



FLOOD|DOCTOR
WATER DAMAGE RESTORATION SPECIALIST

TECHNICAL REPORT

Project Name

Prepared for:

Customer

Private & Confidential

Client Details

Surveyed property		Customer details		Flood Doctor	
				(office annotations)	
				Your ref.	
				Our ref.	
				Assessor	
				Survey date	
				Time	0800 Hours
Postcode		Postcode		Report date	

The content of this document contains the collected data and considered opinions as interpreted by the technical author. Any thermal images and moisture readings obtained during the inspection and investigation are relevant to the areas inspected and surveyed and date and time of testing only stated above and throughout this report.

Whilst reasonable skill and care has been exercised in the undertaking of this inspection and moisture survey; it must be emphasised that some areas are concealed or inaccessible, and no warranty is given or implied.

This survey is not a dilapidation or defect survey. However, where any conditions exist as observed during the inspection and moisture survey, they will be mentioned within the report for consideration by the client.

The report is confidential to Flood Doctor Ltd, the client and their professional advisors and under no circumstances may it be passed on or reproduced in whole or in part, nor may it be relied upon by third parties for any use whatsoever.

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Instructions & Scope

Further to receipt of instructions from [REDACTED] we visited the property on the [REDACTED] l

The purpose of this visit was to evaluate the moisture levels and carry out a damp and mould survey to the property.

Our evaluation was based on a visual inspection and where practicable a non-invasive and in-depth moisture survey.

Property Details

- Built circa 1800s, the property is a ground floor flat in a converted public house.
- Built primarily of brick with a render finish to the front of the property and to part of the side elevation.
- There is an extension to the original part of this ground floor flat. Unfortunately, it is not known when the extension was built. The brickwork on the extension is stretcher bond which means that there will be a cavity between the inner leaf brick wall and the external leaf brick wall.
- The original part of the property is English bond brickwork which means that there is no cavity between the inner leaf brick wall and the external leaf brick wall.
- There are air bricks to original part of the property on the side elevation and although visible, these are mainly just beneath the external ground. There is a French shingle gutter running along side the side elevation of the original part of this property.
- The original part of the property is part concrete/screed floor and part suspended wood floor.
- The extension has a concrete/screed floor.
- On the side elevation, to the original part of the property, there is a visible horizontal slate damp proof course (dpc) to the external brickwork. There is also visible drill holes in the external brickwork, just above the visible slate dpc, which indicates a chemical dpc has been injected at some time in the past.

Summary

Based on our evaluation of the property we can report the following,

Front room. 10.51 square metres. Height. 2.49 metres.

- Elevated moisture readings to walls at side elevation and front of the property.
- I also understand that there was an ingress of rainwater where the front window cill was breached/damaged.
- I was informed that there has been visible mould growth at times to these walls, but the mould had been removed and the walls painted with anti-mould paint.
- The sub floor to this room is concrete/screed covered with floor laminate.

Bedroom. 6.02 square metres. Height. 2.49 metres.

- Visible water damage to part of ceiling, coving and wall covering an area of approximately half square metre. Elevated moisture readings of up to 30% wood moisture equivalent (wme) to the ceiling and upper wall. I understand that water has dripped intermittently from the hole in the ceiling.
- Visible mould growth seen to window board. A small area of the window board had elevated moisture readings of up to 30% moisture content.
- Just above the window board, visible mould growth seen to the wall return to the window. Elevated moisture reading of 25% wme found to this wall.
- Elevated moisture readings found to lower part of wall and skirting beneath the water damaged ceiling. The elevated moisture readings were 30% wme to the wall and 30% mc to the skirting.
- The sub floor to this room is concrete/screed covered with floor laminate.

Lounge/diner. 17.43 square metres. Height 2.49 metres.

- Elevated moisture readings found to lower parts of external side elevation wall.
- Elevated moisture readings found to the lower parts of the party wall, by door to small hall to bedroom and front room, and the lower parts of the party wall to neighbouring flat by the dividing wall to the bathroom.
- The sub floor in this room is wood suspended floor which is covered with laminate floor covering.

Extension. Kitchen and bathroom.

- The extension comprises of a kitchen and bathroom.
- There were no signs of water damage to this area at the time of my visit.
- I checked the combi-boiler and found that the pressure gauge was at zero. I put water into the boiler and took a photo of the gauge which showed the dial at just above 2 bars.
- There are no extractor fans in the kitchen or bathroom.

