



Dampness Inspection Report  
Brooklands Building  
Holmes Chapel Community Centre

Issue 1  
July 2021

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## Background

This report has been requested to advise on damp staining which is visible to the internal face of external and internal walls located on the Ground Floor of the Brooklands Building on the Holmes Chapel Community Centre Site off Station Road. The report will investigate the dampness reported, including identifying the extent of the areas affected, advise on the cause(s) and advise on the remedial works considered necessary.

## Scope of Inspections

The inspection undertaken comprised of the following:

1. A visual inspection of the affected areas.
2. Surface survey of the wall using a Moisture Meter to identify the pattern of moisture content across the length and height of the walls.
3. Moisture readings were taken to several internal areas using a Protimeter. Readings were taken using both the sensor bulge and with the moisture probes. One area in the Male Toilets was drilled internally to obtain the moisture content levels within the thickness of the wall using deep wall probes.

No floor coverings were lifted or disturbed.

## Description

The Brookland Building is a two-storey building located on a shared site with Holmes Chapel Community Centre. The building is of traditional construction with solid masonry walls, concrete floors, suspended upper timber floors and slate pitched roofs.

The building has had an ongoing problem with damp affecting internal walls to several areas on the ground floor.

Windows and entrances doors are a combination of double glazed aluminium powder coated and uPVC units.

The building has been extended to the west with a single storey extension with mono-pitch roof. A single storey entrance porch extension has also been formed in recent years.

The building is primarily used as offices and meeting rooms by Everybody Sports and Recreation who lease the building from Holmes Chapel Parish Council.

## Construction / Condition

The layout of the ground floor accommodation and general locations of dampness is shown in Figure 1.

The walls solid masonry walls are assumed to be built up off a solid concrete foundation. Wall are predominantly plastered with paint finish internally, although there are some sections of Toilet and Kitchen areas which are part tiled. Floors are concrete slab finished with a combination of vinyl safety flooring and carpet throughout.

