# SPECIFIC DEFECTS REPORT DAMPNESS TO AIRING CUPBOARD WHITEHAVEN CASTLE, WHITEHAVEN, CUMBRIA, CA28 7RA

March 2021



Reference: 3495-06-18- GG Prepared By: Storm Tempest Ltd 3 Apollo Court Koppers Way Monkton Business Park South Hebburn Tyne and Wear NE31 2ES Version 1: Prepared For: Home Group Anthorne House Irish Street Maryport Cumbria CA15 8AD



## **EXECUTIVE SUMMARY**

Client:	Home Group			
Address:	Home Group, Anthorne House, Irish Street, Maryport, Cumbria CA15 8AD			
Originator:	This report has been commissioned by Ian Thompson.			
Request Date:	10 February 2021			
Purpose of Survey:	The purpose of the survey and report is to investigate the alleged dampness issues and to identify any relating defects and remedies of the reported issue. The reported issue being detailed on 1130115624.			
Survey Date:	10 March 2020	Surveyor:	George Groom	
Weather:	Overcast & Dry	Approved:	Mark Young	
External Temp:	14°C	Occupied:	Yes	
Orientation:	Directions taken look of the property which	ing to the front faces west.	Site Topography:	Level
Cause/s of Damp:	Condensation	Rising		
Summary:	Condensation Rising   We have identified a defect with the parapet wall/hidden gutter detail directly above the solid stone external walls to damp affected airing cupboard. We recommend further investigation is carried out and the cause remediated to prevent moisture tracking down the surface of the external walls.   Internally we identified rising dampness to the floors and solid partition walls within the meter cupboard and in the adjacent stairwell, due to the age of the property we suspect the absence of damp courses and membranes. The walls are finished with timber panels that are in direct contact with the masonry and floors, the timber is resultantly suffering from similar levels of dampness and showing signs of decay. The cupboard is also experiencing condensation related issues caused by warm moist air becoming trapped behind the timber panelling and condensing on the cold stone walls. We recommend that the timber panelling is removed and disposed of, allowing the walls to breath naturally.   The mineral wool pipe lagging to the heating pipes should be removed and replaced with a foam type product that will be more resilient to moisture and does not readily absorb odours. We also recommend the installation of a consistently running mechanical extractor to the solid stone external wall in order improve ventilation, remove warm moist air, and prevent the build-up of odours.			
Repair Estimate:				



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#### PREFACE

This survey report has been produced subject to limitations as detailed in Appendix A.

The report initially states the commissioner of the survey, purpose of the survey and conditions followed by a brief description of the building / subject of the survey.

The report details our observations of the defect(s) identified and remedial action required together with budget costs, which are also summarised in the conclusion of the report.

The report is supported by an appendix which includes a photographic schedule and where necessary a floor plan detailing location of remediation works and additional supporting information.

Moisture readings have been recorded using an electronic moisture reading to allow moisture profiling to determine the cause and extent of the dampness within the property. Moisture readings are expressed as wood moisture equivalent (WME) and interpreted using the following dampness spectrum:

Readings		Comments	
Pin Reading	7 -16.9 %	Reading within acceptable limits and timber decay is very unlikely.	
Non-Invasive	70 - 169	(DRY)	
Pin Reading	17 – 19.9 %	Borderline readings, where excessive moisture is present and likely derived from a definite source other than normal air humidity. (AT RISK)	
Non-Invasive	170 - 199		
Pin Reading	20 – 99.9 %	Readings indicate significant excess moisture is present and immediate remedial treatment is required. (WET)	
Non-Invasive	200 - 999		

(Source: Protimeter Survey Master Product Literature)

Where necessary further destructive testing will be carried out following permission from the resident / Home Group Contracts Manager / Maintenance Surveyor.



## 1.0 **PROPERTY DESCRIPTION**

1.1	Property Address:	Whitehaven Castl	e, Whitehaven, Cumbria, CA28 7RA
1.2	Туре:	Converted Apartm	nents
1.3	Configuration:	Detached	
1.4	Accommodation:	Multiple Separate	Accommodation
1.5	Year Built:	1769	
1.6	Construction:	Traditional	
1.7	Roof Covering:	Welsh Slate and L	ead
1.8	Roof Type(s):	Flat/Hipped	
1.9	Chimney:	NA	
1.10	Roof Insulation:	N/A	
1.11	External Walls:	Solid	
1.12	Cavity Insulation:	N/A	
1.13	DPC & Type:	Not Visible	
1.14	Windows:	Timber DG	
1.15	External Doors:	Front	Timber
1.16	Ground Floor:	A. Solid	
1.17	First Floor:	A. Susp. Timber	
1.18	Internal Walls:	A. Solid	
1.19	Heating System:	Full	Combi Boiler
1.20	Ventilation:	No trickle vents	



#### 2.0 THE SURVEY

#### 2.1 External Factors That May Be Contributing or Causing Dampness Within Property

#### Observation 1: External Walls

We were instructed to attend the property and carry out a specific defect survey with the intention of identifying the source of the damp odour, believed to be emanating from the ground floor airing cupboard containing the heating pipes. The smell has been noticed for some time by the occupants of the property including one resident in particular whose dwelling was in closest proximity to the cupboard.

