
43	Leyland cypress *Cupressus x leylandii*	10	0.6	1	3	3	3	3	0.5	M	<15	7/10	7/10	**B2**	No bat potential
44	Leyland cypress *Cupressus x leylandii*	8	0.4	1	3	3	3	3	0.5	M	<15	7/10	7/10	**B2**	No bat potential
45	Leyland cypress *Cupressus x leylandii*	6	0.4	1	3	3	3	3	0.5	M	<15	7/10	7/10	**B2**	No bat potential
46	Oak (in private garden) *Quercus robur*	8	0.4	1	6	7	6	6	1.6	M	20-30	7/10	7/10	**B2**	Bats low
47	Ash *Fraxinus excelsior*	8	0.3	1	4	3	4	4	0.15	M	10	5/10	5/10	**C**	Bats med
48	Oak *Quercus robur*	10	1	1	4	4	4	4	2	M	20-30	6/10	6/10	**B2**	Bats low
49	Ash *Fraxinus excelsior*	15	0.6	1	7	6	6	6	1	M	15-20	7/10	5/10	**C**	Bats low

Tree number on Tree Survey Plan	Species	Approx Height (m)	Stem diameter (m)	No of stems	Crown spread North (m)	Crown spread South (m)	Crown spread East (m)	Crown spread West (m)	Height of lowest branch (m)	Age class	P.S.U.L.E. (Estimated longevity in yrs)	Physiological condition	Structural condition	BS5837 Retention value A, B, C, or R (U)	Comments
50	Ash *Fraxinus excelsior*	12	0.4	1	4	4	6	6	4	M	10-20	5/10	5/10	**C**	No bat potential
51	White willow *Salix alba*	14	1.5	1	6	6	7	8	4	OM	<10	4/10	2/10	**R (U)**	Bats med
52	Oak *Quercus robur*	12	0.5	1	5	2	5	5	2	M	20-30	6/10	6/10	**B2**	Bats low
53	Ash *Fraxinus excelsior*	15	0.4	1	2	3	7	3	3	M	20-30	6/10	6/10	**B2**	Bats med
54	Crack willow *Salix fragilis*	12	2	1	8	4	8	4	0.4	V	10-20	6/10	4/10	**C2**	Bats high
55	Ash *Fraxinus excelsior*	13	0.4	2	11	8	6	6	3	M	10-20	6/10	5/10	**C**	Bats low
56	Oak *Quercus robur*	10	1	1	5	5	5	5	2	M	20-30	6/10	4/10	**B1**	Bats med
57	Oak *Quercus robur*	12	1	1	5	5	5	5	3	M	20-30	7/10	5/10	**B1**	Bats med
58	Oak *Quercus robur*	10	0.5	1	3	3	4	4	2	M	10-20	5/10	3/10	**C**	Bats med
59	Oak *Quercus robur*	10	0.6	1	3	5	4	4	4	M	10-20	6/10	5/10	**B1**	Bats med
60	Ash *Fraxinus excelsior*	10	0.6	1	9	9	8	10	4	M	20-30	6/10	5/10	**B1**	Bats low
61	Ash *Fraxinus excelsior*	11	0.7	1	7	8	7	11	2	M	10-20	5/10	3/10	**C**	Bats high
62	Ash *Fraxinus excelsior*	10	0.35	5	6	3	5	4	0.5	EM	10-20	5/10	5/10	**C**	No bat potential
63	Crack willow *Salix fragilis*	12	0.5	2	12	4	5	7	2	M	10-20	5/10	5/10	**C**	No bat potential
64	Crack willow *Salix fragilis*	10	0.6	1	6	6	6	5	2	EM	20-30	6/10	4/10	**C**	No bat potential
65	Crack willow *Salix fragilis*	10	0.5	6	4	6	8	5	0.2	EM	10-20	6/10	6/10	**B2**	Bats low
66	Ash *Fraxinus excelsior*	9	0.4	6	2	2	4	3	0.2	EM	10-20	4/10	4/10	**C**	Bats low
67	Hawthorns (along lock) *Crataegus monogyna*	6	0.4	1	2	2	2	2	2	M	10-20	5/10	5/10	**C**	No bat potential
68	Oak *Quercus robur*	12	1.1	1	3	5	4	5	1	M	10-20	6/10	4/10	**B2**	Bats low
69	Oak *Quercus robur*	8	0.3	1	4	4	4	4	2	EM	30-40	6/10	6/10	**B2**	No bat potential
70	Hawthorn *Crataegus monogyna*	6	0.3	1	3	3	3	3	3	EM	20-30	5/10	5/10	**B2**	No bat potential
71	Oak *Quercus robur*	8	0.75	1	4	7	5	5	2	M	20-30	6/10	5/10	**B2**	Bats low
72	Oak *Quercus robur*	10	0.75	1	4	4	4	4	1	M	20-30	7/10	5/10	**B2**	Bats low
73	Oak *Quercus robur*	10	0.75	1	4	6	3	3	2	M	20-30	5/10	3/10	**C**	Bats low
74	Oak *Quercus robur*	12	0.8	1	5	4	7	3	2	M	20-30	3/10	3/10	**C**	Bats low

