



Providing Expertise on Your Trees ®

Tree Condition Report

Our Reference	AC.2023.226
Client	Mr Matthew Pearce of Marymount School
Site	Marymount School, George Road, Kingston, Surrey, KT2 7PF
Survey & Report by	Mr I S Thompson (known as Tom) BSc. (Hons.) Arb. MSc. (eFor) MArborA
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1 Introduction

1.1 Instructions

1.1.1 Arbor Cultural Ltd was given written instruction from Mr Matthew Pearce of Marymount School to undertake a survey and report on trees located at Marymount School, George Road, Kingston, Surrey, KT2 7PF. Arrangements were made for Arbor Cultural Ltd to survey the site on the 24th March and 6th April 2023.

1.1.2 The trees were inspected, and this report covers.

- The physiological condition of the trees
- The structural condition of the trees
- The likelihood of failure of the trees
- The risk that the potential failure would pose to people or property
- The most appropriate future management of the trees
- The timeline for re-inspection and any proposed management

1.2 Summary of the Legal Situation

1.2.1 The Occupiers' Liability Act (OLA) 1957 and 1984 established that the site owner or occupier holds the liability for the safety of visitors and those on adjacent lands. Where incidents are both reasonably foreseeable and reasonably preventable, the owner or occupier may be held liable for losses (physical harm to life and/or property).

1.2.2 These circumstances include specific consideration for children; under s2 (3) (a) of the OLA 1957, 'an occupier must be prepared for children to be less careful than adults.

1.2.3 The case of Tomlinson v Congleton Borough Council ([2003] 1 A.C. 46; [2004] UKHL 47), the 'shallow pond case', expanded on this requirement by stressing the need to consider the inequivalence of danger relative also to people of reduced mobility.

1.2.4 A considerable body of case law has established that, in order to be in a position to foresee and indeed to prevent harm arising from a tree failure, it is necessary to subject the tree or trees in question to 'regular inspection', This inspection is to be undertaken by someone competent, both to identify any defects present, and to interpret their significance for public safety.

1.2.5 An effective system of managing trees should meet the requirements set out in the Management of Health and Safety at Work Regulations 1999 and the associated ACoP (guidance is contained in HSG 65 Successful Health and Safety Management and INDG 163 Five Steps to Risk Assessment).

1.3 Qualifications and Experience:

1.3.1 I have based this report on my site observations and investigations, and I have come to conclusions in the light of my qualifications gained, and experience obtained, whilst working in the field of arboriculture. I have qualifications and practical experience in arboriculture and forestry and list the details of this in Appendix I.

1.4 Limitations and Use of Copyright

1.4.1 All rights in this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means without our written permission. Its contents and format are for the exclusive use of the Marymount School and their associates. It may not be sold, lent out or divulged to any third party not directly involved in this situation without the written consent of Arbor Cultural Ltd.

- 1.4.2** This report contains all my advice and opinions, and any representation and/or statements that have, or may have been made which are not specifically and expressly included in this report, should not be relied upon and no responsibility is taken for the accuracy of such statements.
- 1.4.3** The Inspection was carried out on the basis of a ground level, Visual Tree Assessment (VTA) examination of external features of each individual tree. Binoculars were used to assess the aerial parts. The principal objective of the survey was to identify trees, or parts of trees, which appear to be in a hazardous condition, and to advise remedial action to ameliorate the risk they could represent to users of the property and adjacent areas. The report and recommendations relate to the condition of the trees and their surroundings at the time of inspection only. All measurements, proportions and assessments of age are approximate, except where stated.
- 1.4.4** Visual assessment, in accordance with accepted arboricultural practice, was based on: apparent vitality (leaf cover, extension growth), presence of deadwood and die back, fractured, and detached limbs, evidence of excessive basal movement and external indications of stem and basal decay likely to affect the structural condition of the tree. No decay detection equipment either invasive or non-invasive was employed.
- 1.4.5** The survey findings are of a preliminary nature with regard to the assessment of the risk of direct damage (by contact) from trees to built structures. No soil samples were taken, or trial pits were dug, therefore no risk assessment was carried out with regard to subsidence (indirect damage). No parts of the drainage or service systems were inspected on site as I am not qualified to do so.

1.4.6 If you, or your advisers, have at your disposal any information to suggest that the property is, or has been suffering any tree related structural defect, I would ask that you release the information to us. All relevant data is presented within this report together with any recommendations for further analysis, as appropriate.

1.4.7 Trees are living organisms whose health and condition can change rapidly. The conclusions and recommendations in this report are only valid for one year. Any changes to the site as it stands at present will invalidate this report, e.g., building of extensions, excavation works, importing of soils, extreme weather events etc.

1.4.8 **The Local Planning Authority has not yet been contacted to establish whether any Tree Preservation Order (TPO) covers any of the trees, or to determine if the site is situated within a Conservation Area (CA). It would be necessary to determine whether any of these planning controls are in operation before commencement of any works and submitting the required notifications or obtaining the required permissions.**

1.5 Disclaimer

1.5.1 I have no connection with any of the parties involved in this situation that could influence the opinions expressed in this report.

2 Health and Safety Assessment of Trees

2.1 This consists of an inspection of trees either individually or sometimes as a group. This is undertaken using VTA inspection techniques pioneered by Professor Claus Mattheck. The survey will record tree locations, identification numbers, height, crown spread, crown height, stem diameter, life stage and condition of any trees that are identified for further action. This is known as a “negative -based” tree survey.

2.2 Tree locations can either be georeferenced, or hand-plotted on a plan. Additionally, small, numbered disks can be attached to the trees with these numbers georeferenced or indicated on a plan.

2.3 The tree risk assessments will ascertain the condition of the trees and recommendations made for any tree work considered necessary along with a timescale for its completion. This will be accompanied by a recommended re-inspection cycle. This will address the clients’ “Duty of Care” liabilities.

2.4 There are Three Elements to the Risk Assessment of Trees.

- Likelihood of failure
- Load or size of part most likely to fail
- Target in terms of number and frequency of people or value of property within the falling zone

2.5 I have in the past used the ISA methodology and then THREATS (Tree Hazard Risk Evaluation and Treatment System), and more recently have completed the QTRA (Quantified Tree Risk Assessment) and TRAQ (Tree Risk Assessment Qualification).

- 2.6** All tree work recommendations will comply with the relevant British Standard BS3998 Tree Work - Recommendations (2010), unless otherwise specified in a report, with a clear justification for any deviation from the standard.
- 2.7** Additionally, further investigation may be recommended that does not form part of a basic tree survey. These investigations include:
- Decay detection testing
 - Climbing inspections
 - Drone inspections
 - Vitality testing, (Chlorophyll fluorescence)
 - Vegetation clearance
 - Soil / root excavation
 - Laboratory testing
- 2.8** Further tree survey details and methodology are recorded in Appendix II.

3 Findings

3.1 General Observations

3.1.1 The trees are all located within Marymount School, George Road, Kingston, Surrey, KT2 7PF. They are located in the southern western corner of the site and along the western boundary with one in the back lawn. This was the extent of the tree inspection on those two days.

