

Arboricultural Impact Assessment Regarding Safety Liabilities and Potential Insurance Issues



No. 5 Pirton Close, Hitchin, Herts SG5 2BU

CLIENT:
CLIENT REF:
AAAL REF:
AAAL CONSULTANT:
REPORT DATE:

Mr Richard Mills
RM/PCHH
SAL/KMA/12158
Shane A Lanigan
16th September 2024

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Summary

Mr & Mrs Mills intend to purchase the property, No. 5 Pirton Close, Hitchin. They do intend to commission a property survey but have not done so as yet. My impression of the bungalow and gardens is that both have been well-maintained and accordingly are in very good condition (I have no qualifications in building matters so this observation is that of a layman).

In making my inspection I included the two large trees (walnut and beech) growing within the front garden and the cypress hedge close to the rear, eastern boundary. I inspected two third-party owned apple trees and one third-party owned Lawson cypress tree in the interests of completeness because they too, are growing within their Theoretical Zone of (Root) Influence (TZI) of the bungalow.

Having completed my inspection and considered my findings I concluded that due to the site superficial geology, there is not an elevated risk of building subsidence (indirect damage), nor a risk of mechanical type direct damage. I have not recommended any pruning or removal works because none are needed at the present time. I did identify some works that might be desirable, or reduce the possibility of future issues. These are discussed later in this report in Section 5 – Discussion.

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Reference publications are listed at the back of this report (Appendix 2)

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1. Introduction

- 1.1 **Instruction:** Mr & Mrs Mills asked me to visit the property, No. 5 Pirton Close, Hitchin and inspect significant individual trees growing within and close to the property curtilage. Following my inspection of the trees I am to provide a written report pertaining to the contemporary tree/building relationship. The report only addresses potential harm to the dwelling-house within the curtilage of No. 5 Pirton Close. I have not been instructed to inspect other infrastructure within the property curtilage.
- 1.2 I made my inspection on Saturday 14th September 2024 beginning at 8.54 am and concluding at 9.28 am. During my inspection the weather was cool, bright and dry. Visibility was good.
- 1.3 The arboricultural issues in relation to the dwelling house are appraised and discussed below with accompanying recommendations where appropriate. Before I began my inspection, I made a visual assessment of the trees that might be capable of adversely affecting the dwelling house within the curtilage of the property. I have prepared a sketch plan of the site in-order that the trees discussed may be identified. The plan is not to scale and may exclude certain features which exist on site (Section 10). All observations in the report are made as if facing the property from the front of the building, and in some instances by using compass bearings.
- 1.4 **Documents provided:** None.
- 1.5 **Tree works:** Any necessary tree works are specified in Section 7 later in this report.
- 1.6 **Ecological constraints:** Impacts on wildlife must be considered prior to and during any tree works deemed necessary. Such matters are governed by various pieces of primary legislation, specifically:
- The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000 and other more recent regulations, and the European Protected Species legislation. These regulations provide statutory protection for birds, bats and other tree and woodland inhabiting creatures. The presence of protected species could impose constraints upon the timing and implementation of the site works. Consultation with an appropriately qualified ecologist must be undertaken should this be deemed necessary.

- 1.7 **Statutory tree protection:** I have contacted the Local Planning Authority which in this instance is North Herts Council to ascertain the existence, or otherwise of any Tree Preservation Orders which may be applied to this site, or whether the site falls within a designated conservation area. The local authority has informed me that two trees growing within the curtilage of No. 5 Pirton Close to the front are protected by Tree Preservation Order No. 053 but the site does not lie within a designated conservation area (see Appendix 3 'A Brief Explanation of Tree Preservation Orders/Conservation Areas' at the back of this report). The status of the tree preservation order and conservation area legislation is only confirmed at the time of writing.
- 1.8 **Qualifications and professional experience:** This report is based on my on-site inspection and assessment of the existing trees. I hold formal qualifications in arboriculture and have fifty-three years of experience in this discipline. A summary of these matters is appended at Section 10.
- 1.9 **Relevant background information:** Mr & Mrs Mills are intending to purchase the freehold of the property, No. 5 Pirton Close, Hitchin, Herts SG5 2BU. This property is comprised of a significantly-sized single-storey dwelling of contemporary design. It is located within a reasonably sized plot which is essentially level although the general topography lowers towards the east. The building appears to be in good-order and well maintained (I have no qualifications in construction or other building related disciplines so these observations must be taken as those of a layman). The two large trees growing within the front garden area both pre-date the building as do the two third-party owned apple trees. G1 (Leyland cypress hedge) and T5 (Lawson cypress) post-date the building.
- 1.10 **Soils:** I accessed the United Kingdom Soil Observatory (UKSO) web site to gain insight into the type of soil present here. The web site showed the soil depth to be Deep with a texture of Sand to Sandy Loam, the parent material from which this has evolved by the 'weathering process' is described as Glaciofluvial Deposits. The web site is generally a good guide to soil type within a general area but is not site-specific. Site soil testing by way of trial pits, boreholes, and technical analysis is the recognized way to obtain truly accurate site-specific results.

