



## ENVIROSCOPE

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# ENVIRONMENTAL INVESTIGATION REPORT

## Enviroscope® Inspection Overview

Thank you for choosing Building Forensics to conduct an indoor air quality inspection using the Enviroscope® system. This report provides a comprehensive overview of airborne biological concentrations in your building and offers a whole-area exposure assessment. The Enviroscope delivers critical insights into indoor air quality through patented optical particle recognition technology.

## 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 (TVOCs), if equipped

This cutting-edge system interprets results using advanced algorithms and particle analysis, and provides a real-time indoor air quality profile and or targets high-risk areas for specific species or genus

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## How Enviroscope assesses indoor air quality

Enviroscope uses patented optical particle recognition technology to detect the biological portion of particulate matter, including PM2.5, PM10, Mould, Bacteria/Virus, and Pollen. It also reports Relative Humidity and Temperature and may include CO<sub>2</sub> and Total Volatile Organic Compound (VOC) readings, too.

### Important considerations and limitations

1. There are no regulatory standards for acceptable levels of airborne biologicals (including mould) inside buildings. Enviroscope detects and identifies particles individually and applies algorithms and particle analysis to the results. Findings are interpreted using published literature from relevant government agencies, expert research, and field experience.
2. Outdoor air influences indoor bioaerosols. Weather, season, time of day, and local ecology can affect results, and data may vary due to environmental or instrument factors. A baseline outdoor test may be conducted for comparison; if insufficient, additional calculations may be used to establish a baseline.
3. Technicians may include other observations or tests (e.g., visual inspection, surface documentation). Enviroscope measures the biological significance of aerosolised particles and may not detect particles that have not aerosolised. Different sampling methods or written observations reflect the technician's discretion and expertise, and results may vary between methods.

### Analysis of results guidance

1. Results pertain only to this inspection and should not be used to evaluate other buildings. Duplication of this report, except in full, requires written consent from Building Forensics.

## Note about this report.

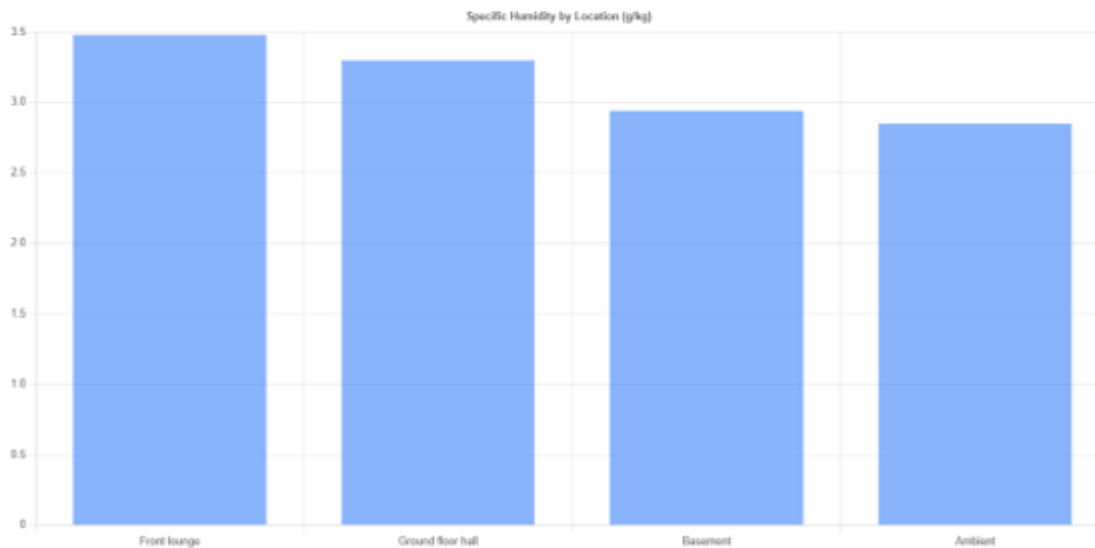
**This report showed elevated levels of contaminants, including dust, bacteria, pollen, viruses, and mould. This resulted in targeted, specific sampling and analysis of high-risk areas. The results of these tests are not part of this report.**

**This makes targeted sampling cost-effective and very beneficial .**

## Table 1 Environmental conditions

Session date: 12/29/25. Environmental measurements (temperature and relative humidity) are taken from the Area Result Summaries (Ambient, Basement, Front lounge, Ground floor hall). Specific humidity values are approximated from these measurements per the provided method, and the table is sorted highest to lowest by specific humidity.

### At-a-glance chart



### Environmental Conditions (sorted by Specific Humidity)

Location	Temperature (°C)	Relative Humidity (%)	Specific Humidity (g/kg)
Front lounge	9	58	3.48
Ground floor hall	9	55	3.30
Basement	7	63	2.94
Ambient	7	61	2.85

## Extremes noted

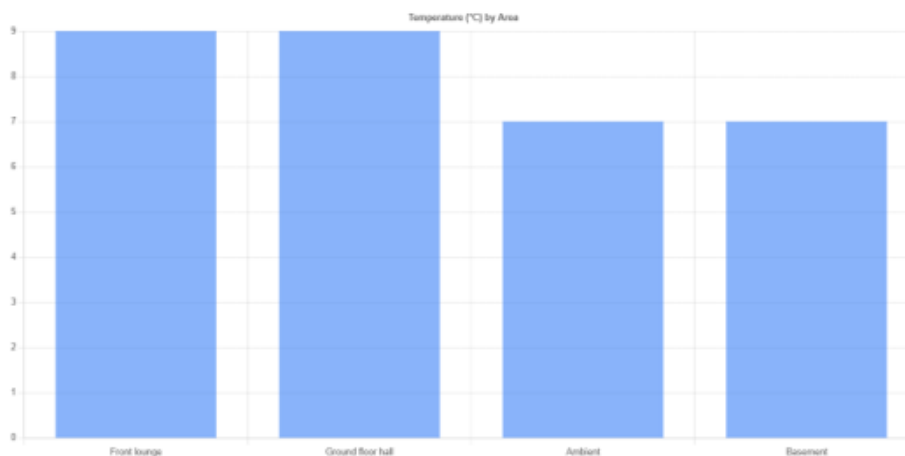
Metric	Highest	Lowest
Specific Humidity (g/kg)	3.48 – Front lounge	2.85 – Ambient
Temperature (°C)	9 – Front lounge; Ground floor hall (tie)	7 – Ambient; Basement (tie)
Relative Humidity (%)	63 – Basement	55 – Ground floor hall