3.1.2 There were a total of eleven individually surveyed trees, see Tree Survey Records in Appendix V.

3.1.3 The main cause for concern were the branches overhanging into the small back gardens of the adjacent properties. This was in terms of hazard but also nuisance issues and loss of amenity space.

3.2 Previous Works

3.2.1 As far as could be determined all of the previously recommended work had not been completed. The recommended work is being undertaken gradually and the school has moved to a well-managed tree stock.

3.3 Tree Survey Findings

- 3.3.1** T560 is a Deodar cedar that has a leaning trunk and mutual crown suppression with the surrounding trees, see Images 1 and 2 in Appendix III.
- 3.3.2** T562 is a holly tree with some basal growth. It is twin stemmed from around 2.5 m with lateral branches from around 6-7 m. It is thinning at top possibly from drought stress, see Images 3 and 4.
- 3.3.3** T708 has a severely leaning trunk, and mutual crown suppression with the surrounding trees. It has a crown bias over the adjacent lockers, see Image 5.
- 3.3.4** T718 is a sweet chestnut tree that has epicormic growth and mutual crown suppression, see Image 6. It has a crown bias over adjacent garden and some deadwood in its crown. It is recommended for the removal of deadwood greater than 50 mm in diameter within the next six months.
- 3.3.5** T719 is a large oak tree on the southern boundary of the site. It has had its root plate undermined by badgers, see Image 9 but is still remaining structurally sound in an Eiffel Tower tree structure. It has mutual crown suppression with the surrounding trees and has extensive ivy on trunk with a significant crown bias over adjacent garden. It has branches extending into the adjacent gardens see Images 7 and 8.
- 3.3.6** T720 is a sweet chestnut tree with basal and epicormic growth and mutual crown suppression. It has a crown bias over adjacent garden. There is a secondary stem emerging from basal growth on west side, see Image 10. It has some deadwood on the main trunk.

- 3.3.7** T723 is a Corsican pine with a swept stem and a leaning trunk. It has mutual crown suppression and a crown bias over the adjacent garden. There is minor deadwood in the crown.
- 3.3.8** T725 is a pedunculate oak tree with an asymmetrical base, growing out of the bank. There is badger activity in the root zone. It has a gnarly old trunk with burrs on it and it has epicormic growth on the trunk. It has mutual crown suppression and a crown bias over the adjacent garden. It also has a large limb extending over the adjacent garden. This has an existing upward growing branch, see Image 11. There is deadwood in the crown.
- 3.3.9** T726 is a pedunculate oak tree that is twin stemmed from 1 m. It has a tight union and included bark. It has a gnarly old trunk with burrs on and epicormic growth on the trunk. It has mutual crown suppression and a crown bias over the adjacent garden. There is deadwood in the crown.
- 3.3.10** Following the inspection in 2023 it appears that the twin stems have moved apart with a separating shear crack, see Images 12 and 13. Historically a large limb has snapped on the east side at around 6 m and left a large cavity with limited occlusion, see Image 14. It also has a more recent branch failure on the woodland side, possibly from last year's storms. It has been previously cut back on boundary side.
- 3.3.11** T748 is a sycamore tree with a trunk wound 0.5 to 1.5 m on northeast side. It has exposed heartwood with good occlusion, see Image 15. It has a woodpecker hole and necrotic bark on the main stem, see Image 16. It has mutual crown suppression.
- 3.3.12** T749 is a horse chestnut tree that has an asymmetrical crown, see Image 17. It has suffered from an infestation of leaf minor in previous years. It has a branch in conflict with adjacent school, see Image 18.

4 Tree Advisory Information

- 4.1** There were a number of trees that had excessive basal and epicormic growth. These were mostly lime trees but there were also other species affected. There is a benefit to the tree of having this extra photosynthetic material so, if possible, it should be retained, but if there is a need to inspect around the base of the tree a basal clearance will be recommended. The largest of these trees in the woodland area with the most basal growth are recommended for a basal clean and reinspection.
- 4.2** There were a number of trees that had excessive ivy growth around the base, main stem, and canopy. There is a wildlife benefit to ivy and the habitat that it creates so, if possible, it should be retained, but if there is sufficient cause for concern then the severance of the ivy and a re-inspection will be recommended. In some cases, simply an ivy severance is recommended, and the next scheduled inspection will identify any further defects.
- 4.3** Ivy can mask defects and can add wind sail to the canopy whereby increasing the load on the tree.
- 4.4** There are a number of issues affect horse chestnut trees the most significant is bleeding canker *Pseudomonas syringae pv aesculi*. This is the bacterial causal agent of horse chestnut bleeding canker. This results in black staining patches appearing on the bark with bark necrosis occurring and cracking occurring around the trunk.
- 4.5** If this extends all the way around drunk it can cut off the vascular supply of water and nutrients travelling up the tree and sugars travelling down. In extreme circumstances this can result in the death or severe decline of the tree requiring it to be removed.

- 4.6** This is not to say that as soon as symptoms arise tree should be removed. The tree should be monitored, and any major deadwood removed, and any crown reductions deemed necessary to be recommended. The tree should be monitored for signs of recovery or decline.
- 4.7** Tree recovery can be assisted with soil treatments including but not limited to de-compaction with either forks or air spades, mulching, irrigation, radial trenching, nutrient treatments, or application of soil ameliorates such as biochar chitin or compost. There is still much research being undertaken in this region.
- 4.8** Additionally, horse chestnuts are prone to horse chestnut leaf miner. The cause of this problem is a moth, *Cameraria ohridella* that is not native to this country but has arrived here from Macedonia with the first reported cases noted in London in 2002. It has been travelling slowly up and across the country since then.
- 4.9** The moth lays its eggs in the leaves of the horse chestnut tree, and it is the larval stage of this insect that causes the problems as it tunnels through the leaves feeding on the live tissue and leaving brown patches on the leaves. Where there is a large infestation, the leaves will be almost entirely brown by late June or July.
- 4.10** This is not a direct threat to the survival of the tree, as the tree is one of the 1st to emerge in spring and absorbs enough energy and stores enough carbohydrates in spring and early summer to sustain itself however the cumulative effect of this loss of photosynthetic material each year is considered to have a long-term detrimental effect on the trees and can be contributing to an ongoing spiral of decline.
- 4.11** Various chemical and biological treatments have been trialled, but today there is no one single recommendation for widespread treatment.

- 4.12** Finally, there is another disease called *Guignardia* blotch that affects horse chestnut trees. This is a fungal disease that also affects the leaves of the tree, so again there is a large aesthetic impact on the tree and a long-term reduction in the amount of energy collection and storage.
- 4.13** This differs from parents of leaf miner as there is a yellowing of the leaves before, they turn brown, which is not present in the pest predation. However, the management and treatment recommendations for trees affected by this are the same as for the leaf miner.
- 4.14** If possible, it is recommended to collect up the leaves from the trees and to burn or compost them on site. An alternative is to contain them locally instead of transporting them off-site and contributing to the spread of disease. Leaving them lying around on the site to continue and expand the problem the following year.
- 4.15** Oak Processionary Moths (OPM) are a problem to human and animal health as well as a defoliator of oak trees. The eggs of the OPM moth are laid on the trunks and main branches of oak trees. Once they emerge into caterpillars, they have long hairs along their bodies.
- 4.16** These cause irritation to skin when they come into contact with it and breathing if inhaled. A management strategy will be required to address this issue if sites are affected by this pest.
- 4.17** Management can involve specialist personnel to Hoover up the nest with specially designed equipment, pheromone traps, or spraying the caterpillars or nests with chemical treatments.

