Alpine Surveys
Independent Property Survey Specialists

Damp Investigation Survey
Final Report

Areas 8 Ltd

65, Kingsway, London. WC28 6TD

October 30, 2018

Alpine Surveys Ltd
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Contents

1 Introduction

Alpine Damp were requested to undertake a damp survey, to investigate and determine causes of damp/ moisture, and to provide remedies to these.

Survey Overview:

In order to ascertain the true cause of your damp, moisture ingress or mould issue, we have undertaken a thorough and detailed investigation. Initially we have obtained any important history regarding previous or present issues. We have undertaken a detailed assessment of the property exterior, and we have assessed every room where a full property survey was instructed, or the selection of rooms where a partial survey or areas of concern were instructed.

You will find that the initial section of the report provides the specific details regarding your property, its style, construction type and general condition, followed by an in-depth external assessment. Thereafter the internal room assessments are detailed with the data obtained, the causes of the issues, and Thermal Images where required.

Finally you will find our detailed recommendations to correct and rectify the issues, based on our findings and survey results.

continued...

Detailed Survey Description:

External Assessment:

In order to ascertain the extent of deterioration, defects and structure issues externally, and therefore to understand where moisture has been entering or penetrating the property, a top down survey has been undertaken of your property in full, or the section(s) of the property if areas of concern were surveyed. We fully assessed the chimney stacks and parapets where present, using increased zoom binoculars where required, or drones where agreed. We assessed the roof condition where visible and accessible for deterioration and defects that could aid moisture ingress. We assessed all elevations including windows and doors, taking into account the structure, for example if it is of solid construction or cavity construction, and obtained levels of deterioration that will increase the risk of moisture penetration, and materials that are trapping moisture within the structure. We have looked for any other issues externally, that have contributed to the internal issues being experienced. We have assessed the ground levels in order to ascertain if they are increasing the level of moisture penetration in the base of the walls, and in turn the floor structure. Where adjoined to another property, we have also assessed the neighbouring structure(s) for deterioration or defects that could be affecting your property.

If found to be necessary, we have assessed your water supply to the property for leakage, and if required we have assessed any adjacent drainage pipes that are deemed to have been a risk, and which we believed are contributing to the internal damp issues. On occasions, it is not possible to assess all drainage pipes, and therefore if an inspection with CCTV is required, we have detailed it in the recommendations.

Internal Assessment:

Initially we undertook a visual assessment of the rooms to be surveyed, before obtaining 360 degree photographs of the room, and detailing visible defects, damp, mould or issues.

In order to ascertain the levels and spread of any damp in the rooms or areas of concern, we have undertaken a Moisture Mapping Survey. This entailed obtaining RD (Relative Damp) levels at high, medium and low levels on all of the walls and chimney breasts. RD levels assess the moisture approximately 22mm within the wall, and the numerous levels provided us with the spread of moisture, and the increased levels which are likely to be the source points. We have also obtained MC (Moisture Content) levels where required. MC levels have provided us with the % of moisture at the points where they have been obtained. This has helped us to determine if the RD levels are the result of general moisture absorption, or a result of moisture ingress. The MC levels have also indicated if damp proofing or tanking has been applied to the walls. In addition we have obtained numerous RD or MC levels on the floor, in order to understand if and where moisture is penetrating the floor structure. All of the moisture levels that are of concern have been included within the report.

Where there are no RD or MC levels detailed for a specific wall or floor, it should be assumed that the levels were all found to be acceptable, and currently no issues were located.

Thermal Imaging has been undertaken throughout each room assessed, or across any areas of concern assessed. Thermal Imaging assesses the surface temperature of the surface, and therefore areas of moisture ingress or damp are generally cooler, and therefore are clearly visible. The Imaging has provided us with crucial information, and the images of any areas of concern have been included in the report, in order that you can also see the moisture spread and severity in conjunction with the moisture levels provided.

Where salts analysis has been undertaken, or inspection cameras have been used, we have included our results within the report.

