

REPORT ON THE TREES LOCATED AT 16 HOPE TERRACE, EDINBURGH

18 December 2023

Prepared at the request of Elpis Property Ltd



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1 Brief

This report was requested by Elpis Property Ltd (the client). The site visit/tree survey was conducted on 14 December 2023. Hinshelwood Arboricultural Consultants are instructed to undertake a tree survey to identify structural defects in trees and to make recommendations proportionate to the nature and the location of the trees.

1.1 Limitations

The content of this report is valid for a period of two years from the date shown on the title page.

Note: Trees are living organisms whose health and condition can change rapidly. Condition and health and safety should be checked on a regular basis and after an extreme weather event.

1.2 Trees

The tree survey has been undertaken from ground level using non-invasive methods. The presence of Ivy, epicormic shoots or other climbing plants on tree trunks and branches obscures any defects that might be present that could otherwise be identified. In the presence of climbing plants etc. assumptions are made based upon the general health and appearance of trees, which may differ fundamentally if Ivy etc. was not present. For example, a tree that has the overall appearance of good health and vigour may have a serious structural defect hidden by climbing plants. Where Ivy severance / removal is recommended, this is usually to facilitate a tree inspection later.

1.3 Tree Law

This report does not consider the presence of, or implications of statutory controls upon trees, such as Tree Preservation Orders (TPO) or Conservation Areas. **It shall be the responsibility of the landowner or their agent, to ensure that statutory requirements are met.**

1.4 Non-disclosure Notice

The content and layout of this report are owned by the author. This report may not be copied or used without the author's agreement for any purpose other than the purpose indicated in this report.

1.5 Third Party Disclaimer

The report was prepared by the author at the instruction of and for the use by, the client named within the report. The author provides this advice without prejudice and bases his opinions on knowledge, experience, qualifications, and published research and cannot be held responsible for the consequences of a difference of opinion held by third parties, for example the Local Planning Authority or Planning Reporter.

1.6 Status

This is a tree safety report. It has been prepared in compliance with a landowner's duty of care obligations regarding the health and safety of the public and property such that may be presented by the partial or whole structural FAILURE of a tree or trees. The report makes recommendations for tree surgery works to address defects identified during the tree survey. The tree surgery works are given a priority weighting.

1.7 This document does not.

- a. Address the matter of the current or future potential for damage to buildings or other structures and surfaces from tree roots, directly or indirectly,
- b. Address any hazards presented by low-hanging tree branches that have the potential to cause injury to pedestrians or damage to vehicles.

2 Tree survey methodology

2.1 The tree has been assessed at ground level, using no ancillary equipment in accordance with the principles of Visual Tree Assessment (VTA) Matheny & Clark (1994). The trees are numbered in sequence. The trees are identified on the tree location plan.

2.2 Common tree names are given.

2.3 Tree height is estimated in metres.

2.4 Stem diameter is estimated in centimetres at 1.5 metres above ground level (or nearest practical height). Where multiple dimensions are given, this reflects the multi stemmed nature of the tree.

2.5 Crown spread is estimated in metres as a radius from the trunk. This is for ease of data collection and the production of the tree location plans and is not intended to give the impression that the tree crowns are symmetrical.

2.6 A priority rating has been provided where remedial tree surgery operations have been recommended. This provides a guide to assist with scheduling work and states the maximum period that should elapse from inspection date to the tree surgery operations.

2.7 Life stage is estimated in accordance with the known lifespan of the species.

- Young: Young trees
- Semi mature: Semi-mature, trees less than 1/2 life expectancy.
- Mature: Mature trees up to 2/3 life expectancy.
- Over mature: Over-mature, declining, or moribund trees of low vigour.
- Veteran: Veteran trees

2.8 The physiological condition of the tree has been referred to as one of the following:

Good: A sound tree, trees needing little, if any, attention.

Fair: A tree with minor but rectifiable defects or in the early stages of stress, from which it may recover.

Poor: A tree with major structural and physiological defects or stress.

Dead: A tree or trees, no longer alive. However, this could also apply to those trees that are dying and will be unlikely to recover or are / have become dangerous.

2.9 Major defects or diseases and relevant observations have also been recorded under Structural Condition within the Tree Schedules. The assessment for structural condition has included inspection of the following defects:

- The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay.
- Soil cracks and any heaving of the soil around the base indicating possible root plate movement.
- Any abrupt bends in branches and limbs resulting from past pruning, as it may be an indication of internal weakness and decay.
- Tight or weak 'V' shaped forks and co-dominant stem
- Hazard beam formations and other such biomechanical related defects.

