



Property Risk Inspection
LIMITED

ARBORICULTURAL ASSESSMENT REPORT



Risk Address:

Lychgate, Church Side, Bishop Burton, Beverley, HU17 8QB

For:

Client: Graham High Group
Insurer: Interested Underwriters per
Pen Underwriting

Client Ref: L/2023/81940/S
Insurer Ref: Vol/37119

 **Policy holder:** Mrs Anne Francis

 **PRI Ref:** 273767

 **Arborist:** Scott Anderson

 **Survey Date:** 11/10/2023

 **QC:** Margaret MacQueen

 **QC Date:** 16/10/2023



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1.0 INTRODUCTION AND BRIEF

- 1.1** Property Risk Inspection has been instructed on behalf of the building insurers of the insured property. We have been advised that the insured property has suffered differential movement and damage that is considered to have been caused by trees growing adjacent to the property influencing soils beneath its foundations.
- 1.2** We have been instructed to undertake a survey of the vegetation growing adjacent to the insured property in order to provide our opinion as to whether, based on the available information, any of this vegetation is likely to be influencing soil moisture levels beneath the foundations of the property, and if so, to provide recommendations as to what tree management could be implemented to effectively prevent damage continuing.
- 1.3** The vegetation growing adjacent to the risk address has been surveyed from the ground. All distances are measured to the nearest point of the risk address unless otherwise stated.

2.0 LIMITATIONS

- 2.1** Recommendations with respect to tree management are associated with the risk address as stated on the front cover of this report and following consultation with investigating engineers. The survey of trees and any other vegetation is associated with impacts on the risk address subject of this report. Matters of tree health, structural condition, and/or the safety of vegetation under third party control are specifically excluded. Third party land owners are strongly advised to seek their own professional advice as it relates to the health and stability of trees under their control.
- 2.2** Recommendations do not take account of any necessary permission (statutory or otherwise) that must be obtained before proceeding with any tree works.
- 2.3** Recommendations do not take account of any requirements for survey or mitigation relating to European or other protected species, e.g. bird nesting or bats. Land owners must obtain their own professional advice in respect of any protected species.



3.0 DISCUSSION AND ANALYSIS

3.1 Soils, soil water and vegetation

All vegetation requires water to live, and this water is substantially accessed from the soil within which the plants' roots grow.

If the soil is classified as a clay soil, then it will hold very much more water than sands, gravels and loam soils. As plants abstract water from the clay soil, the soil volume will “shrink” and “swell” during the summer as water is first removed and then added by summer rainfall. In years in which rainfall during the summer is less than the total amount of water taken from the soil by plants, shrinkage will occur. This shrinkage may remove support from building foundations, leading to cracking in the fabric of the building.

3.2 Vegetation management

The control of trees, shrubs, and climbers, by removal or pruning as appropriate, are proven techniques that can control total soil water loss thereby minimising soil shrinkage and allowing repairs to proceed.

If vegetation management works are carried out promptly, then repairs can usually proceed very quickly and the duration and distress associated with the disruption that tree related subsidence brings can be minimised.

3.3 Third party liaison and statutory controls

Tree roots do not respect physical or property boundaries and can travel for many metres beyond the above ground “dripline” of the canopy of the vegetation.

The purpose of this report is to ascertain which vegetation is the most likely substantial and/or effective contributory cause of the damage witnessed to allow for liaison with third parties or with local administrative Councils as necessary.

3.4 Evidential framework

The engineer has determined on a preliminary basis the damage to the property, its location and the likely mechanism of movement, and has concluded that the building failure is related to differential subsidence damage caused as a result of the action of vegetation. Where a factual geotechnical report has been completed, this will describe the below ground foundation design, soil and geotechnical conditions, as well as any root identification where available.



4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Recommendations

On the basis of our findings, we have considered a practical vegetation management specification.

This specification will assist in reducing the impact of the adjacent vegetation on soil moisture levels, thereby potentially stabilising foundations of the affected area of the building.

Where felling has been proposed, this will be on the basis that the vegetation in question would not respond well to a severe reduction in leaf area that would inevitably lead to decay, the development of potential hazards, and an annual or other on-going management commitment and cost.

If pruning is recommended, the specification will be designed to allow continual ease of re-pruning with a reasonable prospect of a reduction in soil water use.