section3 Summary Document Screenshot

## Summary Document Screenshot

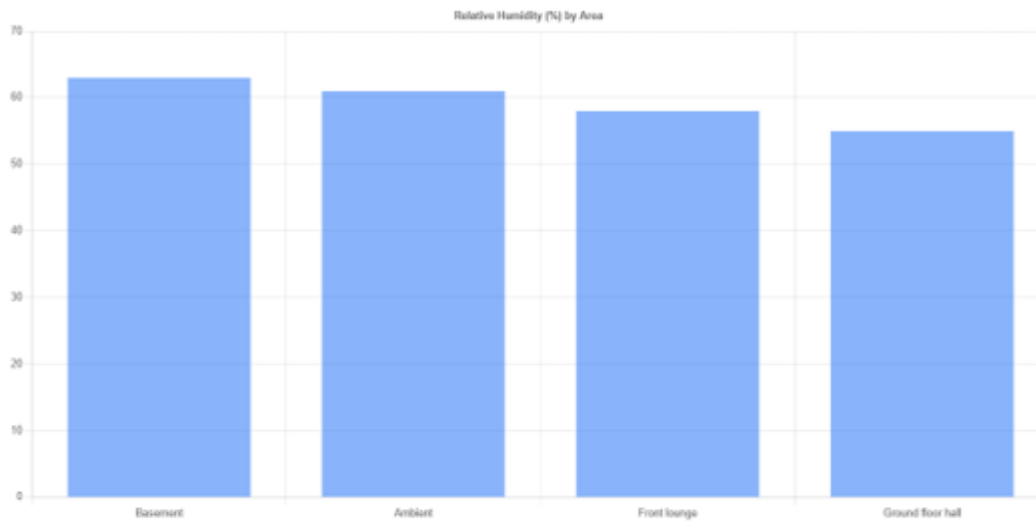
Session performed on 12/29/25. The following tables summarize environmental conditions and airborne biological concentrations for the scanned areas.

### Temperature by Area (°C)



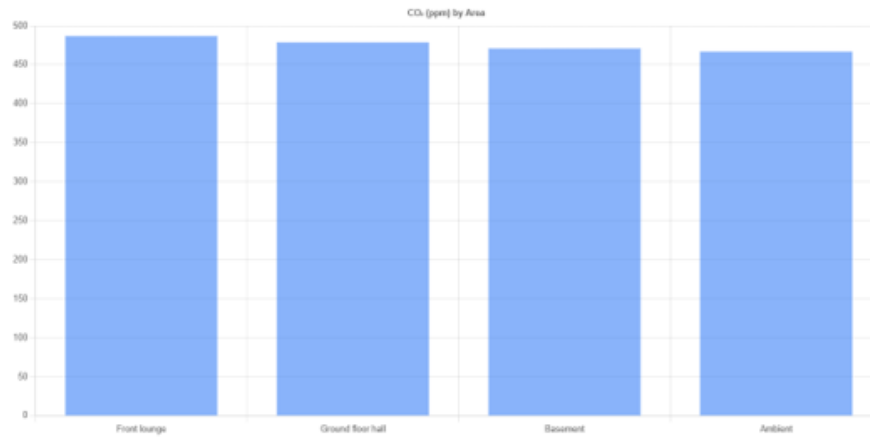
Area	Temperature (°C)
Front lounge	9
Ground floor hall	9
Ambient	7
Basement	7

## Relative Humidity by Area (%)



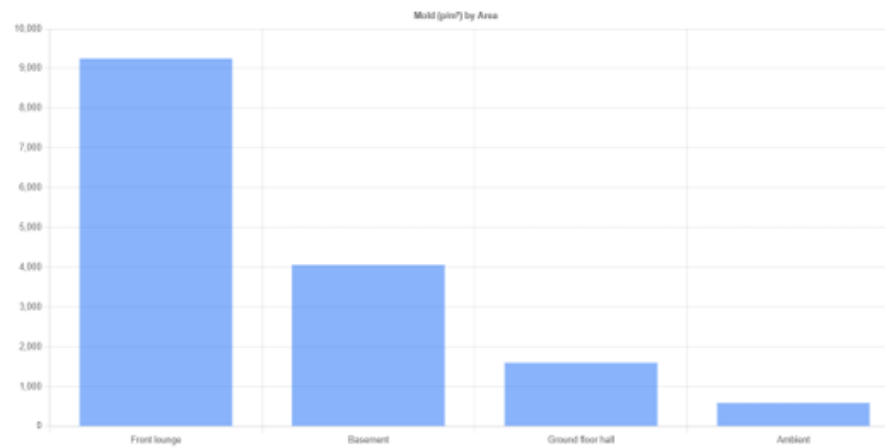
Area	Relative Humidity (%)
Basement	63
Ambient	61
Front lounge	58
Ground floor hall	55

