



## ACB SURVEYS LTD

INDEPENDENT DAMP & TIMBER SURVEYORS

<b>Date:</b>	23 <sup>rd</sup> November 2023
<b>Reference:</b>	14623/11
<b>Client:</b>	Llantwit Fardre Community Council
<b>Property</b>	Carnegie Parish Hall, Church Village. CF38 1PY
<b>Surveyor:</b>	Mr A. Beveridge ABDE CSDB
<b>Company:</b>	ACB Surveys Ltd
<b>Date of Survey:</b>	22 <sup>nd</sup> November 2023



# Contents

---

- A.** Introduction to your report
- B.** Findings and Recommendations
- C.** Additional Information
- D.** Authorisation

# A. Introduction to your Report

---

Thank you for asking us to prepare this Report; we hope that you find our recommendations useful.

## A.1 About the survey

Our survey was carried out in accordance with your instructions. In following your instructions, where we have encountered obstructions which have impeded our inspection (such as heavy furnishings, flooring covers or locked doors) we have noted this in the Report. If you instructed us to inspect specific parts of your property, we have limited our inspection to those areas.

Where we have referred to the 'front', 'rear', 'left' or 'right' of the property, these should be interpreted as if viewing the property from the outside, facing its front elevation.

This Report does not constitute a building condition survey. For the detection of any other defects that the property might have, such as structural problems, we would recommend seeking a further report from a Structural Surveyor. Such a report can be particularly important if you are currently engaged in the sale or purchase of this property.

External joinery, fences, sheds etc. will not normally be included in our inspection. Unlike internal timbers, these are constantly exposed to the elements and so regular maintenance will be necessary. We could offer advice in this respect, if required.

## A.2 Traffic light system

To make it easier for you navigate our Report, we use a traffic light system, which highlights the areas in which we found cause for concern. The key for this system is set out below.



**Problems detected: Repairs required**



**Attention recommended**



**No problems detected**

## B. Findings and Recommendations

---

### B.1 Particulars of Inspection

#### Client's Instructions

Your instructions were to carry out an internal damp inspection, primarily to the original addition to the front elevation.

Unless otherwise stated in our Report, our survey was limited to the areas that you asked us to inspect.

#### Property Status

The property is currently heated and in use.

We are not able to comment on the condition of a concealed wall though in some circumstances we may have assumed its condition based on the condition of immediately adjacent sections of wall. Similarly, where floor coverings are present, we cannot comment on the condition of the timbers beneath them, but in some cases, we may be able to estimate their condition based on adjacent, accessible timbers.

#### Weather Conditions

At the time of the inspection the weather was dry.

The external temperature was 15.2°C and relative humidity was 64.6%.

## B.2 Property Specification

Property Type	The property comprises a local authority community hall.
Year of Construction	Circa 1900
Construction Methods	<p>Some external walls are cement rendered from ground floor level to eaves level and coated with a modern masonry paint. Cement pointing was observed to the exposed stonework to the front elevation.</p> <p>The construction is traditional.</p> <p>The structure of the main roof is conventional pitched timber framed clad. The roof to the original addition is of a parapet design.</p>
Orientation of Property	The front of the property faces S/E.

## B.3 External Inspection

General Observations	<p>We cannot comment upon the serviceability of all of the gutters and the water tightness of the joints, unions or connections but did note areas of disrepair. We recommend that the rainwater goods are maintained on a cyclical basis. In addition, downpipes and gullies should be checked to ensure that there are no blockages and that water is free flowing. As a precautionary measure it is prudent to clear debris and moss from all gutters. This will extend the life of the gutters and prevent unnecessary repairs to the external envelope. Poorly maintained rainwater goods will cause saturation of the external envelope, which will result in moisture ingress.</p> <p>A minimum differential level between internal solid floors and the external ground of 150 mm is required. In the absence of this differential level walls are vulnerable to rain splash back and lateral penetrating dampness. Some external ground levels were noted to be too high and should be lowered to comply with the above specifications.</p>
----------------------	--

3

## General Observations (cont)

Cracks and voids in external rendering, however small, are best repaired as quickly as possible. The integrity of the render system is vital. Damage to the external building fabric will allow water to seep into the underlying structure and will eventually cause deterioration which leads to moisture penetration. Not only is this likely to spoil and damage internal finishes and decoration, but it will also put timbers within the property at serious risk from fungal decay. Inappropriate building materials and wall coatings have been introduced. Multiple areas of delamination and cracking to the external render system were observed. Spalling was also noted to the exposed stonework to the front elevation. It would be prudent to completely renew the render system and re-point the masonry to BS7913:2013 specifications.

