Dear XXXX,

Thank you for instructing us to carry out a damp survey of London. We understand you are the buyer of the property, have damp concerns and you wish to have an expert damp surveyor identify the source of moisture. Please inform us if we have misunderstood your instructions.

OVERALL OPINION

Overall the property appears to be in reasonable order, from a damp perspective. All buildings can be exposed to dampness to some degree. You will mitigate the risk of damp if you follow all our recommendations. This report is intended to be read in full. Observations and opinions must not be taken in isolation. Like any building, especially a period property, you need to be aware of the risks of damp arising in the future and plan a programme of prevention and maintenance accordingly.

SURVEY OBJECTIVES

Our damp and timber surveys are designed to:
- identify the areas of unwanted dampness within the property,
- identify the root cause of unwanted dampness,
- identify the effects of dampness,
- recommend remedial action,

INDEPENDENCE AND METHODOLOGY

Our only income is through damp survey fees. Our motivation is integrity and practical, durable solutions. We are independent of contractors and never profit from remedial work. We use chemical analysis to identify damp within walls.

SURVEYOR’S DECLARATION

I confirm that I inspected London on 20 August 2019. I conclude that at the time of the survey there was no evidence of rising damp. There is some condensation along the flank wall by the front door and rear bedroom and in the rear extension.

Simon Hichens

Simon Hichens BSc(Chemistry), AISSE (Institute of Specialist Surveyors & Engineers)
RICS Expert Witness Certificate (Royal Institute of Chartered Surveyors)
PCA Certificated Surveyor of Dampness in Buildings (Property Care Association)
ICAEW Qualified Forensics/Due diligence/Audit
ABBE Certificated Surveyor of Timber & Dampness in Buildings (Awarding Body of Build Environment)
Expert Damp and Timber Surveyor

Report 31 August 2019
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**Using this damp and timber report**

We identify the root cause(s) of damp and illustrate how we have made our conclusions using images and illustrations, so that you can replicate and better understand our analysis. At the end of the report we conclude what is the root cause of dampness and make recommendations. If you follow those recommendation and there are still damp issues, we are happy to return to the property, we are as keen as you are to make sure the property is dry. It is possible that one form of dampness is masking another form of dampness.

**The principles of damp in properties**

**Root cause**

Damp treatment is most effective and risk free, if the cause is traced back to the source of moisture and stopped. We use a process of elimination. One root cause can mask another cause. It rarely takes long to stop water at source, at least temporarily, such as unblocking a gutter or opening a window. There may be additional smarter more durable options.

**Sources of damp fall into four categories;**

- **Water leak;** typically, mains water, radiator, waste water or shower leak.
- **Rain water;** often seen as penetrating damp. This typically results from a damaged or blocked gutter, hopper, down pipe, gully or damaged roof. It is common in basements.
- **Ground water;** known as rising damp, this is cause by a high-water table and is very rare, but commonly misdiagnosed because of commercial motivation or lack of Condensation (or interstitial condensation – within a building material). This is the most frequent form of dampness 85%, and typically accompanies all other forms of dampness.
- **Condensation** (or interstitial condensation – within a building material). This is the most frequent form of dampness 85%, and typically accompanies all other forms of dampness.

**Properties are not built damp**

Properties are not built with damp defects. It is the changes to the properties that cause dampness, be poorly designed extensions, inappropriate damp proofing treatment, central heating, double glazing or life styles changes such as daily showers.

**Movement of water**

- Water moves in three ways;
- **Liquid form,** always downwards whether it’s rain water or a leak.
- **Vapour** will disperse water through air from high vapour pressure (quantity) to low.
Absorption of water. Porous building material will absorb moisture in all directions equally in zero gravity, but mainly downwards with gravity.

**Condensation (or interstitial condensation – within building material)**
Condensation is found in almost every property to some degree. It is caused by insufficient extraction of vapour at source and is made worse by insufficient heat or insulation. Air at any given temperature has the capacity to hold water vapour. The percentage of vapour compared to the capacity is known as relative humidity or %RH. As temperature increases so capacity increases, conversely as temperature decreases so air holds less vapour until a temperature when condensation starts to form. This is called the dew point. Unless vapour is vented out of a property, when the temperature drops at night, condensation will form on a cold surface inside or within the building material.

**Mould**
Mould only forms when relative humidity exceeds 85%RH for 6 to 8 hours depending on the species. Mould point is the temperature below which there is a risk of mould growing. Mould is not dangerous in the residential setting but a sign that there is insufficient ventilation.

**Thermal bridging**
Moisture condenses on cold surfaces first. Some surfaces can lose heat more rapidly than other surfaces, such as a single pain of glass, a metal RSJ supporting an extension, plasterers metal beading, chimneys, damp brickwork, solid floors or uninsulated ceilings.

