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Our Reference: 9517 / 40740

Campus Tree Survey 2012: University of Bath

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Signed:

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1:0 **Introduction**

1:1 Tree cover across the campus of the University of Bath can be broadly categorised into simple categories: 1) Areas of old woodland containing large old trees, younger self-generated material and maybe recent plantings 2) Large old trees likely to have originally been in hedgerows or on boundaries 3) The avenue of very large mature beech (plus a few other species) running almost East-West across the lower part of the site 4) Specimen and individual trees planted since the establishment of the University in 1966 5) Groups and block-plantings planted since 1966 6) The extensive collection of Yew (*Taxus* species and cultivars) that is registered as the National Collection of the species (Plant Heritage, formerly the National Council for the Conservation of Plants and Gardens, NCCPG) and 7) Sporadic natural regeneration.

1:2 Following site inspections carried out this summer, the Schedule attached to this report lists and details the trees on the entire University campus as defined by the blue line on the plan. The primary function is as a Risk Assessment, to help the University meet its liabilities towards staff, students and members of the public. Secondly, to provide a database of the trees, to be used into the future for management purposes including on-going Risk Assessment. This database is provided as electronic file (Excel) so as to be updatable and amendable into the future, with the potential to provide a thorough record of inspections and actions taken.

1:3 Tree locations are provided on the Tree Location Plan, supplied as pdf file in order to be searchable in Adobe. To be manageable, this plan is cut up into 16 tiles (sheets) covering the entire campus. A separate single-view plan is provided that shows the tile areas.

1:4 This report was authorised by David Hunt of the University Estates Department. Inspections were carried during the summer of 2012, when weather conditions were variable including wind, rain and sun. The inspection was carried out by Geoffrey March Dip. Arb. (RFS) F.Arbor.A. I have been involved in the care of amenity trees since 1976 and am an associate consultant for Tree Maintenance Ltd, which I founded in 1981. I hold the Royal Forestry Society's Professional Diploma in Arboriculture, the industry's premier qualification. I am a Fellow of, and registered consultant for, the Arboricultural Association, the leading UK organisation devoted to the care and promotion of trees. The plotting was carried out concurrently, direct to tablet computer, by Mike Gregory HND Arb. M.Arbor.A. associate consultant for Tree Maintenance Ltd. Together, a total of 27 full man days were spent on site.

2:0 **Risk Assessment: overview**

2:1 A Risk Assessment should take into account a) the hazard b) the likelihood of failure and c) the target.

2:2 Hazard is identified as a significant defect to the tree, such as trees that are:

- Dead or dying
- Decayed at base or otherwise unstable and liable to uproot or fracture
- Structurally suspect and liable to split apart or shed limbs
- Containing significant dead material liable to fall out

2:3 A significant risk is established only if failure potential is significant, the hazard is likely to reach the target, and has a significant chance of causing injury. Clearly, a hazard tree near a footpath that may be little frequented will present a lower *risk* than the same tree standing by a busy road and this is reflected in the recommended work listed in the Schedule. Therefore, for example, dead branches that may land on a woodland path may not be identified as a significant risk.

2:4 The work required to remove or moderate the risk can reasonably be prioritised according to the degree of risk, ie depending on the target and nature of hazard.

3:0 **Survey method**

3:1 All trees across the whole campus have been assessed. Inspections were undertaken from ground level only and without the use of specialist decay detection (where either of these is considered necessary, it forms a recommendation). It should be noted that squirrel damage (leading to branch failure) can often not be seen from the ground and will be an ongoing problem. Occasionally, trees with dense or impenetrable ivy or other basal vegetation may have defects undetectable without further significant clearance work, not allowed for in this inspection.

3:2 Many trees are itemised individually however grouping is done for a) clusters of the same species b) block plantings of similar-aged material and c) areas of copse, woodland, boundary hedgerows and self-generated material etc.

3:3 Each tree or group has a robust galvanised metal number attached to the trunk with a long-shank rustproof nail, the latter driven only partly in to allow for a reasonable period of trunk growth. Tree or group position is shown on the plan.

