Core
CONSERVATION

Dampness Report

Lower Ground Flat, London

London
SW1X XXX

27 November 2024

To whom itmay concern,

Please see below the results of the recent dampness survey performed on your building.

The following information is covered:

Feel free to contact me with any questions you might have.

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Reason for Inspection

We have been asked to investigate the dampness problem in this **Grade 2 listed** lower-ground residential flat due to previous damp proofing works and recent cracking of the decorative finish.

Key Findings – Short Summary

After performing a detailed technical inspection (detailed in the next section), here is a short summary of the key findings:

- The main dampness problem in the building is **rising damp**. Additionally, some underground external walls are also affected by **sideways penetrating damp**.
- Despite being a listed building, in the past the flat has been replastered with cement. A few months ago it also received a modern gypsum finish. The gypsum finish is now cracking badly due to the nature of the used plaster mix and/or application method.
- To **restore the breathability** of the wall fabric and to ensure a long-lasting and aesthetically pleasing decoration, the removal of modern cement and gypsum plasters and the replastering of all internal areas with lime is recommended.
- Being an underground (lower ground) flat – naturally subject to higher humidity levels and the cooling effect of the ground – several lime renovation options have been recommended, both with non-thermal and thermal insulating lime plasters. With the ongoing rise of energy prices, a thermal option, due to its improved thermal comfort, might be a better long-term choice for an underground flat.

FINDINGS

Thank you for your time earlier, for showing me around your property. Here is a quick summary of findings and some of the points we have discussed.

Internal Living Space

The main reason behind the crumbling and degradation of plastering in the building is **rising damp**.

The water is rising from the ground carrying into the wall fabric various minerals known as **salts**. The water evaporates through the plaster and when the growing salt crystals expand in volume (up to 10X), they break down the building fabric, resulting in potential crumbling, peeling and/or damp patches.

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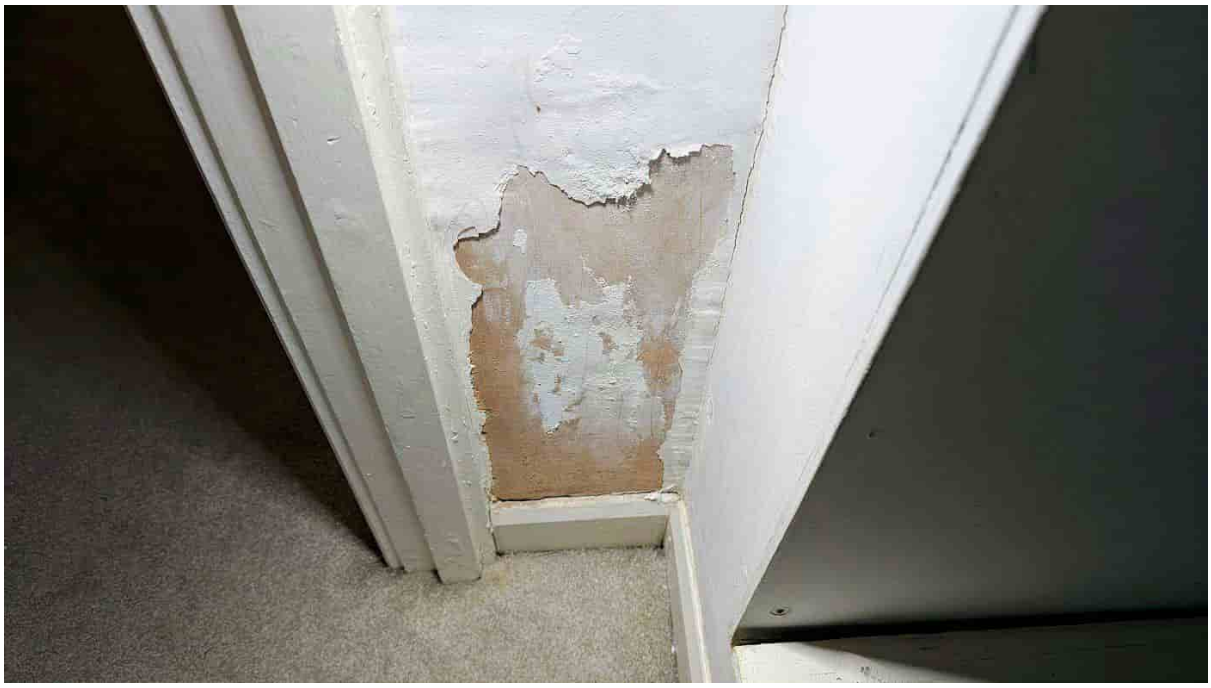
As a result of evaporation and salt crystallization, first the paint starts peeling then the plaster crumbles, eventually leading to damages of the mortar and brickwork.



Modern cement plasters and renders just shift the dampness problem, making it rise higher or push it sideways. If the evaporation of moisture is hindered by modern non-breathable materials, moisture can rise over the proverbial 1 metre height.

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Salt crystallization is also visible outside in form of salt “blisters” along the mortar bed.

Rising damp has been “treated” in the building a few years ago with chemical injections then tanking or replastering all walls with a modern sand and cement plaster. This solution is **not acceptable** in listed buildings, modern renovation materials not being compatible with the historic wall fabric.

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Taking plaster samples indeed confirms the presence of cement plaster and gypsum finish, as shown below:

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The internal **gypsum finish is badly cracked** throughout, spoiling the decoration. This is the result of the plaster mix and/or poor plastering work, resulting in an extremely brittle and fragile finishing.

During core sampling (detailed later) the vibration of the drill caused cracking then the complete delamination of the finishing.

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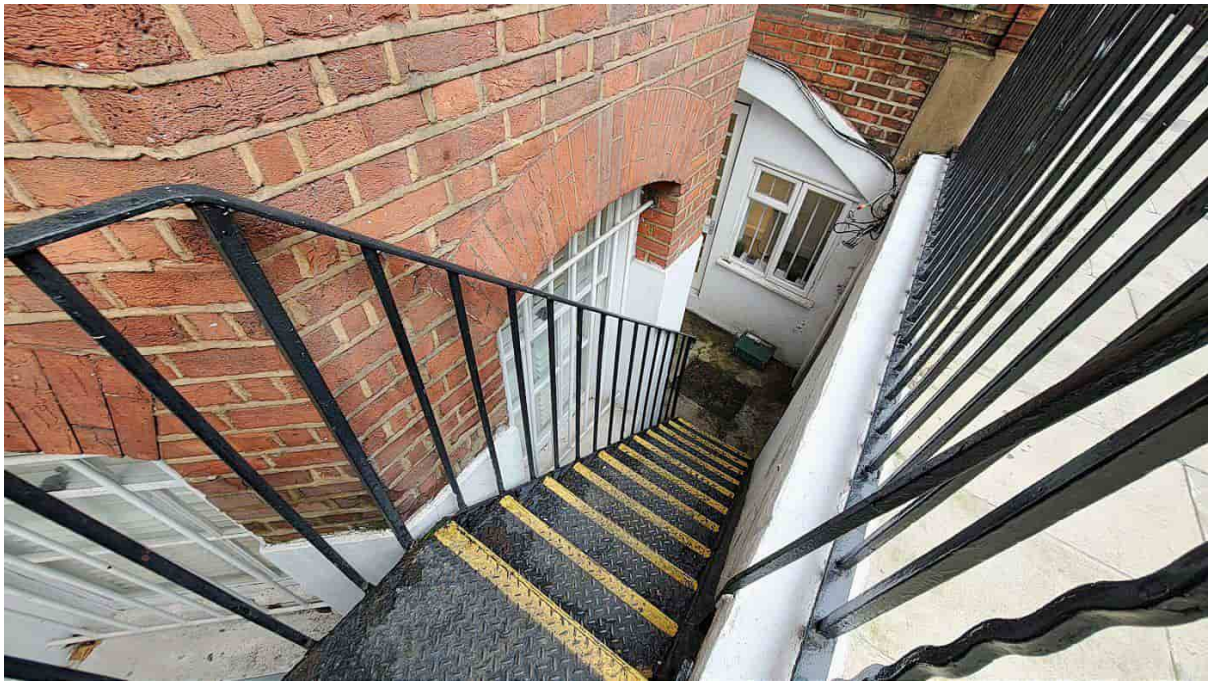
Problems Caused by Past Non-Sympathetic Repairs and Materials

Cement Render

The front part of the building has been rendered up to about 2 metres height with a modern cement render, most likely to protect the fabric from rain. Modern cement renders are also often also part of the overall dampness problem, for the following reasons:

- **Non-breathable**: a cement render prevents the evaporation of water that finds its way under it, locking the moisture into the building fabric
- **Hard & brittle**: it cracks as the building moves, letting rainwater into the building fabric, resulting building fabric decay and dampness problems
- **Dense and poor thermal insulator**: contributes to potential condensation and mould problems, especially on external wall inner surfaces.



