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TREE CARE

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**Tree Report: An appraisal/census of some of the Parkland trees at
Thornbridge Hall.**

Ashford in the Water. DE45 1NZ

Client: Mr J & Mrs E Harrison.

**Date of Survey: Various dates, May to July 2021.
(And previously in February 2017.)**

Weather at time of Survey: Mixed.

File reference: Thornbridge Hall 05

**Appendices: 1. Site plan with tree positions numbered, not-to-scale,
adapted from supplied drawing.**

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Checked by: R H Anderson. Dip Arb.(RFS)

Situation.

Nic Folland of Barnes Walker has requested that trees in the park to the south and east of Thornbridge Hall are inspected and identified. He has supplied me with a site plan that shows the trees in question's positions. I have marked each tree with a number on the plan which corresponds to the following schedule. I may have included some additional trees merely because something about them caught my attention in passing.

The trees.

I have measured or estimated the height (Ht) in metres and the trunk diameter (TD) in millimetres of all the trees. I have also measured the crown spread where it was pertinent.

No.	Species	Ht	TD	Comment
1.	Beech	26	1330	This tree was not actually in the park proper but hard against the fence. I've included it because it is infected with at least two serious decay fungi, and has been for some time. The tree's crown is merged with another Beech tree's that isn't obviously infected with anything.
2.	Hawthorn	5		Almost completely dead. Within an old tree guard.
3.	Common Lime	25	1010	Crown relatively narrow, some ground damage from livestock.
4.	Common Lime	25	1300	Several secondary stems. Ground beneath the crown disturbed by livestock.
5.	Sycamore	22	810	A reasonable specimen, a companion to tree 4.
6.	Ash	21	1380	This tree has suffered significant crown damage and as a result is an excellent habitat tree. its condition could reasonably be regarded as parlous, some work to manage its decline and thus preserve the numerous niche habitats might be justified. Some ground damage at its base.
7.	Lime	24	1030	Again with a relatively narrow crown. A reasonable specimen tree.
8.	Horse Chestnut	18	1010	Almost dead due to Horse Chestnut Bleeding Canker, and possibly livestock damage.
9.	Small Leafed Lime.	5	200	TD estimated. Within a tree guard, apparently recently planted. Some formative pruning would be prudent.
10.	Norway Maple.	15	910	Dark foliage, possibly the cultivar Schwedlerei (I recall this tree having red/purple foliage in May). 17 metre crown spread.

No.	Species	Ht	TD	Comment
11.	Horse Chestnut	15	980	Very poor, the trunk has strips of necrotic bark with exposed heartwood in places. Probably caused by livestock but exacerbated by Horse Chestnut Bleeding Canker. Crown damage .
12.	Sycamore	13	800	Dead.
13.	Common Lime	27	1010	At the south side of the new drive. Good. In a group with 14, 15 & 16.
14.	Pink/Red Horse Chestnut	16	680	Somewhat suppressed by neighbouring trees. Fairly typical condition with the bud proliferation disease that leaves patches of necrotic bark on the trunk.
15.	Common Lime	23	900	Crown slightly one-sided, but a good specimen within the group.
16.	Common Lime	24	970	Another good specimen at the edge of the group. Roots exposed (by livestock?) but not really damaged.
17.	Lime	22	800	Good.
18.	Horse Chestnut	19	800	Fairly severe crown damage, some necrotic bark but otherwise good.
19.	Sycamore	14	600	Dead.
20.	Pink Horse Chestnut	5	600	TD estimated. Just a broken stump.
21.	Horse Chestnut	16	800	(Back at the north side of the drive.) Severely affected by Horse Chestnut Bleeding Canker, effectively dead.
22.	Horse Chestnut	17	1120	Some small signs of Horse Chestnut Bleeding Canker, but otherwise it appears remarkably healthy.
23.	Common Lime	18	1010	Reasonable specimen.
24.	Pink Horse Chestnut	15	770	Some stock damage and signs of Horse Chestnut Bleeding Canker. A significant portion of the crown, approx. 40% is dead.
25.	Horse Chestnut	17	1110	Crown spreads 19 metres. Lower branches have been recently browsed. (Differently browsed to other trees.)
26.	Norway Maple	13	750	Dark foliage, again my recollection is that this was purple in May although it's now simply tinted brown. Possibly the cultivar Schwedlerei. Extremely hollow, with an open basal cavity.

