

Engineers Addendum 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 Name	Mr & Mrs J P & M HardimanARDIMAN	Date of discovery	17/08/2022
Risk Address	15 Russet Glade Emmer Green, Reading, RG4 8UJ	Our Ref	IFS-PRE-SUB-22-0101923
Location of damage	Ground floor lobby , bedroom/office, boiler room , Kitchen.	Date of relevant construction	c.1983
Nature of Damage	Cracking to walls and ceiling	Property Type	Two storey detached house
Crack Widths	2 and would be classified as slight.	Indicated mechanism of movement	Downward and rotational movement to rear
Occupiers' Observations	Damage developed during summer 2022.	BRE Classification	Category 2
Comments	None		
	Previous hairline crack to bedroom/office but significant shift in August 2022.		

Investigation Evidence

Examination by Building Professional	☒ Yes	Simon Davy		BSc CEng MStructE Cert CII
Trial Hole/Bore Hole Excavations	☒ Yes	Confirms foundations at reasonable depth in shrinkable clay with roots		Date of related SI 08/10/2022
CCTV Drainage survey	☐ No	The drains are not implicated in the damage		Date of Drain survey
Soil Laboratory Testing	☒ Yes	Shrinkable soils ☒ Yes	Desiccated soils ☒ Yes	Date of related SI 25/10/2022
Root Analysis	☒ Yes	Confirms Quercus and Pomoideae roots beneath rear right corner		Date of related SI 27/09/2022
Arboriculture Assessment	☒ Yes	Confirms 2 x Oak and 1 x Beech as causal		Date of related SI 11/10/2022
Heave Risk after tree removal	☐ No	Assesed By	Simon Davy	simon.davy@innovation.group
Building Monitoring	☒ Yes	Crack Width	Level/Distortion ☒ Yes	Date of related SI 18/03/2024
Monitoring to date confirms	Subsoil rehydration beneath the foundations to the rear right corner confirming vegetation influence as causal			
Supporting Comments	Site investigations confirm vegetation related clay shrinkage as causal and seeks removal of 2 x Oaks, Recommendations also for future maintenance of adjacent PH Apple trees, along with other 3rd party Oaks.			

Repair Scope

If prompt vegetation removal	Only Superstructure repairs required	Initial likely cost of repairs	£ 10,661.12
If NO vegetation is removed	Potential for mass concrete underpin of affected area of rear and right side.	Potential additional costs	£ 60,480.00
Supporting Comments	In the event that influencing trees are not removed, then it will be necessary to isolate the building from their influence. This would take the form of mass concrete underpinning to below root activity level.		

Conclusions & Recommendations

The property is a c.1983 detached two-storey dwelling, which sits on a site that slopes downwards both from left to right and front to rear. The rear elevation is being utilised as a retaining wall to the rear garden so that the back of the building is set against earth. Construction is based on cavity load-bearing masonry, although the full first floor facade to all 4 sides is of vertical hung tile finish. There has been no structural alteration to the property since purchase. The property has been in ownership with the policyholder since newly constructed. The damage was noticed suddenly in August 2022 after returning from holiday, although there had been a longstanding hairline vertical crack in the Bedroom/office area for some time prior to that. It takes the form of cracking to walls and ceilings in the lobby, bedroom/office, boiler room and kitchen.

The site investigation has confirmed that the cause of the subsidence is clay shrinkage. The foundations are between 600 and 900 mm deep along the rear of the building and bear on a firm clay soil with adequate bearing capacity. The clay soil is desiccated to a depth of 1750mm with roots to a depth of 2000mm at the rear right corner. The roots were identified as emanating from Oak and Apple trees. The desiccation in the subsoil to the rear right corner is also coincident with elevated suctions, indicating reduction of the soil moisture by extraction, which can only be the adjacent significant Oak trees at this location.

The drains at the front of the property have been surveyed and no defects were found.

Level monitoring from September 2022 shows initial uplift through to February 2023, following which there is no further movement until June 2023, when a minor downturn occurs. This is in line with rehydration after soil moisture reduction in summer 2022 and then minor additional influence in the more benign summer of 2023.

An Arborist Assessment of the site implicates 2 x Oaks (T5 & T6) off the rear right of the property in neighbouring land along with T4 Beech off the rear right. Neither the site investigation nor the monitoring supports the Beech as being causal at this time. The report also indicates a requirement for future managemnt of the Policyholder owned Apples and further Third Party owned Oaks.

Given the above factual evidence we conclude that the 2 Oak trees T5 and T6 off the rear right of the property are causal and we require their removal to arrest the current episode of subsidence. The trees are the subject of a Preservation Order and we will now submit an application to remove the TPO in order that the tree removal can be completed.