

Application for Works to Trees at Stoke House 2023

Proposed works at: Stoke House, The Street, Stoke-by-Clare, Sudbury Suffolk, CO10 8HP

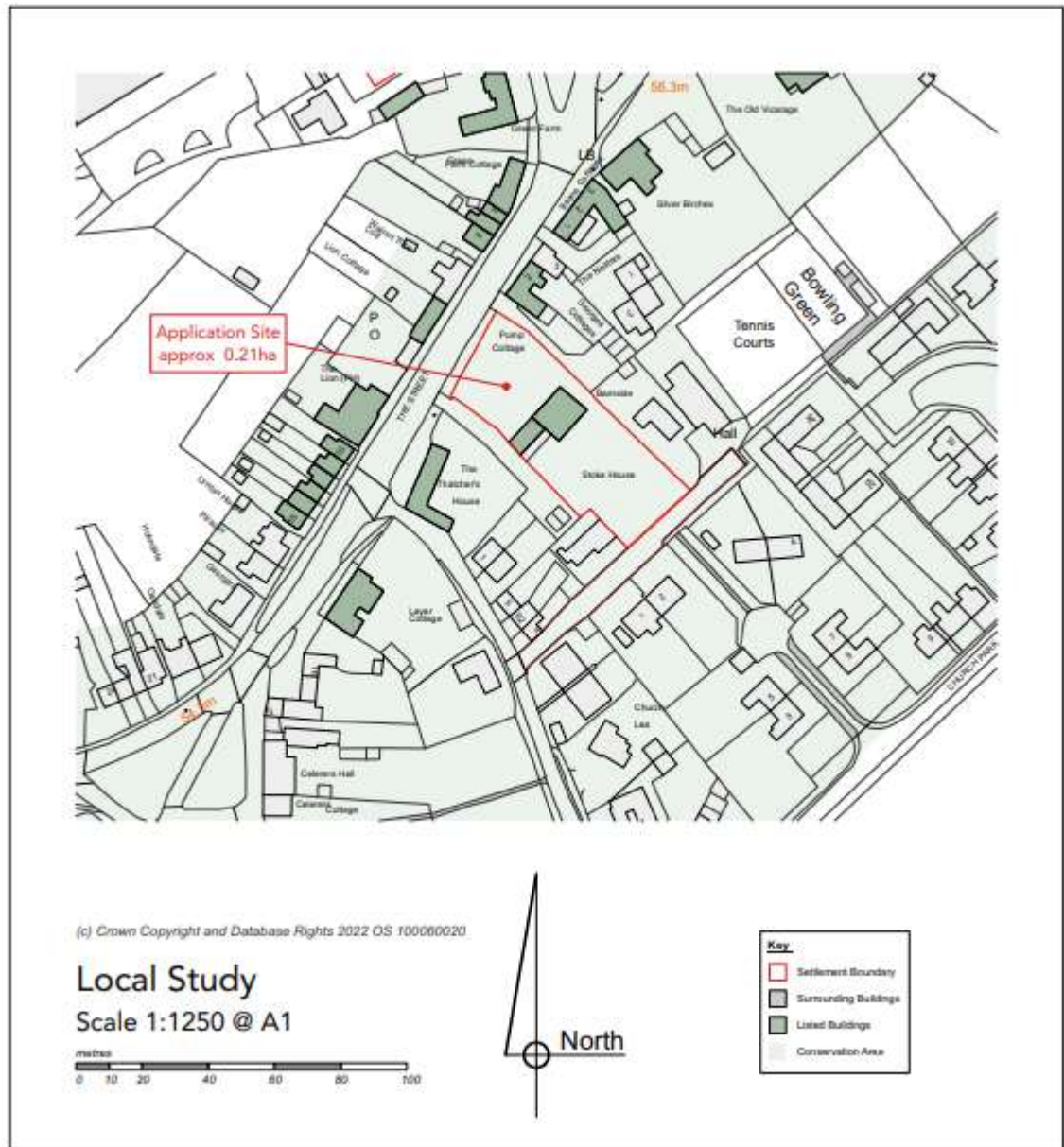
Date: 6th April 2023

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1. INTRODUCTION

1.1. Background

1.1.1. This report has been made using information from a survey carried out by Arborterra Ltd relating to proposed development at Stoke House, The Street, Stoke-by-Clare, CO10 8HP.