4.2 Recommended vegetation management to address the current subsidence:

Tree No:	Species	Works Required	CA	TPO	Ownership
S1	Wisteria	Fell and treat stump with eco plugs (broadleaved)	No	No	PH
T1	Beech (Common)	Fell and treat stump with eco plugs (broadleaved)	Yes	No	PH
T2	Apple	Fell and treat stump with eco plugs (broadleaved)	Yes	No	PH
T3	Apple	Fell and treat stump with eco plugs (broadleaved)	Yes	No	PH
T4	Oak	Fell and treat stump with eco plugs (broadleaved)	Yes	No	PH
T8	Apple	Fell and treat stump with eco plugs (broadleaved)	Yes	No	PH
T9	Whitebeam (Swedish)	Fell and treat stump with eco plugs (broadleaved)	Yes	No	PH
T10	Plum	Fell and treat stump with eco plugs (broadleaved)	Yes	No	PH
T11	Apple (Crab)	Fell and treat stump with eco plugs (broadleaved)	Yes	No	PH
T12	Pine	Fell close to ground level (approx. 50mm) (conifer)	Yes	No	PH



Tree No:	Species	Works Required	CA	TPO	Ownership
T13	Apple (Crab)	Fell and treat stump with eco plugs (broadleaved)	yes	No	PH
T14	Pear	Fell and treat stump with eco plugs (broadleaved)	Yes	No	PH

5.0 STATUTORY CONTROLS

A review of East Riding of Yorkshire Council's website has confirmed that none of the implicated vegetation is subject to a Tree Preservation Order. There are Conservation Area controls.





6.0 APPENDIX 1: TREE TABLES

Tree No	Common Name	Age Class	Condition	Height (m)	Crown Spread (m)	Stem diam. (mm)	Dist to bldg. (m)	Roots Implicated	Pruning history	Recommendation	Tree work constraints	Notes	Owner address	Owner
G1	Rose	Young	Fair	1.5*	2*	10*	0*	Y	Subject to recent management.	No work required.		Roots have been identified but the pit was dug adjacent to the Roses. If problem persists this may be a factor.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH
S1	Wisteria	Early Mature	Fair	3*	2	40	0	Y	Subject to past management.	Fell and treat stump with eco plugs (broadleaved).	Access through side gate.	Roots identified in the trial pit, remove and treat.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH
T1	Beech (Common)	Over Mature	Fair	22*	18*	1013	2*	Y	Subject to past management.	Fell and treat stump with eco plugs (broadleaved).	Access through side gate.	Roots have been identified in the trial pit, Closest Beech to the property.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH



Tree No	Common Name	Age Class	Condition	Height (m)	Crown Spread (m)	Stem diam. (mm)	Dist to bldg. (m)	Roots Implicated	Pruning history	Recommendation	Tree work constraints	Notes	Owner address	Owner
T2	Apple	Semi-Mature	Poor	5*	3.0*	120	0.5*	Y	Subject to past management.	Fell and treat stump with eco plugs (broadleaved).	Access through side gate.	Roots have been identified in the trial pit.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH
T3	Apple	Mature	Poor	12*	10*	320*	3*	Y	Subject to past management.	Fell and treat stump with eco plugs (broadleaved).	Access through side gate.	Roots identified in the trial pit.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH
T4	Oak (English)	Semi-Mature	Good	17*	10*	440	7*	N	Subject to past management.	Fell and treat stump with eco plugs (broadleaved)..			Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH
T5	Beech (Common)	Over Mature	Fair	22*	18*	1020	19*	N	Subject to past management.	No work required.		Closest growth to property is approximately 19 metres away. Tree is far enough away.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH



Tree No	Common Name	Age Class	Condition	Height (m)	Crown Spread (m)	Stem diam. (mm)	Dist to bldg. (m)	Roots Implicated	Pruning history	Recommendation	Tree work constraints	Notes	Owner address	Owner
T6	Cypress (Lawson)	Mature	Good	16*	6*	300	15*	N	No significant past tree works.	No work required.		Tree far enough away from property.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH
T7	Plum	Semi-Mature	Fair	7*	6*	120	8*	N	Subject to past management.	No work required.			Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH
T8	Apple	Semi-Mature	Poor	5*	4*	320	0.3*	Y	Subject to past management.	Fell and treat stump with eco plugs (broadleaved).	Access through side gate.	Roots have been identified in the trial pit.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH
T9	Whitebeam (Swedish)	Semi-Mature	Good	12*	6*	180	5.5*	Y	Subject to past management.	Fell and treat stump with eco plugs (broadleaved).	Access through side gate.	Roots have been identified in the trial pit.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH



