Davies Subsidence

ADDENDUM TECHNICAL REPORT

Retained

DATE OF ISSUE:	20 April 2023
OUR REFERENCE NO:	72229022
YOUR REFERENCE NO:	54058817574
Ageas Insurance Ltd Davies Managed Systems Limited, P.O. Box 2801, Stoke on Trent, Staffordshire, ST4 9DN	6 Windrush Close Ickenham Uxbridge UB10 8EJ

POLICYHOLDER DETAILS	
Policyholder Home tel.:	01895 673525
Policyholder Work tel.:	Not advised
Policyholder Mobile tel.:	Not advised
VAT status	Not registered
POLICY INFORMATION, HISTORY & TIMESCALES	
Policy number:	NS0000534
Policy wording:	Fairweather - Ageas Resi Ppty Owners Policy V20.1 CLEAN (May 2020)
Authority:	Retained
Date of construction:	1958
Date of purchase:	1958
Date of policy inception:	04/05/2022
Date damage first noticed:	13/05/2022
Date claim notified to insurers:	09/09/2022
Date of our initial inspection:	20/09/2022
Supposed cause:	Subsidence
Start date of main remedial works (est.):	June 2023
Date of claim finalisation (est.):	September 2023

SUMMARY

The technical and insurance aspects of this claim are being overseen by our Regional Technical Manager, Ross Lockton BSc, BDMA Ins Tech, Cert CILA, in accordance with our Project Managed Service.
We refer to previous correspondence in respect of the above from which insurers will be aware that we are dealing with subsidence damage affecting a 3 bedroom detached, domestic dwelling comprising mainly brick, elevations beneath a pitched, tiled, roof. The property is a bungalow and is believed to have been constructed in 1958 and built by Mr Ridler. It has been well maintained over the years.

Early indications were that the most likely cause of damage was drying out and shrinkage of the underlying clay soils exacerbated by the moisture extracted by the roots of nearby vegetation.

Site investigations have now been completed and we would report further as follows:

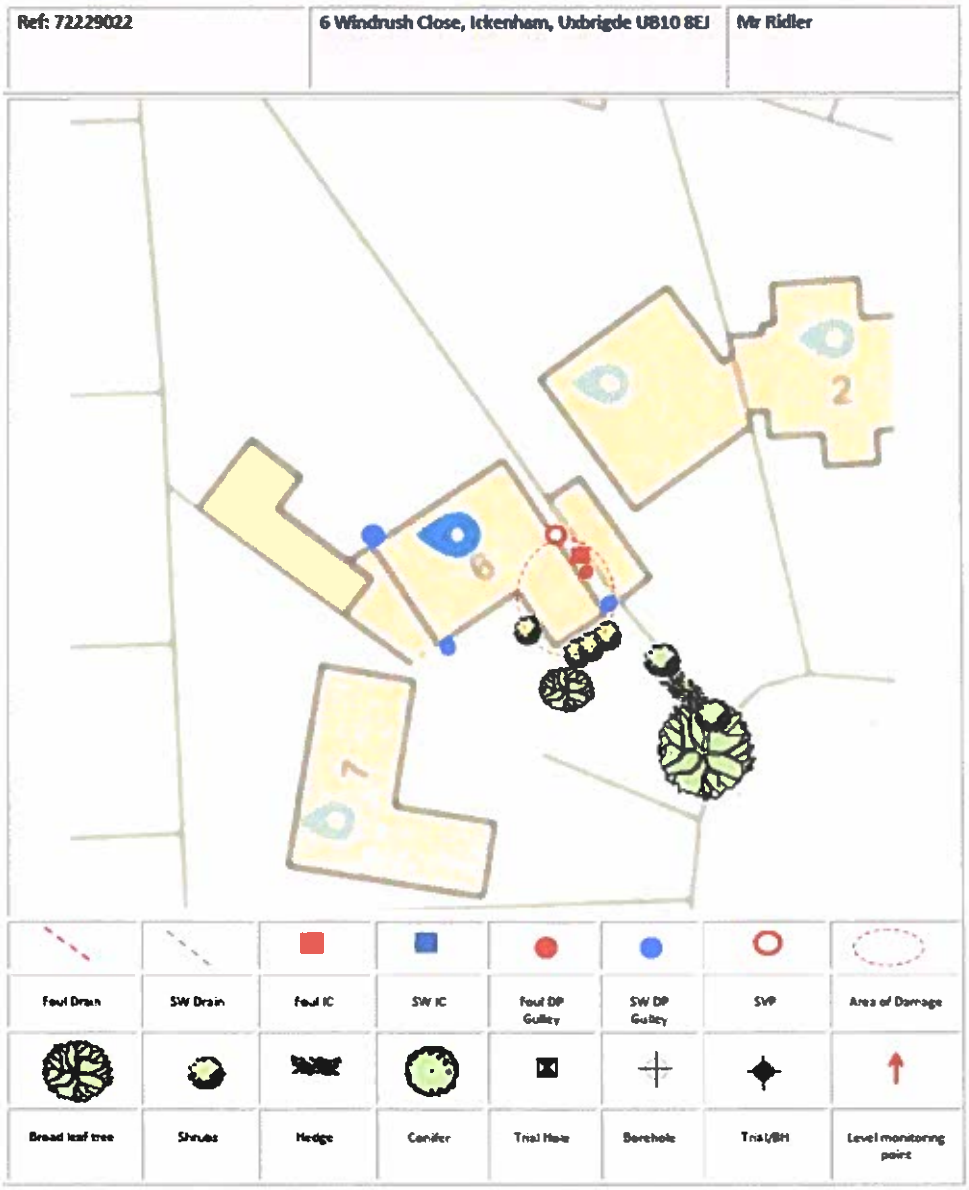

Figure 1 Site plan.

SITE INVESTIGATIONS

Trial holes

Trial hole 1

The foundations to the front of the property are a brick on a concrete strip 0.35m deep and bears onto firm light brown clay. Details of the foundation can be seen in figure 2.

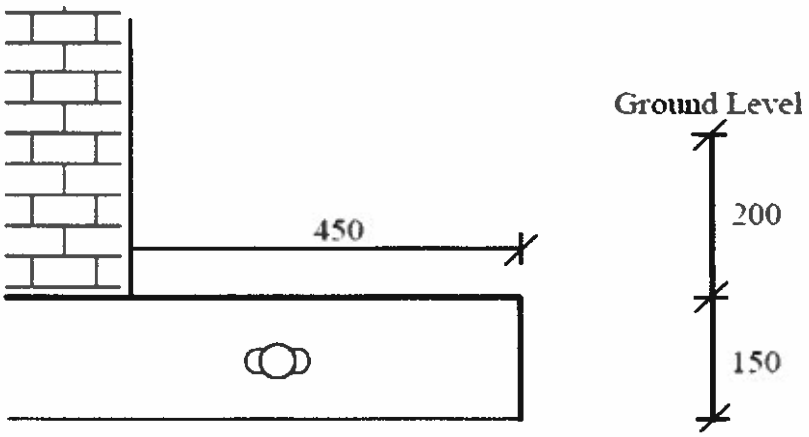

Figure 2 Foundation detail from trial pit.

Augered Boreholes

50mm diameter hand augers were sunk in the same location as the trial hole.

Augered Borehole 1

The soils from the hand auger revealed made ground consisting of topsoil with extends from ground level to the top side of the foundation. From the base of the foundation to 1.30 metres below ground level the soils are described as firm, becoming stiff, brown, slightly sandy clay. Between 1.30 metres and 3.10 metres below ground level the soils are described as stiff getting very stiff, light brown, slightly sandy clay. the borehole was terminated at 3.10 metre below ground level due to encountering soil ground which the site investigation team could not pass through.

Shear vane readings were taken throughout the borehole which determines the stiffness of the clay soils and relates to desiccation. The stiffer the soils the more desiccated they are. The readings start at 56KPa at the base of the borehole and increase with depth to 130 KPA. This indicates the soils get stiffer and desiccated at depth where roots are found.