1.1.2.

1.1.3. The survey was done last year and revealed that important work is needed to be done to the site's trees relating to the presence of *Kretzchmaria deusta* and Honey fungus (*Armillaria*).

1.1.4. The survey's, arboricultural notes and reporting were carried out by Mr Oisín Kelly, Arboricultural Consultant, MArborA, MAE.

1.2. The Site

1.2.1. The site is an existing residential property in Stoke-by-Clare, on the south-east side of The Street. The site is within Stoke by Clare Conservation Area. Tree Preservation Orders 336/1973 applies to three sycamore trees adjacent the boundary with The Street.

1.3. **Proposed Works**

1.3.1. The proposal is to remove dead trees T7 and G18. Also remove if require or dramatically reduce T12 and T14 to avoid the associated risks and damage that may occur with sudden collapse. T12 and T14 are both infected with Keutschmaria Deusta (Brittle Cinder Fungus) which cause sudden collapse and thus poses a risk to neighbouring buildings, vehicles and potentially people.

1.3.2. Reduce the Canopy of the larger trees T1, T2 and T3 of TPO 336/1973 as the all contain Honey Fungus to extend their longevity

2. TREE SURVEY

2.1. **Method**

2.1.1. The tree survey which this information was based on was carried out on 06/01/2022

2.1.2. Trees were plotted to a topographical survey to ensure their accurate positioning.

2.1.3. All observations were made from ground level. Unless otherwise indicated tree stem diameters were measured. Where visibility allowed, tree heights were measured with a laser rangefinder. Tree crown spreads were paced out to the four cardinal points.

2.1.4. The trees were categorized for their quality / value in accordance with "Trees in relation to design, demolition and construction – Recommendations" (BS5837:2012)¹. The categorisation is intended to assist in determining which trees should be removed or retained in the event of development. The categories are summarised as follows:

- Category A: trees of high quality
- Category B: trees of moderate
- Category C: trees of low quality
- Category U: trees not worthy of retention because of their condition

2.2. Results

2.2.1. The Tree Schedule at **APPENDIX 2** contains tabulated data on the trees including details of their type, size, condition, RPA size and ‘quality category’.

2.2.2. The Tree Survey Plan at **APPENDIX 3** shows the location of the trees in relation to the existing site layout. The trees are coloured to indicate their ‘quality categories’ as described above. The RPAs are also shown.

2.2.3. Trees T1, T2 and T3 of TPO 336/1973, are all sycamores and are respectively T5, T4 and T3 of the tree survey presented herein. The TPO’d trees are annotated accordingly on the Tree Survey Plan at **APPENDIX 3**.

2.2.4. The numbers of trees surveyed by category are detailed in the table below. Shrubs included in the Tree Schedule at APPENDIX 2 are not included in Table 1.

Table 1. Count of trees surveyed, by Quality Category

Category	Trees	Groups	Tree
<i>A</i>	<i>4</i>	<i>0</i>	
<i>B</i>	<i>0</i>	<i>0</i>	
<i>C</i>	<i>4</i>	<i>0</i>	
<i>U</i>	<i>8</i>	<i>1</i>	<i>T3, T4, T5, T7 T12*, T14*</i>
TOTALS	16	1	

2.2.5. Sycamore T5 (T1 of the TPO) has been assessed as Category U. This is because the tree contained dead wood to 150mm diameter over the highway footpath. On closer inspection, the mycelium of honey fungus was found beneath dead bark of a buttress root on the eastern side of the stem. The applicant / homeowner also reports honey coloured mushrooms have been present around the tree base earlier in the year. (PHOTOS)

2.2.6. Sycamores T4 (T2 of the TPO) and T3 (T3 of the TPO) also showed signs of decline: impoverishment of the crown and die-back in crown of T4.

2.2.6.1. Sycamores T12 and T14 were found to have the decay fungus *Kretzschmaria deusta* * (“burnt crust fungus” or “brittle cinder”) present.

2.2.6.2. Holly T7 and a small elm in G18 are dead

2.3. **Photographs from the tree survey**

Photo 1. Photo of holly T6 and holly T7 corrupted and lost. T7 is dead.



