Damp & Timber Inspection Report

20 The Boltons
London SW10 9SU
6th September 2015
We thank you for instructing JPM Independent Surveyors to carry out a damp and timber investigation of your property. The content of this report may not be amended or altered in any manner by a third party without the express prior consent of JPM Damp Surveyor.

This report does not constitute a full structural survey and should not be treated as such. If you are using our report during the course of purchasing a property, we advise you to contact a structural surveyor for a detailed report on the overall condition of the property.

During the course of our survey we will not comment on other defects to the property that are un-related to the damp investigation.

The surveyor inspects the inside and the outside of the main building where instructed and all permanent outbuildings but does not force or open up the fabric.

Floor coverings/floorboards, roof insulation, furniture and personal possessions are not moved during the course of the inspection, unless otherwise agreed.

The recommendations section of this report is in no way a specification for works. It merely illustrates possible suggestions of control measures.

JPM Independent Surveyors cannot be held responsible for the way in which the client may interpret or act upon the results of this report.

All directions are taken looking at the front of the property from the outside.
**Property description**
The property is semidetached with solid brick walls construction, circa 1865. An original physical damp course (dpc) was not observed, although, I would expect a house of this type and construction to incorporate a slate dpc. 1875 saw the introduction of the Public Health Act by which damp proof courses became mandatory. That is not to say every property constructed after this time had one installed!

**Instructions**
Instructions were given to undertake a damp & timber investigation of the lower ground floor of property. This report is based on findings undertaken at 2.15 pm on the, 4/9/2015, by Mr. Peter Mullan CSRT.
Correct Identification of damp problems and building defects is essential if the right treatment is to be given. Incorrect diagnosis and leaving defects can lead to very expensive and disruptive remedial measures.

Dampness in Buildings

The greatest of deterioration in buildings is from the ingress of moisture. It is one of our main aims to ensure that the fabric of the building is free from moisture ingress.

Some effects of dampness are easily visible for example, damaged decorations, decaying timber, black mould growth, deterioration of floor coverings etc.

Each problem of dampness must be looked at individually and the cause correctly diagnosed before a method to cure the defect can be undertaken.

There are four main areas which can cause dampness in buildings.

1 – CONDENSATION.

2 - RISING DAMP.

3 - LEAKING PIPES.

4 - INGRESS OF MOISTURE.
1. Condensation

There is always moisture in the air, even if you cannot see it. If the air gets colder, it cannot hold all the moisture and tiny droplets of moisture appear. This is known as Condensation. It appears on cold surfaces and in places where there is little movement of air (e.g. in corners, on / near windows, behind wardrobes). Mould growth is associated with condensation and can be found on damp surfaces such as plaster, wallpaper and timber.

There are steps you can take to reduce Condensation;

**PRODUCE LESS MOISTURE**

- Cover Pans while cooking.
- Dry washing outdoors.
- Do not dry clothes indoors free-standing.

**VENTILATE TO REMOVE MOISTURE**

- Keep a window ajar or a trickle ventilator open.
- Ventilate kitchens and bathrooms with a window open or by using a humidistat controlled fan
- Close kitchen and bathroom doors when rooms are in use.

**INSULATE YOUR HOME**

- Insulating lofts / cavities will keep the building warm.
- In cold weather keep a low background of heating on all day, this raises the room temperature.
2. Rising Damp

True rising Damp does exist, however it is not as common as is made out by many damp proofing contractors. Rising Damp usually occurs in walls where the foundations extend down below the ground water table. The water rises either through the bricks or the mortar joints due to fine capillaries or pores in the materials (A process known as Capillarity). There are three main factors that affect the quantity of moisture absorbed by the wall and the height to which it rises;

- The capacity of the wall material to absorb moisture.
- How wet the ground is.
- How quickly the moisture can evaporate.

Water will continue to rise up the wall until it meets with a physical barrier, the construction of most modern buildings includes a damp proof course (dpc) - a layer of impermeable material (e.g.: slate, bitumen, plastic) built into the external walls just above ground level. The dpc prevents moisture rising within the wall construction. In the absence of a damp proof course (DPC), then the water will continue to rise up the wall to a maximum of 1.5m. Many situations where rising damp occurs is often due to the bridging of the existing damp proof course rather than the absence of one. 1875 saw the introduction of the Public Health Act by which damp proof courses became mandatory. That is not to say every property constructed after this time had one installed!

