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Mr T Cutler
2 Nelville Gardens
Hove
East Sussex
BN3 7QF

Our Ref: PSG/sh/13242/001

31st July 2013

Dear Mr Cutler

Re: **11 CHURCH STREET, SHOREHAM**

Further to your instructions, I confirm having visited the above property in order to carry out a preliminary visual inspect and report on possible movement to the front and rear walls of the building.

The inspection and report have been carried out in accordance with the Consulting Engineer's Conditions of Appointment Agreement No 3 which is attached. I comment as follows:-

1. The inspection was carried out on Wednesday, 24th July 2013.

2. Description

2.1 The property was a three storey, mid-terraced, domestic dwelling with the original part of the building thought to have been in excess of 350 years old. The rear part of the property appeared to have been formed as an extension to the original building, although the exact date of the later extension was unknown, it appeared to be in excess of 100 years old and used materials and methods common to the original form of construction

2.2 For the purpose of this report the front of the property was assumed to face east.

2.3 The second floor of the property had been formed as an addition to the original building retaining the original east roof slope and dormer windows, whilst incorporating a flat roof dormer type extension to the rear built off the rear wall of the property. The extension appeared to be of timber stud construction which was probably added over 60 years ago.

2.4 The original property had suspended timber floors, internal timber stud partitions and solid masonry external walls which were thought likely to be of a locally known random flint, chalk and cobble construction known as bungaroosh. The external walls were faced with a flint and cobble finish.

3. External Observations

3.1 Rear Elevation

3.1.1 The rear elevation had been re-pointed since its original construction, although the exact age of the re-pointing could not be confirmed, it had been applied using a cement based mortar with shingle added and had been placed over the original lime mortar substrate in which the flint cobbles were laid.

3.1.2 The finish of the re-pointing in some places, in particular over the kitchen door, was proud of the original brick arch and brick quoins surrounding the window and door arrangement.

3.1.3 Some of the re-pointing, again over and around the doors and windows, had cracked and become detached from the original lime mortar substrate behind. Cracking was noted above and to the sides of the kitchen door and window and also to the side of the lounge and first floor landing window.

3.1.4 The wall was not generally level or plumb and a slight bulge was present above and adjacent to the kitchen door in the vicinity of the ground to first floor staircase.

3.2 Front Elevation

3.2.1 General deterioration and cracking of the cement pointing to the flint cobble facing of the wall was noted. Deterioration in the form of a loss of bond and key to the lime mortar substrate with the original construction was noted.

3.2.2 The wall was not plumb and some movement and bulging of the wall was noted above the ground floor windows at first floor level.

3.2.3 A vertical hairline crack was present from the south reveal of the lounge window extending from the head of the window through the brick band directly above first floor level. The crack did not appear to be present above the brick banding.

3.2.4 Vertical hairline cracks were present to the low level render band.

3.2.5 No major cracking or movement was noted to the brick arch structures above the windows. Minor hairline vertical cracks were present to the brick soldier courses above the first floor windows, however, there did not appear to have been any movement or slippage of the soldier course lintel.

4. Internal Observations

4.1 Within the kitchen a longitudinal crack was present at the junction of the ceiling with the external wall. It was thought likely that the first floor joists spanned parallel to the external rear wall of the building and were supported intermediately by beams running in an east-west direction between the original rear wall of the building and the external rear wall of the current structure. In addition to the longitudinal crack at ceiling level the wall appeared to have moved laterally, having rotated between the head of the door and the underside of the first floor. A hairline vertical crack was also present at the junction of the stud partition to the staircase and the external wall.

4.2 On the staircase from the ground to first floor timber panelling was present to the partition walls both sides of the stair and also to the rear wall of the building. There were gaps present at the junctions of the panelling to the return stud walls both sides of the staircase and the panelling of the rear wall, although these gaps appeared to be old. The rear wall also appeared to taper and reduce in thickness from first floor level up to the underside of the first floor ceiling.

4.3 Within the bathroom a vertical hairline crack was present at the junction of the staircase partition with the rear wall. The staircase partition was of timber stud construction.