General deterioration was noted from ground level to external joinery and timbers. A closer inspection revealed areas of wet rot behind guttering. A comprehensive overhaul of the woodwork is required and complete renewal of some sections of timber should be anticipated.

**The dwelling is a traditionally constructed listed building, so you will need to use materials that suit this type of structure. The relevant permissions should be obtained from your local conservation officer prior to carrying out remedial works as recommended in this report. You should use contractors and surveyors experienced in this type of work. Older painted surfaces (usually those applied before 1960) may contain high levels of lead that can be a safety hazard when disturbed. You should follow the recommendations of the Health and Safety Executive when redecorating and/or carrying out remedial works.**

3

## B.4 Internal Inspection

### B.4.1 Inspections for dampness

#### Introduction

We examined the areas of the property which you instructed us to inspect for signs of unwanted dampness.

Our survey was confined to readily accessible walls and fabrics such as those not obstructed by furnishings or units; however, we will sometimes make certain assumptions on the condition of concealed walls and fabrics based on the condition and moisture content of adjacent materials.

#### Dampness

Our surveyor examined the accessible internal walls to the front addition for evidence of rising, condensate and penetrating dampness.

##### Findings

The internal floor to the front addition is of solid construction. Solid floors constructed prior to 1965 do not include concrete, compacted hardcore or a damp-proof membrane. It is possible that quarry tiles or flagstones are used on made up ground and/or a thin layer of concrete has been added years later. Checking the full construction of the floors requires intrusive checks which is beyond the scope of this survey.

Our surveyor observed dampness to the internal walls to the front addition. It is our surveyor's assessment that this is the result of a salt contamination and condensation problem. Consistent elevated moisture readings were noted from floor to ceiling levels.

##### Recommendations

Carry out remedial works, as outlined in the 'General Observations' section of this report.

Please refer to the following sections for information regarding 'salt contamination' and 'condensation'.

Although we did not observe any penetrating dampness, it would be prudent for the parapet roof to be inspected by a competent contractor who is experienced in working on properties of this age and type. If repairs are deemed necessary then they should be carried out in a timely manner.

3

## Salt Contamination

Our surveyor examined the walls where dampness was found for evidence of salt contamination of the wall plaster.

### Findings

The damaging effects of soluble salts are intimately linked with wetting and drying cycles at the masonry face. Almost all historic building materials are porous to some degree. The network of pores in stone and brick contain water in which varying quantities and types of salts may be dissolved. As drying/evaporation occurs at the masonry face salts crystallise out of solution. Salt crystallisation (crypto florescence) can occur within the pores below the masonry surface. Fine pores cannot accommodate the increasing accumulations of salts and are eventually broken apart by the expansive forces of the crystal growth, causing the surface to decay.

Our surveyor found evidence of extreme salt-contamination. Salts such as these become deposited in wall plasters when they are carried through the walls of a property by penetrating and/or rising dampness or interstitial moisture within the walls. The salts that our surveyor found are hygroscopic, that is they can absorb water from the atmosphere in a property (caused by our bodies, boiling water, drying clothes etc.) and form a solution; hence they can keep the wall surface damp, even though the cause of the dampness which deposited them may have been resolved.

### Recommendations

To date, the only way to successfully deal with salts in the longer term, is the way it has been done for many hundreds of years. This means deliberately drawing them into relatively soft, renewable surface finishes such as lime render. Lime renders crumble when salts build up in them, automatically shedding the salts from the walls. When the plaster coats start to crumble, it is indicative that the pores of the material have now 'filled up' with salts and it is time to replace it – which is easy to do because it is soft and crumbly. Breathable decorative finishes should be applied following such works, such as clay or lime-based paints.

3



## Condensation

Our surveyor measured humidity levels to the property.

