Harborne Building Consultancy

Structural Surveys and Designs

SPECIFIC ENGINEERS REPORT

By

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Survey Address

Stourbridge
West Midlands

Prepared for

Mr A Hill

Date: 25 April 2014

INTRODUCTION

I have been asked by Mr Hill to comment upon concerns expressed by the Homebuyers Report dated 10th April 2014.

My report has been prepared specifically to address the concerns of the Homebuyers Report. It does not deal with the general condition of the building, decorations, services, damp, timber, rot or infestation etc, except where these matters are considered to be relevant to any structural damage.

All directions are given as if viewing the house from the front elevation and front entrance canopy.

DESCRIPTION OF PROPERTIES

The property is a semi detached house built circa 1955. The house comprises solid load bearing walls and a pitched roof. To the rear left hand corner of the house there is a single skin out building with a flat felted roof. The drainage system is via a foul sewer running parallel to the rear elevation. There is a storm sewer running parallel to the front elevation.

FIGURE 1
Photograph of the front elevation of the house, window bay and entrance door of utility room.

SITE TOPOGRAPHY

The site, upon which the house was built, slopes moderately from the rear to the front of the plot.

OBSERVATIONS/ DESCRIPTION OF THE DAMAGE

The following is an abbreviated description of the damage. The photographs included in this section of the report illustrate the extent of the damage.

FIGURE 2
Photograph of the rear elevation of the house and rear elevation of outbuildings.

EXTERNALLY

Front Elevation:

- There is evidence of two long Helibars having been installed beneath the render directly above the entrance door canopy between the canopy lintel and the left hand window of the front bedroom. See comments.
- The front elevation of the house at the right hand party wall is out of vertical by 1% at ground level and then by 50mm at roof eaves level.
- The centre of the front elevation is out of vertical by 1% at ground level and then by 40mm at roof eaves level.
- The entrance concrete canopy step is out of level by 2.5%.
- The front left hand corner of the front elevation is fairly vertical at ground level and out of vertical by 20mm at roof eaves level.
- The roof ridge tiles are fairly level in the central area.
- There is significant slope to the roof ridge tiles at the left hand elevation.
- There is a horizontal render crack 1-2mm in width to the left hand side of the entrance door canopy lintel. See Figure 4.

Left Hand Elevation:

- The front left hand corner gully has been replaced with a plastic roddable gully. This is a storm drain which discharges into the storm sewer running parallel to the front elevation of the house. See Figure 7 together with comments.

- The front left hand corner of the left hand elevation is fairly vertical at both ground floor and first floor level.
- The central area of the left hand elevation is fairly vertical at ground level.
- The soil and vent pipe has been cut to carry out a CCTV survey many years ago. See Figure 3 together with comments.
- The kitchen gully has not been replaced and is in a fair condition.
- The rear left hand corner of the left hand elevation is fairly vertical at both ground level and first floor level.
- The outbuilding flat roof is in a poor condition. See Figure 10 together with recommendations.

Rear Elevation:

- The rear elevation rear left hand corner is fairly vertical at ground level and out of vertical by 20mm at roof eaves level.
- The rear elevation of the central area is fairly vertical at both ground level and first floor level.
- The rear elevation within the rear right hand party wall is fairly vertical at both ground level and first floor level.
- There is a 1mm diagonal crack above the lounge window lintel up to the bedroom window. The brickwork within this area has settled onto the concrete lintel. The concrete lintel has been left too short. See Figure 5 together with recommendations.
- There is a 1mm diagonal crack above the kitchen window lintel up to the bathroom window this area has been previously re-pointed. The concrete lintel of this window has been left too short. See Figure 6 together with recommendations.

INTERNALLY

Ground Level

Hallway:

- There is a 2-3mm diagonal crack to the front elevation of the front left hand meter cupboard.
- The solid floor within the front left hand meter cupboard has dropped by some 10mm away from the skirting boards. See Figure 8 together with recommendations.
- The stair left hand elevation is out of vertical by 1.5%.
- The hallway solid floor slopes by some 2% towards the front left hand corner.
- The door frame from the hallway leading to the lounge is fairly square.

Lounge:

- The front elevation of the lounge is out of vertical by 1%.
- The party wall of the lounge is fairly vertical.
- The rear elevation of the lounge is fairly vertical.
- An RSJ lintel has been installed between the front and rear sitting rooms of the lounge. The lintel is supported by the hallway partition wall and by the chimney breast. See Figure 9 showing the beam installation.

First Floor

Front Bedroom:

- The suspended timber floor of the front bedroom is out of level by 2%. The floor slopes towards the front left hand corner of the bedroom.
- The front elevation of the bedroom is fairly vertical.
- The door frame from the bedroom leading to the landing is significantly out of square by some 35mm.

