V9 May 2023
Silver mould and water damage risk assessment

The objective of this survey is to identify areas within the property which may or may not be responsible for the building-related illness. Its focus is on water damage in its various forms. This may include historical events in which dry contamination reservoirs may still be present.
This report was written by the named technician and edited by Jeff Charlton, a qualified Indoor Environmental Hygienist.
The report aims to identify water damage and higher-risk areas for mould or biological growth. This survey will also be the basis for sampling points, which is advised.
This is a non-intrusive survey and is not intended to identify all possible areas of concern, but to provide indicators of risk areas.

Where or if any form of sampling is undertaken, these are temporal-spatial assessments only and are subject to normally expected variations where limited samples are taken

No action should be undertaken on this report unless confirmed, and technicians are specifically instructed not to provide an opinion while on site. Questions are, of course, welcome, but should be in writing to enable full context.

CLIENT DETAILS REDACTED

Samples Taken

Sample #	Sample Type	Area Taken	Analyse/On Hold
1	Air-O-Cell	Lounge	Analyse
2	Air-O-Cell	Bedroom	Hold
3	Air-O-Cell	Office	Hold
4	Air-O-Cell	Office disturbed docs from + Hse	Analyse
5	Air-O-Cell	Shower room	Analyse
6	Air-O-Cell	Shower room closed extract vent	Analyse
7	Air-O-Cell	Ambient	Analyse
8	Emma	Entire apartment	Analyse

1. Type of property

1.1. Flat

1.2. Built-up city area - Yes

2. External Facades

In this section, we report on obvious issues seen which may affect the indoor environment

3.

3.1. Window vents – Yes, noted sellotaped and closed in lounge, below

4. Internal

This section uses visual assessments to assess higher-risk areas.

The apartment toilet has a communal vent shared by more than 40 apartments, I believe, which is extracted to the roof of the building. Not identified as working during the visit

Washing being dried in the lounge will add to the moisture load and increase mould risk

The client advised that a dehumidifier is used to dry the clothes

The dehumidifier is outlined.

These types can be a major source of toxic moulds and should not be used when a health issue exists

Swelling and cut out pieces may indicate a historic water damage event and likely hidden mould

Shower mirror showing signs of moisture damage and condensate may be present behind the mirror

Shower room above, tiles in places need regrouting. These are set onto a plasterboard wall, and the reverse side is damp. Re grout and intrusive investigation

Shower room above, slight staining on a plasterboard ceiling, noted the flat has only two plasterboard ceilings, a shower room and a toilet, the rest is concrete. This is a major concern

The kitchen's concrete ceiling above, with yellow stains randomly around it, I believe to be either poor decorating or grease stains from cooking.

Lounge bay window above, skirting with slight swelling indicating historic water damage. With wood chip wallpaper, this is a major concern and risk factor of mould growth. Although now dry, there remains a risk of toxic mould behind the wallpaper.

4.1. Isolated decoration

The lounge wall has undergone isolated redecoration before the owner's purchase. This may be camouflaged historic water damage.

Lounge above, masonry wall with signs of pre-isolated repair, before the client redecorated,

5. Type of floor

5.1. Concrete

6. Informed facts

In this section, we ask the client about any known issues which might focus our investigation.

6.1. Areas of known or suspected leaks /water damage

The client advised that there were no known leaks, but had a specific concern after purchasing the property a year ago regarding the lounge window sill, due to visible damp marks on the masonry wall. However, the apartment has now been fully decorated by the client.

Client advised that other damp surveys be carried out and stated this area is not of concern. Their findings also noted that the wooden window shutters had been tested for mould, and the results were positive; the client has now disposed of all wooden shutters.

Also, the external part of the lounge masonry wall, where the client advised of damp marks, the brickwork joints have been raked out, but were not reinstated.

Also, the client advised of other residences that complained of damp/mouldy external walls before insulation work was carried out, presumably in the voids of the external walls.

The client also notified me that books and other documents had come from a previous house that had mould, which now sit on a shelf and are boxed up in her office.

View from bay window, also faces the sea, pointing has been raked out, above

7. Ventilation issues

This section identifies risk issues and is a basis for possible controls if or where necessary.

7.1. Working extracts installed in wet rooms (Kitchen/bathrooms)

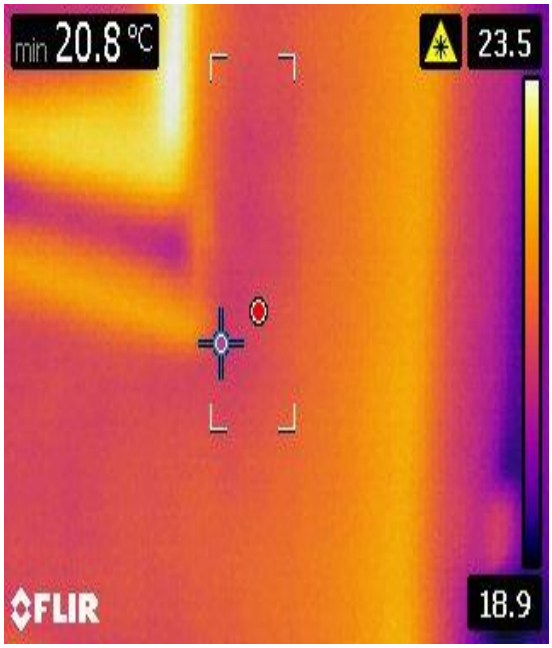
Kitchen above, self-circulating extractor hood,

Toilet above, communal extract fan, noted black residue on the surface,

Shower room above, communal extract fan,

8. Thermal imaging

In this section, we utilise thermal imaging to identify higher-risk areas which may or may not be wet. The significance is that cooler areas are more likely to be at risk of damp or condensation and may be a focus for moisture measurement.