External.

- The external dpc, where visible on the side elevation, is not 150 mm above the external ground. A French gully has been put in place, running along side the brick wall, but this is not 150 mm below the dpc. The French gully does not run off into a drain.
- There was and possibly still is an escape of water from an overflow pipe from above this property as there is large visible water stain on the brick wall.

- There is a hole in the brick wall, where a pipe protrudes out, just above the area of water damage to the bedroom ceiling.
- To the front corner of the property there is gutter dripping water onto the pavement just in front of this flat.
- Parts of the air bricks, to the suspended wood floor, are partially blocked.

At the time of my visit the atmospheric conditions to the property were 68% Relative Humidity, 17 C Temperature, 11.1 C Dew Point and 8 g/kg Specific Humidity.

Photographs & Annotations



Elevated moisture reading to window board to window in bedroom.



Elevated moisture reading to wall return to window in bedroom



Water damage to bedroom ceiling.



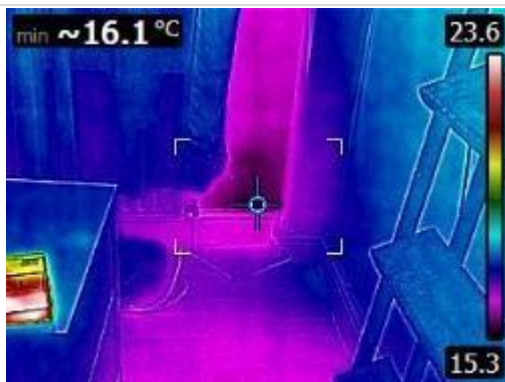
Elevated moisture reading to lower wall in bedroom.



Thermal image of water damaged area of bedroom ceiling, coving and upper wall.



Photo of water damaged area of bedroom ceiling, coving and upper wall.



Thermal image of lower part of bedroom wall where elevated moisture readings located.

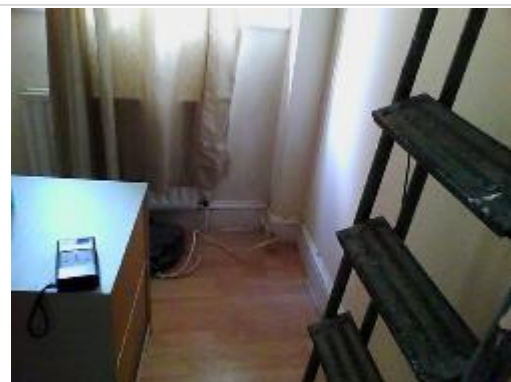


Photo of lower part of bedroom wall where elevated moisture readings located.

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Boiler gauge showing just above 2 bars after being filled.



Boiler gauge showing empty after approximately half hour being filled.



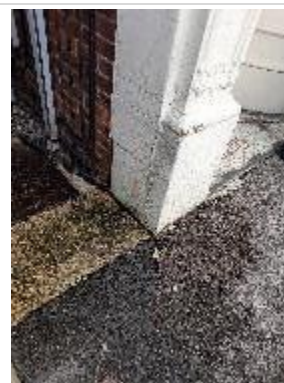
Hole in brick wall where pipe protrudes out.



Water staining to external wall to the outside of the bedroom.



Visible slate dpc just above French gully. Airbrick partially blocked by gravel/debris



Dripping water from gutter to front corner of the flat.



Thermal image of fireplace in lounge/diner showing areas of elevated moisture readings. Blue is area of elevated readings.

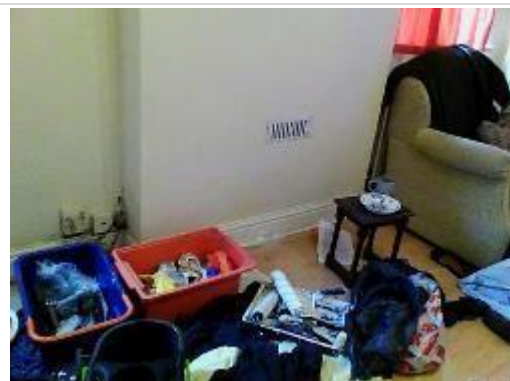


Photo of fireplace in lounge/diner showing areas of elevated moisture readings

Conclusions & Recommendations

Front room. 10.51 square metres. Height. 2.49 metres.