3:4 Listed in the schedule is:

- Tree/tag number
- Species (common name)
- Botanical name
- Maturity class (NP = new planting, Y = young, MA = middle aged or early mature, M = mature)
- Structural condition (P = poor, M = moderate, G = good)
- Physiological condition (P = poor, M = moderate, G = good. D = dead)
- Further detail where appropriate including significant defects; presence of commemorative trees with name
- Any recommendation for work
- Priority code for recommended work (A = safety related, recommended to be done within 3 months, B = safety related and/or strongly recommended formative/remedial work, recommended within 2 years, C = non safety related but recommended if budget allows).

3:5 Trees are dynamic structures that can never be guaranteed 100% safe; even those in good condition can suffer occasional damage under only average weather conditions. A lack of recommended work does not imply that a tree will never suffer damage. Due to the changing nature of trees – and possibly other site circumstances – this report and recommendations are limited to a two year period (however see 6:0 for re-

inspection recommendations). Similarly, this report could be invalidated if any alterations are made to the property that could change the conditions as seen at time of inspection. Under certain circumstances, roots can affect foundations, drains and other underground services. These issues have not been addressed by this report.

3:6 *Taxus* species forming part of the National Collection are listed in the Schedule but with no further detail: this is provided in the specialist report carried out in 2010 (The *Taxus* National Collection, University of Bath dated 24.3.2010, Tree Maintenance Ltd in association with Tony Titchen, TM reference: 9517 / 32944).

3:7 The beech avenue has been the subject of previous inspections by ourselves since May 2009, most recently in February 2012; to avoid duplicating costs, the most recent of these findings have been copied into the Schedule, along with the previous tag number for reference.

3:8 There are 56 commemorative trees having plaques; these are noted in the Schedule under 'further detail' and may be searched for using 'find' (either by name or 'commemorative').

3:9 Notes to the plan numbering etc:

Reference numbers generally follow the tiles. The differing thicknesses and colours of lines used for groups etc do not signify any differences, but aid visually when identifying different groups. Some reference numbers may be entered on the plan twice, eg where a large group is marked on more than one tile.

In the case of 0400 and 0401 there is a colour coded system to recognise similar groups of trees within the car-parking area.

In the case of some woodland tree positions the accuracy of the reference numbers is compromised, though they should be adequate for finding the trees when on foot.

As a general rule a larger font is used for group numbers and a smaller font for individuals, though this is not always the case.

Important - when printing the plan it is necessary to include 'markups' from the printing options, otherwise the tree numbers will not be shown up.

The pdf has to be kept 'live' (as opposed to 'flattened') to enable the search option, so care must be taken not to make alterations by mistake.

4:0 **Summary of findings**

4:1 Overall, the University is to be congratulated on the superb range, quantity and quality of new planting that has taken place since its establishment in 1966, including right up to date. Along with the very high standards of estate maintenance, this binds together what is inevitably a disparate collection of buildings, providing cohesion and an impression of quality and care.

4:2 Being the first thorough inspection of all the trees for some years, and given the high total number, it is inevitable that there is a significant amount of work recommended. However, the most critical tree issue on site, namely the collection of old and

increasingly fragile beech trees in The Avenue, is fully up to date (although ongoing safety work is inevitable). Out of over 1500 database entries, total numbers for recommended work are as follows:

- Category A: 57 trees
- Category B: 110 trees
- Category C trees: 64 trees

Individual items will vary from simple work such as severing ivy, to some highly technical work such as dismantling or surgery work to the largest of trees in confined spaces. Several dead trees were identified and also some large, unsafe items; most (but not all) of these major items are located in the woodlands and/or in less-used locations. Recommendations will be discussed at a meeting on 23rd August.

4:3 The most urgent safety items within Category A are likely to be:

175, 1088, 1092, 1175, 1293, 1413-1417, 1522, 1544, 1550/1, 1557

4:4 It was noted that some off-site trees, immediately adjacent to the campus, appear to be unsafe or at least in urgent need of professional inspection. It is strongly recommended that these neighbours are notified of this. The following items refer:

399, 1080, 1537

5:0 Squirrels

5:1 The grey squirrel damages trees by stripping off bark, causing death of stems and branches by girdling, or branch failure as the exposed wood decays. While sporadic crown damage is to be expected to vulnerable trees, notoriously beech and sycamore, here the problem is much more extensive. Many of the high-quality and expensive recently-planted trees are being ruined this summer, and fresh damage was visible in many areas. The most vulnerable species are maples (including sycamore), beech and hornbeam, the latter 2 species being particularly widely planted on the campus. Other species are also affected to a lesser extent.

