Building Forensics Ltd

Expert Environmental Surveys Tailored to Your Health and Budget

The proper survey depends on **how sick you are** and **your budget**. We're here to guide you to the best option.

We offer **two essential survey options**, plus additional tests if needed. Every client receives **free, no-obligation guidance notes** explaining the benefits, limitations, and suitability of each option.

Survey Objective

Our surveys are designed to:

- ✔ Identify current or historic water damage markers, sources, and hidden reservoirs
- ✔ Detect possible bio-contamination risks and hazards
- ✔ Pinpoint environmental triggers contributing to your illness or symptoms
- ✔ Provide **clear, data-driven results** to assist you, your healthcare provider, and inform remediation and recovery strategies

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Survey Options

✅ **Option 1: Risk Assessment** (Recommended)
A comprehensive risk survey is ideal for most cases.

✅ **Option 2: Hazard Assessment** (Recommended for suspected building-related illness)
A deeper investigation focusing on environmental triggers linked to health impacts.

✅ **Option 3: Specialised Bacteria Testing**
Recommended for individuals with **chronic illness or persistent symptoms** where previous mould treatments have failed.

✅ **Option 4: Envirosope® Real-Time Mobile Lab**
A **unique, on-site scanning tool** that instantly assesses contamination risks (mould, bacteria, chemicals, particles). Ideal for detecting **hidden or masked risk areas.**
Note: It supports broader assessments but does not replace a full building-related illness investigation.

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We're committed to empowering you with the correct information:

- ✔ **Free expert guidance** on sampling, testing, and analysis
- ✔ **Personal consultation available**—book a call or email us anytime

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The information may seem overwhelming at first glance. However, selecting Option 1 (ideally with Option 2) provides a strong foundation for most clients.

The more data we collect, the greater the chance your healthcare provider can accurately diagnose and treat your condition, especially if we identify and remove environmental triggers.

👉 **Our mission is simple:** We collect the right data and deliver a clear, actionable report so your next steps are guided by evidence, not guesswork.

Jeff Charlton MCIEH, CIEC, CR-WLS, CMH, Hon Fellow BDMA
UK's Leading Mould and Biocontamination Expert
www.buildingforensics.co.uk

Review Report on Building-Related Health Issues

Section 1: Preamble

This report is based on information provided by the client, an inspection of the property, and the analysis of samples and measurements taken during the survey.

While no inspection can be 100% reliable, the accuracy of results increases significantly with intrusive investigations and multiple testing protocols. The scope and depth of any survey are determined by the allocated budget and are influenced by the number and type of samples taken and analysed. All conclusions or recommendations must be substantiated before any remedial action is undertaken.

Building-related illnesses (BRI's) can be challenging to treat if environmental contamination persists. Health improvement is unlikely if exposure to inflammatory triggers continues to exceed the therapeutic benefit of treatment. This survey may represent a crucial first step toward recovery and should be shared with the relevant healthcare professionals. Recommendations should be implemented without delay.

Where biological growth has occurred—mould, bacteria, viable or non-viable, and even microscopic fragments—it continues to pose a health risk. Chemical by-products such as mycotoxins and allergens may trigger inflammatory responses decades after exposure. Dried fragments may be up to 40 times more hazardous (WHO reference) than living colonies. Areas that have experienced

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historical water damage, even if now dry, may still present significant health risks and cannot always be fully assessed without intrusive investigation or formal risk assessment.

Section 2. Report basis and considerations

The primary objective of this survey is to assess current and historical water damage or contamination that may contribute to health complaints. This includes:

- Identifying evidence of causation
- Assessing possible construction and design defects
- Considering alterations to the building envelope
- Evaluating lifestyle and ventilation issues

Section 3, Informed Background

Occupants are reportedly experiencing symptoms consistent with building-related illness.

A urine mycotoxin report provided by the client's healthcare provider has indicated specific concerns requiring environmental correlation. Our initial survey identified areas for targeted testing, aligning with the findings of the urine analysis.

We identified toxigenic mould species likely responsible for the biological markers observed and their likely sources and causation factors.

In some instances, environmental decontamination and exposure risk reduction are essential for any medical treatment to be effective.

Section 4. Report Basis and Parameters

This survey assesses current and historical water damage or contamination that may contribute to health complaints. This includes:

- Identifying evidence of causation
- Assessing possible construction and design defects
- Considering alterations to the building envelope
- Evaluating lifestyle and ventilation issues

This is an environmental health investigation with a specific focus on building-related illness. It is **not** a structural survey typically conducted by a RICS (Royal Institution of Chartered Surveyors) surveyor, nor would a RICS survey typically include mould or contamination assessments.

Our assessment includes areas of known concern; however, hidden or obscured contamination, particularly in cavities or redecorated areas, may go undetected unless biological sampling or intrusive methods are employed. Such an intrusive investigation is beyond the scope of this basic-level report but may be recommended as a follow-up.

Section 5. Dust Monitoring

Airborne dust concentration is measured in g/m³ or particles per million (ppm), with particle sizes typically ranging from 0.1 to 10 microns. A 6-channel laser particle counter is commonly used for this purpose.
Mould fragments are often found in the 2.5-micron range, although whole spores are generally larger than 10 microns.

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Particle counts support the development of a sampling hypothesis. Elevated counts in specific size ranges may indicate possible contamination sources and can guide where samples are taken.

The particle count results are presented in Table 1 below.

Table 1

AREA	Particle Size µ	.3	.5	1.0	2.5	5.0	10
Ambient		16255	6793	1329	217	25	13
Main bedroom		116106	33871	4135	636	99	53
Shower		191649	54628	7869	1121	183	75
Single bedroom		209502	62960	9012	1153	161	85
Kitchen		244872	77360	11163	1444	184	92
Hallway		217447	65223	9033	1203	172	73
Lounge Piano end		294233	103434	13935	1668	256	106
Lounge Table		297677	102064	14516	1612	247	93

Conclusions of particles

Elevated particle counts may sometimes be assumed to be sources of contamination. The highlighted readings above are elevated compared to ambient air and comparison areas The colour-coded table is the author's subjective opinion and has no scientific value. The air has a very high particle loading, although the composition and hazard are unknown.

Photographic log of particle counts (edited sample)

Section 6: Thermal imaging survey

A thermal imaging camera was used to scan the building envelope and internal substrates to assess temperature differentials, known as ΔT. These scans can help identify areas of thermal bridging and inadequate insulation, which may contribute to dew point condensation. Such findings can indicate the need for further investigation into potential leaks, penetrating damp, or moisture retention in materials or insulation.