Recommendations:

At the end of the report you will find our detailed recommendations. These have been based on all of the survey data that we have obtained, and the detailed assessment of the property externally and internally. This combined with the Surveyors decades of experience, have allowed us to provide the necessary requirements to correct the defects and deterioration, and to correct the damp and if present the mould within the property.

In order to assess the property with an alternative survey method, to confirm the RD and MC levels, to ascertain the spread of the damp and to locate potential source points. Thermal imaging was undertaken throughout the survey area and photos obtained of the areas of concern.

2 Property Details

Client	Areas 8 Ltd	Survey Date	October 30, 2018
Address	65, Kingsway, London. WC28 6TD		
Consulting Engineer	Richard Haines		
Instruction	Areas of concern to Basement only.		

Property Details

Use of Property	Commercial	Property Style	Basement
Occupants	0	Number of Floors	7
Listed Building	Yes	Conservation Area	No
Approximate Year of Construction	1850		
Wall Construction and Covering	Solid Brick		
Roof Construction inc Visual Condition	Could not observe		

Historical Information

None noted.

Plans Provided	No	Full Access Provided	Yes
Comments			

External Details

External Condition Summary

Exterior is a listed building, which appears to be in reasonable condition, when surveyed from street level.

DPC in Place	Yes	DPC Type and Cond.	DPC Assumed but unable to see
Vent Brick Details	Various Air Bricks	Guttering Condition	N/A

External Fixtures Fittings

N/A

Windows & Doors	Crittall	Pathways & Gardens	Tarmac
Chimney Stacks	No	Condition	N/A
Water Supply Checked	N/A	Drainage	N/A

Internal Details

Ground Floor Construction and Coverings	Solid Floor (Various)

Room Details

Basement only.

Heating Type	Unknown	Air Con	No	Blocked Fireplaces	No

Internal room changes construction mods

Various changes since original construction.

Kitchen/Utility Room

Oven Extractor Details

N/A

Equipment Details

N/A

Bathroom(s)

Air Extraction Details

N/A

Other Details

Other Specific Room Details

None

Property Insulation Details

Solid wall, so no cavities assumed.

Specific Mould and Fungi Details

Mould noted to various areas, due to lack of ventilation.

Specific Condensation Details

Condensation high, due to lack of ventilation/ extraction.

3 Property Survey Details

External Details

On the Kelley St elevation. The property is brick with metal windows.
On the Kingsway elevation, the building is stone with metal windows.
On Wild Court Elevation, the building is a mixture of stone, with rear brick piers.

There is no visible evidence of any moisture ingress from above. The ledges at first and second floor level, are showing signs of deterioration, but there is no signs of water ingress, which could affect the structure below. The seals around the windows are deteriorated, and this will allow moisture to penetrate the structure, and affect the property below. The brickwork and stonework pointing are in reasonable condition, but have been pointed with a cement based mortar, which will trap moisture in the structure, and can cause damage to the brickwork/ stonework. The existing roof could not be surveyed due to its height, and we would recommend that this is checked, for any sources of moisture, or deterioration of the roof covering, which will allow moisture to penetrate the structure, and affect the walls below. The pavements and surrounding road, appear in good condition, but any failure of these, can cause moisture to again penetrate the structure.











3 Property Survey Details

Basment

This is under the main building, and also under the pavement and road, surrounding the building. The walls are a mixture of concrete and solid brick. The ceiling is 4.1m high. The walls have been rendered, with a cement based render, with some gypsum plaster finish. Neither of these finishes are breathable, and will trap moisture in the structure. There is evidence of a slope to the render, at the bottom of the walls, on the Kingsway and Wild Court elevations, but the other walls do not have this. There is evidence of damp/ moisture to most of the walls, including salting at low levels, to the sloped areas.There is also mould to the plasterboard ceiling, on the Kingsway elevation. There is also damp, to the bottom of the brick columns. This is due to moisture from the structure above, which is trapped behind the render, but where this has been removed, this has allowed the moisture to escape. A pilot hole has also been drilled through the floor, and using a reinforcing rod, water to a depth of 600mm, was noted at the bottom of this hole.




















