Alpine Surveys
Independent Property Survey Specialists

Structural Survey
Final Report

Another Client

Another Property, Another Road, Another Town,

Date

Alpine Surveys
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1 Introduction

Alpine Surveys were requested to undertake a structural survey of the part wall. This report will concentrate on the structural elements of the property, and any maintenance issues will be only highlighted if considered relevant.

All our comments are based on visual inspection only, and no opening up works are included. The below-ground drainage was not part of our investigation as well as the drainage survey.

Survey Overview Description

To check the overall structural condition of the party wall, we have undertaken a thorough and detailed investigation. We have carried out a detailed assessment of the exterior and party walls.

You will find that the initial section of the report provided the specific details regarding your property, its style, construction type and general condition, followed by internal assessment with the causes of the issues with relevant photos taken attached to the report.

Finally, you will find our detailed recommendations to correct and rectify, based on our findings.

2 Property Details

Client	Another Client	Survey Date	20 January 2022
Address	Another Property, Another Road, Another Town,		
Consulting Engineer	Ervin Duka, MSc Structural Engineer		
Instruction	Undertake a structural survey of the party wall.		

Property Details

Use of Property	Domestic	Property Style	Semi-Detached
Occupants	2	Number of Floors	2
Listed Building	No	Conservation Area	No
Approximate Year of Construction	1950		
Wall Construction and Covering	Cavity Wall		
Roof Construction inc Visual Condition	Slate (Attention Req)		

Historical Information

The client was concerned about the cracks on the party wall by the first floor ceiling. As per the client the cracks appeared during the alteration works undertaken from the neighbours (Nr15). In addition to this, heavy machines such as digger have been used to do excavation.

Plans Provided	No	Full Access Provided	Yes
Comments	No party wall agreement in place. Structural calculation and drawings are required to investigate the alteration works in more details.		

External Details

External Condition Summary

Self climber (ivy) growth to the front elevation. Algea growth to the roofs. Vegetation growth near the rainwater pipe.

DPC in Place	Yes	DPC Type and Cond.	DPC Assumed but unable to see
Vent Brick Details	No Air Bricks	Guttering Condition	Attention Required

External Fixtures Fittings

N/A

Windows & Doors	uPVC	Pathways & Gardens	Gravel
Chimney Stacks	Yes	Condition	Good Condition
Water Supply Checked	N/A	Drainage	N/A

3 Property Survey Details

Exterior Details

We found that there is a self-clinging climber (ivy) at the front of the elevation. We believe that the self-clinging climber (ivy) roots can cause cracks to the brick wall and mortar. Thereafter, moisture could penetrate through the cracks and cause deterioration of the bricks and mortar.

We noted algae grown to the roof. We believe that algae growth could block rainwater gutters/downpipes. Thereafter rainwater could damage the structure by the deterioration of bricks and mortar.

We found vegetation growth in the front garden near the rainwater gully. We believe that the vegetation growth can cause issues to the below ground pipes. 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.

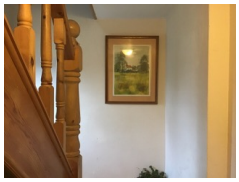
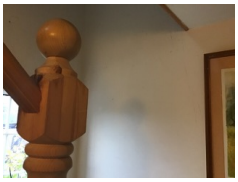
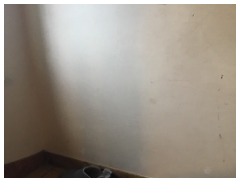
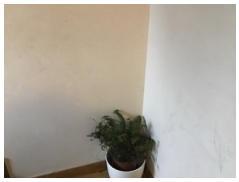
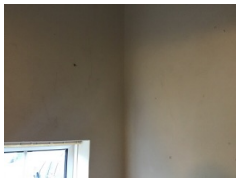
3 Property Survey Details

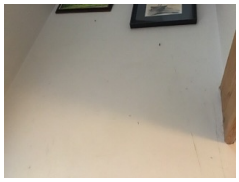
Party Wall (Ground Floor)

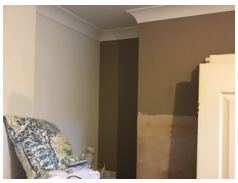
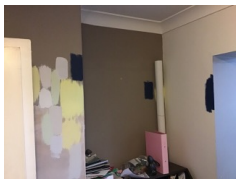
The party wall in the hall area did not have any structural defect to note.