## CO<sub>2</sub> by Area (ppm)



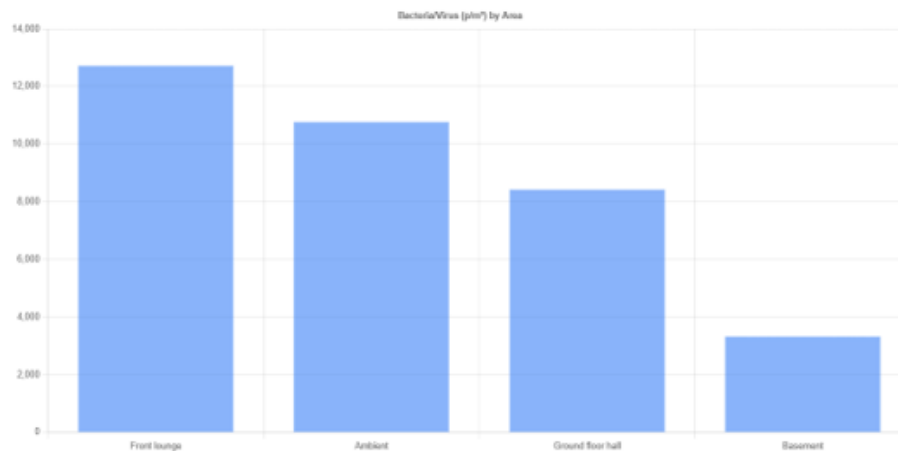
Area	CO <sub>2</sub> (ppm)
Front lounge	487
Ground floor hall	479
Basement	471
Ambient	467

## Mold Concentration by Area (p/m<sup>3</sup>)



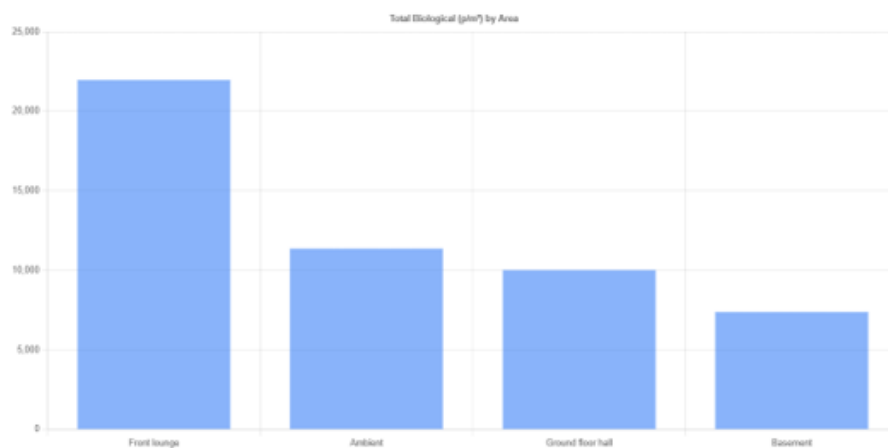
Area	Mold (p/m <sup>3</sup> )	Mold Label
Front lounge	9252	Y
Basement	4064	G
Ground floor hall	1604	G
Ambient	598	G

## Bacteria/Virus Concentration by Area (p/m<sup>3</sup>)



Area	Bacteria/Virus (p/m <sup>3</sup> )
Front lounge	12722
Ambient	10767
Ground floor hall	8421
Basement	3325

## Total Biological Loading by Area (p/m<sup>3</sup>)



Area	Total Biological (p/m <sup>3</sup> )
Front lounge	21974
Ambient	11365
Ground floor hall	10025
Basement	7390

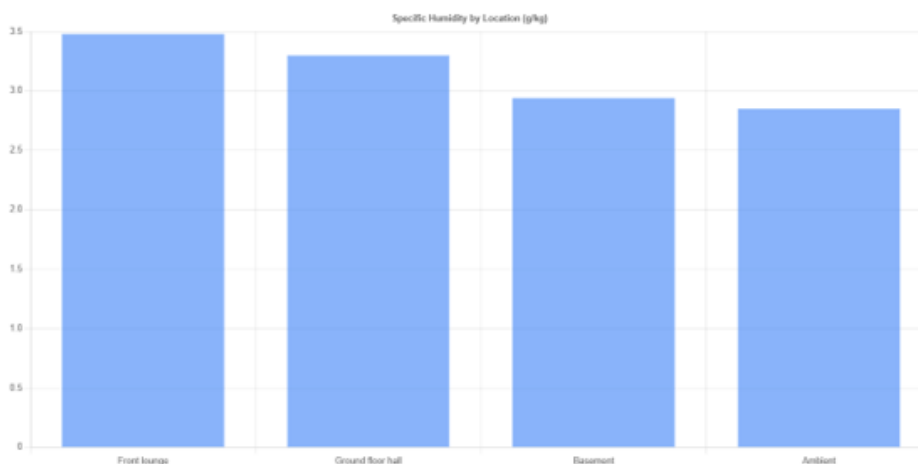
## Environmental Conditions Data Table

Environmental condition readings captured during the InstaScope session performed on 12/29/25. Specific humidity (g/kg) estimated as  $(RH \times T) / 150$ . Table sorted by Specific Humidity (descending).

Location	Temperature (°C)	Relative Humidity (%)	Specific Humidity (g/kg)
Front lounge	9	58	3.48

Location	Temperature (°C)	Relative Humidity (%)	Specific Humidity (g/kg)
Ground floor hall	9	55	3.30
Basement	7	63	2.94
Ambient	7	61	2.85