2. The trees

2.1 Inspection of the trees on site: I inspected trees and vegetation within the calculated Theoretical Zone of (Root) Influencing Distance of the dwelling house. Vegetation discussed is growing within and outside the property curtilage of No. 5 Pirton Close. No. 5 is located at Grid Reference: TL 17719 29015 - Elevation: 88 m. Tree details are summarised in the tabulation below:

Tree No.	Species #: third-party tree	Zone	Height (m) DBH (mm)	Age Class	Surrounding Features Distance from House/Bungalow	Condition Physiological Structural	Action	TZI (theoretical zone of root influence NHBC Standards 2024)	Timing of necessary works (years)
T1	Walnut <i>Juglans regia</i> L.	A	12 m (estimated) 480 mm (measured using a standard diameter tape)	M	Roadway, driveway, bungalow, garden 9 m – from the bungalow front elevation	Physiological: Fair Structural: Fair Foliar condition appears stressed, lower trunk is compromised by decaying branch removal wounds, grows favourably south toward the roadway (see photographs 3 & 4, Appendix 1).	N/A	13.5 m (calculated from full mature height within NHBC Standards 2024)	

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Tree No.	Species #: third-party tree	Zone	Height (m) DBH (mm)	Age Class	Surrounding Features Distance from House/Bungalow	Condition Physiological Structural	Action	TZI (theoretical zone of root influence NHBC Standards 2024)	Timing of necessary works (years)
T2	Purple beech <i>Fagus sylvatica</i> L. 'Riversii'	A	15 m (estimated) 820 mm (measured using a standard diameter tape)	M	Roadway, driveway, bungalow, garden 10.5 m – from the bungalow front elevation	Physiological: Good Structural: Good This purple beech seems to be a seed-raised clone - 'Riversii' - rather than a grafted tree. It shows high genetic vigour and vitality (performance in its growing location) and has been reduced in height and spread (see photographs 7 & 8, Appendix 1).	N/A	15.0 m (calculated from full mature height within NHBC Standards 2024)	
T3	Apple # <i>Malus domestica</i> Borkh	A	5 m (estimated) 400 mm (estimated)	M	Bungalow, garden 3.5 m – from the bungalow front elevation	Physiological: Good Structural: Good Aged orchard apple tree that presents as being well-maintained	N/A	7.5 m (calculated from full mature height within NHBC Standards 2024)	

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Tree No.	Species #: third-party tree	Zone	Height (m) DBH (mm)	Age Class	Surrounding Features Distance from House/Bungalow	Condition Physiological Structural	Action	TZI (theoretical zone of root influence NHBC Standards 2024)	Timing of necessary works (years)
T4	Apple # <i>Malus domestica</i> Borkh	A	5 m (estimated) 390 mm (estimated)	M	Bungalow, garden 3.5 m – from the bungalow front elevation	Physiological: Good Structural: Good Aged orchard apple tree that presents as being well-maintained	N/A	7.5 m (calculated from full mature height within NHBC Standards 2024)	
G1	Leyland cypress x <i>Cuprocyparis leylandii</i> (A.B. Jacks & Dallimore) Farjon	B	1.5 m (estimated) 150 mm (measured using a standard diameter tape)	E/M	Bungalow, garden 2-12 m – from the bungalow rear northeastern elevation	Physiological: Good Structural: Good Recently reduced significantly in height	Remove (to remove the possibility of future unfavourable tree root/building interaction)	16.5 m (calculated from full mature height within NHBC Standards 2024)	1-3
T5	Lawson cypress # <i>Chamaecyparis lawsoniana</i> (A. Murray bis) Parl.	A	5 m (estimated) 150 mm (estimated)	M	Bungalow, garden 2-12 m – from the bungalow rear northwestern elevation	Physiological: Good Structural: Good Seemingly maintained at a restricted size by regular trimming	N/A	22.5 m (calculated from full mature height within NHBC Standards 2024)	

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Tree No.	Species	Zone	Height (m) DBH (mm)	Age Class	Surrounding Features Distance from House/Garage	Condition Physiological Structural	Action	TZI (theoretical zone of root influence NHBC Standards 2024)	Timing of necessary works
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Age Class: EM = Young (first third of life expectancy)
OM = Over Mature (beyond life expectancy and declining naturally)

M = Middle Aged (second third of life expectancy)
V = Veteran (of great age for its species and possibly of conservation value)

Condition: P = Physiological Good = no significant physiological problems
S = structural Good = no significant structural problems
= third-party tree

Fair = symptoms of ill health that can be remediated

Fair = significant defects that can be remediated
Poor = significant ill health
Poor = significant defects – no viable remedial action

Priority Category = U = URGENT WORKS - 1 = within one year - 2 = within two years - 3 = within three years - N/A = No Action

Zone A - Trees located close to and specifically within falling distance of adjacent properties, built structures and areas of high use – Inspection to be annual by a qualified arborist.

Zone B - Trees located within gardens and open areas though not adjacent to roads - Inspection to be biennially by a person with an appropriate and working knowledge of trees and tree structural defects.

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3. Brief explanation of tree root/foundation interaction

- 3.1 Tree roots and soil moisture:** Tree roots utilize considerable quantities of soil moisture in their growing seasons. On shrinkable clay soils this action can induce soil drying with resultant volumetric (shrinkage) change in the subsoil. In the dormant season trees are less active and do not utilise soil moisture to any significant degree. Given sufficient winter precipitation the subsoil will then re-hydrate and expand. If the building foundations located in the zone of influence do not extend below the affected area, then building movement can result. Actively growing trees which demand progressively more moisture can induce a persistent soil moisture deficit which prevents the soil from re-wetting fully each winter period. Continued downward movement of the foundations can result should this occur.
- 3.2 Moisture deficit:** Where a persistent moisture deficit has developed over time, particularly in a shrinkable clay soil of high bulk density and low porosity, buildings can be damaged by ground heave. Heave is the result of excessive soil re-hydration and expansion following the removal or death of a tree which pre-dates construction of the building. The most common occurrence of heave is when a tree that pre-dates the building by some years is removed.
- 3.3 Soil moisture extraction:** The effect of tree roots on soil moisture varies considerably. Factors that influence this include tree age, size, vitality, species, type of soil and proximity to building. Certain species tolerate polluted conditions well and can be unexpectedly successful in inhospitable conditions which can lead to a higher level of water usage than might normally be expected.
- 3.4 Subsidence:** Should subsidence occur and be directly linked to water uptake by trees then removal is almost always the only effective solution. Pruning in the form of crown reduction can reduce water uptake in the short term, although if this is to be relied upon in order to maintain reduced levels of water usage then regular cyclical pruning is essential. This is harmful and disfiguring to most trees. Certain species respond to heavy pruning by producing multiple new shoots, often with softer and large leaves (juvenile foliage) than normal. This can be exceptionally effective in transpiring water to the atmosphere, often more so than the previous foliage.
- 3.5 Patterns and extent of root growth:** Tree roots do not generally conform to set patterns of growth but will develop where conditions for growth are suitable. Therefore, it is unwise to rely strongly on published data in respect of zones of root influence of given species. Trees also vary in their rate of water usage at different life stages. A young actively growing tree may utilize appreciably more soil moisture than a large tree which is at a more mature state of life.