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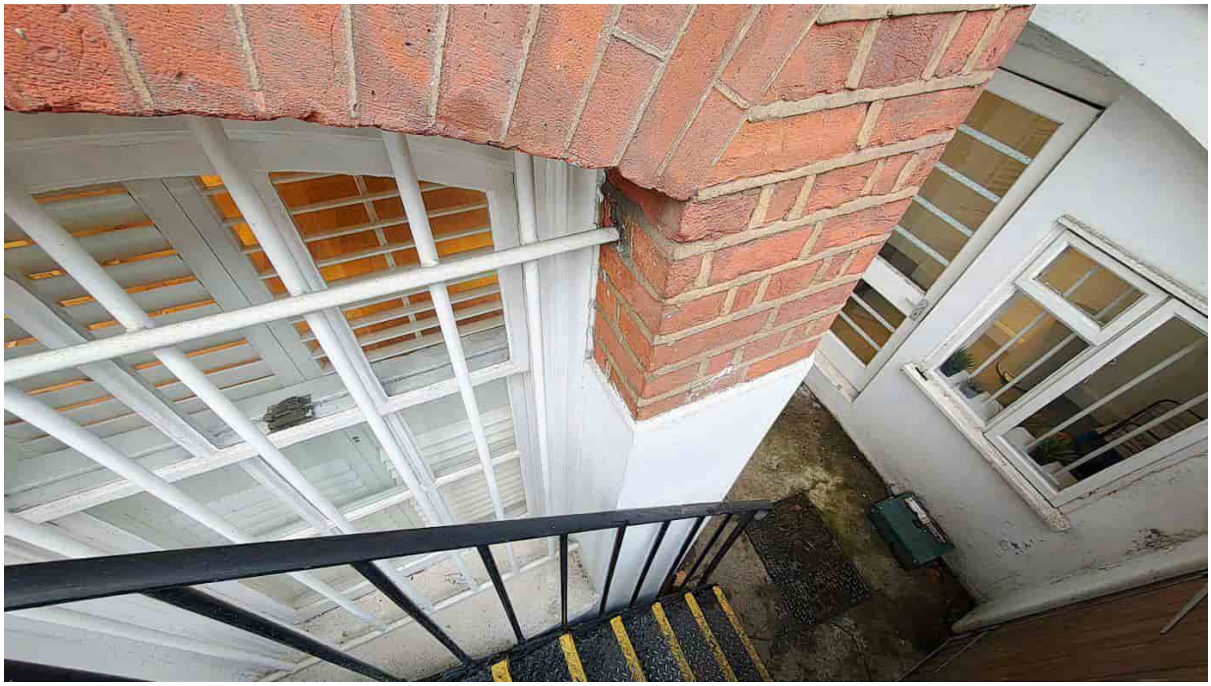

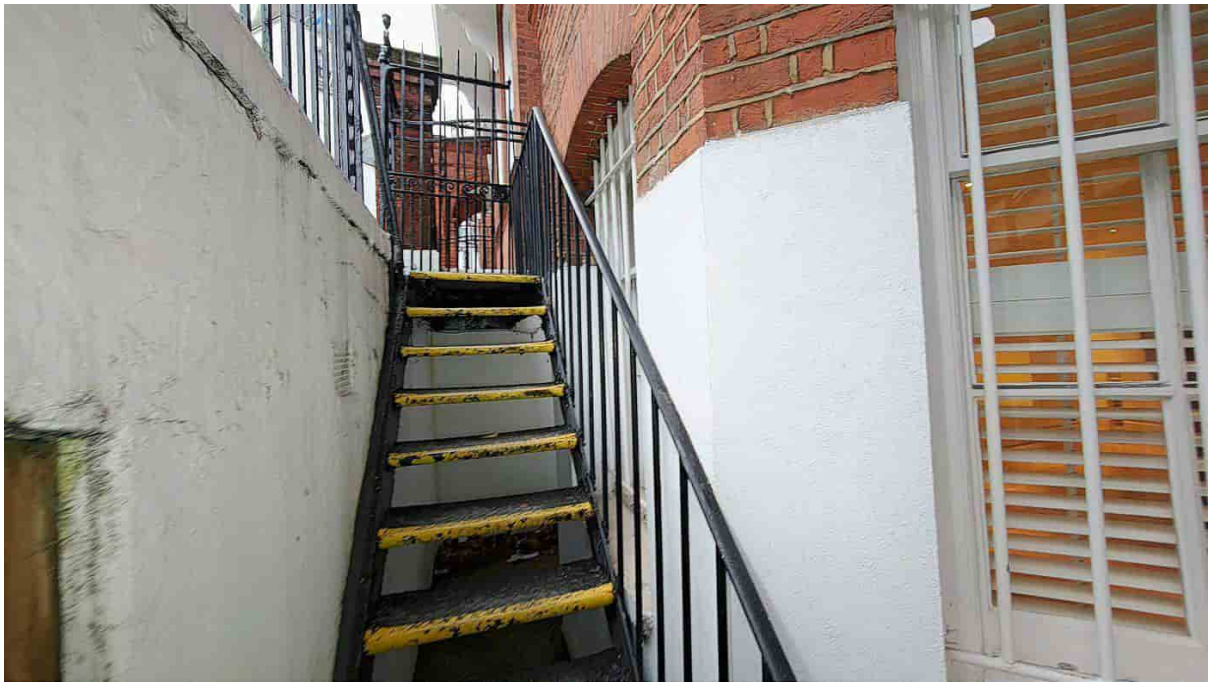

No immediate action is required. The existing render seems to be intact, performing its intended function, protecting the front of the building from rain. However, non-breathable renders contribute to accumulation of moisture inside the wall fabric.

During future renovations a **breathable lime render** should be considered, these being compatible with the old building fabric. More information here: [Re-rendering old buildings with lime – Technical guide]

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Cement Plaster

The internal plastering is a modern cement plaster which is not breathable.

A non-breathable plaster is **not the cause of dampness problems**, however because it blocks the evaporation of moisture from the fabric, it can significantly accelerate the long-term accumulation of moisture in the wall.

All future renovation and plastering works are recommended to be done with **breathable lime plasters**. Modern cement plasters should be entirely avoided.

Cement Pointing

Originally, the building has been built with lime mortar. However, at some point during the recent decades the building has been repointed with cement mortar.

Any future pointing is recommended to be done with a **traditional lime mortar** instead of modern sand & cement mortars.

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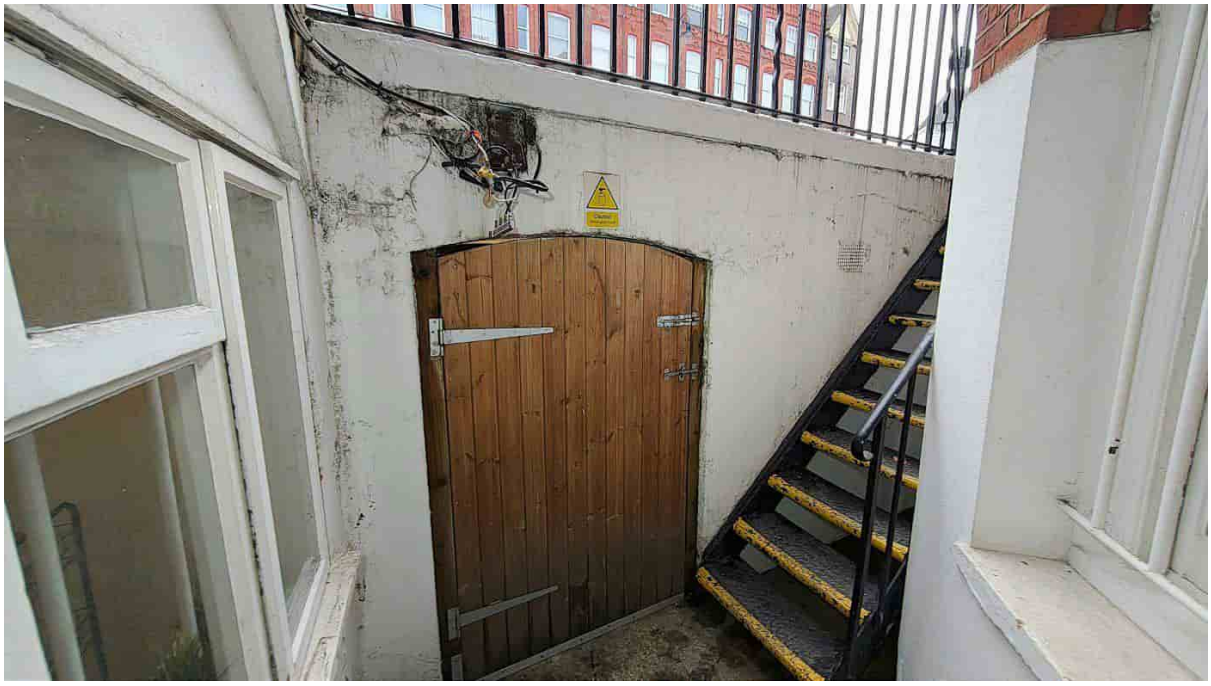
The Vaults (Former Coal Storage)

There are 3 vaults under the external pavement. These vaults, during the pre-war period, have been used **for the storage of coal**.