4.4 Within the en-suite bathroom, which was above the kitchen, a vertical crack was present at the junction of the stud partition to the south side of the staircase and the rear wall of the building. The rear wall was uneven and appeared to have bowed slightly at first floor level.

4.5 The first floor front walls appeared to have been dry lined and there was no evidence of significant cracking or movement noted.

4.6 Within the rear sitting room a vertical crack was present at the junction of the timber stud staircase wall and the rear wall of the building.

4.7 Internally, in general, there was evidence of usual cracking or movement consistent with a property of this type and age.

5. Conclusions

5.1 From my inspection, I confirm it appeared that some minor movement may have occurred to the front and rear walls of the property and that this was most likely due to a lack of restraint between the floor construction and the walls, together with a general deterioration of the wall due to its original form of construction. The extent of movement noted may have been made to

appear more significant where vertical cracks were present between the internal stud partitions and the external wall. Vertical cracks at junctions of walls of differing construction are common, particularly in properties of this age. There did, appear, however, to have been some more recent movement to the rear wall around the staircase where it would not be laterally tied or restrained back to the floor construction.

5.2 With regard to the front external wall it was not possible to determine whether recent movement had occurred, due to the presence of internal dry linings, nor was it possible to determine whether the wall had suffered any movement since its original construction. With properties of this age, they were often not built plumb or level and it is therefore difficult to determine, unless evidence of recent cracking or movement is present, whether the walls were originally out of alignment or if recent movement has occurred.

5.3 With a property of this type and age it is inevitable that movement and cracking will be present and, should you purchase the property, it must be expected that remedial and maintenance works will be required and that you ensure a budget is set aside to undertake such maintenance works.

5.4 Maintenance repairs and refurbishment of listed buildings can be somewhat more complicated than dealing with more modern structures or non-listed buildings, as it is generally a requirement to utilise traditional methods for undertaking remedial repairs. Most works to listed buildings will require Listed Building Consent and the associated time and cost factors need to be included and considered.

5.5 Notwithstanding the above, the general movement to the front and rear walls was not uncharacteristic of a building of this type and age, however, it would certainly benefit from provision of additional lateral restraint. The need for such works was, in my opinion, not urgent, based on my visual inspection, however, it should be assumed that there will be a requirement for this provision in the years to come.

6. Recommendations

6.1 I recommend that you budget for providing remedial strengthening works to enhance the lateral restraint of the front and rear walls. This will include for strapping and tying the external walls, probably utilising mild steel ties through the floors at each level, held in place by external pattress plates on the front and rear walls effectively tying the walls together through the building.

6.2 It will also be necessary to undertake remedial re-pointing of the elevations in order to prevent deterioration of the original lime mortar. The re-pointing works should be undertaken using a modern lime mortar rather than a

cement based mortar, as this can cause further deterioration of the substrate due to it effectively trapping moisture behind the generally waterproof cement based renders, causing further softening and weakening of the original lime mortar.

6.3 As has been previously mentioned, owning a property of this type places a responsibility on the owner to ensure its general upkeep and, given the property's age, the level of maintenance can, in some instances, be significant and the associated costs likewise. I suggest that a budget of £5,000 - £10,000 be set aside to deal with provision of additional lateral restraint to the front and rear walls. I also recommend that a general contingency sum of between £10,000 - £15,000 should be available to deal with general remedial repairs and maintenance in the future.

If you wish to obtain an estimate of potential costs to undertake the repairs and strengthening mentioned in item 6.1 and 6.2 please feel free to contact Rob Steele of R J Steele (01903 753698) and supply him with a copy of my report. I am also happy to discuss the works in principle with him to assist in providing you with a budget price.

I trust this report meets with your requirements and take this opportunity to enclose a receipted fee account for my professional fees which you were kind enough to settle in advance.

Should you wish to discuss any aspect of the above in more detail, please feel free to call me.

Yours sincerely

Eur Ing P S GRINYER
C.Eng.MI.Struct.E
on behalf of PHILIP GOACHER ASSOCIATES

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