- 4.18** Mulching is the single best and simplest treatment that can be applied to any tree to improve its physiological health, as long as it has an area of soil around its base. The area should be cleared of vegetation of any height before application but can be laid on top of turf or short grass or herb layers.
- 4.19** It should be applied to a depth of around 50mm, to the full extent of the crown spread of the tree. There should be a small gap left around the trunk(s) of the tree to allow air to circulate. Any type of compost can be applied, ideally it would be wood chip. Fresh or composted can be applied.
- 4.20** This has several benefits for the trees. Firstly, it will remove the competition from other vegetation like grass, so there will be more water and nutrients available. It will also encourage earth worms, and other soil organism into the area to help recycle the material. This will result in the breaking up of the soil to improve water percolation and reduce soil compaction. There will also be a slow release of nitrogen and other minerals as the mulch decomposes.
- 4.21** Alternatively a sugar water solution can be applied again to the extent of the canopy. This can be made from sugar that can be bought at the supermarket, although it was found that molasses was more effective in some more recent experiments, as this has a slower release.
- 4.22** This is simply applying carbohydrates to the soil where the tree roots can immediately take it up. This short circuits the process where the trees produce it for themselves using the process of photosynthesis. It is also found to stimulate the mycorrhizae, which are soil-based fungi that have a symbiotic relationship with tree roots.

- 4.23** This is particularly useful for trees that are struggling physiologically and will assist in the production of more fibrous roots systems. This should be applied at the rate of 30-50g, per litre per m² of root zone or 10ml, per litre per m².
- 4.24** Another approach is to apply biochar and fertilizer. Biochar is a charcoal product that has been produced in such a way that the chemicals in normal charcoal have been removed. This results in a beneficial non-toxic soil treatment that dramatically increased the surface area within the soil, enabling the storage and release of significantly more nutrients.
- 4.25** This should be applied at the rate of 50% John Innes No 2 or 3, 45% West Morland tree compost, 5% biochar, 2-3% slow-release fertiliser, when applied to 300mm deep cores at 1m or 0.5m spacing. Alternatively, it can be applied to the surface, ideally with a layer of mulch applied over the top. Manufacturers will specify the dose rate of this sort of application.
- 4.26** Another possible treatment is decompaction of the soil. This can be achieved either using hand tools such as a fork, or by using an air spade, which is a lance on the end of a compressor with compressed air blown into the soil. This will result in an immediate decompaction of the soil with improved soil percolation, gaseous exchange, and nutrient cycling.
- 4.27** Finally the application of worms is an option. It is now possible to buy worms on the internet. These can be added to a soil environment where there is none or little present. This is to speed up the process of soil decompaction and nutrient recycling.
- 4.28** It is best to apply these treatments as far as possible and ideally at least to the edge of the crown spread of each affected tree.

5 Discussion and Opinion

- 5.1** Most of the trees were categorised in the medium, high, or very high target area. This was due to the potential use of the site but also all areas had the potential for unsupervised children to have access. Generally, the trees were in good condition and there was clear evidence of ongoing management.
- 5.2** Generally the trees were in good condition and there was clear evidence of ongoing management.
- 5.3** There are a few issues that are common for all tree owners in terms of general tree condition and tree management factors as well as various general and species-specific pest and disease issues. Some of these have management requirements and recommendations. These are covered in a more general sense in the previous section entitled Tree Advisory Information.
- 5.4** The most urgent work is always any work that presents an immediate risk of harm or damage. This could be an expanding crack, significant decay with limited residual sound wood or a hanging or hung up or damaged branch.
- 5.5** T560 the Deodar cedar is recommended to be crown lifted with the removal of three rings of branches, two branches on either side, to raise the crown and reduce future conflict. This is recommended to be completed within the next six months. This will have a very limited short-term impact and no long-term impact to the amenity value of the school.
- 5.6** T562 a holly tree is recommended to be reduced to just above the laterals at around 6-7 m to help create hedge effect. This is recommended to be completed within the next six months.

- 5.7** T708 has no work recommendations at this time.
- 5.8** T718 a sweet chestnut tree is recommended for the removal of deadwood greater than 50 mm in diameter within the next six months.
- 5.9** T719 an oak tree is recommended to have its overhanging branches cut back, as shown on the Images in Appendix III. This is to reduce the overhang, shading, nuisance issues and fear to adjacent nearby properties with small gardens. This will result in the removal of around 8 m of branch length to leave around 8 m. This will entail taking one branch back to the union with three emerging stems. Also taking the adjacent stem to the east back to a similar point, roughly where it runs against dead chestnut stem, see Images 7 and 8. This should be completed within the next six months.
- 5.10** For T720 a sweet chestnut tree it is recommended to coppice the main trunk and favour the basal growth stem to become the next main trunk. This is recommended to be undertaken within the next six months.
- 5.11** T723 a Corsican pine has no tree work recommendations for this tree at this time.
- 5.12** T725 a pedunculate oak tree is recommended to have its deadwood greater than 50 mm in diameter is removed within the next six months.
- 5.13** It is also recommended that the southern branch is reduced at around 4 m in height, reducing it to around 5 m in length, just beyond existing regrowth as shown on Image 11, removing around 8 m of the limb. This is recommended for action within the next six months.

- 5.14** It is also recommended to reduce the south-western branch at around 4 m in height to a similar point. And to reduce 5 or 6 higher and smaller branches by around 5 to 6 m. This is recommended for action within the next six months.
- 5.15** T726 a pedunculate oak tree is recommended to be reduce by around 8 m to leave around 10 m within the next three months. It is recommended that the client considers fitting a threaded bar through the two trunks east to west at around 1 m to hold the tree together, as a means of preventing the tree splitting as it regrows. This is recommended for action within the next six months.
- 5.16** T748 a sycamore tree with a trunk wound 0.5 to 1.5 m on northeast side is recommended to reduce the northern stem with a woodpecker hole and necrotic bark, tsking it down to around 1m above woodpecker hole. This is to reduce the risk and maintain the habitat whilst allowing natural degradation of the stub. This is recommended for action within the next six months.
- 5.17** T749 a horse chestnut tree is recommended to have the branch in conflict with adjacent school building cut back, taking it back to around 1 m from the trunk. This is to allow for natural degradation of the stub. This is recommended for completion within six months.
- 5.18** It is advised to check with the local authority to see if there are any tree protection measures in place on any of the trees. These can be put on trees at any time. Whilst it is required to notify the site owner and adjacent properties of any new protection measures, sometimes there are omissions. It is a criminal offence to remove or reduce any protected tree without written permission.
- 5.19** It is recommended that all the trees are re-inspected within 18 months.