Thermal imaging surveys often serve as the basis for moisture mapping. However, darker areas in thermal images do not automatically indicate wetness; they may represent cooler regions. These

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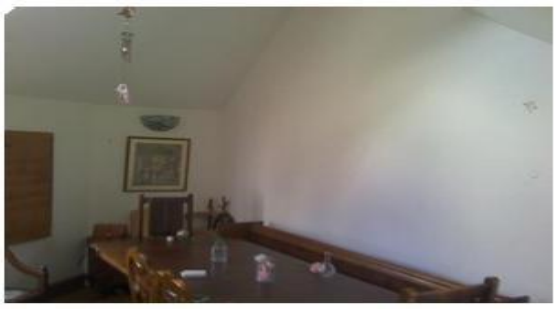
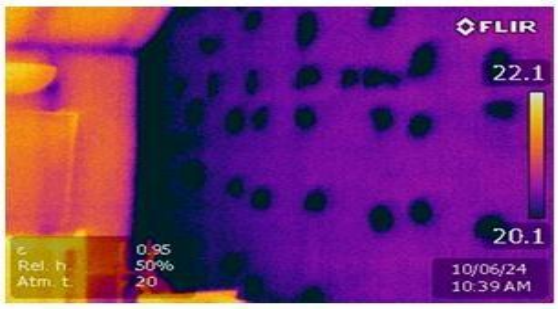
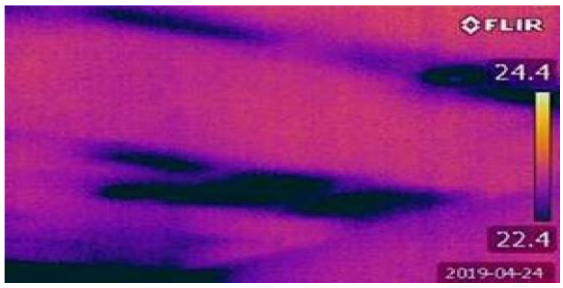
cooler zones can result from missing or uneven insulation, air leakage, or dampness and should be interpreted cautiously.

The ceiling and adjacent external walls may have condensation issues







Section 7. Moisture mapping

The moisture content of various targeted substrates is measured using moisture meters calibrated for the specific material, either through impedance (non-penetrative) or conductive pin meters.

The objective is to assess moisture issues that may contribute to current biological amplification.

Even if areas appear dry, previous moisture exposure may have triggered hidden biological growth, which can remain allergenic or irritating until removed. Inflammagens present within cavities can migrate into occupied spaces.

Moisture readings are evaluated against recognised standards or compared to the equilibrium moisture levels of unaffected areas.

For this purpose, 'equilibrium' refers to the' expected consistent moisture level of identical materials. Where elevated readings are found, penetrative measurements may be necessary.

Mould does not need to be visibly wet or saturated for it to grow. A boundary layer of only a few molecules thick moisture can support mould growth. Mould prefers damp, not wet, conditions.

Standards of dry

The tables below show typical limits regarding the moisture content of various materials.

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Structural material	MC	WME%	ERH
Wood	16	16	N/A
Drywall (plasterboard)	3.0	12	N/A
Plaster	0.3	15	N/A
Brick	1.5	15	75
Concrete	3.5	15	75
Sand cement screed	6.0	15	75

The table is taken from British Standards PAS 64, which also follows BS8201, ASTM F2710, and BS12999.

The floor's moisture content is 5.5, with 4.5 being an action point. This concrete floor is confirmed to be wet and may be a significant source of elevated humidity throughout the house.

A non-destructive impedance measurement of the plasterboard behind the tiles showed that water had penetrated the grouting to wet the plasterboard, resulting in hidden mould growth in the wall cavity between the shower and bedroom.

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Wet plasterboard wall at 22% wme, with 12% being a trigger point for action.

Infrared scanning identified possible moisture at the room edges. The conductive moisture probe confirmed the floor is wet at 36% and well above the accepted 20% trigger for mould.

Comparison levels indicating lower moisture issues

Comparison levels indicating lower moisture issues with the likelihood of mould in the cavity

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Note

These are standards, but interpretation may be required, particularly where historic water damage is present. A significant risk is where water damage in high cellulose materials has been allowed to dry naturally.

The measurement of concrete and screed must follow a recognised protocol, which may require consideration of certain environmental factors and monitoring over 48 hours. Building Forensics will adopt an investigative approach to a lesser degree for simplicity and to contain costs. Where certified evidence is required, a separate instruction will be required.

Section 8. Humidity ratio, also known as Specific Humidity

Humidity ratio is a function of relative humidity and temperature, calculating the actual weight of water vapour present in the air in grams per kilogram (g/kg) of dry air. Variations between indoor areas and ambient conditions can reveal potential moisture-related issues.

A thermo-hygrometer equipped with a probe measures this parameter. Uncontrolled evaporation can result in moisture being absorbed by porous, hydrophilic materials, potentially leading to biological amplification.

Elevated humidity ratios can affect even non-porous materials, particularly when condensation occurs due to the dew point. The following readings, including decimal values, are recorded directly from the meter

Area	Temp C	RH	Humidity Ratio
Ambient	17.4	49.7	6.1
Main bedroom	18.8	67.7	9.1
Shower	18.7	69.8	9.4
Single bed	18.2	68.3	8.9
Kitchen	19.6	64.7	9.2
Lounge	17.6	68.5	8.6

All reasonable levels

Conclusions

The table above shows that the property has a slightly higher specific humidity compared to ambient air, but at acceptable levels

Elevated specific moisture may be caused by lifestyle and poor ventilation. Typically, a family of four may produce 15 litres of moisture in the air per day from breathing, cooking, showers, etc.

Dew Point Condensation

Dew point is the temperature at which warm air holding moisture condenses on colder surfaces, leaving droplets that can result in mould growth. It is measured by measuring the temperature of surfaces, usually external walls.

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The measured external walls show temperatures 3 -4 degrees above the dew point, with a condensation risk.

Wall temperatures are generally 15.5 c, and the dew point is around 12 °c

6.4. Conclusion: Low dewpoint risk

Conclusions: What are the issues, and where are they
Recommendations: What to do for risk reduction and remediation

End the basic survey and start additional sampling and analysis.
The following sampling and analysis options are optional; each has its benefits depending on your symptoms, and not all are necessary. We will help you decide which is your best option and provide the most helpful information to assist in identifying exposure and illness, as well as a cost guide to suit you and your budget.
The following pages show different types of sampling and analysis. Each has benefits in providing information on the types, forms, and location of exposure. Not essential but worthwhile, budget permitting.

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Note

While the following Total Spore Count analysis in Option 1 (section 7) is in addition to the preceding introductory survey, we always recommend this analysis as a guide to your exposure to mould.

Option 1: Total Spore Counts for Risk Assessment purposes

7.1. This survey has been developed from our experience of building-related illness and the confirmation of risks identified in the basic study

7.2. In this sampling protocol, we collect airborne spores in purpose-made, sealed cassettes for laboratory analysis by qualified mycologists. The results are compared to other areas and outside (ambient) air as a control. This type of sampling identifies the mould genus but not the species. However, the levels are an indicator of risk areas.

Sample Number	Area collected
1	**Bed**
2	**Table**
3	**Ambient**
4	**Piano**

7.3.1. Mycologists cannot distinguish between Penicillium and Aspergillus. Therefore, reports are stated as Penicillium/Aspergillus, and the report is deemed a risk assessment regarding counts and types of mould. It is essential to understand that all forms of sampling and analysis have benefits and shortfalls. While this provides a risk assessment of spore counts, it cannot distinguish species or hyphal fragments.

7.4. Lab result factors

7.4.1. The following tables are total spore counts (viable dormant and nonviable)

7.4.2. The individual samples should be compared to other areas and the outside (ambient sample)

7.4.3. The results may be influenced by debris loading and other factors, and these findings are an integral part of the methodology. Debris loading is dust, including skin, dust mite faeces, dander and general fluff/dirt. The level of dust can obliterate the visual detection of spores when viewed under a microscope.

