



# Housing Delivery

Planned Programmes - Major Projects  
The Gate House, Sandy Park Road,  
Brislington, Bristol BS4 3NZ

## Structural Engineer's Feedback Report

"a detailed report on a property's condition".

**Property Address:** 148 City Rd, Bristol, City of Bristol BS2 8YG

**Client Name:** BCC Void Team

**Client Address:**

**Date of Inspection:** 09 December 2015

**Our Ref:** CDL



Photo: 1 Existing Front Elevation



Photo: 2 Existing Rear Elevation

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Page 1

**CONTENTS PAGE**

<b>Page 3-10</b>	<b>1.0</b>	<b>INTRODUCTION</b>
	1.1	Condition Ratings
	1.2	Client’s Brief
	1.3	Limitations of Report
	1.4	Description of the property
	1.5	Brief overall assessment
	1.6	Environmental Matters
	1.7	Topography
	1.8	Vegetation
	1.9	Ground
	<b>2.0</b>	<b>DISCUSSION OF OBSERVATIONS</b>
	2.1	Construction Principal and Structural Risk
<b>Page 10-17</b>	<b>2.2</b>	<b>EXTERIOR</b>
	2.2.1	Chimney Stacks
	2.2.2	Main Roof covering
	2.2.3	Roof Drainage
	2.2.4	Main Walls
	2.2.5	Sub Floor Ventilation
	2.2.6	Damp Proof Course (DPC)
	2.2.7	Windows, Doors & External Joinery
	2.2.8	External Decoration
<b>Page 17-26</b>	<b>3.0</b>	<b>INTERIOR</b>
	3.1	Main Roof Construction
	3.2	Ceilings
	3.3	Walls, Partitions & Plasterwork
	3.4	Fire place, Flue & Chimney Breasts
	3.5	Floors
	3.6	Dampness
	3.7	Timber Defects
	3.8	Internal Joinery
	3.9	Interior Decorations
<b>Page 27-29</b>	<b>4.0</b>	<b>SERVICES</b>
	4.1	Drainage
	4.2	Cold water
	4.3	Gas
	4.4	Electricity
	4.5	Heating & Hot Water
	4.6	Thermal Insulation
<b>Page 30</b>	<b>5.0</b>	<b>GROUND</b>
	5.1	Garage
	5.2	Permanent Out Building
<b>Page 30</b>	<b>6.0</b>	<b>EXTERNAL AREAS, PATIOS, PATH, DRIVEWAYS, AND STAIRS</b>
<b>Page 31</b>	7.0	Boundaries & Fences
	8.0	General Environmental Factors
<b>Page 32-33</b>	<b>9.0</b>	<b>CONCLUSION</b>
<b>Page 34</b>	<b>10.0</b>	<b>RECOMMENDATIONS</b>
	<b>11.0</b>	<b>RIGHTS OF ORIGINATO</b>
<b>Page 34-35</b>	<b>12.0</b>	<b>COST ESTIMATES</b>
<b>Page 37-43</b>	<b>13.0</b>	<b>APPENDICES:</b> Glossary of building terms

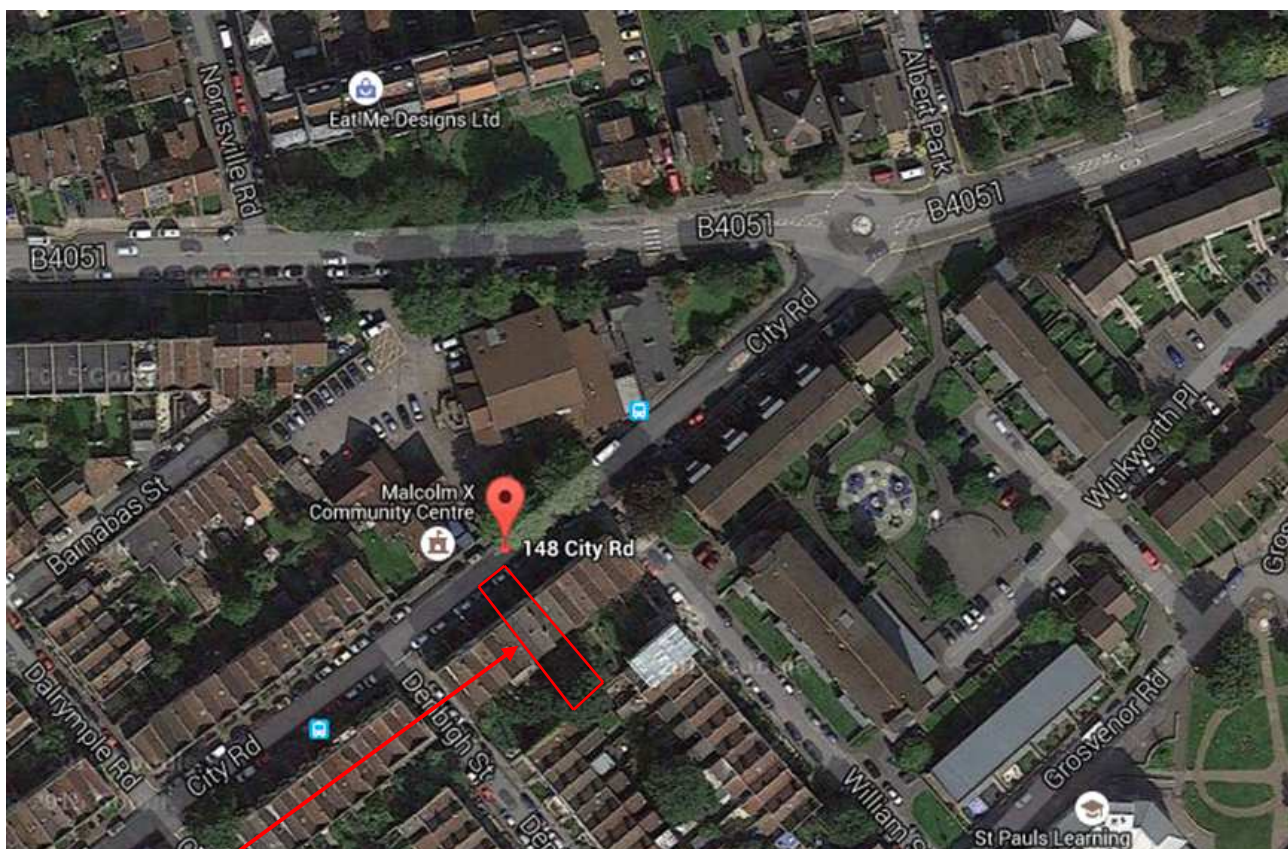


Photo: 3 Aerial view of the property 148 City Road St. Pauls Bristol BS2 8YG

## 1.0 INTRODUCTION

Firstly, may we thank you for your instructions. Following a brief inspection visit to site on 07<sup>st</sup> November 2015 and follow-on inspection on 09 November 2015, we have now prepared the structural inspection feedback report for the aforementioned property. The report takes the following format: an introductory section (which you are currently reading), which includes condition ratings, client brief & limitation of the report; we then describe the property, assess and discuss our observations and include a synopsis of the structural defects; a summary of our findings, details of the examination and rating each finding. We conclude the section with general information on cost estimates.

Our aim is to provide advice and information on this property, its construction, the materials used and its condition in a format that is clear and easy to understand.

We are aware that a report of this nature can be somewhat daunting. We would stress that as the landlord the property defects could represent a large financial outlay. While we hope you will read the entire report, we suggest that you initially look at the "House Illustration" , "Glossary of Building Terms" in the APPENDIX (This will help you understand some of the technical terms in the report), as well as the Summary/Conclusion so that you get a general feel for the way the report is written. We would of course be pleased to discuss any aspect of the report further with you. We recommend that you set aside time to read the report in full, consider the comments, make notes of any areas which you wish to discuss further and then phone us or arrange a meeting for further clarification.

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Page 3

### 1.1 CONDITION RATINGS 1,2 & 3

What everyone wants to know is how significant any defect is and whether the repairs need to be dealt with now while the property is void, or whether they can wait until after occupation – for each repair: we tell you how urgent and significant it is. Where repair or further investigation is required, the appropriate advice about what action to take is provided at the end of the section

#### CONDITION RATINGS

#### DEFINITION

1. **Satisfactory Repair:** Considered to be in an acceptable state of repair and condition taking into account the age of the property. No repair is required.
2. **Maintenance Required:** Considered by the engineer to be in a generally acceptable condition but requires some routine maintenance and repair which is considered normal for a property of this age and character. These defects or shortcomings would be taken into account by a reasonable occupier when viewing the property.
3. **Urgent Repair or Further Investigation Needed:** Defects or shortcomings that are an actual or developing threat to the fabric of the building or to personal safety. Repair or further investigation is required immediately. These defects may affect the Councils decision to repair or to sell the property.