Photo 2. Sycamore T3 Photo ... View into crown of Sycamore T4 showing die back at top of crown



Photo 3 & 4. Sycamore T5 Winter and Summer showing die back at top of crown



Photo 5. Sycamore T5. Dead wood over footpath. Crown impoverished



Photo 6. Base of T5 showing large cavities on south and west side of stem. Honey fungus found nearby. Early signs of colonisation found on buttress far side in photo. Black bootlace rhizomorphs present below the soil



Photo 8. Indian bean tree T8.



Photo 9 & 10. Sycamore T12. *Kretzschmaria deusta* found at base.



Photo 11. Norway maple T13.



Photo 12. Sycamores T14, T15 and T17 all labelled. *Kretzschmaria deusta* found at base of T14. T14 and T15 has impoverished crown. Request for annual trimming of Fir T16 to encourage growth of other trees around by providing more light.



Photograph 13. Fungus found in Law by T5 and T14 & 15



3. IMPACT ASSESSMENT

3.1. Trees recommended for removal and proposed planting

3.1.1. A dead Holly tree T7, and a small dead elm in G18 grouping are proposed for removal.

3.1.2. Two sycamore trees T12 & T14 both suffering from *Kretzschmaria deusta* have been recommended for removal but perhaps can be made safe by significant limb reduction.

3.1.3. Table 2 below lists these trees by their quality category (all of these trees are classified U).

Table 2. Quality of trees proposed for works

Quality category	Trees to be removed	Count
A	0	0
B	0	0
C.	0	0
U	T7 Holly (dead), View of T7 from The Street are largely obscured due to screening by the adjacent holly T6. The proposed removal of this trees will have negligible impact on the setting of the site or the character of the Conservation Area. T12 Sycamore (with K. Deusta), removal required to due to the risks of collapse. T14 Sycamore (with K. Deusta), removal required to due to the risks of collapse. G18 Elm (dead), the Elm is not visible removal of this trees will have negligible impact on the setting of the site or the character of the Conservation Area	4

3.1.4 *Kretzschmaria deusta* background information from the Centre for Agriculture, Food and the Environment University of Massachusetts Amherst.

Source: [Landscape: Root and Butt Rot caused by *Kretzschmaria deusta* | Center for Agriculture, Food, and the Environment at UMass Amherst](#) accessed 11/05/2023

*Root and Butt Rot caused by *Kretzschmaria deusta**



*The fungal pathogen *Kretzschmaria deusta* is sometimes known as the burnt crust fungus or brittle cinder fungus.*

Symptoms & Disease Cycle

*Kretzschmaria is a destructive root and trunk rot pathogen of deciduous hardwoods, decaying both lignin and cellulose. However, unlike many white rot fungi, cellulose is preferentially targeted during the decay process. As cellulose is decayed, the infected wood tissue rapidly loses strength. But due to the pattern of decay this fungus exhibits, the wood can still appear relatively sound. Infections can initiate in the roots and spread to the base, where the fungus causes a butt rot of the lower trunk. Additionally, *Kretzschmaria* can colonize basal wounds, which are common on landscape*

beech trees. Decaying wood appears bleached with distinct black zone lines intermixed in the decaying wood. Like most wood-rotting fungi, symptoms are often cryptic to non-existent. Undersized foliage, canopy dieback, basal cankers, sap flow and sloughing bark can develop as infections intensify. Bleeding cankers can also develop and may be confused with those caused by Phytophthora.

Signs of the pathogen include gray-colored fruiting bodies with bright white margins that are produced from late spring to early summer. These structures appear mostly flattened from a distance and are very different from the fruiting bodies of most wood-rotting pathogens. Upon closer inspection, the fruiting bodies appear as lumpy masses growing from infected bark. Over time, the fruiting bodies become dark black in color and may be difficult to identify on dead, sloughing bark soaked with sap. The fruiting bodies are almost always produced very close to the soil line but may be higher on the trunk when advanced infections exist.

