

**TREE SURVEY AND
ARBORICULTURAL REPORT:
CHESTNUT WALK, READING**

The following survey was carried out by the Reading Borough Council Arboricultural Unit on 14 and 15 January 2019. The surveyor was Jane Rackley, who holds a Professional Tree Inspection qualification.

Prior to that, a full inspection was carried out in 2016 by Clifford Gideon, who also holds a PTI qualification. Given the extensive defects noted at the time, subsequent monitoring has been carried out in the intervening period.

Notes from all of these inspections are recorded.



Background

The avenue of horse chestnuts, *Aesculus hippocastanum*, was planted in around 1860 when Chestnut Walk was laid out. The trees are therefore about 160 years old. They appear on the 1880 OS map, and the record made by Oscar Wilde of seeing them through a prison window suggests that they were mature in the 1890s.

Under ideal conditions in the open field, horse chestnuts can live up to 300 years. However, under urban conditions they are stressed, and the spread of the leaf miner moth, *Cameraria ohridella*, over the past 20 years has accelerated their decline. The leaf miner does not kill the trees, but interferes with the process of photosynthesis, so that trees manufacture and store less carbohydrates. This reduces their vigour, leaving older trees more susceptible to diseases such as bleeding canker. Bleeding canker is now widespread and, once it is in a location, most of the trees in that area suffer from it and die within a couple of years.

Summary of inspection findings and actions taken

A full inspection in 2016 of the trees in Chestnut Walk revealed significant defects in a high proportion of the trees, including canker, cavities and fungal brackets.

Work to fell two trees and prune several others was carried out immediately. Subsequently, another tree failed.

The Parks Service has been monitoring the trees regularly since the 2016 inspection. In summer 2018, prior to the re-opening of the Abbey ruins, a visual inspection was carried out. Further deterioration was noted, and a full re-inspection diarised for winter 2018/19 when the trees are not in leaf. This inspection was carried out on 14 and 15 January 2019, and identified four trees for immediate removal, as well as further deterioration in the remaining trees. Because the trees are located on an important pedestrian thoroughfare, they represent a safety risk to the public.

Reasons for proposed replacement of the avenue

The Parks Service has considered a number of alternative actions to deal with what is evidently a declining feature.

Pollarding

Pollarding was the first consideration. However, given the weakness of the trees through loss of nutrition and invasion of pathogens, most of the remaining trees are unlikely to survive this heavy pruning.

Replacement of the avenue

There are three approaches to managing and regenerating a declining avenue. One is to patch piecemeal, on a tree-by-tree basis. This has the advantage of retaining any healthy mature trees, and the disadvantage of leaving a line of trees with different heights, ages and shapes. There is also a cultivation problem, as the newly planted trees tend to develop slowly because of root competition and shading. Even if growth occurs, differential shading can cause the crowns not to develop evenly.

The second method of regeneration is to plant outside (or inside) the old line of trees, and then to remove the old trees as the new ones develop. There is insufficient space along Chestnut Walk to contemplate this approach.

The third alternative is to remove all of the trees and to plant a new avenue, accepting that this is an investment from which a future generation will benefit.

The Parks Service considered the first of these methods when the number and severity of defects in the trees was noted in 2016, and as monitoring occurred subsequently in anticipation of the restoration of the Abbey ruins. However, the speed of decline suggests that even the remaining trees have little more than a few years before they will succumb to pathogens. For this reason, it makes much more sense to remove all of the trees and to replant a new variety of tree that will withstand the pathogens in the area and grow in clear space, to create a mature avenue of evenly spaced, sized and shaped trees for future generations. That this is a high target area, and that there is a foreseeable risk to the public if the known risks are not mitigated, make this choice unavoidable.

It is therefore the view of the Parks Service that the trees should be felled, and replaced with another genus of tree that is resistant to most pathogens that affect *Aesculus* as well as being drought tolerant. The chosen species is sweet chestnut, *Castanea sativa*. Given the name of the promenade, this is particularly appropriate. They are also a long-lived tree.