Tree No	Common Name	Age Class	Condition	Height (m)	Crown Spread (m)	Stem diam. (mm)	Dist to bldg. (m)	Roots Implicated	Pruning history	Recommendation	Tree work constraints	Notes	Owner address	Owner
T10	Plum	Semi-Mature	Fair	7*	6*	120	4*	N	Subject to past management.	Fell and treat stump with eco plugs (broadleaved).			Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH
T11	Apple (Crab)	Young	Fair	5*	3.0*	90	4	Y	Subject to past management.	Fell and treat stump with eco plugs (broadleaved).	Access through side gate.	Roots identified in the trial pit.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH
T12	Pine	Semi-Mature	Fair	16*	8	480	2*	Y	Subject to past management.	Fell close to ground level (approx. 50mm) (conifer).	Access through side gate.	Roots identified in the trial pit.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH
T13	Apple (Crab)	Young	Fair	4*	5.0*	110	3	Y	Subject to past management.	Fell and treat stump with eco plugs (broadleaved).	Access through side gate.	Roots identified in the trial pit.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH



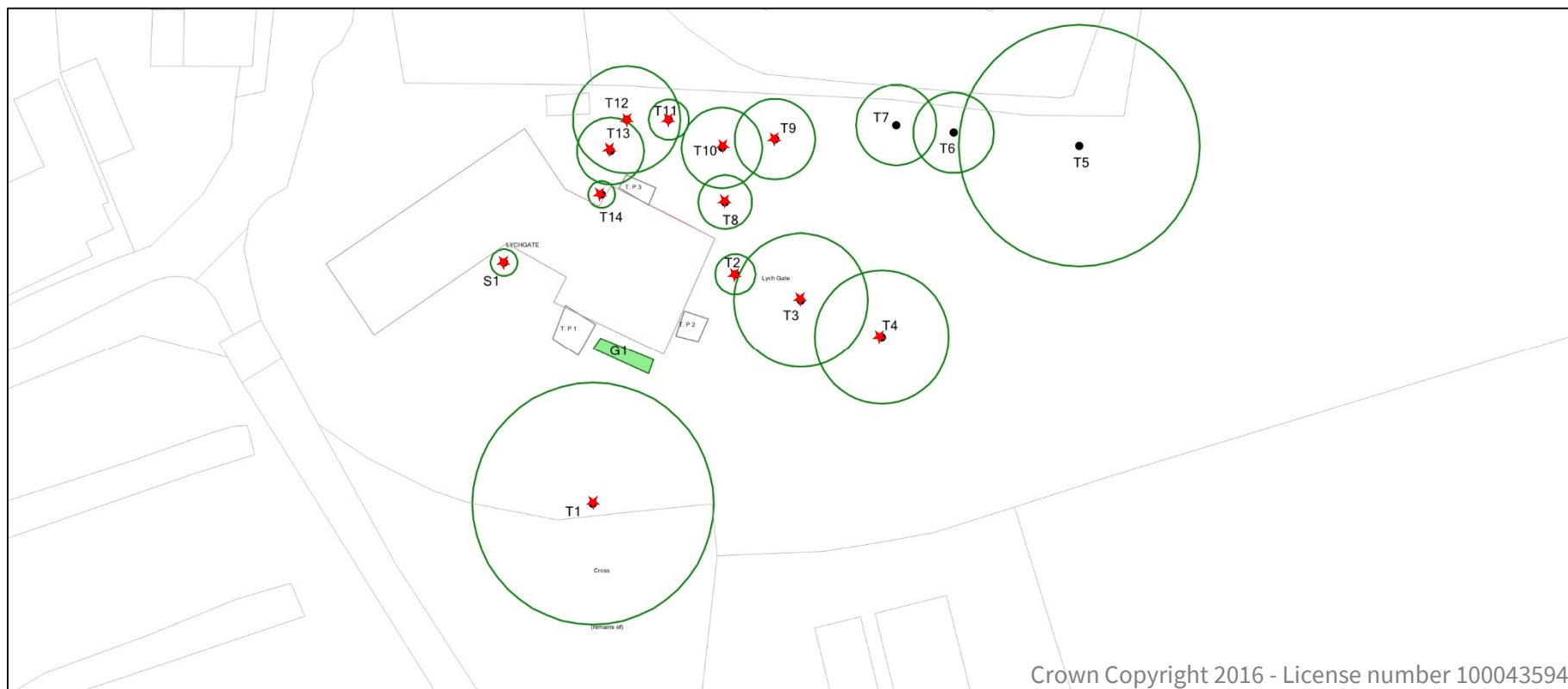
Tree No	Common Name	Age Class	Condition	Height (m)	Crown Spread (m)	Stem diam. (mm)	Dist to bldg. (m)	Roots Implicated	Pruning history	Recommendation	Tree work constraints	Notes	Owner address	Owner
T14	Pear	Young	Fair	3	2*	90	0	Y	Subject to past management.	Fell and treat stump with eco plugs (broadleaved).	Access through side gate.	Roots identified in trial pit.	Lychgate Church Side Bishop Burton Beverley HU17 8QB	PH