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The storage areas in the past **have been partially tanked with a modern tanking slurry**.

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Other areas, however, areas are still intact. In these places the original lime mortar is still visible on some of the vault ceilings.

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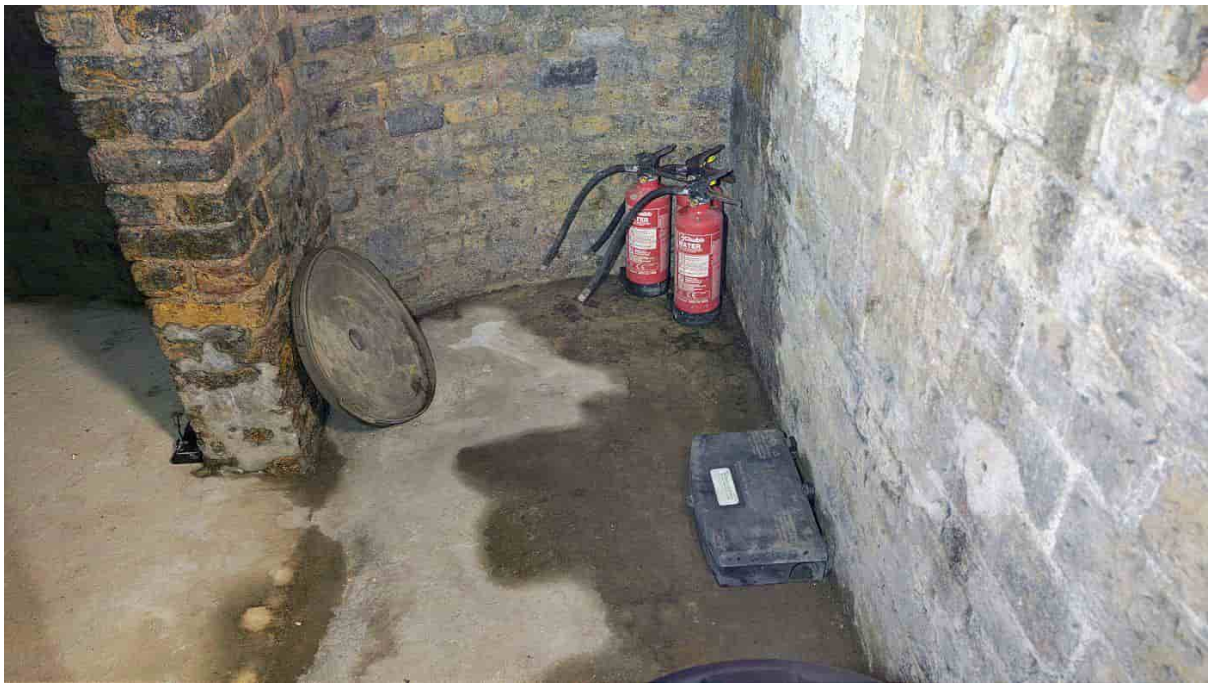
There is also water ingress from above, and in one of the vaults there is liquid water pooling on the concrete floor.



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PROFESSIONAL DAMPNESS MEASUREMENTS

Drilled Core Measurements (Gravimetric Analysis)

The moisture content of the walls has been determined using industry-standard **gravimetric analysis**. The true moisture content of the masonry is determined **from drilled core samples** taken from the core of the wall, at different heights, using a precision scale and a drying oven.

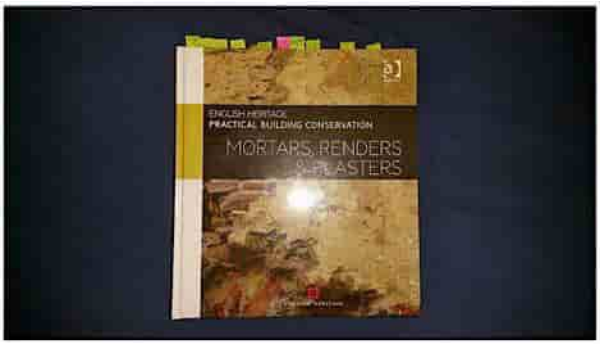
Each wall sample is first weighted (wet weight), dried in the oven, then weighted again (dry weight). The moisture content is calculated from the difference between the wet and the dry weights.

Wall core moisture measurements

The results of the moisture measurements are displayed instantly on the digital display.

This is the **most accurate moisture measurement** and monitoring method, overriding electronic moisture meters. According to **English Heritage**:

"Gravimetric analysis of a drilled sample is the most accurate of the analytical methods, and it is therefore used for calibrating other forms of measurements."
English Heritage



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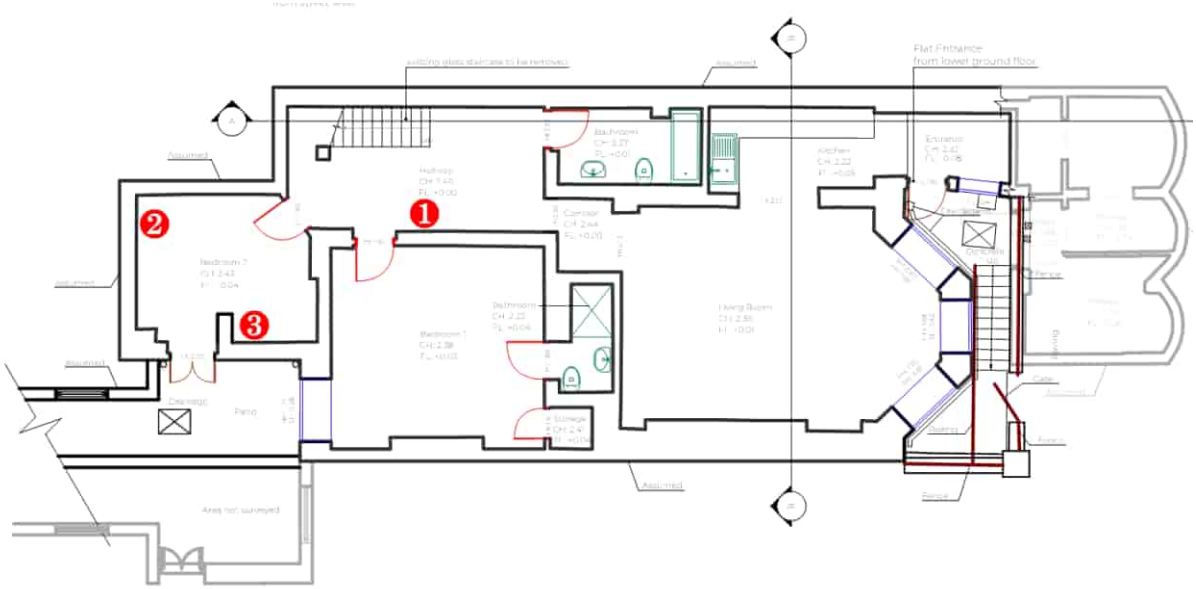
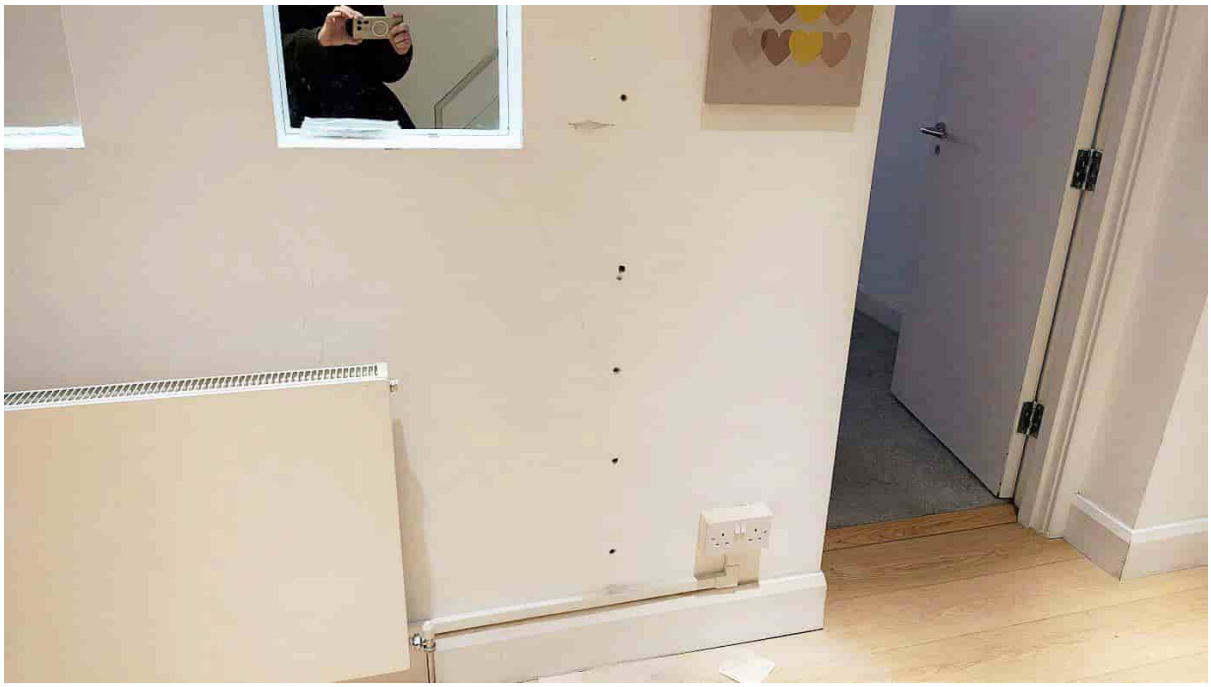
Gravimetric readings have been taken from 3 areas of the building, from various heights, from both internal and external walls, as shown on the floor plan below.