- The elevated moisture readings could be due to previous ingress of water from an external ground source (rising damp), from when the external dpc was covered/breached, residual fossil fuel from an old fireplace and no dpc to the front of the property. If there has been ingress of water from an external ground source or residue from fossil fuels used in the fireplace, it is possible there are hygroscopic salts in the walls which will attract moisture from the air and give false elevated moisture readings. These could cause a problem as the hygroscopic salts can become visible and cause damage to the wall plaster and wall paint. The only way to proof if there are hygroscopic salts would be to take samples of wall plaster and test for hygroscopic salts or fossil fuel residue.
- I also understand that the front window cill has been repaired and there has been no further visible ingress of rainwater.

Bedroom. 6.02 square metres. Height. 2.49 metres.

- The water damage to the ceiling, coving and wall is being caused either by ingress of water from the flat above due to a leak from the en-suite or bathroom. I entered the flat above and at the time of my visit was unable to locate a leak, although there was some visible water damage to the wall by the shower to in the en-suite. The other potential cause of water damage could be due to rainwater ingress through the hole in the external wall above the bedroom.
- Flood Doctor would recommend that the owner of the flat above is asked to run the shower to see if any water enters the bedroom. If no water enters the flat, then the bathroom appliances need to be run to check if any water enters the bedroom. If no water enters the bathroom, then the cause of water damage could be rainwater entering the property through hole in the external wall.

Lounge/diner. 17.43 square metres. Height 2.49 metres.

- The elevated moisture readings to the lower parts of the walls may be due to previous ingress of water due to the dpc being breached or fossil fuel residue around the fireplace.

Extension. Kitchen and bathroom.

- The water pressure to the boiler has dropped to zero which indicates either there is a leak from the pipes or there is a problem with the boiler. Further investigation is required to confirm what the problem is as if a pipe is leaking it is possible that the leak is causing water damage to the property and could be part of the reason for high Relative Humidity in the flat and part of the reason for mould growth.
- As there are no extractor fans fitted it is possible that this is another reason for mould growth within the property. It would be good practice to fit extractor fans, which incorporate humidistats.

External.

- The air bricks need to be cleared of blockages. Air bricks being blocked will prevent air flow to the void and evaporation from the void. The suspended wood floor could then have mould growth and wood decay (wet or dry rot) to the wood floor joists and floorboards.
- The external ground needs to be 150 mm beneath the dpc. It would be good practice to lower the external ground level.

- The front of the property has no visible dpc. It would be hoped that some form of damp proofing has been installed to prevent ingress of water from an external ground source (rising damp). Unfortunately, the only way to proof this would be to cause some damage to the external wall render and possibly internal wall plaster to try to locate any damp proofing.

Survey Equipment:

Non-destructive moisture readings using:

Tramex CMEX2 using electrical impedance survey method on screed/concrete. Scale is between 0 to 6.9% MC to a depth of approximately 10mm depending on material characteristics.

Tramex MEP using electrical impedance survey method on non-wood materials the readings are given numerically from 0 to 30% wme. **Please note** the readings are subjective and open for interpretation; therefore, they **should not** be used indicate actual moisture content. Readings taken from wood are given as a %mc the unit can be calibrated to wood species the readings indicated can be taken as an indication of wood moisture content. Survey depth up to 30 mm depending on material characteristics

Air moisture readings have been obtained using a Tramex CMX2 measuring temperature in °C, % relative humidity and specific moisture content in g/Kg

Note: all readings taken with electronic metering are a guide and should be viewed with all the available information to gauge the true condition. However, for the purposes of this report, the following readings can be taken as an indication that the material checked could be said to be dry back to a satisfactory level.

Non-destructive Tramex CMX2	3.5% mc or below in concrete guide only
Non-destructive Tramex MEP Masonry scale	15% wme or below in masonry guide only
Invasive moisture readings	Plaster and Masonry WME 16% or below guide only
Invasive and non-invasive wood readings	Below 15% mc
Normal indoor wood moisture content	10% – 12% mc
Air moisture readings in concrete	Below 11 g/Kg Dry Air (75 %ERH at 20 °C)

Thermal Imager:

FLIR C6 Thermal Imaging Camera

IR Sensor 80 x 60, Spectral Range 7.5–14 µm

We await further instructions should our services be required.

For & on behalf of Flood Doctor Ltd

Senior Technician/Surveyor

Tel.

Email.