No.	Species	Ht	TD	Comment
27.	Common Lime.	25	890	16 metre crown spread seems quite narrow, but probably isn't. (See discussion below.) A decent tree.
28.	Small Leafed Lime	16	700	Good. A clear stem with no epicormic growths. A pleasing specimen. There is an unusual black lichen on the north side of the trunk.
29.	Common Lime	25	820	A reasonable specimen. 12 metre crown spread.
30.	Horse Chestnut	12	600	To the east of the new drive. (12 metres spread; as wide as it is tall.) Rather close to the bund of soil at the eastern side of the new car park.
31.	Pussy Willow	10	300 max	A group of trees. 5 trees 14 stems. Possibly self-sown. These are not traditional parkland trees.
32.	Common Lime	25	850	Cavity at the base, with a fungal fruiting body. Extensive soil disturbance at the base, possibly Badgers as well as livestock. Healthy otherwise.
33.	Common Lime	21	850	Good proportions, 14 metre spread.
34.	Sycamore	12	660	Dead. Top broken off.
35.	Sycamore	17	810	Adjacent to the woodland, with a one sided crown. OK.
36.	Common Lime	10	640	Rather stunted, for no obvious reason. Possibly damaged or pruned in the past.
37.	Norway Maple	16	930	Another dark foliaged tree, probably Schwedlerei. Branch structure is interestingly convoluted.
38.	Horse Chestnut	14	830	Soil at its base compacted by livestock. 15 metre crown spread means it has a slightly squat profile.
39.	Common Lime	27	820	Good, crown spreads 12 metres. Some minor dead wood.
40.	Norway Maple	13	690	50% dead and unlikely to recover. Another Schwedlerei.
41.	Sycamore	14	640	Between the drive and the pond. Some minor die-back.
42.	Sycamore	16	660	Between the drive and the pond. Some minor die-back.
43.	Sycamore	19	1010	Also between the drive and the pond but a better specimen with a 16 metre spread.

Photographs and discussion.



Photograph 1.

Photograph 1 shows the trunk of tree 1, just outside the park. The railings are the boundary. I've included this because it is sprouting so many fungal fruiting bodies that I could not ignore it.

The fungus is either *Ganaderma austral* or *G. applanatum*. The common names of these two are Southern Bracket or Artist's Fungus, but as it's difficult to distinguish between them, it's probably as well to simply call them *Ganaderma*.

I also found another fungus; *Kretzschmaria deusta*. These are both fungi that are likely to be causing decay and consideration needs to be given to removing the tree or managing its decline.

Photograph 2 is a view of the tree with its companion to the right. This situation needs to be monitored even though there is no obvious indication of dysfunction in the foliage.



Photograph 2.

Some areas of the trunk around the fungal fruiting bodies appeared to be less solid than others. This requires further investigation.



Photograph 3.



Photograph 4.

Photographs 2 & 3 show the dead Hawthorn tree 2. Hawthorns are not really parkland trees and thus I wonder whether the tree originally planted in the guard died and the Hawthorn set itself.