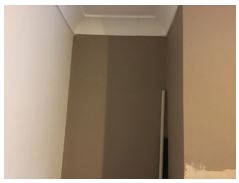
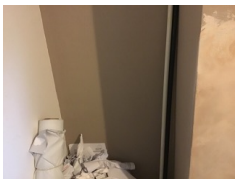
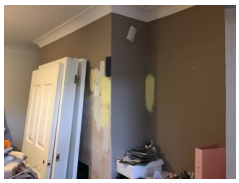
The chimney breast by the sitting room has some minor cracks in the plaster, however, these cracks are shrinkage cracks.

The other areas of the walls and ceiling by the part wall did not have any structural defect to note.



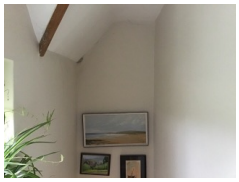




3 Property Survey Details

Party wall (First Floor) Hall

A horizontal crack was found at the top of the party wall on the first-floor ceiling level. The horizontal crack was running from the ceiling to the wall on the right side with an approximate length of 450mm and a thickness of 0.3mm. Thereafter there was a crack by the sloped ceiling. We understand that the works were not present prior to the works, and therefore we believe that the cracks are a result of the works and structural disturbance that has been caused. The undertaken works by the neighbours side are: removal of the stairs, demolition of the wall by the stairsand creating openings for the new windows in the external wall which are highlighted on the floor plan below.

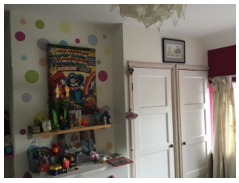
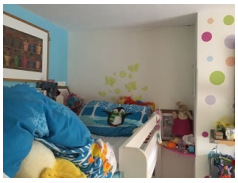
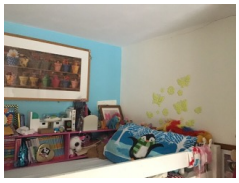
We found a water stain between the wall and ceiling by the party wall. We believe that the cracks are caused due to rainwater penetration in front of the roof.

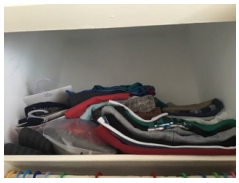


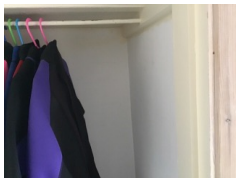
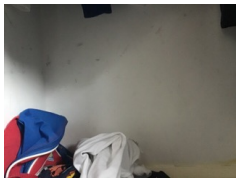
Party Wall (First Floor) Bedroom

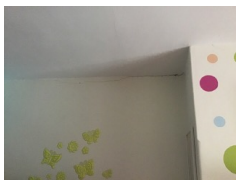
We found a vertical crack at the sloped ceiling by the right side of the party wall. The crack was at the junction of the ceiling with the wall. As per the highlighted drawings the undertaken works at the the loft space at the bathroom area and the roof structure has resulted on the cracks at the sloped ceiling.

On the left side of the chimney breast, there was a horizontal crack running from the top of the chimney breast with a length of 1100mm and an approximate thickness of 0.7mm. The horizontal cracks are caused due to lateral horizontal forces applied to the wall. The alteration works at the neighbour side have had an impact on the cracks (the areas that have creating an impact are: converting loft space into bathroom, alteration works at the font entrance by removing the staircase and the wall by the stairs, creating openings for the new windows).