Lounge above, bay window, moisture reading of 26 and a comparable reading og 03 on a masonry wall. Considered damp, possibly from the dew point of penetrating damp. Dew Point found to be 4 degrees above the target risk level.

8. Air quality issues

Temperature and specific humidity are measured and calculated to determine the actual water content of the air and “dew point” condensation risks.

These calculations may also identify potential risk areas associated with uncontrolled evaporation from moisture sources. This may indicate penetrating or rising damp, poor ventilation, or even a leak.

The property has 50% higher moisture in the air compared to the ambient. This is not considered very high, but is an indicator of poor ventilation

Area	Temp C	Dew Point C	RH	Humidity Ratio
kitchen	22.1	13.2	57.2	9.5
lounge	22.2	12.8	55.2	9.2
bedroom	22.1	12.8	55.6	9.2
toilet	21.6	12.8	57.3	9.2
Shower room	21.9	13.2	57.8	9.4
office	22.1	13.2	56.9	9.4
ambient	13.7	6.6	62.4	6.0

Kitchen above,

Lounge above,

Bedroom above,

Toilet above,

Shower room above,

Office above,

Ambient above,

Moisture Risk Areas Identified

Low levels of moisture in the bay window and lounge walls, likely from historic leaks.
Elevated moisture to rear shower tiled wall and cavity, with risk of mould
Elevated specific humidity (moisture in the air likely to be from drying wet clothes and a poor, substandard ventilation system. The Freeholders, the property management company, should be contacted to confirm maintenance.

Particle count

In this section, we measure particle loading through a 6-channel particle counter. The counts are compared between outside and between rooms or areas. Smaller particles have a significantly higher respiratory risk.

AREA	Particle Size µ	.3	.5	1.0	2.5	5.0	10
kitchen		9493	3829	889	169	33	16
lounge		9088	3339	664	160	31	13
Shower room		7792	2842	648	73	19	6
toilet		8251	2821	649	179	30	7
bedroom		8527	3624	709	103	11	6
office		8612	3297	666	122	16	6
ambient		13073	5193	1242	313	49	11

Comments on air quality.
The ambient outside air is higher than inside the property, and this may be an anomaly of the day
The shower room should be taken as the baseline as it's the lowest count

Both the kitchen and the lounge have elevated counts.

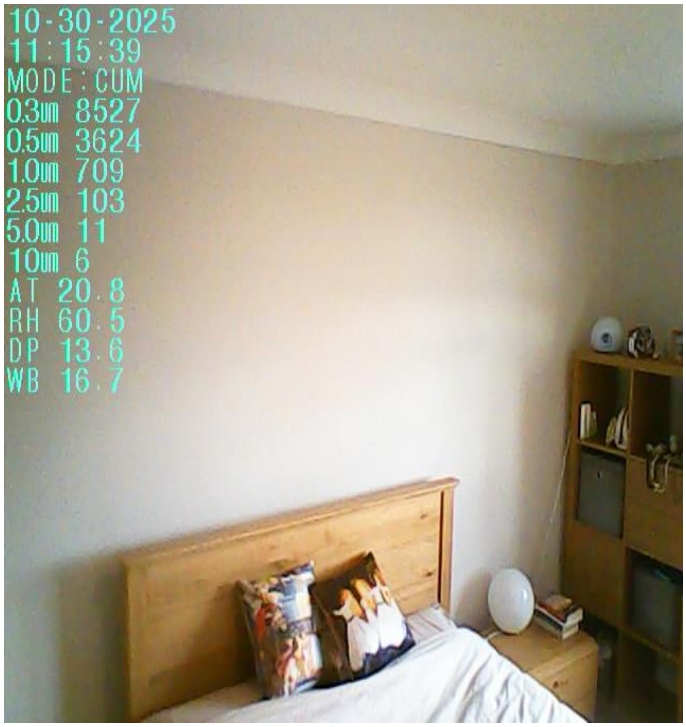
It should be recognised that even if the extract fan were 100% efficient in the extract, it would be ineffective if make-up air or fresh air ventilation were not available. Window vents must be opened.

Kitchen above,

Lounge above,

Shower room above,

Toilet above,



Bedroom above,

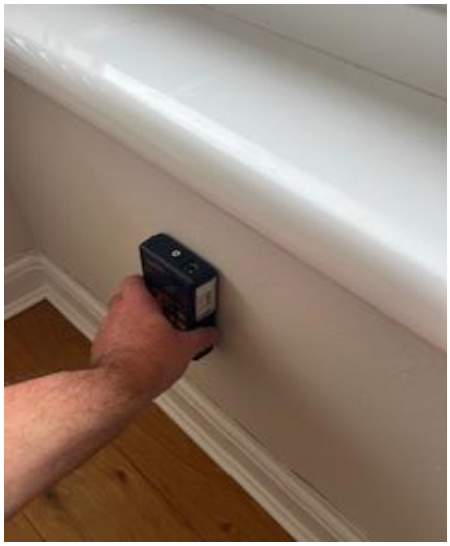
Ambient above,

9. Moisture mapping

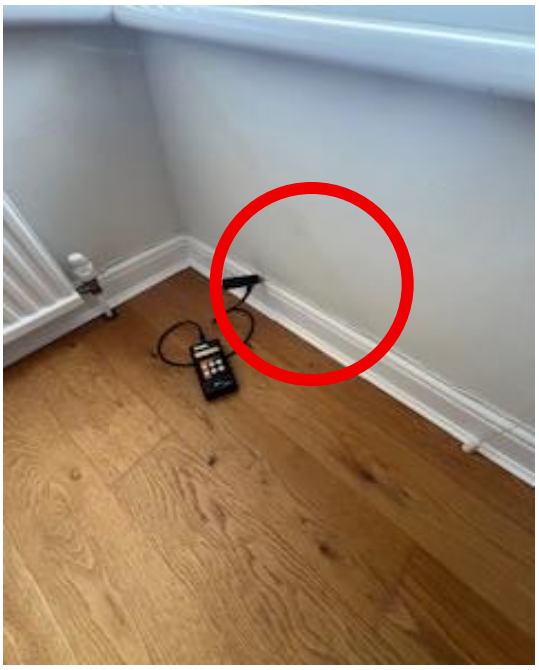
Areas identified in the foregoing sections are investigated for moisture levels, potential hidden water damage, and potential mould reservoirs. These are obviously target areas for mould and biological amplification.

