INNOVATION GROUP

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 Nicholas Richardson	**Date of discovery**	14/07/2022
Risk Address	3 High Meadows Kirk Ella HULL HU10 7NJ	**Our Ref**	IFS-LBG-SUB-22-0101724
		Date of relevant construction	Circa 1987
Location of damage	Main building	**Property Type**	Two storey dormer bungalow
Nature of Damage	Internal and external cracking and distortion	**Indicated mechanism of movement**	Downward/rotational movement to the left hand side/rear letf hand side corner
Crack Widths	2 and would be classified as slight.	**BRE Classification**	Category 2
Occupiers' Observations	Following the appearance of cracking, the policyholder considered it prudent to contact insurers	**Previous Relevant movement**	N.A.
Comments	There is internal and external cracking and distortion to the structure of the building. The pattern and location of the damage/distortion is consistent with a downward/rotational movement of the building due to subsidence.		

Investigation Evidence

Examination by Building Professional	Yes	John Morrison	BSc (Hons), MCIOB, AssocRICS, Cert CILA				
Trial Hole/Bore Hole Excavations	Yes	Report Ref.: C65657G31871				Date of related SI	04/04/2023
CCTV Drainage survey	Yes	The drains are not implicated in the damage				Date of Drain survey	06/02/2023
Soil Laboratory Testing	Yes	Shrinkable soils	Yes	Desiccated soils	Yes	Date of related SI	02/05/2023
Root Analysis	Yes	Report Ref.: 101724				Date of related SI	11/04/2023
Arboriculture Assessment	Yes	Report Ref.: SA-250503				Date of related SI	11/10/2022
Heave Risk after tree removal	Yes	Assesed By	John Morrison	john.morrison@innovation.group			
Building Monitoring	Yes	Crack Width	Yes	Level/Distortion	No	Date of related SI	18/08/2023
Monitoring to date confirms	The monitoring results indicate seasonal/cyclical movements in the area(s) of concern.						
Supporting Comments	Based on the site investigation findings, the likely cause of the damage is root induced shirinkage of the subsoils. Subsoil is shrinkable. There is a sycamore tree and ash tree within influencing distance. Positive root identification for species Fraxinus spp. (ash).						

Repair Scope

If prompt vegetation removal	Only Superstructure repairs required	Initial likely cost of repairs	£ 5,000.00
If NO vegetation is removed	Piling or other appropriate form of stabilisation/intervention	Potential additional costs	£ 50,000.00
Supporting Comments	Failure to remove culpable vegetation influencing stability resutling in consequential damage to the property will necessitate a form of stabilisation/intervention.		

Conclusions & Recommendations

Based on the geotechnical investigation findings, arboriculturist's assessment and accurate monitoring readings, the most likely cause of the damage is clay shrinkage subsidence exacerbated by the moisture demand of nearby vegetation. The trial pit/borehole undertaken adjacent to the front left hand side corner indicated that the foundation comprised of a brick wall to 100mm below ground level (bgl), bearing on stepped concrete to 1600mm bgl, with a total projection of 50mm from the elevation. The underside of the foundation (USF) was exposed to 200mm back from the face of the foundation and probed 200mm back from the face of the foundation. The foundation is supported on firm clay with adequate bearing capacity. No roots or water strikes were encountered. The trial pit/borehole undertaken adjacent to the rear left hand side corner indicated that the foundation comprised of a brick wall to 100mm bgl, bearing on stepped concrete to 900mm bgl with a total projection of 200mm from the elevation. The underside of the foundation (USF) was exposed to 200mm back from the face of the foundation and probed 200mm back from the face of the foundation. The foundation is supported on desiccated clay with adequate bearing capacity. Roots were encountered down to a depth of 2500mm bgl. No water strikes were encountered. The roots have been identified (using anatomical analysis) as having emanated from the species Fraxinus spp. (which include common ash). The small window of sampling/location of TP/BH is likely to account for the failure to recover roots from the sycamore tree.

The monitoring results to date indicate that in the area(s) of concern, upward movement over the autumn/winter period and downward movement during the spring/summer period has been recorded. This is characteristic of the seasonal pattern of foundation movement where vegetation is involved. The monitoring results support removal of the vegetation as recommended by the arborist. Failure to remove culpable vegetation influencing stability resulting in consequential damage to the property will necessitate a form of stabilisation/intervention at considerable cost. Given the above factual evidence we conclude that the vegetation identified by the arborist is causal and removal as prescribed by the arborist is required to arrest the current episode of subsidence.

Report Prepared By	John Morrison	BSc (Hons), MCIOB, AssocRICS, Cert CILA