6 New Planting

- 6.1** It is strongly recommended that there should be some replacement planting implemented to mitigate the loss of some trees and the relatively even aged tree population, with very few young trees coming through. Also, there is a poor species mix, making the site potentially prone to species specific diseases, resulting in a low resilience.
- 6.2** This is recommended to be undertaken in the next planting season, during November to March. All replacement planting will be fully compliant with BS8545 Trees; from the nursery to independence in the landscape, clauses 6-11.
- 6.3** All the specimen trees are recommended to be standards with a girth of 8-10cm and of a minimum height 1-1.5m at planting. They will have been formatively pruned to create a good canopy shape, so that only minimal formative pruning will be required once it has been planted.
- 6.4** They will have good structural branching, a clear stem to 0.5m, a good stem taper, and a visible root flare with the planting mark clearly visible. All trees shall comply with BS8545 Trees: from nursery to independence in the landscape; Recommendations, Clauses 6-11. It is recommended to use container grown stock.
- 6.5** They shall be planted to the planting mark and an irrigation tube will be installed around their rooting systems to allow watering during their establishment and then on-going in any periods of drought (more than 1 week without significant rainfall).
- 6.6** Organic mulch shall be placed around the base of the tree to a radius of 0.5m but ensuring that there is a small gap immediately around the base of the tree of around 100mm.

- 6.7** They shall be secured with a twin stake system with hessian used to secure the trees between the two stakes. These shall be removed once the tree roots have stabilised, usually after the first growing season that the trees are in the ground. The stake is only there to ensure that the root ball does not move in the ground and should be removed when this has been achieved.
- 6.8** Suggested planting locations are along the northern and eastern boundaries in the wooded areas to create a more even aged tree population.
- 6.9** It is recommended to plant with a mixed species of native or naturalised trees, to create a more species diverse treescape, as well as some exotic species to prepare the site for climate change. This would make the woodland more resilient to the threat of disease.

7 Conclusion and Recommendations

7.1 Conclusion

7.1.1 The trees and shrubs are generally in a good condition and are well maintained. There are a few management recommendations.

7.1.2 T560 the Deodar cedar is recommended to be crown lifted with the removal of the three lowest rings of branches, two branches on either side, to raise the crown, within the next six months.

7.1.3 T562 a holly tree is recommended to be reduced to just above the laterals at around 6-7 m within the next six months.

7.1.4 T718 a sweet chestnut tree is recommended for the removal of deadwood greater than 50 mm in diameter within the next six months.

7.1.5 T719 an oak tree is recommended to have its overhanging branches cut back. This will result in the removal of around 8 m of branch length to leave around 8 m. This will entail taking one branch back to the union with three emerging stems. Also taking the adjacent stem to the east back to a similar point, roughly where it runs against the dead chestnut stem, see Images 7 and 8. This should be completed within the next six months.

7.1.6 For T720 a sweet chestnut tree it is recommended to coppice the main trunk within the next six months.

7.1.7 T725 a pedunculate oak tree is recommended to have its deadwood greater than 50 mm in diameter removed within the next six months.

- 7.1.8** It is also recommended that the southern branch is reduced at around 4 m in height, reducing it to around 5 m in length, just beyond existing regrowth as shown on Image 11, removing around 8 m of the limb. This is recommended for action within the next six months.
- 7.1.9** It is also recommended to reduce the south-western branch at around 4 m in height to a similar point, and to reduce 5 or 6 higher and smaller branches by around 5 to 6 m. This is recommended for action within the next six months.
- 5.10** T726 a pedunculate oak tree is recommended to be reduce by around 8 m to leave around 10 m within the next three months. It is recommended that the client considers fitting a threaded bar through the two trunks east to west at around 1 m to hold the tree together. This should be completed within the next six months.
- 5.11** For T748 a sycamore tree it is recommended to reduce the northern stem, taking it down to around 1m above the woodpecker hole within the next six months.
- 5.12** T749 a horse chestnut tree is recommended to have the branch in conflict with the adjacent school building cut back to around 1 m from the trunk, within six months.
- 5.13** It has been checked with the local authority and the trees are protected so this report forms part of the tree work application.
- 5.14** It is recommended that all the trees are re-inspected within 18 months.
- 5.15** When replanting it is recommended to plant with a mixed species of native or naturalised trees, to create a more species diverse treescape, as well as some exotic species to prepare the site for climate change, as per the recommendations and guidance in Section 7.

7.2 Recommendations

- 7.2.1** Management recommendations given in the survey data are given based on good arboricultural management and to mitigate Health and Safety risk.
- 7.2.2** The works laid out are prioritised and it is recommended that they are carried out within the given time frames, see Table overleaf for the summaries.
- 7.2.3** All recommended works should be undertaken by appropriately qualified Arboricultural Contractors, to BS3998 Recommendations for Tree Work 2010 or current Industry Best Practice.
- 7.2.4** This survey and survey results are for the sole use of the client Marymount School and their associates.
- 7.2.5** The survey results are based upon current site conditions. Arbor Cultural Ltd should be informed of any future change in those conditions at the earliest opportunity.
- 7.2.6** It is advised to check with the local authority to see if there are any tree protection measures in place on any of the trees. These can be put on trees at any time. Whilst it is required to notify the site owner and adjacent properties of any new protection measures, sometimes there are omissions. It is a criminal offence to remove or reduce any protected tree without written permission.
- 7.2.7** It is recommended that all the trees are reinspected within the next 18 months.

7.3 Recommended Tree Works

Ref	Species	Measurements	Recommendations
T560	Deodar Cedar	Height (m): 15 Crown Radius (m): 6 DBH (cm): 58	Remove three rings of branches two either side to lift crown and reduce future conflict. Timescale: 6 Months.
T562	Holly	Height (m): 10 Crown Radius (m): 4 DBH (cm): 31	Reduce to just above laterals at around 6-7 m to help create hedge effect. Timescale: 6 Months.
T718	Sweet Chestnut	Height (m): 16 Crown Radius (m): 3 DBH (cm): 45	Remove deadwood Timescale: 6 Months.
T719	Oak	Height (m): 18 Crown Radius (m): 7 DBH (cm): 81	Cut back Overhanging branches as another on photo to reduce overhang, shading, nuisance issues and fear to adjacent nearby properties with small gardens. Removing around 8 m and leaving around 8 m. Taking one branch back to union with three emerging stems. Take adjacent stem to east to same point. Roughly where it runs against dead chestnut stem. Take higher branch to east back to a similar point. See Photo. Timescale: 6 Months.
T720	Sweet Chestnut	Height (m): 15 Crown Radius (m): 4 DBH (cm): 34	Coppice main trunk and favour basal growth stem. Timescale: 6 Months.
T725	Oak	Height (m): 12 Crown Radius (m): 5 DBH (cm): 95	Mitigation Actions 1: Remove deadwood - greater than 50 mm. Timescale: 6 Months. Mitigation Actions 2: Reduce southern branch at around 4 m to around 5 m just beyond existing regrowth as shown on photo. Removing around 8 m. Reduce South-western branch at around 4 m to the same point. Reduce 5 or 6 higher and smaller branches by around 5 to 6 m Timescale: 6 Months.
T726	Oak	Height (m): 15 Crown Radius (m): 5 DBH (cm): 97	Mitigation Actions 1: Reduce by around 8 m to leave around 10 m. Timescale: 3 Months. Mitigation Actions 2: Consider fitting a threaded bar through the two trunks east to west at around 1 m. Timescale: 6 Months.
T748	Sycamore	Height (m): 17 Crown Radius (m): 6 DBH (cm): 61	Reduce northern stem with woodpecker hole and necrotic bark to around 1m above woodpecker hole to rescue risk and maintains habitat whilst allowing natural degradation of the stub. Timescale: 6 Months.
T749	Horse Chestnut	Height (m): 11 Crown Radius (m): 5 DBH (cm): 53	Cut back branch in conflict with adjacent school, taking it back to around 1 m from the trunk to allow for natural degradation of the stub. Timescale: 6 Months.