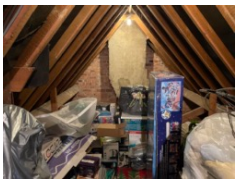
3 Property Survey Details

Party Wall (Loft)

The loft was partly boarded, and our access to the party wall was limited.

We found material storage in the lofts. We believe that the loft was not designed to support additional loads.

We investigated the brick wall and did not note any structural defect.



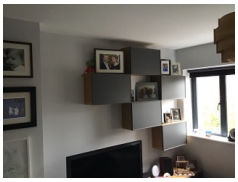
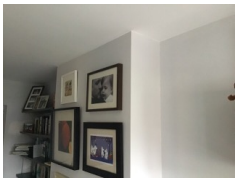
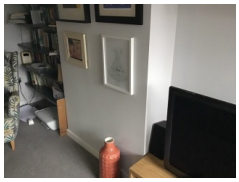
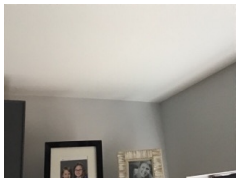
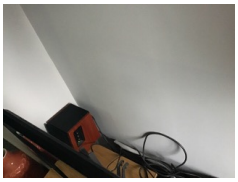
3 Property Survey Details

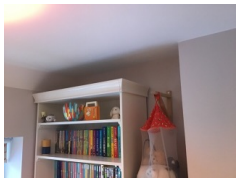
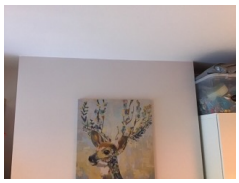
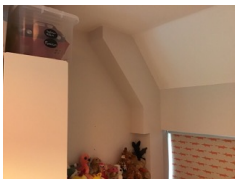
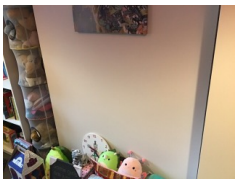
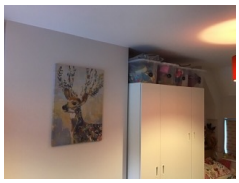
Party Wall (Neighbours)

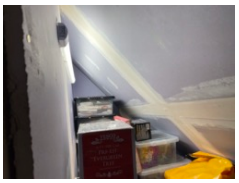
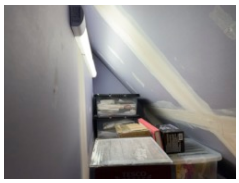
The chimney breast appears to be in an acceptable condition without any structural defect to note.

The other areas of the walls and ceiling by the part wall did not have any structural defect to note.

The loft space by the chimney stack has been converted into a bathroom. The areas have been boarded, and there was no structural defect to note.

