Specific Structural Report

Relating to:

XXXXXXXXXX
XXXXXXXXXX
XXXXXXXXXX
XXXXXX

structural engineers & building surveyors

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Project Preface

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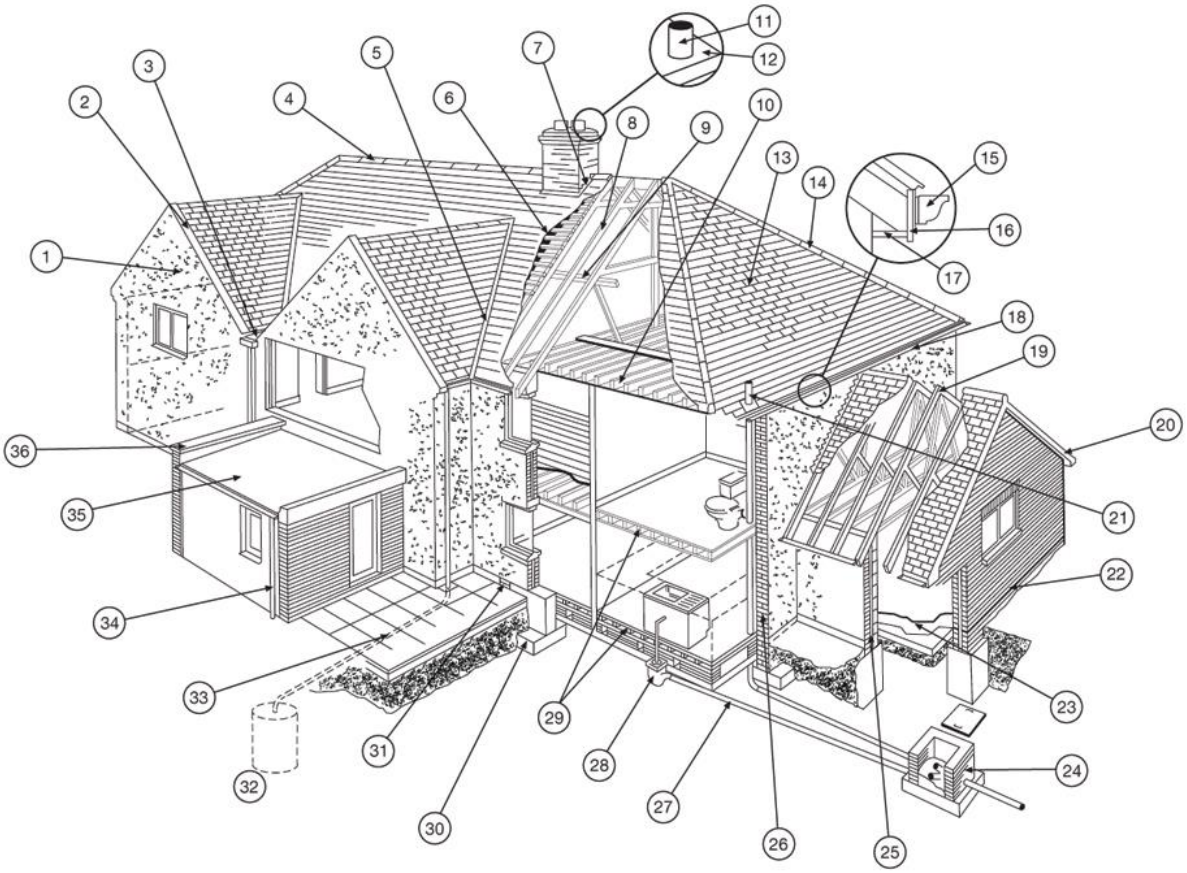
Date of Inspection:	XX/XX/XXXX
Job reference:	XXXXXXXX

Traditional House Construction



KEY

1 Gable end wall
2 Verge
3 Valley gutter
4 Ridge tile
5 Valley
6 Roofing felt
7 Flashing
8 Rafter
9 Purlin
10 Ceiling joist
11 Pot
12 Cement
13 Hip roof
14 Hip tile
15 Gutter
16 Fascia
17 Soffit
18 Eaves
19 Roof truss
20 Barge board
21 Soil-and-vent pipe
22 Damp-proof course (DPC)
23 Damp-proof membrane (DPM)
24 Inspection chamber
25 Cavity wall
26 Solid Wall
27 Foul drain
28 Gulley
29 Floor joists
30 Foundation
31 Airbrick
32 Soakaway
33 Surface water drain
34 Downpipe
35 Flat roof
36 Parapet

Table of contents

1 Introduction

1.1 Instructions

In accordance with instructions received from XXXXXXXXXXXXXXX we have carried out a Specific Structural Inspection in relation to the movement noted to the rear of the property known as XXXXXXXXXXXXXXXX. The inspection was carried out on XXXXXXXXXXX. All comments are based on visual inspection only and no opening up of areas was carried out. No below ground investigations have been carried out and no drainage survey has been undertaken.