### Findings

Our surveyor's inspection revealed a RH of 85.5%. Examinations of floors and walls revealed a high level of visible condensate dampness throughout. Interstitial moisture (condensation) was also measured to a depth of 40mm to internal walls. It is unlikely that adequate through ventilation is being achieved, so the front addition is currently serving as an internal moisture reservoir.

Aspergillus and similar moulds are hydrophilic fungi that require high levels of surface moisture. Capillary held dampness is not sufficient to cause mould growth. The mould requires free moisture on the surface. Moulds can germinate if levels of relative humidity exceed 70% for a period of 24 hours or more.

Keeping relative humidity levels under 50% also helps to minimise or control dust mites.

### Recommendations

Carry out remedial works as outlined in the 'General Observations' section of this report.

Update the existing mechanical ventilation units with automatic humidistat-controlled mechanical ventilation units. An autostat that measures absolute humidity should be linked to each fan. We have included suitable examples of mechanical ventilation units and autostats with this report.

Do not decorate until surfaces have thoroughly dried.

**It is very important to carefully monitor the heating to the whole property to prevent the temperature of the walls falling below dewpoint which is the point at which condensation occurs (please refer to section C.5).**

3

## C. Additional Information

---

### C.1 [Party Wall etc Act 1996 and Listed Buildings](#)

Please note that where any of our recommended works are to walls which fall within the definition of a party wall as per the Party Wall etc. Act 1996, you are required to obtain the consent of your neighbours prior to the start of any works. In addition, if your property is a listed building or located in a conservation area, you should obtain the necessary permissions before any works are carried out.

### C.2 [British Standards 7913:2013](#)

BS 7913 describes best practice in the management and treatment of historic buildings (buildings built before 1919 or of a solid wall construction). It applies to historic buildings with or without statutory protection.

'If a mortgage valuation survey report insists that a chemical Damp Proof Course is required, sections 6.3.6.2 and 6.10.1 can be referred to. This makes an authoritative argument to ensure that the cause of any problem is properly dealt with. This is reinforced by section 6.3 of BS7913:2013 and also the joint statement (2022) by RICS, Historic England and the PCA, on the need to assess a building's performance and on the requirement for building pathology.

### C.3 [Black Ash Mortar](#)

Black ash mortar is where coal slag was used rather than sand in mortar and consequently is high in sulphates. This has serious implications for plasters that are applied to such walls. For instance, ordinary Portland cement often used in the base coat of some plasters (especially replacement plaster associated with previous chemical DPC work) will prematurely fail/degrade/become damp due to the contaminates from the mortar leaching into the wall as a whole and then into the plaster.

Due to its high sulphate content black ash mortar will cause an electrical moisture meter to respond in an unpredictable manner. It is therefore important to understand that readings obtained with a conductance or dielectric meter should be deemed qualitative and not quantitative. If inconsistent readings are obtained, and the reasons are not obvious, then a calcium carbide test should be carried out to obtain a more accurate result.

### C.4 [The Use of Cement in Older Properties](#)

Modern cement render and pointing is incompatible with the construction of older buildings and can cause or accelerate serious decay. Modern buildings generally depend on an impervious outer layer and cavities to keep out moisture. By contrast, solid-wall buildings tend to rely on their permeable nature ('breathability') to allow water absorbed by the fabric to evaporate back out.

The use of an impervious Portland cement render in place of a traditional lime-based material restricts evaporation. Hairline cracks form due to the mortar being more rigid than the wall. These then draw in water that becomes trapped in the fabric. Timber-framed and earth-constructed buildings, in particular, can suffer major structural damage if moisture builds up behind a cement render.

A wall previously covered with a cement render for some time is likely to have a high salt content. A new lime render may act like a poultice and initially draw the salts out. Areas of excessive salt loading can cause localised premature decay (particularly at the base of the wall). Some remedial re-rendering after a couple of years might be required.

### **C.5 Heating and Humidity**

The walls of this property have high thermal mass. This means that when heat is first applied; the walls absorb it. When the walls are subjected to continuous heating, the heat will build up in them until they reach their working temperature. When heating the walls of this house from cold during the winter months, it is likely to take several days. When the walls reach their working temperature, they will help to stabilise the room temperatures. They do this by giving heat out when room temperatures fall and absorbing more heat as temperatures rise. If the house is heated with short bursts of intense heat or is allowed to become cold during winter months or when unoccupied, the walls will not reach their working temperature, so will just continually absorb heat, leaving the rooms perpetually cold and prone to localised mould and condensation.