Tree number on Tree Survey Plan	Species	Approx Height (m)	Stem diameter (m)	No of stems	Crown spread North (m)	Crown spread South (m)	Crown spread East (m)	Crown spread West (m)	Height of lowest branch (m)	Age class	P.S.U.L.E. (Estimated longevity in yrs)	Physiological condition	Structural condition	BS5837 Retention value A, B, C, or R (U)	Comments
75	Oak *Quercus robur*	8	0.4	1	4	4	4	4	2	M	20-30	5/10	5/10	**B2**	Bats low
76	Oak *Quercus robur*	8	0.4	1	3	3	5	5	2	M	10-20	2/10	3/10	**R (U)**	Bats low
77	Oak *Quercus robur*	8	0.4	1	3	3	3	3	2	M	<10	2/10	3/10	**R (U)**	Bats med
78	Oak *Quercus robur*	8	0.6	1	4	4	4	4	2	M	10-15	4/10	2/10	**R (U)**	Bats low
79	Oak *Quercus robur*	10	0.7	1	5	5	5	5	2	M	20-30	5/10	3/10	**C**	Bats low
80	Oak *Quercus robur*	12	0.9	1	6	9	4	4	2	M	20-30	5/10	5/10	**B2**	No bat potential
81	Alder *Alnus glutinosa*	6	0.4	1	4	4	4	3	1.5	EM	20-30	6/10	6/10	**B2**	Bats low
82	Oak *Quercus robur*	10	0.9	1	5	7	8	5	2.5	EM	10-20	5/10	3/10	**C**	Bats low
83	Oak *Quercus robur*	8	0.6	1	5	6	5	2	2	M	10-20	5/10	3/10	**C**	Bats low
84	Oak *Quercus robur*	8	0.7	1	4	4	7	5	3	M	10-20	5/10	3/10	**C**	Bats low
85	Oak *Quercus robur*	7	0.4	1	4	4	4	4	2	EM	20-30	5/10	5/10	**B2**	Bats low
86	Crack willow *Salix fragilis*	10	1	8	3	4	8	4	1	EM	20-30	5/10	5/10	**B2**	Bats low
87	Crack willow *Salix fragilis*	10	1.5	1	3	4	8	4	2	M	>10	3/10	1/10	**R (U)**	Bats med
88	Crack willow group x 5 *Salix fragilis*	10	<1 average	n/a	n/a	n/a	n/a	n/a	n/a	M	>10	3/10	2/10	**R (U)**	No bat potential
89	Crack willow *Salix fragilis*	13	0.4	10	6	6	8	4	1	M	20-30	4/10	4/10	**C**	No bat potential
90	Crack willow *Salix fragilis*	10	0.4	6	5	6	5	5	1.5	M	20-30	4/10	4/10	**C**	No bat potential
91	Crack willow *Salix fragilis*	10	0.4	9	6	6	7	7	0.5	M	20-30	4/10	4/10	**C**	No bat potential
92	Crack willow *Salix fragilis*	10	0.5	1	5	5	5	5	2.5	M	20-30	6/10	4/10	**C**	No bat potential
93	Oak *Quercus robur*	7	0.6	1	4	4	4	4	1	M	20-30	5/10	5/10	**B2**	Bats low
94	Crack willow *Salix fragilis*	10	0.7	1	3	3	3	3	1	EM	30-40	5/10	5/10	**C**	Bats low
95	Crack willow *Salix fragilis*	10	0.7	1	2	2	2	2	1	EM	30-40	5/10	5/10	**C**	No bat potential
96	Crack willow *Salix fragilis*	10	1.2	1	6	6	6	6	Ground	EM	30-40	6/10	4/10	**C**	Bats low
97	Crack willow *Salix fragilis*	10	1.5	1	3	4	3	3	1	M	10-20	3/10	3/10	**R (U)**	No bat potential
98	Crack willow *Salix fragilis*	10	1	1	3	3	3	3	1	M	10-20	5/10	5/10	**R (U)**	No bat potential
99	Crack willow *Salix fragilis*	10	1	1	3	3	3	3	1	M	10-20	5/10	5/10	**R (U)**	No bat potential