Area 1: Hallway



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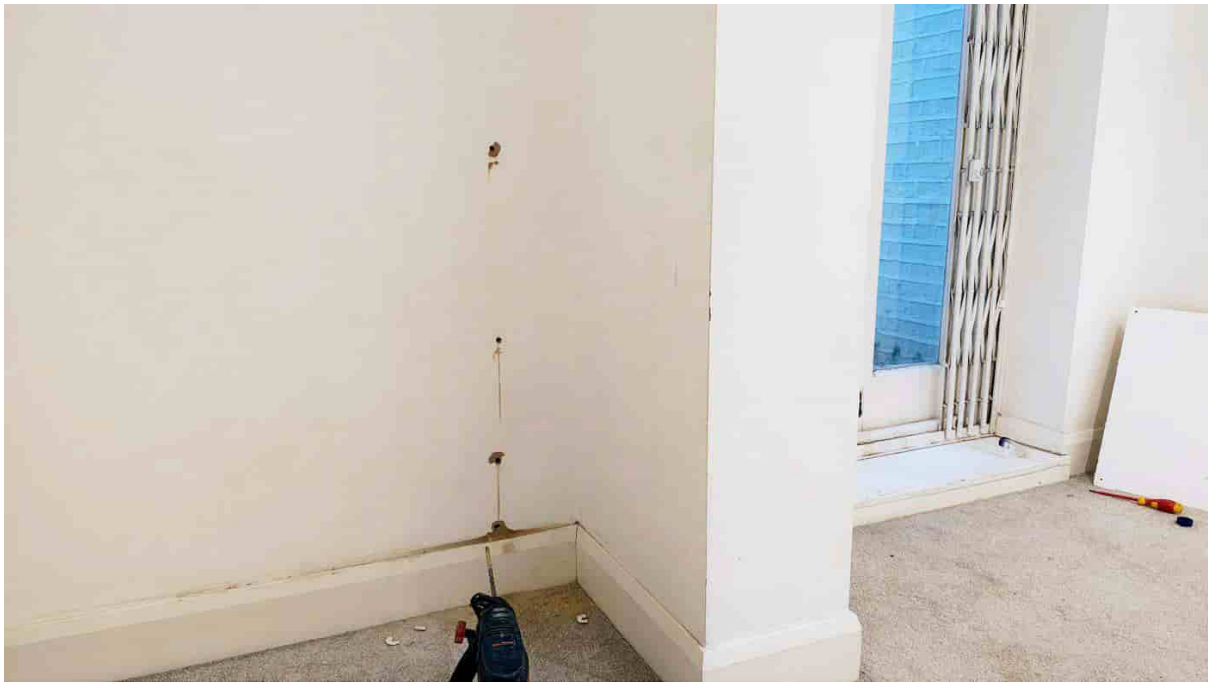
Area 2: Rear Bedroom – Internal Wall

Area 3: Rear Bedroom – External Wall



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The results of the gravimetric analysis (moisture % by weight) are summarized below:

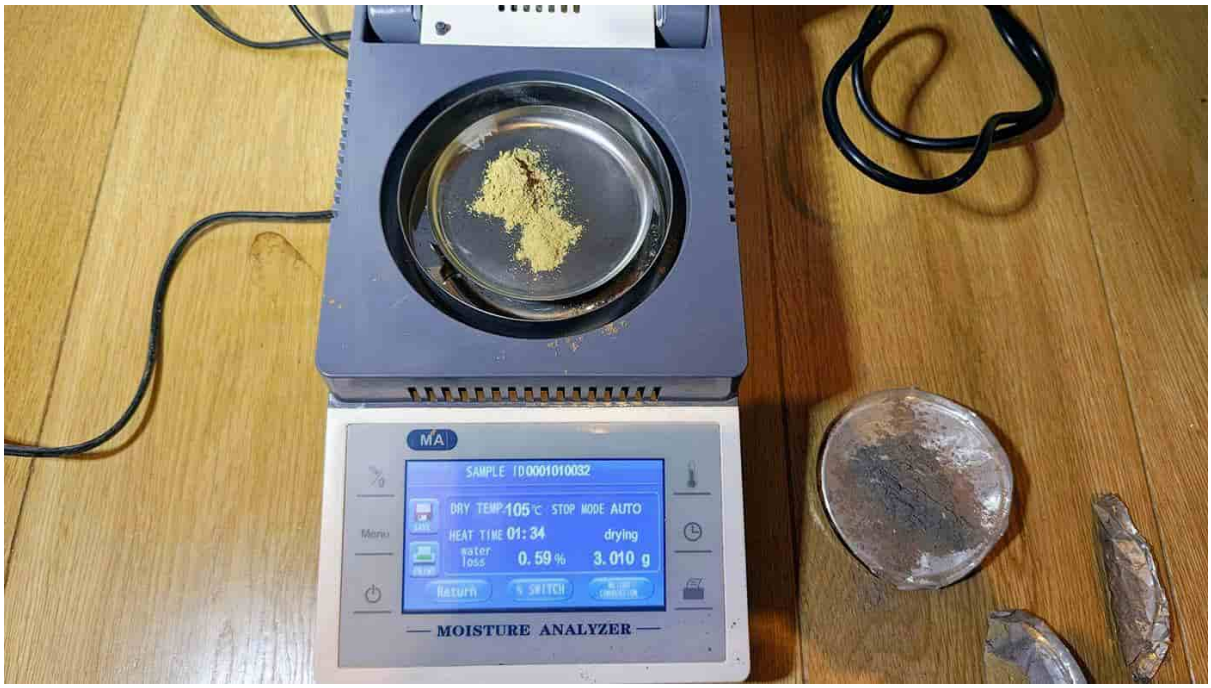
Wall section		Absolute moisture content [Weight %]
Hallway	Brick (@height 1,208 mm)	**0.58 %**
	Brick (907 mm)	**0.75 %**
	Brick (508 mm)	**4.29 %**
	Brick (298 mm)	**4.49 %**
bottom	Cement plaster (298 mm)	**1.80 %**
Rear Bedroom – Internal Wall	Brick (488 mm)	**0.38 %**
	Brick (289 mm)	**2.42 %**
bottom	Brick (200 mm)	**6.58 %**
Rear Bedroom – External Wall	Brick (916 mm)	**1.41 %**
	Brick (548 mm)	**5.29 %**
	Brick (291 mm)	**8.79 %**
bottom	Brick (210 mm)	**6.60 %**