3 Property Survey Details

Basement Continued

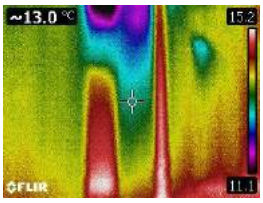
The RD levels, to the Kingsway side, were up to 415, at low level, but acceptable above this. The RD levels, to Kelley St elevation, were up to 414, at low level, but acceptable above this. The RD levels, to brick columns were up to 388 at low level, especially on the Keeley St elevation.The RD levels, to the right of the Kingsway elevation, towards the Wild Court elevation, were up to 346 at low level, especially in the newly repaired render area. The RD levels, to the Wild Court elevation, were up to 217 at low level, but acceptable above this.

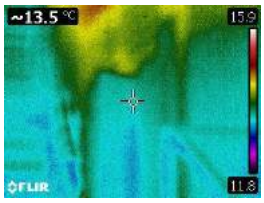
The MC levels, taken across the floor, in various locations, using a pinless moisture meter, due to solid concrete floors, were all acceptable. Where obtained, close to the walls, these rose to 289, in some locations, due to moisture from the walls, tracking back across the floor.

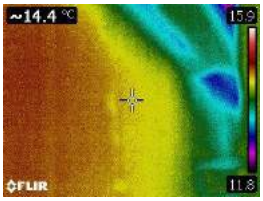
There is no ventilation to this area, at present, to remove excess moisture. It is planned to install an air conditioning system, which will extract externally.

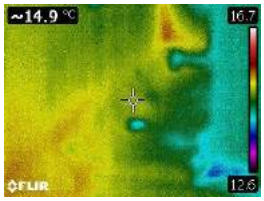


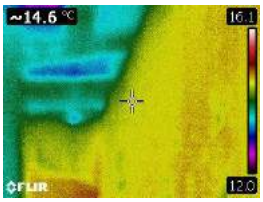


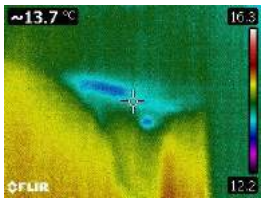













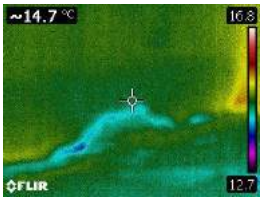

3 Property Survey Details

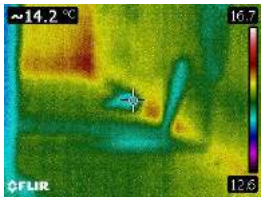
Basement Continued

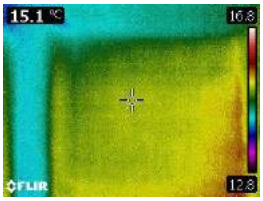
There is no evidence of any tanking system applied to the walls, but this may be a liquid system, which has then been rendered over. The cement render would act as a barrier, to prevent moisture ingress, but this often fails at the wall/ floor junction, and in corners, as these are the weakest points.

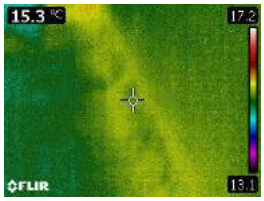
In our opinion, the current cement based render is providing an adequate moisture barrier at high level, but has failed at low level, at the wall/floor junction, and in some of the corners. This will allow moisture to track along the floor, which is evidenced by the MC levels, obtained close to the walls.

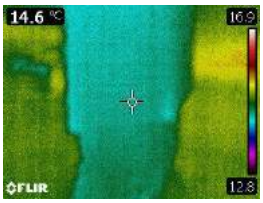
The MC levels, taken away from the walls were acceptable, suggesting there is an adequate membrane under the floor. The water noted in the pilot hole is ground water, due to the depth of the basement. In order to provide a tanking system, then a floor membrane will also be required to prevent any moisture from the walls, affecting the floor.