Management

Kretzschmaria produces airborne spores from fruiting bodies that can establish on surrounding beech or maple with basal cankers. Spread also likely occurs through root grafts between susceptible trees. However, overland spread is believed to be limited as multiple infected trees in a "disease pocket" are uncommon in landscape and forest settings. Nothing can be done to eradicate the pathogen once present since the fungus lives in roots and the heartwood. Boosting vigor and minimizing additional stresses are really the only management strategies for advanced wood rot infections. A basal bark application of phosphites may help to slow the progression of the disease into the sapwood and cambium but ultimately the tree will die as a result of the disease. Upon death, try to remove as much of the root material as possible. If the stump is left, the fungus will persist on site and may infect a newly planted tree nearby. Avoid replanting with beech or maple when the tree is removed.

Author: Nicholas J. Brazee <https://ag.umass.edu/landscape/fact-sheets/root-butt-rot-caused-by-kretzschmaria-deusta#Symptoms%20&%20Disease%20Cycle>

Last Updated: November 2019

3.2. Summary of Impact assessment

- 3.2.1. Two trees are to be removed because they are dead. The proposed removal of these trees will have negligible impact on the setting of the site or the character of the Conservation Area.
 - 3.2.2. Two large Sycamores are recommended for removed due to the presence of *Kretzschmaria Deusta*. They are too dangerous to leave so perhaps maybe made safe by significant limb reduction. These will not impact the visual character of the area as observed from the village main road, but leaving will mean that the *Kretzschmaria Deusta* will persist .
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4. SCHEME OF ACTION & REPLANTING

- 4.1. Proposed replanting will be one of the more honey fungus resistant tree with Reference to the 'RHS Honey Fungus list'. Preferred trees include the Ginkgo Bilo, Pear, Fig and Catalpa.
- 4.2. Replanting will be done but needs to be managed carefully to avoid subsequent trees becoming infected with *Kretzschmaria Deusta* or Honey Fungus. Removing all the roots from these trees will not be possible due to their locations next to tarmacked roads. So when they are removed there should be an intermittent time allowance before new trees from the RHS Honey Fungus Host list (Appendix 4) are planted. This will be to hopefully reduce the high chance of the new trees being infected by these fungi.

Table 3. Proposed Action

Tree to be reduced or removed	Comment of tree	Proposed action	Date of Planting
T5 (Sycamore)	Impoverished, sparse crown. Large area of dead bark and decay on N side facing fence from 0 to 0.5m. Access limited for inspection. Fungi, cavity, dead bark, decay and crown decline indicate significant vascular dysfunction. Tree likely to be increasingly liable to branch failure. When the tree is removed it will not be possible to remove all the roots due to the North west side of the root base being under tarmac. .	Monitor crown and reduce limbs to support longevity	
T7 (Holly)	Holly	Remove plant a pear	Sept 2024 or 2025
T12 (Sycamore)	Impoverished, sparse crown. Patch of Kretzschmaria deusta found on NW side on buttress. Large area of dead bark and decay on N side facing fence from 0 to 0.5m. Probe revealed cavity extending below ground. Access limited for inspection. Fungi, cavity, dead bark, decay and crown decline indicate significant vascular dysfunction. Tree likely to be increasingly liable to branch failure or collapse from base. When the tree is eventually removed it will not be possible to remove all the roots due to the North East side of the root base being under tarmac.	Ideally we would like to avoid removal of this tree but the tree will need to have considerable crown reduction to limit damage of tree collapse due to the root and butt rot.	Sept 2024 or 2025
T14 (Sycamore)	K. deusta on base on NW and W sides. Large decayed area to SE, probe inserted 100mm easily. Small bleeding patches characteristic of Honey fungus on NW side. Impoverished crown. When the tree is eventually removed it will not be possible to remove all the roots due to the SouthEast side of the root base being under tarmac.	Again, ideally we would like to avoid removal of this tree but the tree will need to have considerable crown reduction to limit damage of tree collapses	Sept 2024 or 2025
T15 (Sycamore)	Impoverished and regressing and severely sparse crown. When the tree is eventually removed it will not be possible to remove all the roots due to the SouthEast side of the root base being under tarmac.	This tree looks the most unhealthy of all the trees there is not much crown left and should be considerably reduced.	Sept 2024 or 2025
G18 Elm, ash, birch, whitebeam	(Dead Elm)	Plant an elder	Sept 2024 or 2025

5. CONCLUSION

5.1.1. The site is an existing residential property in Stoke-by-Clare, on the south-east side of The Street. The site is within Stoke by Clare Conservation Area. Tree Preservation Orders 336/1973 applies to three sycamore trees adjacent the boundary with The Street.