Trees to be retained

The trees to be retained are

001X: private tree at the west end of Chestnut Walk

001Y: the London plane

0018: the young horse chestnut at the east end of Chestnut Walk

Arboricultural Report - Explanation of terms.

1. Introduction

Trees are affected by both physical (abiotic) influences and biotic factors (that relate to living organisms). The assessment of both condition and H&S risks is generally a judgement based on observed features and unobserved but likely considerations (both within the structure of the tree and under the ground). These qualitative judgements are used to estimate the extent of foreseeable risk. Due to this complexity, it is not possible to apply highly specific terminology, and terms cover a spectrum of conditions so as to allow some categorisation.

In particular, terms relating to mid-spectrum conditions and risks are vague; e.g. 'reasonable' condition should be thought of as a wide spectrum ranging from 'slightly better than poor', to, 'nearly perfect'.

Where public safety is involved, landowners have a duty of care to identify and act on foreseeable risk, and courts tend to apply risk-averse interpretations to loosely-defined terms. For this reason, survey reports record specific defects, to allow landowners to take account of as many risk factors as possible when deciding how to manage trees.

2. Terms used to describe condition:

-Good: free from visible significant defects, high levels of vitality, prime specimen, displaying normal or superior health, displaying normal or superior positive attributes.

-Reasonable: Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.

-Poor: Some to many significant defects, critical defects, low levels of vitality, discoloured leaves, sickly, weak, unhealthy, high pathogen load, likely to be condemned.

3. Glossary of terms:

-Crown End loaded / Subsiding limb(s): A limb with a significant load acting on it causing a gradual, creeping failure of the wood fibres.

Significance: limb failure

-Suppressed / Etiolated / Unbalanced growth: Uneven growth within the crown resulting in either significantly extended or stunted limbs.

Significance: reduced ability to cope with wind

-Base Disruption to footway / kerbs: thickening of roots and/or the base of the tree results in disturbance to hardstanding/paving/roads.

Significance: Trip hazards

-Decay / Cavity: A minor area of decay or a relatively small cavity.

Significance: possible sign of declining health or an active pathogen, slight reduction in structural integrity.

-Significant or major Decay / Cavity: A large area of decay or a relatively large cavity.

Significance: possible sign of declining health and/or an active pathogen, significant reduction in structural integrity.

-Exudation/exudate: An excretion/seepage/discharge from the tree.

Significance: sign of internal issue, often active pathogens.

-Pollard Lapsed/lapsed pollard: A tree that was formally managed as a pollard that has not been cut for many (more than 5) years

Significance: can result in a congested crown with many upright stems. With many compression forks between the "weakly" attached stems

-Epicormic growth: shoots growing from adventitious buds just under the bark. These shoots grow directly from the trunk/stem/branches.

Significance: often a sign of physiological stress

-Shed limb: A branch that has fallen from the tree

Significance: hanging branches or a trip hazard.

-Included bark / Forked trunk: also known as a compression fork, is a fork or branch union that has a very tight, acute angle between the stems which often results in improper fusing of the stems.

Significance: weakened branch/stem union

-Low vigour: poor growth response, thin canopy, unhealthy

Significance: declining health

Leaning minor/ minor lean: a tree or stem that is leaning but not considered significant, usually less than or equal to 10° from vertical.

Significance: slight increase in leverage acting on base of stem, possible sign of movement in roots.

-Significant or major lean: a tree or stem that is leaning, usually more than or equal to 10° from vertical.

Significance: large increase in leverage acting on base of stem, possible sign of movement in roots.

-Bark necrosis: Death of bark; often visible as a discoloured and delaminating section of bark.

significance: exposes wood to potential pathogens.