1.2 Brief

We have been requested by the prospective purchaser to carry out a Specific Structural Inspection of the above property consequently this report is limited to the structural elements of the property only and maintenance issues will only be highlighted if considered relevant.

1.3 Site inspection

Where the terms “right hand” or “left hand” are used, they assume that the reader is facing the front of the property with the main access door situated within the front elevation.

We can only make general comments on electrical circuits as detailed comments and inspections have to be carried out by an NIC EIC registered electrician. Also we can only make general comments on gas installations, as detailed comments and inspections have to be carried out by a Gas Safe Registered Engineer.

1.4 Terminology

Where the expressions immediate, short term, medium term, long term and very long term are used they generally mean the following:

- Immediate: within 1 year
- Short Term: within the next 1 to 3 years
- Medium Term: within the next 4 to 10 years
- Long Term: within 11 to 20 years
- Very Long term: over 20 years

Where relating to structural damage and crack widths the expressions negligible, very slight, slight, moderate, severe and very severe are used they generally mean the following:

"negligible"	< 0.1mm
"very slight"	0.1 - 2mm
"slight"	>2 but < 5mm
"moderate"	>5 but < 15mm
"severe"	>15 but < 25mm
"very severe"	>25 mm

Table 1.

Classification of damage to buildings based on crack widths.

2 General Description of Property

XXXXXXXXXXXXXXX is a mid terraced two-storey property constructed in 250mm wide cavity brickwork surmounted by a timber roof with a slate tile covering.

To the right hand side of the front elevation is a bay window beneath what appears to be a flat felted roof.

To the left hand side of the front elevation is the main entrance door beneath a flat felted roof.

The drainage system is noted to collect around the rear and the left hand side of the property and we assume flows out to the front where it connects to the main public sewage system although this cannot be confirmed.

No trees of any significance were noted within influencing distance of the property.

3 Observation / Damage

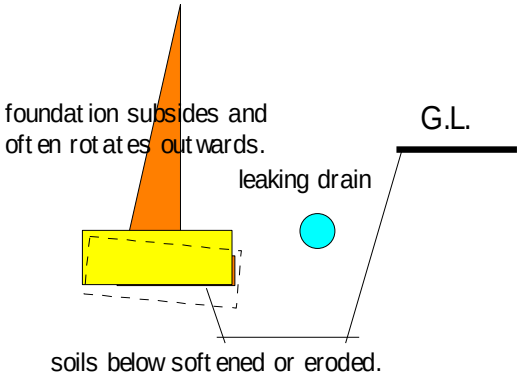
A moderate crack is to the rear right corner of the property evident that the foundation is sinking in the localised area. There is a gully to both the inspected property and the adjoining property on the external wall in the area of the cracking noted internally. The gully to the adjoining property appeared to have been blocked for a long period of time evidenced by overgrown plantation growing in and around the gully.

4 Discussion

The property has suffered from structural movement localised to blocked gully to the adjoining property.

The diagonal aspect of the cracks, the fact they tend to increase in width with height and their general disposition is indicative of a minor episode of subsidence. The cause of movement appears to be an escape of water from the drainage system in the local area of the cracking noted.

Water escaping from drains in non-cohesive soils can cause localised erosion as the finer particles of soil are washed away. It can also soften cohesive soils by reducing their shear strength.



The ground beneath the foundation softens, resulting in rotation and possible sinking of the foundation. Usually, the building stabilises following repairs to the damaged service.

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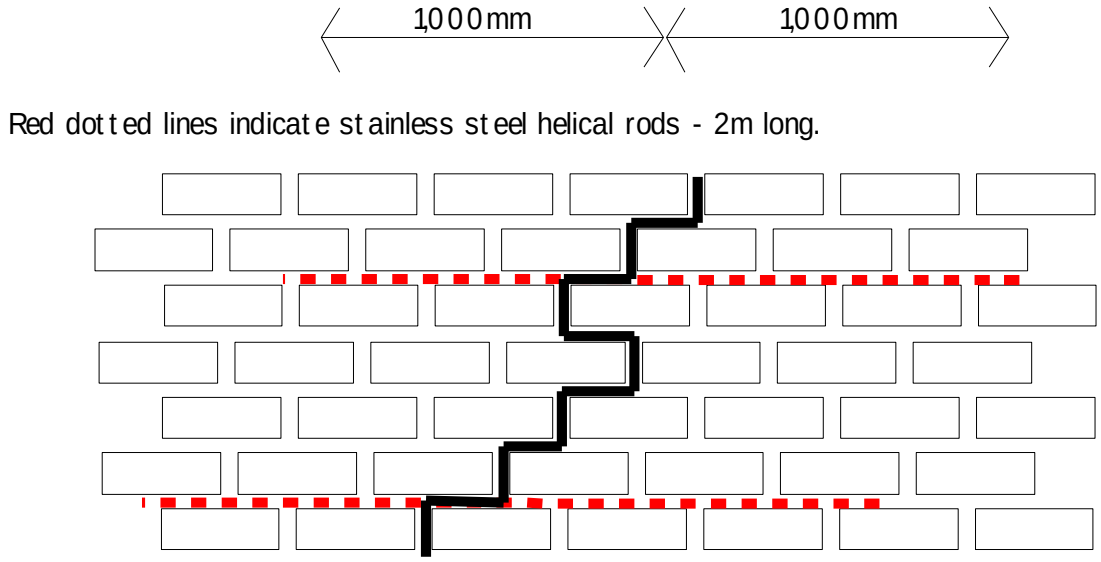
5 Repair

