

P/2017/01652  
Received 22 Dec 2017

# Arboricultural Survey & Report

Land at Shobnall Street, Burton upon Trent, Staffordshire, DE14 2HG

Produced for:  
Urban Designs Ltd  
Anson Court, Horninglow Street  
Burton on Trent, DE14 1EG

Produced by:  
Richard Jones MICFor, F Arbor A

Chartered Arboriculturist

Issue Date: October 2017

Ref: ShobnallStreet\_Burton/01/rev1

Ground Floor Unit, 3 Millers Yard, Roman Way, Market Harborough, Leicestershire, LE16 7PW  
Tel: 01858 432938 Mob: 07765 792719 Email: richard@rjtreесervices.co.uk

**Chartered Arboricultural Consultancy & Advice**

[www.rjtreесervices.co.uk](http://www.rjtreесervices.co.uk)

Company Number: 9484682

	<b>CONTENTS</b>	<b>Page</b>
1.	Introduction	1
2.	Background & Purpose	2
3.	Conditions & Limitations	2
4.	Survey Information	3
5.	Legal Constraints	4
6.	Documents & Additional Information Provided	4
7.	The Site	5
8.	Trees outside Boundary	5
	The Trees & the Development-Impact Assessment	6
	Generic Method Statement	10
	 <b><u>Appendices</u></b>  	
	<i>Appendix 1</i> Arboricultural Survey Schedule & Data Collection Methodology	17

All rights to this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature, without our written permission. Its content and format are for the exclusive use of the addressee in dealing with this site. It may not be sold, lent, hired out or divulged to any third party not directly involved in this site without written consent.

© RJ Tree Services 2017

Tree Preservation Orders (TPO) or Conservation Areas	Issue Date	Accompanying Plan/s	Agent	Local Planning Authority
No	October 2017	Arboricultural Survey & Constraints Plan: 01	Urban Designs Ltd	East Staffordshire Borough Council <a href="http://www.eaststaffsbc.gov.uk">www.eaststaffsbc.gov.uk</a>

## **1. Introduction**

1.1 Written instructions were received from Ms Shella Aziz of Urban Designs Ltd (the agent) on behalf of the client to carry out an Arboricultural Survey in the context of a proposed development of land at Shobnall Street (the site).

### **1.2 Qualifications & Professional Indemnity & Public Liability Cover**

1.2.1 Richard Jones is the sole Director at RJ Tree Services Ltd. He is a Chartered Arboriculturist and Institute of Chartered Foresters (ICF) Registered Consultant and thus is subject to the ICF Professional Code of Conduct with a duty to provide objective, professional and responsible advice.

1.2.3 Richard holds the International Society of Arboriculture Tree Risk Assessment Qualification (TRAQ), a Higher National Diploma (HND) in Arboriculture, a National Certificate (NC) in Horticulture with an Arboricultural Option and a City and Guilds in Amenity Horticulture Phase 1. He has in excess of 25 years craft and managerial experience in the Arboricultural and Landscape Management industries in the United Kingdom and the United States including six years as a local authority Tree Officer and 15 years as a consultant working for various public, commercial and domestic clients.

1.2.3 Richard is a Fellow of the Arboricultural Association (F Arbor A) and a Professional Member of the Institute of Chartered Foresters (MICFor). He is committed to professional development and regularly attends relevant seminars and courses.

1.2.4 RJ Tree Services Ltd holds professional indemnity and public liability insurance which is limited to £1000000. Please contact me should you require any more information relating to this matter.

## **2. Background & Purpose**

2.1 A scheme is proposed to acquire planning consent to redevelop at the site. The purpose of this report is therefore:

- To provide an objective arboricultural survey to the BS5837 (2012) 'Trees in Relation to Design, Demolition and Construction-Recommendations' as a guide to the site layout.
- To provide sufficient data to calculate tree Root Protection Areas.
- To provide advice on the proposed development in respect of trees-Impact Assessment.
- To provide a generic method statement/s.
- Produce a Tree Survey and Constraints Plan.

## **3. Conditions & Limitations**

3.1 Trees are dynamic living organisms whose health and condition can be subject to changes, depending upon a number of internal and external factors. Thus, it is recommended that they should be assessed by a competent and qualified person on a regular basis. It is proposed that the trees discussed in this survey be assessed every 1 to 2 (maximum) years in line with the guidelines in the International Society of Arboriculture Evaluation of Hazard Trees in Urban Areas publication (1994); or more often where stated.

3.2 While every effort has been made to identify defects within the trees inspected, no absolute guarantee can be given or is intended to the safety or otherwise of any tree or trees discussed in this survey or report. Extreme climatic conditions can on occasions cause damage to what appear to be healthy trees.

#### **4. Survey Information**

- 4.1 Richard Jones undertook a brief visual assessment of the subject trees from ground level on the 10 October 2017 using current tree assessment information and in accordance with the guiding principles of BS5837 (2012). The trees are recorded in the survey sheets in Appendix 1. He was unaccompanied when carrying out the survey work. No digging or drilling was undertaken.
- 4.2 The weather conditions were clear with adequate visibility for surveying trees.
- 4.3 This survey is based on an Ordnance and Topographical Survey Plan, which the tree and group numbers have been appended onto to produce the Arboricultural Survey and Constraints Plan 01. The trees are shown on the Arboricultural Survey and Constraints Plan 01. The hedgerows, where appropriate, are recorded in the survey schedule, but are not given a Retention Classification in line with the guidelines in the BS5837 (2012). Additional trees are not plotted to scale.