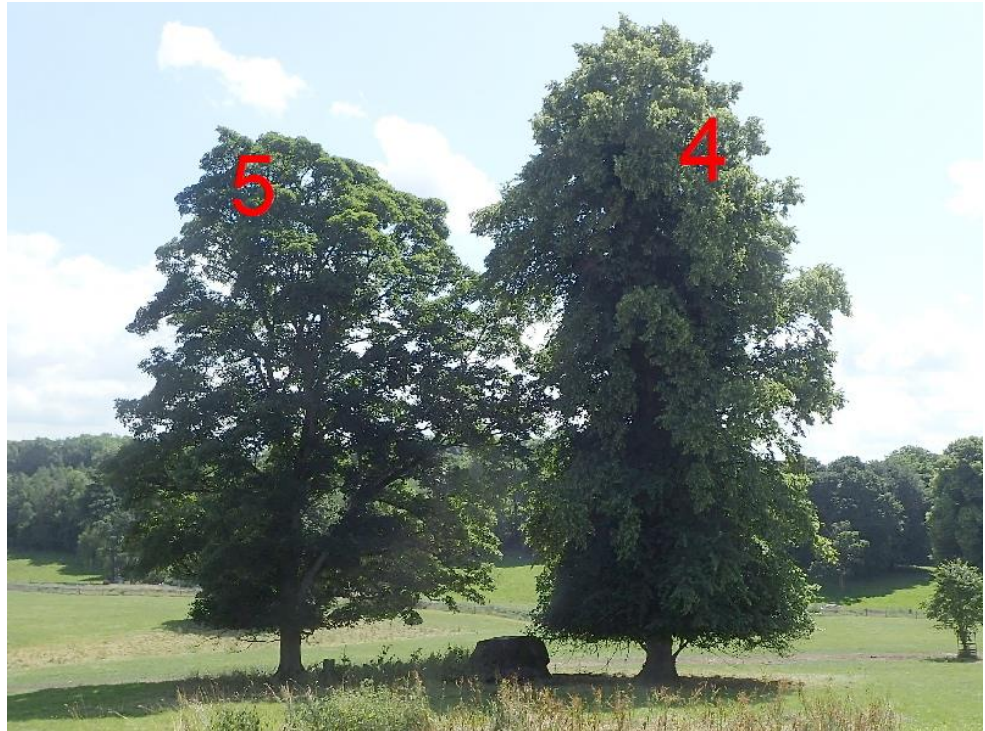


Photograph 5.

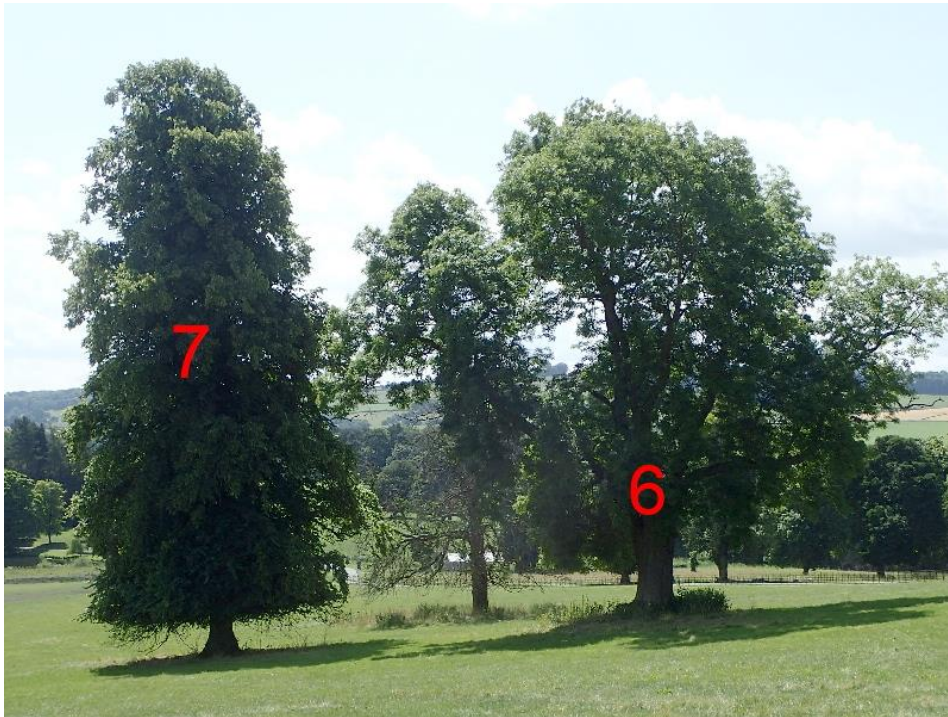
Photograph 5 shows the only other tree guard I noted in the park. This is clearly recently planted tree because one of the clients initials (and a birthday?) are profiled in the crossbars. Tree guards like this were used to protect trees planted in parkland, where animals were likely to browse the bark. This tree would benefit from some formative pruning.

Tree guards like this are often found overgrown by trees. That is the trunks expand and if the guard is not removed it becomes subsumed by the trunks expansion. Metal inside trees, entirely hidden from view is not uncommon and regularly causes damage to woodcutting machines. It's possible that some of the trees in the park still have tree guards hidden in the trunks.

Photograph 6 is a view of trees 4 & 5, taken looking roughly south east.



Photograph 6.



Photograph 7.

Photograph 7 is a view of trees 6 & 7, taken looking roughly south west. A branch from Ash tree 6 obscures the view of tree 8, whose trunk can be seen between the two trees.

I described Ash tree 6 as an excellent habitat tree, this is because it has suffered damage that has left it with nooks and crannies that might be exploited as roosts or nest holes, by bats or birds, or even small mammals such as dormice. Thus; despite this tree being really in fairly parlous condition, it's probably one of the most interesting in the park.



Photograph 8.

Photograph 8 shows a crack in one of the branches at the eastern side of tree 6. If this tree was at the side of a road then some action would need to be taken to remove the risk of that branch collapsing onto a passer-by, but as it's not close to any frequently used space it can be left alone.