7.4.4. Debris loading is generally rated between 1 and 5, with 5 being dirty air.

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7.4.5. A simplistic explanation is to consider a plate of peanuts with 1-2 -3 -4 -5 bags of flour dropped on top and see if you can count the peanuts through the flour.

7.4.6. The reality is, the dirtier the air, the more the mycologist relies on periphery counts, and this always leads to underestimation

7.5. The lab report identifies the percentage of count and the total spore count

The standard report displays a column indicating the percentage of sample fields that have been read. This means that the number of spores counted for each spore type is represented by a certain percentage of fields on which they were observed, not the percentage of the total sample.

7.6. Reporting Limits

The Reporting Limit for a spore type uses the formula listed in the section above and assumes that the lowest raw count that can be detected is one.

7.7. Lab analysis

7.7.1. The ambient outside conditions should be compared to inside genus and spore counts (levels), including the percentage identified in the analysis. Our reports provide risk factors from the data collected.

7.7.2. Note the high debris loading both inside and outside the property, which may occlude visible identification; therefore, spore counts can be assumed to be higher (see note above, Table 42)

7.7.3. Comparison between different locations should also be considered.

7.7.4. The spore counts are extremely high

7.7.5. The lounge is grossly contaminated, but the bedroom is also bad

7.7.6. These identified genera may be considered toxigenic due to levels and environment

7.8. MOST IMPORTANT INFORMATION

The AMB or ambient (outside) count of Aspergillus and Penicillium is essential, as it shows 747 spores per cubic meter of air against the inside property, showing thousands of the same genus. Do not be concerned about the data gathered; we will interpret it.

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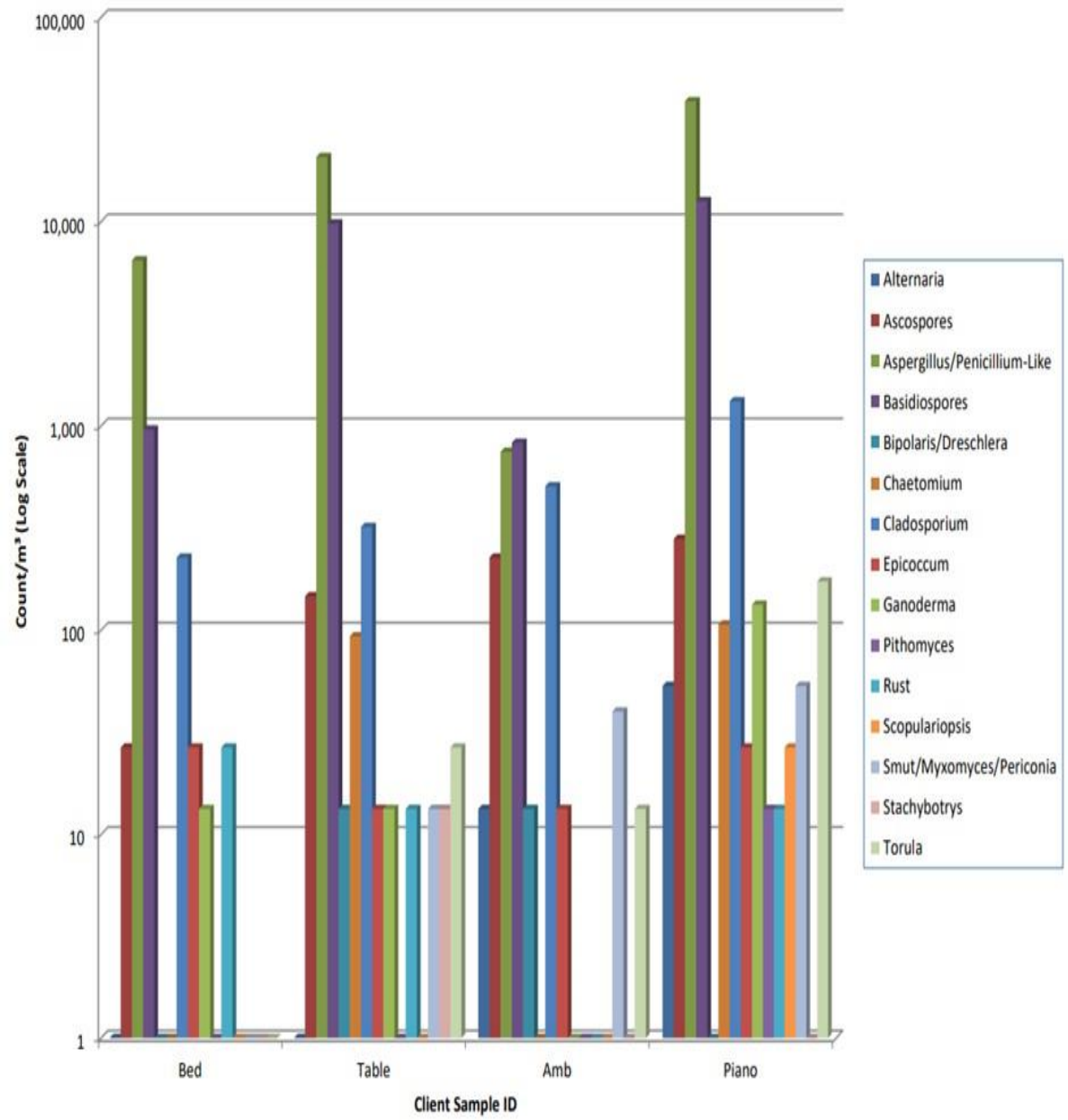

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Sample ID:	504964-01	504964-02	504964-03	504964-04
Client Sample ID:	Bed	Table	Amb	Piano
Volume Sampled (L):	75	75	75	75
Media:	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell
Percent of Trace Analyzed:	100% at 600X Magnification	100% at 600X Magnification	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	–	–	–	–	–	–	1	13	1	4	53	<1
Arthrinium	–	–	–	–	–	–	–	–	–	–	–	–
Ascospores	2	27	<1	11	147	<1	17	227	9	21	280	1
Aspergillus/Penicillium-Like	485	6,467	83	1,553 #	20,707	66	56	747	31	2,914 #	38,853	72
Basidiospores	72	960	12	735 #	9,800	31	62	827	34	945 #	12,600	23
Bipolaris/Dreschlera	–	–	–	1	13	<1	1	13	1	–	–	–
Botrytis	–	–	–	–	–	–	–	–	–	–	–	–
Chaetomium	–	–	–	7	93	<1	–	–	–	8	107	<1
Cladosporium	17	227	3	24	320	1	38	507	21	99	1,320	2
Curvularia	–	–	–	–	–	–	–	–	–	–	–	–
Epicoccum	2	27	<1	1	13	<1	1	13	1	2	27	<1
Fusarium	–	–	–	–	–	–	–	–	–	–	–	–
Ganoderma	1	13	<1	1	13	<1	–	–	–	10	133	<1
Memnoniella	–	–	–	–	–	–	–	–	–	–	–	–
Nigrospora	–	–	–	–	–	–	–	–	–	–	–	–
Oidium/Peronospora	–	–	–	–	–	–	–	–	–	–	–	–
Pithomyces	–	–	–	–	–	–	–	–	–	1	13	<1
Rust	2	27	<1	1	13	<1	–	–	–	1	13	<1
Scopulariopsis	–	–	–	–	–	–	–	–	–	2	27	<1
Smut/Myxomyces/Periconia	–	–	–	1	13	<1	3	40	2	4	53	<1
Stachybotrys	–	–	–	1	13	<1	–	–	–	–	–	–
Torula	–	–	–	2	27	<1	1	13	1	13	173	<1
Ulocladium	–	–	–	–	–	–	–	–	–	–	–	–
Unidentified Spores	–	–	–	–	–	–	–	–	–	–	–	–
Total Spores	**581**	**7,747**		**2,338**	**31,173**		**180**	**2,400**		**4,024**	**53,653**	
Hyphal Fragments	6	80		31	413		4	53		31	413	
Pollen	5	67		22	293		37	493		24	320	
Debris Rating	3			3			3			3		
Detection Limit	13			13			13			13		

Estimation performed due to high count.