**Timber defects**
The greatest risk to any property results from rot, especially dry rot damaging below ground floor timber. Rot only grows where water is present. The risk of rot diminishes if airflow evaporates away water. Misdiagnosed and incorrectly treated damp increases the risk of rot.

Woodworm damage is common in old timber, but very rarely active as old timber is not normally sufficiently nutritious. Damp timber is more likely to be affected by woodworm than dry timber. Unlike rot, woodworm can continue after the source of damp has been stopped. Active woodworm is easy to identify and treat.

**ABOUT DAMP SURVEYS LTD**
Damp Surveys Ltd is an independent specialist damp surveying company incorporated following the development of analytical technology employed to rapidly and accurately differentiate types of damp. Our confidence in our analytical equipment allows us to categorically state whether or not there is a risk of rising damp.

Independence is key to understanding how we operate and why we provide a unique service quite different to any other company. Many contractors, looking for chemical damp work, offer low cost, or sometimes “free” surveys. We do not and never will benefit financially from any recommended remediation. We are motivated to recommend optimal treatment to protect the property now and into the future. Your peace of mind is our goal, for you to be satisfied that the property will be properly protected against damp.
THE PROPERTY
The property is lower ground floor of a Victorian semi-detached house. The front door faces south. The building has an elevation of 30M above sea level in an area of London with a very low flood risk (see https://flood-map-for-planning.service.gov.uk flood risk is a proxy for a high-water table, a necessity for rising damp). Consequently, we conclude the risk of rising damp is very low.

Changes to the property’s original design
Properties are not designed and built with damp problems. Understanding changes to a property since first inhabited is the starting point for tracing damp back to its root cause. Key changes are; conversion into flats, rear extension, internal kitchen and bathroom, and modern living including more showers and clothes drying.

OBSERVATIONS
Conditions during the survey
Occupancy
Occupyed Furnished
Weather during survey
Dry
The previous 24 hours
Dry
Humidity
53.3%RH (relative humidity)
Temperature
22.1°C, dew point 12.2°C (condensation)
Mould point 14.7°C (MouldPoint.co.uk)
External low before survey
13°C (see twitter.com/MouldPoint)
0

External
- The roof appeared to be in reasonable order from a damp perspective, except where included in this report. This is not a roofing report.
- The rainwater goods (gutters, hoppers, downpipes and gullies) appeared to be in reasonable order from a damp perspective, except in this report. The rainwater goods should be observed and filmed during a rain storm. Please send to us for review.
- The brickwork appeared to be in reasonable order, except as described.

Rising damp
There is a fear in the UK that properties suffer from rising damp. There is no evidence that the property is in contact with ground water, a precondition for rising damp, see hydrographic map; http://mapapps2.bgs.ac.uk/geoindex/home.html?layer=BGSHydroMap & RICS fact sheet; https://www.periodproperty.co.uk/pdf/RICS_Dampness_Factsheet_V3.pdf.

The lowest floor of a property is more likely to suffer from condensation than higher floors, compounded by poorly vented bathrooms, bedrooms, laundry areas or kitchens. The reasons are;
1. rain water falls, bounces off the ground and concentrates on the lowest level,
2. there is less wind to speed up the evaporating process,
3. there is less sunlight to warm walls, and importantly and
4. occupiers are less inclined to open windows.
FINDINGS

The house was treated for rising damp despite the building having a low risk of rising damp.

Treatment of damp or rot relies on correctly identifying the root cause and stopping damp at source. The centre of the rot outbreak is by the front party wall. You found the neighbour’s down-pipe was pouring water onto the front of the house. The simplest solutions are the best. For £5 you solved the root cause of dampness by extending the pipe away from the house. If previous owners had done this, there would have been no damp or rot.
The gulley on the other side of the property was blocked. We unblocked it during the survey. This could have increased sub-floor humidity and dampness in the wall.

We understand that you had damp proofing treatment and the timbers and joists were repaired about 10 months ago. However, brown dust has appeared. The dust is Dry rot spores. Water takes a month per 25mm to dry. Rot can survive without water for 12 months.
We opened up under the floorboard. A majority of the dry rot appears to have died. We understand you have been applying a dual purpose woodworm rot treatment. It is generally accepted practice to treat rot, especially Dry rot separately, with a form of borate.
The only area of visibly active Dry rot is under the floorboard below the cupboard where the spores were found. The rot has mould growing on it a sign that is it drying, but also a sign of excess humidity below the floorboards. Most of the humidity will come from the ground drying, however the debris in the sub-floor vents should be cleared to increase airflow.