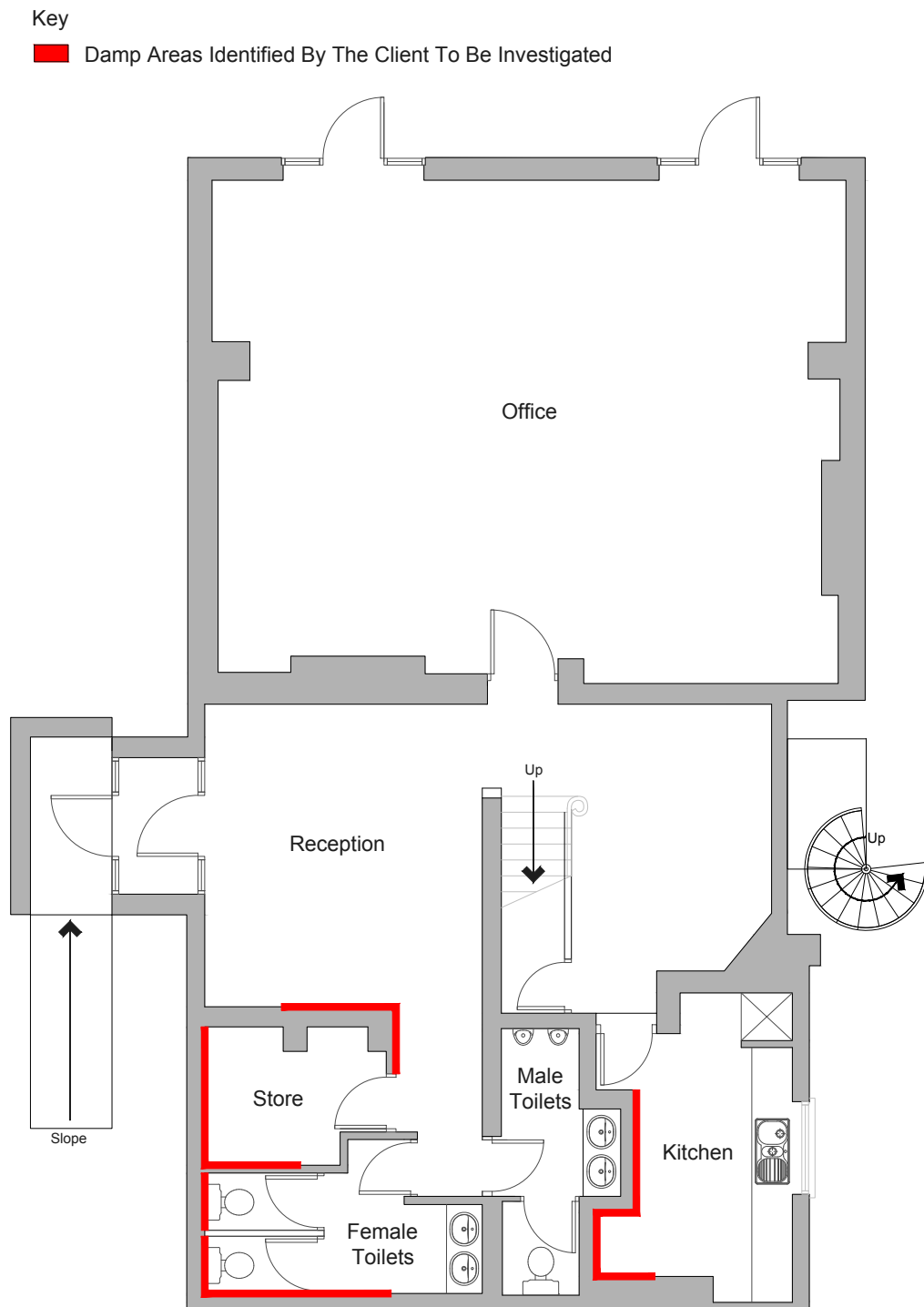


Figure 1 – Building Layout with Damp Areas requested by Client to be Investigated

The following defects were noted during our inspection and are indicated on Figure 2 below:

1. Efflorescence and blistering / peeling of paint finish at low level to walls.
2. Rough / uneven plaster at low level.
3. Plaster corner beads were noted to be corroding.
4. Generally surface condition of all walls is consistent throughout.
5. Heavily spalled brickwork at low level externally with salt evident.

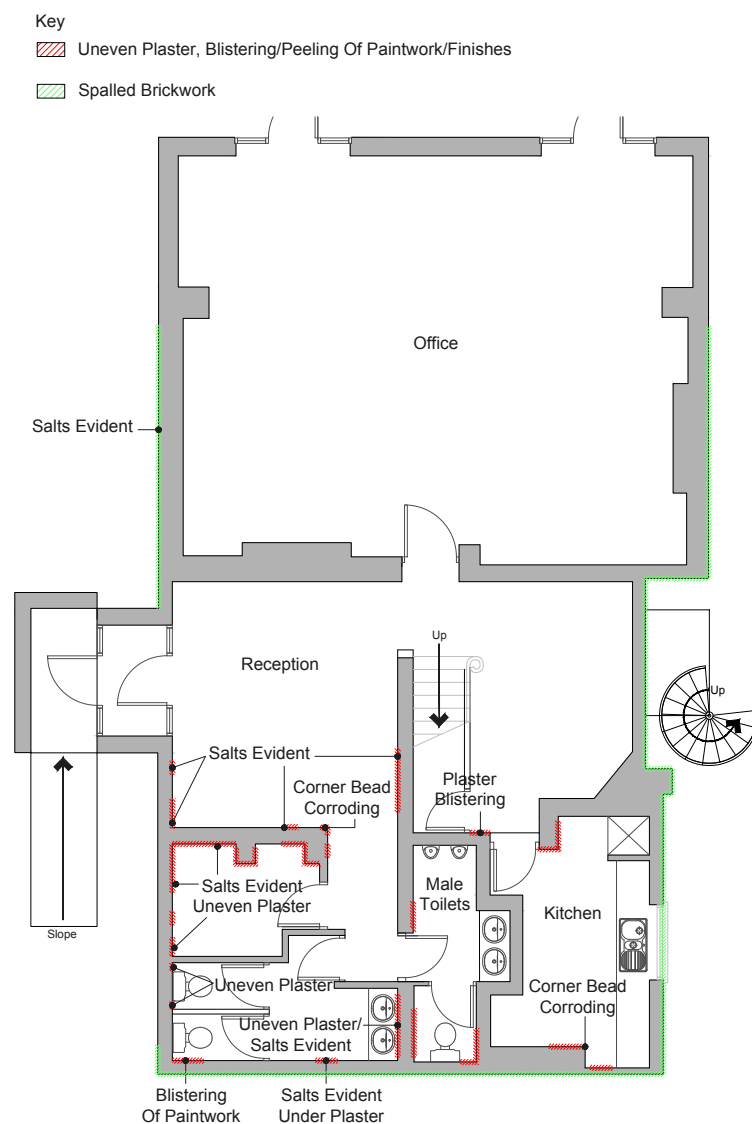


Figure 2 – Defect Locations

## Investigation

A survey was carried out with a surface moisture meter to record moisture content of the walls, to an approximate depth of 15mm and extending from floor level to a height of 1500mm. Normal moisture content readings were generally recorded above 1200mm.