The property should be heated in a way that is efficient for the type of building. The heating needs to be on continuously with a low to moderate room temperature setting. At night or when the property is unoccupied, the heating should still remain on, but the temperature can be allowed to fall back slightly. Some experimentation will be required to establish the best temperatures, but the minimum setting is likely to be around 15°C at night and no lower than 12°C when the house is unoccupied. The heat settings should remain identical throughout the year. When the walls have achieved their working temperature, on many occasions the heating will not be triggered, even on the odd cold day, as the walls will supply the heat required. If a prolonged period of cold weather should occur in summer; the heating will need to cut in to stop the walls falling below their working temperature. A modern boiler, controlled by a separate thermostat, will do this by heating the radiators to just lukewarm as the temperature drops to the minimum permitted – this happens to be when a modern boiler develops its peak efficiency. When the property is unoccupied, cupboard doors should be left open to improve the heat and air circulation and reduce the likelihood of cold spots developing.

### **C.6 Suspended Timber Floors**

A common feature of Victorian and Edwardian properties is a suspended timber floor at ground level. A typical method of construction is to span timber joists across the width of the room, resting on timber plates connected to the top of masonry sub walls. Floorboards are then placed on top of the joists to form the floor. These floors are typically suspended above soil. The space in between the floorboards and the soil is referred to as the sub-floor void or oversite. Adequate sub-floor ventilation is

required to allow any moisture build up, within the sub-floor, to evaporate and vent out. This requires through ventilation from the front of the property to the rear. Sub-walls should be adequately honeycombed with no debris to hinder the passage of air. Unfortunately, it is often the case that little or no consideration is given to sub-floor ventilation when these properties are extended, cutting off adequate ventilation and allowing moisture build-up within the sub-floor which commonly leads to timber decay and/or wood boring beetle infestation.

### **C.7 Speedy Calcium Carbide Testing**

A speedy carbide meter is an item of apparatus used by ACB Surveys Ltd to determine the moisture content within a damp wall. The test aids our surveyors when investigating a property for dampness and helps to determine an accurate diagnosis of the dampness within a wall. A speedy carbide test has a greater degree of accuracy when compared to a capacitance or dielectric meter, which also determine the moisture levels within a damp wall. Unlike the electric meters the speedy carbide test is a destructive test and requires a sample from the wall or floor. As a result, a Speedy Carbide Test tends to be only carried out if it is specifically recommended by our surveyor or requested by the owner of the property.

### **C.8 Wood Burning Stoves & Open Fires**

If there is inadequate air entering a house, that is, enough to replace the volume of air being drawn into the appliance, and out through the flue or chimney, the house can depressurise. This can result in a stove or fireplace borrowing or drawing air from another flue or chimney within the home. As the house tries to re-pressurise itself, it can draw noxious fumes including lethal Carbon Monoxide into the home via another fireplace, central heating boiler, or water heater etc with potentially fatal consequences. Any type of mechanical ventilation will alter air pressure which in turn could affect the performance of the stove's flue or chimney system. Therefore, it is extremely important that any solid fuel biomass or fossil fuel appliance is checked by a HETAS registered engineer prior to introducing or updating any passive or mechanical ventilation to a property.

## D. Authorisation

---

We thank you for inviting our company to carry out an inspection on your behalf. We hope that you have found the content of our report easy to understand. However, if there is any part that you would like explained in greater detail then please contact the surveyor concerned.

This Report contains information which is correct to the best of our knowledge. It is authorised by Mr A. Beveridge ABBE CSDB, Managing Director of ACB Surveys Ltd.

Signed: *A. Beveridge*

Date: 23<sup>rd</sup> November 2023

**Mr A. Beveridge ABBE CSDB**

This report is for the sole use of Llantwit Fardre Community Council 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.

ACB Surveys Ltd (Registered in England and Wales no:12212850)

### Enclosures:

The documents listed below are enclosed with this report and will form part of any contract. Should you find that any are missing then please contact us immediately.

- Report No: 14623/11 (13 pages)
- File of Images
- Autostat Data
- Vapour Vent WAD-B Fan Data