We removed all the dry rot within reach and painted on Disodium Octaborate Tetrahydrate (Na₂B₈O₁₃·4H₂O). [https://www.acslimited.co.uk/borates/boron-powder](https://www.acslimited.co.uk/borates/boron-powder)
Disodium Octaborate Tetrahydrate is professional grade treatment for rot. We left some in your sprayer as you requested. Please read https://www.acslimited.co.uk/borates/boron-powder and follow directions. Dry rot is resilient and will regrow if damp is not stopped at source. Rot will start to die without water, whether or it is treated. Borates speed up the process of killing rot but are not a silver bullet – so keep timber as dry as possible.

The key consideration to any rot investigation is the structural damage to timber and a risk assessment. The joist closest to the wall is rotten, providing no meaningful support to timber above. However, a joist running beside it is providing sufficient strength to a part of the floor that has no foot traffic or is otherwise significant. There is a small amount of rot on that supporting timber. It is our view that if the sub-floor humidity is not consistently over 95%RH and the rot is monitored monthly, then there is currently no need to replace timber.
We checked extensively under the floor by the front door and to the end of the corridor. There were no other signs of active rot.

There is rot within the skirting board. This is almost certainly inactive. Gloss paint traps moisture. Mould can generate its own moisture through respiration.
Looking through a thermal imaging camera where blue is about 5°C colder than orange, we see that the base of the wall is cold. This is likely to be as a result of moisture drying from under the floor.

We tested walls with a Protimeter damp meter in conductance mode. Damp meters measure electrical conductance. Water is a poor electrical conductor. It is salts in water that conduct electricity. Despite criticism, damp meters are a good test of dryness. Protimeter readings below 20WME are considered dry. The wall is now dry. The salts can be rubbed off using coarse grain sandpaper. The wall can then be painted.
We looked in on the neighbour. She has rot to timber by the front door. Inside the front door there are piles of paper, so it was impossible to see the floor. She said she would remove the paper so that we could check her side of the floor.

There is a condensing drying machine in the internal shower room. Condensing dryers release a lot of humid air. It would be wise to vent out the room and keep it closed, especially when it is cold outside, to reduce the risk of condensation and mould.
CONCLUSIONS

There is no evidence of rising damp. There is some condensation along the flank wall by the front door and rear bedroom and in the rear extension. No chemical damp proofing work is required.

RECOMMENDATIONS

Our recommendations address items identified in our survey as areas of sufficient concern that they must be undertaken to mitigate the risk of damp. In line with every property, we recommend ongoing observation, repair and a periodic programme of maintenance, including annual clearing of gutters, repainting and repointing.

No damp proofing work is required. If a builder, decorator or damp proofing company tries to convince you that the property needs damp proofing treatments – IT DOES NOT – please contact us. We are happy to return.

Specific recommendations

1. **Monitor sub-floor rot**
   a. Monitor sub-floor humidity with eth device provided. Typically, sub-floor relative humidity should remain below 85%RH. It can increase with external humidity. This is fine so long as the humidity drops back.
   b. Observed and take images of the rot to compare to each other for signs of activity.
   c. Clear debris from the sub-floor vent to improve airflow, especially under the front door step.

We are happy to return if required.

Generic recommendations

2. **Managing humidity:**

Like any property, ambient humidity should be managed. Generic information has been placed in the following online page; [https://dampsurveys.com/condensation](https://dampsurveys.com/condensation) please read it along with this report. Condensation and mould tend to take place at night between 2am and 5am, when the temperature is at its coldest, humidity at its highest and there is relatively little air movement.

   a) Keep rooms ventilated by opening trickle vents or slightly opening windows (with safety locks “on” where available – otherwise open window).
   b) Keep any room where clothes are drying, ventilated in a similar manner or in winter, use a clothes dryer.
   c) Maintain a minimum temperature above the dew point, about 12°C in winter. The thermostat should be used for this. Condensation reduces thermal insulation, so it is cheaper to maintain a minimum 12°C, than allow temperature to drop below the dew point. Once condensation has stopped, you can drop the thermostat to 10°C, but be careful to make sure the thermostat is not near a radiator, and that the heating is evenly distributed.
d) Consider insulating cold walls, with thermal lining paper or thermal insulating plasterboard. Apply a final coat of anti-mould paint.

e) Keep obstacles away from damp walls so that air can flow more evenly.

f) Cook with tops on pots and pans and ventilate the kitchen.

g) Consider installing a bathroom humidistat with a low humidity setting so that it is on most of the time, such as the Vent-Axia see smart technology, or make sure you open the bathroom window and keep doors closed after having a shower.

**Smart ventilation**

Economically and environmentally, it is best to extract air with as high a vapour content as possible. For example; compare a PIV (Positive Input Ventilation) system to a vented dryer. With a PIV unit air of any moisture content is pushed out through the path of least resistance by cold air. It does not target humid air. By contrast a vented dryer only extracts very humid air, in small quantities. Considerably more vapour is extracted, and less heat is lost with the vented dryer compared to a PIV unit.