Tree number on Tree Survey Plan	Species	Approx Height (m)	Stem diameter (m)	No of stems	Crown spread North (m)	Crown spread South (m)	Crown spread East (m)	Crown spread West (m)	Height of lowest branch (m)	Age class	P.S.U.L.E. (Estimated longevity in yrs)	Physiological condition	Structural condition	BS5837 Retention value A, B, C, or R (U)	Comments
100	Crack willow *Salix fragilis*	10	1	1	3	3	3	3	1	M	10-20	5/10	5/10	**R (U)**	No bat potential
101	Crack willow *Salix fragilis*	10	1	1	3	3	3	3	1	M	10-20	5/10	5/10	**R (U)**	No bat potential
102	Crack willow *Salix fragilis*	10	1	1	3	3	3	3	1	M	10-20	5/10	5/10	**R (U)**	No bat potential
103	Oak *Quercus robur*	9	1	1	5	4	4	4	2	M	10-20	3/10	4/10	**C**	Bats med
104	Field maple *Acer campestre*	8	3	2	3	3	3	3	Ground	EM	10-20	4/10	4/10	**C**	No bat potential
105	Oak *Quercus robur*	20	1.5	1	12	3	13	3	4	Dead	-	-	-	**R (U)**	Bats high
106	Oak *Quercus robur*	20	1.5	1	10	6	6	4	4	OM	10-20	5/10	5/10	**B2**	Bats high
107	Sweet chestnut *Castanea sativa*	15	0.6	1	8	4	6	6	3	M	20-30	6/10	5/10	**B2**	No bat potential
108	Scots pine *Pinus sylvestris*	8	0.4	1	3	3	3	3	3	EM	20-30	6/10	6/10	**B2**	No bat potential
109	Scots pine *Pinus sylvestris*	12	0.4	1	3	3	3	3	5	EM	30-40	6/10	6/10	**B2**	No bat potential
110	Ash *Fraxinus excelsior*	13	1	1	8	12	8	6	2	M	20-30	5/10	5/10	**B2**	Bats med
111	Oak *Quercus robur*	12	0.8	1	5	8	3	8	2	M	20-30	5/10	5/10	**B2**	Bats low
112	Lombardy poplar *Populus nigra Italica*	14	0.5	1	2	2	2	2	2	EM	10-20	5/10	5/10	**B2**	No bat potential
113	Lombardy poplar *Populus nigra Italica*	14	0.4	1	2	2	2	2	2	EM	10-20	5/10	5/10	**B2**	No bat potential
114	Oak *Quercus robur*	10	0.9	1	4	4	4	4	2	M	30-40	5/10	5/10	**B2**	Bats low
115 – 124	Lombardy poplars *Populus nigra Italica*	14	0.3 – 0.5	1	2	2	2	2	2	EM	10-20	5/10	5/10	**B2**	No bat potential
125	Ash *Fraxinus excelsior*	8	0.2	2	3	2	4	2	1	EM	30-40	4/10	4/10	**B2**	No bat potential
126	Ash *Fraxinus excelsior*	8	0.25	1	3	4	4	4	1	EM	20-30	5/10	5/10	**B2**	No bat potential
127	Horse chestnut *Castanea sativa*	10	0.3	1	3	3	3	3	1	EM	10-20	4/10	5/10	**B2**	No bat potential
128	Horse chestnut *Castanea sativa*	12	0.3	1	3	4	3	2	2	EM	10-20	4/10	5/10	**B2**	No bat potential
129	Horse chestnut *Castanea sativa*	12	0.3	1	3	5	4	4	3	EM	10-20	4/10	5/10	**B2**	No bat potential
130	Ash *Fraxinus excelsior*	10	0.3	1	3	5	4	4	3	EM	20-30	5/10	5/10	**B2**	No bat potential
131 - 162	Lombardy poplars *Populus nigra Italica*	18	0.5 - 1	1	2	2	2	2	2	FM	10-20	4/10	4/10	**B2**	No bat potential
163	Ash *Fraxinus excelsior*	12	0.5	1	5	5	5	5	2	EM	30-40	6/10	6/10	**C**	Bats low
164	Ash *Fraxinus excelsior*	8	0.4	1	4	4	4	4	2	EM	30-40	6/10	6/10	**C**	Bats low