Remember this is just a guide but it should help you prioritise the lettings. Take special note of items with a condition rating **3** as further investigation may be needed by a specialist contractor. You are strongly advised not to let out the property until all the items given a rating of **2** or **3** is repaired.

### 1.2 Structure team Brief

We were commissioned by the void team, to attend site and undertake a structural inspection and prepare an inspection feedback report in accordance with the Terms and Conditions of Engagement. It is pointed out that this is a general building inspection report on the property and not a Schedule of Condition which would list every minor defect. It is a report, intended to give a general opinion as to the condition of the property, and to enable the void team to plan a re-let and future maintenance.

This report has been prepared solely for the benefit of the named client. No liability is accepted to any third party.

No formal enquiries have been made of the Statutory Authorities or investigations made to verify information as to the tenure and existence of rights or easements.

Where work has been carried out to the property in the past, the engineer cannot warrant that this has been done in accordance with manufacturers' recommendations, and European Standards and Codes of Practice, Agreement Certificates, and statutory regulations.

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Page 4

Prior to letting out the property, you should factor sufficient time within your letting schedule for all of the further investigations we have recommended if required and allow all the repairs to be carried out.

### 1.3 Limitations of the Report

The contents of this report are strictly confined to comments concerning those terms outlined in the brief above. If the report does refer to some minor defects, this does not imply that the building is free from other such defects. The report should not be construed as a valuation or homebuyers report and is not an inventory of every single defect, some of which would not significantly affect the use of the building. The findings are not intended to be an exhaustive list of minor defects. They are purely significant structural defects apparent from a visual inspection. Further defects may be encountered during the remedial work to the property.

Comment cannot be given on areas that are covered, concealed or not otherwise readily visible. There may be detectable signs of concealed defects, in which case recommendations are made in the report. In the absence of any such evidence it must be assumed in producing this report that such areas are free from defect. If greater assurance is required on these matters, it will be necessary to carry out exposure works. Unless these are carried out during the repair work, prior to letting the property, there is a risk that additional defects and consequent repair costs will be discovered at a later date. This risk should be discussed with the engineer.

The inspection of the services was limited to those areas which are visible. No comment can be made as to the soundness of any services which are not visible. Services have not been tested but where appropriate, specific advice has been made as to the advisability of having the services inspected by a specialist contractor.

It must be accepted that this report can only comment on what is visible and reasonably accessible to the engineer surveying at the time of inspection.

The property is vacant The loft to the property has not been inspected a few stored items at the access point and whilst we have made every effort to examine this area thoroughly it must be accepted that there are certain restrictions on what can be reasonably accessed in this area.

### 1.4 Description of the property

**Property type** The property is a traditional mid-terraced house converted into 3No.flats with load bearing masonry construction with tiled roof, similar to most of the properties in this area and forms part of a row of houses. Only the ground floor flat 148A was inspected.

**Year built** Circa 1900. (Solicitors to verify).

**Accommodation** Ground Floor The property forms part of the converted 3 flats Lounge, Kitchen and WC. Front and rear bedroom

**Outbuildings:** There is no outbuilding with this property.  
**External:** The property has a private enclosed front and rear garden.

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Page 5

Location	The property is situated on the outskirts of Bristol town centre with a good range of amenities and facilities. The area is a popular and generally high value suburb.
The Site and Surrounding Area	property occupies a regular shaped level plot. The boundaries are marked physically on all sides.
Tenure	The property is vacant and it has been assumed that the property is to be re-let with vacant possession on completion of the repair works.
Floor area	Approximately 50m2.

**1.5 BRIEF OVERALL ASSESSMENT**

The structural frame of the building is in reasonably good condition. It was apparent from our inspection however, that the property is in need of major repair work, details of which we give in our observations later in this report. It is important that the report should be considered in its entirety before proceeding with the re-let. Please note, where we have provided estimates of costs for repairs, these are based on a combination of quotations from independent contractors as well as our own experience. These figures are for guidance only to help budget for the repair work or to assist with making an informed decision whether to dispose of the property.

**1.6 ENVIRONMENTAL MATTERS**

There is soil vent pipe to the property, we are not aware of any adverse environmental factors affecting the property. We are not aware that this area has had any recent flooding problems.

Planning	No issues noted.
Building Regulations	The repair work will involve some structural design and building services work which will need Building Regulation approval.
Roads	No issues noted.
Rights of way	No issues noted.
Drainage	It is assumed that the property is connected to the mains sewer. There are signs of broken drains which will need to be repaired.
Party Wall Etc. Act 1996	N/A.
Flying Freeholds	N/A.

Service and testing documentation	Test to all services will be done during and on completion of the repair works and documentation for the appliances i.e. boiler and central heating system will form part of the tenant pack.
Guarantees	Guarantees should be obtained for the glazing, if available.
Other Matters	None.
Weather	The weather was dry and sunny for the first 2 hours, later turning wet and overcast during the survey. This preceded a period of similar weather conditions.
Furnished or unfurnished	The property was vacant and unfurnished at the time of our inspection.

### 1.7 Topography

Topographically, the site slightly slopes down towards the South-East. Surface water and overall groundwater flows on site, are expected to mimic the general topography of the site, flowing towards the South-East. Flow to groundwater may occur through the soils finding a possible route to the aquifer at depth. Surface water flow could find a possible route via surface water drains and channels to the South-East of the site leading to the drainage system. The property lies within an established residential area and originally contains a combination of shrubs and mature trees at the rear garden some of which have in the past being removed and which fall mainly on the periphery of the property. The property benefits from side fences of the front garden wall from the adjacent properties. Similarly the rear garden has vegetation growth on the boundary line and side walls from the adjacent properties.

**Occupancy** The property was vacant at the time of our inspection. We saw no signs of any formal or informal tenancy arrangements.

### 1.8 Vegetation

There were several shrubs and tree nearby. The photographs show the remaining shrubs and tree from the adjacent garden situated close to the wall and on the boundary line respectively. We were also informed by the local residents that there were several shrubs at the front elevation side which have since been removed. It was difficult to verify this. However stumps from former shrubs which have been removed are visible and the remaining shrubs are very close to the front elevation wall of the property. Unfortunately without a tree specialist, it was difficult to confirm the specie of the tree in the rear garden which is approximately 12m away from the property. We believe there is future cause for concern with regards to the roots to this tree as it continues to grow.

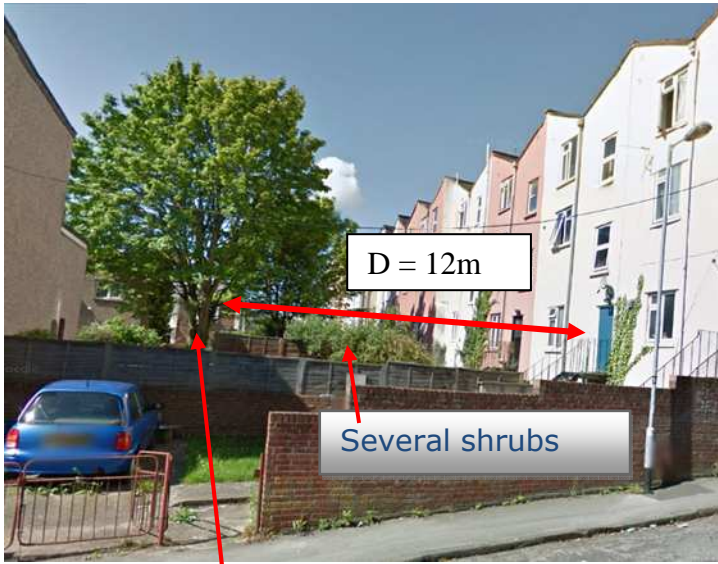
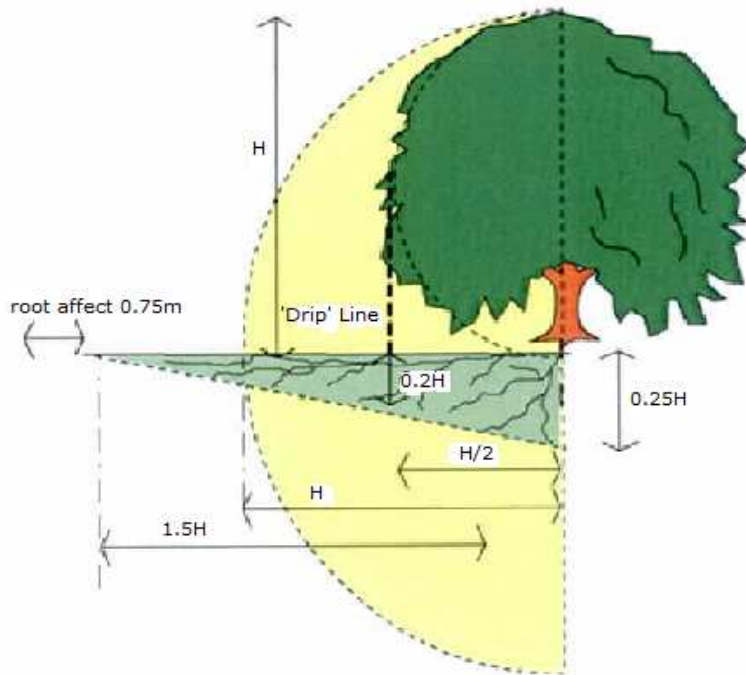


Photo: 4

Tree from the adjacent garden near the boundary line approx. 12m from the wall

See sketch. Tree roots can be troublesome in cohesive (clay) soils because they can induce volumetric change. They are rarely troublesome in non-cohesive soils (sand and gravels etc.) other than when they enter drains, in which case collapse and blockages can ensue. Both old and young trees are tolerant of quite heavy pruning and crown thinning. Broadleaf trees typically have wider spreading roots and higher water demands than coniferous species and many are better adapted to growing on heavy clay soils. Some are capable of sprouting from cut stumps or bare wood and most will tolerate pruning better than conifers. However heavy pruning of any tree should be avoided if possible, as it stimulates the formation of dense masses of weakly attached new branches which can become dangerous if not re-cut periodically to keep their weight down.