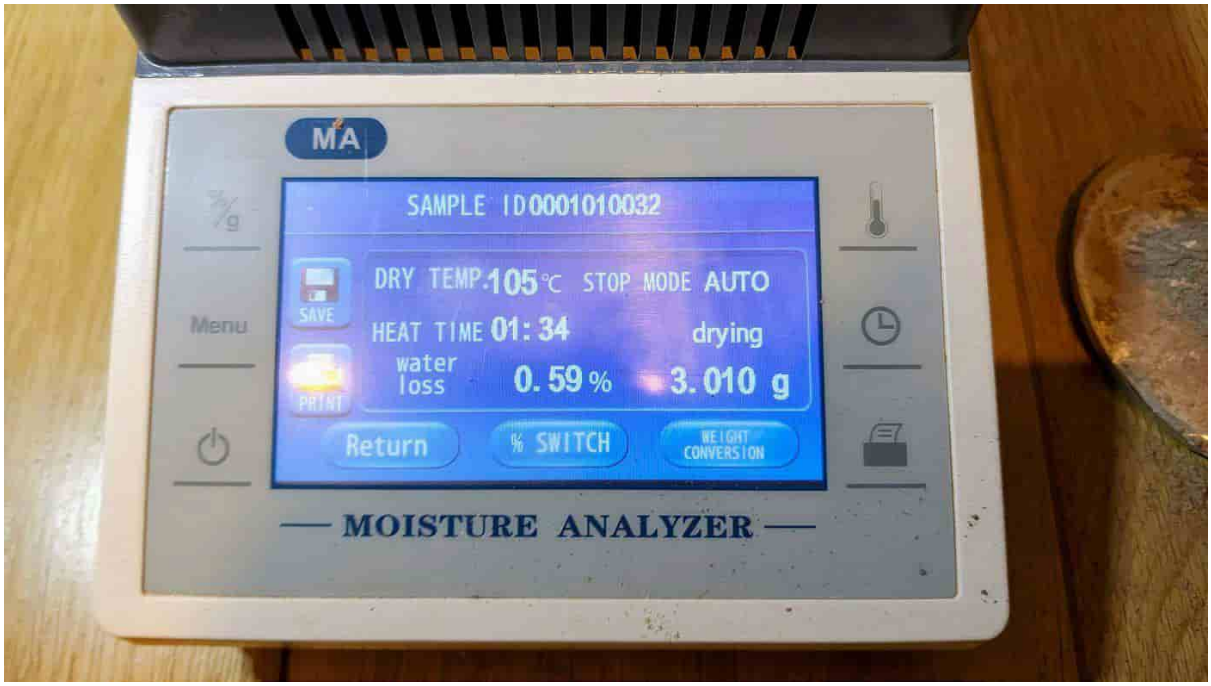
Dry bricks have usually under 1.0 % moisture content. External walls can be expected to be somewhat damper than internal walls due to the presence of rain.

Dampness values over 3.0 % need attention. In the flat we have **over 8.7 %** moisture content, these walls being significantly damp.

The measurements show the presence of **rising damp** thought every tested point, with highest moisture levels closest to ground and much lower moisture levels higher up.

Here are some of the dry masonry values – here 0.59 % moisture content by weight.





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Here are some of the damp masonry values – here 8.79 % moisture content by weight.

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Salts – Professional Salts Analysis

In addition to dampness, salts and salt crystallization is a major threat to the integrity of the wall fabric and plastered finishes. Transported by water, salts crystallize, breaking down the bricks and mortar.

A professional salt analysis has also been performed, and the concentration of **chlorides, nitrates and sulphates** – the most common salt types known to damage the masonry – has been determined using lab grade chemical strips.

The origin of various salts is detailed below:

1. **Chlorides**: the main source of chlorides are sea salts. They can also originate from the ground which contains chlorides, from road salts used for de-icing or as a result of flooding.

2. **Nitrates**: nitrates originate from ground from the decomposition of organic materials, organic waste or fertilizers (including animal excrements such as urine etc.). They are prevalent in farming areas, around drains, sewers, churches and cemeteries. Nitrates are carried up into the building fabric primarily by rising damp, and their presence is a strong indication of rising damp.

3. **Sulphates**: the most damaging salt type due to their unique needle-shaped crystallization structure. Sulphates primarily originate from modern building materials (cement, gypsum etc.) or from the combustion of wood and other fossil fuels as a by-product of burning. They can be found in/around old chimney breasts, or in large cities in the air due to high air pollution or in the ground.

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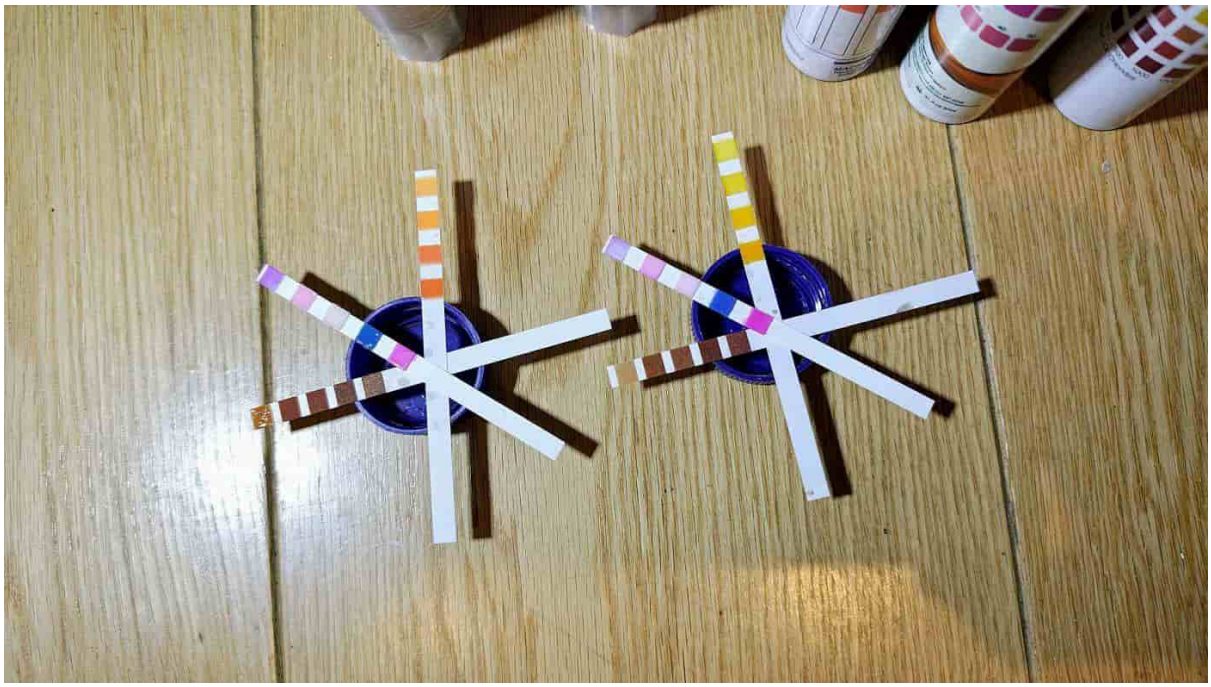
The following salts have been found in your walls:

- **Sulphates** (pink to orange): medium to high concentration, can originate from several sources, including the ground.
- **Nitrates** (white to purple): medium concentration, from the ground, as a result of rising damp.
- **Chlorides** (brown to white): none found.



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POTENTIAL SOLUTIONS

1. Replastering, Renovation, Thermal Insulation

Choice of Renovation Materials

Because older buildings have been built of older, more porous bricks and a very porous lime mortar (as opposed to a modern dense sand-and-cement mortar), there is a considerable moisture movement inside the fabric of old buildings, the old fabric constantly evaporating out some of its moisture. The ongoing evaporation, also known as "breathing", is how old buildings regulate their humidity and stay dry long-term.

Most modern plasters, however, are non-breathable. In addition to liquid moisture they supposed to block they also block all vapour movement, essential for old properties to stay dry. This results in unwanted **moisture accumulation** behind the plaster, leading to serious dampness problems long-term.