Tree number on Tree Survey Plan	Species	Approx Height (m)	Stem diameter (m)	No of stems	Crown spread North (m)	Crown spread South (m)	Crown spread East (m)	Crown spread West (m)	Height of lowest branch (m)	Age class	P.S.U.L.E. (Estimated longevity in yrs)	Physiological condition	Structural condition	BS5837 Retention value A, B, C, or R (U)	Comments
165	Ash *Fraxinus excelsior*	8	0.4	1	4	4	4	4	2	EM	30-40	6/10	6/10	**C**	Bats low
G1	Woodland strip at southern boundary	Narrow band of woodland, approximately 15 – 20 m wide, with canopy formed predominantly by strip of mature trees +/- to either edge, possibly some very old former path or trackway, but now the central area also colonised by mature (albeit younger) trees. Some large and over-mature oaks present, with characteristic defects, e.g. dieback, dropped boughs, etc., along with large ashes and mature sycamore and sweet chestnut. Some trees also cloaked in ivy and had potential for hidden defects (and therefore also bat roosts). Between trees on outer edges are tall leggy hawthorns, possibly formerly part of a hedgerow between the trees, but now grown into fully mature specimens. Ground flora patchy and consisted of dog's-mercury, herb-Robert and common nettle. Despite being a narrow band, the varied structure of the woodland edge does form an effective visual screen between this part of the application site and land beyond to the south and west.											**B**	Retain and enhance. Bat potential, especially in mature oaks.
G2	Shelter belt	Narrow shelter belt of densely-planted young Sitka spruce *Picea sitchensis* trees with a new single row hawthorn hedgerow around its margins. Forms an effective screen, albeit one that is somewhat visually incongruous by comparison with other planting within and around the site.												**C**	No bat potential
G3	Windthrown conifers	Area of conifer plantation with Scots pine and hybrid larch *Larix x intermedia* that has suffered from extensive wind-throw, with several Scots pines remaining as tall (6m+) ragged stumps. Broadleaved regeneration in evidence, especially young sycamores but could be improved by replanting with natives, and/or management.												**R (U)**	Bat potential
G4	Willow group	Triangular area of damp ground that has been colonised by white willows, of which there are numerous multi-stemmed examples, including some that are strongly leaning or have partly collapsed. The height of some trees means that this group provides a short stretch of taller screening of elevated A38 trunk road.												**B**	No bat potential
G5	Willow group	Triangular area of willow regeneration in part of the Trent and Mersey Canal that was formerly an SBI for grassland in this area. Neither a visual nor an ecological asset of any merit, and could be replaced with better trees.												**C**	No bat potential
G6	Willow group	Triangular area of willow regeneration in an unmanaged field. Neither a visual nor an ecological asset of any merit, and could be replaced with better trees.												**C**	No bat potential
A38 verge sycamore planting		Mature roadside screen planting, mainly sycamore and now mature. Trees in generally good condition but closely planted and could benefit from management.												**A**	No bat potential

Branston Locks

Tree Survey Plan

Key

Planning application boundary

Individual trees

Retention value

- A - High
- B - Moderate
- C - Low
- R - Remove

Group of trees

Retention value

- A - High
- B - Moderate
- C - Low
- R - Remove

atmos CONSULTING

0 100 200 400

Metres

N

Scale @ A3: 1:9,000

05/11/2012 6801/EC/001a

Drawn by: JM Checked by: SM Approved by: KA