We were informed by Home Group that prior to our attendance, in house maintenance surveyors had suggested the cause of the odour to be damp pipe lagging within the cupboard. Works had previously been undertaken to replace the pipe lagging, however the odour persisted. At request of Home Group, Storm Tempest attended site on the 10<sup>th</sup> March 2021 in order to carry out their own inspection and provide any advice/recommendations.

We inspected the external envelope of the property in the area directly corresponding to the damp meter box cupboard and noted the walls to be generally in a satisfactory condition. The rear wall of the meter box cupboard is the solid stone external wall directly between two ground floor windows. We identified some staining in this area which we attribute to rainwater dripping down the surface of the walls from the above parapet. From our limited ground-based inspection, we believe there is a hidden gutter behind the parapet that discharges through a concealed penetration into a cast iron hopper and downpipe.

We cannot comment on the condition of the hidden gutters, however the hopper and downpipe appeared in satisfactory condition. Based upon the location of the staining leading from the parapet corbeling and to the wall directly below, we suspect there may be a defect to the hidden gutter/parapet wall detail, allowing rainwater to escape.

Photo Ref:

1 - 4



#### 2.2 Internal Survey

#### Observation 2: Internal Survey

Internally the airing cupboard is situated between a stairwell and the electrical plant room. We immediately noted the damp odour that had been described by the residents and that the door to the airing cupboard has louvred vents from which the smell is likely escaping. Internally the cupboard was a small space and noticeably warmer than its surroundings due to the heat radiating from the pipework. The damp odour presented very strongly within the cupboard itself, however we did not identify any condensation mould growth at the time of our survey.

The heating pipes had been wrapped in a mineral wool type insulating lagging that may be absorbing moisture and smells and contributing to the issue. The walls of the cupboard were lined with plywood panels that were visibly damp stained directly above floor level and had started to decay. We tested the timber with the electronic moisture meter and recorded elevated moisture levels, we also recorded elevated moisture levels to the floors, which we attributed to rising dampness as there was no evidence of leaking pipework.

We inspected within the electrical cupboard to the left-hand side of the damp cupboard, which we found to be free from dampness and odours at the time of our survey. On the other side of the solid partition wall to the right-hand side of the airing cupboard is a stairwell, the damp smell was also present here and we noted heavily corroded sections of spare metal pipework. We tested the solid partition walls and the rear elevation solid external walls within the stairwell and recorded elevated damp readings to both.

Photo Ref:

5 -12



## 3.0 CONCLUSION & RECOMMENDATIONS

- 3.1 The staining visible to the solid stone external walls in the area that corresponds internally with the airing cupboard is attributed to rainwater tracking down the surface of the external elevation walls. We identified an area directly below the parapet corbeling as the most likely origin of the dripping water and recommend it is inspected at roof level along with the hidden gutter behind the parapet wall for signs of defect. It is unlikely that the rainwater dripping onto the external walls is solely responsible for the damp issues noted internally to the cupboard, however it will prolong drying out of the walls after periods of wet weather and may be exacerbating the dampness internally.
- 3.2 Internally we identified elevated dampness readings to the floors in the airing cupboard and stairwell. We also recorded dampness to the plywood wall panelling in cupboard and to the exposed solid partition wall where accessible within the adjoining stairwell. The dampness has clearly been an ongoing issue for some time as the bottom of the timber panels has started to decay. We attribute the low-level dampness to the solid partition walls and timber panelling to be rising dampness. The wall panels are in direct contact with the floor slab, based on the age and construction of the property the presence of a DPM is unlikely, which will allow ground borne moisture to rise through the slab and present as dampness issues internally. The rising dampness to the solid partition wall is likely caused by the absence or failure of a damp proof course.
- 3.3 In addition to the rising dampness at low level to the walls, we also recorded less significantly elevated readings up to ceiling height which are attributed to condensation. We suspect that warm moist air from within the cupboard is becoming trapped behind the timber panelling and condensing on the colder surface of stone walls. The lack of any mechanical ventilation to the room is exacerbating the issue and as the only existing vent is through the door to the communal areas of the building, that is where the smells are emanating from.
- 3.4 The pipe lagging to the heating pipes is a rockwool type product that likely offers good insulative properties but also is capable of absorbing smells and odours more easily than alternative materials.
- 3.5 We recommend that the timber panelling is removed from the walls and disposed of in order to allow the stone walls to breath naturally and prevent the moist air becoming trapped within the wall void. The low-level rising dampness to the walls and floors can be remediated by installation of a liquid DPM and retrofit DPCs, however as the walls are un-plastered and in a non-habitable location it may be preferable to simply let the moisture evaporate naturally. The existing pipe lagging should be removed and replaced with a foam type product that will be more resilient to moisture and does not readily absorb odours. Finally, we recommend the installation of a consistently running mechanical extractor to the solid stone external wall in order improve ventilation and remove warm moist air and odours from the cupboard itself. It is our opinion that it would be a more sympathetic option to control the moisture levels through ventilation, rather than by attempting to seal away the dampness with retrofit barriers and membranes.