## 5. Legal Constraints

- 5.1 The East Staffordshire Borough Council website on the 10 October 2017 confirmed that there are currently no Tree Preservation Orders at the site and that it is not in a conservation area.
- 5.2 New TPO's may be served, conservation areas created and boundaries changed. Hence, it is recommended that a further check be carried out immediately prior to carrying out any tree works.
- 5.3 **Trees and Wildlife:** Trees are hosts to nesting birds, many of which are protected by law. Investigations should be carried out for signs of bats (all of which are protected by law) and nesting birds by competent trained persons and advice sought from appropriate agencies such as Natural England, the Bat Conservation Trust (BCT) or the Royal Society for the Protection of Birds (RSPB) following any positive sightings. Tree works should be planned carefully to avoid disturbing nesting birds and roosting bats. The disturbance of protected species is an offence and could result in prosecution, a criminal record and a substantial fine.

## 6. Documents & Additional Information

- 6.1 Urban Designs Architects Ltd provided a copy of a topographical Survey plan in pdf and dwg format and a draft layout plan in dwg format.

## **7. The Site & the Trees**

7.1 The site is situated approximately 1km to the south west of Burton upon Trent Town Centre. It is roughly rectangular in format with trees growing primarily on the boundaries. There are embankments on the boundary with Shobnall Street.

7.2 Access to the site is available from Waverly Lane through an existing hard surface driveway that is generally flat.

### **7.3 Generic Recommendations & Observations**

7.3.1 **Plant Growth and Other Debris:** In situations where a build-up of debris and or plant growth has restricted an adequate assessment taking place; it is advised that the debris and or plant growth be removed and that a further assessment be undertaken at the soonest opportunity as described in the following tree works schedule. A dash (-) is placed in the structural condition category box and a note recorded in the survey schedule where a general assessment has not been carried out.

7.3.2 **Tree Works:** To avoid confusion and on agreement (in writing) with the LPA, it is recommended that any trees selected for removal should be marked on site by the supervising arboriculturist using spray paint.

7.3.3 It is advised that the tree works recommended in the associated survey schedule should be completed at the soonest opportunity subject to statutory constraints and consent from the appropriate tree/land owner.

7.3.4 No fungus fruiting bodies at or around the trees at the site were identified other than where described in the survey schedule or above

## **8. Trees outside the Boundary**

8.1 The trees growing outside the site boundary are considered in the survey schedule in Appendix 1. They are the responsibility of the neighbouring land owners whose consent should be obtained before working on them. I understand, however, that there is a right to cut back overhanging boughs to the boundary while offering the arisings back to the owner. You may wish to clarify this with a legal professional?



## **The Trees & the Development-Impact Assessment**

### **1. Calculating Root Protection Areas**

1.1 Section 4.6 of the BS5837 (2012) suggests that the Root Protection Area (RPA) for single stemmed trees is calculated as an area equivalent to a circle with a radius 12 times the stem diameter. For trees with more than one stem at below 0.5m from ground level, one of the two calculation methods below should be used.

- For trees with two to five stems, the combined stem diameter should be calculated as follows:

$$(\text{stem diameter } 1)^2 + (\text{stem diameter } 2)^2 \dots + (\text{stem diameter } 5)^2$$

- For trees with more than five stems, the combined stem diameter should be calculated as follows:

$$(\text{mean stem diameter})^2 \times \text{number of stems}$$

1.2 Multi-stemmed trees are described as such in the survey schedule.

1.3 The unaltered RPA radius in m are provided in the survey schedule according to the calculations in Annex D of BS5837 (2012) and on the accompanying survey plan by a red circles for individual and individually represented trees in the case of groups where they are plotted on the topographical survey base plan.

1.4 The BS5837 makes the following broad advice:

- Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:
- a) the morphology and disposition of the roots, when influenced by past of existing site conditions (e.g. the presence of roads, structures and underground apparatus);
- b) topography and drainage;
- c) the soil type and structure;
- d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

## 2. The Trees & Development

- 2.1 It is understood that a final site layout has not been agreed yet. Advice is provided, however, with respect to the trees at the site and the draft plan.
- 2.2 Trees are a material consideration in the development process. It is advised that the A and B Category trees are the most significant specimens at and around the site. Their retention is desirable.
- 2.3 **Tree Retention:** It is intended to retain the Moderate B Category silver birch T5, the rowans (sometimes called mountain ash) T8, T10 and T11, the wild cherry T12 and the silver maple tree T17 (outside the site boundary). They are better-quality trees that have the potential to contribute to the landscape and the development in the long-term. The trees should be protected by barriers while the construction works take place.
- 2.4 One row of Low C Category Leyland cypress (T3) trees may be retained on completion of the proposed pruning. They are growing on or just outside the site boundary
- 2.5 **Tree Removal:** In line with the guidelines in the BS5837 (2012), caution should be exercised when retaining trees to avoid misguided attempts to keep too many or inappropriate trees on a site, which could lead to conflict or future pressure to prune or remove. It is important to consider the conflicting requirements of the layout and the trees and to take a pragmatic approach to the long-term canopy cover at the site.
- 2.6 The following Low C Category trees, Portuguese laurel T2, willows T6 and T22, the apple tree T7, the wild cherry trees T13, T14, T15 and T16, the weeping willow trees T19, T20 and T21, the hawthorn T23, T25, T28 and the Japanese cherries 27 and 30 are to be removed to facilitate the development. They are ordinary trees typical to their municipal setting. They are of limited quality whose impaired condition will require ongoing and intensive management. The most sustainable approach in this case would be to remove and replace them.
- 2.7 The following trees are identified as U Unsuitable for Retention because of their condition and or potential to cause damage to existing structures: Rowans T1, T9, ash tree T18, Japanese cherry trees T24 and 29, hawthorn tree and T26.

