

Webb Structural Design Ltd

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Part Structural Inspection of 8c & 12 Thornfield Way Hinckley. LE10 1BE

For: Mr & Mrs Grewcock

Conducted by: Craig Webb
On: 7th April 2017

•STRUCTURAL CALCULATIONS & DESIGN•STRUCTURAL SURVEYS•BUILDING REGULATION SUBMISSIONS•

Introduction

A part structural inspection of the two buildings has been requested. Two trees are present at the rear of number 12. One is in the garden of number 12 and one is in the garden of number 8c. An inspection of the garage and rear garden area of number 12 has been requested. An assessment of the garage and main building of number 8c is also to be conducted. Signs of cracking are present to the garage of number 8c and the garage to number 12 also appears to be under distress. A structural assessment of the damage with respect to the nearby trees is required.

An instruction was received from Mrs Grewcock on the 21st March to conduct the inspection. The inspection was made on the 7th April. Access was gained via Mrs Grewcock. The weather at the time of the inspection was clear and dry.

This report is produced on behalf of Mr & Mrs Grewcock and no liability will be accepted from any other parties.

Building & Tree History

The main dwelling at number 12 dates to approximately 1920-1955. The main building is 20-30m away from the trees and not of concern for this report. The exact age of the garage to number 12 is not known, but it is estimated to date to 1975-1990. The dwelling at number 8c is a relatively recent construction, dating to 1997.

The trees in question are protected by a tree preservation order. The tree to number 12 is an Ash and the tree to number 8c is a Sycamore. It is understood that there is a lot of history regarding the trees and the two buildings. A perusal of the planning website noted that permission to remove both trees was refused in 1997 and also 2003. Permission to trim and work on the trees was granted in 1999 and 2005.

Building Construction & Surroundings

Number 8c is a single storey bungalow. The external walls are formed in brick and block cavity wall construction. The pitched roof is tiled and formed in trussed rafters. A large double garage projects from the front of the building and this is also formed in cavity wall construction. The front garden of the property is finished in block paving. This paving also returns around the side of the property.

The garage to number 12 is a single garage. The structure is formed with pre-cast concrete panels that have been bolted together. The roof is flat in nature. The floor slab is concrete. The area in front of the garage and to the RHS side is formed in paving slabs. A narrow flower bed is present to the rear fence line.

The surrounding land is mostly flat, a slight fall to the ground is present running downwards from number 8c to the garage of number 12. The two trees appear a number of years old and are near maturity. Both trees are a similar height of approximately 8-10m.

Observations from Survey

Note that LHS & RHS observations are made facing the front of the house

Number 8c

An inspection was made of the external walls of the main house and garage area. No cracking or signs of structural movement were noted. All of the facing brickwork was noted to be in very good condition. The walls are plumb with no bowing present.



Photograph 1 – Front LHS wall elevation



Photograph 2 – Front RHS wall elevation



Photograph 3 – Garage LHS gable wall

An inspection was made within the double garage. The internal walls of the garage are plain unpainted blockwork. Vertical cracking to the blockwork was noted to the LHS gable wall. Three cracks are present to this wall, running from floor to ceiling. The cracks are spaced evenly with one near the front corner, one in the middle and one near the rear corner. The two front cracks are hairline in nature. The rear crack has a width of 5mm in the worst case. Similar cracking is present to the RHS gable wall, although a window is present to this elevation. Cracking is present above and below all four window corners. A further vertical

crack is present near the front corner. The front wall is nearly fully occupied by the large up and over door. Hairline ceiling cracks are present to the rear of the garage. No issues were noted to the concrete floor slab.



Photograph 4 – Worst of cracking to rear of LHS gable wall



Photograph 5 – Hairline cracking to middle of LHS gable wall

The front and side garden of the property is finished in block paving. A small flower bed is present around the tree location on the LHS. The block paving is generally in good order. Around the tree location, a number of blocks were noted to have been pushed upwards by the tree roots. The owner stated that they have previously re-laid this area of paving due to the roots lifting the surface.