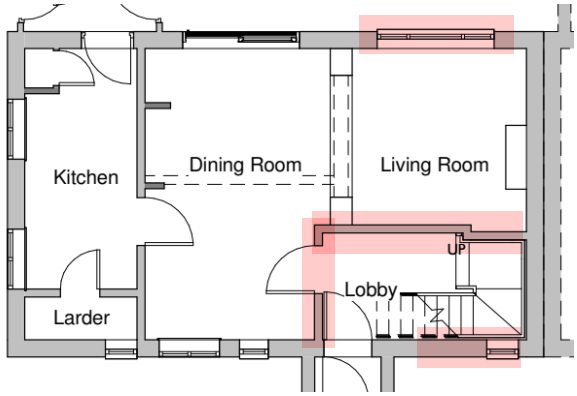






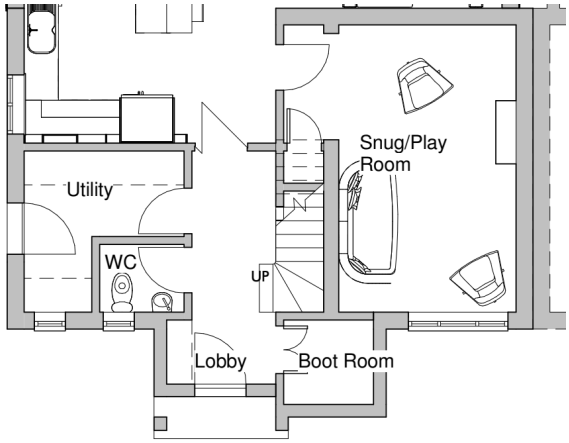



3 Property Survey Details

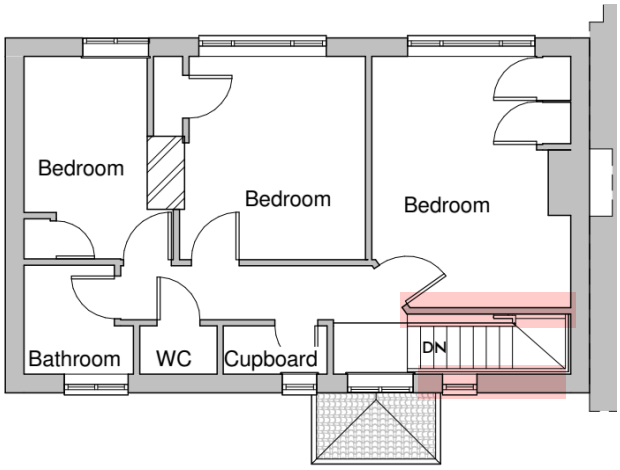
Neighbours Property Existing and Proposed floor plans (Nr 15)