- 2.8 **Underground Constraints:** Trees over time achieve a balance with their environment and any impact on that equilibrium can be damaging to their health. As a result, BS5837 (2012) recommends that the default position is that development should take place outside the RPA to avert, as far as reasonably possible, harm to their root environment. Injury to tree roots can impact on their physiological health and structure. The new dwellings are sited outside the RPA's of the retained silver birch T5, the rowans T8, T10, T11, the wild cherry T12, the silver maple tree T17. The rowans T8, T10, T11 and the wild cherry T12 are small maturing trees that have sufficient room to grow. Hard surfaces inside the RPA's of retained trees may be installed by the no-dig method using a cellweb material to dissipate downward loads.
- 2.9 **Above Ground Constraints:** New buildings should be located at a distance suitable for the trees and the new structures to co-exist with the minimum of direct or in-direct conflict without, where practically possible, affecting the reasonable enjoyment of the proposed new dwellings. Development should ideally be undertaken outside the crown radius when branches extend significantly beyond the RPA's. Conversely, it may, on occasions, be possible to shorten or remove branches when they overhang a proposed development. The development is proposed outside the crown radii of the silver birch T5, the rowans (sometimes called mountain ash) T8, T10, T11, the wild cherry T12, the silver maple tree T17.
- 2.10 It is important to bear in mind that the ultimate shape, form, height and density vary between different tree species. Thus, the shade they cast is likely to differ depending on their juxtaposition to the new structure/s.
- 2.11 BS5837 (2012) gives advice regarding the retention of older trees on development sites. Care is recommended when retaining large trees which become enclosed within a development. Older trees may be less resilient and more likely to die or become potentially unsafe as a result of the pressures associated with development. No large or old trees are proposed to be constrained by the development.
- 2.12 **New Tree Planting:** It is my advice that the removed trees be replaced by new specimens to maintain a consistent and sustainable landscape and to complement any future development. New trees may be planted as individual specimens in gardens or as groups or avenues in open spaces and verges.
- 2.13 Given the ongoing transfer of new insects and diseases to the United Kingdom, it is my recommendation that planting single species should be avoided. A mix of species as described below would be suitable for a site like this.

2.14 It is important to choose carefully the location of new trees while bearing in mind their future growth habit to avoid conflict with future structures. I would recommend that the following mix of species would be suitable for this site:

- Field maple (*Acer campestre*) small-medium size at maturity
- Silver birch (*Betula pendula*) small-medium size at maturity
- Himalayan birch (*Betula utilis*)-Small size at maturity
- Italian alder (*Alnus cordata*) small-medium size at maturity
- Small leaved lime (*Tilia cordata*) medium size at maturity
- Red maple (*Acer x freemanii* 'Autumn Blaze') medium size at maturity
- Sycamore (*Acer pseudoplatanus*) Large size at maturity
- Ornamental pear (*Pyrus* 'Chanticleer') Small size at maturity
- Tibetan cherry (*Prunus* 'Tibetica') Small size at maturity

2.15 **Planting and Maintenance:** It is essential that new trees are planted properly in a sustainable planting medium in large pits with a post planting maintenance regime including watering, weeding etc. This should be required by a condition accompanying any planning consent.

2.16 **Conclusion:** It is evident in this case that a balance between the needs of better quality trees and the development has been satisfactorily achieved. Thus, it appears that there is no reasonable cause in arboricultural terms why the site should not be developed as described on the draft site layout plan provided by Urban Designs Ltd.