The soils plasticity was tested at intervals throughout the borehole and found to range from 34% at the base of the borehole increasing with depth to 44% at 2.35 metres below ground level. this indicates the soils have the potential for volumetric change when deprived of water.

The degree of clay shrinkage has been determined using the Oedometer Swell Strain Test method of measuring soil values. In short, the greater the strain value, the drier the sample of clay. On this basis we have determined that there is significant clay desiccation to the front of the property in the area of damage. The depth of clay shrinkage has implied that the nearby vegetation is the prime cause of clay dehydration. The oedometer results can be seen in figure 3.

Oedometer Strain

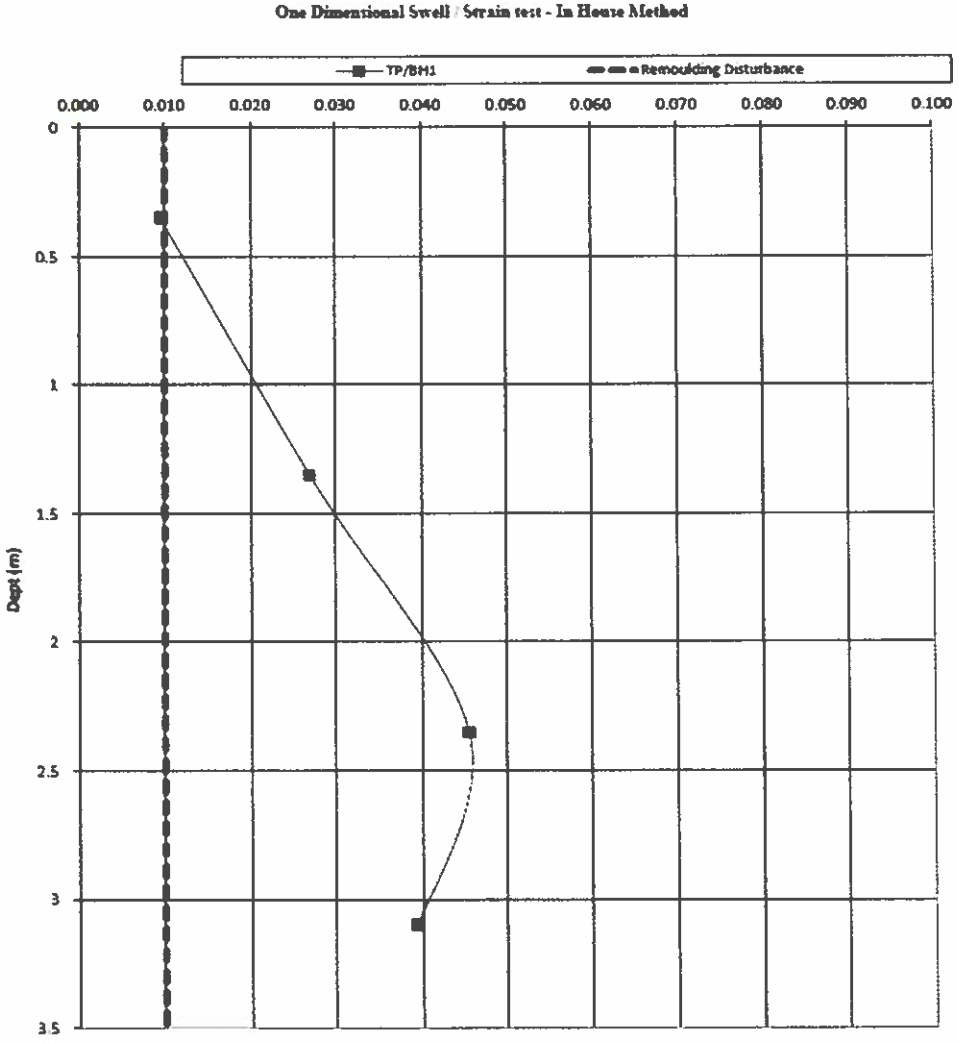

Figure 3 Oedometer strain graph.

MONITORING

Monitoring Type	Start Date	Date of Latest Readings
Level	08/02/2023	04/04/2023
Point 6 the front left corner has recovered by 2.10 mm which is expected during the winter months.		

