



*“safe pair of hands”  
solving the causes of damp*



## REPORT

For and on behalf of XXXX,  
Property surveyed

XXXX,  
London, XXXX

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.

Dear XXXX,

Thank you for instructing us to carry out a damp and timber survey of your second floor flat. We understand that you own the lease to flat and that you have a record of damp penetrating from the top floor roof terrace since you moved in April 2010 and the freeholder has failed to rectify the underlying fault. Please inform us if we have misunderstanding your instructions.

## OVERALL OPINION

Overall the flat is beautiful and very well maintained. However, damp to the bedroom ceiling has caused rot, mould and staining to the ceiling. The rotten wood has been severely weakened and could collapse, especially taking into account heavy items stored on the roof terrace above and neighbours walking on it.

We recommend you spend time understanding our advice in this report, which we would be happy to discuss in person. We would also be delighted to revisit at any time for a modest survey update fee.

## INDEPENDENCE AND METHODOLOGY

Our only income is through damp survey fees. Our motivation is integrity and practical, durable solutions. There is no conflict of interest as 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 Flat 6, 56 Westbourne Drive on 6 March 2018.

*Simon Hichens*

*Simon Hichens, BSc (Chemistry), AISSE (Institute of Specialist Surveyors & Engineers)  
CSD (certified surveyor PCA Property Care Association), MARLA, MNAEA, PWC (consult/audit)  
Expert Surveyor*

*Report completed on 8 March 2018*



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## 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. 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 and for you to recommend us in person, or by social media. Please follow us on <https://twitter.com/DampSurveys>

## THE PROPERTY

The property is one of 10 flats in a purpose-built property. We understand it was built by Lakedale Developments Ltd and completed in 2010. The freeholder is London and Quadrant Housing Trust (L&Q). The apartment occupies the rear on the second floor, beneath an approximately 2 metres by 5 metres open roof terrace. The walls are constructed of cavity brickwork.

The front door of the building faces East. All references to direction are taken as if looking at the front door from the road. The roof terrace facing West, therefore left-hand side is the South, and right-hand side is the north.

### Changes to the property’s original design

There are no significant changes to property’s original design. There has been remedial work previously carried out by L&Q to the section of roof terrace above the living room.

## OBSERVATIONS

### Conditions during the survey

Occupancy	Occupied, furnished
Weather	Dry
Weather past 24hrs	Wet
Internal humidity	50%HR
Internal temperature	22.8°C

### External

- The walls were studied from the ground level for signs of damp such as white efflorescence from sulphate salts and algae growth. The brickwork was streaked with white sulphate salts, but nothing to suggest ingress from the wall.
- Rainwater goods were tested, but despite some white streaks suggesting a leaking hopper and down pipe, they were found to be in order.
- The roof terrace above, was also inspected during the survey visit. Water was observed to be ponding on a bitumen felt membrane.

### Internal measurements

A Protimeter Surveymaster II was used to detect potential damp in “search mode” across all walls and where elevated readings noted, the area was checked more accurately in “conductance” mode. Conductance mode measures the passage of electrolytes (mainly salts) in water, across two pins. The meter is designed for wood. A measurement in wood exceeding 18% Wood Moisture Equivalent (WME), needs further investigation, but rot doesn’t start until greater than 28% WME.

Surface timbers were sampled in conductance mode. No timber was found to be above 18%WME, except where noted. No rot was found except where noted.

The mouldy patch on the bedroom ceiling was tested with the damp meter, and found to have only about 10% WME, which is considered dry. One area showed an elevated meter reading. This was along the left-hand wall stretching about half a metre from the corner, coinciding with the roof terrace hopper. We investigated the damp area by cutting out a section of plaster board. A second area was investigated, where mould was growing

## ILLUSTRATIONS

### 1 Damp on bedroom ceiling investigated



Damp staining stretches across the bedroom from left to right. There is a large patch of mould in the middle. Some areas have been painted with an antifungal paint. To the left, there was damp patch, also with black mould, which could be toxic and could cause serious health issues. We cut open a 50 x 100mm rectangle, inspection hole to the ceiling, where the elevated damp meter reading was located.

