

Engineering Final Report

This report sets out in concise terms the nature of the evidence collected and the consultant's conclusions and recommendations

Policyholder, Property & Event Details

Policyholder		Date of Discovery	27/08/2022	
Risk Address	5 Sharpthorpe Close Lower Earley Reading RG6 4DB	Our Ref		
Location of Damage	Rear Elevation	Date Affected Area(s) Constructed	N/A	1983
Nature of Damage	Internal and external cracking	Property Type	Two Storey Semi-detached House	
Crack Widths	Cat 2, 1mm to 5mm - slight.	Indicated Mechanism of Movement	Downward / rotational movement of the foundations to the rear elevation	
Occupiers' Observations	N/A	BRE Classification	Category 2	
Comments	The damage has been caused by clay shrinkage subsidence, exacerbated by moisture extraction by nearby vegetation. The implicated vegetation is believed to be the T1 Oak, T2 Oak, T3 Oak and T4 Maple. If these trees are removed, we anticipate the property will stabilise and superstructure repairs only will be required.			
Previous Relevant Movement	N/A			

Site Investigation & Monitoring Evidence

Examination by Building Professional	Yes	BSc (Hons) Building Surveying							
Arboriculture Assessment	Yes	Report Ref(s):		Date(s)	04/10/2024				
Geotechnical TP/BH Logs & Pens	Yes	Report Ref(s):		Date(s)	10/08/2023				
Soil Laboratory Testing	Yes	Ref:		Plasticity	Medium	Desiccated?	No	Date(s)	22/08/2023
Root Analysis	Yes	Report Ref(s):		Acer spp - 0.63 to 1.6m bgl - Moderate Starch	Date(s)	31/07/2023			
Drainage Survey	Yes	Ref(s):		No drainage defects within area of concern	Date(s)	14/09/2023			
Heave Risk after Tree Removal	Low/None	Assessed By		BSc (Hons) Building Surveying					
Building Monitoring	Level	Crack Width (+/- mm)		Level/Dist (+/- mm)	3.5	Date of last reading	07/10/2024		
Monitoring Confirms	Ongoing Seasonal Movement.								
Supporting Comments	The site investigations and level monitoring have confirmed that the damage at this property has been caused by clay shrinkage subsidence, exacerbated by moisture extraction by nearby vegetation. In this instance, the offending vegetation is considered to be the T1 Oak, T2 Oak, T3 Oak and T4 Maple								

Mitigation Actions / Scope of Repair

Previous Mitigation?	No	Ownership	Species	Label	Action	Date Completed	Date Drain Repairs Completed/ No Defects Confirmed:	No Defects Confirmed.		
If Effective Mitigation is REFUSED or Is a Root Barrier Possible?	(All Estimated & Subject to Feasibility Study)	Yes	Location	Policyholder	Estimated Depth (m)	2.2	Length (m)	10	Estimate	£ 23,100.00
Mitigation Statement	Should the effective mitigation, or the funding/installation of a root barrier be refused, we will have no other option but to stabilise the building with a scheme of traditional mass concrete underpinning (stabilisation), and pursue the local authority for a recovery of these significant costs as noted above.									

Conclusion & Recommendations

Building/Construction:
The affected building is a 4 bedroom semi detached house, constructed 1983 under a pitched and clay tiled roof with a solid concrete ground bearing floor slab. The building is constructed of traditional design, with external masonry cavity walls and masonry single skin partition walling with a suspended timber first floor.

Circumstances & Damage:
The damage was first noticed in late summer of 2022. Cracking is evident to the rear elevation of the main building. At the time this damage was noted to be less than 5mm in width but has worsened since, on a seasonal and progressive basis.

Site Investigations & Monitoring:
House foundation comprised of brick and block wall to 575mm bgl, bearing on concrete to 630mm bgl, with a total projection of 0mm from the elevation. Underside of foundation (USF) was exposed to 100mm back from the face of the foundation and probed 500mm back from the face of the foundation. This is below the depth of naturally occurring moisture evaporation and as such any influence on soil moisture content can only be caused by the seasonal effects of vegetation. Shrinkable, low to intermediate plasticity Clay soils were encountered. Maple roots were found to 1.6m deep. The discovery of these roots has assisted the Arboriculturalist with the identification of the causal vegetation.

Conclusion:
Monitoring has evidenced ongoing seasonal movement.

Our investigations have confirmed that the cause of the property damage is clay shrinkage subsidence. Causal vegetation has been identified as Oak, Oak, Oak and Maple labelled T1, T2, T3 and T4 in the Arboriculturalist report mentioned above. These trees are located within influencing distance of the areas of damage and geotechnical investigations have confirmed their roots penetrate underneath affected foundations.

Drainage has no possibility of being contributory or causal.

In order to prevent any further and progressive damage to the building, we now require you to mitigate the effects that your vegetation is having on our insured's property. As experts in subsidence, we have outlined what will resolve the issue in our Arboriculturalist report (noted above).

Should you ignore this letter or fail to mitigate the cause of the ongoing property damage, we will have no other option but to stabilise the building using a traditional underpinning scheme and pursue a recovery of these costs from you by legal means.

NOTE: A further trial pit was excavated on the rear left-hand corner of the property in January 2025. Roots emanating from Quercus spp which are oaks or Castanea spp which include sweet chestnut were found within the excavations between 2.60m and 3.10m below ground level.