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Fungal Glossary (Sample page only)

 Typically found growing outdoors, considered a water damage indicator 

 Potential allergen, Potential to produce mycotoxins 

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.	

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Option 2 (Hazard Assessment) is known as ERMI

Settled dust and QPCR-DNA dust analysis for mould speciation

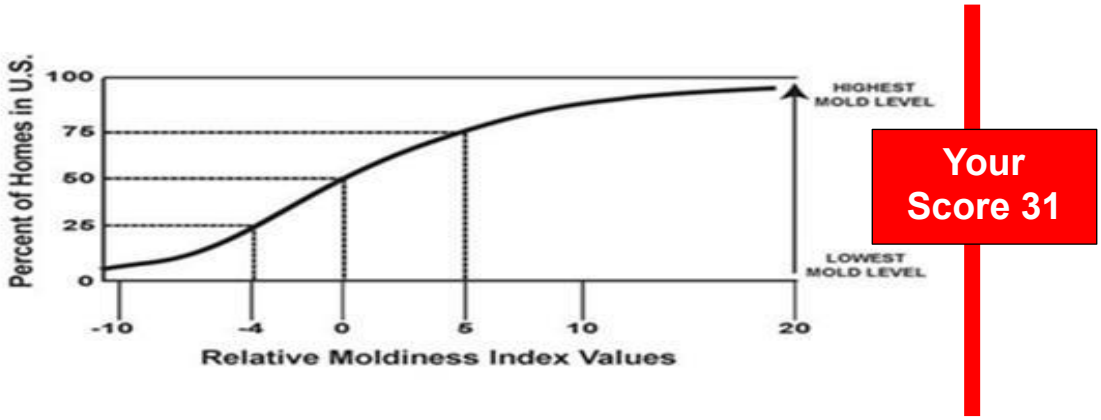
8.1. The ERMI score should not be considered a risk or hazard assessment, as we usually collect dust from different areas. The risk score is derived from the presence of Group 1 moulds, which are likely to produce mycotoxins and are known as potentially toxigenic

8.2. These moulds are usually present at detection levels in ambient air and are considered markers of water damage and potential health hazards.

8.3. While some may interpret the levels of ERMI score as a health risk, the reality is we have shown adjacent areas can have differing levels and scores (see our paper on mould sampling failures) in free advice Professional Letter (wpdesign.website)

8.4. The ERMI score has no significant value, but we interpret the actual species as a risk factor. The information regarding group 1 mould species may be of significant benefit to your medical practitioner

8.5. The "Environmental Relative Mold Index" table below (ERMI) shows the typical results from 1096 homes analysed by the Environmental Protection Agency.



8.6. The EPA developers of ERMI categorically state its use is for professional research use only, and no significance as to risk or hazard can be gained from scores

8.7. No health assessments can be concluded from the ERMI score. Still, the lab results may provide important information regarding restoration and medical treatment, as well as the overall risk and hazards faced in the sampled areas.

8.8. An ERMI score of 0 would represent the average level of mould contamination (50%) of homes investigated. It should be pointed out here that a minus score does not mean there is no health hazard or low risk. We have assessed the species, particularly in the group one section.

8.9. We do not advocate using the score as a risk assessment. Building Forensics assesses species from group 1 only, as a hazard assessment

8.10. We have included the risk table below for those needing information on the ERMI score.

8.11. After sampling over 1000 homes in the UK, we can provide a baseline of high or low, although this is not a hazard or risk assessment

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Level	ERMI Values	Interpretation	Comment
Q 1	Less than - 4	Low Relative Moldiness Index	Further investigation is not needed to determine the sources of the mold.
Q 2	-4 to < 0	Low - Medium Relative	Further investigation may be needed to determine the sources of the mold if occupants have been reactive, sensitized, genetically predisposed or otherwise immuno-compromised.
Q 3	0 to < 5	Medium- High Relative	
Q 4	5 to < 20	High Relative Moldiness Index	Source and cause of mold should be determined and remediation is undertaken, reducing the ERMI to levels below Q2.
	> 20	Very High Relative	

Lab analysis Results - Lounge and bedroom

8.11.1. There are several very toxic mould species at levels over 1000-fold higher than normal

8.11.2. The species identified can reduce your immune system, and the species in Group 1 are potentially toxigenic

8.11.3. The species in group 1 are most likely to be a concern to healthcare professionals who may link your symptoms to exposure.

8.11.4. We do not recommend using the ERMI score to assess health risks. However, the species loading is an extremely important factor in hazard assessment

8.11.5. Your score of 31 is in Q4 and well above the tigger of 15

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Group 1: Water Damage Molds			
Species	Level	SE/mg	
Aspergillus flavus/oryzae		235	* *
Aspergillus fumigatus		61	*
Aspergillus niger		218	*
Aspergillus ochraceus		4	
Aspergillus penicillioides		12,537	*
Aspergillus restrictus		9,311	* * *
Aspergillus sclerotiorum		8	
Aspergillus sydowii		N.D	
Aspergillus unguis		N.D	
Aspergillus versicolor		7,071	* *
Aureobasidium pullulans		5,264	*
Chaetomium globosum		51	*
Cladosporium sphaerospermum		199	
Eurotium (Asp.) amstelodami		12,436	* *
Paecilomyces variotii		N.D	
Penicillium brevicompactum		4,319	* *
Penicillium corylophilum		139	*
Penicillium crustosum		355	*
Penicillium purpurogenum		17	*
Penicillium Spinulosum		52	*
Penicillium variabile		22	
Scopulariopsis brevicaulis/fusca		19	
Scopulariopsis chartarum		224	*
Stachybotrys chartarum		5	
Trichoderma viride		2,937	* *
Wallemia sebi		11,003	*
Sum of logs G1		56.3	

Note

Although not as toxic as Group 1, the species identified in Group 2 are still potentially allergenic and have some toxicity.