Breathability

Thus, the application of modern cement plasters is not recommended in older buildings as **they lead to moisture accumulation and dampness problems long-term**. One such problem can be the appearance of rising damp in higher areas of the wall as the non-breathable tanking materials "push" the moisture upwards inside the walls.

The recommended solution would be a "breathable" plaster that is allowing the underlying building fabric to breathe, thus preventing excess moisture accumulation inside the wall fabric long-term.

Salt-Resistance

A significant majority of plaster damages (flaking, crumbling, peeling etc.) are **not the result of humidity, but salts**. These most often originate from the ground from rising or penetrating damp, but salts can also originate from the air (sea spray, air pollution etc.). Due to the ongoing evaporation, most salts are drawn to the outer 10-15 mm area of the wall where they **crystallize**, increasing in volume by 500% – 1,000%. The crystallization pressure can exceed 800 atmospheres which breaks down the plaster, the wall fabric, even concrete – the strongest concrete rarely can withstand 550 atmospheres.

Additionally, salts **can chemically bond humidity from the air** (hygroscopy). Crystallizing salts near the surface can make the plastering look damp even when the wall fabric in depth is much drier.

Crystallizing salts breaking down the plaster

To prevent the crumbling of the plastering a **salt-resistant protective lime base coat must be used under the main lime coat**. This protects the plastering by preventing the migration of salts into the fresh plaster, making it last much-much longer, typically decades even in high dampness conditions.

Such breathable and salt-resistant materials exist. These plasters have been "invented" by the Romans, who discovered that mixing lime with carefully selected **volcanic ashes and sands**, in the right proportions, results in special lime plasters that are salt-resistant. Moreover, they are also waterproof that can stop liquid water while letting water vapours though.

A selection of volcanic sands and ashes

These plasters were very well known from the antiquity for their waterproofing abilities, being used by Roman architects in the construction of ports, canals or other hydraulic works where waterproofing was necessary.

The outstanding properties of these materials can be attributed to the volcanic ingredients. When the lava cools down, it results in a light, porous, breathable material. The chemical reactions between the lime and the volcanic ingredients will **make the mix waterproof** which can also withstand salt crystallization.

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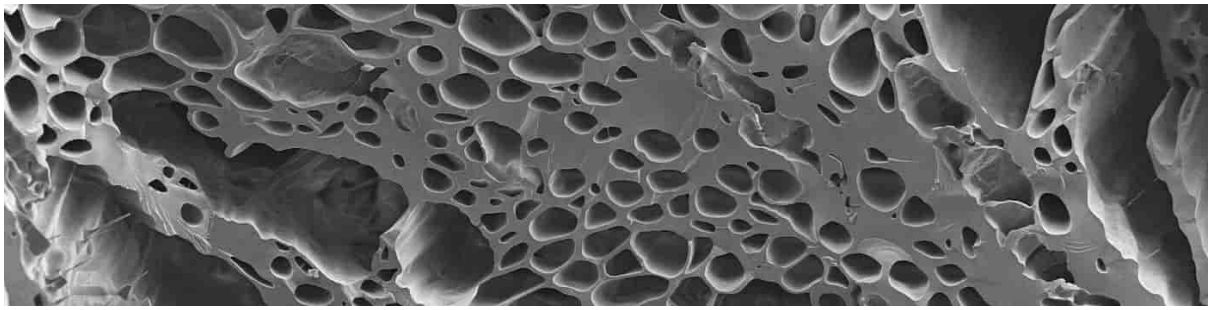

The pore structure of natural volcanic pozzolans facilitates breathabilty

The lifespan of these volcanic tanking mixes is also outstanding, **it can last for decades** in very harsh environments (e.g. submerged in sea water), **significantly longer than modern cement**.

Applying one coat of Rinzaffo MGN Roman waterproofing mortar – described next – onto the walls can make them waterproof and salt-resistant while preserving the wall fabric's breathability.

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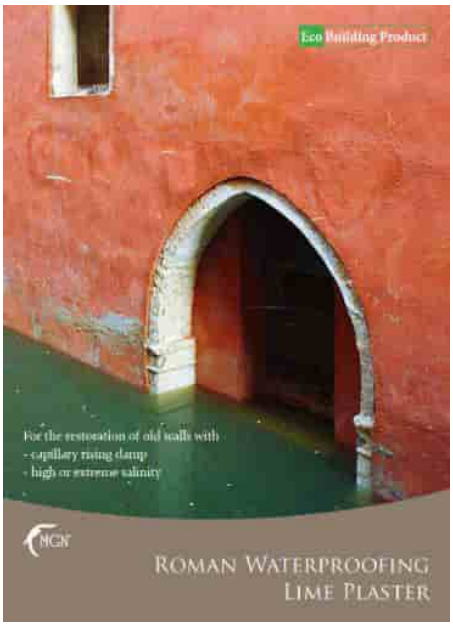
Rinzaffo MGN – Roman Salt Resistant Lime Mortar



The Rinzaffo MGN Roman salt-resistant lime base coat has been developed in Venice to the problem of rising damp, penetrating damp, wind driven rain and salts. The plaster is based on a 2,000-year-old Roman recipe. The Romans have figured out that by mixing the lime with **volcanic ashes and sands** (also known as volcanic pozzolans) results in salt-resistant, waterproof yet fully breathable lime mixes. Using this traditional technology throughout the Roman Empire, the Romans have built their famous viaducts, baths and wells, some of them still standing today.

Rinzaffo MGN's unique pore structure acts as a natural salt filter. It regulates the evaporation of humidity; preventing the crystallization of salts inside its pore structure and the premature damage of plastering by salt crystallization. As a result, the life expectancy of plastering increases multifold, the plaster stays dry and aesthetically pleasing much longer.

Because Rinzaffo MGN is **both waterproof and breathable**, it is suitable for many demanding applications such as:

- A base coat in any building subject to **rising or penetrating damp**
- A plaster against the damp patches, discoloration or the crystallization of salts (sulphates) around old **fireplaces and chimney stacks**, a frequent problem in old buildings
- A lime-based breathable tanking slurry for making **basements or cellars waterproof**
- A render against **driving rain**
- A mortar for **pointing chimney stacks and roof areas**
- A waterproof (but breathable) floor screed **to prevent flooding** in high water-table or pressure water situation

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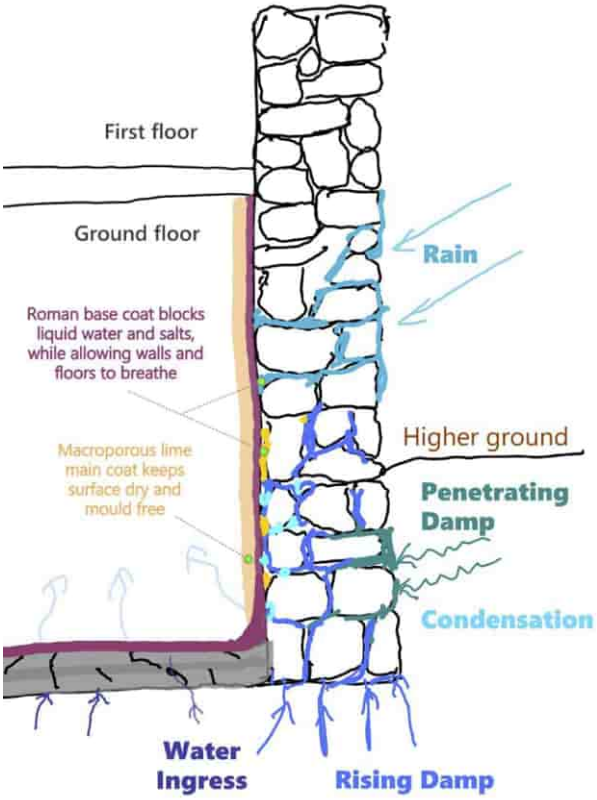
How to Replaster and/or (Optionally) Thermally Insulate Old Walls?