Landing:

- There is a 1mm diagonal crack below the landing window.
- The door frame from the landing leading to the bathroom is out of square by 10mm.
- There is a 1mm vertical crack to the left hand elevation of the landing above the landing window.

Loft Space (accessed via landing):

- Triangulation configuration has been installed within the loft space supporting the roof purlins. Two large triangulation members are present which adequately support the purlins. See Figures 11 and 12.
- The front and rear roof purlins have sagged moderately in their central areas.

FIGURE 3
Soil and vent pipe and kitchen gully.

FIGURE 4
Horizontal crack to rendering to the front elevation to the left hand side of the entrance concrete canopy.

FIGURE 5
Cracking and settlement of brickwork to the rear elevation above the lounge window lintel.

FIGURE 6
Cracking and displaced brickwork to the rear elevation above the kitchen window lintel.

FIGURE 7
Roddable plastic gully installed to the front left hand corner of the house in circa 2005.

FIGURE 8
Settlement of the solid floor of the front left hand cupboard within the hallway.

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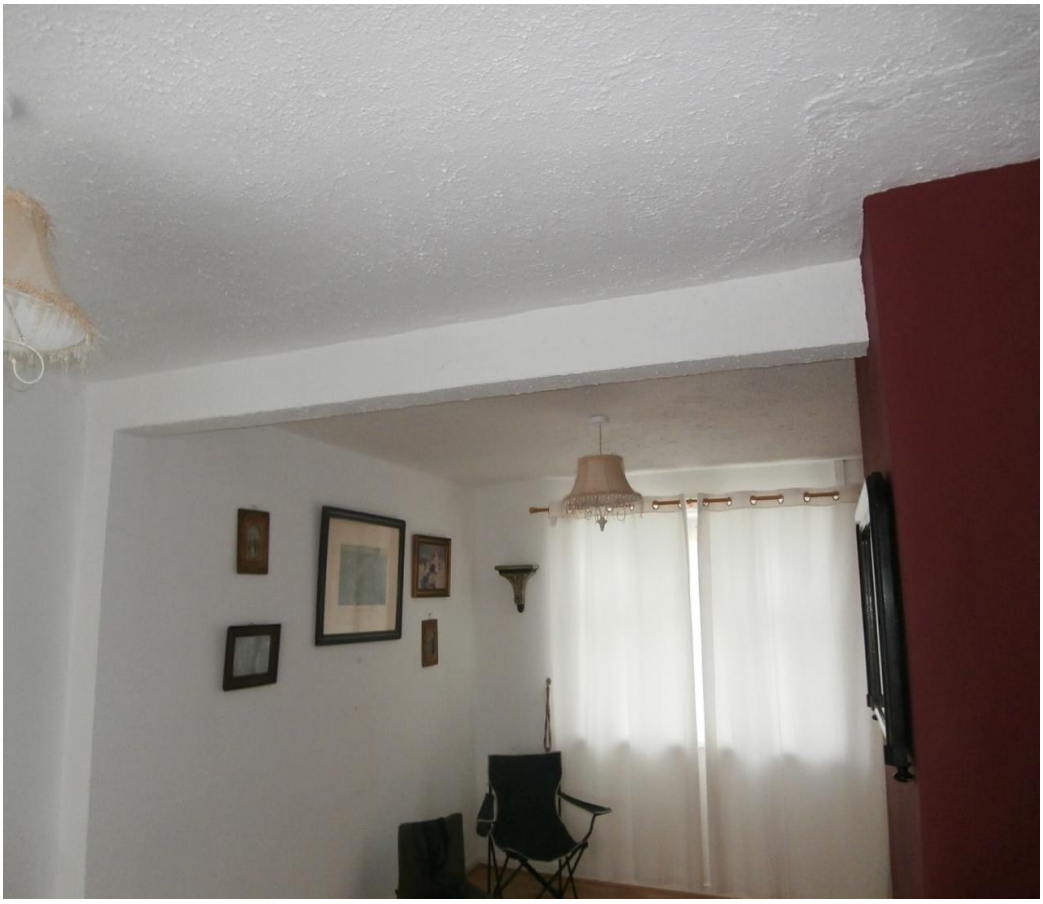

FIGURE 9

RSJ lintel introduced between the front and rear sitting rooms of the lounge which is supported by the chimney breast.

FIGURE 10

Poor condition of flat felted roof to the utility room.

FIGURE 11
Good supports to the roof timbers and purlins.

FIGURE 12
Good supports to the roof timbers and purlins

DRAINS

I understand that a CCTV survey of the drains has recently been carried out. That survey confirms that the front left hand corner storm gully has been replaced. Additionally a short length of downstream drain has been lined onto the storm sewer which runs parallel to the front elevation of this house. To the rear of the house the soil and vent pipe and kitchen gully are in a fair condition. Some 4m to the rear of the soil and vent pipe the main foul sewer runs parallel to the rear elevation of this property. I understand that no major defects were found during the CCTV survey.