A visual examination of the South-East elevation shows signs of the tree and several shrubs

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which are very close to the wall and the tree approximately 12m from the rear elevation wall. Because this tree has not reach maturity we would recommend that its growth is managed to ensure it does not affecting the integrity of the building in the future. This need to be communicated to the adjoining property owner working together to minimised the future impact of the tree roots to the property.

We believe that the `zone of influence of the shrubs removed from the front garden and the existing shrubs and the tree near the rear garden has caused failure within the foundation edges as the root system could have been encroaching on the drains. The movement could be a combination of the tree root encroaching in the drains causing blockages and cracks to the joints allowing water from the drains to discharge directly in to the base of the wall and soften the ground beneath the wall. Or the tree roots could have extended beneath the house’s foundations inducing volumetric changes. We refer you to our later comments in this regard in the main wall section in this report.

## 1.9 Ground

The building is situated on a slight sloping ground, susceptible to clay deposits. We have not carried out trial holes to expose the foundation however, given the age of the property, we can expect there to be a relatively shallow depth to the foundation. Because of this the external load bearing walls have insufficient depth to avoid atmospheric changes and the effect of vegetation.

Trees close to buildings can cause unequal settlement where once active roots dry out. As discussed above, there is a mature tree away from the building; however more notably there are shrubs close to the building, some which has since been removed. The condition of the front elevation of the property is in reasonable condition; there was no visible signs of settlement cracks in this wall. We refer you to our later comments in this regard in the main wall section in this report.

## 2.0 DISCUSSION OF OBSERVATIONS

### 2.1 CONSTRUCTIONAL PRINCIPLES & STRUCTURAL RISKS

#### Description

The construction principles consider the way in which a property supports vertical and lateral loads through its fabric. It therefore assesses whether the structural parts of the building i.e. walls, floors and roof, will provide adequate strength and rigidity at all times.

Although dwellings can be built in a number of different shapes and sizes, all must satisfy construction principles which will ensure that the building does not fail when built or when reasonable loads are placed upon it.

## Construction Principles

The roof is supported on timber rafters. This loading is transferred down through loadbearing external walls to foundations at ground level. Lateral restraint to the structure is likely to be provided by fixed wall plates at roof level and braced by internal floors and loadbearing walls. The floors are in turn supported on the loadbearing internal and external walls. We can expect there to be foundations of a relatively shallow depth given the age of the property.

The loft has an independent loadbearing loft structure which is carried on timber loft joists from the spine wall to the left and right side external walls.

## Structural Movement

We noticed evidence of slight past movement to the property as is common with a property of this age and type in this part of Bristol. This is mainly due to slight settlement of the structure (natural compression of the building materials and soil under load) as well as natural differential thermal expansion and contraction of the building at weak points. We noted past cracks at the external rear elevation to the main wall of the property. We refer you to our later comments in this regard in the main wall section in this report.

## 2.2 EXTERIOR

### 2.2.1 CHIMNEY STACKS

There are two brick stacks to the property.

The chimney stacks are in reasonable condition and one stack appears to have been rebuilt. This is quite common to stacks which often become eroded if they are in an exposed position.

The chimney stack would formerly have served a fireplace and this flue appears to have been sealed off and appear to have ventilation visible at the basement floor. We refer you to our later comments in this regard in the fireplaces section in this report.

## Condition Rating



## 2.2.2 MAIN ROOF COVERINGS

### Description

The roof to the property has concrete tiles laid over a felt underlining. The original roof covering was slate tiles which have since been replaced with concrete tiles. Due to the weight of the concrete tiles, slight sag to the rafters was noticeable. We refer you to our later comments in this regard in the loft section in this report.

### Condition

There is moss coverage to some areas of the roof This is apparent to several properties in the area. Also it is clear that most tiled roofs of 20 years and over often look dirty, caused usually by the presence of black lichen.

The main roof coverings appear to be in a generally reasonable condition with no evidence of significant defects noted. There is a sign of past water leakage from the roof, apparent from the staining to the wall at roof level, but we believed work has been carried out to stop this water penetration.

There appears to be a slightly sag to the roof.

As discussed above, the roof originally was slate tiles and has been formerly stripped and re-laid over a felt underlining which provides a secondary defence against leakages from wind driven rain or snow. The felt appears to be in a satisfactory condition with no evidence of significant deterioration where visible.

### Condition Rating

1



Photo: 5 Roof with Velux window



Photo: 6 Roof with new chimneystack



Photo: 7 Roof with Valley

### 2.2.3 ROOF DRAINAGE

**Description** The gutters and all of the downpipes to the property are in modern plastic sections discharging to gullies at ground level.

**Condition** Inadequate disposal of rainwater can cause serious problems in a building including damp, timber decay and structural movement. Keeping gutters and downpipes (and the drains to which they connect) clean and in good condition is always important.

We notice the slabs holding the gullies directly below the rear elevation down pipes appear to be subsiding. We believe the water could be discharging directly to the ground rather than into the gullies. We refer you to our later comments in this regard in the drainage section in this report.



Photo: 8 Rainwater downpipe to the rear elevation Photo: 9 Rainwater downpipe to the rear elevation

Condition Rating



## 2.2.4 MAIN WALLS

### Description

The main walls are of cavity construction. This is the normal form of construction found on houses from the mid-1930's to the present day, although many older houses have a variation of the same form of wall detail. As the name implies, cavity walls are constructed with two leaves of brick or block work – with a cavity between. The benefits of the cavity are that the wall cannot let water through its depth whilst the air in the cavity offers improved insulation standards. The outer and inner leaves of a cavity wall are usually stabilised with ties made of galvanised steel or plastic. In some cases, the ties which hold the outer and inner leaves together begin to rust. At first, they expand causing the outer leaf to bow and eventually may collapse.

### Condition

During our inspection we saw no sign of this in this property. Cavity wall tie failure is more common in older houses (prior to 1980) and is often known to be a problem in particular areas. We would alert you to potential maintenance regarding cavity wall ties if there were visible signs of problems or if we are aware of previous problems in nearby properties. We believed this not to be the case in this property.

It is clear that, even though cavity construction is effective, water can sometimes penetrate the outer skin of the wall. We therefore would expect cavity trays to be inserted over window and door openings to catch this water. Also, there should be drainage channels left through the mortar joints from these trays although they are frequently omitted. During our inspection, it was clear from the exposed timber lintel at the rear window of the property that there is no cavity tray over the window or door opening.

Our inspection of the external surfaces of the main walls was made from ground level with the aid of binoculars, a spirit level and a standard surveyor's ladder. The foundations have not been exposed. Whilst there is a risk of unseen defects, there are no above ground signs of defective foundations. There are no signs of any unusual significant movement or distortion to the main walls at the front elevation of the building. The main walls at the front and side elevations are in a generally satisfactory condition where visible, consistent with their age and are free from any obvious significant on-going distortion or cracking that would lead us to suspect the structural integrity of the property.

There is however cause for concern with regards to rear elevation wall. The wall is pulling away from the building, and will need to be tied back; to ensure structural stability. As discussed in this report the cracked masonry to this elevation is saturated from leakages from wind driven rain and the broken rain water downpipes discharging water directly into the wall, this water is tracking back into the floors and ceilings. There are several lintel failures on this elevation, this will need urgent attention.

The all elevation is distorted and need major structural work to re-store the stability, the work will also include stitching work, dismantling out of plumb brick work and re building back up to plumb level, re-pointing, re-rendering and painting. The work will require propping the existing building, full scaffolding to ensure the work is carried out safely. All saturated masonry work will need to be exposed for considerable amount of time to dry before re-rendering work can start.

There is rotten timber lintel in urgent need of replacement, also, there is some minor past settlements, thermal and shrinkage movement cracks, on the entire elevation. The exact cause of the foundation movement or the likelihood of the degree of progressive movement we believe in this circumstance it is likely that there is an outside influence affecting the bearing capacity of the foundation sub stratum beneath the property.