The adjoining properties drain should be cleared of all over growth and plantation, leaving clear for the free flow of water from the rainwater down piper above.

STRUCTURAL REPAIR SPECIFICATION

Cracks 1mm wide or less will be filled (internal) or repointed (external). Where the cracks are wider than 1mm, but less than 5mm the underlying brickwork will be exposed and any broken or cracked bricks or blocks will be replaced prior to covering with expanded metal and making good the plaster finishes. Where cracks are 5mm across or wider some form of bed joint reinforcement should be introduced.

This will involve disc cutting a 20mm deep chase into the bed joint across a crack. An epoxy resin mortar is then pressure grouted into the open joint, and stainless steel rods are set into place.



Typical repair detail for cracks wider than 5mm across, and when active movement has been recorded less than 3 mm per annum.

These bars are supplied by Helifix Ltd., 54 Uxbridge Road, London, W12 8LP. Tel: 0181.749.4346, Fax: 0181.749.8639. Technical specification - 6mm diameter austenitic stainless steel, grade 304 with a cross sectional area of 7.45mm^2. Helical pitch of 25 - 29mm, Tensile strength 1,325N/mm^2, 0.1% proof stress = 965N/mm^2.

The preferred epoxy resin grout for setting the bars into the bed joints is HeliBond MM2, a non-shrinkable cementitious grout which flows easily under pressure and reaches 80N/mm^2 in 14 days. Setting time about 15 minutes or less.

PolyPlus epoxy resin grout is preferred for filling smaller cracks. It takes about 30 minutes to set.

Cracks in ceilings are to be exposed to a clean surface prior to filling with a proprietary compound and rubbing down to a smooth even surface. The ceiling is to be lined with a heavy duty lining paper.

5 Conclusion

The property has suffered from subsidence movement in the past, which appears to be a direct result of the adjoin owners blocked gully localised to the area of the cracking noted. We consider that once the drain has been unblocked / repaired that the bearing capacity of the ground will return to normal and no further movement will result. Crack repairs should then be carried out by a reputable builder, as described above.

6 Estimated Costs

At this time we can offer little more than preliminary estimated costs for the works indicated above. However, based upon our experience of similar schemes we consider the estimated costs to be reasonable. These costs do not include any allowances for possible items of external/internal decoration. We must strongly advise against basing a firm financial judgement entirely upon the estimated costs stated. They are intended purely as a guide and must be treated with caution until detailed tender documents have been prepared and competitive quotations have been obtained. We recommend that quotations for the works are invited from reputable contractors. They should carry all necessary Liability Insurance and be affiliated to a recognised trade association and be prepared to provide an underwritten warranty relating to the quality of their workmanship. Agreement regarding the provision of such warranties should be obtained before entering into a Contract for the works.

7 Terms of Future Engagement

Design & Calculations

Within the conclusions / recommendations of our report under 'recommendations' we may advise that certain items of repair will require the preparation of design and calculations which after receiving instruction we will proceed to prepare the design / calculations as required. These will be forwarded to you directly upon completion.

Note: If design / calculations are required, you will need to have these available before obtaining estimates as the contractor will need to view them in order to price for the works.

Specialist Reports

If we have recommended you obtain additional specific specialist reports, these should be sought from specialist contractors who are qualified and experienced in this type of work and who can offer suitable certification upon completion. We will require sight of both the report and certificate from this specialist prior to issuing our own Engineer's Completion of Works Certificate.

Completion of Works Certificate

We would strongly advise that all **essential works** recommended should be inspected and certified to protect the long term insurance and saleability aspects of the property. The report and completion certificate should then be stored with your deeds to provide an accurate record for the future.

If our report is for mortgage purposes, your mortgage/insurance company are likely to **insist** that an Engineers Completion of Works Certificate is issued to cover the essential works recommended and will require sight of the documentation to release any monies / retentions due. If you are unsure as to whether you require a Certificate for mortgage/insurance purposes, please contact your mortgage company / insurer direct.

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We reserve the right to refuse copies of the report to any third party (other than those named above). We also reserve the right to amend our opinions in the event of additional information being made available at some future date. The Contracts (Rights of Third Parties) Act 1999 shall not apply to this agreement.

END OF REPORT

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