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Site Investigation Appraisal Report

Damage to Butlers Cottage, South Wraxall Manor, Upper South Wraxall, BA15 2SD



Front elevation

Introduction

Claimstech originally received instructions from Stephen Smout of McLarens Private Clients for Lewis Bryer, BEng CEng MICE, Chartered Engineer, to inspect the above property on 10th October 2022 at 9am in the presence [redacted] (estate manager).

Description of property

Butlers Cottage is considered to have been constructed originally in the 1700's. It is constructed adjacent to the original estate stable block.

The cottage is also located within the grounds of the estate manor house which is English Heritage Grade 1 Listed. The Manor House was originally constructed in the 1300's. It is considered that the cottage is set within the curtilage of the grade 1 English Heritage listing to the Manor House.

The cottage is constructed of solid stone walls surmounted by a multi ridged stone slate covered roof construction. The building incorporates a rear two storey projection which contains the kitchen at ground floor level and the bathroom at first floor level.

This reporting is associated with movement to the rear two storey projection.

Circumstances of discovery

Slight crack damage was originally discovered in the summer of 2022. The damage became significantly worse over the late summer period. Insurers were therefore immediately notified of the issue.

Description of damage

All observations are taken viewing the property externally from the front driveway location.

Our external inspection did not note any significant crack damage to the front elevation. We did however note raking and tapering crack damage of up to 20mm with to the rear elevation and to the rear projection elevations at both ground and first floor levels.

Internally raking and tapering crack damage of up to 6mm width was noted to the rear left room area at ground floor level. Raking and tapering crack damage was noted of up to 20mm width to the rear projection ground (kitchen) and first floor (bathroom) areas. Raking and tapering slight crack damage was noted to the landing and top of stairwell areas.

The pattern of cracking indicated recent summer 2022 movement of the rear two storey projection.

Site Investigations

Site investigations incorporating a trial pit excavation extended by hand auger and sub soil laboratory analysis and root identification were carried out by Geocore in late November 2022. A CCTV drain survey was also carried out.

The trial pit excavation revealed that the foundation in the zone of movement was a stone foundation founded at a depth of 500mm below ground level. Roots belonging to Ash were revealed within the excavation. The clay sub soil incorporated a moisture deficit and was reported as having intermediate to high plasticity levels.

The CCTV drainage survey revealed mainly defects to drain run 1 associated with ground movement.

Cause of damage

The rear left corner of the rear projection has dropped in relation to the rest of the building. This has caused tapering and raking crack damage to both the rear two storey projection and to the rear areas of the main building.

The mechanism of movement is towards the rear left mature ash tree which is approximately 6 metres from the rear of the building and is approximately 16 metres in height. We also note the presence of another mature deciduous unknown tree located to the front of the ash tree which is located within the garden to the manor house.

The mechanism of movement combined with the timing of the damage would suggest that the movement has occurred as a result of differential clay shrinkage subsidence exacerbated by rear nearby Ash tree vegetation. Normally the removal of the offending vegetation would have the effect of stabilising the building. However, we are mindful that local authority consent may be required to get offending vegetation removed.

In order to obtain consent for tree removal and to further evidence the cause of the damage, we would normally appoint an arborist to report upon removal measures. We would also recommend that level monitoring continues to evidence the mechanisms of movement occurring and also evidence stabilisation once the offending vegetation has been removed.

Once stabilisation has been confirmed, sympathetic superstructure repair carried out in accordance with local authority listed building consent should proceed. It should not be necessary to underpin the building.

It would also appear that the subsidence ground movement has damaged the underground drainage to the rear of the building within the same zone of movement.

Instructions required

- Confirmation that we can proceed to instruct an arborist to advise upon effective tree management measures within this listed building site?

- Confirmation that underground drain repairs can proceed in accordance with Geocore's drainage repair recommendations in the sum of £[redacted]

- Please can you also process the outstanding Geocore fee invoice. We have also attached our outstanding fee invoice.

Lewis Bryer BEng CEng MICE
Chartered Engineer