Areas are reviewed for general moisture issues and listed where levels exceed recognised standards, indicating damp and possible natural drying. Levels are also compared to similar substrates in adjacent areas.

9.1. Photo log



Lounge above, the client advised that this wall had signs of damp when they first moved in. The client had a mould survey carried out, which listed this area as dry. Tested area with a low 26 but a comparable reading of low 03, also noted the comparable reading was relatively consistent throughout the lounge walls. This may indicate historic water damage and hidden mould reservoirs.



Lounge skirting above, highlighted in the swelling section, directly under the area in the previous picture, bay window wall, tested with a pin probe with a moisture measurement of 13.5% and a comparable reading of 8.2%. This does indicate historic water damage, and the skirting should be investigated. I advise removing the wallpaper.

Lounge above, highlighted in the isolated redecoration section, I believe this area had previously been repaired before the client redecorated. Now dry.

Kitchen ceiling above, concrete ceiling highlighted in the stain section, with a low moisture reading of 19, which was consistent throughout the kitchen ceiling.

Shower room above, plasterboard ceiling highlighted under the stain section, tested with a pin probe with an acceptable moisture reading 07.8%, but may be a hidden mould reservoir due to telltale staining.

Comments on Moisture levels

All areas shown in photographs show markers of possible historic water damage but are currently below action points.

Dew Point and Condensation Issues

10.1. General moisture level concerns

Typical findings: all walls well above dewpoint

10. Air Sampling (Genus)

10.1. Total Spore Counts & Results

This form of air sampling identifies the Genus only, but counts spores per cubic meter. Genus is a family of moulds, as compared to species, which identifies family members or toxigenic species. This is a valuable tool to assess risk levels across different areas and to pick up potentially hidden mould reservoirs.
Risk areas are identified by comparing different rooms or areas, and perhaps outside (ambient). Typically, we look for markers of a possibly toxigenic genus.

Sample number	Area sampled
1	Ambient
2	Office Disturbed
3	Shower – Open
4	Shower – Closed
5	Lounge