### 2 The roof terrace above



Directly above the elevated meter reading is a roof terrace made from layers of bitumen felt. We tested the hopper (right hand photo, that sits above the left hand corner of the bedroom) by pouring water onto the roof terrace towards the hopper. The hopper and down pipe did not leak. A surprisingly large amount of the water remained on the roof. Bitumen felt is designed to be used on roofs with a fall of greater than 4°, currently there is no slope. This is evidenced by the green algae to the right. Water is finding ways to penetrate the joints in the roofing material through minor defects or joints. The entire roof terrace was holding water. Water was splashing up between the paving stones as they were trodden on, even though it wasn't raining at the time.

### 3 Looking inside the inspection hole



The above left-hand photo is looking slightly upwards at the left-hand corner. The insulation was sopping wet within the inspection cavity. Water can be seen dripping down the wood on the left-hand, by the wall. White rot was abundant. The wood was spongy and had lost considerable strength. The white rot was *Asterostroma*, a family of wet rot. There was no ventilation to the roof, or at least no adequate ventilation.

### 4 A second inspection hole was cut into the mould in the centre of the bedroom ceiling



The area above the mould was damp. Water was glistening off a series of rusty nails. Water was also running along a metal channel created by the metal ceiling frame. There were damp stains along the plasterboard edges all over the bedroom ceiling. The wood was found to have bowed, which would contribute to the ponding. The plasterboard has also bowed due to the extensive water damage.

## CONCLUSIONS

### Roof Terrace

The bitumen felt (or Reinforced Bitumen Membrane) used to weatherproof the roof terrace above Flat 6, has failed to stop the ingress of water. Bitumen felt was the wrong choice as;

1. The roof does not have adequate rainwater disposal. The slope is insufficient to direct water away from the roof. When rainwater is in constant contact with seals, moisture inevitably finds its way past the seals within and between bitumen felt sections.
2. Paving stones are laid on the bitumen felt and walked on. The movements of paving stones on the weatherproofing felt, risks puncturing the felt and aggravating joints.

**NHBC requirements 2008 7.1 - D9 Flat roofs (and balconies functioning as roofs) shall have adequate rainwater disposal to a suitable outfall;** "Other than the exceptions given below, all flat roofs (and balconies functioning as roofs) should be designed with a fall of not less than 1:40. A fall of 1:40 should be used for the design of flat roofs and balconies, unless a detailed analysis of the roof is carried out including overall and local deflection, to ensure the finished fall is not less than 1:80. Falls to balconies acting as flat roofs and slatted balcony decking should drain way from the dwelling."

**NHBC requirements 2008 7.1 - D3 Flat roofs and balconies, including associated elements such as support and guarding, shall be designed to resist the applied loading and have adequate durability**

**NHBC requirements 2010 7.1 - D3 Flat roofs and balconies, including associated elements such as support and guarding, shall be designed to resist the applied loading and have adequate durability** 7.1 D3 "Technical Requirement R3 states that the structure shall, unless specifically agreed otherwise in writing with NHBC, have a life of at least 60 years." R3a includes "Weatherproofing".

### The Building Regulations 2010 Part C 6.4

"Any roof will meet the requirement if:

- a. it is jointless or has sealed joints, and is impervious to moisture (so that moisture will not enter the roofing system); or
- b. it has overlapping dry joints, is impervious or weather resisting, and is backed by a material which will direct precipitation which enters the roof towards the outer face (as with roofing felt)."

### Roof void – under the roof terrace

1. Although not a building regulations requirement, the roof void would not have been as wet had there been ventilation.
2. New timber should not rot as modern timber should be pre-treated with a fungicide.

### Health and safety

1. Careful consideration needs to be given to the health and safety of the occupants of the flats above and below the structurally damaged roof terrace.