ROOTS

Root activity of live appearance was noted to the underside of the foundations in borehole 1 and down to 2.50m below ground level.

Roots were found from the following species

Cedrus or Pinus Cedar or Pine trees
Rosoideae Rose bush
Caprifoliaceae shrubs

DRAINS

As there are drains located within close proximity to the area of damage, they were surveyed.

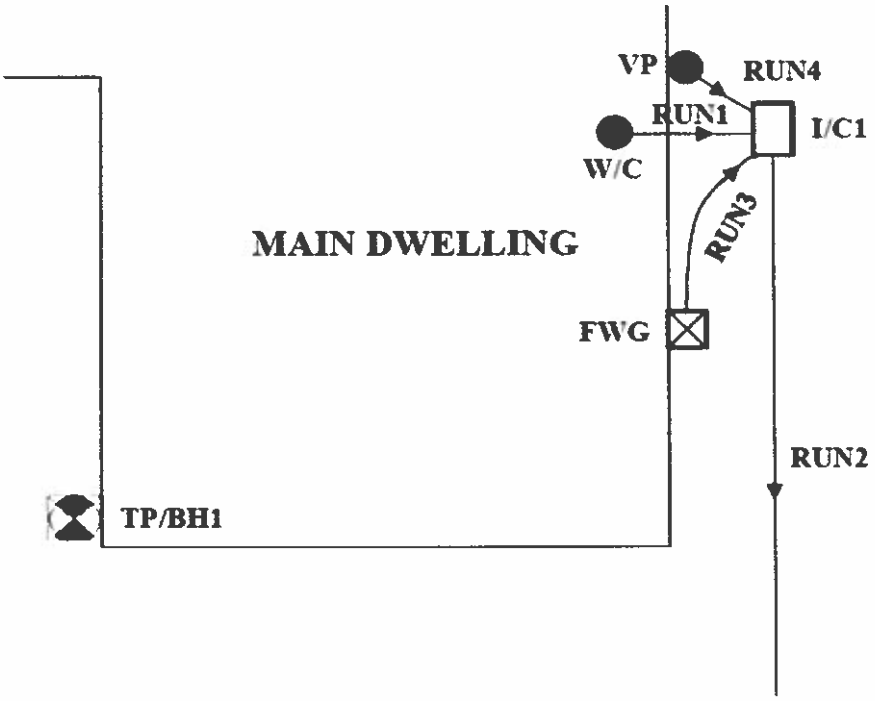

Figure 4 Drainage site plan.

The only issues with the drains are to run 2, there are mulitple cracks and root increase down the run.

CAUSE OF DAMAGE

Following analysis of the results of the site investigation, we are now able to confirm that the cause of damage is root induced clay shrinkage.

DISCUSSIONS

As mentioned above, the main cause of movement is associated with vegetation in the policyholder's garden. It is most likely that stability will be regained once the vegetation has been removed or reduced and the soils have naturally rehydrated. Once stability has been regained, it is likely that remedial works will be limited to crack repair and redecoration of the superstructure.

There are some drainage issues to run 2 which need to be rectified however this would not be the sole cause of movement.

RECOMMENDATIONS

It is recommended that small tree and rose bush is removed as soon as possible, we then need to liaise with the local authority as the Cedar tree to the front has a preservation order on it. The Cedar

tree needs to be removed as this is causing clay shrinkage, if the local authority do not lift the preservation order then substructure works will be needed.

It is recommended that drains are repaired as soon as possible.

NEXT ACTIONS

We have investigated the claim and found the front projection is suffering from root induced clay shrinkage. You will now need to remove the small tree and rose bush to the front of your property. in the meantime, we will write to the local authority and request they lift the preservation order on the cedar tree in order to remove it, as this is the primary cause.

There are some drainage issues to run 2, insurers will need to confirm to us if we can repair them under the current claim or an additional AD claim.

Once all mitigation is complete, we will confirm stability through level monitoring. Once stable repairs then can be completed.

ATTACHMENTS

Attachments are as follows:

Site Investigation Report