References and Bibliography and Glossary of Terms

References and Bibliography

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Glossary of Terms

Glossary of Terms

Bacterial canker	Has lesions on the stems that can exude a gum like exudate that carries the bacteria.
Brash	Thin wood removed from trees.
Chlorosis/Chlorotic	An abnormal yellowing or blanching of the leaves due to lack of chlorophyll.
Canopy/Crown	Foliage bearing part of the tree.
Crown lifting	The removal of the lower branches of the tree.
Crown thinning	The complete removal of selected limbs/lateral branches to thin the density of the crown.
Dysfunctional wood	Woody tissues no longer function.
Epicormic growth	Young, vigorous shoots arising from the external tissues of a stem. Epicormic growth is usually induced if a limb is removed or is broken off and the light factor changes (sprouts) or if a woody plant is coppiced or pollarded.
Flush cut	A pruning cut close to the parent stem which removes part of the branch bark ridge.
Heartwood	The heartwood is the dark area in the centre of the tree.
Lateral branch	A side branch which arises from a main stem.
Mulch	A layer of bulky organic material placed around the stem.
Occlusion (Occluded)	The process of wound wood closing a wound.
Parasitic	Organisms that live off other organisms, or hosts, to survive
Pathogen	A micro-organism which causes disease in another organism.
Reaction Wood	Additional wood that is put on by a tree to address increased loads.
Reaction Zone	An area where reaction wood is formed.

Glossary of Terms Continued

Saprotrophic	Organisms that obtain their nutrition from non-living organic materials.
Soft rot	A kind of wood decay in which a fungus degrades cellulose within the cell walls, without causing overall degradation of the wall.
Stem	Principal above ground structural component(s) of a tree that supports its branches.
White rot	Various kinds of wood decay in which lignin, usually together with cellulose and other wood constituents is degraded.
Wound	Injury in a tree caused by a physical force.
Wound Wood	Additional wood that is put on by a tree in reaction to damage or wounding, with the aim of healing over the wound.

Appendix I Abridged CV: Qualifications and Experience

I S Tom Thompson BSc (Hons Arb), MSc eFor, MArborA Cert Arb

1 Qualifications

Subjects	Level	Dates	
Bond Solon Expert Witness Training (CUBS)	Pass		2017
International Society of Arboriculture Certified Arborist	Pass	May	2012
Professional Tree Inspection Course (LANTRA)	Pass	April	2011
BSc Hons Arboriculture	(2.1)	2008	2009
FdSc Arboriculture	Distinction	2004	2007
MSc. Environmental Forestry (MSc eFor)	Pass	2001	2002
BSc. Hons Env Science (Conservation Management)	(2.2)	1997	2000
Environmental Studies	Access Course	1996	1997
Forestry & Practical Environmental Skills	NVQ I & II	1996	1997

2 Career Summary

Tom Thompson is a professional member of the Arboricultural Association (AA), an International Society of Arboriculture (ISA) Certified Arborist, Chairman of the Consulting Arborist Society (CAS), and an associate member of the Institute of chartered Foresters (ICF).

He was worked in the private and public sector, before setting up Arbor Cultural in 2014, to promote the value and benefits of trees.

He currently heads up the BIM4Arb group promoting Building Information Modelling (BIM) to the arboricultural industry.

He then spent five years working in new woodland creation, firstly for ADAS in the National Forest and then for 18 months with the Forestry Commission in Cobham, Kent. During this time, he began a degree in Arboriculture through Myerscough College.

This course enabled him to make the transition from forestry to arboriculture where he spent 5 years as a tree officer, firstly at St Albans and then more recently at King's Lynn and West Norfolk. He joined Connick Tree Care in May 2012, where he worked as their Principal Arboricultural Consultant.

Having worked as the principal tree consultant at Connick tree care for two years he left to established Arbor Cultural Ltd. In 2014, with the intent to provide professional advice in all aspects of tree consultancy, to enable clients to obtain planning permission, house purchase completion, and successfully address all tree related health and safety matters. He is passionate about trees, and he is keen to promote the economic value and benefits of the urban forest.

3 Areas of Competence

- Tree hazard risk assessments for tree owners
- Decay assessment and mapping
- Mortgage and Insurance reports to assess the influence of trees on buildings.
- Pre-development site surveys and arboricultural implication studies
- Tree management reports to prioritise maintenance programs.
- Tree related insurance claims
- Diagnosis of tree disorders
- Arboricultural Expert Witness

4 Selected Continual Professional Development

Tom continually keeps up to date with regular in person and online training to exceed the requirements of all his professional membership.

These are UK, European, and American based trainings.

He regularly attends conferences, and networking events to share and discuss current and future developments on the arboricultural industry and associated industries.

Subjects covered include:

- Tree Risk Assessment
- Decay Detection Equipment
- Tree Biomechanics
- Tree Pull Testing
- Expert Witness
- Pest and Diseases
- Tree Valuation and Economics
- Veteran Tree Management
- Tree Population Management
- Building Information Modelling
- Digital Practice
- Business Management
- Trees and Buildings
- Tree Law and Policy
- Soil and Tree Interaction
- Tree Pruning Practices
- Biodiversity and Wildlife
- Designing with Trees
- Young Tree Establishment

Training Providers Include but are NOT Limited to:

- Arboricultural Association
- Consulting Arborist Society
- International Society of Arboriculture
- Municipal Tree Officers
- London Tree Officers
- LANTRA
- Rinntech
- Claus Mattheck
- Landscape Institute

5. Professional Affiliations

Arboricultural Association (AA) Professional Member	since 2008
International Society of Arboriculture (ISA) Certified Arborist	since 2012
Consulting Arborists Society (CAS)m Professional Member	since 2014
Institute of Chartered Foresters Associate Members	since 2018
Royal Forestry Society	since 1999

Appendix II Tree Survey Process and Details

The Survey Schedule

- Approximate tree height in metres.
- Tree stem diameter, in millimetres, measured at 1.5m*.
- Age class.
- Observed physiological/structural condition and assessment of direct damage to built structures excluding drains.
- Management recommendations.
- Works priority.
- Tree location.

- * If multi-stemmed then measures at ground level B.D. (Basal Diameter)
If not possible to measure, then estimated and recorded with the # symbol

Survey Procedure

The survey was conducted to industry Best Practice.

Trees Included

Only those trees specified by the client were included in the survey data, newly planted or shrub species were not included.

Only onsite trees were included in this survey.