5.1.2. A survey was carried out of the trees. The trees were categorised for their quality / value in accordance with "Trees in relation to design 'BS5837:2012, as summarised in the table 2

5.1.3. Several trees on the site were found to be in poor condition and warrant serious management for safety purposes.

- 5.1.4. Two trees are to be removed because they are dead. The proposed removal of these trees will have negligible impact on the setting of the site or the character of the Conservation Area.
- 5.1.5. All trees suffering from Honey Fungus will need management in term of reduction of canopy each year to help them cope with the honey fungus- though they clearly are suffering and will need removal within the next 10 years.
- 5.1.6. Two trees will need to be seriously reduced or removed due to their advance state of Kretzschmaria Deusta and the associated risks of sudden collapse.
- 5.1.7. Replanting will be done but needs to be managed to avoid subsequent trees becoming infected with Kretzschmaria Deusta or Honey Fungus. Removing all the roots from these trees will not be possible due to their locations next to areas of tarmac. So when they are removed there should be an intermittent time allowance before new trees, chosen from the RHS Honey Fungus Host list (Appendix 4), are planted. This will be to hopefully reduce the high chance of the new trees being infected.

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LIST OF APPENDICES

- APPENDIX 1 Tree Schedule
 - APPENDIX 2 Tree Survey Plan (ref: 903-101)
 - APPENDIX 3 Tree Constraints Plan (ref: 903-201)
 - APPENDIX 4 RHS list of Honey Fungus vulnerable trees
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APPENDIX 1 Tree Schedule

APPENDIX 2 Tree Survey Pla

Tree No.	Species	Stem Diam @ 1.5m (mm)	Height (m)	Crown Spread				Age Range	Physiological Condition	First main branch	Crown Clearance	Comments	Recommendations	Remaining contribution (Yrs)	Amenity	RPA Radius	RPA Area
				N	S	E	W										
T1	Crab apple	90 x1	5.5	2	2	2.5	2	YO	G					40+	C1	1.1	3.7
T2	Rosebud cherry	30 x1	2.5	0.5	0.5	0.5	0.5	YO	G					40+	C1	0.4	0.4
T3	Sycamore (T3 of TPO 336/1973)	490 x1	13.5	3	5	3.5	5	MA	F	4.6S 100	4			20+	B1	5.9	109
T4	Sycamore (T2 of TPO 336/1973)	620 x1	14.5	5	2.5	5	4	MA	P		5	Impoverished crown. Die-back. Dead wood over drive entrance, highway and west of crown to 100mm.	Remove dead wood.	10+	C1	7.4	174
T5	Sycamore (T1 of TPO 336/1973)	860 x1	17	7	9	8	9	MA	P		8	Wounds at base on S and W sides indicate large column of decay, possibly extending to 4m. Impoverished crown. Deadwood to 150mm over footpath footpath. Homeowner reports honey coloured mushrooms found nearby. Dead bark on buttress eastern side removed to reveal young rhizomorphs of honey fungus.	Tree safety to be dealt with	<10	U	10.3	335
T6	Holly	270 x1	8.5	3	3	3	3	EM	F		2			10+	C1	3.2	33
T7	Holly	240 x1	8.5	3	3	3	3	EM	D			Dead	Fell due to condition.	0	U	2.9	26.1
T8	Indian bean tree	170 x1 150 x1	8	4	4	4	4	EM	G					40+	C1	2.7	23.3
T9	Norway maple	380 x1	11	3.5	3.5	3.5	3.5	EM	F			Past crown reduction.		20+	B1	4.6	65.3