Older buildings, particularly those with solid stone or brick external wall, do not always have a dpc. It is assumed that rising dampness is likely to be a problem in these types of properties; however a full investigation of the cause of dampness must be carried out to determine if rising damp is indeed the cause.
3. Leaking Pipes

A small leak in a water supply, central heating or internal drainage pipe can cause extensive dampness over a period of time. Signs of dampness though may only appear some distance from the leak.

Spills from water tanks, cisterns and washing machines can cause water to run through cracks or joints. This can spread underneath floor coverings causing further problems.

4. Ingress of moisture

Water ingress will occur where the building is unable to prevent water entry where water is present. Water can be driven in by wind and rain, attracted by salts and drawn towards the warmth. Penetrating dampness can occur through many building defects, examples include;

Rainwater goods - Blocked valley gutters and downpipes can cause rainwater to 'pond' and overspill the flashings. Parapets and chimneys can also get very wet, with water draining downwards to other parts of the building causing damp patches inside.

Leaking roofs - Common defects of roofs include corrosion of nails that fix the tiles to the battens, cracked or missing roof tiles, mortar missing from ridge tiles. These defects can all allow the passage of moisture into the building.

Plaster Rendering - Defective plaster rendering can occur mostly on external walls caused by penetrating rain, evaporation and condensation. These thermal stresses can cause shrinkage and cracking of the render.
Moisture Meters

Moisture meters are often used by an experienced damp and timber surveyor. Moisture meters do not actually measure moisture within non timber materials; they only measure electrical resistance on a qualitative scale. High readings in the majority of cases will be due to water or hygroscopic salts within the masonry.

Timber such as skirting boards that are in contact with masonry should always be tested, as accurate moisture readings can be obtained from the timber. If the timber is recording high moisture readings then the wall or floor behind the timber is usually damp.

Furthermore, as moisture does not readily transmit over the grain in timber, a map of the moisture path can be achieved. That said, if a section of timber is recording higher readings at its base, as opposed to further up the timber, the moisture must be originating from lower levels.

: Any timber with moisture content above 16% -20%MC (Moisture Content) is theoretically at risk from attacks by wood rotting fungi and wood boring insects. Generally though, moisture content is usually higher before attacks are established.

: WME (wood moisture equivalent) is a technical term of measurement used in conjunction with moisture meters when used on materials other than timber.

: When the moisture meter is used in the search mode, on masonry, any reading over 200 warrants further investigation for dampness.

It should be noted that that it is not always required for any works/treatment to be carried out on areas that are returning a high reading on a moisture meter -

If decorations are not spoiling, if timber is not rotting, is there a problem?

Although the moisture meter is a tool used very often by damp surveyors, the experience of the surveyor and the surveyor’s use of the moisture meter are paramount.
### Areas of interest - Outside of the property.

| Image 1. Rear ground levels. | External ground levels to the rear walls are too high. As mentioned previously in this report, it is expected that there could be a physical damp proof course within the property, due to external high ground levels in places; it is possible that ground water could penetrate laterally to the internal side of the property, as the original dpc (if there is one) would be too low in relation to the external ground levels. **There should be a gap of at least 150 mm between an existing dpc and the ground level to prevent rain water splash back and lateral penetration.**

External garden walls abutting the property can also allow moisture to enter the property without an effective vertical damp proof course.

| Image 2. Right hand side wall. | External rendering has been taken down to ground level at the front of the property, and would be bridging the line of the dpc. Rendering can bridge damp proof courses, which can then cause damp to penetrate into the internal side of the structure. Damp associated problems can then occur, such as attacks by wood rotting fungi and wood boring insects. The fabric of the building can also be damaged.

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**See Recommendations & Conclusions at the end of this report.**
### Areas of interest: Inside the property.