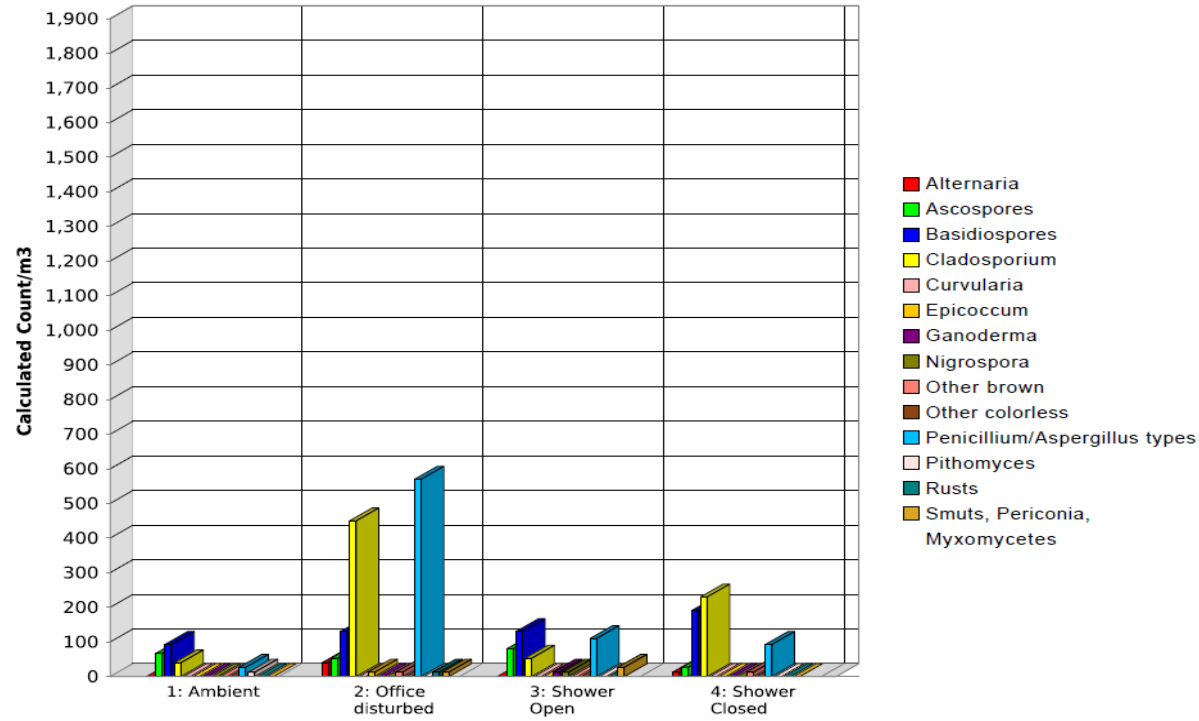
Comments on lab analysis

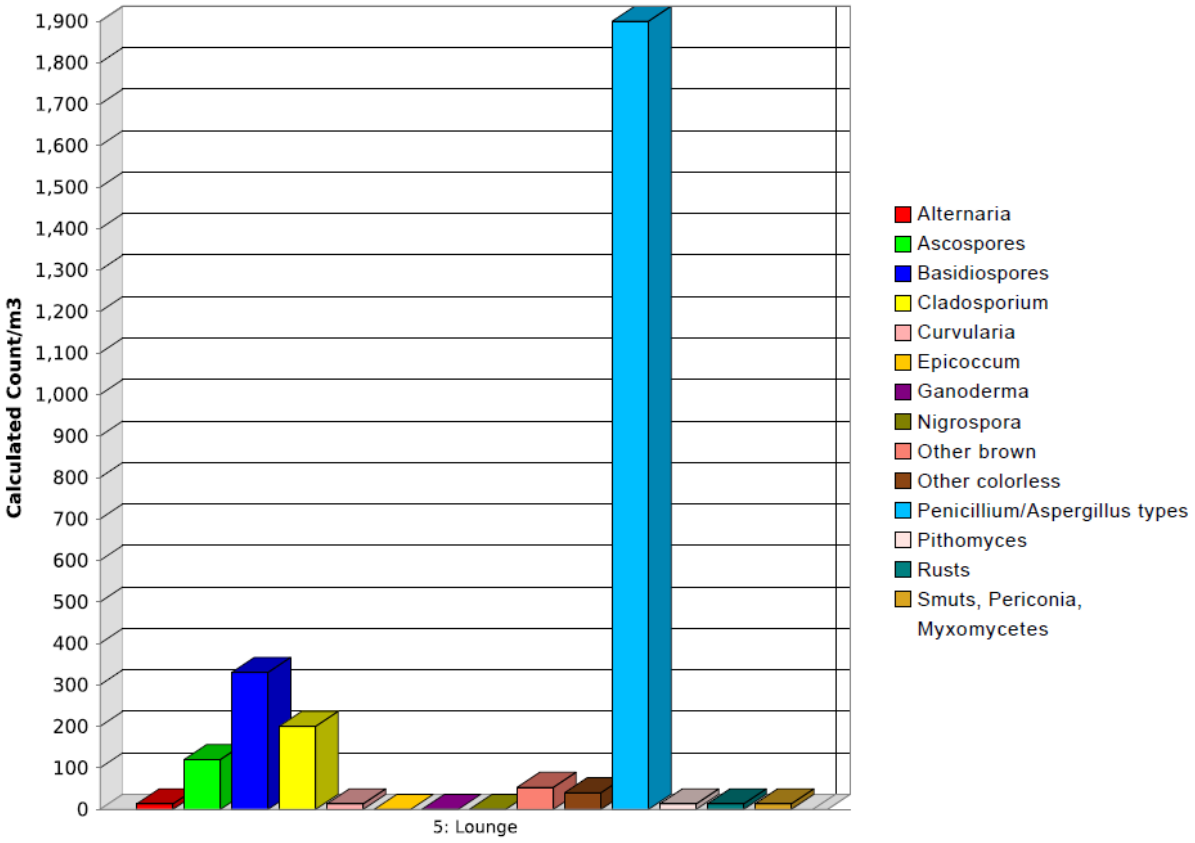
- Debris levels are high, and this means the air has elevated debris, which obliterated visual identification, and the results may be seriously underreported.
- Comparison is made between the room areas and the ambient.
- In this report, we use Aspergillus/Penicillium as a comparison marker.
- Ambient levels of 27 spores per cubic meter are low.
    - **The Lounge is exceptionally high with a count of 1900, and this is a significant concern**
    - **The office is also at a level of concern at 500.**

Sample ID:	21493009-1			21493010-1			21493011-1			21493012-1		
Client Sample ID:	1: Ambient			2: Office disturbed			3: Shower Open			4: Shower Closed		
Volume Sampled(L):	75			75			75			75		
Media:	Spore Trap: Cassette			Spore Trap: Cassette			Spore Trap: Cassette			Spore Trap: Cassette		
Percent of Trace Analyzed:	100% at 600X Magnification			100% at 600X Magnification			100% at 600X Magnification			100% at 600X Magnification		
Spore Types	Raw Count	Count/m3	%	Raw Count	Count/m3	%	Raw Count	Count/m3	%	Raw Count	Count/m3	%
Alternaria	-	-	-	3	40	3	-	-	-	1	13	2
Arthrinium	-	-	-	-	-	-	-	-	-	-	-	-
Ascospores	5	67	28	4	53	4	6	80	19	2	27	5
Penicillium/Aspergillus types	2	27	11	43	570	44	8	110	25	7	93	17
Basidiospores	7	93	39	10	130	10	10	130	31	14	190	33
Bipolaris/Drechslera group	-	-	-	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-	-	-	-
Cladosporium	3	40	17	34	450	35	4	53	13	17	230	40
Curvularia	-	-	-	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	1	13	1	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	1	13	3	-	-	-
Memnoniella	-	-	-	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	1	13	3	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-	-	-	-	-
Pithomyces	1	13	6	-	-	-	-	-	-	-	-	-
Rusts	-	-	-	1	13	1	-	-	-	-	-	-
Smuts, Periconia, Myxomycetes	-	-	-	1	13	1	2	27	6	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-	-	-	-
Unidentified spores	-	-	-	-	-	-	-	-	-	-	-	-
Other brown	-	-	-	1	13	1	-	-	-	1	13	2
Other colorless	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL spores	18	240		98	1,300		32	430		42	560	
Hyphal fragments	3	40		16	210		5	67		8	110	
Pollen	-	-		2	27		1	13		-	-	
Background debris	1			4			4			4		
Analytical Sensitivity	< 13			< 13			< 13			< 13		