Description of Tree Categories

Age Class:

NP	Newly Planted – A tree that is still receiving post planting maintenance and still has a stake supporting it.
Y	Young – Recently planted or establishing tree that could be transplanted without specialist equipment, i.e., up to 12-14cm stem diameter.
SM	An establishing tree which is still exhibiting strong apical dominance and has significant growth potential.
EM	A tree that is reaching its ultimate potential height and losing apical dominance, whose growth rate is slowing down but will still increase in stem diameter and crown spread and has safe life expectancy remaining
M	Mature tree with limited potential for any increase in size but with reasonable safe useful life expectancy
OM	Over mature – A senescent or moribund specimen with a limited safe useful life expectancy
V	Veteran – Trees of great age for species with important biological, aesthetic, conservation, or cultural value. Trees are in a state of decline due to old age.
D	A tree without enough live material to sustain life.

Tree Condition

P = Physiological	Good	No significant health problems
	Fair	Symptoms of ill health that can be remediated
	Poor	Significant ill health
	Dead	A tree without enough live material to sustain life.

S = Structural:	Good	No significant defects
	Fair	Significant defects that can be remediated
	Poor	Significant defects no remedy

Deadwood Categorisation

Minor Deadwood Less than 50mm in diameter or less than 3m in length

Major Deadwood Greater than 50mm in diameter or greater than 3m in length

Target

Target is quite an emotive word, but in a tree risk assessment context it is used to describe the likelihood of harm or damage occurring; based on the likely presence of people or the proximity of buildings or vehicles.

An allowance is made for unsupervised children

It is simply classified as.

Low	Rarely used buildings or roads and areas with only occasional public/resident/client access.
Medium	Occasionally used buildings and roads and areas of low public/residents/client usage.
High	Buildings and roads used during working hours, and regular public/resident/client usage. Also, to cover areas of less frequent usage but where unsupervised children have access.
Very High	Constant use buildings and roads and areas of high public use.

Work Reason

Generally, there are three reasons for tree work to be undertaken, hazard, nuisance, and formative.

Hazard is where there is a defect present that has the potential to cause harm or damage.

Nuisance is where a tree is close to a building, or street furniture, or is low over a road, or path, whereby they can potentially obstruct vehicles or pedestrians. Generally, trees are cut to give a 2m clearance of any buildings or street furniture to allow for two years' worth of growth, or 5m and 2.5m over roads and paths, respectively.

Formative is where the pruning is for aesthetic reasons, whether to create a better formed canopy or to clear a view.

Work Timescale

Immediately – The tree presents an imminent threat of harm or damage, and a tree surgeon has to be called out immediately, and the area cordoned off until the required action is completed.

The rest of the timescales are self-explanatory, 1 week, 1 month, 3 months and 6 months.

Anything that does not need to be completed within a year, either because of its condition or its low target value would just be placed on a re-inspection regime of that frequency.

Re-Inspection Frequency

This is the last aspect of the tree survey and is based on the trees condition and its target value.

The normal frequency of a re-inspection will be 2 ½ years to enable the trees to be seen in alternating seasons, in and out of leaf.

If a tree has a defect of some concern, but not justifying tree surgery at the time of inspection, it can be placed on a more frequent inspection.

If a tree is required to be seen at a different time of year, e.g., out of leaf, if the initial survey was undertaken in the spring and summer months or in leaf, if the initial survey was undertaken in the winter months, then a re-inspection regime of 6 or 18 months can be specified.

Sometimes a course of action is required such as ivy severance or basal clearance. This may be followed by a more frequent re-inspection to fully assess whatever was obscured. The frequency of this will depend on the perceived risk, how soon the action can be undertaken and how long it will take to take effect.

Appendix III Images

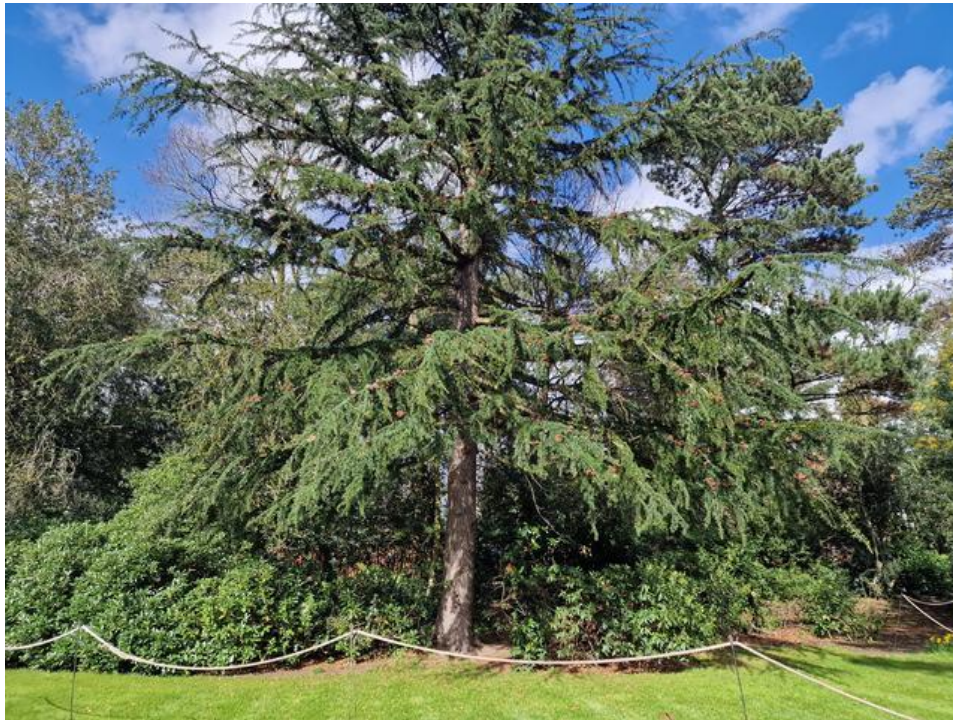


Image 1 T520 a deodar cedar in the front lawn.

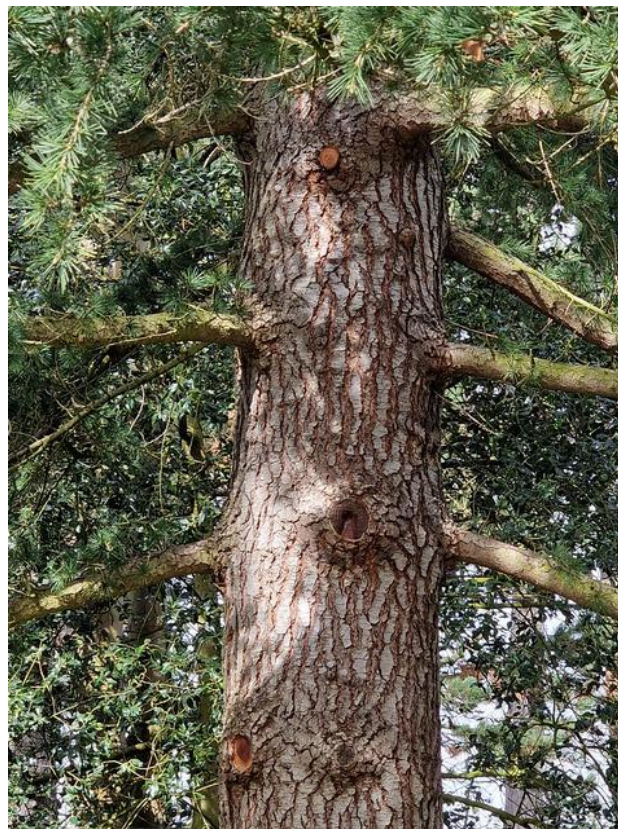


Image 2 Remove the three lowest pairs of opposite branches to lift the crown.