Tree No.	Species	Stem Diam @ 1.5m (mm)	Height (m)	Crown Spread				Age Range	Physiological Condition	First main branch	Crown Clearance	Comments	Recommendations	Remaining contribution (Yrs)	Amenity	RPA Radius	RPA Area
				N	S	E	W										
T10	Norway maple	160 x1	8	2	2	2	2	SM	F			Bleeding bark lesions to 0.5m on stem. Suspected honey fungus, but no rhizomorphs or mycelium found beneath dead bark.	Monitor crown condition.	10+	C1	1.9	11.6
S11	Lilac	250 x1	4.5	2	2	3	2	FM	G					20+	X	3	28.3
T12	Sycamore	1050 x1	14	7	7	7	7	FM	P			Impoverished, sparse crown. Patch of Kretzschmaria deusta found on NW side on buttress. Large area of dead bark and decay on N side facing fence from 0 to 0.5m. Probe revealed cavity extending below ground. Access limited for inspection. Fungi, cavity, dead bark, decay and crown decline indicate significant vascular dysfunction. Tree likely to be increasingly liable to branch failure or collapse from base.	Tree safety to be dealt with	<10	U	12.6	499
T13	Norway maple	310 x1	11	3	3	3	3	EM	G					40+	B1	3.7	43.5
T14	Sycamore	820 x1	18	7	3	7	7	FM	P			K deusta on base on NW and W sides. Large decayed area to SE. probe inserted 100mm easily. Small bleeding patches characteristic of Honey fungus on NW side. Impoverished crown.	Tree safety to be dealt with	<10	U	9.8	304

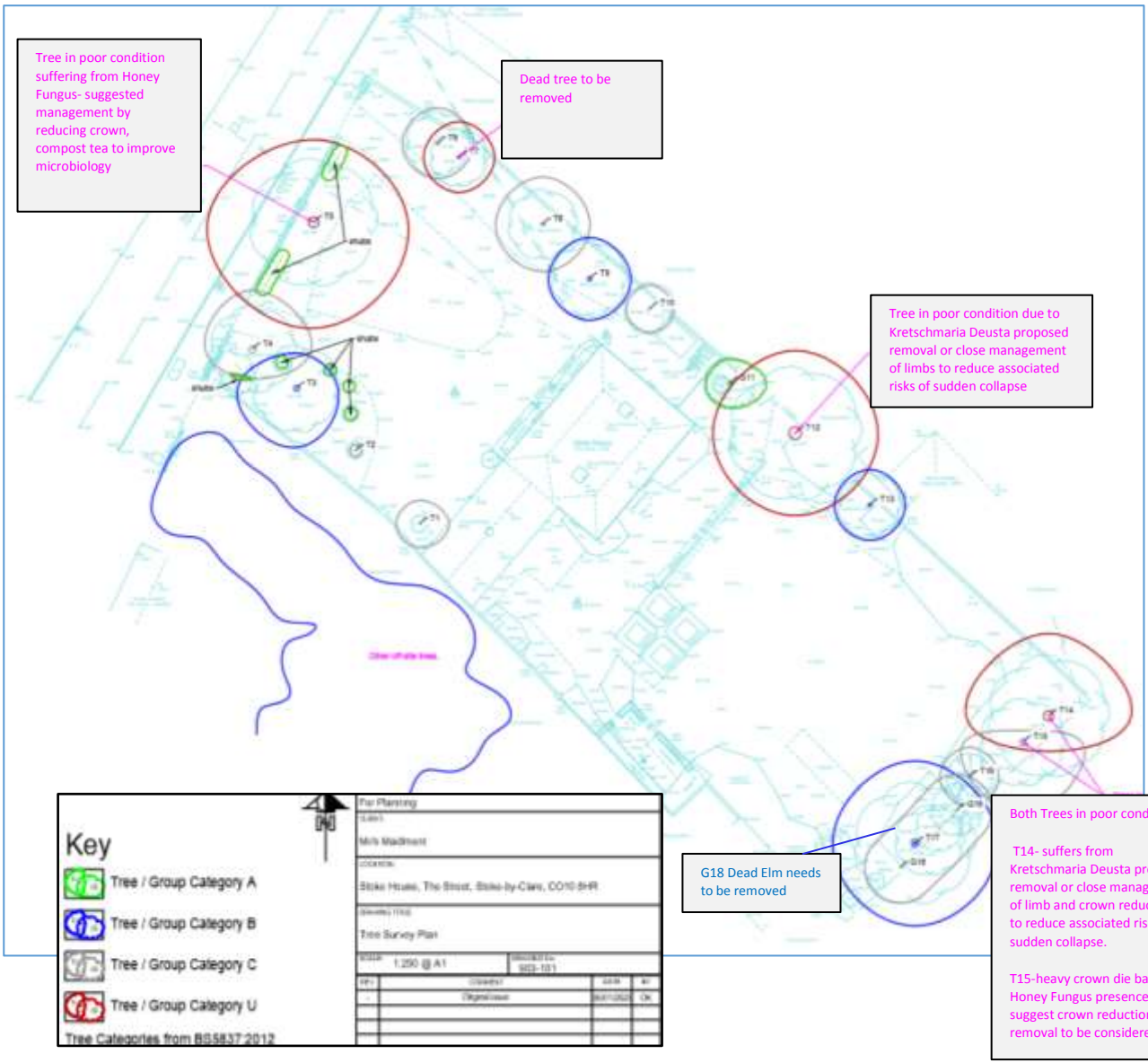
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T15	Sycamore	600 x1	15	1	6	5	5	MA	F			Impoverished and regressing crown.	Tree safety to be dealt with	10+	C1	7.2	163
T16	Leyland cypress	300 x1	8	2.5	2.5	2.5	2.5	EM	G					20+	C1	3.6	40.7
T17	Sycamore	350 x2 300 x1	15	7	7	7	7	EM	G					40+	B1	6.9	152
G18	Elm, ash, birch, whitbeam	250 x1	8	3				EM	G			Dead elm in group	Tree safety to be dealt with	40+	C2	3	28.3