Sample ID:	21493013-1*		
Client Sample ID:	5: Lounge		
Volume Sampled(L):	75		
Media:	Spore Trap: Cassette		
Percent of Trace Analyzed:	100% at 600X Magnification		
Spore Types	Raw Count	Count/m3	%
Alternaria	1	13	< 1
Arthrinium	-	-	-
Ascospores	9	120	4
Penicillium/Aspergillus types	140#	1,900	70
Basidiospores	25	330	12
Bipolaris/Drechslera group	-	-	-
Botrytis	-	-	-
Chaetomium	-	-	-
Cladosporium	15	200	7
Curvularia	1	13	< 1
Epicoccum	-	-	-
Fusarium	-	-	-
Ganoderma	-	-	-
Memnoniella	-	-	-
Nigrospora	-	-	-
Oidium/Peronospora	-	-	-
Pithomyces	1	13	< 1
Rusts	1	13	< 1
Smuts, Periconia, Myxomycetes	1	13	< 1
Stachybotrys	-	-	-
Torula	-	-	-
Ulocladium	-	-	-
Unidentified spores	-	-	-
Other brown	4	53	2
Other colorless	3	40	1
TOTAL spores	201	2,700	
Hyphal fragments	14	190	
Pollen	-	-	
Background debris	5		
Analytical Sensitivity	< 13		

*Trace overloaded with debris.





Fungal Glossary

 Typically found growing outdoors

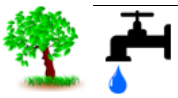
 Potential allergen

 Potential to produce mycotoxins

Considered water damage indicator

Alternaria	
Description	**Characteristic**
These are a common plant pathogen involved in the decomposition of plants. In the indoor environment they are found growing on a variety of substrates including sheetrock and other building materials. They are common allergens causing hay fever or hypersensitivity reactions.	

Anthrinium	
Description	**Characteristic**
These are a plant pathogen found in soil and decomposing plant material. Not typically found growing indoors. One species has been determined to be an allergen.	

Ascospores	
Description	**Characteristic**
These are a very large group of spores that are found everywhere in nature. They are commonly found outdoors and associated with rain and moisture. Some species grow well indoors on damp materials. Ascospores have allergenic potential, however, it is species dependent.	

Aspergillus/Penicillium – Like	
Description	**Characteristic**
These are two of the most common genera in the world. They can be found everywhere in nature, both indoors and outdoors. Indoors they can be found on water damaged wallpaper, carpet, and other organic materials. They can also grow well in conditions of high humidity. Many species are allergens and a common cause of respiratory irritation. Some species are human and animal pathogens and can cause infection.	

Basidiospores	
Description	**Characteristic**
These are primarily comprised of mushrooms and shelf fungi. They are typically found outdoors. Occasionally they are found indoors growing on any organic matter causing	

dry rot. Some species can be an allergen to sensitive individuals.	

Bipolaris/Dreschlera	
Description	**Characteristic**
These are a plant pathogen typically found outdoors on grasses, grains, and decaying food. Indoors they can be found on plants and building materials. They are an allergen that can affect the nose, skin, eyes and upper respiratory track.	

Botrylis	
Description	**Characteristic**
These are a plant pathogen typically found growing on vegetation particularly in temperate and subtropical climates. Indoors they can be found growing on plants. They are a potential allergen causing hay fever and asthma effects.	

Chaetomium	
Description	**Characteristic**
These are typically found indoors on water damaged cellulose containing materials such as paper, sheetrock, and wallpaper. Not well studied but possible allergen with hay fever and asthma effects.	

Cladosporium	
Description	**Characteristic**
One of the most common genera in both the indoor and outdoor environments. Indoors they grow well in damp environments and areas where condensation builds. They are often found on textiles, window sills, in bathrooms, and A/C systems. They are a common allergen when airborne.	

Curvularia	
Description	**Characteristic**
Primarily found outdoors on plants and soil especially in subtropical and tropical environments. Indoors they grow on a variety of building materials. They are a common allergen causing hay fever, asthma, and allergic fungal sinusitis.	

Epicoccum	
Description	**Characteristic**

Outdoors they are found in the soil, air, and rotting vegetation. Indoors they grow well on a variety of building materials such as paper and textiles. They are a potential allergen with hay fever, asthma, and skin allergy effects.	

Fusarium	
Description	**Characteristic**
Indoors they are typically found under very wet conditions. Some places they can be found are dust in carpet and mattresses, damp walls, wallpaper, and duct liner. They are a potential allergen causing hay fever and asthma effects.	

Ganoderma	
Description	**Characteristic**
These are shelf mushrooms that are typically found growing outdoors on wood causing white rot, root rot, and stem rot. They are a possible allergen at high concentration	

Memnoniella	
Description	**Characteristic**
These are mycotoxin producing spores related to and often found in conjunction with Stachybotrys. These grow well on water damaged cellulose containing building materials such as sheetrock, paper, wallpaper, and textiles.	

Nigrospora	
Description	**Characteristic**
These are typically found on decaying plant material and soil and are usually not found growing indoors. They are a potential allergen causing hay fever and asthma effects.	

Oidium/Peronospora	
Description	**Characteristic**
These are plant pathogens that are common obligate parasites on leaves, stems, flowers, and fruits of higher living plants.	

Pithomyces	
Description	**Characteristic**
These are typically found on dead leaves and stems of plants. Rarely found growing indoors; however, they grow well on paper indoors given the right conditions.	

Rust	
Description	**Characteristic**
These are parasitic plant pathogens that grow on plants, grass, and trees. They are rarely found growing indoors since they require a living host, and therefore typically not found on cellulose containing building materials. They are a potential allergen causing hay fever and asthma effects.	

Smut/Myxomyces/Periconia	
Description	**Characteristic**
This is a grouping of several genera organized together in a general category that are mostly associated with living and decaying plants, wood, soil, grass, cereal crops, weeds, and flowering plants. These are rarely found growing indoors. They are a potential allergen causing hay fever and asthma effects.	

Strachybotrys	
Description	**Characteristic**
These are typically found indoors growing on water damaged cellulose containing building materials such as sheetrock, paper, and ceiling tiles. They are often referred to as "toxic black mold." They have the ability to produce mycotoxins which may cause a burning sensation in the mouth, throat, and nasal passages. Chronic exposure has been known to cause headaches, diarrhea, memory loss, and brain damage.	