The damaged walls can be replastered wither with a breathable lime plastering system or, optionally for external walls, with a breathable thermal lime plaster. To make the renovations long-lasting, the following actions are recommended:



For internal walls with no need for thermal insulation the following plastering is recommended:

- Salt resistant, waterproof lime base coat (**Rinzaffo MGN**): @10 mm thickness
- High quality main lime coat, fully breathable (**Calcina Bianca MGN**) @12 mm
- High quality lime finishing coat (**Rasacol MGN**) @4 mm

For external walls in need for thermal insulation the main lime coat can (optionally) be replaced by a special lime thermal insulation coat, as per below:

- Salt resistant, waterproof lime base coat (**Rinzaffo MGN**): @10 mm thickness
- Lime thermal insulation coat: depending on the application, a combination of 1 or 2 types of thermal plasters (**Termointonaco 2020 MGN** and/or **Termorasante Aerogel MGN** lime-aerogel superinsulation with extremely good thermal value.
- High quality lime protective finish (**Rasacol MGN**) @4 mm

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The external rendering, wherever is needed, is recommended to be redone with the following materials::

- Salt resistant, waterproof lime base coat (**Rinzaffo MGN**): @10 – 15 mm thickness
- **Sanacolor 2000 MGN** lime render, as the main decorative coat and finish @15 mm

The rendering is available in various colour options (both white and cloloured), making possible various type of finishes, smooth or coarse. Coloured renders **do not need maintenance** as they are coloured throughout.

Here is a sample of the **Sanacolor 2000 MGN** render in yellow colour option, with different finishes.

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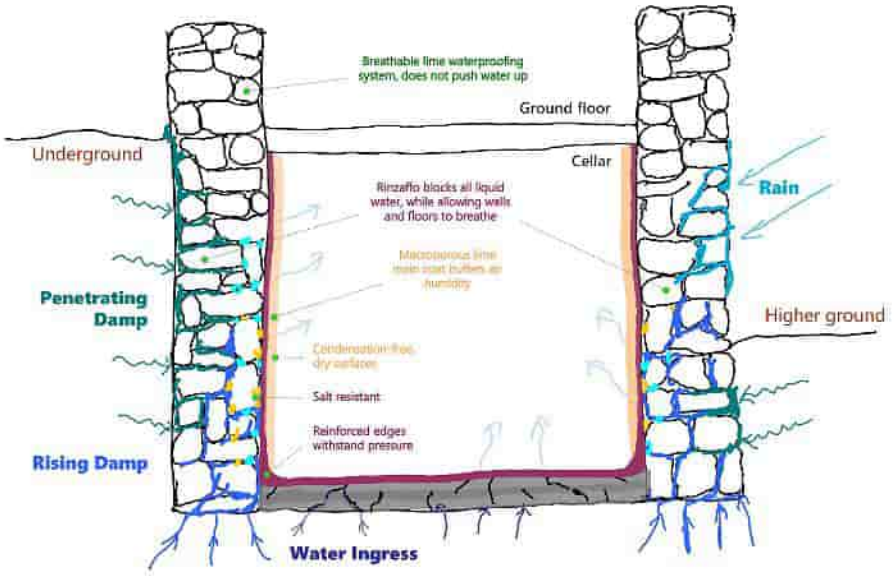
2. Basement Waterproofing

Basements and cellars can be made waterproof with the Rinzaffo MGN Roman waterproofing mortar by applying 2 x 10 mm coats onto the ceiling, walls and floor.



The ventilation in the cellar also needs to be improved to reduce the high internal humidity levels.

Work Schedule / Application

To make the cellar waterproof, the following actions need to be performed:

1. Hack off the existing old plaster (if present).
2. Clean the wall well to be free of loosed debris, oils etc. – sandblasting is recommended.
3. Abundantly wet the wall surfaces before the application of the plaster (this action applies to the application of *any* lime plaster). If the surface is not well wetted, the drier wall fabric will suck out the moisture content of the lime, making it dry too fast and not carbonate well. So the wall fabric must be wetted abundantly before application especially for the first base coat.
4. Using the **Rinzaffo MGN Roman lime waterproofing mortar** apply a levelling / repair / dub-out coat onto the wall to make the surface as even as possible.
5. Apply 2 x 10 mm coats of the same material onto the walls (and if needed, on the floor).
6. Apply a coat of traditional **Cocciopesto Dehumidificante MGN** brick coloured lime-cocciopesto plaster as the main coat which performs extremely well in damp environments, buffering the excess moisture (absorbs and lets it go).

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Here is a photo of both plasters. The Cocciopesto brick coloured main coat can be left on its own (in a cellar) having a nice, brick-coloured look, or finished with a white lime finish (in a converted basement), then painted with a breathable paint to give the walls a nice appearance.

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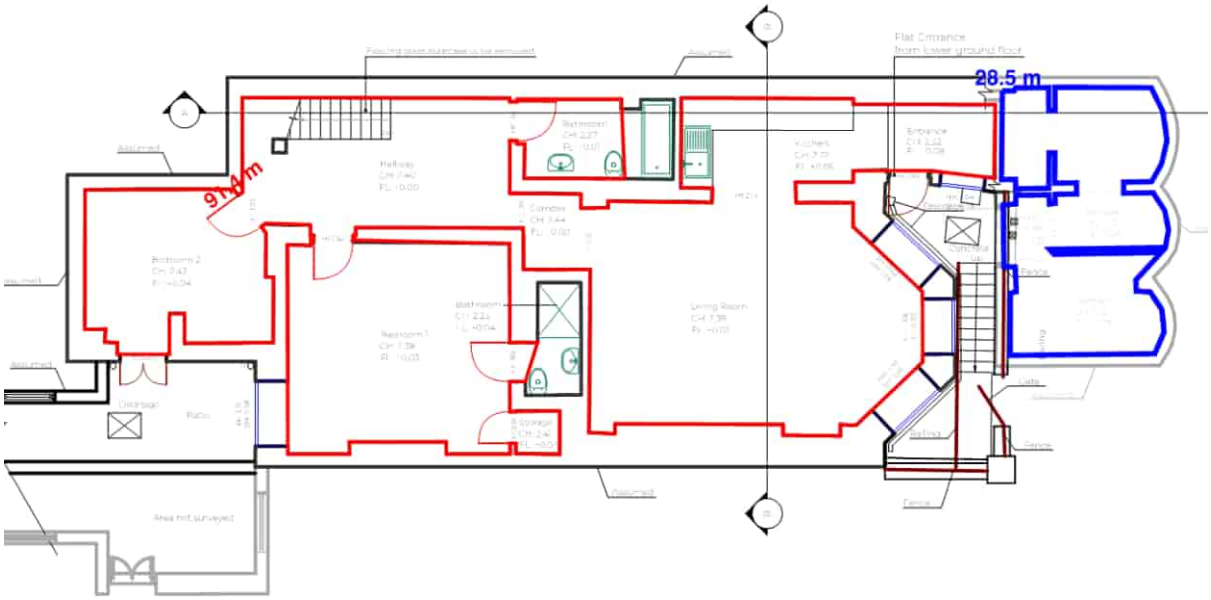
RECOMMENDATIONS

Internal Replastering (220 m^2)

Due to the presence of modern cement plaster and the poorly applied gypsum finish we have discussed the complete replastering of the internal building with **lime materials only**.

The internal perimeter of all walls is about 91.4 liner metres. Calculating with a 2.4 m ceiling height (with small variations from room to room) this will result in a **220 m^2 surface area** – highlighted in **red** below.



The internal lime plastering schedule would consist of the following lime coats:

- **Lime base coat: Rinzaffo MGN** salt resistant, waterproof lime base coat: @15 mm thickness. (20 mm included to allow for the repair and levelling of the uneven walls after the removal of cement plaster). The role of this lime coat is very important. It deals with the dampness and salts, ensuring the longevity of the lime plastering, preventing premature decay from dampness and salts.
- **Lime second coat**: here we have different options. We can either use a plain lime plaster, or to improve the thermal efficiency and thermal comfort of the underground flat, a thermal insulation lime plaster would be recommended. Various options will be offered and discussed next.
- **Lime finish**: a high-quality lime protective-decorative finish @3-4 mm

All options proposed here are **lime based**, **breathable** and **heritage approved solutions**, suitable for any listed building or scheduled monument. All materials and solutions proposed here are widely used throughout Venice, a UNESCO World Heritage Site.

Option 1: Lime Thermal Plastering (20+10 mm)

Here is plastering schedule recommended for this option.

- **Rinzaffo MGN** salt resistant, waterproof lime base coat: @15 mm thickness (20 mm included to allow for the repair and levelling of the uneven walls).
- **Termointonaco 2020 MGN** high quality lime thermal insulating coat, breathable @20 mm.
- **Termorasante Aerogel MGN**: a super-insulating lime-Aerogel plaster @10 mm. Aerogel is the best thermal insulator known to man making possible outstanding thermal values in a thin plaster coat. Aerogel also has an outstanding **thermal reflectance**, reflecting the heat back into the room, resulting in **high thermal comfort**.
- **Rasante B40 MGN** high quality lime protective finish @3-4 mm

This option reduces the U-Value of the coldest external walls by almost **4 times**, **from 2.47 to 0.66**. Due to the excellent thermal reflectance of the Aerogel coat, it increases the thermal comfort of the building significantly.