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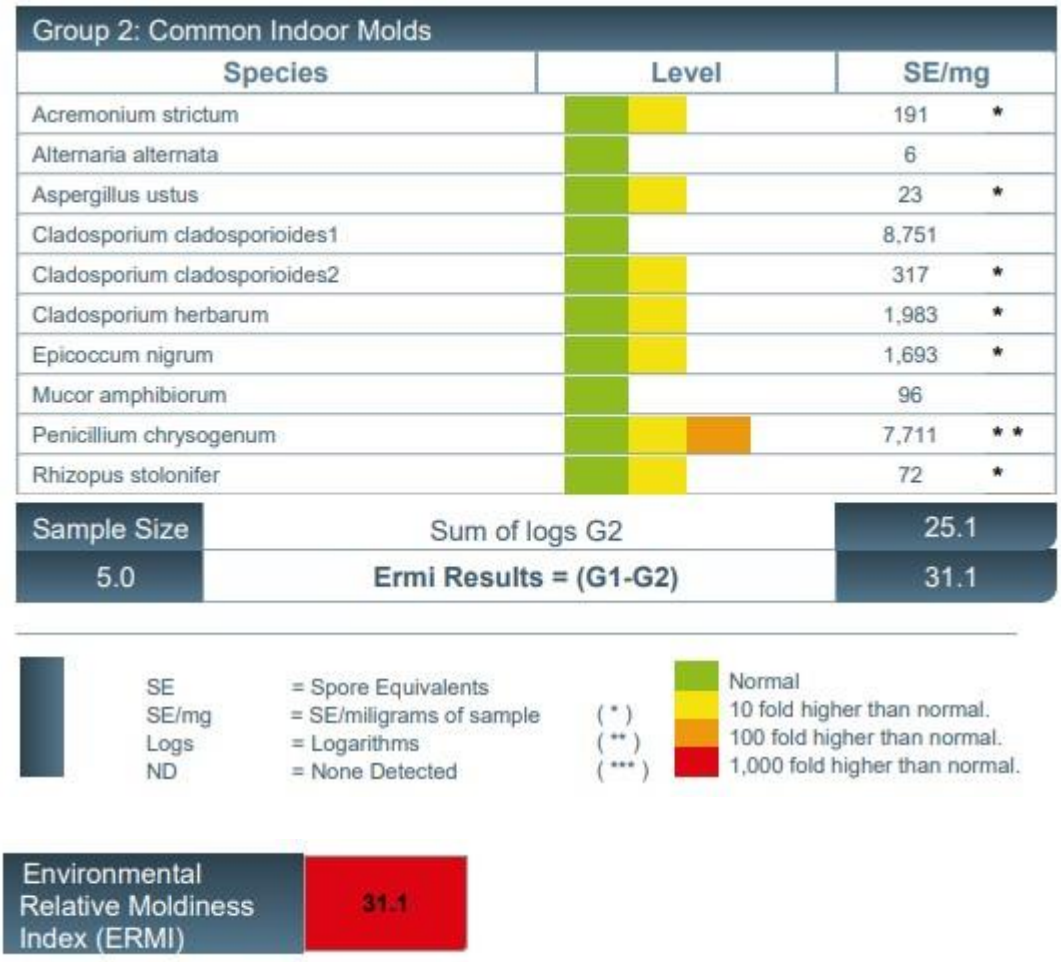

Group 2: Common Indoor Molds		
Species	Level	SE/mg
Acremonium strictum		191 *
Alternaria alternata		6
Aspergillus ustus		23 *
Cladosporium cladosporioides1		8,751
Cladosporium cladosporioides2		317 *
Cladosporium herbarum		1,983 *
Epicoccum nigrum		1,693 *
Mucor amphibiorum		96
Penicillium chrysogenum		7,711 * *
Rhizopus stolonifer		72 *

Sample Size	Sum of logs G2	25.1
5.0	**Ermi Results = (G1-G2)**	31.1

8.12. Significant results

Building Forensics has analysed over 750 ERMI scores in the UK

- Your score is almost 2.5 times higher than the UK national average
- This HERTSMI score is 4 times the level considered safe for CIRS patients to be exposed to. (See note)

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9. HERTSMI 2

9.1. This is a risk assessment of hazards identified in the QPCR-DNA sample analysis. This calculation is based on thousands of patients with varying exposures and their 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

HERTSMI 2 Score - Lounge and bedroom

HERTSMI-2 Species	Spore E./mg	Weighting	
Aspergillus penicillioides	12,537	10	*
Aspergillus versicolor	7,071	10	* *
Chaetomium globosum	51	6	*
Stachybotrys chartarum	5	4	
Wallemia sebi	11,003	10	*
Sample Size	5.0 mg	HERTSMI-2 Score =	40

9.2. HERTMI 2 Table of risk

The HERTSMI -2 score of 40 in this property is likely unsafe for persons with CIRS, or an inflammatory response and treatment of any sort is unlikely to have any benefit. With elevated exposure in the home, the intake of toxins and inflammagens is likely to surpass the benefits of treatment. We have free information papers on guidance if you request.

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.

9.3. Genetically close–related species may be detected in the indicator assay

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As reported	Includes
Eurotium (Asp.) amstelodami	E. chevalieri, E. herbariorum, E. rubrum and E. repens.
Penicillium spinulosum	P. glabrum, P. lividum, P. pupurescens, and P. thomii.
Trichoderma viride	T. koningii and T. atroviride.
Aspergillus restrictus	A. caesillus and A. conicus.
Mucor amphibiorum	M. circinelloides, M. hiemalis, M. indicus, M. mucedo, M. racemosus, M. ramosissimus.
Rhizopus zygosporus	R. homothalicus, R. microsporus, R. oligosporus, R. oryzae.
Penicillium crustosum	P. camembertii, P. commune, P. echinulatum, P. solitum.
Aspergillus niger	Know called Aspergillus basiliensis
Scopulariopsis brevicaulis/fusca	Has been renamed as species of Microascus[10]
Wallemia sebi	W. mellicola, W. canadensis[11]

Option 3: Actinomyces (Edited from 5 pages)

Actinomycosis are believed to play a significant part in building-related illnesses and may be responsible for many symptoms, which are sometimes misdiagnosed as mould illness and CIRS. Generally, bacteria grow before mould; some studies suggest bacteria may be a higher risk factor in mould illness (inflammatory response) than mycotoxins.

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-

Lounge and bedroom

Actino Score	23
Pathogen Score (Q Level)	Q4
Black Water Score (Q Level)	Q1

Actino Score interpretation (Water Damage)	
20 or below	Indicative of a Healthy Building
Between 21 to 23	Further investigation needed
Greater than 24	Suggestive of Building Related Illness.

	Total Species	Pathogen Species	Be/mg Total	Q Level
Bacteria	3,074	214	8,583,513	Q 4
Actino	708	61		

Summary of Bacteria's Order

Orders Detected	Abundance B.E/mg	Families	Abundance	Fold ▲	Diversity	Fold ▲	Pathogen
Actinomycetales	1,106,585	41	23 %	0.9	15.7 %	0.9	61
Bacillales	857,964	14	18 %	1.4	5.4 %	0.8	24
Clostridiales	373,495	25	8 %	2.5	9.6 %	1.2	36
Rhizobiales	190,651	13	4 %	1.5	5.0 %	1.1	1
Rhodospirillales	172,874	3	4 %	0.8	1.1 %	0.7	0
Acidimicrobiales	122,831	3	3 %	5.8	1.1 %	0.9	0
Rhodobacterales	116,230	1	2 %	0.9	0.4 %	0.6	0
Sphingomonadales	115,543	2	2 %	1.8	0.8 %	0.8	0
Gaiellales	112,873	1	2 %	1.7	0.4 %	0.3	0
Solirubrobacterales	94,334	3	2 %	6.0	1.1 %	1.0	0

▲ = Fold over normal top orders Table only list 10

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Q1 Quartile | Q2 Quartile | Q3 Quartile | Q4 Quartile

B.E	= Bacteria Equivalents	Logs	= Logarithms
B.E/mg	= B.E/miligrams of sample	ND	= None Detected
(* *)	100 fold higher than normal.	P	= Human Pathogen
(* * *)	1,000 fold higher than normal.		