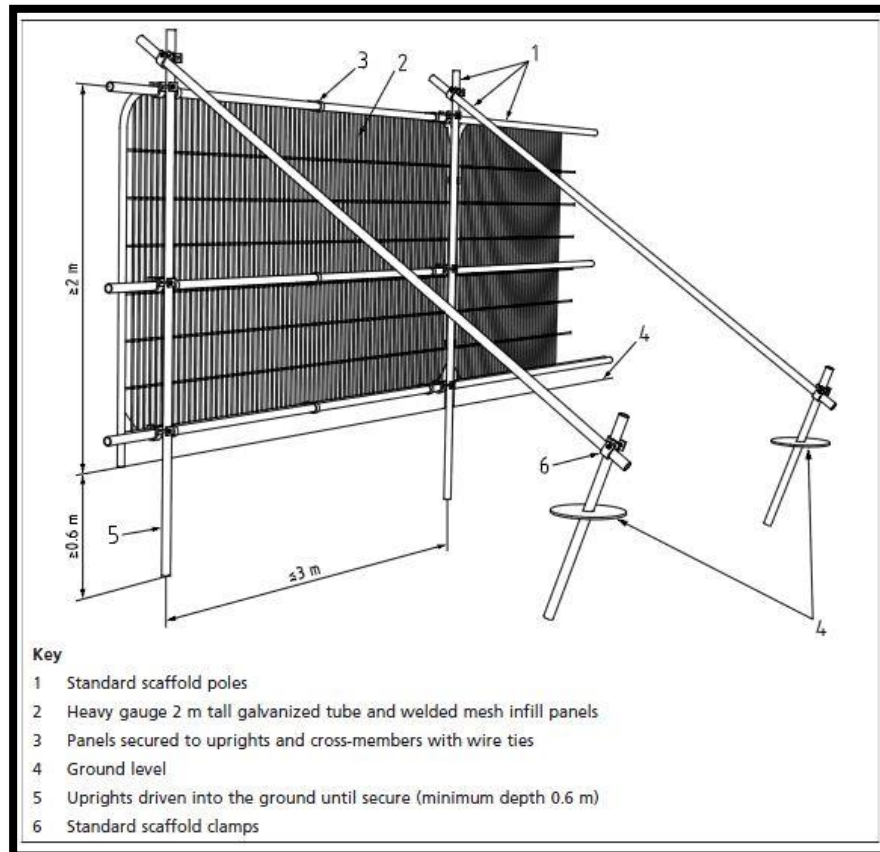
### 3. Trees, Soils & Foundations

3.1 No data is available relating to soil type at the site. Nonetheless, consideration should be given to the implications of tree removal, planting and retention in terms of foundation type. A suitably qualified structural engineer should be consulted in terms of foundation design.

## Generic Method Statement

### 1. Installation of Tree Protection Fencing/Barriers during Construction

- 1.1 Barriers/fencing will be placed by hand around the retained trees at the site.
- 1.2 The barriers should meet with the standards in BS5837 (2012) and comprise of a vertical and horizontal framework with vertical tubes driven into the ground at a maximum of 3m intervals as described in figure 1. Weld mesh panels, fencing or boards should be securely attached to the framework with wire or scaffold clamps.



**Figure 1 BS5837 (2012)**

- 1.3 The poles should be driven into the ground to a minimum depth of 0.5m. Care must be taken not to disturb/impact on utilities, which could cause danger, damage or even death to operatives. Specialist advice must be obtained respect to this matter.
- 1.4 The position of the protection barriers in relation to the new dwellings and infrastructure and the retained trees should be shown on a Tree Protection Plan, which should be required by a condition. The fencing will be amended to facilitate existing hard surfaces (where appropriate) in a manner described in the following photograph 1.



**Photograph 1**

- 1.5 The area inside the protective barriers must remain undisturbed during the development process; it is a **“Construction Exclusion Zone”**. No change in levels, fires, storage of materials, and use of fuels, chemicals, equipment or vehicles are permitted in the construction exclusion zone. Adequate provision for storage, office accommodation, access for construction traffic and parking is available outside the Construction Exclusion Zone.
  
- 1.6 The barriers must be in place before building work commences and must be fit for purpose at all times. Damage to the barriers must be immediately repaired. It is recommended that an appropriately qualified arboriculturist in conjunction with the LPA Tree officer should approve the fencing and supervise any amendments. The barriers should not be removed until work is completed on site.

- 1.7 Contaminating materials such as concrete washings should be disposed of at a minimum of 10m from the retained trees in a position where, if spilt, could not run towards the trees. Notice boards, service/utility cables etc must not be attached to any part of the protected trees.
- 1.8 Robust weather proof signs similar to that in figure 2 and photograph 2 should be attached to the protective barriers at 4 to 6m spacing's.



Figure 2



Photograph 2

- 1.9 **Above Ground/Canopy Protection:** It will be necessary to supervise the operation of tall or wide machinery such as booms or jibs where building and/or demolition works are to take place in proximity to the canopies of retained trees.
- 1.10 It is recommended that a pre-commencement meeting be arranged with the contractors who may be operating the machinery be arranged to address/overcome any concerns about close by branches and to organize further mitigating pruning.



## **2. Timing/Phasing of Temporary Tree Protection, Tree Works & Site Supervision**

1. In the first instance, the pruning and tree removal works should be carried out to facilitate safe access to the site.
    - Works will not progress to the next stage without the agreement of the appointed arboriculturist and the site manager.
  2. Pre-commencement setting out of the infrastructure and building footprints in proximity to the retained trees must then be carried out.
    - Works will not progress to the next stage without the agreement of the appointed arboriculturist and the site manager.
  3. The temporary tree protection barriers should then be installed.
    - Works will not progress to the next stage without the agreement of the appointed arboriculturist and the site manager.
  4. The building works may then be started on site.
  5. The temporary tree protection barriers must remain until the building works are entirely complete and removed only on approval by the site manager and/or the appointed arboriculturist.
- 2.1 It is the responsibility of the site manager and main contractor to ensure that any tree protection or other relevant planning conditions are adhered to. A breach of a planning condition may result in enforcement action by the LPA. An arboriculturist should be retained to supervise ongoing tree protection, pruning and retention works, which should be required by a condition attached to any planning consent.
- 2.2 The contractor must give at least 3 working days' notice to the appointed arboriculturist to request site inspections.
- 2.3 A reporting protocol shall be agreed with the LPA in respect of the trees in an effort to ensure, as far as reasonably possible, that they are kept informed of progress at the site with respect to tree safety and protection.

