



RJ Tree Services Ltd

Arboricultural Survey & Report

Hangmans Lane, Hinckley, Leic's, LE10 1SU

Produced for:
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TMCS Ltd, Architectural Consultants

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Summary

This survey appraises 3 trees and 2 groups to the standards in BS5837 (2012) 'Trees in Relation to Design, Demolition and Construction-Recommendations'. It finds that the 2 groups and 2 trees meet the standard for a Low (C). The remaining tree is shown as Unsuitable for Retention (U). The heights and predominant species in the hedgerows, where appropriate, at the site are recorded in the survey schedule. They are not given a Retention Classification.

Statutory Constraints	Issue Date	Accompanying Plan/s	Agent	Local Planning Authority
Yes-Tree Preservation Order	May 2016	Arboricultural Survey Plan: 01	Mr T Mastin TMCS Ltd, Architectural Consultants Market Harborough Tel: 01858 468344	Hinckley Hub, Rugby Rd, Hinckley LE10 0FR Tel:01455 23814 www.hinckley-bosworth.gov.uk Tree Officer: Mr Julian Simpson

1. Introduction & Brief

- 1.1 Verbal instructions from Mr Trevor Mastin of TMCS on behalf of their client to appraise the trees shown on the accompanying Arboricultural Survey Plan 01 at Land at Hangmans Lane, Hunckley, Leicestershire (the site).

1.2 Qualifications & Indemnity

- 1.2.1 I am the sole Director at RJ Tree Services Ltd. I am a Chartered Arboriculturist and Institute of Chartered Foresters Registered Consultant. I hold 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. I have 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 11 years as a consultant working for various public, commercial and domestic clients.
- 1.2.2 I am a Fellow of the Arboricultural Association (F Arbor A) and a Professional Member of the Institute of Chartered Foresters (MICFor). I am committed to professional development and regularly attend relevant seminars and courses.
- 1.2.3 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 for a new house at the site. The purpose of this report is therefore:

- To provide an objective arboricultural survey to 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 an arboricultural survey/constraints plan and site specific guidance on developing in proximity to trees

3. Conditions & Limitations

3.1 Trees should be assessed by a competent and qualified person on a regular basis. It is recommended that the trees discussed in this survey be assessed every one to two 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.

3.3 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 survey to enable the appropriate remedial action.

4. Survey Information

- 4.1 I undertook a brief visual assessment of the subject trees from ground level on the 29 April 2016 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. I was unaccompanied when carrying out the survey work. No digging or drilling was undertaken.
- 4.2 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 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.
- 4.3 The condition ratings and life expectancies are estimated (est) and retention ratings are assumed in the case where the assessment has been restricted by way of the trees being located outside the site, or access being constrained by barbed wire, dense ivy or other plant growth, a build up of debris, soil etc.
- 4.4 The weather conditions were clear with adequate visibility for surveying trees.
- 4.5 This survey is based on a plan supplied by the Trevor Mastin in pdf format, which I have appended the trees and tree numbers onto to produce the Arboricultural Survey Plan 01. The trees are shown on the Arboricultural Survey Plan 01 thus: T1=Tree 1, G1= Group 1 and so on. They are tagged with small metal discs, which are cross referenced to the survey schedule. The crown radii in the case of the Crack willow trees are shown roughly by a green line.
- 4.6 The heights and predominant species in the hedgerows at the site are recorded, where appropriate, in the survey schedule as suggested in the BS5837 (2012). They are not given a Retention Classification.

5. Statutory Protection/Constraints

- 5.1 I gather that the trees are subject to 1 or more Tree Preservation Orders (TPO). The site does not appear to be in a conservation area.
- 5.2 A TPO is an order made by a LPA to protect trees when it is expedient in the interests of amenity. The guidelines state that it should be in the public interest to make a TPO on a tree/s. Written consent from the LPA must be obtained before any work can take place on protected trees. Failure to acquire written consent from the LPA or damage, deliberate or otherwise, to TPO trees may result in prosecution and a substantial fine.
- 5.3 **Exemptions:** An exemption from the need for an application under the TPO applies to the removal of dead limbs or where tree pruning or removal work is necessary to implement a development with full planning permission. This exemption does not apply to outline planning consent.
- 5.4 The Local Planning Authority in this case is Hinckley and Bosworth Borough Council.