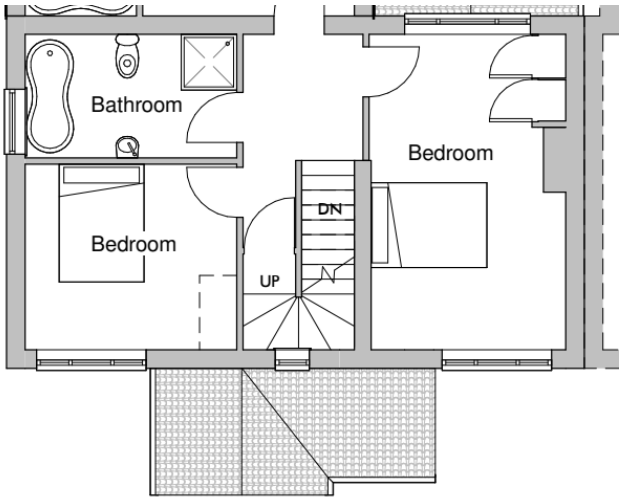
Existing Ground Floor



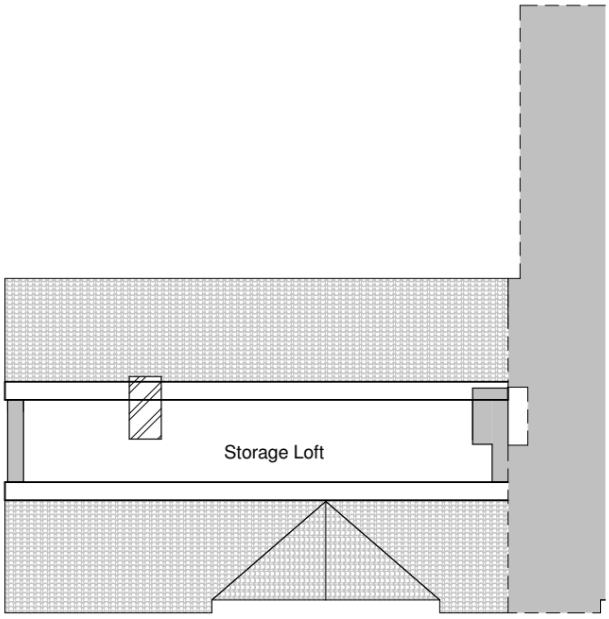
Proposed Ground Floor



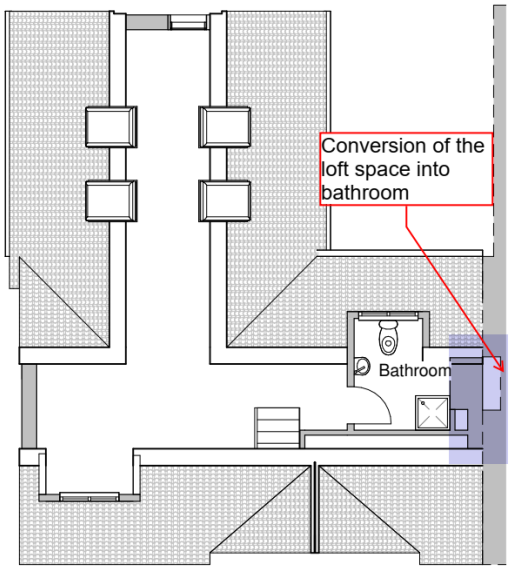
Existing First Floor



Proposed First Floor



Existing Loft space



Proposed loft space

Key:

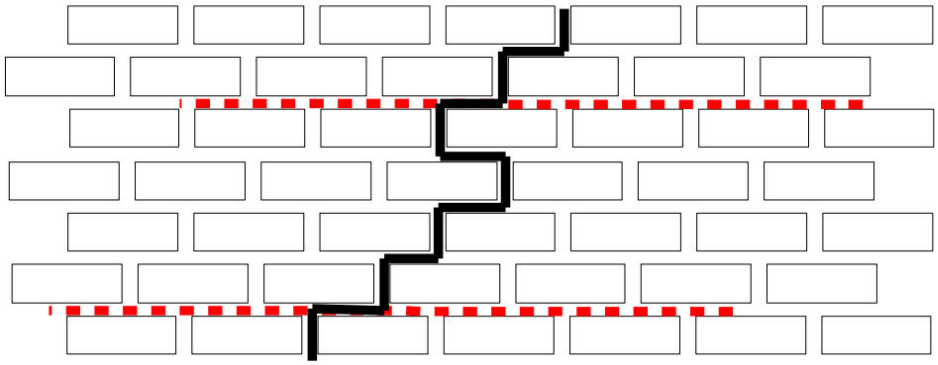
Demolition areas

Standard Details 1

STRUCTURAL REPAIR SPECIFICATION

This will involve disc cutting a 30mm deep and 8mm height chased 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.

Red dotted lines indicate stainless steel helical rods - 2000mm long.



Black line = crack.

4 Recommendations

In order to rectify the current issues, we recommend that the following works and rectifications are undertaken.

1. We recommend that the roof tiles are cleared from any algae, debris and maintained thereafter.

2. We recommend that the self-clinging climber (ivy) to be removed.

3. We recommend that the vegetation at the front garden are removed from the front garden.

4. We recommend that the crack in the ceiling by the stars to be repaired by carefully remove plaster, replace any cracked brick matching existing and to be laid on cement mortar, thereafter plaster and decorate.

5. We recommend that the roof to be inspected by a roofing specialist and any gap in the brick wall to be filled with cement mortar.

6. We recommend that the cracks to the party wall to be repaired by carefully remove plaster, remove a part of the ceiling, thereafter apply standard details 1 in vertical direction following manufacturers recommendations for strengthening the brick wall, thereafter plaster and decorate.

The results of this survey were based on the information and survey data obtained whilst on site, and we believe that this is a true and accurate assessment of the property and any issues or defects located within it, or found externally. The recommendations have been based on the survey data that we have obtained, and the detailed assessment of the property externally and internally. This combined with the Surveyors decades of experience, have allowed us to provide what Alpine Surveys believe to be the necessary requirements to correct the defects and deterioration located.

Signed: *Ervin Duka, MSc Structural Engineer*

Date: 20 January 2022