## At-a-Glance Chart



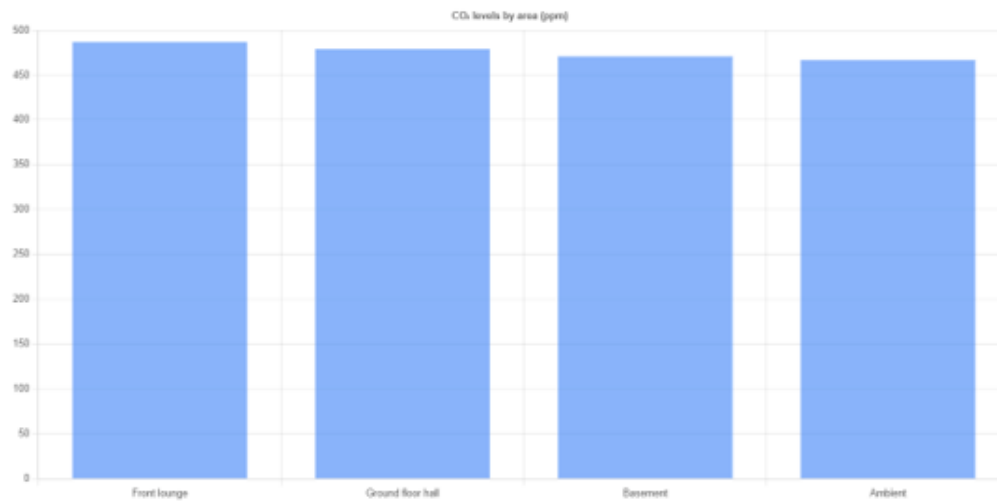
## Highest and Lowest Readings

- **Highest temperature:** 9°C (Front lounge, Ground floor hall)
- **Lowest temperature:** 7°C (Ambient, Basement)
- **Highest relative humidity:** 63% (Basement)
- **Lowest relative humidity:** 55% (Ground floor hall)
- **Highest specific humidity:** 3.48 g/kg (Front lounge)
- **Lowest specific humidity:** 2.85 g/kg (Ambient)

## Table 2 Carbon Dioxide Levels Indicating ventilation

Carbon dioxide (CO<sub>2</sub>) readings per area from the session report. Values are sourced from the Scan-by-Scan CO<sub>2</sub> Comparison and Area Result Summaries and are sorted from highest to lowest.

Location	CO <sub>2</sub> (ppm)
Front lounge	487
Ground floor hall	479
Basement	471
Ambient	467

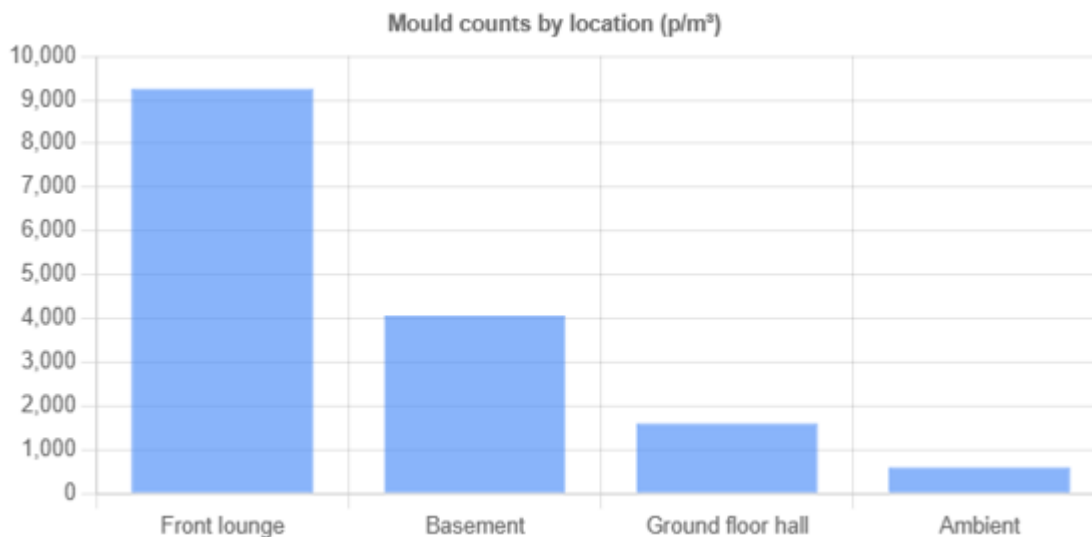


## Table 4: Mould Respiratory Risk

Mould levels for each location from the InstaScope session report (particles per cubic meter, p/m<sup>3</sup>). The source provides qualitative color codes (Green/Yellow) but does not define Q-rating categories (Q1-Q4); therefore the Q-rating column is omitted.

Location	Mould count (p/m <sup>3</sup> )
Front lounge	9,252

Location	Mould count (p/m <sup>3</sup> )
Basement	4,064
Ground floor hall	1,604
Ambient	598