4 Tree Inspection Procedure

4.1 Overview of tree risk: The risk of harm from falling trees or tree parts is commonly overrated. This is due in part to media coverage of tree failure events which is often dramatic, including photographs of large trees lying across vehicles, buildings and other inanimate objects. Some may view this as a reflection of contemporary society's thirst for excitement which is nowadays readily fulfilled by the many and varied forms of social media. The reality is that the actual risk from tree failure is extremely low. A useful guidance document addressing tree risk has been produced by the National Tree Safety Group (NTSG). It is entitled 'Common Sense Risk Management of Trees,' and its stated purpose is to provide guidance on trees and public safety in the UK for owners, managers and advisers. The document was produced following consultation with many authoritative industry bodies and related interested organisations. Notable amongst these are:

- Health and Safety Executive
- Centre for Decision Analysis and Risk Management – Middlesex University
- Arboricultural Association
- B/213 Trees Committee of the British Standards Institution (BSI)
- Institute of Chartered Foresters
- London Tree Officers Association
- Royal Institute of Chartered Surveyors
- The Tree Council
- Visitor Safety in the Countryside Group
- British Holiday & Home Parks Association Ltd
- Confederation of Forest Industries (UK) Ltd
- Country Land and Business Association
- English Heritage
- Essex County Council
- Forestry Commission
- National Farmers Union
- Ancient Tree Forum
- Campaign to Protect Rural England
- National Trust
- Woodland Trust

4.2 Overriding aim: A fundamental aim of the NTSG is to develop a nationally recognised approach to tree safety management and to provide guidance that is proportionate to the actual risks from trees. This identified aim accords to the need to conserve trees and the benefits they provide in the light of ongoing global warming. The benefits provided by trees and woodlands cannot be enjoyed without the acceptance of some level of risk. Five key principles underpin the NTSG position and are set out below:

- Trees (and other vegetation) provide a wide variety of benefits to society
- Trees are living organisms that naturally lose branches or fall
- The overall risk to human safety is extremely low
- Tree owners have a legal duty of care (under the Occupiers Liability Act 1957 [as amended 1984]) and a Common Law Duty of Care
- Tree owners should take a balanced and proportionate approach to tree safety management

4.3 Benefits to society: Societal benefits are considerable, even more so in the current era of significant and harmful climate change which is causing global warming. Briefly, trees sequester carbon by using atmospheric Carbon Dioxide (CO₂) to convert it initially to carbohydrates and ultimately to wood. This process 'locks-up' the carbon as long as the wood endures. Other benefits relate to human health and wellbeing – both physiologically and mentally, and property values. An acceptance of a level of risk of harm or property damage is needed to realise these benefits.

4.4 Overall risk to human safety: The NTSG has utilised the Health and Safety Executive's decision-making framework, known as the Tolerability of Risk (ToR) Framework to define and classify risk. Three levels of risk are defined:

1. Unacceptable – generally more than 1:10,000
2. Tolerable – 1:10,000 risks in this framework region are managed 'as low as reasonably practicable' (ALARP)
3. Broadly Acceptable Region – 1:1,000,000

Research undertaken by the Centre for Decision Analysis and Risk Management (DARM) has demonstrated that the risk to the public from falling trees is extremely low, representing about a one in ten million chance of an individual being killed by a falling tree – or tree part – in any given year.

- 4.5 **Other risks of harm:** Property damage caused by falling trees or tree parts is a secondary concern. It is not always possible to predict tree or tree part failures as trees are natural organisms which do, on occasions, break and fall. However, in many instances a properly qualified and experienced arboriculturist can identify existing and developing problems. In many instances it is possible to prescribe remedial works to reduce the risk to a level acceptable to the client.
- 4.6 **The view of the Health and Safety Executive (HSE):** In the UK it is the HSE that defines risk tolerability, primarily by way of its Tolerability of Risk Framework (ToR). HSE recognises that a 'hazard' is something that can cause harm: in this instance the hazard is the tree, or tree part. Risk (of injury or harm) is characterised by reference to potential events and consequences, or a combination of the two. It is often expressed as a combination of an event's consequences and the likelihood of it occurring. Where trees are involved, potential consequences include property damage, death or serious injury. The important part of any tree inspection and consequent assessment is the likelihood of either occurring. Levels of risk are judged against a baseline, which is usually the current overall maintenance or control regime for that hazard (the tree). When assessing a tree, owners and managers need to judge whether the management measures they adopt will fulfil society's reasonable expectations. "Reasonableness" is a key legal concept when considering the risks to the public and tree owners' obligations. Deciding what is reasonable can be undertaken only with regard to the trees' place within the wider management context and how that context influences decisions locally. All the above is underpinned by the HSE risk philosophy which is set out in the executive's Tolerability of Risk Framework. The HSE says that, "for practical purposes, any activity or practice giving rise to risk in the upper zone (the unacceptable region where risks exceed 1:10,000) would be prohibited – unless exceptional reasons could be given. This translates to the risk presented by an obviously unstable or degraded tree, meaning that injury or harm by that tree is foreseeable and so unacceptable. Conversely, a healthy tree, or trees, would fall within the broadly acceptable region (1:1,000,000 – annual risk of death). Thus, a healthy tree might still fail but liability should not attach to the tree owner/manager. In this respect HSE states: "*Risks falling in this region are generally regarded as insignificant and adequately controlled. We, as regulators, would not usually require further action to reduce risks unless reasonably practicable measures are available. The levels of risk characterising this region are comparable to those that people regard as insignificant or trivial in their daily lives.*"