Normal values are based on bacteria distribution in 1,000 US homes. Distribution of bacteria species are also ranked on Quadriles, only elevated species are highlighted with a color code for Q3 and Q4.

Actino Species Detected

	Genus & Species	B.E/mg	Comments	Q Level
1	Actinomyces funkei	343	P	
2	Actinomyces massiliensis	343		
3	Actinomyces naeslundii	343	P	
4	Actinomyces nasicola	86		
5	Actinomyces odontolyticus	1,803	P	
6	Actinomyces viscosus	172	P	
19	Corynebacterium amycolatum	5,751	P	
20	Corynebacterium appendicis	28,669	*	
21	Corynebacterium aurimucosum	4,893		
22	Corynebacterium capitovis	515		
23	Corynebacterium glycinophilum	343		
24	Corynebacterium imitans	5,064	P	
25	Corynebacterium jeddahense	601		

Cyanobacteria Species Detected

	Genus & Species	B.E/mg	Comments	Q Level	
1	Aerosakkonema funiforme	343			
2	Anabaena cylindrica	1,030			
3	Anabaena flosUnclassifiedaquae	515			Microcystin
4	Anabaena sp	2,232			Anatoxin-a, Microcystin
5	Aphanizomenon flosUnclassifiedaquae	2,918			Cylindrospermopsins, Saxitoxin
6	Brasilonema bromeliae	3,262			
7	Brasilonema terrestre	4,206			
8	Calochaete cimrmanii	773			

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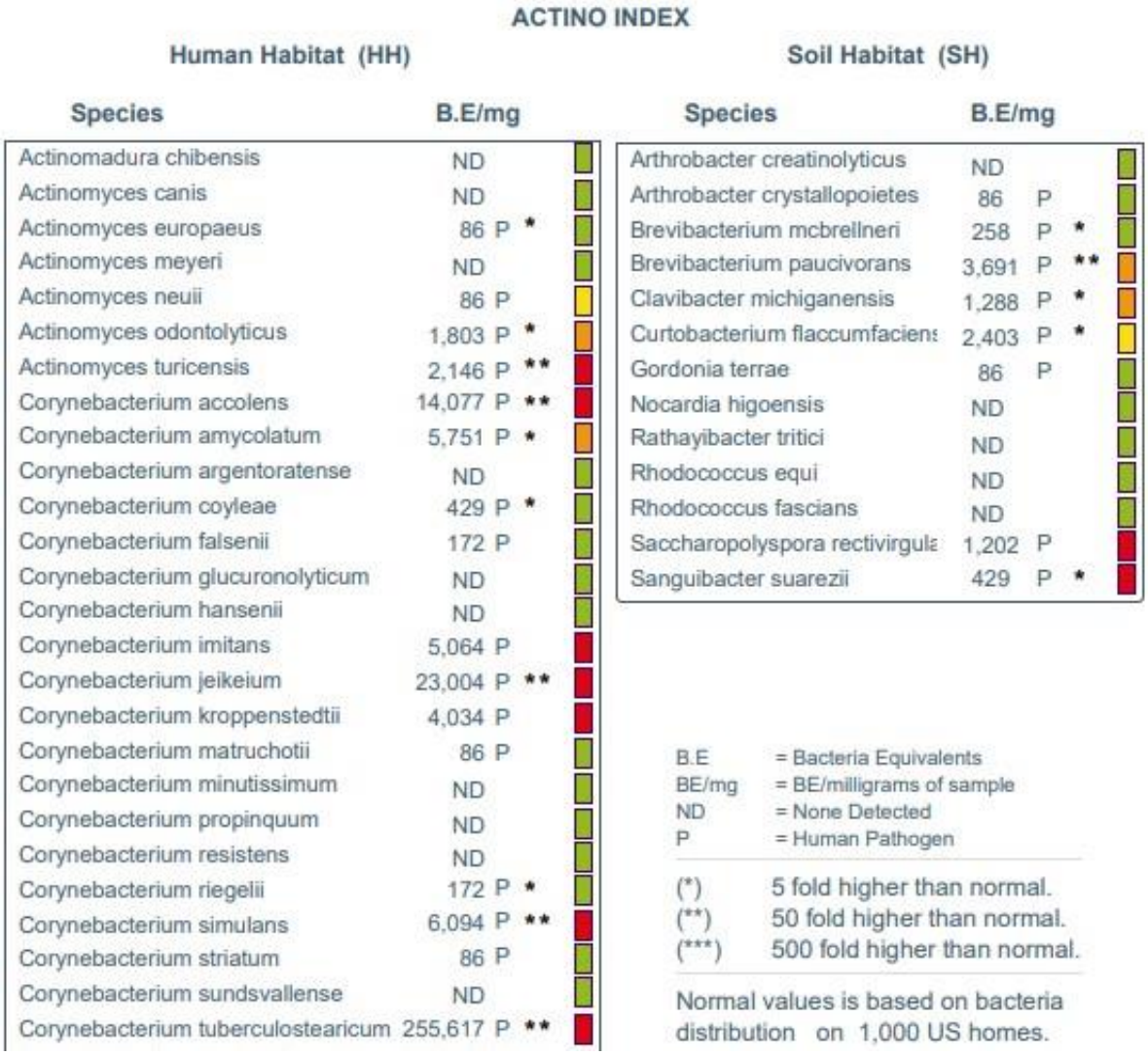

ACTINO INDEX

Human Habitat (HH) Species	B.E/mg			Soil Habitat (SH) Species	B.E/mg		
Actinomadura chibensis	ND			Arthrobacter creatinolyticus	ND		
Actinomyces canis	ND			Arthrobacter crystallopoietes	86	P	
Actinomyces europaeus	86	P	*	Brevibacterium mcbrellneri	258	P	*
Actinomyces meyeri	ND			Brevibacterium paucivorans	3,691	P	**
Actinomyces neuii	86	P		Clavibacter michiganensis	1,288	P	*
Actinomyces odontolyticus	1,803	P	*	Curtobacterium flaccumfaciens	2,403	P	*
Actinomyces turicensis	2,146	P	**	Gordonia terrae	86	P	
Corynebacterium accolens	14,077	P	**	Nocardia higoensis	ND		
Corynebacterium amycolatum	5,751	P	*	Rathayibacter tritici	ND		
Corynebacterium argentoratense	ND			Rhodococcus equi	ND		
Corynebacterium coyleae	429	P	*	Rhodococcus fascians	ND		
Corynebacterium falsenii	172	P		Saccharopolyspora rectivirgula	1,202	P	
Corynebacterium glucuronolyticum	ND			Sanguibacter suarezii	429	P	*
Corynebacterium hansenii	ND						
Corynebacterium imitans	5,064	P					
Corynebacterium jeikeium	23,004	P	**				
Corynebacterium kroppenstedtii	4,034	P					
Corynebacterium matruchotii	86	P					
Corynebacterium minutissimum	ND						
Corynebacterium propinquum	ND						
Corynebacterium resistens	ND						
Corynebacterium riegelii	172	P	*				
Corynebacterium simulans	6,094	P	**				
Corynebacterium striatum	86	P					
Corynebacterium sundsvallense	ND						
Corynebacterium tuberculostearicum	255,617	P	**				

B.E = Bacteria Equivalents
BE/mg = BE/milligrams of sample
ND = None Detected
P = Human Pathogen

(*) 5 fold higher than normal.
(**) 50 fold higher than normal.
(***) 500 fold higher than normal.

