

Engineers Addendum Report

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

Policy Holder:	Mrs D Daupias-Green	Date:	17/09/2020
Property Address:	9A Rofant Road, North Wood, HA6 3BD	Our Ref:	IFS-LBG-SUB-18-0078577
Description Of Property:	c.1970 semi-detached 3 bedroom two storey house purchased by the Insured in 1983. There is a single storey porch to the front and separately to the right hand side of the main house and subsequent uPVC conservatory to the rear that pre-date the purchase by the Insured.		
Location Of Damage:	Conservatory to the rear		
Date Of Relevant Construction:	Pre-1983		
Nature Of The Damage:	Downward and outward rotation of rear conservatory as displacement of over 23 mm to rear elevation to the conservatory at dpc line and arched cracking superstructure above to around 3 to 5 mm		
Indicated Mechanism Of Movement:	Downward and outward rotation of substructure to rear of the rear conservatory.		
Category Of Damage:	Damage is at least to Category 3 of BRE Digest 251.		
Date Of Discovery:	Damage was initially discovered in September 2018.		
Occupiers' Observations:	Damage was seen to develop beyond initial hairline cracking through to notification in September 2018		
Previous Relevant Movement:	No previous movement is recorded to conservatory prior to the details of the current claim.		
Comments:	During our investigations, a rainwater pipe located to the rear left corner of the rear conservatory was discovered to be discharging to ground Whilst this is not directly implicated in the subsidence it may have an influence on the amount of movement being recorded by the level monitoring.		

Investigation Evidence:			
Examination By Building Professional:	Yes, David Caress BSc (Hons) Geol, BSc (Hons) Construct Mgmt, MCIOB, C Build E, MCABE		
Trial Hole/ Bore Hole Excavations:	Yes	04/03/209 – ref C42528G19747 & 03 September 2019 – Ref C42528G22440	
CCTV Drainage Survey:	No	A rainwater pipe located to the rear left corner of the rear conservatory was discovered to be discharging to ground Whilst this is not directly implicated in the subsidence it may have an influence on the amount of movement being recorded by the level monitoring.	
Soil Laboratory Testing:	Yes	Shrinkable soils – 04/03/2019 – ref C14189S42528	Yes
		Desiccated soils – 04/03/2019, ref C14189S42528	Yes
Root Analysis	Yes	01 March 2019 – R24763 & 09 August 2019 R31555	
Arboriculture Assessment:	Yes	Recommendations: Removal of Third Party trees (T1 – Leyland Cypress), (T2 – Oak), (TG2 – Leyland Cypress) & (TG3 – Sycamore).	
Heave Risk After Tree Removal:	No	Oedometer test from Soils report 04/03/2009, ref C14189S42528	
Building Monitoring:	Yes	Crack width: No	Level / distortion: Yes 05 November 2018 to July 2020, ref M12099
Monitoring To Date Confirms:	Initially from Sept 2018 to July 20 there is recovery of as much as 23mm to the rear elevation of the rear conservatory and downward movement of 13mm between May and July 20. This confirms that vegetation related clay shrinkage had affected the conservatory, regardless of any possible		

	drainage issue as there is uplift which would only occur with rehydration of the clay soil.		
Comments:	What we clearly have at this time is classic recovery in the period August 2019 through to May 2020. Since May 2020, we have seen a marked downturn, in line with expectation as a result of the very dry spell since May.		
	I have looked at the Arb report and taking the NHBC guidelines for 1974, I have looked to predict required foundation details for the current level of tree growth and maximum tree growth.		
	For current levels of growth (at time of Arb report) oak and Sycamore trees (T2 & TG3) so with foundations at around 1.5 m are very unlikely to be found or to have a significant influence. The current conservatory foundations are seated at 700mm. I do not consider that there is a counter agreement for inadequacy of foundation depth as the conservatory construction did not require Building Regulation and predates The Conservatory Good Building Guide.		
	Even if the conservatory foundations had been constructed to 1.5m depth, roots from the implicated Sycamore trees have been found to 2.2m depth, which greatly extend		
Repair Scope And Value			
If Prompt Vegetation Removal:	Superstructure repairs	Potential Cost	£16,000
If No Vegetation Is Removed:	Foundation stabilisation (piled raft to conservatory)	Potential Additional Cost	£20,000
Comments:	If vegetation removal is not going to be achieved we have to consider the alternative methods available to cease the movement.		
	A root barrier would not be a possibility due to the location of the implicated trees and aspect of the conservatory and main house. Due to the confines of the rear garden, even if a root barrier was placed between the trees and the property, there is risk that roots from the trees would get around this down the right and left hand sides, where it would be possible to extend the barrier beyond.		
	On the basis of the above, it seems that the only options to be considered are in regard to stabilising the building itself. In this respect there is a possibility that the conservatory is removed, a new deeper foundation to extend beyond the roots from T2 & TG3.		
	Therefore the only viable option would appear to be a piled foundation scheme and given the depth of root activity and likely spread of influence of the trees an internal piled raft is likely to be the only option available for consideration. This would be appropriate to both the rear single storey extension and the conservatory beyond.		
CONCLUSIONS AND RECOMMENDATIONS			

In light of our assessment, we recommend that trees T2 Oak and TG3 Sycamore together with T1 & TG2 Leyland Cypress are removed as appropriate mitigation at this time. If this action is taken it will not be necessary to include a major stabilisation scheme in the repair of the building.

Report prepared by:

David Caress BSc (Hons) Geol, BSc (Hons) Construct Mgmt, MCIQB, C Build E, MCABE