Hazards with risk levels falling in the intermediate region (1:10,000 – tolerable region) may be tolerated in order to secure the associated (societal) benefits, providing that:

- The nature and level of the risks are adequately assessed and the results are used to determine control measures. This means that the assessment of risk needs to be based on the best available evidence and, where evidence is lacking, on the best available scientific advice. It is therefore, quite clear that a suitably qualified and experienced arboriculturist must make this judgement regarding tree hazard and associated risk of injury or harm.
- The residual risks are not unduly high and kept as low as reasonably practicable (the ALARP principle.)
- The risks are periodically reviewed (trees are re-inspected as specified) to ensure that the risk is controlled so far as is reasonably practicable (SFAIRP) and they continue to meet the ALARP criteria, for example by ascertaining whether further or new control measures need to be introduced to take account of new knowledge or new techniques for reducing or eliminating risks.

As before, this requires ongoing inspection by a suitably qualified and experienced arboriculturist.

4.7 Overview of the legal aspects of tree ownership: Tree owners (and managers) have a legal duty of care and consequent liability for injury to others (and property damage) caused by the fall of a tree or branch. Under both the civil law and criminal law, an owner of land on which a tree stands has responsibilities for the health and safety of those on or near the land and has potential liabilities arising from the falling of a tree or branch. The civil (common) law gives rise to duties (of care) and potential liabilities to pay damages in the event of a breach of those duties. The criminal law gives rise to the risk of prosecution in the event of infringement of that law. If a person is injured by a falling/fallen tree or branch, potential causes of action arise against the tree owner in negligence for a breach of the duty of care, in the tort of nuisance and, where the injured person was on the land of the tree owner at the time of injury, under the Occupiers Liability Act 1957 (as amended 1984) – in England.

4.8 Tree inspection: The NTSG guidance incorporates aspects of historical Forestry Commission Guidance. In the first instance, it advocates effective record-keeping; a professionally prepared arboricultural report often constitutes the foundation of the necessary record. Zoning is often employed to determine the necessity for and frequency of inspection. In this manner the frequency and level of detail of inspection can be determined. Large and aged trees growing in a 'high-use' area will clearly need more detailed and intensive inspection than smaller trees located in lightly trafficked areas. In similar fashion, inspection by an arboricultural professional is not always needed. Where a number of young smaller trees are growing on a lightly used area inspection by the land owner or perhaps an employee who knows the site well might well prove sufficient. However, the inspection is made, and by whom, detailed record-keeping is essential.

4.9 Tree inspection by Abbots Arboricultural Advice: Currently, I undertake all inspections and subsequent report preparation personally. Reports include zoning and unless otherwise specified are made at International Society of Arboriculture Level 2. Such reports are undertaken from ground level using simple tools and related equipment commonly including binoculars, clinometer, diameter tape, metal investigative probe, small trowel, sounding mallet. On some rare occasions a more detailed Level 3 inspection is needed, this may be a climbing inspection or entail the use of electronic investigative inspection. Detailed inspections such as these will only be undertaken after a fee proposal has been provided and client instruction received. Individual trees will be inspected following the bullet points below:

- View the tree as a whole from around as much of the outer circumference as is possible
- View and assess the tree crown (branch structure, twigs and leaves using binoculars as needed)
- Closely inspect the trunk from the crown breakout point to ground level using steel probes as needed to investigate any dysfunctional or suspect areas
- Visually inspect the root crown area (the region where the trunk produces root buttresses and then roots) using steel probes as detailed above (if this is deemed necessary)

Results of the inspection will be presented in a written report with conclusions and any necessary work recommendations within an appropriate time frame.

Photographic images will be appended to the report where these will serve to clarify issues identified during the inspection.

5. Discussion

5.1 Site history: The property, No. 5 Pirton Close, consists of a mostly level plot which hosts a single-storey dwelling in the centre. I do not know the age of the building but it seems to be of quite contemporary design and in very good condition (as detailed earlier, I have no qualifications in building matters). So far as I am aware there is no history of, or ongoing subsidence, or any other tree root-related problem associated with the building.

5.1.1 It seems likely that the bungalow is built on land that was formerly part of an older property curtilage. I formed this opinion because the two trees growing within the front garden area, especially the beech, are significantly older than the building.

5.2 The trees: Tree 1 (walnut – see Photographs 1 & 2, Appendix 1) and Tree 2 (beech – see Photographs 5 & 6, Appendix 1) pre-date the building by many years as do the two third-party apple trees (T3 & T4, see Photograph 9, Appendix 1). The cypress hedge (G1 – see Photograph 10, Appendix 1) and T5, the third-party Lawson cypress (T5 – see Photograph 11, Appendix 1) are more recent introductions.

5.2.1 Tree 1, the common walnut is a tree of moderate-water-demand. It is located within its TZI of the bungalow front elevation but is currently only around half its likely ultimate size. Therefore, any contemporary adverse tree root/building interaction is improbable. This tree presents as being in somewhat poor condition but this is the way with walnut. It is minorly structurally compromised by two decaying branch removal wounds on the lower trunk but is not likely to fail due to this effect.

5.2.2 The second tree inspected, T2 – beech is the most significant on this site. It is of mature age class and likely around 100 years of age. The trunk and scaffold branch structure are sound with no real external signs of decay – other than some squirrel gnawing damage around the outer edge of a northern-side scaffold branch removal wound. Tree vigour and vitality are high, this being primarily evidenced by the foliar condition and density (see Photographs 5 & 6, Appendix 1) and secondarily by the rate and completeness of wound-wood growth which has, in most cases, completely occluded the wounds where branches have been pruned-off to ‘lift’ the canopy.