<table>
<thead>
<tr>
<th>Image 3. Right hand front wall.</th>
<th>Dampness was observed in all of the lower ground walls to varying degrees.</th>
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<tbody>
<tr>
<td>Image 4. Internal party wall.</td>
<td>• <strong>WME:</strong> 30.3% – <strong>Dampness detected.</strong></td>
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<tr>
<td></td>
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<td>• <strong>See Recommendations &amp; Conclusions at the end of this report.</strong></td>
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</table>
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No dpc was observed where internal walls have been removed. If there is a dpc below this level it is not effective.

**WME: 25.6% – Dampness detected.**

Moisture levels are near ceiling height on some walls.

**WME: 100% – Dampness detected.**

Some walls have a thick sand and cement rendered coating, which, on the surface is only moderately damp but beneath the surface:

**Search Mode: 215 – Dampness detected.**

When the moisture meter is used in the search mode, on masonry, any reading over 200 warrants further investigation for dampness.

*See Recommendations & Conclusions at the end of this report.*
Areas of interest: inside the property.

Timber window frames and lintels did not show high moisture content.

**Moisture content:** – 12.4%

Although no condensation was forming on walls or floors at the time of visit, some flooring showed to be at risk of condensation forming.

The floor screed when tested showed to be damp beneath the surface.

**Search Mode: 937 – Dampness detected.**

When the moisture meter is used in the search mode, on masonry, any reading over 200 warrants further investigation for dampness.

*See Recommendations & Conclusions at the end of this report.*
Recommendations:

- Lower ground floor walls are suffering from water penetration both laterally and rising.

- Some walls are 18” thick, some only 8” whilst it is possible to insert a chemical cream damp proof course into these walls with remedial re-plastering, due to external render, high external ground levels in places, abutting brick walls to the rear of the property and the height at which moisture has penetrated it is not recommended.

- I would recommend structural waterproofing to BS 8102: 2009. To the full height of the lower basement walls. This would normally apply to below ground structures but would still be suitable in this instance.

Structural Waterproofing Options:

Option 1: Type A

- Waterproof plastering using cement/sand mortar that incorporates a cementitious tanking slurry or similar. This is a high grade waterproofing layer which is simply brushed onto the walls and sandwiched between coats of cement/sand mortars. Other finishing methods once the tanking has been applied (i.e. the top coat) can consist of gypsum browning plasters and skim finish or dot and dabbing with plasterboard.

- It should be noted that applying waterproof plasters to walls can push dampness into unprotected areas where it can become visible. There is no way of foreseeing this.

- Finishing the walls with a dense cement render can cause mould to grow on the walls as the finished surface can be cold. Careful consideration should be made as to what top coat is the most appropriate for the building.
Option2: Type C

- A high quality rigid plastic membrane can be applied directly onto the walls and then battened and plaster boarded over. It is quick, not as messy as re-plastering and will certainly be a lot cheaper. Plaster boarding and insulating would also increase the surface temperature of the walls. This would inhibit mould growth to some degree, which can be caused by condensation. This can be a particular problem in buildings that are constructed from solid masonry/concrete walls. This method usually increases the walls thickness by an average 50mm. Another option is to build an insulated timber stud wall in front of the existing once the membrane has been applied, this way the thickness of insulation could be increased.

- Care should be taken that any timbers associated with tanked walls are suitably protected. Care should be taken not to puncture the tanking coats/membranes.

The above options are in no way exhaustive they are merely illustrations of the variety of possible control measures available.
Conclusions:

- High moisture levels in the lower ground floor walls will require structural waterproofing to remedy them.

- The screeded solid floor appears to have been laid correctly on insulation and there is a visible Visqueen damp proof membrane visible. Surface readings of the floor were around 18.4% WME which shows an at risk state. The moisture metre when used in search mode can detect at a depth of approx. 20 mm, this showed a high moisture level beneath the surface. It could be that the floor screed is still drying out depending on when it was laid and the thickness. I would recommend that the flooring is again checked before any moisture sensitive flooring is laid.

Thank you for instructing JPM Independent Surveyors

This report was prepared by: Peter Mullan CSRT on the 6th September 2015.

- If you go to the web-site: [www.property-care.org](http://www.property-care.org) put your post code into the section marked at the top Find A Property Care Specialist you will be presented with a list of Property Care Association Contractors who should be willing to undertake some or all of the damproofing recommendations contained in this report.