- Cavities because of limb losses or past pruning.
- Broken branches
- Storm damage
- Canker formations
- Loose bark
- Damage to roots
- Basal, stem or branch / limb cavities
- Die-back in the crown
- Abnormal foliage size and colour
- Any changes to the timing of normal leaf flush and leaf fall patterns
- Other pathological diseases affecting any part of the tree

2.10 The inspection frequencies are recommended in the absence of extreme weather events.

It is strongly recommended that a 'walkover' inspection is undertaken following an extreme weather event where it is likely that trees will have been subjected to damaging forces and where branches can be expected to have been shed. A walkover survey is a basic visual assessment that may be conducted by a person with basic knowledge of tree safety and keen eyesight. The walkover surveys should record any items that require immediate attention to ensure safety. Works identified should be undertaken as soon as practicable and the area affected should be cordoned off where possible, until the works have been undertaken.

3 Findings

- 3.1 The trees, ash T0952 and T0954 have been identified to have a detailed health survey conducted.
- 3.2 Since the original and comprehensive investigation was conducted by Donald Rodger Associates in 2021 there has been a marked decline in the health of these trees. There are positive indicators of the condition Chalara or Ash dieback (*Hymenoscyphus fraxineus*) infection in the trees.
- 3.3 It is seen from the inspection of Ash Tree T0952 that the fungal body *I. hispidus* is growing from the trunk of the tree. It should be noted David Lonsdale's "Principles of Tree Hazard Assessment and Management" Forestry Commission: Research for amenity N0.7 says, "Since *I. hispidus* weakens the wood of *F. excelsior* at an early stage of decay, its presence on this species, often indicates that breakage of the affected branch or trunk could be imminent." Whilst this specimen is Weeping Ash, (*Fraxinus excelsior* "pendula") this would still be relevant and more so as its general weeping form has an inherent structural weakness. It is often seen in collapse of ash stems and branches caused by *I. hispidus* undermining the structural integrity of the tree's heartwood. The reason it does this is that this is a heart rot fungi that feeds on both the lignin and cellulose in the heartwood, weakening the trees structural integrity by undermining the trees flexibility and rigidity at the same time. David Lonsdale also points out in the same publication that Ash has a low resistance to decay this is because "*The relatively low moisture content of Fraxinus wood makes it rather susceptible to decay. Also the heartwood does not appear to be rich in preformed defensive substances*" What this means is the trees level of toxins that are used by trees to fight decay and fungal – bacterial infection are low in this species and as such fungi like *I. hispidus* can cause high levels of damage here whereas in a plane tree it may be lower. It is for this reason the fungi is commonly found on Ash trees.
- 3.4 Further, tree T0952 has significant dieback throughout the canopy with large amounts of dead wood present. This tree has symptoms consistent with Ash Dieback and removal is recommended within the next 6 months
- 3.5 Ash Tree T0954 is located next to the boundary wall of 14 Hope Terrace. A self-seeded tree growing immediately adjacent to stone wall. Forks into two codominant stems at the base, this provides a very acute union with included bark. This creates a significant structural defect. This specimen also has significant dieback throughout the canopy with large amounts of dead wood present, there is epicormic growth growing on the structural branches which is a good indicator of stress. This tree has symptoms consistent with Ash Dieback and removal is recommended within the next 6 months. Removal of all timber and arisings will need to comply with government guidance, see attached notes.
- 3.6 One or more ash trees on your site have symptoms consistent with Ash dieback. Therefore, it is important that you note the advice below and follow up with your own research at the links provided to ensure you comply with relevant government guidance and procedure. If other ash trees on site do not currently have confirmed symptoms, it would be prudent to follow up with further surveys regularly to ensure that management of infected trees is carried out.

Ash dieback, *Hymenoscyphus fraxineus* (also known as *Chalara fraxinea*), is the most significant tree disease to affect the UK since Dutch elm disease which was first recognised in the 1960s. Only seven years after its official identification in the UK, ash dieback has already started having significant impacts on the country's treescape. Although it is still too early to understand whether any trees will prove to be resistant to the fungus, the stark reality is that over 90% of the 2 billion ash trees across the UK are likely to be infected in the years to come (Ash dieback: an action plan toolkit, Tree Council, February 2019).