Dehumidifiers are a win-win, in that the electricity extracts vapour releasing heat. However, dehumidifiers rarely take more than 1 Litre out per day, compared to a couple generating 3 L per day. Furthermore, dehumidifiers don’t target the source of moisture.

**Consider smart technology to tweak your property’s needs when condensation risk is high**

a. Govee make a good, blue tooth or WIFI connected meter with long battery life, cost £40. Move it around property. Aim to keep relative humidity below 60%HR. Use mouldpoint.co.uk to for dew or mould points and twitter.com/MouldPoint for forecasts. Alternatively monitor humidity with a simple inexpensive £10 meter “ThermoPro” TP50NEW which records overnight low temperatures and high humidity.

b. Hive or Nest (with a humidity meter), cost about £200, allowing constant control of temperature, and minimum temperatures by setting a schedule that never allow the temperature to drop below the dew point typically 10˚C (but start with 12˚C). Make sure thermostat is far from a radiator and that heat is evenly distributed to external walls.

Alternatively manage the temperature by keeping the boiler permanently on, then increase or decrease the temperature by adjusting the thermostat.

c. VentAxia SVARA 409802 4W, (humidistat with Bluetooth, controlled with a smartphone), cost £99. Ideally the extractor fan should be kept running for at least half an hour after a shower and should have an extraction rate of at least 3 L/sec. Alternative use an extractor fan linked to the light switch with a 30-minute time delay.

**5 simple, cheap tricks to stop mould, save money and environment**

1. Keep bathroom windows open or extractor fan running for at least 30 minutes ensuring gap under door (or door ajar), wipe yourself and shower walls/floor down.

2. Dry clothes outside or in vented room, with door closed.

3. Turn gas down when boiling. Simmer with top on pots.

4. At night dehumidify bedroom, open windows or vent out.

5. Maintain a minimum wall temperature above the dew point 12˚C
Illustration of effects of humidity in a shower

Below is an illustration showing a typical shower over 1 hour with a strong extractor on for the full hour. The shower is on for the first 5 minutes. Red is heat, blue is humidity.

A typical shower needs at least 30 minutes to extract warm humid air from the shower, and a few hours to extract the extra humidity from shower-soaked walls, damp towels etc.

HEALTH AND SAFETY CONSIDERATIONS

There are no health and safety issues from the dampness identified. Excess humidity, dampness and mould in the residential setting, do not themselves pose a health risk.

ONLINE RESOURCES

We are constantly adding to online resources, YouTube and tweets.
Do subscribe to [https://twitter.com/DampSurveys](https://twitter.com/DampSurveys) and [https://twitter.com/MouldPoint](https://twitter.com/MouldPoint)

A. Rising damp - defined
[https://dampsurveys.com/rising-damp/](https://dampsurveys.com/rising-damp/)
B. Understanding damp
[https://dampsurveys.com/understanding-damp/](https://dampsurveys.com/understanding-damp/)
C. Identifying damp
[https://dampsurveys.com/identifying-damp/](https://dampsurveys.com/identifying-damp/)
D. Survey methodology
E. Survey observations
[https://dampsurveys.com/survey-observations](https://dampsurveys.com/survey-observations)
F. Tracing source of dampness
[https://dampsurveys.com/locating-damp/](https://dampsurveys.com/locating-damp/)
G. Ongoing maintenance
[https://dampsurveys.com/identifying-damp/](https://dampsurveys.com/identifying-damp/)
H. Definition of Rising Damp
[https://dampsurveys.com/identifying-damp/](https://dampsurveys.com/identifying-damp/)
LIMITATIONS

Damp Surveys Ltd reports are designed to provide you with an informed independent expert opinion as to the condition of the property together with any recommendations for further investigation or remedial work. We do not warrantee any findings in this report unless we enter into a separate warrantee agreement with you.

The survey was conducted during daylight hours. Damp will be more noticeable at night and when the weather is colder and more humid. Gutters are more likely to fail when full of leaves and during periods of prolonged rain and adverse wind. We make best endeavours but cannot guarantee being able to identify all forms of damp, rot and insect infestation affecting the property. We are happy to return and update our observations and advice at any time.

We carried out a careful and thorough inspection of as much of the property as was accessible. However, when it is not possible to make a full inspection, we make a professional judgement about the likelihood of a defect being present. In certain circumstances, this may lead to a recommendation for further action to open up an area for further investigation. We are unable to see the whole roof, all the guttering and some of the drains. We were unable to inspect woodwork or other parts of the structure which are covered, unexposed or inaccessible, and are therefore unable to report that such parts of the property are free from defect. There were no obvious signs of damp resulting from these limitations.

This report is for the sole use of XXXX for whom the survey was undertaken and can only be relied upon for 90 days from the survey date. Unless expressly stated otherwise in this report, nothing in this report confers or is intended to confer any rights on any third party pursuant to the Contracts (Rights of Third Parties) Act 1999.