### 3. Tree Work Standards

- 3.1 Where appropriate and possible, any bough agreed to be removed or shortened shall be cut back to a suitable point such as the branch collar or suitably positioned secondary branch. The branch collar shall be left intact. Climbing irons or 'spikes' shall not be used.
- 3.2 **Crown and Branch Reduction:** This work shall comprise a reduction in both height and spread over the whole crown by shortening or removing peripheral branches in a uniform and systematic manner. Where branches are to be shortened they should be cut back to a suitably positioned secondary branch. Crown reduction shall not be construed as 'lopping' or 'topping' and shall result in a tree of typical form for the species and of balanced appearance.
- 3.3 **Crown Lifting/Raising:** This shall be to a maximum height above ground level as specified in metres (m) in the following schedule. This work shall involve the removal of low branches to the height specified and result in a tree of a balanced appearance. Those branches to be removed should be cut at their origin.
- 3.4 The safety of operatives and the public should be paramount. The integrity of the remaining trees is also important. Machinery should be used in a proper and safe manner and must at all times be fit for purpose. Power saws, wood chipping machines etc should be maintained and fuelled outside the site to prevent damage by spillages.
- 3.5 The appropriate signage should be used and footpaths, roads etc closed and or managed in line with current guidelines for best practice and the law.
- 3.6 It is my advice that contracting companies employed to carry out the recommended works be appropriately trained, insured and qualified. Certificates should be requested where there is uncertainty.
- 3.7 All tree pruning works should be carried out to the BS3998 (2010) Tree Works-Recommendations guidelines for best practice.
- 3.8 On undertaking the recommended works, the arborist/tree surgeon must without delay report any defects that become apparent while climbing or working on the tree/s in question. Those defects must be reported immediately to the project manager, landowner and or the author of this report to enable the appropriate remedial action.

## **Bibliography**

British Standards 5837 (2012), Trees in Relation to Design, demolition and Construction-Recommendations, British Standard Institute

BS3998 (2010) Tree Works-Recommendations guidelines for best practice, British Standard Institute

**Appendix 1**

**Objective pre-development Arboricultural Survey Schedule**

Summary	Retention Category		Summary	Life Stage		Summary	Rem. Contrib.
B	7		Early Mature	4		<10 years	7
C	16		Mature	8		10+ Years	14
NotRecorded	1		Over Mature	4		20+ Years	10
U	7		Semi Mature	10			
			Young	2			
			Not Recorded	3			
<b>Total</b>	<b>31</b>						

## Appendix 1

Ref	Species	Full Structure	Measurements	Spread	General Observations	Retention Category	RPA	Comments	Measurements2	Recommendations
T001	Rowan (Sorbus aucuparia)	Tree	Height (m): 6 Stem Diam (mm): 170 Branch Spread(m): 1(N), 2(S), 2(E), 2(W) Crown Clearance (m): 2 Life Stage: Early Mature	N:1 S:2 E:2 W:2	Profound asymmetric form	U	none - due to Retention Category of U.	None	Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Low	Pre construction: No action required. Remove tree
T002	Laurel, Portuguese (Prunus lusitanica)	Small Tree	Height (m): 8 Branch Spread(m): 2(N), 2(S), 2(E), 2(W) Crown Clearance (m): 3	N:2 S:2 E:2 W:2	Large shrub/small tree	C1	Radius: 3.6m. Area: 41 sq m.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Ideally remove to facilitate development
T003	Leylandii (Cupressocyparis leylandii X)	Group	Height (m): 8 Stem Diam (mm): 200 Branch Spread(m): 2(N), 2(S), 2(E), 2(W) Crown Clearance (m): 1 Life Stage: Early Mature	N:2 S:2 E:2 W:2	Located outside site in private garden, poor upright form	C2	Area: 29.96 sq m.	None	Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Low	Pre construction: Reduce height 3-4m
T004	Hawthorn (Crataegus sp.)	Group	Height (m): 4 Stem Diam (mm): 170 Branch Spread(m): 2(N), 2(S), 2(E), 2(W) Crown Clearance (m): 1.5 Life Stage: Semi Mature	N:2 S:2 E:2 W:2	Overgrown hedgerow	NotRecorded	none - no Retention Category specified.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Reduce height by 1.5m & width by 0.5m  Post construction: Maintain by regular trimming
T005	Birch, Silver (Betula pendula)	Multi-Stemmed	Height (m): 14 Branch Spread(m): 3(N), 3(S), 3(E), 3(W) Crown Clearance (m): 1.5 Life Stage: Early Mature	N:3 S:3 E:3 W:3	None	B1	Radius: 5.1m. Area: 424 sq m.	None	Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Raise crown to 3m from ground level  During construction: Protect trees with protective barriers
T006	Willow (Salix sp.)	Group	Height (m): 4 Branch Spread(m): 1(N), 1(S), 1(E), 1(W) Crown Clearance (m): 1.5 Lowest Branch (m): 1	N:1 S:1 E:1 W:1	Row of coppice trees	C2	Area: 25.88 sq m.	None	Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Low	Pre construction: Ideally remove to facilitate development
T007	Apple (Malus sp.)	Group	Height (m): 4 Stem Diam (mm): 150 Branch Spread(m): 2(N), 2(S), 2(E), 2(W) Crown Clearance (m): 1 Life Stage: Young	N:2 S:2 E:2 W:2	Fruit trees of little merit	C2	Area: 69.3 sq m.	None	Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Low	Pre construction: Ideally remove to facilitate development