5.2.2.1 Tree 2 is growing 10.5 m from the bungalow front elevation so is within its TZI. It is however, a tree of moderate, rather than high-water-demand and of a species that is not frequently implicated in cases of subsidence. The likelihood of this has been further reduced by the tree being historically reduced in height and spread and seemingly maintained at this reduced size.

5.2.3 Trees 3 and 4 are third-party owned trees and therefore the responsibility of the property owners. Although they are growing within their TZI (7.5 m) of the bungalow, they are seemingly maintained by regular pruning which has served to restrict their size, and consequently their water usage.

5.2.4 G1 is a Leyland cypress hedge which has been recently significantly reduced in height. Leyland cypress is a species of high-water-demand which should not be planted near buildings. This group should be removed to reduce the possibility of future unfavourable tree root building interaction (see Photograph 10, Appendix 1).

5.2.5 The final tree inspected is a third-party owned Lawson cypress. This is a species of high-water-demand with a TZI of 22.5 m. this tree is seemingly being maintained by regular pruning and so long as this continues the actual threat of adverse tree root building reaction will remain low.

5.2.6 **Superficial site geology:** The site geology is shown to be a sand to sandy loam which is essentially non-shrinkable and so indirect (subsidence) type damage should be a low-risk on this site.

5.3 Root influences and built structures: Trees can cause damage to buildings by two primary means. These may be described as direct and indirect damage. The two types of damage are briefly described below.

1. Direct damage: This is commonly the result of physical forces induced by tree growth acting upon a built structure. Damage of this nature usually occurs when trees are located within 0.5m of buildings or other hard landscaping features. Expansion of tree parts, specifically incremental trunk, root and root buttress growth is capable of causing damage by way of uplift or wall distortion to light structures which are built on insubstantial foundations. Buildings of stronger construction are better able to resist the expansion growth and tree parts will commonly deform around structures such as these rather than cause displacement and cracking.
2. Indirect damage: Subsidence and heave are two types of indirect damage which trees may be party to. Clay type shrinkable soils are a necessary prerequisite for indirect damage to occur. Indirect damage most commonly occurs when trees of high-water demand are growing on shrinkable soil types near to buildings which are built on foundations of insubstantial or less than optimal design. Essentially, if trees extract significant amounts of water from a clay soil close to or under building foundations, and if this soil water is not fully replenished each year, then a persistent soil moisture deficit may develop. Over time the lower soil moisture levels lead to a reduction in soil volume which can in turn, induce movement of building foundations. Ground heave is essentially the opposite, being an expansion of shrinkable soils that have rewetted due to trees that were formerly using local soil moisture being removed.

6. Conclusion:

- 6.1 Tree cover has increased only minorly since the bungalow was built. The two largest trees T1 (walnut) and T2 (beech) along with T3 and T4 (both orchard apple) would have been present when the bungalow was built and accordingly would have been a material consideration in the foundation design. Therefore, it is improbable that they will now react adversely with the building.
- 6.2 G1, the Leyland cypress hedge, is currently quite small and so unlikely to be capable of causing structural damage. The species is however, capable of growing large quite quickly and being of high-water-demand is a potential problem around buildings. This group would be better removed.
- 6.3 Tree 5 is the responsibility of the third-party property owner but is in any case unlikely to become a problem provided that it is maintained at, or close to its current size.

7. Recommendations

- T1 – Walnut – N/A (no action) but review in three years-time
- T2 – Purple beech – N/A but review in three years-time
- T3 & T4 – Apple – third-party owned trees
- G1 – Leyland cypress hedge – remove
- T5 – Lawson cypress – third-party owned tree

8. ASSUMPTIONS AND LIMITING CONDITIONS

- 8.1 Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.
- 8.2 Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible, however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.
- 8.3 The consultant/appraiser shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.
- 8.4 Loss or alteration of any part of this report invalidates the entire report.
- 8.5 Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom, it is addressed, without the prior expressed written or verbal consent of the consultant/appraiser.
- 8.6 Neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant/appraiser particularly as to value conclusions, identity of the consultant/appraiser, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant/appraiser as stated in his qualification.
- 8.7 This report and values expressed herein represent the opinion of the consultant/appraiser, and the consultant's/appraiser's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.
- 8.8 Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
- 8.9 Unless expressed otherwise, (1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and (2) the inspection was by means of visual examination of accessible items.

9. CERTIFICATE OF PERFORMANCE

I, Shane A. Lanigan, certify that:

9.1 I have personally inspected the trees and the property referred to in this report and have stated my findings accurately. The extent of the evaluation or appraisal is stated in the attached report and the Terms of Assignment.

9.2 I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved.

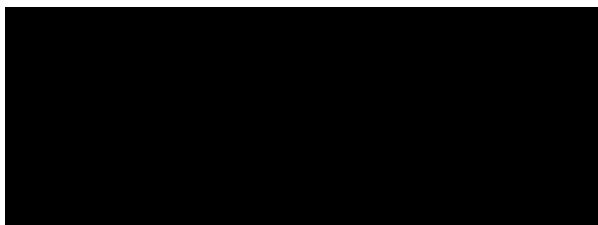
9.3 The analysis, opinions and conclusions stated herein are my own and are based on current scientific procedures and facts.