The results are illustrated in Figure 3 with the important points to note being:

1. Very high moisture levels were consistent from finished floor level up to 1200mm above floor level.
2. Salts were evident to areas showing plaster defects.
3. Generally walls that appear dry on visual inspection still showed high damp readings at low level.
4. The moisture levels have a distinct absolute line where damp levels significantly decline to a safe % above the 1200-1500mm height.
5. No mould growth was noted.
6. High moisture content readings were present through the thickness of the wall where tested with the deep probes.
7. Timber skirtings have high moisture content readings around the defective areas but in a lot of instances were not showing any current signs of deterioration.
8. No signs of defects were noted to external rainwater goods and services.
9. Externally low-level bricks are heavily spalled with salts evident.

Externally a bitumen DPC was identified and was noted to be 75mm below the finished floor level of the building. The DPC was noted to be 150mm above ground levels.

Additionally an Electro-osmotic damp course appears to be present 75mm higher than the original DPC (titanium wire present behind mortar joint), suggesting past remedial works have been attempted to resolve historic damp issues. Due to the current condition of the walls, this system appears to be redundant or could be switched off. Further investigation of the installation and condition of this system should be undertaken before any intrusive remedial works are considered or undertaken.

#### Electro-osmotic Damp Courses explained

A titanium wire is passed around the walls to be treated and at regular intervals this wire is pushed into holes made in the brickwork, then it is earthed and a safe voltage is applied, this stops the dampness from rising up the masonry.

One end of the wire is connected to a metal stake, which is hammered into the ground to make an effective earth.

These types of damp courses can fail due to various reasons such as owners simply switching off the electricity supply, electrical connections can become damaged by ground maintenance / rodents. It is also common electrical anodes can become damaged.

Height	Typical Reception Wall Reading					
1500mm	8%	N/A	N/A	8.30%	8.20%	8.60%
1200mm	8.20%	N/A	N/A	8.60%	8.20%	8.30%
900mm	8.90%	8.40%	9.40%	9.20%	9%	7.80%
600mm	8.30%	10%	22%	17%	20%	8.40%
300mm	15%	22%	30%	72%	27%	25%
100mm	16%	12%	25%	39%	24%	24%
Length	1 metre	2 metres	3 metres	4 metres	4.5 metres	5 metres

Height	Typical Store Wall Reading				
1500mm	10%	9%	8%	N/A	8.00%
1200mm	10.00%	13%	9%	N/A	9.00%
900mm	11.00%	15.00%	26%	12.00%	8%
600mm	10.00%	24%	61%	N/A	12%
300mm	50%	90%	18%	N/A	96%
100mm	10%	8%	24%	18%	21%
Length	0.5metres	1 metre	1.5 metres	2 metres	2.5 metres

Height	Typical Female Toilet Wall Reading						
1500mm	20%	9.10%	9.10%	9.60%	9.10%	9.60%	8.60%
1200mm	23%	9.40%	9.20%	11.00%	9.10%	8.80%	11.00%
900mm	14.00%	9%	15%	30%	9.20%	89%	27%
600mm	8.70%	10%	33%	59%	15%	8%	20%
300mm	8.00%	11%	27%	21%	33%	13%	74%
100mm	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Length	1 metre	2 metres	3 metres	4 metres	5 metres	6 metres	7 metres

Height	Typical Male Toilet Wall Reading				
1500mm	N/A	9.30%	10.00%	8.50%	9.00%
1200mm	N/A	9.30%	21%	7.90%	9%
900mm	9.60%	9.50%	11.00%	10.30%	88%
600mm	16.00%	22%	9.00%	37%	25%
300mm	N/A	8.10%	41%	8.20%	27%
100mm	N/A	N/A	N/A	N/A	N/A
Length	1 metre	2 metres	3 metres	4 metres	5 metres