“The risks that dead and diseased ash trees pose to human health and safety, together with the significant economic and environmental impacts, mean that it is vital to accept that ash dieback cannot be treated as ‘business as usual’ by anyone who manages trees or the landscape” Tree Council, February 2019.

Considering the above, it is clear that ash dieback is likely to result in similar demands on the tree care industry as those previously for Dutch elm disease. By contrast to Dutch elm disease, ash trees will stand hazardous and high risk. Delaying tree works will thus have a dual effect of making take down more complex and potentially more hazardous as well as there being a rising cost due to industry demand.

Tree works contractors and tree surgeons working on infected trees should ensure they are up to date with and carry out appropriate biosecurity precautions to prevent spread of infection to other trees. Advice on this may change over time so regular review of information and guidance is recommended.

Further information can be found at:



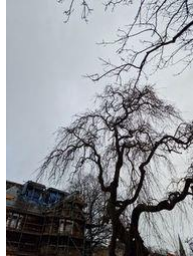
[Ash dieback: an action plan toolkit](#)




[Forest Research web page](#)

[Forest Research Tree Alert - for reporting diseased trees](#)

[Woodland Trust - your ash dieback questions answered](#)


- 3.7 It is proposed to plant t new specimen trees to mitigate for the trees to be removed. This will result in no net loss of tree cover across the site as a whole. These seek to restore and enhance the tree cover and to provide additional trees within the rear garden of number 16.
- 3.8 The tree survey schedule identifies trees that require remedial tree surgery and / or the removal. In most cases. All tree surgery must be undertaken by expert tree surgeons in accordance with British Standard BS3998:2010 Tree Work – Recommendations. It shall be the responsibility of the landowner to ensure that tree surgery contractors are indemnified with suitable insurance policies and that they are authorised to carry and dispose of commercial waste such as arises from tree surgery operations.
- 3.9 A summary of the findings can be found in the chart below.


Ref.	Species	Measurements	Survey Notes	Overall Condition	Inspected	Recommendations	Photo	Photo	Photo
T0952	Weeping Ash (<i>Fraxinus excelsior</i> 'Pendula')	Height (m): 16 Crown Radius (m): 5 DBH (cm): 69 Life Stage: Mature Life Exp.: <10 years	<p>Vigor:</p> <p>Foliage:</p> <p>Wind Exposure: Full.</p> <p>Crown Size: Large.</p> <p>Crown Density: Sparse.</p> <p>Interior Branches: Few.</p> <p>* Crown and Branches</p> <p>Cracks in branches:</p> <p>Included bark.</p> <p>Previous branch failures:</p> <p>Cankers present.</p> <p>Sapwood decay.</p> <p>Heartwood decay:</p> <p>Fungus: Inonotus hispidus (Shaggy Polypore)</p> <p>Pests and Diseases: Ash Dieback Infection Level 3: 50% to 75%</p>	Poor	13-Dec-2023	Fell tree. Timescale: 13-Dec-2024 (1 Year)			

T0954	Ash (<i>Fraxinus</i> sp.)	<p>Height (m): 9 Crown Radius (m): 2 DBH (cm): 34 Life Stage: Early Mature Life Exp.: <10 years</p>	<p>Vigor: Foliage: Wind Exposure: Full. Crown Size: Medium. Crown Density: Sparse. Interior Branches: Few. Unbalanced crown.</p> <p>Pests and Diseases: Ash Dieback Infection Level 3: 50% to 75%</p>	Poor	13-Dec-2023	<p>Fell tree. Timescale: 13-Dec-2024 (1 Year)</p>			
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4 Recommendations

- 4.1 Any works required to establish acceptable levels of risk for the site and to maintain the tree in line with good arboricultural management are listed and should be carried out within the time scale indicated. These lists of works are designed to highlight dangerous situations and are necessary for safety reasons or to establish high levels of arboricultural management to the existing tree..
- 4.2 A replacement tree is introduced to allow for the continuation of tree cover at this site.
- 4.3 Hinshelwood Arboricultural Consultancy strongly recommends the use of a properly qualified and fully insured, reputable arboricultural contractor for all classes of tree surgery Operations. Retained trees should be inspected on a suitable cycle. Re-inspection on a regular basis, by a competent arborist, would help meet the landowner's duty of care, (Occupier's Liability (Scotland) Act 1960).