## Appendix 1

Ref	Species	Full Structure	Measurements	Spread	General Observations	Retention Category	RPA	Comments	Measurements2	Recommendations
T008	Rowan (Sorbus aucuparia)	Tree	Height (m): 10 Stem Diam (mm): 230 Branch Spread(m): 3(N), 3(S), 3(E), 3(W) Crown Clearance (m): 1 Life Stage: Semi Mature	N:3 S:3 E:3 W:3	Assessment restricted by dense undergrowth	B1	Radius: 2.8m. Area: 25 sq m.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Clear undergrowth & reassess & raise crown to 3m from ground level  During construction: Protect trees with protective barriers
T009	Rowan (Sorbus aucuparia)	Tree	Height (m): 5 Stem Diam (mm): 170 Branch Spread(m): 1(N), 1(S), 1(E), 1(W) Crown Clearance (m): 2 Life Stage: Young	N:1 S:1 E:1 W:1	Dead tree	U	none - due to Retention Category of U.		Physiological Cond: Dead Structural Cond: Poor Bat Habitat: Low	Remove tree
T010	Rowan (Sorbus aucuparia)	Tree	Height (m): 10 Stem Diam (mm): 210 Branch Spread(m): 3(N), 3(S), 3(E), 3(W) Crown Clearance (m): 0.5 Life Stage: Semi Mature	N:3 S:3 E:3 W:3	Stake at base, trunk growth	B1	Radius: 2.5m. Area: 20 sq m.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Remove stake & raise crown to 2.5m from ground level. Remove trunk growth  During construction: Protect trees with protective barriers
T011	Rowan (Sorbus aucuparia)	Tree	Height (m): 10 Stem Diam (mm): 190 Branch Spread(m): 3(N), 3(S), 3(E), 3(W) Crown Clearance (m): 0.5 Life Stage: Semi Mature	N:3 S:3 E:3 W:3	Stake at base	B1	Radius: 2.3m. Area: 17 sq m.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Remove stake & raise crown to 2.5m from ground level  During construction: Protect trees with protective barriers

## Appendix 1

Ref	Species	Full Structure	Measurements	Spread	General Observations	Retention Category	RPA	Comments	Measurements2	Recommendations
T012	Cherry, wild (Prunus avium)	Tree	Height (m): 10 Stem Diam (mm): 210 Branch Spread(m): 3(N), 3(S), 3(E), 3(W) Crown Clearance (m): 0.5 Life Stage: Semi Mature	N:3 S:3 E:3 W:3	Trunk growth	B1	Radius: 2.5m. Area: 20 sq m.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Raise crown to 2.5m from ground level & remove trunk growth  During construction: Protect trees with protective barriers
T013	Cherry, wild (Prunus avium)	Tree	Height (m): 10 Stem Diam (mm): 350 Branch Spread(m): 4(N), 4(S), 4(E), 4(W) Crown Clearance (m): 0.5 Life Stage: Semi Mature	N:4 S:4 E:4 W:4	Twin stems at 2.5m from ground level attached by included bark union, raised buttress roots damaged by mowers	C1	Radius: 4.2m. Area: 55 sq m.	None	Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Low	Pre construction: Ideally remove to facilitate development. If retained raise crown to 2.5m from ground level & remove stake  During construction: Protect trees with protective barriers
T014	Cherry, wild (Prunus avium)	Tree	Height (m): 10 Stem Diam (mm): 240 Branch Spread(m): 4(N), 3(S), 3(E), 3(W) Crown Clearance (m): 0.5 Life Stage: Semi Mature	N:4 S:3 E:3 W:3	Stake at base	C1	Radius: 2.9m. Area: 26 sq m.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Raise crown to 2.5m from ground level & remove stake  During construction: Protect trees with protective barriers
T015	Cherry, wild (Prunus avium)	Tree	Height (m): 10 Stem Diam (mm): 220 Branch Spread(m): 4(N), 1(S), 2(E), 2(W) Crown Clearance (m): 0.5 Life Stage: Semi Mature	N:4 S:1 E:2 W:2	Stake at base, profound asymmetric form as result of proximity to much larger willow trees	C1	Radius: 2.6m. Area: 21 sq m.	None	Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Low	Pre construction: Ideally remove to facilitate development

## Appendix 1

Ref	Species	Full Structure	Measurements	Spread	General Observations	Retention Category	RPA	Comments	Measurements2	Recommendations
T016	Cherry, wild (Prunus avium)	Tree	Height (m): 10 Stem Diam (mm): 220 Branch Spread(m): 2(N), 2(S), 2(E), 2(W) Crown Clearance (m): 0.5 Life Stage: Semi Mature	N:2 S:2 E:2 W:2	Stake at base, profound asymmetric form as result of proximity to much larger willow trees	C1	Radius: 2.6m. Area: 21 sq m.	None	Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Low	Pre construction: Ideally remove to facilitate development  During construction: None  Post construction: None
T017	Maple, Silver (Acer saccharinum)	Tree	Stem Diam (mm): 200 Branch Spread(m): 3(N), 3(S), 3(E), 3(W) Crown Clearance (m): 2.5 Life Stage: Semi Mature	N:3 S:3 E:3 W:3	Located outside site in private garden, northerly lean, basal damage	B1	Radius: 2.4m. Area: 18 sq m.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Cut back branches to boundary  During construction: Protect trees with protective barriers
T018	Ash (Fraxinus sp.)	Tree	Height (m): 14 Stem Diam (mm): 650 Branch Spread(m): 6(N), 6(S), 6(E), 6(W) Crown Clearance (m): 2 Life Stage: Early Mature	N:6 S:6 E:6 W:6	Poor structure with crossing limbs, located at base of road bridge brick structure - risk of direct damage by root action	U	none - due to Retention Category of U.	None	Custom Number 3: Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Low	Pre construction: Remove tree
T019	Willow, Weeping (Salix babylonica)	Tree	Stem Diam (mm): 670 Branch Spread(m): 7(N), 8(S), 8(E), 8(W) Crown Clearance (m): 1 Life Stage: Mature	N:7 S:8 E:8 W:8	Large wound decay on southern aspect of stem, history of pruning, wounds on branch framework, dead wood in crown	C2	Radius: 8.0m. Area: 201 sq m.	None	Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Medium	Pre construction: Remove dead wood, reduce crown height by 3m & width proportionately by 2m or remove & replace  Post construction: Monitor structure annually