Torula	
Description	**Characteristic**
These are typically found growing outdoors on leaves, roots, wood, and soil. Indoors they can be found growing on water damaged cellulose, paper, wicker, straw baskets and ceiling tiles. They are a potential allergen causing hay fever and asthma effects.	

Ulocladium	
Description	**Characteristic**
Requires very wet conditions and can commonly be found indoors in damp or wet areas such as bathrooms, kitchens, basements, and around windows. These grow well on cellulose containing materials such as paper and straw and on water damaged building material such as sheetrock. They are a common allergen causing hay fever and asthma effects.	

Unidentified Spores	
Description	**Characteristic**
This is a grouping of spores that are unable to be categorized due to a variety of reasons. They may be weathered, disfigured, or otherwise lacking the morphological structures necessary to identify the genus.	

Hyphal Fragments	
Description	**Characteristic**
These are branched filamentous structures with cell walls. Hyphae are somewhat analogous to stems or roots in plants whereas the spores would be analogous to the seeds. Large quantities present may indicate an active fungal colony or active fungal growth in the structure	

Pollen	
Description	**Characteristic**
These are a fine to course powdery substance produced by the anthers of seed-bearing plants, trees, grasses, flowers, and weeds. They are an allergen that causes hay fever effects.	

NOTE This is an additional test to the standard, but seen as relevant on the day of inspection and shown to be worthwhile

13. Surface Sampling

ERMI & Results (NA)

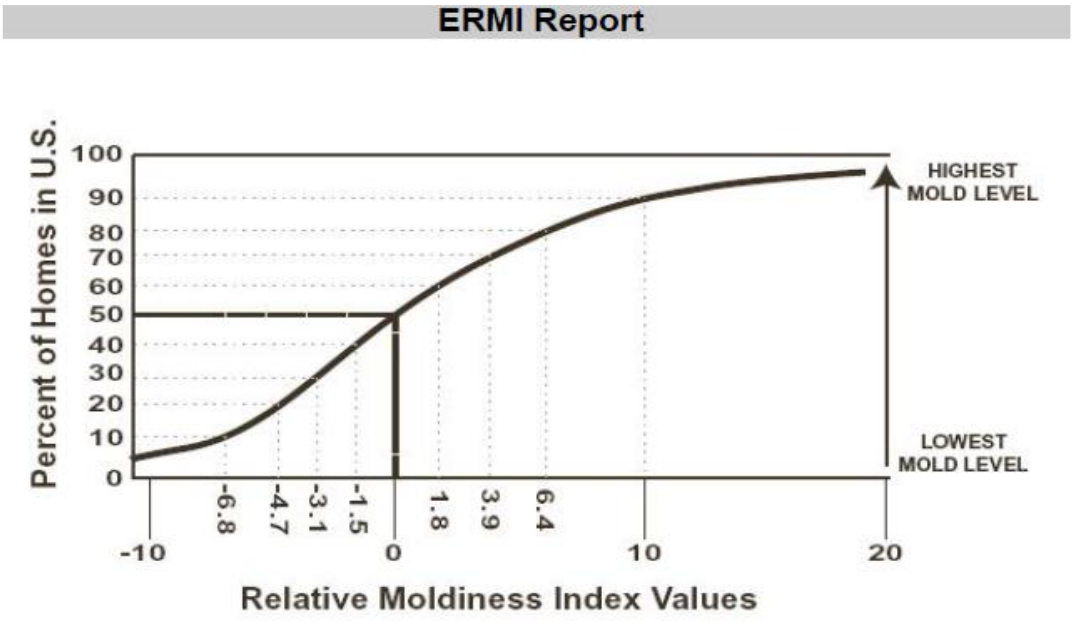
This technique collects settled dust for PCR-DNA analysis and will provide ERMI and HERTSMI 2 scores. This can be an essential analysis where mycotoxins are possibly responsible for negative health issues.
The Ermi was developed by the U.S. Environmental Protection Agency, which explicitly states that it is for professional use only and should not serve as the basis for numerical assessments. This is especially pertinent, as the initial ERMI results depend on the wide-area USA environment, climate, and construction details, which differ from those in northern Europe.

The most significant factor in ERMI is the identification of water-damage indicators, which are often the most likely to be toxigenic and pose a health risk.

Building Forensics analysed over 500 individual samples we have taken around the UK and, based on specific species, provides a simple high or low average of results.

13.1. Swab PCR-DNA & Results

This technique uses a swab to reach hard-to-reach areas or to analyse specific toxigenic mould species.



ERMI Lab result is Higher than average (based on over 500 analyses undertaken by Building Forensics in the UK

13.2. HERTSMI 2

This is a risk assessment of hazards identified in the QPCR-DNA sample analysis from ERMI. Put simply, this calculation is based on thousands of patients with varying exposures and their personal responses to medications, as recorded by their practitioners. The higher the HERTSMI 2 score is, the less likely the CIRS patient is to respond to treatment while those contaminants remain at high levels.

These calculations are for your personal risk assessment.
Your count at 14 is just below the action point of 15.

13.3. Mycotoxins with Toxigenic Moulds & Results

In this sample, we collect dust and analyse it for the most toxic of moulds, which are known to produce mycotoxins. The lab analysis shows up to 16 toxigenic mould species together with 10 or more mycotoxins.

qPCR MOLD ANALYSIS

The results of the mold detected in the sample/s collected from the property were as follows:

Top 5 Toxic Mold Species

Species	SE/mg	Levels	Q
Aspergillus fumigatus			Q1
Aspergillus flavus/oryzae			Q1
Aspergillus niger			Q1
Aspergillus ochraceus			Q1
Penicillium brevicompactum			Q1

HERTSMI-2 Results

Species	SE/mg	Levels	Weighting	Q

HERTSMI-2 Score =	14

Q = Quartile		Normal	Sample Size
SE = Spore Equivalents	(*)	10 fold higher than normal.	4.9 mg
SE/mg = SE/miligrams of sample	(**)	100 fold higher than normal.	
N.D = None Detected	(***)	1,000 fold higher than normal.	