Normal values is based on bacteria distribution on 1,000 US homes.

Bacterial analysis results

The lab's colour-coded report shows this home in the fourth quantile, which means its contamination is above 75% worse than average.

The bacteria present are associated with cancer, including Liver and respiratory paralysis. Another bacterial species is also associated with cancer and can cause protein phosphatase inhibition. The levels identified from this sample are NOT very high, but you should know their presence if symptoms and/or treatment have been unsuccessful.

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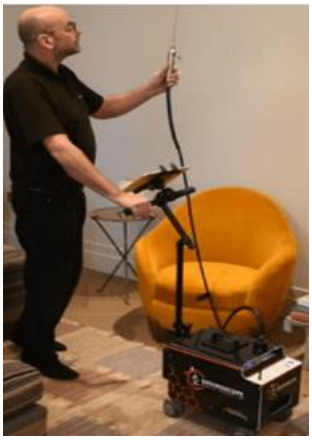
Option 4: AI Robot

About Enviroscope® Technology

Enviroscope® instantly detects and identifies the biological portion of airborne particulate matter, including:



- PM2.5 and PM10
- Mould spores
- Bacteria and viruses
- Pollen
- Relative Humidity and Temperature
- Optional: CO2 and Total Volatile Organic Compounds

This cutting-edge system interprets results using advanced algorithms and particle analysis and provides a real-time indoor air quality profile

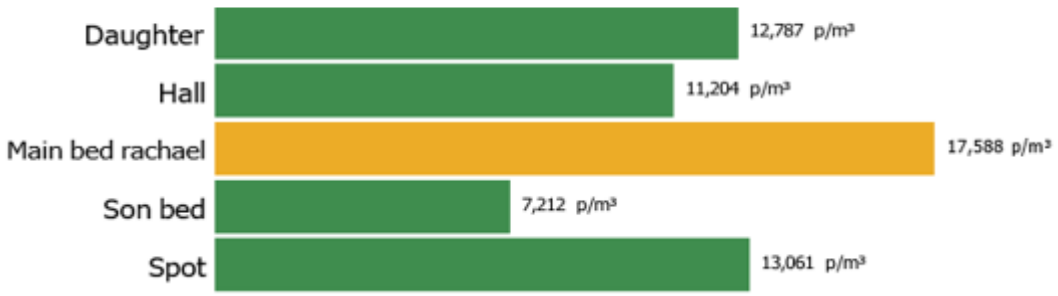
See more about this revolutionary technology

Enviroscope report

As the unit and wand are moved, the contamination component levels are displayed on the iPad screen on the handle. This allows areas of high concentration to be further risk assessed by other analyses. This reduces sampling costs and improves accuracy

Scan-by-Scan Mould Comparison

The Scan by Scan Mould Comparison shows all the particle readings per cubic meter (p/m³) in one chart, for each area, and can be used to compare rooms to each other and to the baseline scan (if present).



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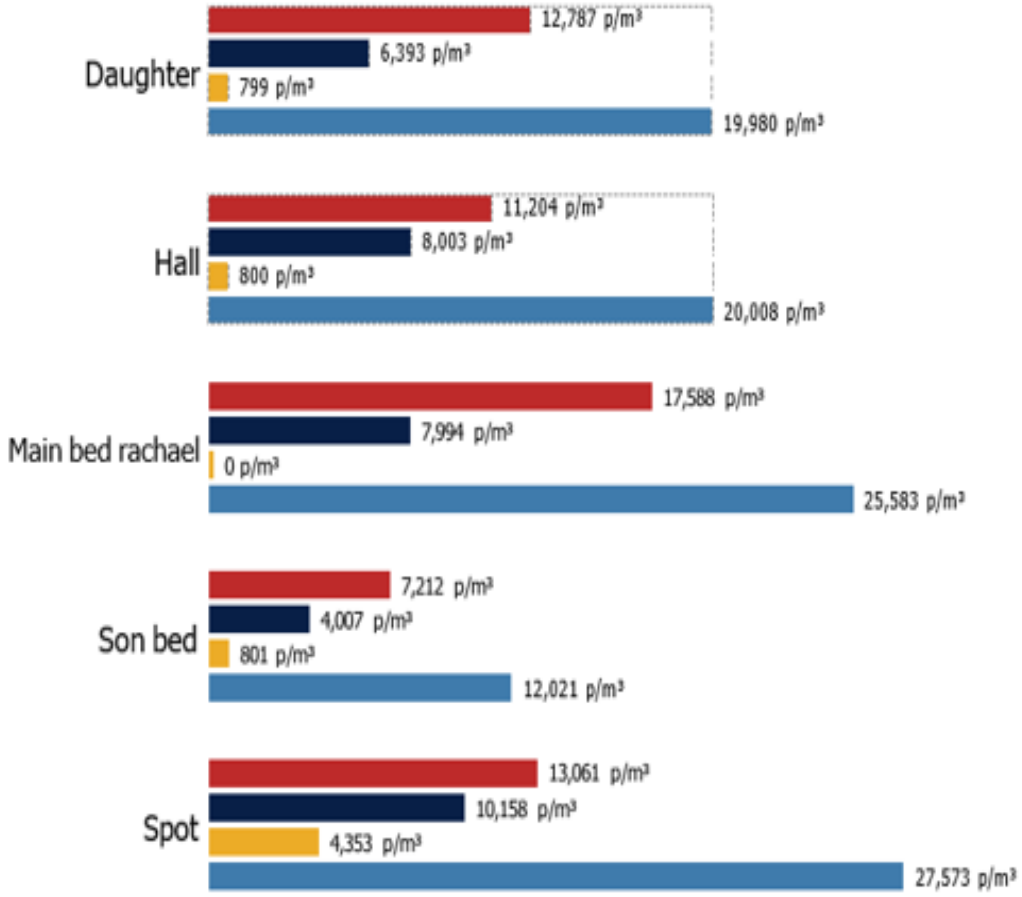
Scan-by-Scan Total PM Comparison

The Scan-by-Scan PM Comparison chart shows each area's $PM_{2.5}$, $PM_{2.5}$ Bio, PM_{10} and PM_{10}Bio levels as they compare in micrograms per cubic meter ($\mu g/m^3$).