## RECOMMENDATIONS

We recommend the following;

### A. The rotten wood below the roof terrace

#### Health and safety

1. The original architect's drawings need to be obtained to establish how critical the rotten wood is to the safety of those above and below the roof terrace.
2. Until there is certainty that the rotten wood is not structurally critical;
  - a. The neighbour above must not walk on the final square metre by the left-hand corner, nor to leave heavy objects there.
  - b. Occupants of flat 6 should avoid walking under the rotten timber.
3. The original architect's design needs to be reviewed and re-evaluated to establish where the defect lies, in terms of choice of weatherproofing material, was it;
  - a. defective design, or
  - b. defective construction

### B. The roof terrace

1. Weatherproofing of the whole roof terrace does not meet NHBC and Building Regulation requirements and needs replacing, not just the area above the bedroom.
2. Alternatives to bitumen felt, including fibreglass and EPDM rubber roofs need to be assessed for water resistance and durability of the roof terrace in its current form.
3. Unless a solid concrete roof is used (which is unlikely to be economic), water will need to be managed with whichever roofing material is chosen. Water must be managed by;
  - a. an incline to stop water ponding "direct precipitation which enters the roof towards the outer face,
  - b. strengthening of the roofing material to ensure it is not punctured by paving stones being walked on,
  - c. Ideally, ventilation of the roof void to allow water that gets through, to evaporate.

4. A contractor from Flat Roofing Alliance should be consulted and ideally do the work.

**C. Treating the damage**

1. If any of the rotten wood is structural (see architect's drawings), then this wood must be removed and replaced with treated wood.
2. The roof void must be dried out. The carpet should be protected from water.
3. The bedroom ceiling needs replacing.

**D. Ventilation**

1. The roof void should have vents fitted to allow a through-flow of air.

## 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 warrant any findings in this report unless we enter into a separate warranty 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. The survey represents a snapshot in time. Damp is often progressive only becoming visible after the survey. 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.

## MORE INFORMATION AND RECOMMENDATIONS

See the developing blogs on <https://dampsurveys.com> for generic recommendations and information. Please follow us on <https://twitter.com/DampSurveys>

## APPENDIX - STANDARD TERMS OF ENGAGEMENT

### Terms of Engagement

- 1) You may cancel this contract with Damp Surveys Ltd at any time 24 hours before the time and day of the pre-arranged inspection.
  
- 2) We may cancel this contract at any time including the day of the inspection if we determine after arriving on site, that it is unsafe or that we do not have sufficient skills to complete the exercise for you. In such a case, we will refund full payment less our travel expenses.
  
- 3) You are engaging Damp Surveys Ltd, to undertake an inspection of the property in question at a pre-arranged time and the production of a report in a timely fashion thereafter. We will carefully and thoroughly inspect both the inside and outside of the property but NOT any outbuildings unless specifically requested to do so in writing.
  
- 4) Before the inspection, but after the appointment has been made, we will undertake a desk top analysis of the property by checking various different websites and other information sources for details about the property and its location.
  
- 5) Terms of Payment – we only accept instructions after advance payment.
  
- 6) Liability – our report is provided for your use only and may 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.
  
- 7) We are unable to inspect parts of the structure which are covered, unexposed or inaccessible, including lofts, without written permission to do so, and are therefore unable to report that such parts are free from defect. We may express a professional opinion as to the likelihood of damp.
  
- 8) No disruptions will be made to the building's fabric save for a few pin sized holes, left by a measuring device. Access hatches and inspection chamber lids will only be lifted where it is easily possible to do so. Floor coverings and furniture cannot be moved, unless we have the prior written consent of the property owner. Floor voids will only be inspected if access panels permit. If there is a covered area you particularly wish us to investigate, please ensure that the owner of the property gives us prior written permission to uncover it.



9) We sometimes publish damp related images on websites to inform the public of damp, rot and the causes of damp and rot. We make every effort to ensure individual and corporate privacy is protected.

### **Insurance**

For peace of mind, Damp Surveys Ltd have Public Liability insurance of £1,000,000 and Professional Indemnity insurance of £250,000 (annual aggregate) both through Hiscox.

### **Quotations**

We recommend obtaining three quotes for any significant remedial work. We are happy to review your quotes, but always remain independent of contractors.