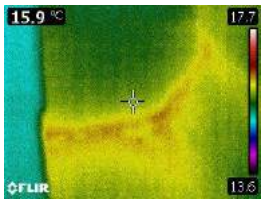


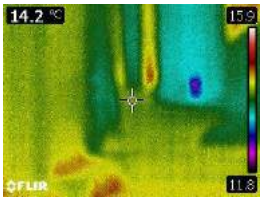



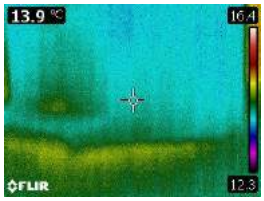



3 Property Survey Details

Mould Formation

Mould is very often incorrectly related to damp, when in fact it is the result of warm airborne moisture that condenses, and in turn mould is formed.

Warm airborne moisture is created when such things as cooking, bathing and the drying of clothes are undertaken. The warm airborne moisture travels around a property, and condenses on cold surfaces (such as a damp wall or windows), or in areas where it has become trapped (such as wardrobes or behind furniture Items), allowing time for it to cool and condense.

The levels of airborne moisture and condensation are much increased when extraction rates are poor, and the levels of insulation are increased.

3 Property Survey Details

Absorbed Moisture

As a property ages, the level of absorbed moisture increases within the structure. This is the result of airborne moisture being created by processes such as cooking, bathing, and the drying of clothes.

The moisture is absorbed into the structural materials such as plaster, bricks and block work, and despite breathing, evaporation and extraction, a certain amount will remain as residual moisture. Over time, the residual level will increase, unless mechanical drying is undertaken such as Dehumidification.

Therefore an increased moisture level will be expected within a property, dependent on it's age, and therefore slightly increased levels, will be recorded as acceptable.

3 Property Survey Details

Technical Information

Moisture levels have been obtained to the areas of concern, and we have relied on RD Relative Damp levels, and MC Moisture Content levels.

The RD levels, use radio frequency to ascertain the moisture, to a depth of approx. 20mm, within the wall or floor being assessed. This allowed us to ascertain the pattern of moisture.

0-169 = Acceptable, 170-199 = Risk Of Damp, 200-999 = Varying Levels Of Damp.

The MC levels, are percentage of moisture within the material being assessed, but are recorded on the surface of the wall or floor.

Thermal Imaging was undertaken, which assesses the surface temperature of the walls or floors being assessed. The surface temperature is affected by the moisture within the structure, and therefore areas of saturation which are not necessarily highlighted at surface level, within the walls or floor, have been highlighted. To the right of the image, the temperature scale for the area assessed is indicated.

4 Recommendations

In order to rectify the current issues, we recommend that the following works and rectifications are undertaken.

1. We understand a specialist tanking contractor, has already visited, and provided recommendations for a low level tanking system. We have not seen the specification for this, or the type of system to be used. Based upon our observations, and readings, this should be designed to prevent further moisture ingress, especially at the wall/ floor junction. Any tanking system, should allow the structure to breathe, allowing any trapped moisture to escape. We normally recommend, a Delta Membrane or similar system, that will capture moisture that penetrates the structure, and drain it away, but provide a dry room internally. The new tanking system, should also be provided with a manufacturers, or insurance backed guarantee, to cover any future issues.
2. Provide ventilation to the Basement area, extracting to outside air, to prevent moisture build up, causing condensation on internal surfaces. This system should include dehumidification, in order to dry out any air borne moisture, before it is removed externally.
3. Ensure the property above, is maintained on a regular basis, to prevent any penetrating moisture through this, affecting the structure below. This includes renewing the seals, around any windows or openings, as required.

The results of the survey were based on the information and data obtained whilst on site and we believe that these are a true and accurate assessment of the property and the damp within it.

The recommendations are based on the damp located, the source points of the damp and the defects as found during the survey. We believe the recommendations will resolve the issues if completed in full.

Signed *Richard Haines*

Date: October 30, 2018