## Written by:



George Groom BSc (Hons) Storm Tempest Ltd 07 April 2021





Mark Young BSc (Hons) Storm Tempest Ltd 07 April 2021

#### **APPENDIX A – LIMITATION OF SURVEY & REPORT**

#### **General Limitations**

- A1 Our comments on the causation of the defect are based only on the investigations which have been carried out at this stage and would be subject to review in the light of further information being available at a later date
- A2 We have not inspected parts of the structure which are covered, unexposed or inaccessible; we are therefore unable to report that any such part of the property is free from defect.
- A3 We are not mechanical and electrical engineers and as such our comments are based on our observations and interpretations only.
- A4 No allowance has been made for any non-visible asbestos related works that may be required prior to undertaking any of the works.
- A5 All figures used in this report exclude VAT and are calculated from historic data from previous similar defects. Estimated costs are given as a guide only and should not be used to raise finance.

#### **Limitations Relating to Dampness Issues**

- A6 The report comments on the condition of parts of the property affected by dampness on the date of inspection. The client should note that the severity of dampness identified may alter between the date of inspection and remedial works being carried out.
- A7 The survey initially consists of a visual inspection of the external of the property to identify any defect that is causing or has the potential to cause dampness within the property.
- A8 Internally our surveyor's will liaise with the customer to identify the any previous history of damp related problems within their property. The surveyor will undertake a survey of the ground floor walls of the property with an electronic moisture meter. The surveyors will also record moisture profiles for any noted extraneous moisture penetration issues within the property.
- A9 Moisture readings in excess of 18% wood moisture equivalent (WME) will be recorded by our surveyor. The report identifies the location of the dampness, the cause of the dampness and the proposed remedial works required to rectify the damp problem.
- A10 Our comments on the current condition of the property are based only on the investigations which have been carried out at this stage and are based on visual observations and readings taken using an electronic moisture meter. Our comments on the likely cause of the defect would be subject to review in the light of further information being available at a later date.
- A11 Moisture readings from an electronic moisture meter are calibrated to a moisture equivalent value of timber and therefore do not provide quantitative measures of moisture content levels on or in masonry substrates. The readings recorded from the property should be read as a

percentage wood moisture equivalent (WME), where a reading of 20% is considered by the manufacturers of such moisture meters to be of significance. Generally, when timber has moisture content in excess of 18 - 20% it is classed as being susceptible to wet rot. The fact that a meter does not record a quantitative measurement is of little consequence as the diagnosis is based on the overall distribution of meter readings and not so much the reading itself. Most masonry materials are free from materials which affect electrical resistance; therefore, changes in electrical resistance on masonry will be reflecting either water and / or soluble salts such as chlorides and nitrates in the sample.

- A12 Our inspection is limited to surfaces that are accessible and exposed, we are unable to comment on the condition of inaccessible timber adjacent to damp walls or subject to moisture ingress. All timber in the vicinity of damp should be considered to be at risk from fungal decay.
- A13 We have not inspected parts of the structure which are covered, unexposed or inaccessible due to kitchen units, floor coverings, stored resident belongings or large pieces of furniture; we are therefore unable to report that such areas are free from defect. However, where we suspect that dampness may be present from readings around such covered or unexposed areas, we will advise the client to arrange for these areas to be exposed to allow a further intrusive survey.
- A14 Fitted carpets and other secured floor finishes were not lifted which limited the inspection of the floor.
- A15 The recommendations that have been made in this report are considered to be effective in either controlling moisture ingress or eradicating it. These recommendations are made on the basis that the client continues to ensure the structure is kept water tight throughout its life cycle.

#### **APPENDIX B - ABBREVIATIONS**

CDS	- Cavity Drainage System
Combi	- Combination
Cond	- Condensing
CA	- Contract Administrator
CUP'D	- Cupboard
CWI	- Cavity Wall Insulation
DG	- Double Glazed
DPC	- Damp Proof Course
DPM	- Damp Proof Membrane
EWI	- External Wall Insulation
Ext	- Extractor
FF	- First Floor
FFL	- Finished Floor Level
GF	- Ground Floor
GW	- Georgian Wire
LHS	- Left Hand Side
NA	- Not Applicable
PIV	- Positive Input Ventilation
PVC	- Polyvinyl Chloride
RHS	- Right Hand Side
RWDP	- Rainwater Downpipe
RWG's	- Rainwater Goods
SG	- Single Glazed
SoW	- Schedule of Work
SUSP	- Suspended
UPVC	- Unplasticised Polyvinyl Chloride
WC	- Water Closet
WHB	- Wash Hand Basin
WME	- Wood Moisture Equivalent

### APPENDIX C - PHOTOGRAPHIC SCHEDULE



Photo 2





Photo 4



Photo 5



Photo 6





Photo 8





Photo 10







Photo 12