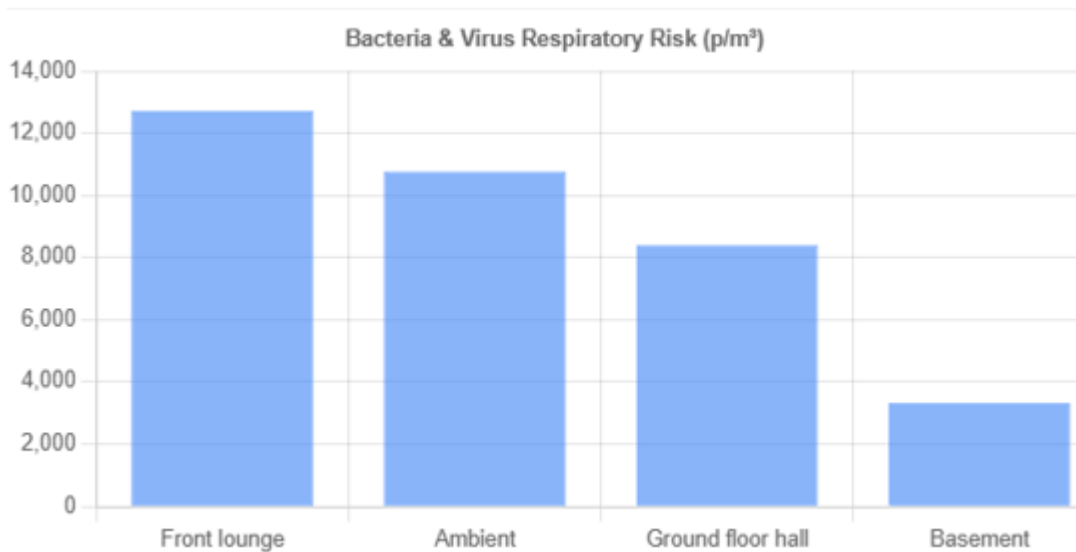
## Medically Harmful Mould Overview

Name	Target Organs	Symptoms	Precautions
Mould	Respiratory system (nose, sinuses, lungs); eyes	Sneezing, nasal congestion/runny nose, cough, wheeze, throat and eye irritation, shortness of breath; can exacerbate asthma; prolonged or heavy exposure may trigger hypersensitivity pneumonitis (fever, chest tightness, fatigue)	Control moisture (fix leaks, dehumidify to 30–50% RH), improve ventilation, clean small non-porous surfaces with detergent and dry thoroughly, discard porous materials with visible growth, use HEPA filtration/vacuuming, wear gloves and an N95/respirator during cleanup, keep high-risk individuals (asthma, infants, elderly, immunocompromised) away, seek professional remediation for large or recurring growth

## Table 5: Bacteria & Virus Respiratory Risk

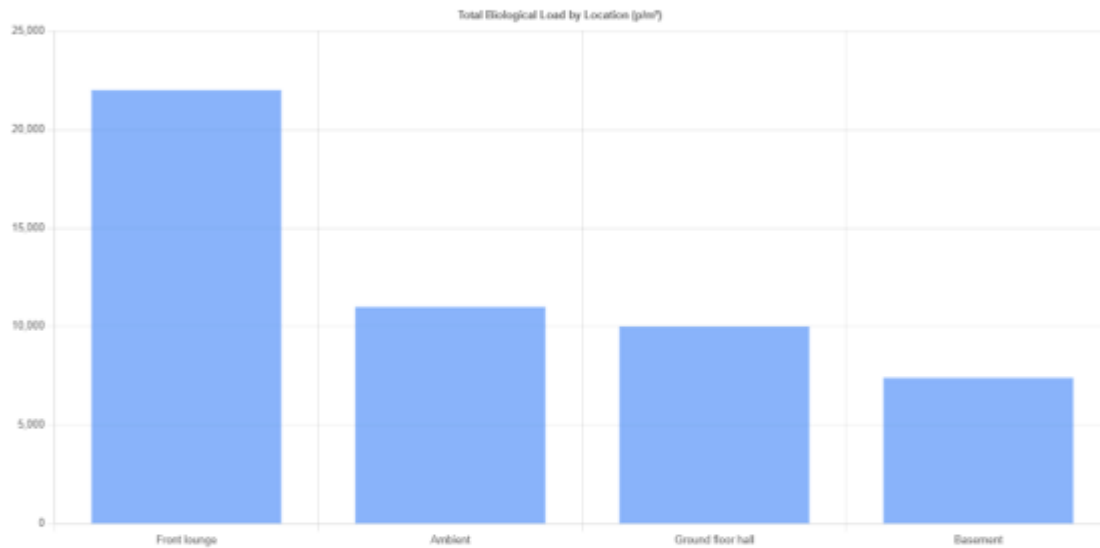
Extracted from the session summary (performed on 12/29/25). Values are particles per cubic meter (p/m<sup>3</sup>).

Location	Count	Q rating
Front lounge	12,722	Q4
Ambient	10,767	Q3
Ground floor hall	8,421	Q2
Basement	3,325	Q1



## Table 7 - Total Bio loading

Total biological loading per area, sourced from the Area Result Summaries (Quiescent, TOTAL BIO).

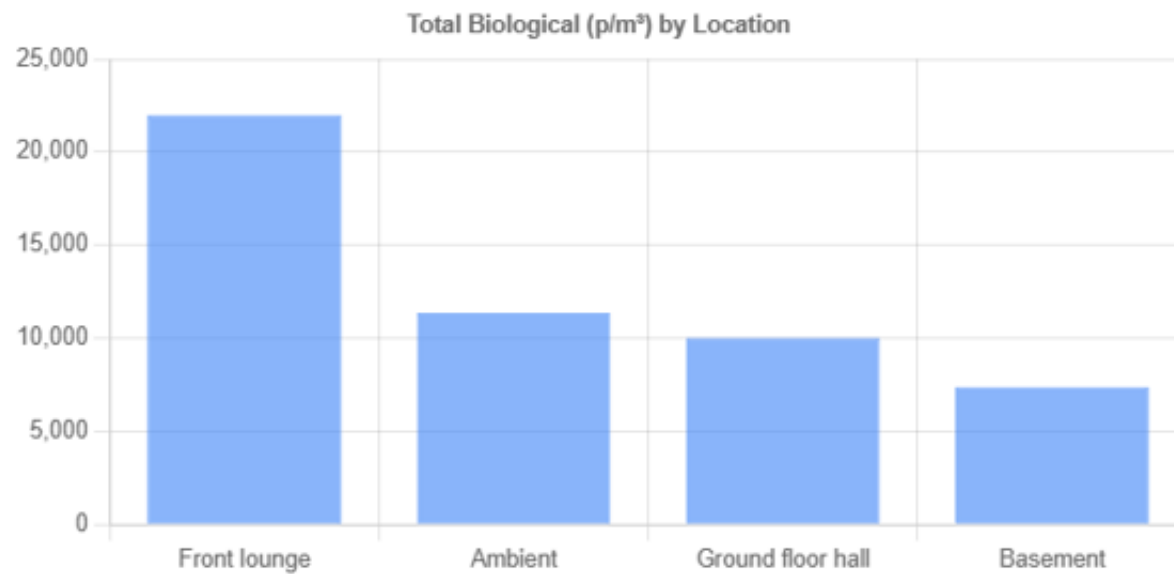


Location	Total Bio Load (p/m³)	Q rating
Front lounge	22K	Q4
Ambient	11K	Q3
Ground floor hall	10K	Q2

## Table 9 - Total air particle burden

Summary of total biological particle concentrations ( $\text{p}/\text{m}^3$ ) by area from the Scan-by-Scan Total Bio Comparison. Values are sorted highest to lowest.