6. Documents & Additional Information

- 6.1 The client provided a copy of Topographical Survey Plan.

7. The Site

- 7.1 The site (photograph 1) is situated approximately 2.5km to the north of Hinckley Town Centre off Hangman's Lane. It is dominated by 2 Weeping willow and numerous Crack willow trees of limited longevity.



Photograph 1

- 7.2 The Weeping tree 1 is in a state of collapse. There is evidence of extensive decay in the main stem from where a large limb has fallen (photograph 2). The Weeping willow tree 1 is, in my opinion, Unsuitable for Retention (U) in terms of the guidelines in the BS5837 (2012) Trees in Relation to Design, Demolition and Construction-Recommendations.



Photograph 2

- 7.3 The Weeping willow tree 2 (photograph 3) has a profound lop-sided disposition as a result of its proximity to the Weeping willow tree 1. Hence, I have given the Weeping willow tree 2 a Low (C) Grade.
- 7.4 If retained, the Weeping willow tree 2 will require restorative pruning work to mitigate its susceptible form and unbalanced nature. It is unlikely that it will recover well from such extensive pruning and thus it may be more sustainable in terms of the overall landscape to remove it and plant another willow or similar.



Photograph 3

- 7.5 There is a row Lawson's cypress trees (Group 1) growing just outside the northern site boundary (Photograph 4). They are typical to their suburban setting with little merit as a public visual amenity. Accordingly, I have also given them a Low (C) Classification.



Photograph 4

- 7.6 The Crack willow trees in Group 2 have a significant visual presence in the landscape (photograph 5). Roughly 6 trees come together to form 1 canopy, hence why I have dealt with them on a collective basis. I have, however, considered them individually within the group and tagged them accordingly.



Photograph 5

- 7.7 I am particularly concerned with respect to the inherently fragile nature of the Crack willow trees. This is borne out by the vertical stress fracture (photographs 6 and 7) I identified through the stem of Tree 0692. The natural breakable disposition of the Crack willow trees in Group 2 and their over-extended end heavy form make them vulnerable to breaking up and failing. Accordingly, it is my opinion that they meet the standard for a Low (C) Category subject to the completion of mitigating crown reduction pruning that will need to be carried out on an ongoing basis.



Photograph 6



Photograph 7

- 7.8 I would recommend in this case that canopies of the Crack willow trees in Group 2 are reduced in height by roughly 5-6m and in width proportionately by 3-4m as described in photograph 8 by a blue line.



Photograph 8

- 7.9 The ash tree 3 is a self seeded specimen with an over-extend asymmetrical disposition. Accordingly, I have given it a Low (C) Category also.

7.10 Generic Recommendations & Observations

7.10.1 **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 my advice 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.

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

7.10.3 It is my advice 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.

7.10.4 **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 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.

7.10.5 I did not identify any fungus fruiting bodies at or around the trees at the site other than where described in the survey schedule or above

8. Trees outside the Boundary

8.1 Trees growing outside the site boundary that impact on the development area or vice versa are considered in this survey.

The Trees & Development-Advice on the Site Layout

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, 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's in m and m² are provided in the survey schedule according to the calculations in Annex D of BS5837 (2012). Representations of the RPA's are described on the Arboricultural Survey Plan 01 by red circles for Moderate B and High A Category trees only to prevent it becoming cluttered. RPA's should be capped at 15m.

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 ***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 British Standard states that A, B and C Category trees should be a material consideration in any site layout plan.
- 2.2 Each situation should be considered on its merits as development inside RPA's is possible with the use of special foundations such as pile and beam or house deck and hard surfaces using the no dig method. These designs allow for construction to take place inside RPA's as they require only very minimum excavations. Where at all possible, the installation of utilities should take place outside the RPA's of retained trees. Significant changes in levels inside RPA's should be avoided.
- 2.3 I would recommend in this case that building should be placed inside the RPA's (8.4m radius) of the retained Crack willow trees in Group 2 to avoid conflict with their considerable root plate; as described on the Plan 01 roughly by a purple line. The cypress trees in Group 1 should be given sufficient room to grow. A minimum safe clearance of 4m would be reasonable in my view.
- 2.4 ***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 be possible to shorten or remove branches when they overhang a proposed development.
- 2.5 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.