Figure 3 – Typical Surface Moisture Content Reading





Photograph of DPC / Electro-osmotic DPC



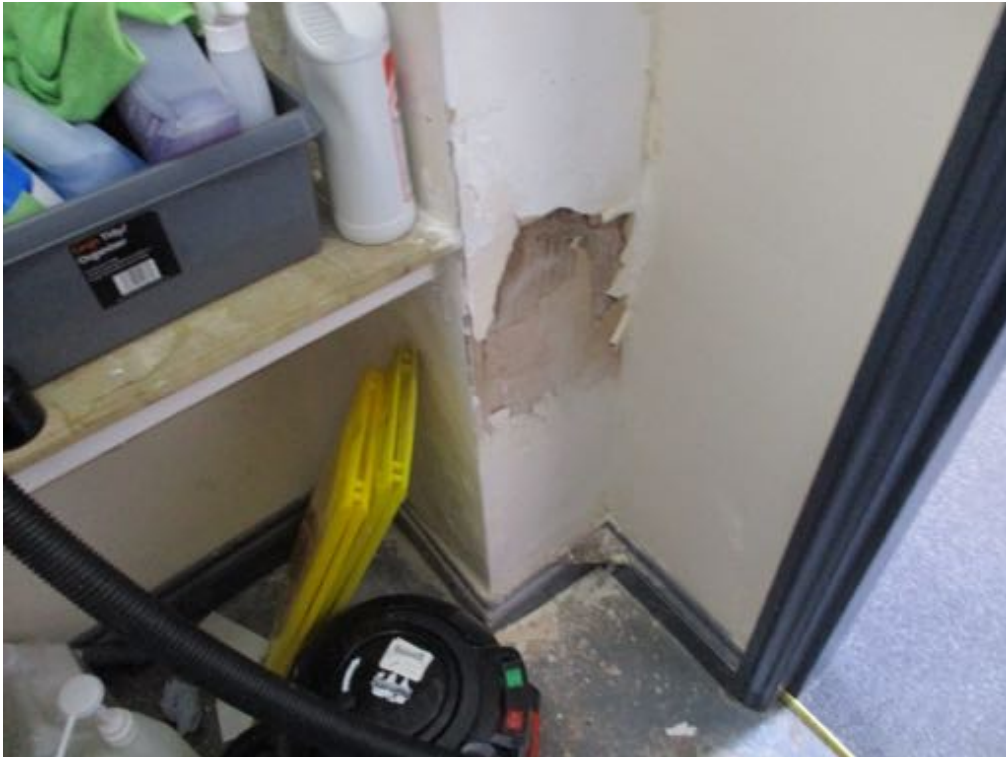
Photographs of Internal Dampness



Photographs of Internal Dampness



Photographs of Internal Dampness



Photographs of Internal Dampness



Photographs of Internal Dampness



Photographs of Internal Dampness



Photographs of Internal Dampness



## Assessment

Figure 4 indicates the extent of rising dampness identified. The pattern of moisture content readings do not support condensation as being a significant factor in the cause of the dampness, whilst the presence of salts, lack of mould and lack of defects to nearby services do not support penetrating dampness or pipe leaks as being a significant factor in the cause of dampness.

Given the location of defects and general pattern of the damp readings of the walls the source of the moisture is considered to be caused by ground water rising up through the internal and external walls, due to the lack of adequate damp proof membranes with installation height of original DPC also being a contributing factor.

The installation of an electro-osmotic DPC highlights previous remedial works have been undertaken to attempt to resolve rising damp issues and considered to be redundant for the purposes of this report.