In most cases the above influence is either

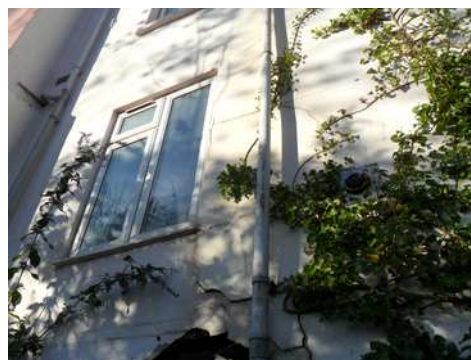
- a) Leaking drainage/water main creating wet conditions or softening the foundation material or
- b) The proximity of mature trees/vegetation creating a moisture deficiency within the foundation sub structure resulting in the shrinkage of material. In either situation it is usual that if the outside influence is removed and the substratum is allowed to return to its former state and bearing capacity then further movement will be unlikely.

We believe the movement in the area possibly caused by the drainage failure.

Further movement will be unlikely provide that the outside influence is removed. Since we have not carried out a CCTV test for the system to check for any damage/defective drain to include the main drainage line and the branch, we were unable to report the presence of any roots in the drainage runs. We would recommend that this is carried out by drainage specialist to ensure the drainage system is in good working order.



Photo: 10 Lintel failure



11 Render failure



Photo: 12 Front garden wall failure



Photo: 13 Rear garden wall failure



Photo: 14 Rear elevation wall failure

**Condition Rating**

3

**2.2.5 SUB FLOOR VENTILATION**

**Description**

All the floors at the ground floor level are timber suspended construction. There is no sub floor ventilation to the suspended part of the floor, and air vents above the floor level in the front living room, which should drive the air from the front to back of the property. (See photo 15)

Ventilation is necessary to prevent timber decay occurring to the joists from stagnant and moist air conditions.

**Condition**

Ventilation to the bathroom requires some improvement. It was very difficult to establish if there was sufficient cross-ventilation. There is no sign of a side vent to ensure cross-ventilation under the floor. We would recommend that a clear ventilation or circulation path is created to ensure the suspended floor is kept ventilated.



Photo: 15 No Subfloor air vent.

**Condition Rating**

2

### 2.2.6 DAMP PROOF COURSE (DPC)

**Description** During our inspection of the external walls at ground level, it was not clear that the property benefited from a DPC (damp-proof course). We saw no sign of rising damp on these walls except for localised slight damp to the wall in the kitchen, bathroom area; this could be due to a collapsed drain in this area of the wall. (See photo 16-17). There was no sign of penetrating damp to the walls.

#### Condition

Walls require a damp-proof course to prevent moisture travelling up through the structure which can lead to internal dampness, perished plaster, spoilt decorations and rot in skirting boards and other timbers. Damp can penetrate if there is no damp-proof course or if the damp proof course has failed.

We did not note any evidence of a problem with rising dampness in this property except in the kitchen, bathroom and the basement rear bedroom and as described and therefore consider that the damp proof course if there is one is effective. We recommend that the localised damp is treated once the drainage system is repaid. There is a sign of brickwork being saturated with water which is currently running through the wall. The wall will need to be repaired urgently to ensure the flow of the water is stopped.



Photo: 16 Localise damp to the bathroom wall.



Photo: 17 Localise damp to the wall.

#### Condition Rating

3

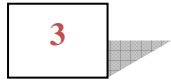


### 2.2.7 WINDOWS, DOORS & EXTERNAL JOINERY

**Description** All the windows to the property are of modern double glazed plastic sections and all open smoothly. We recognised that after several years, windows could become hard to open due to dirt build-up on the jambs; this was not the case on this property.

**Condition** All the windows were found to be in a reasonable condition with no evidence of significant defects with the exception of the cracked glass window g in the rear bedroom in need of replacement, some would benefit from minor adjustments. All the doors were found to be in a reasonable condition with no evidence of significant defects with the exception of the rear access door to the rear garden in need of replacement.

Condition Rating

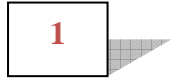


### 2.2.8 EXTERIOR DECORATIONS

**Description** None

**Condition** None

Condition Rating



### 3.0 INTERIOR

#### 3.1 MAIN ROOF LOFT CONSTRUCTION

**Description** The roof to the property has concrete tiles laid over a felt underlining. The original roof cover was slate tiles which since being replaced with concrete tiles. It was clear from the evidence seen during the inspection in the loft area that the roof has been replaced since, and there is no noticeable sign of sag to the rafters. Access to the roof void was via a hatch in the landing area at the top flat. The insulation in the loft conceals much of the structure. The roof also, benefit from velux windows immediate over the access point.

**Condition**

The main roof coverings appear to be in a satisfactory condition with no evidence of significant defects noted. As discussed above, the roof originally was slate tiles and has been formerly stripped and re-laid over a felt underlining which provides a secondary defence against leakages from wind driven rain or snow. The roof has been constructed in equally spaced timber rafters supported on valley tray truck spanning between the walls. The rafters spans from party wall to the valley truck.

Where visible, the roof timbers appear to be coping with the imposed loading with no evidence of significant distortion or weaknesses. We believed the original roof support members were designed to support slate tiles. As with most of properties of this age in Bristol or indeed in most parts of the country, the original slates have since being replaced with concrete tiles As a result, some of the rafters are slightly deformed, which is apparent in most houses of this age around Bristol and the country. For this property the roof has been replaced in the past as referred to above. The felt appears to be in a satisfactory condition with no evidence of significant deterioration where visible. The tiles near the chimney stack are covered with slight moss to a greater degree than in other area of the roof. This is also apparent in several properties in this area. Most tiled roofs of 20 years and over, often look dirty caused usually by the presence of black lichen. Roof tiles are the perfect place for moss and other algae to grow especially in this part of the country which receives the most rain-fall and has higher levels of humidity making conditions perfect for moss to thrive. Also moss growth is encouraged by organic debris as well as indirect or infrequent sunlight.

During our inspection we found the roof rafters, spanned from party wall to roof valley truck and the ceiling joists spanned from front to back of the property. This form of construction means the roof rafters are independent to the ceiling joists, in this form of construction the restraint to the roof rafters will depend on each rafter being tied back to the wall. Without an intrusive investigation, it was very difficult to establish if there was sufficient restraint to roof rafters and ties within the loft space to ensure structural integrity of the roof.

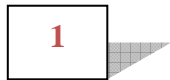


Photo: 18 Loft rafters



Photo: 19 Loft velux window

Condition Rating



### 3.2 CEILINGS

Description

The original lath & plaster ceilings have predominantly been replaced with plasterboard.

Condition

The ceilings have been inspected from within the rooms. No opening up has been undertaken. Therefore, the nature of the ceiling materials cannot be fully ascertained without damage being caused.

All the ceilings from the rooms at the rear of the property are saturated with the water trucking back from the cracked rear elevation wall of the property. There are several cracks to the ground and basement ceilings. Also, slight distortion and bulging was noted, in some ceiling boards. There are also minor hairline cracks in some rooms and hallway ceilings, which have been caused by general shrinkage and the normal vibrations which tend to occur in domestic buildings. These cracks are not of structural significance, but will need to be filled when redecorating. While most of the ceiling surfaces appear to be in a reasonable condition, consistent with their age, considerable work needs to be carried out to repair or re-instate the damaged sections of the ceilings at ground and basement level.

Condition Rating



### 3.3 WALLS, PARTITIONS & PLASTERWORK

Description

The internal partitions have been constructed from a combination of timber studs and solid masonry.

Condition

As with the ceilings, the walls and partitions have been inspected from within the rooms and no opening up has been undertaken. The precise composition of the wall structures and finishing cannot therefore be ascertained without exposure works being undertaken. Internal wall surfaces are mostly plastered and decorated. They are in reasonable condition for the property's age but we found some localised areas of cracked and hollow plaster. Additionally we found some areas of distortion and cracking. We also noticed the external walls from the inside of the property have been dry-lined in the past. However, due to the cracked rear elevation wall, the dry-lining on this area is in very poor condition and will need to be dry-lined again on this elevation. We would strongly recommend that the dry-lining saturated with water is replaced.

Condition Rating



### 3.4 FIREPLACE, FLUE & CHIMNEY BREAST

**Description** There are two chimney stacks at roof space, unfortunately only one chimney breast was observed in the front room and continues to the basement room beneath.

**Condition** The chimney breast to the other stack appears to have been removed and without an intrusive investigation, it was difficult to confirm the support arrangement for one of the chimney stack above.