9.4 My analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices.

9.5 No one provided significant professional assistance to me, except as indicated within the report.

9.6 My compensation is not contingent upon the reporting of a predetermined conclusion that favours the cause of the client or any other party nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

9.7 I further certify that I am a Chartered Arboriculturist being a professional member of the Institute of Chartered Foresters and a Registered Consultant of that professional body. I am a Registered Consultant of the Arboricultural Association, and a Registered Consulting Arborist (#588) of the American Society of Consulting Arborists. I am also an ISA Board-Certified Master Arborist and hold the Royal Forestry Society Professional Diploma in Arboriculture. In matters of tree inspection, I hold the LANTRA Professional Tree Inspection Module with integrated assessment and update training. I have worked full time in the field of Arboriculture for a period of fifty-three years.



**S.A. Lanigan – Chartered Arboriculturist
MICFor, Dip.Arb. (RFS), M.Arbor A, RCarborA – ISA - BCMA,CUEW,
ASCA Registered Consulting Arborist #588**

Arboricultural Impact Assessment in respect of potential insurance issues and safety liabilities at:

No. 5 Pirton Close, Hitchin, Herts SG5 2BU

S.A. Lanigan Chartered Arboriculturist, MICFor, Dip.Arb. (RFS). M.ArborA, RCarborA – ISA BCMA & Municipal Specialist - ASCA Registered Consulting Arborist #588

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10. PROFESSIONAL DETAILS OF SHANE. A. LANIGAN

Qualifications: I hold the City and Guilds Certificate in Tree Surgery and am an International Society of Arboriculture Certified Arborist, also holding the International Society of Arboriculture Municipal Arborist Accreditation and being a Board- Certified Master Arborist of that professional body.

In addition, I hold the Royal Forestry Society's Professional Diploma in Arboriculture which is a degree level qualification rated as level 6 on the qualifications and curriculum framework. It is a qualification specific to the arboricultural profession. In matters of tree safety and risk assessment I have undertaken and completed the LANTRA Awards Professional Tree Inspection Course and integrated assessment.

I am a registered consultant of the American Society of Consulting Arborists (ASCA RCA#588), a Chartered Arboriculturist, being a Professional Member of the Institute of Chartered Foresters and a Registered Consultant of the Arboricultural Association.

Regarding legal issues, I am also a Cardiff University Law School Certified Expert Witness in both civil and criminal proceedings.

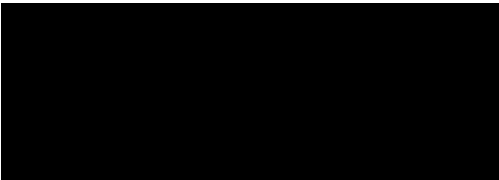
My professional memberships include:

- The American Society of Consulting Arborists
- The Arboricultural Association
- The Consulting Arborist Society
- The International Society of Arboriculture
- The Institute of Chartered Foresters
- The Royal Forestry Society

Career details: I am a second- generation arborist having worked from 1971 to 1979 for a private tree care company before forming my own arboricultural company in 1979.

Continuing professional development: I maintain and improve my professional knowledge by being an active member of the five professional bodies referred to above. In addition, I attend a high number of arboriculture related seminars and the annual conferences of the International Society of Arboriculture, the Arboricultural Association and the Institute of Chartered Foresters (ICF). I was also privileged to serve on the credentialing council of the International Society of Arboriculture educational certification department for seven years. Having served two consecutive terms as an elected member. I 'rolled off' the council in late 2020.

Currently, I am the senior consultant within Abbots Arboricultural Advice Limited. This is my consulting practice which is a forward-looking operation. In order to keep abreast of changes in arboriculture and consulting practice I attend many conferences and seminars which contribute to my CPD/CEU obligations.



**S.A. Lanigan – Chartered Arboriculturist
MICFor, Dip.Arb. (RFS), M.Arbor A, RCarborA – ISA - BCMA,CUEW,
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Arboricultural Impact Assessment in respect of potential insurance issues and safety liabilities at:

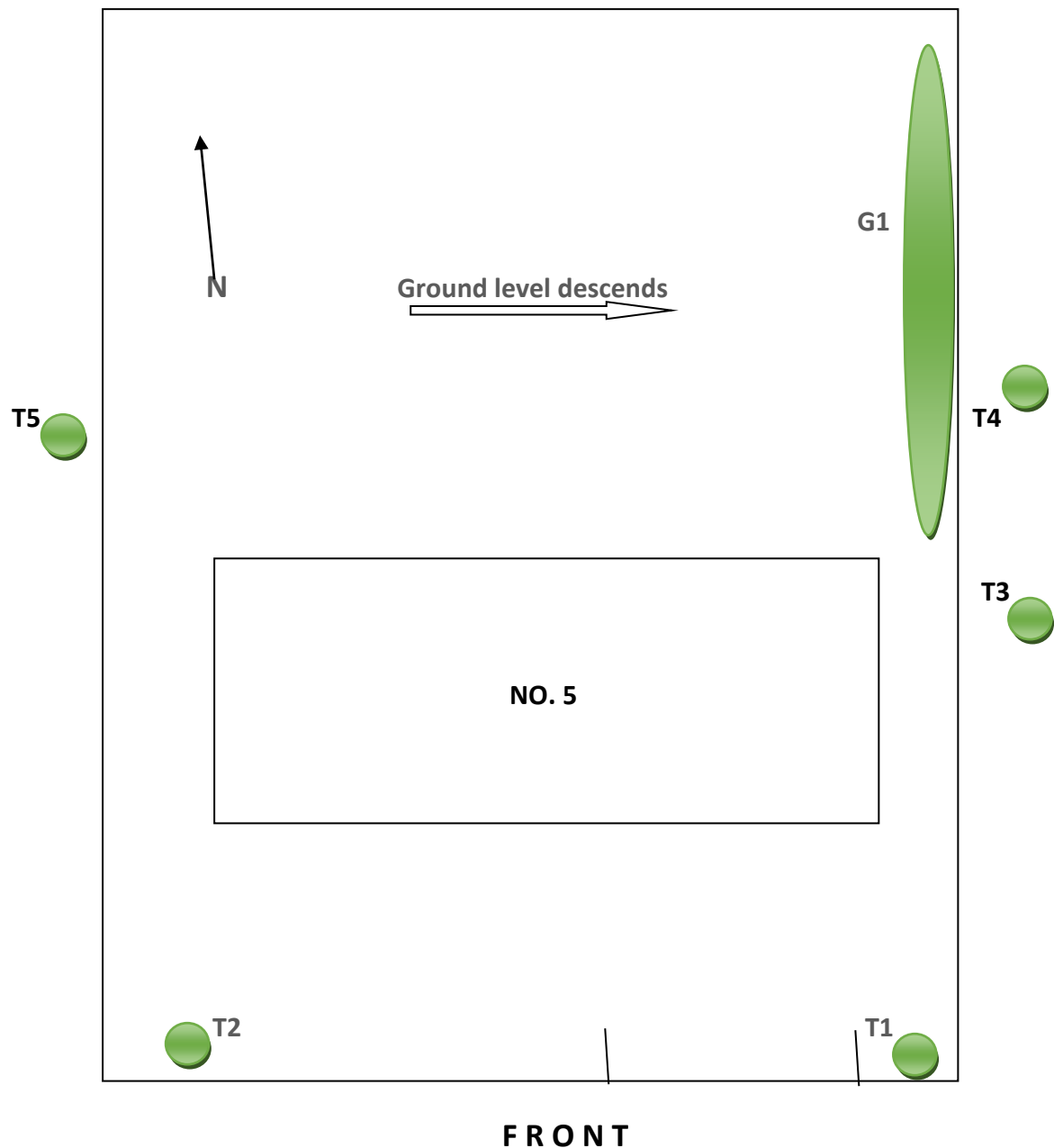
No. 5 Pirton Close, Hitchin, Herts SG5 2BU