• APPENDIX 3

Proposed Tree works Plan

Fig.1



APPENDIX 4

List of rarely affected trees from the RHS site: www.rhs.org.uk/myadvice (accessed 11/04/2023)

How to use this list as a planting guide:

Three separate tables are presented, for decisions on planting hedges, trees or shrubs. In each, there are three categories of plants:

Frequently affected: these plants are clearly susceptible to honey fungus and should be avoided, where possible, in situations where honey fungus is known to be present.

Sometimes affected: these plants are less often affected than those in the previous category, but it may be worth avoiding them where honey fungus is known to be present.

Rarely affected: These plants are likely to have some degree of resistance to honey fungus. On this basis, we recommend them in situations where honey fungus has been found.

If a woody plant you are considering is not listed below, it is because we have insufficient data on it to determine its degree of susceptibility to honey fungus. Some information on these is included below the main lists.

Ones we would chose from the lists include

- Rarely affected: Pear, ginko, fig , catalpa
- Sometimes affected:lime, holm oak

Trees:

Frequently affected plants (- top host)**

Abies (fir)	Crataegus (hawthorn)	Metasequoia**
Aesculus (horse chestnut)	Cupressus (cypress)	Parrotia
Alnus (alder)	Davidia (handkerchief tree)	Photinia
Amelanchier	Eucryphia	Pterocarya
Betula (birch)	Fraxinus (ash)	Quercus (oak)
Castanea (sweet chestnut)	Gleditsia (honey locust)	Salix** (willow)
Ceanothus	Juglans** (walnut)	Sequoia
Cedrus**	Koelreutania	Sorbus** (rowan)
Cercidiphyllum**	Laburnum**	Syringa** (lic)
Cercis (judas tree)	Ligustrum** (privet)	Taxus**
Chamaecyparis (false cypress)	Liquidambar**	x Cuprocypris** (leyland cypress)
Cotoneaster**	Liriodendron (tulip tree)	

Sometimes affected

Acer (maple, sycamore)	Hobelia	Platanus (plane)
Araucaria (monkey puzzle)	Ilex (holly)	Populus (poplar)
Carpinus (hornbeam)	Juniperus (juniper)	Prunus (flowering cherry, stone fruit)
Comus (dogwood)	Magnolia	Robinia (false acacia)
Corylus (hazel)	Malus (apple)	Sambucus (elder)
Cydonia (quince)	Oenanthe	Tilia (lime)
Eucalyptus	Paulownia	Ulmus (elm)
Eurostymus	Picea (spruce)	
Fagus (beech)	Pinus (pine)	

Rarely affected

Acacia (mimosa)	Cryptomeria	Morus (mulberry)
Ailanthus (tree of heaven)	Diospyros	Olea (olive)
Albizia (silk tree)	Erythrina	Pyrus (pear)
Arbutus (strawberry tree)	Exochorda	Sophora
Caesalpinia	Ficus (fig)	Taxus (yew)
Catalpa (Indian bean tree)	Ginkgo	Zelkova
Clerodendrum	Lagerstroemia	
Cordyline	Laurus (bay laurel)	