## Appendix 1

Ref	Species	Full Structure	Measurements	Spread	General Observations	Retention Category	RPA	Comments	Measurements2	Recommendations
T020	Willow, Weeping (Salix babylonica)	Tree	Stem Diam (mm): 610 Branch Spread(m): 6(N), 8(S), 6(E), 8(W) Crown Clearance (m): 1 Life Stage: Mature	N:6 S:8 E:6 W:8	Large wound decay on northern aspect of stem, history of pruning, wounds on branch framework, dead wood in crown, flat crown possibly as a result of historical branch loss	C2	Radius: 7.3m. Area: 167 sq m.	None	Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Medium	Pre construction: Remove dead wood, reduce crown height by 3m & width proportionately by 3m or remove & replace  Post construction: Monitor structure annually
T021	Willow, Weeping (Salix babylonica)	Tree	Stem Diam (mm): 560 Branch Spread(m): 6(N), 4(S), 6(E), 6(W) Crown Clearance (m): 1 Life Stage: Mature	N:6 S:4 E:6 W:6	Large wound decay in branch framework, history of pruning, wounds on branch framework, dead wood in crown, flat crown possibly as a result of historical branch loss or pruning	C2	Radius: 6.7m. Area: 141 sq m.	None	Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Medium	Pre construction: Remove dead wood, reduce crown height by 3m & width proportionately by 2m or remove & replace  Post construction: Monitor structure annually
T022	Willow (Salix sp.)	Group	Height (m): 4 Branch Spread(m): 1(N), 1(S), 1(E), 1(W) Crown Clearance (m): 1.5 Lowest Branch (m): 1	N:1 S:1 E:1 W:1	Row of coppice trees	C2	Area: 16.33 sq m.		Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Low	Pre construction: Ideally remove to facilitate development/new landscaping
T023	Hawthorn (Crataegus sp.)	Tree	Height (m): 11 Stem Diam (mm): 480 Branch Spread(m): 3(N), 3(S), 3(E), 3(W) Crown Clearance (m): 3 Life Stage: Over Mature	N:3 S:3 E:3 W:3	Overgrown by very dense ivy, dead wood in crown	C1,2	Radius: 5.8m. Area: 106 sq m.	None	Custom Number 3: Physiological Cond: Fair Structural Cond: Poor Bat Habitat:	Pre construction: Clear ivy & reassess & reduce crown proportionately by 2m or remove & replace  Post construction: Monitor structure annually
T024	Cherry, Japanese (Prunus sargentii)	Tree	Height (m): 7 Stem Diam (mm): 380 Branch Spread(m): 3(N), 3(S), 3(E), 3(W) Crown Clearance (m): 2 Life Stage: Over Mature	N:3 S:3 E:3 W:3	Decay in stem & branch framework	U	none - due to Retention Category of U.	None	Physiological Cond: Poor Structural Cond: Poor Bat Habitat: Low	Pre construction: Remove tree

## Appendix 1

Ref	Species	Full Structure	Measurements	Spread	General Observations	Retention Category	RPA	Comments	Measurements2	Recommendations
T025	Hawthorn (Crataegus sp.)	Tree	Height (m): 10 Stem Diam (mm): 310 Branch Spread(m): 3(N), 3(S), 3(E), 3(W) Crown Clearance (m): 3 Life Stage: Mature	N:3 S:3 E:3 W:3	Dead wood in crown, raised canopy	C1,2	Radius: 3.7m. Area: 43 sq m.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Reduce crown proportionately by 2m or remove & replace  Post construction: Monitor structure annually
T026	Hawthorn (Crataegus sp.)	Tree	Height (m): 6 Stem Diam (mm): 250 Branch Spread(m): 3(N), 2(S), 3(E), 2(W) Crown Clearance (m): 3 Life Stage: Mature	N:3 S:2 E:3 W:2	Sparse stunted canopy	U	none - due to Retention Category of U.	None	Physiological Cond: Poor Structural Cond: Poor Bat Habitat: Low	Pre construction: Remove tree
T027	Cherry, Japanese (Prunus sargentii)	Tree	Height (m): 6 Stem Diam (mm): 270 Branch Spread(m): 3(N), 3(S), 3(E), 3(W) Crown Clearance (m): 3 Life Stage: Mature	N:3 S:3 E:3 W:3	Small tree of little merit	C1,2	Radius: 3.2m. Area: 32 sq m.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Reduce crown proportionately by 1.5-2m or remove & replace
T028	Hawthorn (Crataegus sp.)	Multi-Stemmed 2 stems	Height (m): 8 2 stems, diam(mm): 320, 320, Branch Spread(m): 4(N), 4(S), 4(E), 4(W) Crown Clearance (m): 3 Life Stage: Mature	N:4 S:4 E:4 W:4	Twin stemmed tree of little merit, historically crown reduced	C1,2	Radius: 5.4m. Area: 92 sq m.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Reduce crown proportionately by 2-3m & remove dead wood or remove & replace
T029	Cherry, Japanese (Prunus sargentii)	Tree	Height (m): 10 Stem Diam (mm): 450 Branch Spread(m): 6(N), 6(S), 6(E), 6(W) Crown Clearance (m): 3 Life Stage: Over Mature	N:6 S:6 E:6 W:6	Overgrown by very dense ivy	U	none - due to Retention Category of U.	None	Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Low	Pre construction: Remove tree
T030	Cherry, Japanese (Prunus sargentii)	Tree	Height (m): 8 Stem Diam (mm): 630 Branch Spread(m): 8(N), 8(S), 8(E), 8(W) Crown Clearance (m): 2 Life Stage: Over Mature	N:8 S:8 E:8 W:8	Broad over pruned multi-stemmed canopy	C2	Radius: 7.6m. Area: 181 sq m.	None	Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Pre construction: Reduce crown proportionately by 2-3m in width & 2m in height or remove & replace