- 2.6 The retained Crack willow trees in Group 2 have a crown radius of 10-12m. As described roughly on the Plan 01 by a green line Even though it is proposed to reduce the canopy back, I would suggest that a minimum safe clearance of 10-12m be given from the trees in Group 2 in light particularly of their vigorous and inherently fragile nature.
- 2.7 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.
- 2.8 If the preservation of potentially large trees is proposed then the most sustainable approach would be to retain them in a large garden or open space to enable sufficient room for their protection, maintenance and to avoid potential conflicts with structures. This advice is particularly pertinent with respect to the Crack willow trees in Group 2.
- 2.9 ***Tree Retention within a Development:*** It is my advice the low C Category trees should only be retained where they will not detract from or constrain what might otherwise be considered as acceptable development. Consideration may be given to retaining particularly High A and sometimes Moderate B Category trees while taking into account the conflicting requirements of the site layout and the development as a whole.
- 2.10 In this case, it is my suggestion that the remaining Weeping willow tree 2 be removed to facilitate the development and replaced by a tree of a more sustainable nature.
- 2.11 In line with the guidelines in the BS5837 (2012), caution should be exercised when retaining trees so as to avoid misguided attempts to keep too many or inappropriate trees on a site, which could lead to conflict and or future pressure to prune or remove.
- 2.12 I would strongly recommend that a site specific Arboricultural Impact Assessment should be produced by an arboriculturist when a site layout is agreed to consider any development implications relating to the retained trees and vice versa (if any). This should also include a site specific method statement.

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. Tree Retention & Protection during Construction

- 1.1 Barriers should be placed around the RPA's of any retained trees in direct proximity to the proposed building works in line with the following figure 1.
- 1.2 The position of the protection barriers inside the site in relation to the building works and the retained trees and hedgerows should be shown on an arboricultural protection plan by a red line on agreeing a site layout.
- 1.3 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. The construction exclusion zone is shown on the protection plan by red hatching.
- 1.4 The barriers must be in place before building work commences and must be fit for purpose. It is recommended that an appropriately qualified arboriculturist in conjunction with the LPA tree/arboricultural officer should approve the fencing and supervise any amendments. The barriers should not be removed until work is completed on site.
- 1.5 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 tree.