	Layer	Plaster used	Layer thickness (mm)	Layer Thickess (m)	R material	Thermal conductivity (λ)	Thermal Resistance (R-value)	U-value	
			350			0.865	0.4045		
	Outside transmission factor		-		-	-	0.0400		
	External cement render				0.770		-		
	Stone wall with lime			-	0.660		-		
	CMR New brick solid				3.300		-		
Wall fabric	Brick wall - Leaf 1		350		0.670		0.2345		
	Air cavity				0.180		-		
	Brick wall - Leaf 2				0.670		-		
	Internal lime plaster				1.100		-		
	Internal cement plaster				0.770		-		
	Inside transmission factor		-		-	-	0.1300		
								2.47	Initial
Base coat	Finishing	Rasante B2007 MGN		-		0.5300	-		
	Base coat	Rinzaffo MGN	15	0.015		0.9200	0.0163		
	Background pozzlonanic levelling coat	Cocciopesto		-		0.4800	-		
	Prickling coat of hair lime			-		0.7000	-		
	Hazel twigs with air gap			-		0.1600	-		
Plastering	Prickling coat of hair lime			-		0.7000	-		
	Isolair Multi			-		0.0430	-		
	Lime thermal coat	Termointonaco 2020 MGN	20	0.020		0.0430	0.4651		
	Lime-aerogel thermal coat	Termorasane Aerogel MGN	10	0.010		0.0160	0.6250		
	Cocciopesto	Other		-		0.4800	-		
	Thermal cover	Other		-		0.0008	-		
Finish	Protective-decorative finish	Rasacol MGN	4	0.004		0.4800	0.0083		
			-		-	-			
	Insulation thickness		30	mm		mm	1.5193	0.66	Final
	Total		49	mm		mm			

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Option 2: Lime Thermal Plastering (20 mm)

Here is plastering schedule recommended for this option.

This option removes the Aerogel superinsulation, using a single high-performance lime thermal coat as second coat.

- **Rinzaffo MGN** salt resistant, waterproof lime base coat: @15 mm thickness (20 mm included to allow for the repair and levelling of the uneven walls).
- **Termointonaco 2020 MGN** high quality lime thermal insulating coat, breathable @20 mm
- **Rasante B40 MGN** high quality lime protective finish @3-4 mm

This option reduces the U-Value of the coldest external walls by about **2.2 times**, **from 2.47 to 1.12**.

	Layer	Plaster used	Layer thickness (mm)	Layer Thickess (m)	R material	Thermal conductivity (λ)	Thermal Resistance (R-value)	U-value	
			350			0.865	0.4045		
	Outside transmission factor		-		-	-	0.0400		
	External cement render				0.770		-		
	Stone wall with lime			-	0.660		-		
	CMR New brick solid				3.300		-		
Wall fabric	Brick wall - Leaf 1		350		0.670		0.2345		
	Air cavity				0.180		-		
	Brick wall - Leaf 2				0.670		-		
	Internal lime plaster				1.100		-		
	Internal cement plaster				0.770		-		
	Inside transmission factor		-		-	-	0.1300		
								2.47	Initial
Base coat	Finishing	Rasante B2007 MGN		-		0.5300	-		
	Base coat	Rinzaffo MGN	15	0.015		0.9200	0.0163		
	Background pozzlonanic levelling coat	Cocciopesto		-		0.4800	-		
	Prickling coat of hair lime			-		0.7000	-		
	Hazel twigs with air gap			-		0.1600	-		
Plastering	Prickling coat of hair lime			-		0.7000	-		
	Isolair Multi			-		0.0430	-		
	Lime thermal coat	Termointonaco 2020 MGN	20	0.020		0.0430	0.4651		
	Lime-aerogel thermal coat	Termorasane Aerogel MGN		-		0.0160	-		
	Cocciopesto	Other		-		0.4800	-		
	Thermal cover	Other		-		0.0008	-		
Finish	Protective-decorative finish	Rasacol MGN	4	0.004		0.4800	0.0083		
			-		-	-			
	Insulation thickness		20	mm		mm	0.8943	1.12	Final
	Total		39	mm		mm			

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Option 3: Lime Non-Thermal Plastering

Here is plastering schedule recommended for this option.

This option does not used thermal materials, but uses a high-quality traditional lime-cocciopesto coat for increased moisture control.

- **Rinzaffo MGN** salt resistant, waterproof lime base coat: @15 mm thickness (20 mm included to allow for the repair and levelling of the uneven walls).
- **Cocciopesto MGN** a traditional lime-cocciopesto plaster, breathable @13 mm
- **Rasante B40 MGN** high quality lime protective finish @3-4 mm

This has an effect on the U-value, slightly reducing it due to the thermal mass of the lime plaster, **from 2.47 to 2.19**.

	Layer	Plaster used	Layer thickness (mm)	Layer Thickess (m)	R material	Thermal conductivity (λ)	Thermal Resistance (R-value)	U-value	
			350			0.865	0.4045		
	Outside transmission factor		-		-	-	0.0400		
	External cement render				0.770		-		
	Stone wall with lime			-	0.660		-		
	CMR New brick solid				3.300		-		
Wall fabric	Brick wall - Leaf 1		350		0.670		0.2345		
	Air cavity				0.180		-		
	Brick wall - Leaf 2				0.670		-		
	Internal lime plaster				1.100		-		
	Internal cement plaster				0.770		-		
	Inside transmission factor		-		-	-	0.1300		
								2.47	Initial
Base coat	Finishing	Rasante B2007 MGN		-		0.5300	-		
	Base coat	Rinzaffo MGN	15	0.015		0.9200	0.0163		
	Background pozzlonanic levelling coat	Cocciopesto		-		0.4800	-		
	Prickling coat of hair lime			-		0.7000	-		
	Hazel twigs with air gap			-		0.1600	-		
Plastering	Prickling coat of hair lime			-		0.7000	-		
	Isolair Multi			-		0.0430	-		
	Lime thermal coat	Termointonaco 2020 MGN		-		0.0430	-		
	Lime-aerogel thermal coat	Termorasane Aerogel MGN		-		0.0160	-		
	Cocciopesto	Other	13	0.013		0.4800	0.0271		
	Thermal cover	Other		-		0.0008	-		
Finish	Protective-decorative finish	Rasacol MGN	4	0.004		0.4800	0.0083		
			-		-	-			
	Insulation thickness		13	mm		mm	0.4562	2.19	Final
	Total		32	mm		mm			

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About Core Conservation Ltd

Core Conservation has been operating since 2013. We are an Award Winning company providing damp investigation and remedy solutions for any old or listed building.

We have won several industry awards including the **Homebuilding and Renovating Awards** as well as the prestigious **Build-It Awards**.

Our activity covers 4 main areas of expertise:

- **Research**: in our in-house labs we research moisture movement in porous building materials and connected electronic phenomena associated with wetting, movement of moisture and dehydration of materials.
- **Professional dampness surveys**: using cutting-edge diagnostic equipment we assess all types of damp. Very old buildings, especially the ones older than 200 years present their own specific challenges that are very different from newer buildings. We specialize in solving difficult or complex dampness cases, our surveyors are amongst the best in the business.
- **Solving dampness problems**: using a patented magnetic dehydration system we permanently resolve the problem of rising damp non-invasively. As a result the building dries out permanently, the crumbling of the wall fabric slows down or stops altogether, the building becomes warmer and often the musty smell vanishes too. For peace of mind, we also monitor the dehydration of every building for 1-2 years or until it becomes dry.
- **Sympatethetic renovations**: dampness problems and associated ground salts often create a lot of decorative or structural damage; in most cases some restoration work is necessary. We advocate and use specialist traditional building materials which not only allow the building to breathe, but which are suitable for the long-term restoration of very old, salty buildings.

We have worked on many listed buildings, cottages, manor houses and commercial properties.

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Hope you find the above helpful. If you have any question, please feel free to get in touch.

Kind regards,

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Val Juhasz is an Electronic Engineer with a Master's Degree from the Manchester Business School (MBS). He is the co-founder of Core Conservation Ltd, pioneering the most modern, non-invasive dampness remedy solutions which can be safely applied even to very old, listed or heritage buildings throughout the UK. He regularly attends conservation seminars and workshops throughout Europe, including Venice where dampness remedy technologies are at their best. He has held numerous talks to private architectural and surveying practices throughout the UK, as well as the CIOB and RICS.