The former fireplaces have been blocked and there is provision for ventilation within the chimney at basement level which appears to be blocked, there is no sign of vent at roof level. We recommend that suitable vents are installed into the front faces of the sealed fireplaces and the chimney stacks are vented at roof level. It may be beneficial to also provide a vent half way up the redundant flue. This should allow any trapped moisture to naturally reduce. Ventilation is required to redundant flues to prevent an excessive build-up of moisture within the chimney flues which can cause external decay to brickwork and internal damp staining. The chimney breasts appear to be in reasonable condition.

**Condition Rating** 2

### 3.5 FLOORS

**Description** All floors at the ground floor level are of suspended timber floor joist construction, and of solid construction at the basement level.

**Condition** Suspended timber floors have been used for many years without great design changes. Most problems result from under-sizing of the joists or poor conditions at the end support (bearing), or poor sub-ground ventilation. Joists bearing into solid walls (usually pre-World War II) can rot, particularly if the wall is exposed to prevailing winds and rain soaking through the brick or stonework. Very often, joists are cut or notched, to allow pipes and wiring to run under floorboards. There are clear regulations which now restrict what can be done, but all too often mistakes are made, sometimes resulting in the floor becoming springy. During our investigation we record this being the case in the front bedroom.

It should be noted that there are practical limitations on the inspection of floors, whether bare or covered by fitted coverings and furniture. Floorboards have not been lifted as this could cause damage and only a general comment can be made, and complete assurance cannot be given that there are no concealed defects. Comments are therefore based on selected areas where the existing floorboards and ceiling boards have been removed, to give an indication of the method of construction used and its condition. There are signs of past water penetration to the timber joists in the kitchen and living room floor. (See photo 20-25) Also, it was difficult to check the floor joists because all the floor boards are glued with ply boards. All the ply-boards over the floor boards, ceiling boards in some areas are soaking through from the water tracking back from the walls and skirting boards in places will need to be replaced; In addition, most of the decayed floor joist will probably need replacing. We refer you to our later comments in this regard in the timber defect section in this report.



Photo: 20 Vinyl tiles removed



Photo: 21 Water tracking back to ceiling



Photo: 22 Water tracking back to wall



Photo: 23 water stained floor board



Photo: 24 Vinyl tiles removed



Photo: 25 slightly slanted floor

## Condition Rating

3

### 3.6 DAMPNESS

#### Inspection

Tests were conducted with an electronic moisture meter at appropriate positions throughout the property (except where impermeable surface finishes, furniture, fitted cupboards and stored goods prevented access to take readings).

#### Rising Damp

Rising dampness is caused by the natural effect of moisture from the ground rising up through a structure by means of capillary action. This will occur where there is failure or lack of a damp-proof course. Rising dampness will inevitably lead to spoilt decorations, defective plaster, and rot to timbers, and creates an unhealthy environment in which to live.

Walls were tested with a moisture meter and we found no evidence of rising dampness. We conclude that the damp proof course is in satisfactory working order.

#### Penetrating Damp

Penetrating dampness can occur when rain penetrates the external fabric of the building or as a result of some water leak. There are localised signs of damp in the bath room and in the cupboard area (See photo 26-29) evidence of recent work carried out to the kitchen floor. The floor repairs will need to be carried out again in some areas of the property. We believed the localised damp in the wall could be due to past water ingress, we did not find any evidence or sign of penetrating damp elsewhere in the building. We would recommend that the damp is treated.

**Condensation**

No indications of any problems with condensation were noted internally. However, condensation may be a problem for one occupier where it was not for the previous one. It can often be controlled by careful management of heating and ventilation rather than by physical works. The control of condensation involves maintaining surface temperatures above the dew point (the humidity related temperature at which water vapour turns into moisture), and the provision of adequate thermal insulation and proper ventilation. The extent of condensation in a dwelling will depend not only on its orientation and construction, but on variable factors such as weather conditions, lifestyle, and how the property is heated and ventilated. It is essential that moisture producing rooms, such as kitchens, bathrooms and utilities are adequately heated and ventilated at all times to prevent future problems.



Photo: 26 Damp in the bath room wall



27 Damp in the wall



Photo: 28 Damp in the cupboard wall



Photo: 29 Damp in the wall

**Condition Rating**

3

### 3.7 TIMBER DEFECTS

#### Description

We have inspected all accessible timbers for damage and decay. We are, however, unable to comment on the condition of hidden timbers which have not been inspected.

It is our experience that in some properties, there are likely to be timbers incorporated within the structure which have over the years deteriorated from possible wood boring infestation, penetrating or rising damp and can be a cause of potential problems. Without opening up the structure it is not possible to comment in any detail on such timbers. When dealing with a property of this age and type it is a potential hazard which should be borne in mind when calculating future maintenance costs. The possibility of having to carry out localised treatment and repair should not be discounted. We notice during our inspection, timber lintel failure at the rear elevation, due wind driven rain and the water from drainage down pipe over the cracked wall.

#### Wet Rot

Wet rot is usually associated with neglect or poor detailing in buildings, occurring in timbers which are definitely wet, or having persistent moisture content in excess of around 20%. Wet rot can occur in internal as well as external timbers. It is often limited in extent and does not extend beyond damp timbers. In addition to external joinery exposed to the weather, areas particularly at risk include timbers built into damp walls, and floors beneath leaking sanitary fittings. Damp roof timbers and ground floor timbers are also vulnerable.

We found no evidence of wet rot in all areas we could inspect.

#### Wood Boring Beetle

Wood boring beetles lay their eggs in timber which bore out when hatched and this can affect the structural strength of timbers over time. We found evidence of woodboring beetle attack to the timbers around the property, however almost certainly in a property of this age, there will be some in hidden floor timbers. There is evidence of old attack to roof timber around the house but nothing to suggest that this is active. Because we could not verify the condition of the timbers in the hidden areas of the floor, we would recommend that the best course of action is to replace the joist; this will remove the possibility of woodboring beetle attack to the timbers.

#### Dry Rot

Dry rot is a fungus which develops in damp timber usually under conditions of dampness and inadequate ventilation. The fungus does not like light and often grows between materials where light is excluded. This characteristic can conceal an outbreak at the development stage. Poorly ventilated, damp sub-floor and roof voids are places at high risk from dry rot attack. The fungus produces strands which can extend for several metres over and through such materials as plasterwork and brickwork, allowing secondary outbreaks to occur. It is possible for a dry rot outbreak to pass between adjoining dwellings. Eradication can be difficult, disruptive and expensive to achieve. However, there were no indications of dry rot in this property.

#### Condition Rating





### 3.8 INTERNAL JOINERY

#### Description

#### Interior Doors

#### Staircases

#### Built In Kitchen Fittings

Internal joinery is in poor order in places generally.

All the internal doors are of timber construction. All the doors to the property are found in serviceable condition with the exception of the rear door leading to the rear garden of the property, which will need replacing.

The staircases appear to be of traditional construction formed by timber treads and risers. They appear to be serviceable and in reasonable condition.

All kitchen fittings have been removed.. We would recommend a new kitchen be fitted.



Photo: 30 staircase



Photo: 31 staircase



Photo: 32 Rear Door need replacing

#### Condition Rating

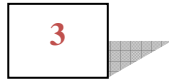
3

### **SANITARY FITTINGS**

Description

All Sanitary fittings have been removed.  
We recommend all new sanitary Fittings be installed in the property.

Condition Rating



### **3.9 INTERIOR DECORATIONS**

Description

All of the internal areas of the property are benefitting from the old predominantly painted finishes. None of the internal areas of the property have been decorated and are in poor condition with evidence of significant defect. We would recommend that all the internal areas of the property is skimmed and decorated.

Condition

Condition Rating



**4.0 SERVICES**  
**4.1 DRAINAGE**

Description

The property is connected to the mains drainage system.

Condition

Inspection of the drainage system was limited to the readily accessible chamber. The underground pipes could not be seen. The absence of any obvious problems within the chambers does not necessarily mean that the concealed parts are free from defect. In the absence of a full inspection by a drainage specialist, you must accept the risk of such defects existing. Due to the vegetation growth it was not possible to locate the inspection chamber to the rear of the property. There is however inspection chamber inside the property at the bottom of the stairs leading to the basement level. We have not inspected the chamber; we are therefore unable to comment on the condition of the drainage system which have not been inspected.

There is soil pipe at the property serving the bathroom. The drainage system is combined foul and surface water and is collected at the rear/side of the property. The drainage then runs parallel to East side elevation of the property and discharges into the main sewer. The drainage pipe collecting water from the roof valley and the foul water from the property are both broken halfway along the height of the property, and are discharging water directly to the cracked rear elevation wall.

The manholes for both foul & surface water are located inside of the property. Manhole covers were not lifted on the day of the inspection to look for any sign of vegetation roots and to carry out the following tests:

**Operation Test**

Often referred to as a 'simple drains test' (SDT). It simply involves lifting manhole covers and running water through the drain runs from the taps within the property, whilst observing the flows throughout the drainage system. This allows us to check if the drains are running free, or if there are blockages, and will also indicate any severe leakage.