The Geotrichum candidum value was less than 19.5 Ct, indicating that no inhibition was present in the sample.

HERTMI-2 Color-Coded Interpretation [10]	
If 10 or below	In only 1.7% of cases, re-occupancy of building following mold remediation has led to relapse of CIRS-WDB symptoms.
If between 11 to 15	Borderline. Further remediation and re-assessment is indicated.
If greater than 15	Re-occupancy is ill-advised until further remediation and re-assessment are conclusive.

Mycotoxin Results

You have Q4, the highest-risk ban for mycotoxins in the form of Enniatin. You should convey this to your healthcare professional

RESULTS

The following table summarizes the concentrations expressed as nano-grams per gram of dust sample (ng/g (1)) determined for the positively identified analytes:

Mycotoxin	(ng/g)	Freq.	Related Species	Q	
Enniatin B	1.5	54 %	F.avenaceum F.sambucinum F.moniliforme F.roseum F.solani F.nivale	Q4	75%
Enniatin B1	1.8	36 %	F.avenaceum F.sambucinum F.moniliforme F.roseum F.solani F.nivale	Q4	76%

Distribution by Species: Level

Q1 Q2 Q3 Q4

A. = Aspergillus
F. = Fusarium
Freq =Frequency
L = Level
ng/g (1) = nano-grams /gram
Alt. = Alternaria
P. = Penicillium
Q = Quartile
E. = Emericella
Tal =Talaromyces
Min.=Munimum
Low=Low Limit
N/A = Non Available
C. = Chaetomium
Tri =Trichophyton
Max.=Maximum
High =High Limit
N.D = Not Detected

The fungal score is a marker of fungi manifestation, the higher the fungal score, the more fungi are in the sample. This score is independent of the mycotoxin levels but indicates potential water damage in the building. Only mycotoxins, and metabolites detected are presented in the report.

Fungi Metabolites	ng/g	Q	
Atranorin	1,520	Q2	34%
Fumigaclavine A	0	Q1	0%
Quinolactacin A	1	Q2	43%
Usnic acid	7	Q1	8%

None Detected Mycotoxins

1	Aflatoxin	N.D	21	Deoxynivalenol	N.D
2	Aflatoxin B1	N.D	22	Deoxynivalenol-3-Glucoside	N.D
3	Aflatoxin B2	N.D	23	Dihydrocitrinone	N.D
4	Aflatoxin G1	N.D	24	Dihydrotrichotetronine	N.D
5	Aflatoxin G2	N.D	25	Enniatin	N.D
6	Aflatoxin M1	N.D	26	Enniatin A	N.D
7	Aflatoxin P1	N.D	27	Enniatin A1	N.D
8	Alpha	N.D	28	Enniatin B2	N.D
9	Averufin	N.D	29	Enniatin B3	N.D
10	Averufin-Derivat	N.D	30	Fumagillin	N.D
11	Bis(dethio)methylthiogliotoxin	N.D	31	Fumifungin	N.D
12	Bis(methylthio)gliotoxin	N.D	32	Fumigaclavine	N.D
13	Bismethylgliotoxin	N.D	33	Fumigaclavine A	N.D
14	Brevianamid A	N.D	34	Fumigaclavine C	N.D
15	Brevianamide F	N.D	35	Fumiquinazolin A	N.D
16	Chaetoglobosin A	N.D	36	Fumiquinazolin D	N.D
17	Chaetoglobosin D	N.D	37	Fumiquinazolin Derivat	N.D
18	Chaetoglobosins	N.D	38	Fumiquinazolin F	N.D
19	Citreoviridin A	N.D	39	Fumitremorgin A	N.D
20	Citrinin	N.D	40	Fumitremorgin C	N.D

14. Initial surveyor's comments

1) **Client advised of other flat owners in the building complaining of damp/mould on the external walls, which seems to be remedied by installing insulation, but they still have a considerable difference from a comparable reading on the bay wall in the lounge.**
2) **The bathroom/toilets have no independent mechanical extracts installed; there is a communal extract cannot confirm the draw of the extract, although the client advised they seem to come on approximately every 15 minutes. Air testing was carried out in the shower room with a closed extract and then tested with an open extract with disturbed air during both tests.**
3) **Air testing was carried out in the office at the request of the client due to concerns about items brought from a previous damp/mouldy property, which have been put on Hold for Jeff to decide if they need to be analysed**

Reviewed and Edited by Jeff Charllton

The urine samples you independently had analysed have been set out in the Building Forensics report as follows.

Main laboratory findings

1.1 Urine mycotoxins (MosaicDX MycoTOX)

- **Ochratoxin A (OTA)** – **31.62**
  - Lab reference: **< 7.5**
  - This is clearly **elevated**.

    Hannah Percival Mycotox result …

- **Citrinin (measured as Dihydrocitrinone – DHC)** – **18.99**
  - Within the lab's "normal" reference range, but **not zero** – so there is some exposure.

    Hannah Percival Mycotox result …

- **Mycophenolic Acid (MPA)** – **30.31**
  - Detected at a moderate level. Again, not zero exposure.

    Hannah Percival Mycotox result …

- Other tested mycotoxins (aflatoxins, trichothecenes, zearalenone, sterigmatocystin, enniatin B, gliotoxin, etc.) were **not detected** or were below reporting thresholds.