Figure 3 Examples of above-ground stabilizing systems

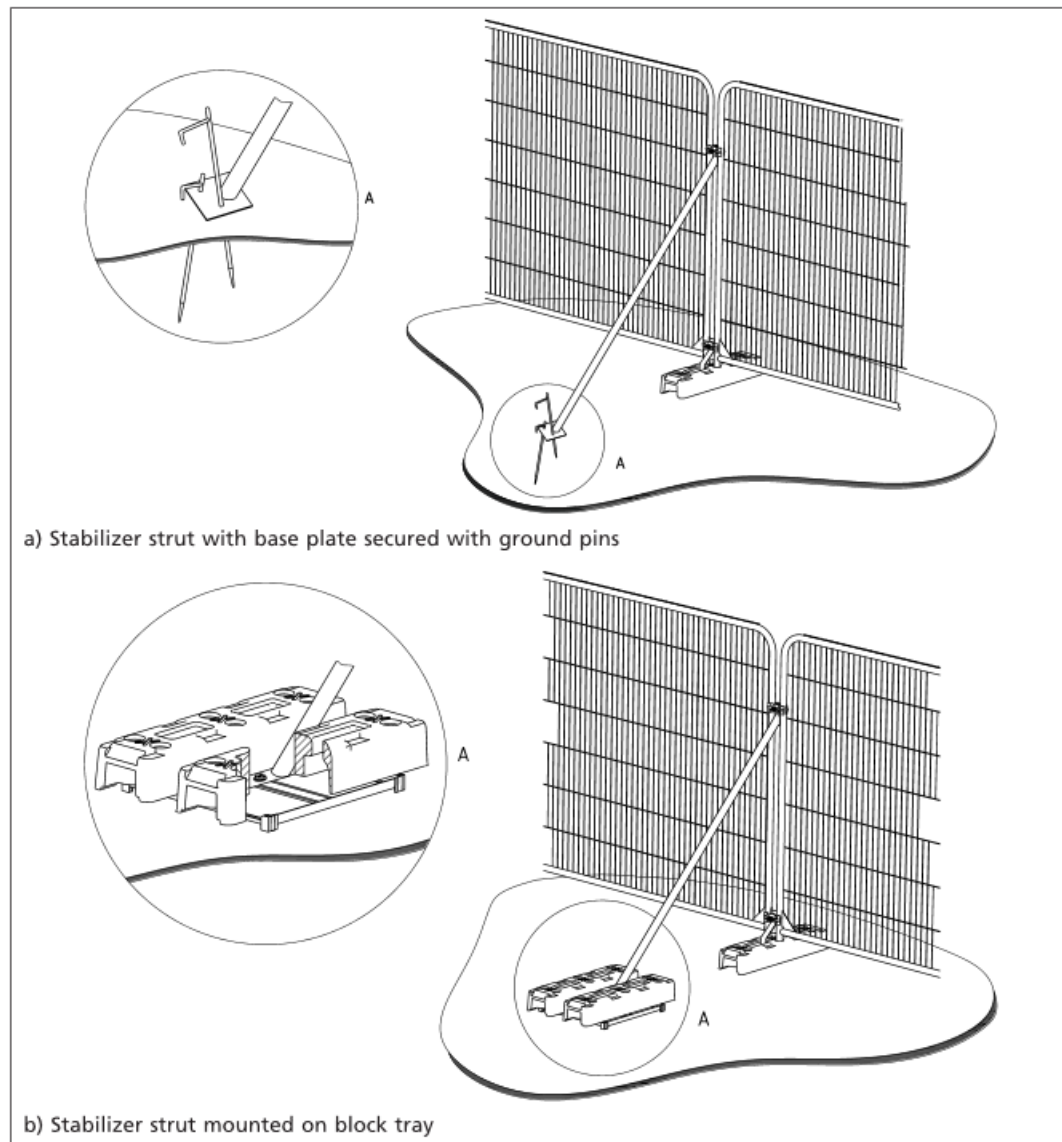


Figure 1 BS5837 (2012)

2. Timing/Phasing of Tree Works

- The proposed tree works should be carried out and protective barriers installed prior to starting work on site.
- Works should not progress to the next stage without the agreement of the appointed arboriculturist and or the project manager.

2.1 It is my recommendation that an arboriculturist be retained during the building works to oversee the tree protection, pruning and removal works. 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.

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 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 safe manner. Power saws, wood chipping machines etc should be maintained and fuelled outside the site to prevent damage by spillages.
- 3.3 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.
- 3.4 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.
- 3.5 All tree pruning works should be carried out to the BS3998 (2010) Tree Works-Recommendations guidelines for best practice.

Biography

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

British Standards 3998 (2010), Tree Work-Recommendations, British Standard Institute

Appendix 1

Arboricultural Survey Schedule

Tree no Tag no	Species	Age	Min life exp (est)	Height (est) m	Mat H't (max) m	Crown Spread m (est max)				Cr'n Height (est max) m	Stem Diam mm	Con Cat est	Phys Cat est	Ret Cat	Comments & Recommendations
						N	E	S	W						
1 (0693)	Weeping willow (<i>Salix x chrysocoma</i>)	Mat	<10	12	20	1	6	6	6	1	730	D	B	U	Extensive decay in stem, collapsing crown Risk of structural collapse Recommendations: Remove RPA: N/A
2 (0991)	Weeping willow (<i>Salix x chrysocoma</i>)	Mat	<10	12	20	4	4	4	4	GL	750	C	B	C1	Asymmetrical untidy form, dead wood in crown Canopy will become vulnerable on removal of T1 Recommendations: Ideally remove If retained-Reduce crown height down by 2-4m & proportionately in width by 2m RPA: 9m radius, 255m ² area
3 (0901)	Ash (<i>Fraxinus excelsior</i>)	Yng	20	10	23	1	2	2	2	1	210	C	B	C1	Self-seeded over extended form Recommendations: Ideally remove RPA: 2.4m radius, 18m ² area

Abbreviations:

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 * = Calculation from section 4.6a of BS5837 (2012)

Con Cat= Condition Category- A= Good. B= Fair. C= Poor, D= Dead, Phys Cat= Condition Category- A= Good. B= Fair. C= Poor, D= Dead, Ret Cat = Retention Category- A= High. B= Moderate. C= Low. U= Unsuitable for Retention. > = Greater than. <= Less than. est = Estimate. max = Maximum. H't = Height. C'n = Crown. CV = Cultivar. GL=Ground level, exp=Expectancy, RPA = Root Protection Area.