**Water Test**

Leaking drains very often go undetected for years or decades, but if close to the building, (which is the case for this property) the ground beneath the foundations can be weakened by the water, resulting in subsidence. It is for this reason that we often perform this test to establish the cause of the cracking or other indications of foundation movement discussed above.

Due to the absence of the sanitary fittings in the kitchen and bath room plus not being able to lift the manhole, we have not carried out a water test, which would normally involve plugging the drain at the lower end, filling it up with water, and then waiting to see if it holds the water or if it leaks away. When the plug is removed, the water should flow away rapidly to indicate that the drain is not blocked. Normally once the above test is carried out it will be revealed if the drainage is in good working order and free from vegetation roots.

Also, since we have not carried out a CCTV test for the system to check for any damage/defective drain to include the main drainage line and the branch, we were unable to report the presence or absence of any roots in the full drainage runs. There is evidence of defective rainwater downpipes from the roof discharge into the ground via gullies as discussed above the pipes will need replacing. Evidence of significant defects was found, at the rear pipes discharging into the wall instead of gullies.

Condition Rating



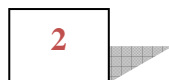
#### 4.2 COLD WATER

Description  
Condition

Mains water is connected to the property. Mains water connects to copper plumbing internally where visible. It is likely that the main into the house is in the original lead piping. Our understanding is that in our region this does not pose a health hazard. More detailed advice can be obtained from the water supplier, Severn Trent Water.

Due to the no sanitary fittings to the property, it was difficult to test if there was an adequate pressure to the taps.

Condition Rating

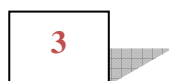


#### 4.3 GAS

Description  
Condition

The property is connected to a mains gas supply, which is cut off at the moment. Most of the plumbing work will need re-instating in some areas. Once re-instated, we would advise to have this checked by a Gas Safe qualified contractor as a precaution.

Condition Rating



#### 4.4 ELECTRICITY

Description

The property is connected to a mains electrical supply.

Condition

The installation has cables and reasonably modern switch gear. It is impossible to fully assess the condition of the electrical installation on the basis of a visual inspection only. There are many factors relating to the adequacy of electrical installations which can only be identified by a test which covers matters relating to resistance, impedance and current, etc. A specialist test by a NICEIC engineer would be advisable once the work is completed.

Condition Rating



#### 4.5 HEATING & HOT WATER

Description

There is central heating in the property.

Condition

It was difficult to check if all the installations are in working order. A specialist test by heating engineer would be advisable.

Condition Rating



#### 4.6 THERMAL INSULATION

Description

Properties of this type are inherently less thermally efficient than modern properties particularly due to there being lower levels of insulation in walls and roofs, as well as having less efficient heating systems.

Condition

We have not covered this area in detail as the Energy Performance Certificate has all the relevant information on this.

As we discussed above all the external wall have been dry-lined.

Condition Rating



**5.0 GROUND**

**5.1 GARAGE**

Description

There is no garage with this property.

Condition

N/A

Condition Rating

1

**5.2 PERMANENT OUTBUILDING**

Description

None.

**6.0 EXTERNAL AREAS/PATIOS/PATHS/ DRIVEWAYS ETC/STAIRS.**

Description

The path and patio area leading to the front entrance door and rear garden are in concrete.

Condition

It is always sensible to assume the ownership of individual boundaries and Paths and drives will inevitably wear and become distorted with time. Although serviceable at present, some future maintenance and repair should be anticipated. We show evidence of significant defects. (See photos 27-28). The slab subsiding and cracking in some areas of the path driving water into the foundation line. We would recommend that the slab/path is re-instated.



Photo: 33 Defective areas of the slab



Photo: 34 Defective areas of the slab

Condition Rating

2

## 7.0 BOUNDARIES & FENCES

### Description

Boundaries are generally formed by the boundary walls between the adjacent properties and are from masonry brick work. The wall forms boundary line between the adjacent properties at the rear of the property and at the front of the property the wall to the front garden to the property and the highway boundary line.

### Condition

Most of the boundaries are adequately defined and the front garden walls are found in a serviceable condition. The rear garden walls are in poor conditions, although serviceable at present, some future maintenance and repair should be anticipated.



Photo: 35 Side boundary fence



Photo: 36 side boundary fence

2

### Condition Rating

## 8.0 GENERAL ENVIRONMENTAL FACTORS

### Noise Disturbance

None noted.

### Means of Escape

Fire is always a danger but we see no provision for the preventive measure to minimise risks to fire in this property. Example fire doors etc. Smoke detectors are a valuable asset to a property and should be maintained in a working condition at all times. We see no evidence of these.

### Hazardous Materials

None noted.

Security

The property is temporarily secured at the moment, some improvements should be considered after occupation. We recommend the following:

Modern burglar alarm system to be installed.

Radon

None known.

Flooding

Check with the Environment Agency about the risk.

Listed Building

N/A.

Planning application nearby

None known.

No environmental factors

No significant adverse environmental factors are known.

Old mine works

N/A

Clay sub soil

It is possible that the property is built on ground which contains an amount of clay. Clay soils can shrink and swell, depending on the levels of rainfall in a period of time. This will make it particularly important to maintain drains in good condition at all times.

High Voltage Electricity

Not noted as a risk.

**9.0 CONCLUSIONS**

Not all movement and damage is abnormal or of such seriousness that it requires remedial measures to be undertaken. The majority, if not all buildings and structures are subject to movement and some associate damage, not necessarily caused by ground or foundation movement, for example thermal or shrinkage movement. This was apparent in this property. The main sides and front walls are in a generally satisfactory condition where visible, consistent with their age and are free from any obvious significant on-going distortion or cracking that would lead us to suspect the structural integrity of the property.

There is however cause for concern with regards to rear elevation wall. The wall is pulling away from the building, and will need to be tied back; to ensure structural stability. As discussed in this report the cracked masonry to this elevation is saturated from leakages from wind driven rain and the broken rain water downpipes discharging water directly into the wall, this water is tracking back into the floors and ceilings. There are several lintel failures on this elevation, this will need urgent attention. The all elevation is distorted and need major structural work to re-store the stability, the work will also include stitching work, dismantling out of plumb brick work and re building back up to plumb level, re-pointing, re-rendering and painting. The work will require propping the existing building, full scaffolding to ensure the work is carried out safely. All saturated masonry work will need to be exposed for considerable amount of time to dry before re-rendering work can start.

There are some minor past settlements, thermal and shrinkage movement cracks recorded during our investigation, mostly at the end and inside of the property, as earlier referred to in this report. The exact cause of the foundation movement or the likelihood of the degree of progressive movement we believe in this circumstance it is likely that there is an outside influence affecting the bearing capacity of the foundation sub stratum beneath the property. In most cases the above influence is either

- a) Leaking drainage/water main creating wet conditions or softening the foundation material



or

b) The proximity of mature trees/vegetation creating a moisture deficiency with the foundation sub structure resulting in the shrinkage of material.

In either situation it is usual that if the outside influence is removed and the substratum is allowed to return to its former state and bearing capacity then further movement will be unlikely. The key issue is to determine whether the movement and associated damage is unacceptable and or is likely to continue or deteriorate without remedial measures.

The property is typical of its era in terms of appearance, construction and materials. We notice recent building work was carried out in the roof area to replace the existing roof, also the external walls were dry lined which have since saturated with water and in need of further repair work.

We believe the existing rear elevation of the property intended to provide shelter to habitable rooms within the property, is no longer at its full working capacity. As discussed in this report there are signs of past and recent water penetration plus the ongoing water from the foul system from the flats above to the masonry. Most of the masonry work and joists at this elevation are excessively soaked with water. There is sign of timber decay in some areas of the wall. All saturated ceiling boards plus the skirting boards will need replacing; also, most of the timber lintels on this elevation will probably need replacing. As discussed in this report all the services and sanitary fittings including the kitchen to the property have been removed, the property is currently void and in need of major refurbishment. We also notice an unsupported chimney stack as referred to in this report; we will recommend that a steel beam is provided under the stack probably at top level. The new steel beam will need to be compliant with the building regulations standard/requirements. Also, there is evidence of minor structural movement as referred to in this report. This movement has induced cracking externally and internally too, affecting mostly the internal wall and one end of the property. Although as mentioned in this report these are minor settlement, thermal and shrinkage movement cracks we believe further movement will be unlikely provide that the outside influence is removed. It is clear that the trees has been removed, however since we have not carried out a CCTV test for the system to check for any damage/defective drain to include the main drainage line and the branch, we were unable to report the presence of any roots in the full drainage runs. We would recommend that this is carried out by drainage specialist to ensure the drainage system is in good working order. Only if found to be in good working order then we will have no cause for concerns with regards to the structural integrity of the property.

What everyone wants to know is how significant any defect is and whether repairs need to be dealt with now, or whether the work can wait until after occupation – for each repair: we tell you how urgent and significant it is. Where repair or further investigation is required, the appropriate advice about what action to take is provided at the end of the section.