In short: **your body is actively excreting OTA, with measurable but lower-level exposure to citrinin and mycophenolic acid.**

1.2 Dust PCR

The composite dust sample from your living areas shows the following mould DNA:

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- **Aspergillus penicillioides – 1200 spore equivalents/mg**
- **Wallemia sebi – 130 SpE/mg**
- **Aspergillus versicolor – 5 SpE/mg**
- **Chaetomium globosum – 8 SpE/mg**
- **Stachybotrys chartarum – 1 SpE/mg**

These species are strongly associated with **chronic dampness and water-damaged building materials**, not just normal outdoor background.

They also include known or suspected **mycotoxin producers** – for example:

- *A. versicolor* – can produce sterigmatocystin and related toxins.
- *Chaetomium* – can produce chaetoglobosins.
- *Stachybotrys* – produces trichothecenes and other potent toxins.

Even though the test is not measuring the toxins directly, the presence of these species in household dust suggests **ongoing or historic moisture problems** that can support mycotoxin production.

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2. What this means in plain English

1. **Your body is carrying a significant burden of Ochratoxin A.**
    - OTA is linked to **kidney stress, immune dysregulation, fatigue, cognitive issues, and gut problems.**
    - It is usually taken in through **food** (contaminated grains, coffee, dried fruits, wine, processed foods) *and* from **inhalation or ingestion of dust in damp buildings**.
    - **You have measurable exposure to other mould-related toxins (citrinin and MPA).**
    - These are often produced by **Penicillium and Aspergillus** species – the same general group of moulds found in the house dust.
    - Even when results are within the laboratory's "normal" range, they still show that your system is dealing with these compounds.
2. **Your home environment contains DNA from several classic water-damage moulds.**
    - This doesn't automatically prove a current visible mould problem, but it strongly suggests **past or ongoing moisture** (leaks, condensation, historic damage) and **reservoirs of contaminated dust**.
3. **When urine mycotoxins and dust PCR line up, it supports a real-world exposure picture.**
    - We can't say "this exact patch of mould caused this exact urine result", but we can say:

      "You live in an environment where toxin-producing moulds are present, and your body is excreting related mycotoxins at levels that are not trivial."

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3. How this may relate to symptoms

Everyone responds differently, but the combination of **OTA + other mycotoxins + water-damage moulds** can contribute to:

- Persistent or unexplained fatigue
- Brain fog, poor concentration, headaches or migraine

- Sleep disturbance
- Gut and bowel symptoms, nausea, loss of appetite or weight change
- Increased sensitivity to smells, chemicals, or damp environments
- Joint or muscle pain, neuropathic sensations
- POTS-like symptoms, palpitations or dizziness in susceptible individuals

It's important to stress:

These results do not prove that mycotoxins are the only cause of your symptoms – but they do show a **credible and measurable environmental burden** that is entirely capable of making people ill or blocking recovery from other conditions.

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4. Likely exposure sources

Based on these tests alone (without yet inspecting the building), plausible sources include:

1. **Indoor environment**
    - Historic or current leaks, damp walls, bathroom or kitchen moisture, poorly ventilated areas.
    - Dust reservoirs in carpets, bedding, soft furnishings, and hidden voids where species such as *A. penicillioides, Wallemia, Chaetomium* and *Stachybotrys* thrive.

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2. **Dietary intake**
    - OTA and citrinin are commonly found in **stored or processed foods**, especially grains, cereals, bread, coffee, wine, dried fruits, cheeses and cured meats.

      Hannah Percival Mycotox result …

3. **Combination**
    - Most people with significant results have **both** building and food contributions. The key is to identify and reduce the main drivers in your specific case.

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5. What I recommend next

These are **suggestions for environmental and medical follow-up**, not treatment instructions.

5.1 Environmental steps

1. **Full building investigation**
    - A proper inspection of your flat (and adjoining structures where relevant) to locate:
        - Moisture sources (leaks, condensation, hidden damp).
        - Visible or hidden mould growth.
        - Dust reservoirs loaded with fine particulates.
        - Investigate the dehumidifier as a source,
        - Investigate the communal fresh air supply.
        - Investigate wall papers and cavity walls

2. **Targeted remediation**
    - If sources are confirmed, work should focus on **removal of contaminated materials and dust** – not just spraying biocides or fogging.
    - Clearance should be verified with appropriate post-remediation testing.

3. **Immediate low-cost actions while you wait**
    - Improve ventilation where safe to do so (avoiding bringing in polluted outdoor air if that's an issue).
    - Use HEPA vacuuming and damp-wiping to reduce dust build-up.
    - Avoid DIY disturbance of obviously mouldy areas – that can temporarily worsen exposure.

5.2 Medical steps

1. **Share this summary and the full lab reports with your doctor or specialist.**
    - They should be aware of the **OTA elevation** and the presence of other mould-related toxins.
    - They can consider this alongside your symptoms, physical exam, and other tests.

2. **Discuss kidney, liver and immune function.**
    - OTA and citrinin are both associated with **kidney and liver stress**, so your clinician may want to monitor relevant blood and urine markers.
3. **Consider whether ongoing exposure is undermining any current treatment.**
    - Detoxification, supplements or medications will always struggle if you remain in the same exposure that is generating the toxins.
4. **Do not start any aggressive "detox" protocol without supervision.**

- Sudden mobilisation of stored toxins can worsen symptoms if bowels, kidneys, and hydration aren't properly supported.

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6. Key take-home points for you

- Your urine test **clearly shows a raised Ochratoxin A level** with additional mould-related toxins present.
- Your house dust contains **water-damage moulds** capable of producing significant toxins.
- Taken together, this strongly suggests **meaningful environmental mould/mycotoxin exposure**, not a random lab finding

- The priority now is to:
    1. **Investigate and control the environment**, and
    2. **Work with your healthcare professional,** who understands building-related illness and can integrate these results into a sensible care plan.

Report Ends

Jeff Charlton