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11. PLAN OF TREES AT NO. 5 PIRTON CLOSE, HITCHIN, HERTS SG5 2BU



This sketch plan is not to scale and may exclude certain features that are on site.

APPENDIX 1

PHOTOGRAPHS 1 – 11



PHOTOGRAPH NO. 1 – T1 – Common walnut viewed from the south



PHOTOGRAPH NO. 2 – T1 – Common walnut viewed from the northeast



**PHOTOGRAPH NO. 3 – Decaying branch removal wound on the north side of
T1**

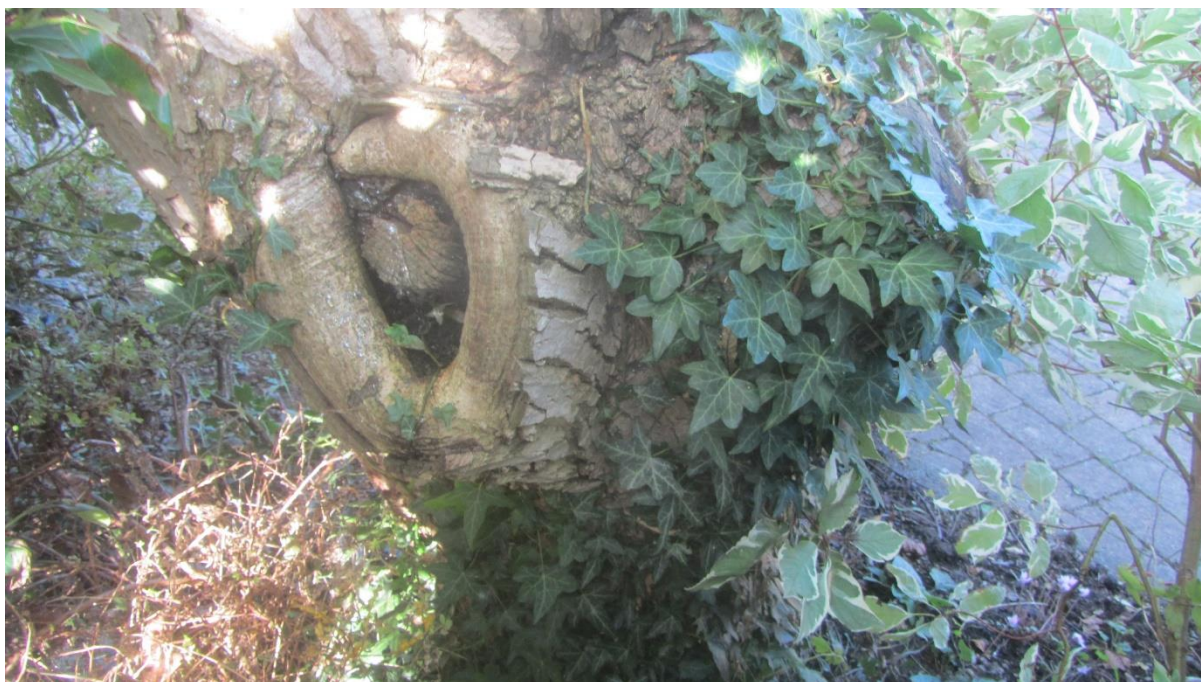
Arboricultural Impact Assessment in respect of potential insurance issues and safety liabilities at:

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**PHOTOGRAPH NO. 4 – Decaying branch removal wood on the eastern side of
T1**



PHOTOGRAPH NO. 5 – T2 – Common (European) beech viewed from the south

Arboricultural Impact Assessment in respect of potential insurance issues and safety liabilities at:

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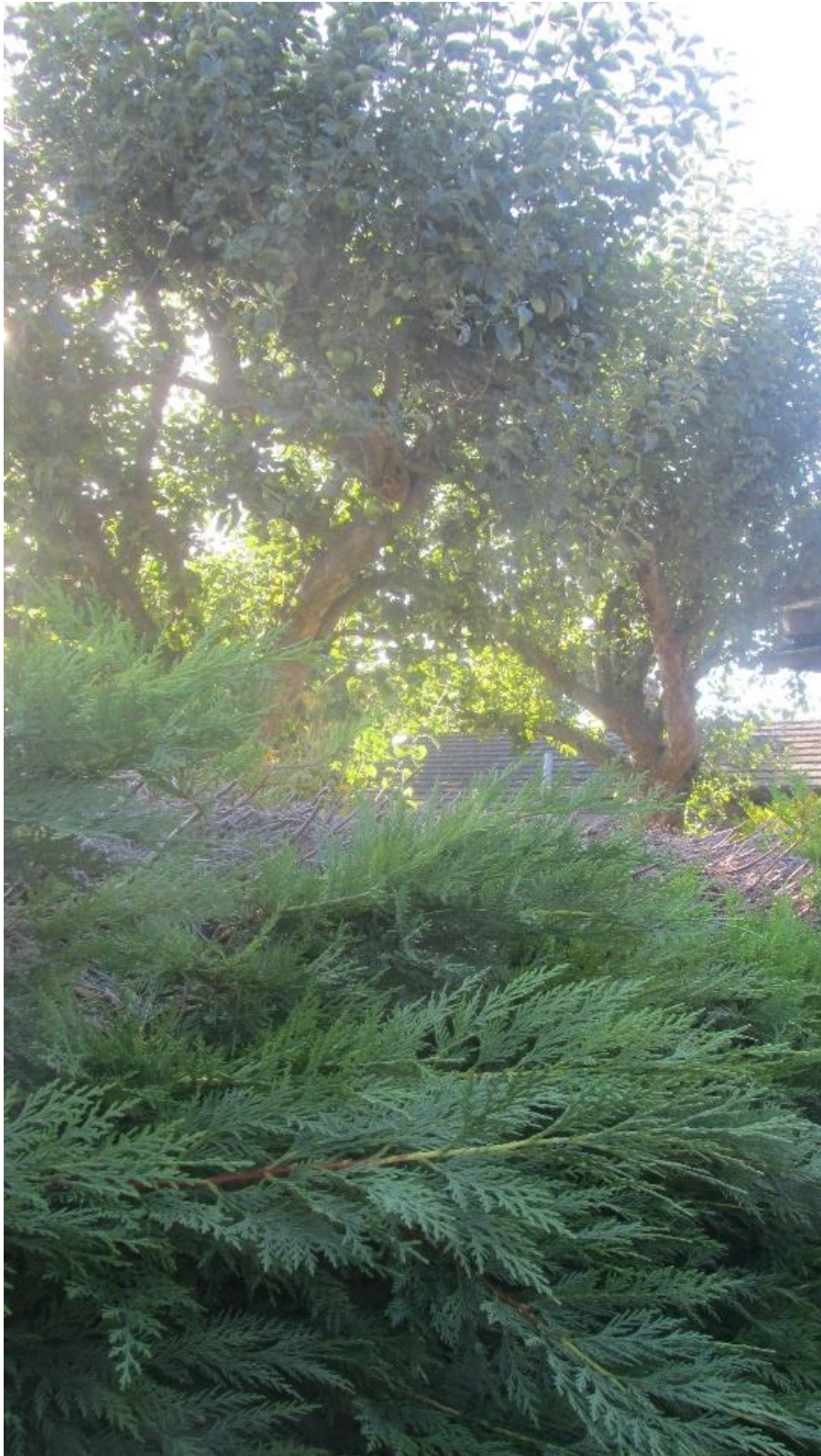
PHOTOGRAPH NO. 6 – T2 – Beech viewed from the northeast



PHOTOGRAPH NO. 7 – North side of the base of T2



PHOTOGRAPH NO. 8 – Northwest side of the base of T2



PHOTOGRAPH NO. 9 – T3 & T4 # – third-party owned apple trees



PHOTOGRAPH NO. 10 – G1 – Leyland cypress hedge



PHOTOGRAPH NO. 11 – T5 # – third-party owned Lawson cypress

APPENDIX 2

References:

Cutler, D., Richardson, I.B.K., 1981. *Tree Roots and Buildings*. 1st ed. United States of America: Longman Inc, New York.

Hillier J G (2014). *The Hillier Manual of Trees and Shrubs*. 14th ed. 80 Vincent Square, London SW1P 2PE;(Hillier Nurseries and The Royal Horticultural Society,).

NHBC Standards (2020). *NHBC Standards Effective 1 January 2024*. NHBC House, Davy Avenue, Knowhill, Milton Keynes MK5 8FP: NHBC.

UK Soil Observatory – British Geological Survey - <https://www.bgs.ac.uk/map-view> - accessed September 2024

APPENDIX 3

Statutory Tree Protection

Tree Preservation Orders/Conservation Areas

Tree Preservation Orders are made under Section 198C of the Town & Country Planning Act and applied by the 2012 Tree Regulations. They effectively prohibit unauthorised removal and pruning of trees identified within the order. Conservation areas are designated areas defined by geographic limits within which any tree with a stem diameter of more than 75mm (measured at breast height or 1.5m above ground level) is effectively protected. Certain exceptions exist under both sets of legislation, though these are limited and ideally require interpretation by a suitably qualified arboriculturist.

Felling Licenses

Felling licenses may apply for felling significant volumes of timber on sites without full planning permission. The statutory legislation in this case is the Forestry Act 1967 which is administered by the Forestry Commission.

Faculties

Faculties may be required for significant tree works on sites that fall under the jurisdiction of the church authorities. The local Parochial Church Council can advise on the need and requirements for faculties.

Hedgerow Removal Notices

A hedgerow removal notice will be required for the removal of almost any hedge growing in a rural area. Certain works are permitted without notification including (j) “for the proper management of the hedgerow”. The applicable statutory legislation may be cited as “The Hedgerow Regulations 1997” (Statutory Instrument 1997 No. 1160).