Location	Total Biological ( $\text{p}/\text{m}^3$ )
Front lounge	21,974
Ambient	11,365
Ground floor hall	10,025
Basement	7,390

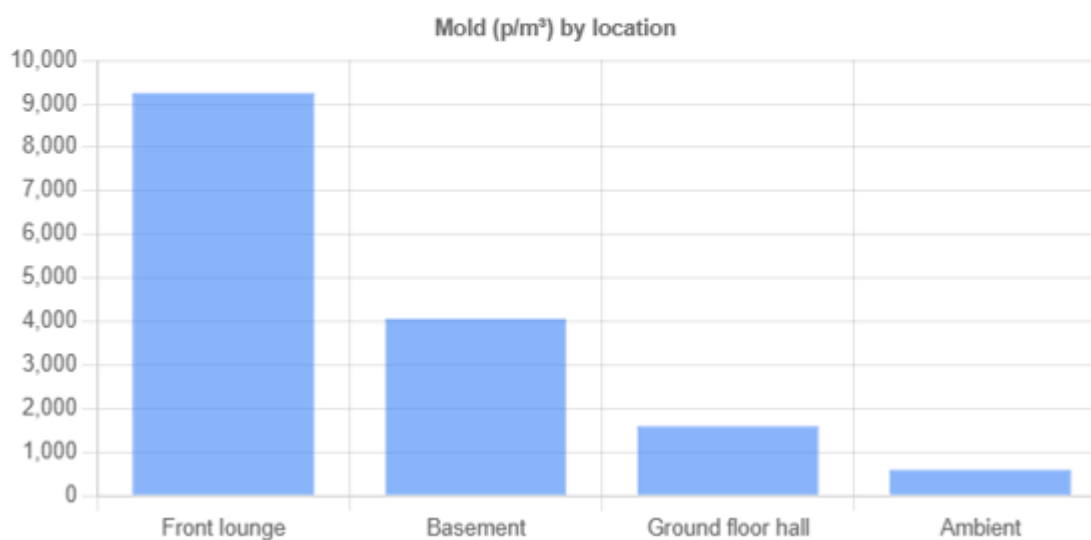


At-a-glance bar chart of total biological load by location.

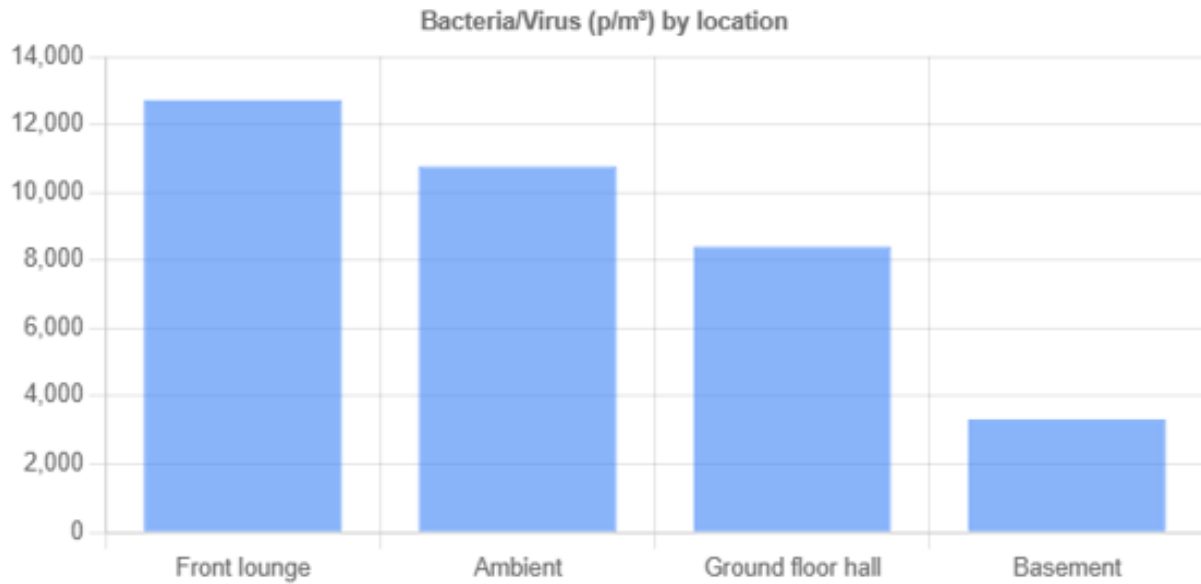
## Area-by-area mould comparison risks

The combined chart has been split into four focused tables with at-a-glance bar charts for Mold, Bacteria/Virus, Pollen, and Total Biological loading. Values are InstaScope particle counts reported in particles per cubic meter ( $p/m^3$ ) for areas scanned on 12/29/25: Ambient, Basement, Front lounge, Ground floor hall.