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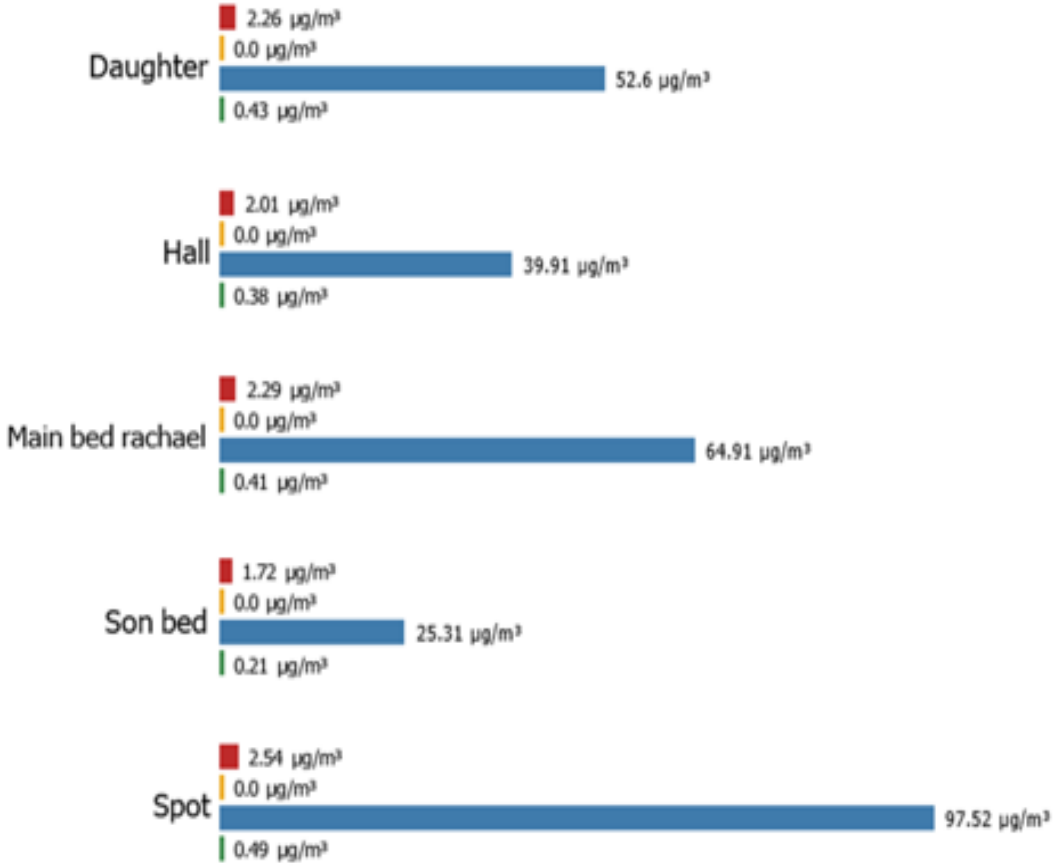
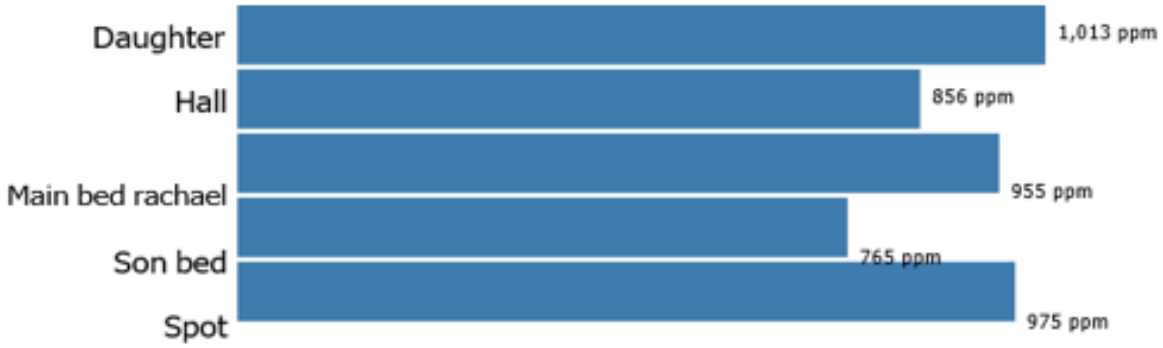


Scan-by-Scan CO_2 Comparison

The Scan by Scan CO_2 Comparison chart shows each area's CO_2 levels in parts per million (ppm) as they compare to other areas assessed.



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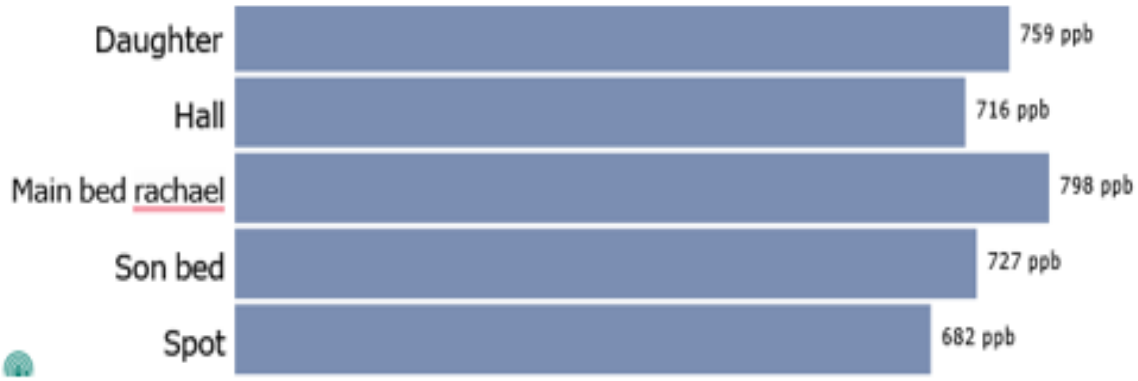
Scan-by-Scan VOC Comparison

The Scan-by-Scan VOC Comparison chart shows each area's VOC levels per billion (ppb) compared to other areas assessed.



Hall Summary

AREA STATS

VOC 716ppb	CO_2 856ppm	Humidity 51%	Temp 20°C

PARTICULATE MATTER (P/M³)

	MOLD	POLLEN	BACTERIA/VIRUS	TOTAL BIO
Quiescent	11K	800	8K	20K
Resuspension	—	—	—	—

OBSERVATIONS

—

SOURCETRACKING MOLD

—

Main bed rachael Summary

AREA STATS

VOC 798ppb	CO_2 955ppm	Humidity 53%	Temp 20°C

PARTICULATE MATTER (P/M³)

	MOLD	POLLEN	BACTERIA/VIRUS	TOTAL BIO
Quiescent	18K	0	8K	26K
Resuspension	—	—	—	—

OBSERVATIONS

—

SOURCETRACKING MOLD

—

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Report Conclusions

All lab analysis is produced into actionable, understandable information to enable you and your healthcare professional to make sensible data-based decisions.

Report Recommendations

Our recommendations will revolve around industry best practices and standards. Most importantly, as an award-winning specialist in remediation, decontamination and risk reduction, where or if necessary, we will provide you with sensible solutions

Please don’t worry about understanding the data; that’s our job, and we will interpret it into understandable actions and meanings, and we're here to answer your questions (by email, please).

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