## **Appendix 1**

### **Survey Data Collection Methodology & Constraints**

This survey is for planning guidance purposes only and is intended as only a preliminary assessment of the trees. It is not a detailed individual tree condition assessment. In the case of groups of trees, only a general assessment has been made and the recorded condition and retention categories awarded are on the basis of what is typical of the group.

The trees are identified by their common and botanical names. The identification is based on visual observations and the common name is listed first, with the botanical name in brackets. In some instances, it may be difficult to identify a particular tree without further detailed investigations. Where there is some doubt of the precise species of tree, a sp is shown after the genus. The species shown for groups represents the main constituent and there may be other minor species not listed. Common names are sometimes regional and may therefore vary in terms of the locality.

BS5837 (2012) suggests the following **age classifications** which have been supplemented to assist the reader:

- Yng-** Young tree/s of less than 1/3 life expectancy*
- SM-** Semi-mature tree/s between young & middle aged*
- EM-** Early-mature tree/s of 1/3-2/3 life expectancy*
- Mat-** Mature tree/s of more or less full height, but with potential to increase in girth*
- O/M-** Over Mature tree/s declining in health & stature*
- Vet-** Veteran tree/s of significant & identifiable historical, ecological & conservation value*

## Appendix 1

A **retention category** (Ret Cat) is given as follows to correspond with table 1 of BS5837 (2012)-See appendix 4:

### Ret Cat

- A-** *Trees of a high quality and value with greater than 40 years estimated life expectancy-shown as light green on plan  
(sub category 1: mainly arboricultural qualities, 2: mainly collective landscape qualities, 3: mainly conservation & or cultural values)*
- B-** *Trees of moderate quality and value with 20 to 40 years estimated life expectancy -shown as mid blue on plan  
(sub category 1: mainly arboricultural qualities, 2: mainly collective landscape qualities, 3: mainly conservation & or cultural values)*
- C-** *Trees of low quality and value with 10 to 20 years estimated life expectancy -shown as grey on plan  
Trees below 150mm diameter, which may be considered for transplanting  
(sub category 1: mainly arboricultural qualities, 2: mainly collective landscape qualities, 3: Mainly conservation & or cultural values)*
- U-** *Trees 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-shown as red on plan*

The trees are given a supplementary **structural condition** (Con Cat) and **physiological condition category** (Phys Cat) thus:

### Structural Condition Cat

- A Good-** *Trees that appear to be in a good condition without any obvious defects*
- B Fair-** *Trees that appear to be in a moderate to good condition and/or with only minor defects that can be addressed by pruning and/or trees with an unbalanced shape or form*
- C Poor-** *Trees that are of a poor quality that are in decline and or with one or more obvious structural defect that can be addressed by major surgery*
- D Very poor-** *Trees that are of a very poor quality with one or more significant structural defects and or that are in an irreversible state of decline with a very limited safe life expectancy. **Collapsing, decaying or dead** trees*

## Appendix 1

### Physiological Cat

- A- Trees that appear to be in a good physiological condition*
- B- Trees that appear to be in a moderate physiological condition*
- C- Trees that are in a poor physiological condition*
- D- Trees that are in a very poor physiological condition or dead*

**Trunk diameters** are recorded in millimetres at 1.5m from ground level and at the narrowest point below any out of the ordinary swelling as recommended in BS5837 (2012).

**Trunk diameters** are measured on the up-slope side of the tree base on sloping-ground as recommended in BS5837 (2012). Trees with irregular bulging stems are measured at the narrowest point below the bulge. Trees with low branching are measured at the narrowest point below the fork. A current maximum stem diameter is given to trees considered as a group. **Tree heights** are estimated in metres and a mature height.

As recommended in BS5837 (2012) **Crown radii** (Spread) are measured at the four cardinal points in meters: *N-North, E-East, S-South, W-West* and a lowest crown clearance from ground level is given at the lowest of the four cardinal points or all four when the crown clearance is roughly level. The crown radius and level measurements are as accurate as possible, but in some instances, are estimated (est) due to difficult ground conditions or restricted access. In the case of tree groups, the maximum peripheral spread is given.

Brief comments are made on the overall health and condition of the trees in question and recommendations are given for any management works considered appropriate on the date of inspection in relation to the current site conditions.

**Bat Habitat:** General guidance on the potential for trees being a bat habitat is given as follows: High, Medium or Low