The amount of movement that has taken place is fairly minor as discussed in this report and is not affecting the overall stability of the building. It is isolated to some areas of the internal and external walls only with no signs of major movement in general terms. All the visual damages in structural terms have been rated.

The exact cause of the foundation movement or the likelihood of the degree of progressive movement cannot be determined without the benefit of detailed site investigations. However in this circumstance it is likely that there is an outside influence affecting the bearing capacity of the foundation sub stratum beneath the property as discussed above. Also, as discussed above the property is in need of major refurbishment a combination of structural and not structural repair work.

<b>Planned Programmes–Major Project</b> Sandy Park Road, Brislington Bristol BS4 3NZ	<b>Gillian Durden</b> Service Manager Planned Programmes	<b>Website</b> <a href="http://www.bristol.gov.uk">www.bristol.gov.uk</a>	Page 33
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## 10.0 RECOMMENDATIONS

We would recommend the following:

- a) All defect rated 3 to be carried out as soon as possible.
- b) Assuming various matters to which we have made reference within this report are satisfactorily resolved, we found no significant structural cause for concern with regards to the structural integrity of the property and to advise against proceeding with the letting. We have however concerns that the remedial cost of refurbishment of the property to bring it back to the letting standard, is above the provisional figure allowed for the repair of one property. We feel that this is not representing value for money and would therefore recommend the disposal of this property if possible.

## 11.0 RIGHTS OF ORIGINATOR

This report was for the sole use of the client, their Mortgage Company and insurance company. It must not be reproduced or transferred to any other third party without the express written consent of BCC Housing Delivery Structural team.

BCC Housing Delivery Structural team will consider the re-issue of the report in its original form to a third party within 6 months of the original report date for an administrative fee (to be agreed excl VAT). Upon the lapse of a 6 month period the report can only be re-issued following a full re-inspection, which will attract a full inspection fee. 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.

### FINALLY

## 12.0 COSTS ESTIMATES

Where we have offered an estimate of building costs please remember we are not experts in this area. We always recommend you obtain quotations for the large jobs before carrying out the work (preferably three quotes). The cost of building work has many variables such as the cost of labour. For unskilled labour we currently use between £50 and £75 per day (the higher costs in the city areas) and for tradesmen we use between £100 and £200 per day for an accredited, qualified, skilled tradesman. Other variations include the quality of materials used and how the work is carried out, for example off ladders or from scaffold. If you obtain builders estimates that vary widely, we would advise the work is probably difficult or open to various interpretations and we would recommend a specification is prepared. It would probably be best to supervise the work if it is complex, both of which we can do if so required.

COST SUMMARY  
REMEDIAL WORKS

**Works Considered Essential**

**Structural**

1	Builder's service and materials (is subject to visiting, to the property)	£TBC
2	Repair to rain water down pipes	£TBC
3	Cost for structural steel beam to support the chimney breast	£TBC
4	Stich up cracks in the rear external wall and repoint brickwork	£TBC
5	Building control fees depending on the total work costs (minimum)	£TBC
6	Replacing timber lintel and joist	£TBC
7	To Level up concrete slab at the rear side elevation	£TBC
8	Structural scaffolding at full elevation	£TBC
9	Structural propping for temporary support	£TBC
10	Demolished and rebuild out of plumb masonry work	£TBC
11	Tying rear elevation	£TBC

**None Structural**

12	Carryout CCTV drainage camera survey and jetting plus drainage repairs under the building	£4,500
13	To treat damp	£2,000
14	To replace 1No. Doors including repair to some door frames	£2,000
15	To replace ceiling at the ground and basement floor	£6,000
16	Plumbing work	£3,000
17	Electric and rewiring	£2,000
18	6No. Radiators	£2,000
19	New bath room (Sanitary)	£2,000
20	New Kitchen Unit	£2,500
21	To skimmed and redecorate the internal walls.	£3,000
TOTAL:		£29,000

**Works Considered Desirable**

1	Maintenance of the existing doors	£2,000
2	Repairs to internal plastered walls and wall papers including in the cupboards.	£1,500
3	Repair to front and rear boundary wall to the property.	£1,500
4	Remove vegetation at the rear garden.	£1,000
TOTAL:		£6,000

Total Project work cost: (£29,000 + 6,000) =

**£35,000**

The above costs do not allow for any specialist fees or V.A.T.

It should also be noted that these costing are for guidance purposes only and do not represent an actual estimate from a builder.

Also costs for the structural works not included, we are waiting for quotation for the structural work. Once obtained the total cost for the works will be: (£35,000 + quotation for the structural works).

Thank you for your valued Instruction

**Carlos De Lima**  
Structural Engineer

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### 13.0 GLOSSARY OF BUILDING TERMS

<b>Aggregate</b>	Pebbles, shingle, gravel, etc used in the manufacture of concrete, and in the construction of "soakaways".
<b>Air Brick</b>	Perforated brick or metal/plastic grille used for ventilation, especially to floor voids (beneath timber floors) and roof spaces.
<b>Architrave</b>	Joinery moulding around window or doorway.
<b>Asbestos</b>	Fibrous mineral used in the past for insulation. Can be a health hazard - specialist advice should be sought if asbestos is found.
<b>Asbestos Cement</b>	Cement with 10-15% asbestos fibre as reinforcement. Fragile - will not bear heavy weights. Hazardous fibres may be released if cut or drilled.
<b>Ashlar</b>	Finely dressed natural stone: the best grade of masonry
<b>Asphalt</b>	Black, tar-like substance, strongly adhesive and impervious to moisture. Used on flat roofs and floors.
<b>Barge Board</b>	See "Verge Board".
<b>Balanced Flue</b>	Common metal device normally serving gas appliances which allow air to be drawn to the appliance whilst also allowing fumes to escape (see also "Fan Assisted Flues").
<b>Batten</b>	Thin lengths of timber used in the fixing of roof tiles or slates.
<b>Beetle Infestation</b>	(Wood-boring insects: eg woodworm) Larvae of various species of beetle which tunnel into timber causing damage. Specialist treatment normally required. Can also affect furniture.
<b>Benching</b>	Smoothly contoured concrete slope beside drainage channel within an inspection chamber. Also known as "Haunching".
<b>Bitumen</b>	Black, sticky substance, related to asphalt. Used in sealants, mineral felts and damp proof courses.
<b>Breeze Block</b>	Originally made from cinders ("breeze") - the term now commonly used to refer to various types of concrete and cement building blocks.
<b>Carbonation</b>	A natural process affecting the outer layer of concrete. Metal reinforcement within that layer is liable to early corrosion, with consequent fracturing of the concrete.

**Cavity Wall**

Standard modern method of building external walls of houses comprising two leaves of brick or blockwork separated by a gap ("cavity") of about 50mm (2 inches).

**Cavity Wall Insulation**

Filling of wall cavities by one of various forms of insulation material:

**Beads:**

Polystyrene beads pumped into the cavities. Will easily fall out if the wall is broken open for any reason.

**Fibreglass:  
Foam:**

Can lead to problems if becomes damp.

Urea formaldehyde form, mixed on site, and pumped into the cavities where it sets. Can lead to problems of dampness and make investigation/replacement of wall ties more difficult.

**Rockwool:  
Cavity Wall Tie**

Inert mineral fibre pumped into the cavity. Metal device bedded into the inner and outer leaves of cavity wall. Failure by corrosion can result in the wall becoming unstable - specialist replacement ties are then required.

**Cesspool**

A simple method of drainage comprising a holding tank which needs frequent emptying. Not to be confused with "Septic Tank".

**Chipboard**

Also referred to as "Particle Board". Chips of wood compressed and glued into sheet form. Cheap method of decking to flat roofs and (with formica or melamine surface) furniture, especially kitchen units. Also commonly used on floors. Tends to swell if moisture content increased.

**Collar**

Horizontal timber member intended to restrain opposing roof slopes. Absence, removal or weakening can lead to roof spread.

**Combination Boiler**

Modern form of gas boiler which activates on demand. With this form of boiler there is no need for water storage tanks, hot water cylinders, etc but are complex and more expensive to repair. Water supply rate can be slow.

**Coping/Coping Stone**

Usually stone or concrete, laid on top of a wall as a decorative finish and to stop rainwater soaking into the wall.

**Corbel**

Projection of stone, brick, timber or metal jutting out from a wall to support a weight.