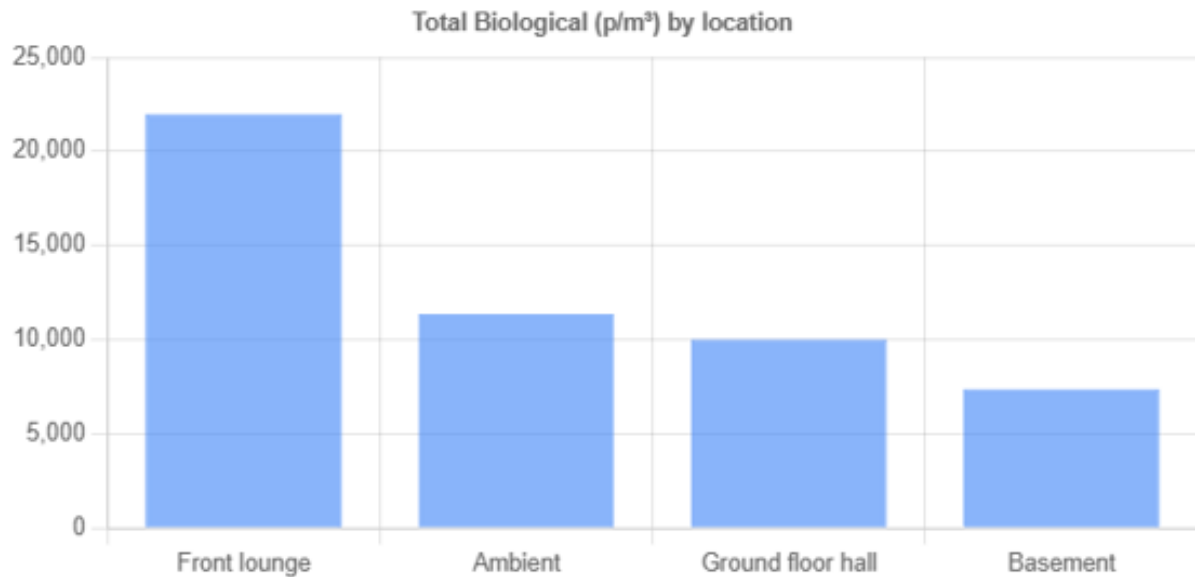
**Table 11 — Mold ( $p/m^3$ )**



Location	Count ( $p/m^3$ )
Front lounge	9,252
Basement	4,064
Ground floor hall	1,604
Ambient	598

**Table 12 — Bacteria/Virus (p/m<sup>3</sup>)**

Location	Count (p/m <sup>3</sup> )
Front lounge	12,722
Ambient	10,767
Ground floor hall	8,421
Basement	3,325

**Table 14 — Total Biological (p/m<sup>3</sup>)**

Location	Count (p/m <sup>3</sup> )
Front lounge	21,974
Ambient	11,365
Ground floor hall	10,025
Basement	7,390

## Area -by -Area Total Particulate Matter Comparison

This section compares particulate matter by area, showing PM2.5, PM2.5 BIO, PM10, and PM10 BIO in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) for each scanned location.

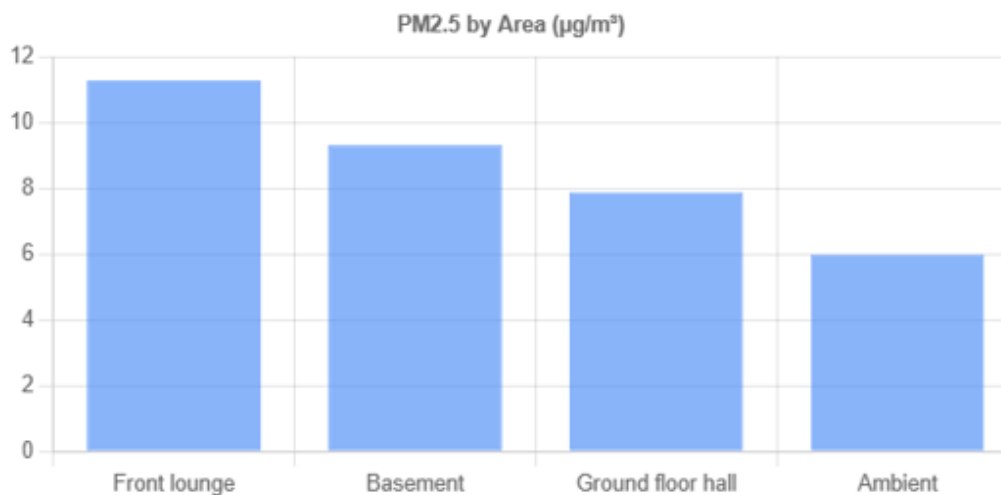
Standards and guidelines (as referenced in the report): The EPA's National Ambient Air Quality Standards (NAAQS) define acceptable ambient levels for particle mass: **PM2.5** (fine particles  $< 2.5\mu\text{m}$ ) has a standard of **35  $\mu\text{g}/\text{m}^3$** ; **PM10** (coarse particles  $< 10\mu\text{m}$ ) has a standard of **150  $\mu\text{g}/\text{m}^3$** . These standards are referenced by OSHA, NIOSH, ACGIH, and ASHRAE for evaluating air quality. For reference, the average human hair is about  $70\mu\text{m}$  in diameter.

## Legend

- PM2.5
- PM2.5 BIO
- PM10
- PM10 BIO

## PM2.5 ( $\mu\text{g}/\text{m}^3$ )

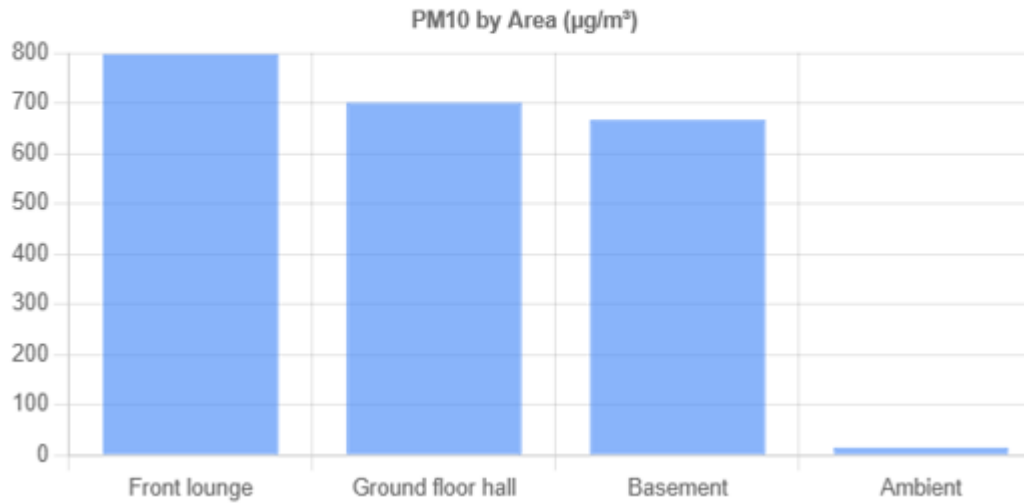
PM2.5 values by area



Area	Value ( $\mu\text{g}/\text{m}^3$ )
Front lounge	11.27
Basement	9.31
Ground floor hall	7.88
Ambient	5.99