Image 3 T562 a holly with dieback characteristic of drought stress.



Image 4 T562 a holly with extensive basal growth.



Image 5 T708 an oak tree with a crown bias over the lockers.



Image 6 T718 a sweet chestnut tree with a crown bias over the adjacent garden.



Image 7 Overhanging branches of oak tree T719.

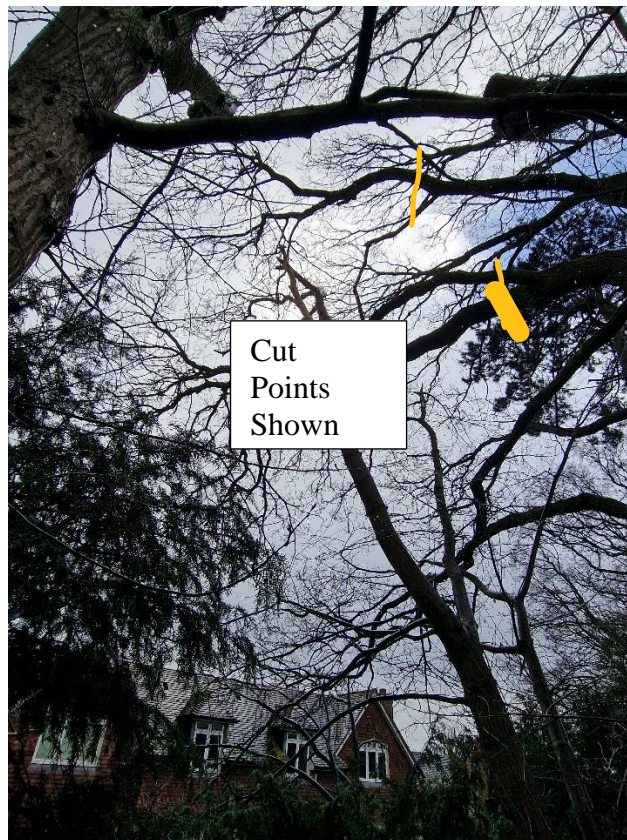


Image 8 Overhanging branches of oak tree T719.



Image 9 Undermined root plate of oak tree T719.



Image 10 Degrading main stem with 2nd stem establishing on sweet chestnut T720.

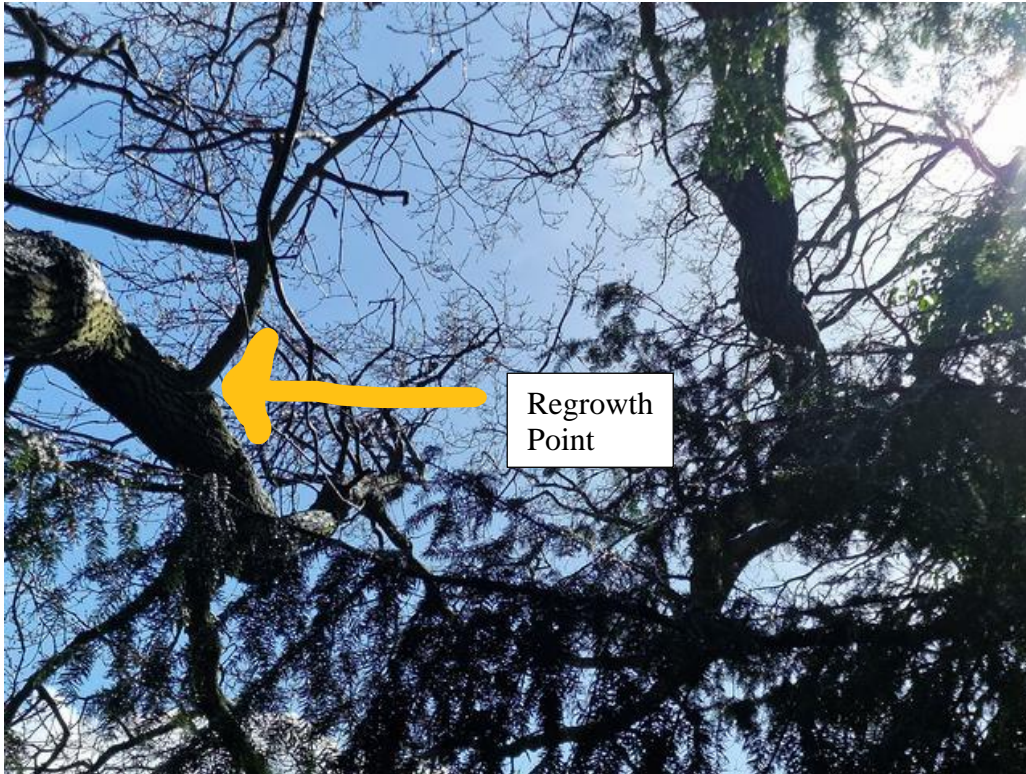


Image 11 Large limb of T725 extending over adjacent garden, with regrowth branch.



Image 12 T226 an oak tree with a separation shear crack.



Image 13 T226 an oak tree with a separation sheer crack.



Image 14 T226 an oak tree with a large cavity from a previous major limb failure.



Image 15 T748 a sycamore with an occluding trunk wound with good wound wood.

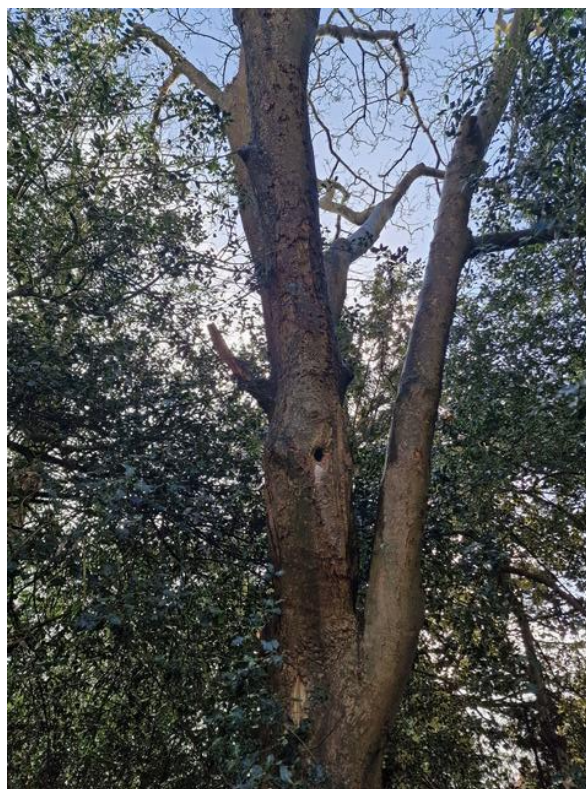


Image 16 T748 a sycamore with degradation and a woodpecker hole in main trunk.