ID	Age	Condition See below for definition).	Stem Diam	Spread	Height	Species	RequirementType	Consideration
0016	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	40-50cm	10m	20m	Aesculus hippocastanum	General Prune 1 - CL/CB/DW/Epi etc.	Crown End loaded / Subsiding limb(s) Crown Suppressed / Etoliated / Unbalanced growth Base Disruption to footway / kerbs
0017	Mature	Stump	70-80cm	4m	20m	Stump		Tree felled because of bleeding canker. Note Furniture Utilities underground
0018	Young	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	10-20cm	5m	7m	Aesculus hippocastanum Baumannii		Stem Decay / Cavity; Stem Bark exudation / Bleeding canker
0019	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	60-70cm	12m	20m	Aesculus hippocastanum		Crown End loaded / Subsiding limb(s); Crown Suppressed / Etoliated / Unbalanced growth; Crown Pollard Lapsed; Epicormic growth; Furniture Road sign / Other street furniture; Shed limb; Crown Decay / Cavity minor; Stem Included bark / Forked trunk
001A	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	60-70cm	11m	20m	Aesculus hippocastanum		Crown Low vigour; Crown Pollard lapsed; Crown Decay / Cavity minor; Stem Decay / Cavity; Stem Leaning minor; Crown Shed limb; Furniture Road sign / Other street furniture; General More frequent inspection required
001B	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with	50-60cm	10m	20m	Aesculus hippocastanum		Crown Suppressed / Etoliated / Unbalanced growth; Base Disruption to footway / kerbs; Stem Leaning minor

		developing issues. A wide range of conditions that is every state between good to poor/failed.						
001C	Mature	Poor Some to many significant defects, critical defects, low levels of vitality, discoloured leaves, sickly, weak, unhealthy, high pathogen load, likely to be condemned.	50-60cm	10m	20m	Aesculus hippocastanum	Specific branch reduction / removal	Stem Bark exudation / Bleeding canker; Crown low vigour; Crown Suppressed / Etoliated / Unbalanced growth; General More frequent inspection required; Stem leaning; Furniture Road sign / Other street furniture; Base Disruption to footway / kerbs
001D	Mature	Poor Some to many significant defects, critical defects, low levels of vitality, discoloured leaves, sickly, weak, unhealthy, high pathogen load, likely to be condemned.	60-70cm	10m	20m	Aesculus hippocastanum	Fell tree	Crown End loaded / Subsiding limb(s); Crown Decay / Cavity significant; Stem Decay / Cavity significant; Crown Pollard lapsed; Crown Suppressed / Etoliated / Unbalanced growth; Furniture Road sign / Other street furniture
001E	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	60-70cm	10m	20m	Aesculus hippocastanum	Specific branch reduction / removal	Crown Low vigour; Crown End loaded / Subsiding limb(s); Crown Suppressed / Etoliated / Unbalanced growth; Base Mower / Strimmer damage; Stem Epicormic growth; General More frequent inspection required
001F	Mature	Stump	60-70cm	1m	20m	Aesculus hippocastanum	Fell tree	High Priority One sided crown to river, cavity in stem 2m up, concrete & bricks inside, also fungal bracket & aerial roots.
001G	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	50-60cm	9m	20m	Aesculus hippocastanum		Stem Decay / Cavity; Crown Suppressed / Etoliated / Unbalanced growth; Stem Epicormic growth; General More frequent inspection required
001H	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is	50-60cm	10m	20m	Aesculus hippocastanum		Crown Pollard lapsed; Crown Suppressed / Etoliated / Unbalanced growth; Stem Decay / Cavity; Base Disruption to footway / kerbs