Photograph 6 – Front garden elevation



Photograph 7 – Block paving near tree

The Ash tree was noted to be 5.7m from the garage side wall. The Sycamore tree was noted to be 5.5m from the side wall.

Number 12

The garage structure to number 12 was noted to be approximately 1.5m from the Ash tree and 2m from the Sycamore. The garage was full of stored items at the time of the survey and only a limited inspection

internally could be conducted. The concrete panel walls were noted to be in good order. No cracking or signs of spalling were noted. The RHS gable wall was noted to be slightly out of plumb.

The visible area of the garage floor slab was noted to have some cracks present. A large crack was noted to the front RHS corner of the slab.



Photograph 8 – Elevation of tree and garage



Photograph 9 – Cracking to front of garage slab



Photograph 10 – RHS gable wall to garage

The paving slabs to the front of the garage were noted to be generally level and in good order. Occasional unevenness was noted, but not to an excessive degree. The slabs to the RHS of the garage were noted to be uneven. Immediately next to the tree trunk, the paving slabs have lifted to a notable degree.



Photograph 11 – Slightly uneven slabs to front of garage



Photograph 12 – Raised slabs near tree trunk

Tree Inspection

At the time of the survey, both trees were without leaves. The identification of the trees was given by the owners of number 12 and 8c. Both trees appeared in good order. Although a detailed assessment of the trees is outside the scope of this structural report, no signs of clear deterioration or disease were noted to either tree.

Conclusion

The cracking noted to the garage of number 8c is not due to subsidence. The cracking is related to blockwork shrinkage. The masonry has dried out since construction and shrunk laterally. This has allowed vertical cracks to form at regular centres. The external masonry is in very good order and unaffected by this issue. The cracks should not progress any further in length or width. The cracks could be raked out and re-pointed if required (allow a cost of £500-£750+vat for this work).

Number 8c was constructed recently and the trees would have been present on the site before the building. As the building was constructed in 1997, the foundations of the property would have been required to meet the NHBC guidelines for foundation depths. The NBHC tables would require the footings to be approximately 1.8m deep (to the nearest garage gable wall), assuming highly shrinkable clay soil. The building has been fully signed off by the local council, hence it is assumed that the footings met their approval. Given that the house has suffered from no subsidence in the last 20 years would bear this fact out. The owner has no detailed records of the foundation specification or as-built details. In order to confirm the footings construction, it would be necessary to conduct trial holes next to the house and garage. However, as no issues are present, this is not viewed as a necessity. The house is viewed as structurally stable, with no issues relating to tree induced subsidence.

The block paving to the front garden will be subject to local movement caused by the tree roots. There is not much that can be done to avoid this issue. When the situation occurs, the paving can be locally lifted and re-laid as required.

The garage to number 12 is close to the existing trees. It is clear that large tree roots are running under the garage floor slab and disturbing the paving locally. The paving slabs can be locally re-laid to take account of the existing roots. Periodic works will be needed to this area to maintain a level floor. The garage floor slab is most likely a thin slab construction, without any structural reinforcement. In this situation, cracks are inevitable. The existing cracks are unlikely to progress much further, but they may get worse during a long dry spell and then close up slightly in the winter months. To resolve the issue would require the removal and relaying of the floor slab. A 150mm thick concrete slab with reinforcement would suffice to prevent future cracking. However, given the closeness of the trees, the slab could still move and rotate as a whole under the influence of the trees. If a new masonry based garage is to be constructed in this area, it is recommended that the foundations are mini-piled to avoid such issues.

The trees appear healthy at present, but it is recommended that this is confirmed by a tree specialist (if not already done). Given the closeness of the trees to the buildings, they should be regularly pruned and kept in good order. These works will need to be coordinated with the preservation order.



Craig Webb
BEng CEng MIStructE

29th April 2017

Notes on Survey and Report

The survey and report only covers items of the building that can easily be inspected on site. Items that are not visible on site or access cannot be gained to, are not covered in the report. This involves such things as floor construction, foundations, sealed void areas, chimney flues, wall ties, lofts with no access, etc. Disruptive investigations are not carried out without the permission of the house owner.