5:2 Control measures include shooting, poisoning and trapping. Trapping may be the best approach here however this has to properly planned and executed. On this site it would probably be necessary for traps to be sited out of reach in tree crowns, perhaps pre-baited initially, and then regularly emptied/reset (likely to be every day during the control period). More information can be found at:

http://www.forestry.gov.uk/greysquirrel - click on: Controlling Grey Squirrel Damage to Woodlands (PDF 569kb)

http://www.greysquirrelcontrol.co.uk/trapping-method.php

We do not provide squirrel control ourselves however may be able to recommend a contractor.

6:0 **Re-inspection**

6:1 The following is recommended:

- Annual walk-round safety inspection of all trees (risk assessment), providing a shortlist of any recommended work.

- Variations to this may be recommended eg to critical trees or a specific time of year.

- Full update of database and plan every 5 years, to include additions/removals, updating of all entries and replacing any missing tags etc.

7:0 **Wildlife issues and timing of operations**

7:1 Bats. Under current legislation it is an offence to 'intentionally or recklessly disturb a bat' or 'damage, destroy or block access to the resting place of any bat' (Countryside and Rights of Way Act 2001 and further strengthened by other legislation). Where work is being carried out and bats are present, or if the tree is a known roost, consultation must be made with the Statutory Nature Conservancy Organisation (Natural England 0845 6003078 www.naturalengland.org.uk). A European Protected Species Habitat Regulations Licence is likely to be required. Work to trees with the potential for roosting bats is best done from late August to early October. March through to April is also suitable although this may conflict with nesting birds (see below).

7:2 Birds. It is also likely to be an offence to kill, injure or take any wild bird; or take, damage or destroy the nest of any wild bird while it is in use or being built. Therefore work likely to disturb nesting birds should be avoided from late March to August.

7:3 All trees requiring work should have a routine evaluation for the above, prior to work starting, and if suspected then work should be carried out during August – early October.

7:4 The value of veteran trees (in particular) has been the subject of much attention and research in the last few years, and it is recognised that this country has a superb and unique collection that has been undervalued and eroded in the past. This site includes some veteran trees and careful management of these is most important.

In the interests of biodiversity, remedial work should be appropriate and the minimum required to alleviate the risk. Standing dead trunks should be retained as a reserve for fungi, insects, birds and small mammals, provided they are in a safe condition. 'Coronet cuts' (cutting several Vs into the end) may be used in these tops or on major stubs, in order to mimic the effects of natural processes. Dead branches need only be made safe, eg by shortening or pulling with poles. The remaining stubs form a reserve for fungi and invertebrates. Dead branches not liable to reach the target should be retained. Ivy provides a habitat for insects, birds and bats. It may only need severing where there is an unacceptable build-up of wind load on the crown of the tree, or to enable a closer inspection for defects, or to encourage lower crown regeneration. Where appropriate, felled timber and prunings should be left nearby to naturally decay rather than being scrupulously cleared away.

More information on the evaluation / recording of veteran trees and the use of appropriate work methods (some newly developed) can be found at the following web sites, which are highly recommended:

Ancient Tree Forum: www.woodland-trust.org.uk/ancient-tree-forum

Arboricultural Information Exchange: www.aie.org.uk (eg see Trees / Tree Pollards)

7:5 The pruning of some species should avoid specific times; this should be advised by the contractor when preparing schedules of work.

8:0 **Planning considerations**

8:1 If the site is subject to Tree Preservation Orders (TPO) at present, any pruning work to protected trees (or their removal) will have to be authorised by the Local Planning Authority, and should be the subject of a formal application.

8:2 Any pruning or felling of trees within a Conservation Area requires a 6 week notification to the Local Planning Authority.

8:3 Although certain exemptions apply to these planning provisions, for example to dangerous trees, it is recommended that all schedules of work be referred to the LPA.

References:

British Standard 3998:2010 '*Tree work – Recommendations'*
Diagnosis of ill-health in trees. Strouts & Winter. DOE/HMSO. 1994.
Principles of Tree Hazard Assessment and Management. Lonsdale. DETR/HMSO. 1999.