		every state between good to poor/failed.						
001J	Mature	Stump	60-70cm	1m	20m	Stump	Fell tree	High Priority Dead bark on stem, 1cm gap behind, then hard wood., exudation, cavities with concrete & significant decay in main fork & one major limb
001K	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	40-50cm	12m	20m	Aesculus hippocastanum		Crown Pollard lapsed; Crown Suppressed / Etoliated / Unbalanced growth; Stem Included bark / Forked trunk; Stem Epicormic growth; Base Basal decay / Cavity; Base Disruption to footway / kerbs
001L	Mature	Poor Some to many significant defects, critical defects, low levels of vitality, discoloured leaves, sickly, weak, unhealthy, high pathogen load, likely to be condemned.	50-60cm	6m	8m	Aesculus hippocastanum	Remove crown / Monolth; Fell tree	Stem Bark exudation / Bleeding canker; Stem Bark necrosis; Base Basal decay / Cavity
001M	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	60-70cm	10m	20m	Aesculus hippocastanum		Crown Pollard lapsed; Stem Bark damage; Stem Decay / Cavity; Base Bark damage; General More frequent inspection required; Stem Epicormic growth; Furniture Seating
001N	Mature	Poor Some to many significant defects, critical defects, low levels of vitality, discoloured leaves, sickly, weak, unhealthy, high pathogen load, likely to be condemned.	80-90cm	6m	10m	Aesculus hippocastanum	Fell Tree	Urgent; Tree crown failed in January 12 winds. Crown pollard; Crown Decay / Cavity significant; Stem Decay / Cavity significant; Stem Bark necrosis; Base Basal decay / Cavity; Furniture Seating
001P	Mature	Poor Some to many significant defects, critical defects, low levels of vitality, discoloured leaves, sickly, weak, unhealthy, high pathogen load, likely to be condemned.	80-90cm	6m	11m	Aesculus hippocastanum	Fell Tree	High Priority; Crown stems prison side decaying fast; Crown Decay / Cavity significant; Stem Bark necrosis; Stem Decay / Cavity; Stem Epicormic growth; Furniture Seating

001Q	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	70-80cm	12m	20-25m	Aesculus hippocastanum		Stem Included bark / Forked trunk; Furniture Seating; Base Compaction to rooting area; Base Disruption to footway / kerbs
001R	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	90-100cm	18m	20-25m	Aesculus hippocastanum		Stem Included bark / Forked trunk; Base Compaction to rooting area; Base Disruption to footway / kerbs; Furniture Seating
001S	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	60-70cm	8m	20m	Aesculus hippocastanum	General Prune 1 - CL/CB/DW/Epi etc.	General More frequent inspection required; Stem Bark exudation / Bleeding canker; Stem Bark necrosis; Stem Epicormic growth; Furniture Street light / Traffic light
001T	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	60-70cm	11m	20m	Aesculus hippocastanum		Crown Suppressed / Etoliated / Unbalanced growth; Stem Epicormic growth; Furniture Road sign / Other street furniture
001U	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	60-70cm	12m	20m	Aesculus hippocastanum		General More frequent inspection required; Crown Pollard lapsed; Crown Suppressed / Etoliated / Unbalanced growth; Crown End loaded / Subsiding limb(s); Stem Decay / Cavity; Stem Included bark / Forked trunk; Furniture Road sign / Other street furniture

001V	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	60-70cm	12m	20m	Aesculus hippocastanum	Deadwood - Above 50mm diam	General More frequent inspection required; General Poor past pruning / Poor structure; Crown Pollard lapsed; Crown Suppressed / Etoliated / Unbalanced growth; Crown End loaded / Subsiding limb(s); Crown Weak attachment points; Stem Decay / Cavity; Stem Leaning significant; Crown Suppressed / Etoliated / Unbalanced growth
001W	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	50-60cm	10m	20m	Aesculus hippocastanum		Crown Pollard lapsed; Crown Suppressed / Etoliated / Unbalanced growth; Crown Weak attachment points; Stem Included bark / Forked trunk; Stem Epicormic growth; Furniture Road sign / Other street furniture
001X	Mature	Reasonable Significant defects often present but no critical defects at this time. Middling. Could be in declining health with developing issues. A wide range of conditions that is every state between good to poor/failed.	70-80cm	14m	20m	Aesculus hippocastanum		Stem Decay / Cavity; Stem Ivy / climbing plants / obscured view; Stem Epicormic growth; Furniture Road sign / Other street furniture
001Y	Mature	Good Free from visible significant defects, high levels of vitality, prime specimen, displaying normal or superior health, displaying normal or superior positive attributes.	120-130cm	>20m	20-25m	Platanus x hispanica		Crown Pollard lapsed; Crown Suppressed / Etoliated / Unbalanced growth; Stem Decay / Cavity; Stem Included bark / Forked trunk