Appendix 1

Group Survey Schedule

Grp no	Species	Age	Min life exp (est)	Height (est) m	Mat H't (max) m	Crown Spread m (est max)				Cr'n Height (est max) m	Stem Diam mm max	Con Cat est	Phys Cat est	Ret Cat	Comments & Recommendations
						N	E	S	W						
1	Lawson's cypress tree (<i>Chamaecyparis lawsoniana</i>)	SM	210	14	18	3	3	3	3	GL	300	B	B	C2	Located just outside site boundary-no access available & no assessment carried out Limited merit as an amenity as a result Recommendations: None RPA: 3.6m radius, 41m² area max

Abbreviations:

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. * = Calculation from section 4.6a of BS5837 (2012)

Con Cat= Condition Category- A= Good. B= Fair. C= Poor, D= Dead, Phys Cat= Condition Category- A= Good. B= Fair. C= Poor, D= Dead, Ret Cat = Retention Category- A= High. B= Moderate. C= Low. U= Unsuitable for Retention. > = Greater than. <= Less than. est = Estimate. max = Maximum. H't = Height. C'n = Crown. CV = Cultivar. GL=Ground level, exp=Expectancy, RPA = Root Protection Area.

Appendix 1

Grp no	Species	Age	Min life exp (est)	Height (est) m	Mat H't (max) m	Crown Spread m (est max)				Cr'n Height (est max) m	Stem Diam mm max	Con Cat est	Phys Cat est	Ret Cat	Comments & Recommendations
						N	E	S	W						
2	Crack willow (<i>Salix fragilis</i>)	Mat	10	18-20	24	10	10	10	10	GL	700	B-C	B-C	C2	Group of prominent trees with limited safe life expectancy in current form Group of trees individually tagged that come together to form roughly 1 canopy Inherently fragile structures with propensity to shed limbs Dead limbs throughout crowns <i>Tag no:</i> 0696-Profound easterly lean, over extended vulnerable form <i>Tag no:</i> 0692-Sheer crack through entire stem, over extended vulnerable form <i>Tag no:</i> 0677-Multistemmed over extended vulnerable form <i>Tag no:</i> 0684-Over extended vulnerable form <i>Tag no:</i> 0691-Over extended vulnerable form <i>Tag no:</i> 0678-Over extended bifurcated vulnerable form Recommendations: Remove tree tagged 0692 Reduce entire crown by 5-6m as described in photo 8 & maintain by regular re-pruning & assessments (ever 203 years) RPA: 8.4m radius, 222m² area max

Abbreviations:

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. * = Calculation from section 4.6a of BS5837 (2012)

Con Cat= Condition Category- A= Good. B= Fair. C= Poor, D= Dead, Phys Cat= Condition Category- A= Good. B= Fair. C= Poor, D= Dead, Ret Cat = Retention Category- A= High. B= Moderate. C= Low. U= Unsuitable for Retention. > = Greater than. <= Less than. est = Estimate. max = Maximum. H't = Height. C'n = Crown. CV = Cultivar. GL=Ground level, exp=Expectancy, RPA = Root Protection Area.

Appendix 1

Arboricultural Survey Data Collection Methodology

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:

Con Cat

- A-** *Trees that appear to be in a good condition without any obvious defects*
- B-** *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-** *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-** *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, Dead trees*

Appendix 1

Phys 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). A current maximum stem diameter is given to trees considered as a group.

Tree heights are estimated in metres and a mature height is given according to the guidelines shown in the NHBC Standards April 2006 Chapter 4.2, Table 12. A current maximum height is given to trees considered as a group.

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 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.

Appendix 2

Arboricultural Survey Plan 01 (Not to Scale)