Image 17 T749 a horse chestnut growing near to adjacent school building.



Image 18 T749 a horse chestnut growing near to adjacent school building.

Appendix IV Tree Location Plan



Appendix V - Tree Survey Records

Abor Cultural Ltd.

Tree Survey

Site -	Marymount School, George Road, Kingston, Surrey, KT2 7PF
Client -	Mr Matthew Pearce
Survey Date -	24th March and 6th April 2023
Surveyor -	Mr I S Thompson (known as Tom)

Ref	Species	Description	Measurements	Survey Notes	Condition	Risk Rating	Inspect Period	Recommendations
T560	Deodar Cedar <i>(Cedrus deodara)</i>	In woodland strip along road frontage.	Height (m): 15 Crown Radius (m): 6 DBH (cm): 58 Life Stage: Semi Mature Life Exp.: 40+ Years	Leaning trunk Mutual crown suppression	Good	Low	18 Months	Remove three rings of branches two either side to lift crown and reduce future conflict. Timescale: 6 Months.
T562	Common Holly <i>(Ilex aquifolium)</i>	In woodland strip along road frontage.	Height (m): 10 Crown Radius (m): 4 DBH (cm): 31 Life Stage: Semi Mature Life Exp.: 40+ Years	Basal growth. Twin stemmed from around 2.5 m. Lateral branches from around 6-7 m. Thinning at top possibly from drought stress.	Good	Low	18 Months	Reduce to just above laterals at around 6-7 m to help create hedge effect. Timescale: 6 Months.
T708	Pedunculate Oak <i>(Quercus robur)</i>	Growing on bank along rear (south) boundary.	Height (m): 19 Crown Radius (m): 6 DBH (cm): 61 Life Stage: Early Mature Life Exp.: 40+ Years	Severely leaning trunk Mutual crown suppression. Bias over lockers.	Good	Low	18 Months	No action Recommended at this time (NAR).
T718	Sweet Chestnut <i>(Castanea sativa)</i>	Growing on bank along rear (south) boundary.	Height (m): 16 Crown Radius (m): 3 DBH (cm): 45 Stems: 2 Life Stage: Early Mature Life Exp.: 40+ Years	Epicormic growth Mutual crown suppression. Bias over adjacent garden.	Good	Low	18 Months	Remove deadwood Timescale: 6 Months.

Appendix V - Tree Survey Records

Ref	Species	Description	Measurements	Survey Notes	Condition	Risk Rating	Inspect Period	Recommendations
T719	Pedunculate Oak (<i>Quercus robur</i>)	Growing on bank along rear (south) boundary.	Height (m): 18 Crown Radius (m): 7 DBH (cm): 81 Life Stage: Mature Life Exp.: 40+ Years	Root plate undermined by badgers Mutual crown suppression. Extensive Ivy on trunk Bias over adjacent garden.	Good	Low	18 Months	Cut back Overhanging branches as another on photo to reduce overhang, shading, nuisance issues and fear to adjacent nearby properties with small gardens. Removing around 8 m and leaving around 8 m. Taking one branch back to union with three emerging stems. Take adjacent stem to east to same point. Roughly where it runs against dead chestnut stem. Take higher branch to east back to a similar point. See Photo. Timescale: 6 Months.
T720	Sweet Chestnut (<i>Castanea sativa</i>)	Growing on bank along rear (south) boundary.	Height (m): 15 Crown Radius (m): 4 DBH (cm): 34 Life Stage: Early Mature Life Exp.: 40+ Years	Epicormic growth Mutual crown suppression. Bias over adjacent garden. Secondary stem emerging from basal growth on west side. Some deadwood on main trunk.	Good	Low	18 Months	Coppice main trunk and favour basal growth stem. Timescale: 6 Months.

Appendix V - Tree Survey Records

Ref	Species	Description	Measurements	Survey Notes	Condition	Risk Rating	Inspect Period	Recommendations
T723	Corsican Pine <i>(Pinus nigra laricio)</i>	Growing on bank along rear (south) boundary.	Height (m): 17 Crown Radius (m): 4 DBH (cm): 47 Life Stage: Early Mature Life Exp.: 40+ Years	Swept stem Leaning trunk Mutual crown suppression. Bias over adjacent garden. Minor deadwood	Good	Low	18 Months	NAR
T725	Pedunculate Oak <i>(Quercus robur)</i>	Growing on bank along rear (south) boundary.	Height (m): 12 Crown Radius (m): 5 DBH (cm): 95 Life Stage: Veteran Life Exp.: 40+ Years	Asymmetrical base, growing out of the bank. Badger activity in the root zone. Gnarly old trunk with burrs on. Epicormic growth Mutual crown suppression. Bias over adjacent garden. Deadwood in crown.	Good	Low	18 Months	Mitigation Actions 1: Remove deadwood - greater than 50 mm. Timescale: 6 Months. Mitigation Actions 2: Reduce southern branch at around 4 m to around 5 m just beyond existing regrowth as shown on photo. Removing around 8 m. Reduce South western branch at around 4 m to the same point. Reduce 5 or 6 higher and smaller branches by around 5 to 6 m Timescale: 6 Months.

Appendix V - Tree Survey Records

Ref	Species	Description	Measurements	Survey Notes	Condition	Risk Rating	Inspect Period	Recommendations
T726	Pedunculate Oak (<i>Quercus robur</i>)	Growing on bank along side (west) boundary.	Height (m): 15 Crown Radius (m): 5 DBH (cm): 97 Stems: 2 Life Stage: Veteran Life Exp.: 40+ Years	Twin stemmed from 1 m. Tight union and included bark Gnarly old trunk with burrs on. Epicormic growth. Mutual crown suppression. Bias over adjacent garden. Deadwood in crown. 2023 twin stems have moved apart with a separating. Moved apart. Large limb snapped on east side at around 6 m. Probably in last year's storm. Previously cut back on boundary side.	Poor	Moderate	18 Months	Mitigation Actions 1: Reduce by around 8 m to leave around 10 m. Timescale: 3 Months. Mitigation Actions 2: Consider fitting a threaded bar through the two trunks east to west at around 1 m. Timescale: 6 Months.
T748	Sycamore (<i>Acer pseudoplatanus</i>)	Growing on bank along side (west) boundary.	Height (m): 17 Crown Radius (m): 6 DBH (cm): 61 Life Stage: Semi Mature Life Exp.: 40+ Years	Trunk wound 0.5 to 1.5 m on north east side. Exposed heartwood with good occlusion. Mutual crown suppression.	Good	Low	18 Months	Reduce northern stem with woodpecker hole and necrotic bark to around 1m above woodpecker hole to rescue risk and maintains habitat whilst allowing natural degradation of the stub. Timescale: 6 Months.
T749	Horse Chestnut (<i>Aesculus hippocastanum</i>)	Growing on bank along side (west) boundary.	Height (m): 11 Crown Radius (m): 5 DBH (cm): 53 Life Stage: Semi Mature Life Exp.: 40+ Years	Asymmetrical crown Leaf minor	Good	Low	18 Months	Cut back branch in conflict with adjacent school, taking it back to around 1 m from the trunk to allow for natural degradation of the stub. Timescale: 6 Months.

APPENDIX III

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