STRUCTURAL STATEMENT

Civil & Structural
Chartered Engineers
Hems Court, Longbrook Street
Exeter, Devon, EX4 6AP
T. 01392 421600
sands@sands-consultants.co.uk
www.sands-consultants.co.uk

Sands
Est. 1991

Project	Wonham Barton, Bampton Structural statement regarding replacement of Living Room Ground Floor				
Project No.	2022.060	**Date**	Oct 23	**By**	M Cridge

The gable end of the building has suffered with subsidence, and it appears that the corner of the building has settled. This settlement has resulted in multiple cracks in the stone, internally and externally in both the gable and front elevation. A majority of the cracking is of structural concern as it has resulted in building in the wall, dropped lintels and open joints in the face of the wall.

The cause of the subsidence appears to be related to a leaking drain running adjacent to the gable wall.

As part of the of the investigative work, excavations were carried out to determine the depth of the foundations, however, after excavating over 2m deep, the foundations were not encountered.

It is very probable that since the natural profile and slope of the ground falls steeply away that the ground levels have been built up around the gable end of the house. This would also explain the very tall retaining wall on the boundary of the site.

It is likely that the foundations were formed at a depth of circa 3m, (below existing ground) and then the ground levels made up with site won stone / earth material.

This made-up ground could have washed out / settled / compacted from the leaking drain. The drain has been repaired, and the ground has since re-formed into a firm stratum.

The ground settlement also occurred internally and under the timber suspended ground floor in the living room. The ground floor was made up of stone sleeper walls (built directly off the ground) with timber joists spanning across the top of them. The sleeper walls had sunk, and the floor dropped away in level, quite considerably alongside the gable wall.

The floor was lifted for inspection, and it was found the compacted stone ground had fallen away – similar as external. Approx 1m depth of stone was excavated away as part of the foundation investigation, but since the foundations were so deep, the excavations were terminated.

The void now needs to be back filled and the floor reinstated. However, there is a concern that due to the volume of stone required, it will compact over time, and the floor will once again fall out of level.

Sands Consultants structural recommendation, to minimise the risk of future ground settlement and the floors falling back out of level, is to introduce a new reinforced concrete slab over the entire area of the living room. This will create a 'raft' which can span or cantilevering over softer areas of ground.

This slab can be insulated and screeded.