Ref.	Species	Measurements	Recommendation	Work Timescale	Photo
T0952	Weeping Ash (<i>Fraxinus excelsior</i> 'Pendula')	Height (m): 16 Crown Radius (m): 5 DBH (cm): 69 Life Stage: Mature Life Exp.: <10 years	Fell tree.	13-Dec-2024 (1 Year)	

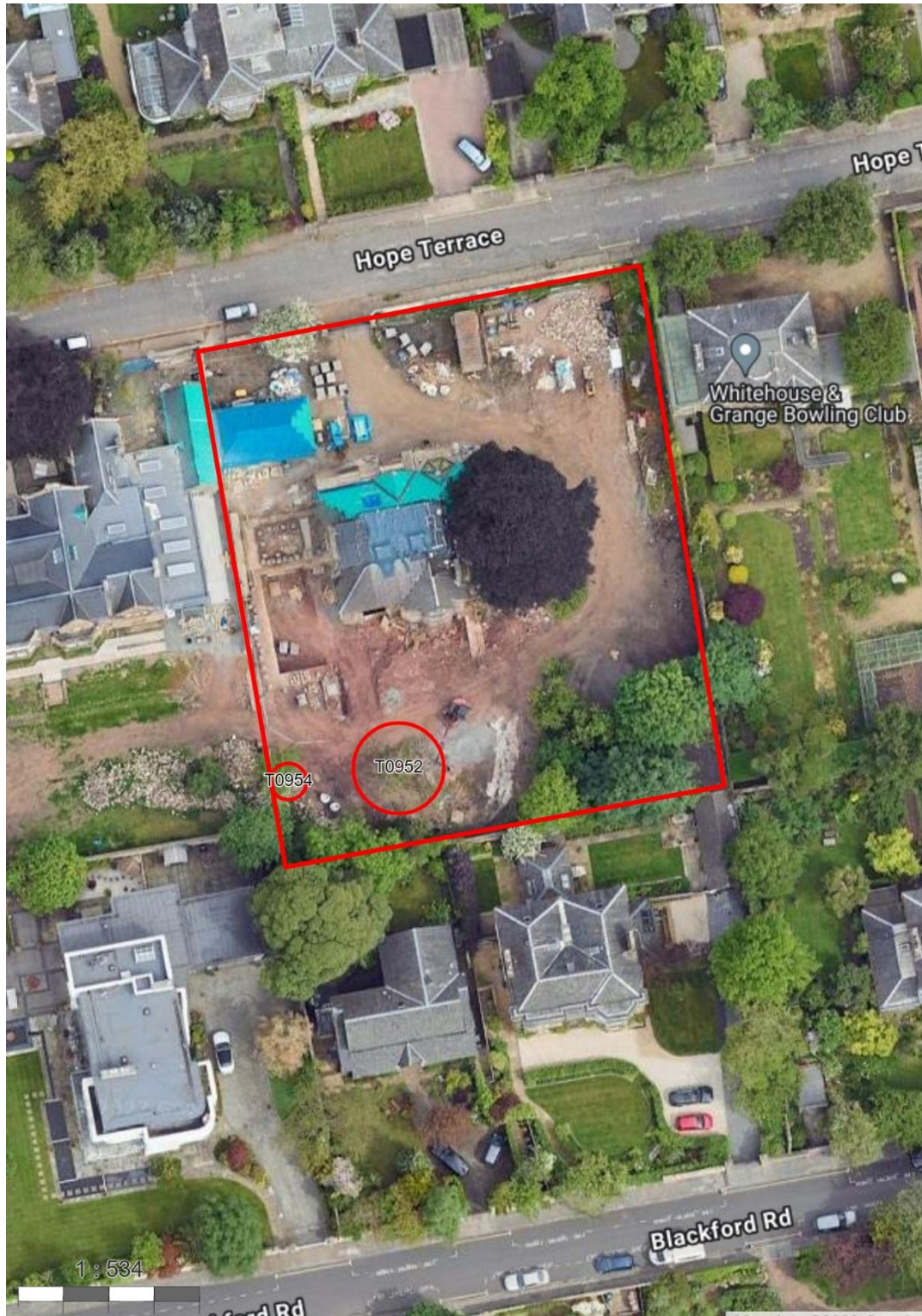
T0954	Ash (<i>Fraxinus sp.</i>)	Height (m): 9 Crown Radius (m): 2 DBH (cm): 34 Life Stage: Early Mature Life Exp.: <10 years	Fell tree.	13-Dec-2024 (1 Year)	
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5 Normative references