<b>Cornice</b>	Ornamental moulded projection around the top of a building or around the wall of a room just below the ceiling.
<b>Coving</b>	Curved junction piece to cover the join between wall and ceiling surfaces.
<b>Dado Rail</b>	Wooden moulding fixed horizontally to a wall, about 1 metre (3ft 4in) above the floor, originally intended to protect the wall against damage by chair backs.
<b>Damp Proof Course</b>	Layer of impervious material (mineral felt, PVC, etc) incorporated into a wall to prevent dampness around windows, doors, etc. Various proprietary methods are available for damp proofing existing walls including "electro-osmosis" and chemical injection.
<b>Damp Proof Membrane</b>	Usually polythene, incorporated within ground floor slabs to prevent rising dampness.
<b>Deathwatch Beetle</b>	Serious insect pest in structural timbers, usually affects old hardwoods with fungal decay already present.
<b>Double Glazing</b>	A method of thermal insulation usually either:
<b>Sealed unit:</b>	Two panes of glass fixed and hermetically sealed together; or
<b>Secondary:</b>	In effect a second "window" placed inside the original window.
<b>Dry Rot</b>	A fungus which attacks structural and joinery timbers, often with devastating results. Can flourish in moist, unventilated areas.
<b>Eaves</b>	The overhanging edge of a roof at gutter level.
<b>Efflorescence</b>	Salts crystallised on the surface of a wall as a result of moisture evaporation.
<b>Engineering Brick</b>	Particularly strong and dense type of brick, sometimes used as a damp proof course. Usually blue in colour.
<b>Fan Assisted Flues</b>	Similar to "Balanced Flue" but with fan assistance to move air or gases.
<b>Fibreboard</b>	Cheap, lightweight board material of little strength, used in ceilings or as insulation to attics.
<b>Fillet</b>	Mortar used to seal the junction between two surfaces, ie between a slate roof and a brick chimney stack.

<b>Flashing</b>	Thin sheet material used to prevent leakage at a roof joint. Normally metal (lead, zinc or copper).
<b>Flaunching</b>	Contoured cement around the base of cement pots, to secure the pot and to throw off rain.
<b>Flue</b>	A smoke duct in a chimney, or a proprietary pipe serving a heat producing appliance such as a central heating boiler.
<b>Flue Lining</b>	Metal (usually stainless steel) tube within a flue - essential for high output gas appliances such as boilers. May also be manufactured from clay and built into the flue.
<b>Foundations</b>	Normally concrete, laid underground as a structural base to a wall; in older buildings may be brick or stone.
<b>Frog</b>	A depression imprinted in the upper surface of a brick, to save clay, reduce weight and increase the strength of the wall.
<b>Gable</b>	Upper section of a wall, usually triangular in shape, at either end of a ridged roof.
<b>Ground Heave</b>	Swelling of clay subsoil due to absorption of moisture; can cause an upward movement in foundations.
<b>Gulley</b>	An opening into a drain, normally at ground level, placed to receive water, etc from downpipes and waste pipes.
<b>Haunching</b>	See "Benching". Also term used to describe the support to an underground drain.
<b>Hip</b>	The external junction between two intersecting roof slopes.
<b>Inspection Chamber</b>	Commonly called "manhole"; provides access to a drain comprising a chamber (of brick, concrete or plastic) with the drainage channel at its base and a removable cover at ground level.
<b>Jamb</b>	Side part of a doorway or window (see also "reveals").
<b>Joist</b>	Horizontal structural timber used in flat roof, ceiling and floor construction. Occasionally also metal.
<b>Landslip</b>	Downhill movement of unstable earth, clay, rock, etc often following prolonged heavy rain or coastal erosion, but sometimes due entirely to subsoil having little cohesive integrity.
<b>Lath</b>	Thin strip of wood used as a backing to plaster.
<b>Lintel</b>	Horizontal structural beam of timber, stone, steel or concrete placed over window or door openings.



**Longhorn Beetle**

A serious insect pest mainly confined to the extreme south east of England, which can totally destroy the structural strength of wood.

**LPG**

Liquid Petroleum Gas (or Propane). Available to serve gas appliances in areas without mains gas. Requires a storage tank.

**Mortar**

Traditionally a mixture of lime and sand. Modern mortar is a mixture of cement and sand. Used for bonding brickwork, etc.

**Mullion**

Vertical bar dividing individual lights in a window.

**Newel**

Stout post supporting a staircase handrail at top and bottom. Also, the central pillar of a winding or spiral staircase.

**Oversite  
Parapet**

Rough concrete below timber ground floors. Low wall along the edge of a flat roof, balcony, etc.

**Pier**

A vertical column of brickwork or other material, used to strengthen the wall or to support a weight.

**Plasterboard**

Stiff "sandwich" of plaster between coarse paper. Now in widespread use for ceilings and walls.

**Pointing**

Smooth outer edge of mortar joint between bricks, stones, etc.

**Powder Post Beetle**

A relatively uncommon pest which can, if untreated, cause widespread damage to structural timbers.

**Purlin**

Horizontal beam in a roof upon which rafters rest.

**Quoin**

The external angle of a building, or, specifically, bricks or stone blocks forming that angle.

**Rafter**

A sloping roof beam, usually timber, forming the carcass of a roof.

**Random Rubble**

Primitive method of stone wall construction with no attempt at bonding or coursing.

**Rendering**

Vertical covering of a wall either plaster (internally) or cement based (externally), sometimes with pebbledash, stucco or Tyrolean textured finishes.

**Reveals**

The side faces of a window or door opening (see also "jamb").

**Ridge**

The apex of a roof.

**Riser**

The vertical part of a step or stair.

**Rising Damp**

Moisture soaking up a wall from below ground, by capillary action causing rot in timbers, plaster decay, decoration failure, etc.

<b>Roof Spread</b>	The thrust of a badly restrained roof structure (see "Collar") causing outward bowing of a wall.
<b>Screed</b>	Final, smooth finish of a solid floor; usually mortar, concrete or asphalt.
<b>Septic Tank</b>	Drain installation whereby sewage decomposes through bacteriological action, which can be slowed down or stopped altogether by the use of chemicals such as bleach, biological washing powders, etc.
<b>Settlement</b>	General disturbance in a structure showing as distortion in walls, etc, usually as the result of the initial compacting of the ground due to the loading of the building.
<b>Shakes</b>	Naturally occurring cracks in timber; in building timbers, shakes can appear quite dramatic, but strength is not always impaired.
<b>Shingles</b>	Small rectangular pieces of wood used on roofs instead of tiles, slates, etc.
<b>Soaker</b>	Sheet metal (usually lead, zinc or copper) at the junction of a roof with a vertical surface of a chimney stack, adjoining wall, etc. Associated with flashings which should overlay soakers.
<b>Soffit</b>	The under-surface of eaves, balcony, arch, etc.
<b>Solid Fuel</b>	Heating fuel, normally coal, coke or one of a variety of proprietary fuels.
<b>Spandrel Stud Partition</b>	Space above and to the sides of an arch. Lightweight, sometimes non-loadbearing wall construction comprising a framework of timber faced with plaster, plasterboard or other finish.
<b>Subsidence</b>	Ground movement possibly as a result of mining activities, clay shrinkage or drainage problems.
<b>Subsoil</b>	Soil lying immediately below the top soil, upon which foundations usually bear.
<b>Sulphate Attack</b>	Chemical reaction, activated by water, between tricalcium aluminate and soluble sulphates. Can cause deterioration in brick walls, concrete floors and external rendering.
<b>Tie Bar</b>	Heavy metal bar passing through a wall, or walls, to brace a structure suffering from structural instability.
<b>Torching</b>	Mortar applied on the underside of roof tiles or slates to help prevent moisture penetration. Not necessary when a roof is underdrawn with felt.

<b>Transom</b>	Horizontal bar of wood or stone across a window or top of door.
<b>Tread</b>	The horizontal part of a step or stair.
<b>Trussed Rafters</b>	Method of roof construction utilising prefabricated triangular framework of timbers. Now widely used in domestic construction.
<b>Underpinning</b>	Methods of strengthening weak foundations whereby a new, stronger foundation is placed beneath the original.
<b>Valley Gutter</b>	Horizontal or sloping gutter, usually lead or tile lined, at the internal intersection between two roof slopes.
<b>Ventilation</b>	Necessary in all buildings to disperse moisture resulting from bathing, cooking, breathing, etc, and to assist in prevention of condensation.
<b>Floors:</b>	
	Necessary to avoid rot, especially dry rot, achieved by air bricks near to ground level.
<b>Roofs:</b>	
	Necessary to disperse condensation within roof spaces; achieved either by air bricks in gables or ducts at the eaves.
<b>Verge</b>	The edge of a roof, especially over a gable.
<b>Verge Board</b>	Timber, sometimes decorative, placed at the verge of a roof; also known as a "Barge Board".
<b>Wainscot</b>	Wood panelling or boarding on the lower part of an internal wall.
<b>Wallplate</b>	Timber placed at the eaves of a roof to take the weight of the roof timbers.
<b>Wet Rot</b>	Decay of timber due to damp conditions. Not to be confused with the more serious "Dry Rot".
<b>Woodworm</b>	Colloquial term for beetle infestation; usually intended to mean Common Furniture Beetle, by far the most frequently encountered insect attack in structural and joinery timbers.