* Value is estimated





7.0 APPENDIX 2: SITE PLAN



Location: Lychgate, Church Side, Bishop Burton, Beverley, HU17 8QB

Job Ref: 273767

Survey Date: 11/10/2023 - NTS

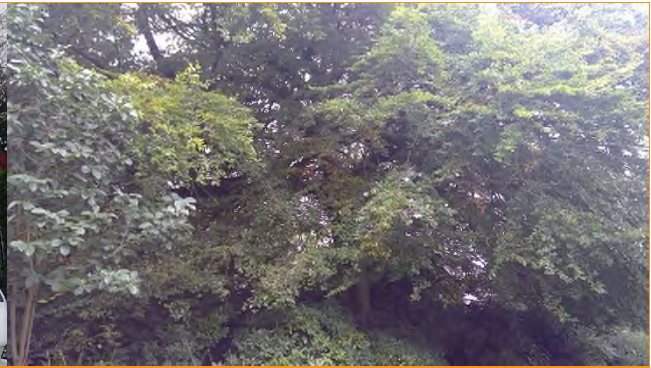
By Property Risk Inspection - Insurance Services



8.0 APPENDIX 3: SITE PHOTOGRAPHS



Front Elevation



T1 - Beech (Common)



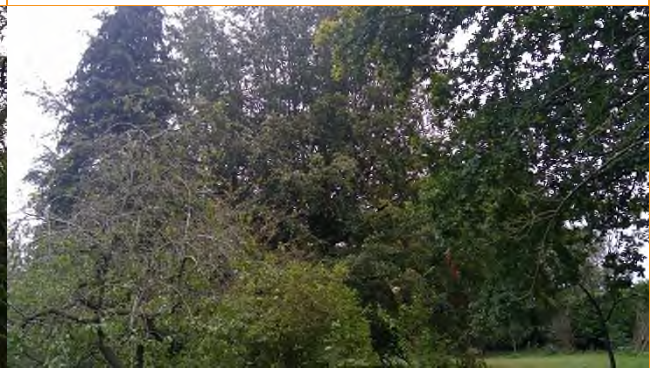
T2 - Apple



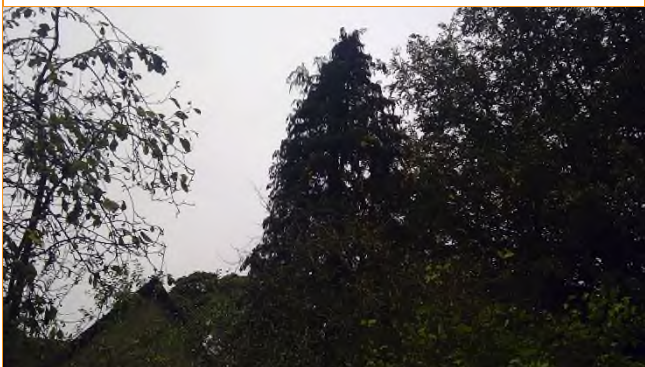
T3 - Apple



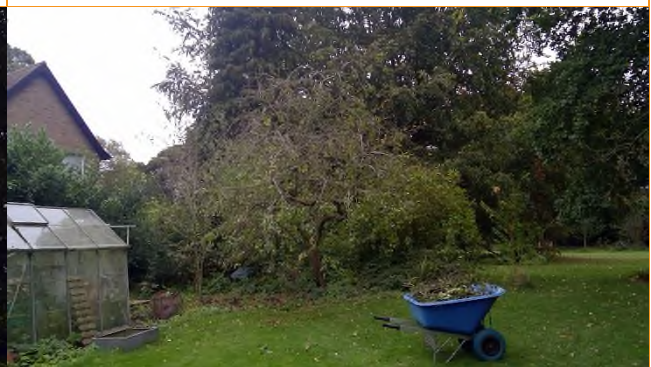
T4 - Oak (English)



T5 - Beech (Common)



T6 - Cypress (Lawson)