CATEGORY

It is common practice to categorise the structural significance of the damage in accordance with the classification given in Table 1 of Digest 251 produced by the Building Research Establishment[1]. In this instance, the damage falls into Category 2.

Category 0	"aesthetic damage"	< 0.1mm
Category 1	"aesthetic damage"	0.1 - 1mm
Category 2	"aesthetic damage"	>1 but < 5mm
Category 3	"serviceability damage"	>5 but < 15mm
Category 4	"serviceability damage"	>15 but < 25mm
Category 5	"stability damage"	>25 mm

Extract from Table 1, B.R.E. Digest 251
Classification of damage based on crack widths.
Note: Actual categorisation can vary due to 'local' effects

DISCUSSIONS/ CAUSE OF DAMAGE

A subsidence claim was handled at this property by GAB Robins. A structural certificate was issued by GAB Robins on 9th August 2005. It appears that Helibars were installed to the front elevation above the entrance door lintel and also an internal Helibar was added within the bathroom. Many areas within the house were lath and plastered and rooms redecorated.

A Homebuyers Report was produced on behalf of my client on 10th April 2014 by Mr Paul Jackson, FRICS. That report expresses the following concerns: "We found evidence of historic subsidence to the front left hand corner of the house causing a slope to the concrete floor slab and a gap between the skirting boards as well as ongoing settlement cracks to the side outbuilding. Further movement has occurred over the window reveals at the rear where the PVC frames now provide the only method of support to the concrete lintels and which will need to be replaced. I would recommend that you obtain a structural engineers report as well as a drainage survey to establish the cause and likelihood of any further movement to the building fabric. A builder's estimate should also be obtained for the cost of installing new lintels where necessary over the window reveals". My client became concerned following the surveyors comments. I was first contacted on 17th April 2014 and appointed on 18th April 2014. My survey was carried out on 23rd April 2014.

I concur with the surveyors findings that the front left hand corner of the house has suffered subsidence damage. The estate agents are providing me with a structural certificate and schedule of building repairs following the 2005 subsidence claim. It appears that defective drains have caused subsidence to the front left hand corner of the house. Engineers adjusters carried out drainage repairs and monitoring following which Helibars were installed to the front and rear elevation of the house. I also agree with the surveyor that the solid floor within the meter cupboard has not been re-levelled. Internal floors to the landing and front bedroom slope towards the front left hand corner. My client needs to be aware that this house is suffering from moderate distortions following the subsidence claim.

I am concerned about the installation of the RSJ lintel between the front and rear sitting rooms of the lounge. This lintel installation does not meet building regulation standards as the lintel is supported in part by the chimney breast. I will be advising my client to obtain an indemnity insurance policy for the poor installation of this lintel.

[1] Building Research Establishment, Garston, Watford. Tel: 01923.674040

I also concur with the surveyor regarding the lintel failures to the rear elevation above the lounge and kitchen windows. New lintels could be introduced alternatively heavy duty Helibars could be introduced above the brick soldier course providing support to brickwork above the lintels.

The flat roof of the utility room and out buildings should be replaced.

INSURANCE

Since the subsidence claim was submitted in 2005 at this property, it would be advisable for my client to obtain insurance with the current buildings insurers. New insurers will be reluctant to provide cover due to the 2005 subsidence event.

RECOMMENDATIONS

I recommend that long Helibars are introduced to the rear elevation of the house to adequately support brickwork above the lounge and kitchen window lintels. A 2.5m long Helibar should be introduced above the soldier course of the lounge lintel. A 2m long Helibar should be introduced above the soldier course of the kitchen window lintel. The areas above both lintels can then be re-pointed.

The solid floor of the meter cupboard should be re-screeded to level. An indemnity policy should be put in place for the poor installation of the RSJ lintel between the front and rear sitting rooms of the lounge.

My client needs to be aware that the subsidence claim in 2005 would have a detrimental affect on the re-sale value of this property. It will also be detrimental to my client when obtaining buildings insurance as the 2005 subsidence event may well enhance any future insurance premiums.

The flat roof of the utility room and out buildings should be replaced.

CONCLUSION

In conclusion, this house has suffered from subsidence to its front left hand corner due to escaping water from defective drains. A subsidence claim was handled by GAB Robins and a structural certificate issued by them on 9th August 2005. My survey findings conclude that the claim was handled adequately and those structural repairs have been sufficient in the main. There are moderate distortions throughout the property following the subsidence event. Lintel replacements are required to the rear elevation or Helibar introduction to act as lintels. An indemnity insurance policy should be put in place for the poor installation of the RSJ lintel between the front and rear sitting rooms of the lounge. The meter cupboard solid floor should be re-screeded to level. The flat roof of the utility room and out buildings should be replaced. My client needs to be aware of the detrimental affect on this property following the 2005 subsidence claim.

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