Although some ecologically minded individuals would prefer to see trees like this left to their own devices, to collapse and eventually rot away into the soil, others would take action to preserve the various niche habitats. In this case as there is no shortage habitat in the area, unless there are extremely valuable animals grazing nearby, leaving it to its own devices is probably most sensible.

Photograph 9 is a better view of tree 8, more obviously dead in this picture than photo 7. This is another tree that will soon start to collapse. As long as there is nothing of great value to damage, this is tolerable. Standing dead wood is a valuable resource from a habitat point-of-view.



Photograph 9.



Photograph 10.

Photograph 10 is a view of trees 13-16 taken looking north west.

Photograph 11 is a view of the base of tree 16. It seems that livestock sheltering under the tree has led to the soil being eroded from around the roots. I did not particularly notice any bark being browsed or any specific damage to the roots. The soil is compacted by livestock, but not too badly.



Photograph 11.

Livestock damage to trees is fairly common when trees grow in fields that are grazed. Some Ecologists claim that deficiencies in livestock's diets lead them to seek trace elements that are found in bark. In this park I did not particularly notice any bark damage although lower branches on some trees are quite obviously browsed. In some deer parks trees appear almost to have been trimmed (in the manner of a hedge) to maintain the foliage at a level parallel to the ground (for example Chatsworth Park) but the "browse-line" seems much less rigid around this park.

Plenty of animals; deer, hares, rabbits for example, will browse newly emerged foliage, which is a problem when new trees are being planted but less of a problem once trees are established. Soil compaction around trees is another problem that might be caused by livestock, although it did not seem too great a problem here.



Photograph 12 is a view of trees 17 & 18. Tree 18's rather strange crown shape is a result of a large branch having collapsed, although it is actually still growing but resting on a lower branch.

Photograph 12.



Photograph 13.



Photograph 14.

Photograph 13 shows tree 21, which is well on the way to dying, while tree 22 in photo 14 appears in much better health. What appears to be a second tree trunk in photo 14 is actually a stump that's been dug up from elsewhere and left there. I'm not sure where this was from but there are several other trees with root-balls dumped alongside. I don't think

these are doing any harm, I presume they were dug up as part of the recent drain-repair works.

Photograph 15 shows tree 25 with a dumped-root, ground compacted by livestock, and lower branches browsed.



Photograph 15.



Photograph 16.

Photograph 16 is a view of the base of tree 26, with a very deep cavity. Again, this tree is not particularly near anything so there is no need to worry about it posing a hazard to passers –by.

Photograph 18 is a view of tree 27 taken looking roughly west. It is fairly unusual to see a Common Lime that hasn't been regularly pruned or to have its trunk festooned with epicormic growths, thus this tree at first glance appears to have a rather narrow crown in relation to its height.

Epicormic growths on Lime trees, often called "feathers," are one of the reasons regularly cited for not planting the species. Livestock browsing the leaves appears to keep them under control and improve their appearance.



Photograph 17.



Photograph 18.

Photograph 18 is a view of tree 28, the Small-leaved Lime.

I understand the park was designed and laid out in the late 1890s, so assume that a majority of the trees date from that time or soon after, but it's possible that this tree dates from later than that, perhaps planted while the estate was in Sheffield Council's ownership. The Forestry Commission's Information note on calculating the age of large and veteran trees suggests the tree is approximately 70 years old. (Tree 27 using the same FC note gives an age of 91 years, which seems reasonable.)

Photograph 19 is a view of tree 32, another pleasing specimen. There was quite a lot of soil disturbance at the base of this tree which revealed the tree to be hollow.



Photograph 19.



Photograph 20.

Photograph 20 shows the hole at the base of tree 32. It has a fungal fruiting body growing in there, which suggests some ongoing decay.

I don't know if whatever creature disturbed the soil around the tree excavated this hole. In the past, before the arboricultural fraternity became aware of the ecological value of the organisms that lived on trees, and indeed the whole circle of life that surrounds trees, steps might have been taken to prevent wildlife inhabiting the ground in which trees grow. Fortunately we now have a better view of ecology and would not accuse wildlife of causing damage.

Again, as tree 32 is not close to any road or area with public access, I am not concerned by it potentially falling. Also as the tree appears very healthy there is no real reason to assume that the fungi is affecting the tree greatly.



Photograph 21.

Photograph 21 looking north shows trees 33-36. The woodland in the background is on the embankment that adjoins the Monsal Trail (a repurposed railway line).



Photograph 22.



Photograph 23.