T7 - Plum



T8 - Apple



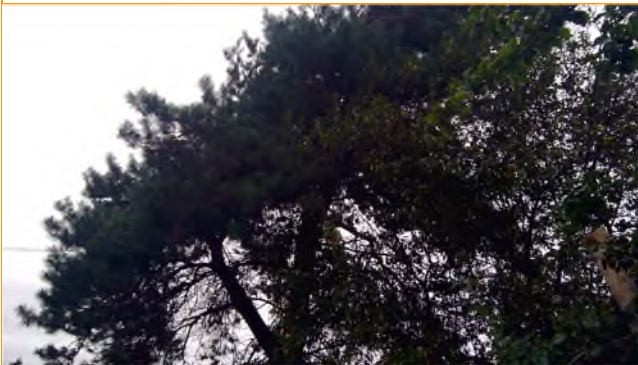
T9 - Whitebeam (Swedish)



T10 - Plum



T11 - Apple (Crab)



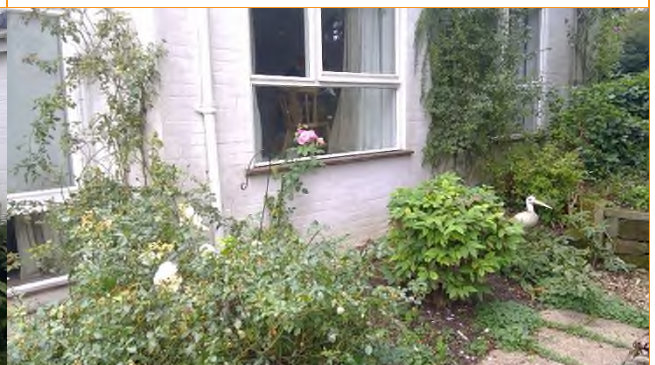
T12 - Pine



T13 - Apple (Crab)



T14 - Pear



G1 - Rose



S1 - Wisteria

9.0 APPENDIX 4: ENVIRONMENTAL STATEMENT & CO2e POLICY

Tree removal as a remedy for subsidence of low-rise buildings

When subsidence occurs to a residential home which has foundations within clay soils one common cause of movement is the presence of trees, hedges and other vegetation removing moisture from the clay causing a shrinkage of the soil and downward movement of foundations.

There are a variety of ways in which subsidence of low-rise buildings can be mitigated and this report details the vegetation options that can be implemented and that should effectively deal with the cause of movements.

It is acknowledged that removal of trees has impacts on visual amenities for owners and the wider community and that trees play an important role in our towns, cities, and the countryside in a variety of positive ways.

Trees are not recommended for removal without a clear understanding of all these impacts and increasingly of the importance of due consideration relating to the climate crisis, of global climate change and of potential negative impacts in the UK and abroad.

The subsidence event must be remedied to secure the property, its energy efficiency and weather tightness, to maintain its saleability and suitability for mortgage or re-mortgage finance if sold and as a requirement of the insurers commitment under the terms of the policy.

In considering a vegetation remedy the insurer, their advisors and arboricultural specialists are seeking to minimise impacts to the policyholder, to remedy the cause of movement quickly and effectively, and allow subsequent repairs to commence without risk of recurrence of damage. To simply leave the property exposed to intermittent periods of repair based on dry periods would also be hugely disruptive to homeowners and costly in repeat super-structural repairs, vehicle movements, materials and other claim costs in CO2e production and would not comply with a Net Zero agenda.

If vegetation management is not possible or was unsuccessful other remedies that might be attempted whether property underpinning, extensive root barriers or other soil and ground stabilisation have their own issues and impacts. Not least of these is the cost to the environment in CO2e generation from creation of cement and cement substitutes, of steel and other metals production, from costs in plastics and then the material transport, insertion, and excavation effort with heavy machinery.

A single tree removal on a site has a relatively modest annual impact on the CO2e budget loss for a site subject to subsidence of around 25kg CO2e per tree per annum. The cost in total of materials and fuel in tree removal are significantly less than 100kg CO2e.

Heavy engineering and ground stabilisation solutions can range in impacts from around 3000kg CO2e to 10,000kg CO2e in carbon cost and are often difficult to effectively mitigate relative to tree management.

However, this is not simply a “site” consideration and insurers and their advisors through PRI are committed to replace every tree lost on a subsidence scheme in sustainable forests and reforestation projects across the globe with thousands of trees already planted and through carbon reduction investments that stop CO2e being generated to have immediate positive impacts whilst new trees grow.

It’s always sad to see a tree lost but we ensure that the loss is mitigated and replaced with new trees, and this avoids heavy engineering solutions far more costly to the planet. You can learn more about our work in tree planting, climate change and carbon capture by visiting our web site at: www.propertyrisk.co.uk.





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