Key

■ High Level Of Dampness & Surface Defects

■ Damp Present Lower Level Only , No Current Surface Defects

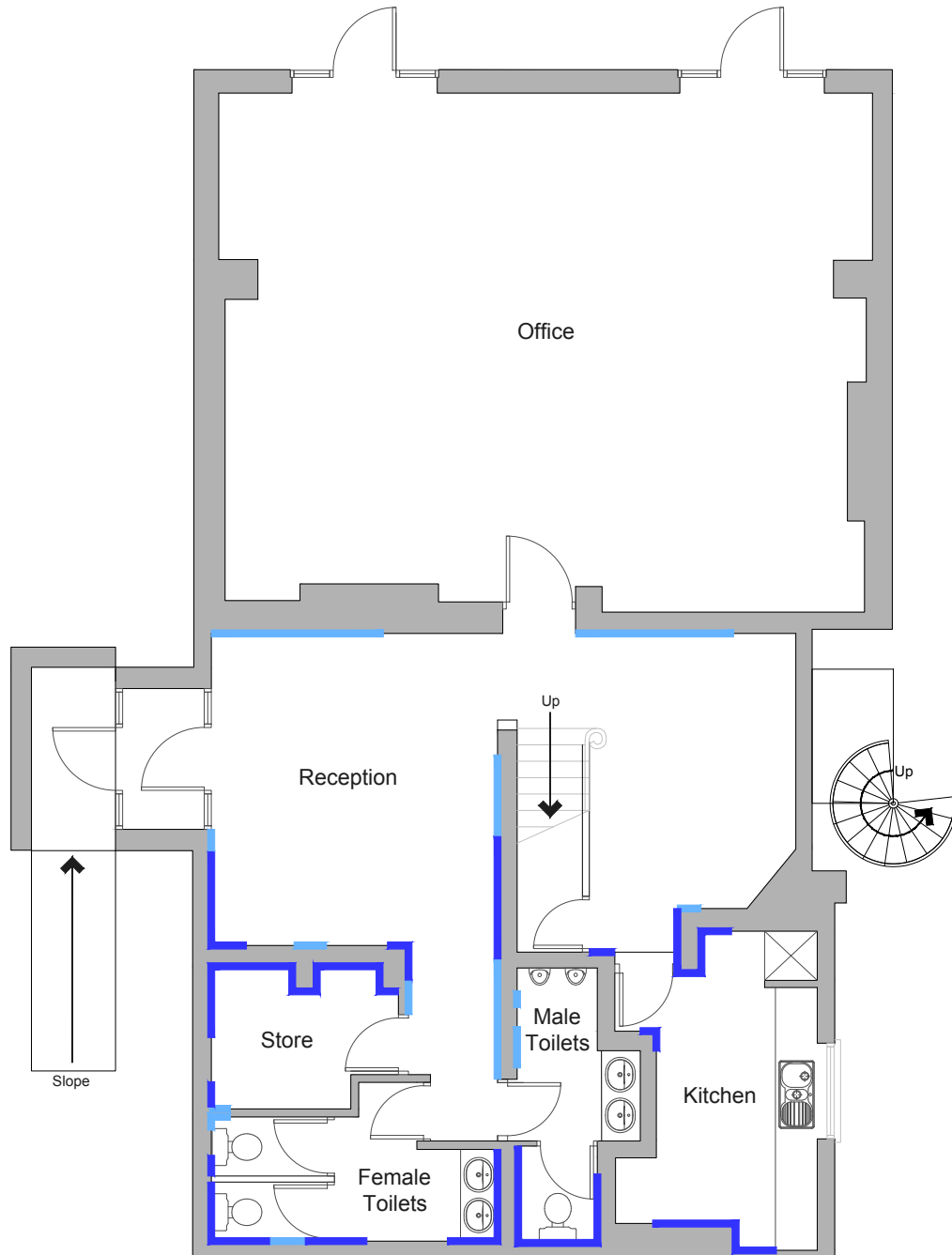


Figure 4 – Dampness Locations

## Recommendations

The investigation works have identified that majority of the damp to the walls is being caused by moisture rising up the masonry and mortar joints from ground level.

Ideally the remedial works need to create a new barrier between the sources of the moisture and the wall and this could potentially include:

1. Provision of a damp proof course to the base of the wall to prevent moisture rising up the walls from floor level.
2. Designing the skirtings to protect the base of the wall from surface water on the floor.

## Damp Proof Course

The moisture content readings and damage to the walls indicate that there is no effective damp proof course to the base of the wall. As previously noted there is the possibility that a Electro-osmotic damp proof course has been installed as part of previous remedial works, however if this is the case then it is no longer working effectively or requires repair works / servicing.

It is therefore recommended to install new chemical injection damp proof course.

Plaster should be removed to 1200mm above floor level and the wall re-plastered to finish above the level of the new injected damp proof course and first horizontal mortar joint above floor level. The new skirtings should be installed and high enough to cover the gap to the base of the wall where there is no plaster.

New skirtings will be required and some floor finishes will be disturbed and require replacement.

The full extent of the walls affected will require redecoration.

## Chemical Injected DPC

### Scope of work

1. Removal of counters, worktops, cubicles etc
2. Strip out flooring
3. Strip out sanitary
4. Strip skirtings
5. Hack off and replaster wall internally.
6. Installation of chemical injected DPC
7. New skirtings
8. Removal / reinstatement of set aside items / sanitary
9. Replacement Flooring where disturbed
10. Replacement wall tiling where required
11. Redecoration - Walls
12. Redecoration – Skirtings
13. Reinstatement of set aside sanitary fittings
14. Reinstatement of mechanical and electrical services
15. Preliminaries & Overheads & Profit
16. Contingency