Photograph 22 shows Norway Maple 37 and photo 23 shows it on a rainy day in May this year. This cultivar's (Schwedlerei) leaves emerge a purple colour but then turn green (with a brown tint) later. There are numerous varieties of Norway Maple with purple leaves that stay purple through the summer until giving a colourful autumn display.

The purple leaved cultivars of Norway Maple (or other trees) are not always admired; some people regard them as a black-hole in the landscape. At least they usually show very good autumn colour. This is a reasonable specimen, even if the leaf colour could be looked upon as dull for most of the year. (In going through my photographs to include here, I noted that tree 37 and tree 26 have a very similar appearance; both have a single, very large lowest branch.)

Photograph 24 shows Horse Chestnut 38 with its rather broad crown profile in relation to its height.



Photograph 24.



Photograph 25.

Photograph 25 shows tree 40. Although there has obviously been some excavations around this tree, it was declining long before these took place. I was told there has been a drainage problem here that left the tree waterlogged.

Photograph 26 is a view looking south east towards the entrance of the park from the A6020. The tree to the right of the drive is a Beech that I was not asked to include. It's in reasonable condition. behind the Beech and opposite tree 43 is a Yellow Buckeye, (*Aesculus flava*) a near relative of Horse Chestnut. It would be good to see some more of this species planted in the park.



Photograph 26.

This concludes my tour of the parkland trees.

Further discussion.

One of the problems faced by the arboricultural fraternity in the UK is the widespread assumption that trees and woodlands will look after themselves. This is not really true and while individual trees might do perfectly well when they're left alone, leaving them alone might mean taking some steps to ensure that nothing interferes with their growth. In a managed parkland environment this may mean taking steps to protect them from pests such as the Grey Squirrel, or Deer, as well as ensuring grazing livestock does not cause damage. Most pertinently removing competing trees is probably necessary if the intention is to produce a good, well-formed specimen.

In a parkland environment, where the objective is to maintain the park pretty much as a medieval deer park, the most important thing is probably to ensure that there are always a range of tree species and a range of ages. We do not want a situation where all the trees reach a state of decline at the same time. There's nothing wrong with having a declining tree in the midst of a managed landscape, but ideally a situation where all the trees decline at the same time needs to be avoided.

The only criticism I can reasonably make here is to question the whereabouts of the young trees; apart from tree 9 there are no young trees. I accept that these things are hard to plan but in an ideal world we would plan to replace all the trees over (say) a century. Rodney Helliwell, the well-known Arboriculturist suggested that a sensible approach to the management of any tree population would be to replace 10% every 10 years. This would be a perfectly reasonable way to approach the management of the parkland trees at Thornbridge Hall and ought to ensure that the landscape is never denuded. (Any tree planting should of course pay due respect to any design objectives of the original layout, if there were any.)

Current thinking on ensuring that the UK's tree stock is resilient to climate change is very much that we need to improve the diversity of the tree stock. To that end I'd suggest that the park would benefit from planting the following: Hornbeam, Tulip tree, Chestnut-leaved Oak, Black Walnut and Rauli. This is not an exhaustive list and could be seen as reflecting my own preferences, but none of these are likely to prove to be invasive pests and would add interest to the landscape. Invasive trees might not sound like much of a problem but some of the things we've introduced to the UK over the last couple of centuries are not as benign as might be imagined: Holm Oak is already a pest on the south coast and Western Hemlock (a popular forestry tree) is proving to be an invasive nuisance.

Whatever planting takes place the main problem will be protecting the new trees from livestock or vermin. Iron tree guards, like tree 9's, would be good, but simple wooden post and rail fences might be more economical.

Conclusions.

1. The only tree I consider to be a potential threat to anything is tree 1. This should be inspected more thoroughly, possibly with a drill or increment borer, to examine the extent of the fungi's influence.

2. I did not notice any particular planting-plan with the park's trees.
3. Most of the trees inspected are in reasonable condition with none that pose a significant threat to anything of obviously great value.
4. The biodiversity value of some of the trees needs to be appraised, with a view to either expending resources on managing their decline, or removing them to reduce the risk of them falling and injuring livestock. (Spending money preserving tree 6 seems reasonable, attempting to manage the decline of tree 8 would be a waste.)
5. The main concern here should be the planting of new trees.
6. Recent events in the park; constructing the drive and the car park, have not greatly altered any of the trees' surroundings. That is, none of the trees are likely to decline rapidly because of the construction work.

W L Anderson. Dip.Arb(RFS). M Arbor A.
Anderson Tree Care Limited. July 2021.