The following documents are indispensable in the application of the recommendations in this report:

- R.G. Strouts, T.G. Winter (1994). Diagnosis of Ill-Health in Trees. DoE
- D. Lonsdale (1999). Principles of Tree Hazard Assessment and Management. ODPM
- C. Mattheck, K. Bethge, K. Weber (1994). The Body Language of Trees. DoE
- C. Mattheck (2007). Updated Field Guide for Visual Tree Assessment. Forschungszentrum Karlsruhe GmbH
- F.W.M.R. Schwarze, J. Engels, C. Mattheck (1999). Fungal Strategies of Wood Decay in Trees. Springer
- Common Sense Risk Management of Trees (2011). National Tree Safety Group / Forestry Commission
- Tree Surveys: A Guide to Good Practice – Guidance Note 7 (2015). The Arboricultural Association
- British Standard BS3998: 2010 Tree Work – Recommendations. BSI

APPENDIX 1 SITE PLAN



APPENDIX 2 TREE SCHEDULE

Ref.	Common Name	Full Structure	Measurements	Survey Notes	Physiological Condition	Structural Condition	Overall Condition	Easting	Northing	Clickable link for Google Maps	Inspected	Public Amenity Value	Recommendations
T0952	Weeping Ash	Tree	Height (m): 16 Crown Radius (m): 5 DBH (cm): 69 Life Stage: Mature Life Exp.: <10 years	Vigor: Foliage: Wind Exposure: Full. Crown Size: Large. Crown Density: Sparse. Interior Branches: Few. * Crown and Branches Cracks in branches: Included bark. Previous branch failures: Cankers present. Sapwood decay. Heartwood decay: Fungus: Inonotus hispidus (Shaggy Polypore) Pests and Diseases: Ash Dieback Infection Level 3: 50% to 75%	Diseased	Physical Defect	Poor	325312.31	671726.04	T0952	13-Dec-2023	Moderate	Fell tree. Timescale: 13-Dec-2024 (1 Year)

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T0954	Ash	Tree	<p>Height (m): 9 Crown Radius (m): 2 DBH (cm): 34 Life Stage: Early Mature Life Exp.: <10 years</p>	<p>Vigor: Foliage: Wind Exposure: Full. Crown Size: Medium. Crown Density: Sparse. Interior Branches: Few. Unbalanced crown.</p> <p>Pests and Diseases: Ash Dieback Infection Level 3: 50% to 75%</p>	Poor	Poor	Poor	325300.11	671724.79	T0954	13-Dec-2023	Moderate	<p>Fell tree. Timescale: 13-Dec-2024 (1 Year)</p>
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APPENDIX 3 GLOSSARY OF TERMS

Glossary of Terms:

- **Adventitious growth:** Growth that has developed from dormant buds, normal due to a loss of apical dominance.
- **Bole:** Main stem/trunk.
- **Buttress Area:** of reaction wood at base of tree where structural roots merge with the main bole. Heavily buttressed trees may withstand decay more readily.
- **Cavity Space:** created by decay organism(s). Co-dominant stems Two (or more) relatively equal diameter upright stems.
- **Compression fork:** A branch/stem attachment at a tight angle (non-optimised). Prone therefore to structural failure.
- **Epicormic growth:** Advantageous growth that, in some species, can indicate physiological stress.
- **Good clean bole:** Trunks free of significant wounds, cavities, debris, or decay fungi fructifications.
- **Large diameter deadwood:** Dysfunctional/static mass above 50mm diameter.
- **Natural target pruning:** Pruning that utilises the natural features of the stem to indicate the appropriate position of the final severing cut. Minimises the likelihood of decay developing and/or spreading – aids occlusion.
- **Occlusion:** To grow over and cover with new wood.
- **Restricted rooting zone:** The normal root spread of the tree is likely restricted by obstacles such as foundations or unsuitable conditions for development.
- **Rooting zone Area:** where majority of feeding and structural roots would be expected to be located.
- **Scaffold:** Large(er) diameter branch that is normally horizontal with the ground.
- **Supports minor branching:** Small diameter deadwood Dysfunctional/static mass below 50mm diameter.
- **Tension union:** A shape optimises branch or limb union. Less likely to fail.

PHOTOGRAPHS