## PM10 ( $\mu\text{g}/\text{m}^3$ )

PM10 values by area

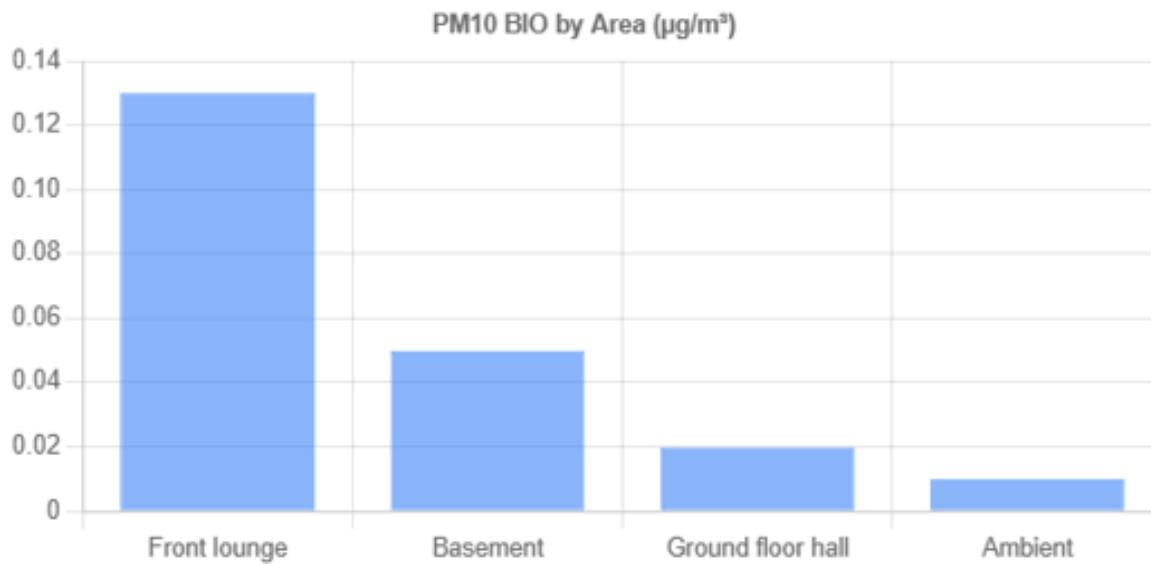


Area	Value ( $\mu\text{g}/\text{m}^3$ )
Front lounge	797.45
Ground floor hall	700.91
Basement	666.86
Ambient	15.68

## Biological

### PM10 BIO ( $\mu\text{g}/\text{m}^3$ )

PM10 BIO values by area



Area	Value ( $\mu\text{g}/\text{m}^3$ )
Front lounge	0.13
Basement	0.05
Ground floor hall	0.02
Ambient	0.01

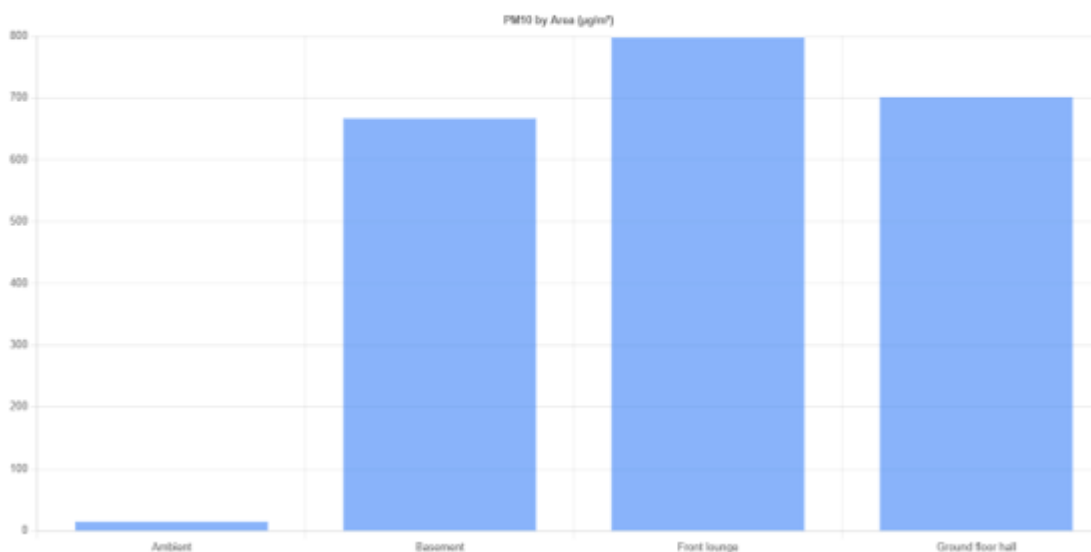
## Area summary metrics

Area	Mold (p/m <sup>3</sup> )	Bacteria/Virus (p/m <sup>3</sup> )	Total Bio (p/m <sup>3</sup> )	PM10 (µg/m <sup>3</sup> )	VOC (ppb)	CO <sub>2</sub> (ppm)
Ambient	598	10,767	11,365	15.68	0	467
Basement	4,064	3,325	7,390	666.86	0	471

Front lounge	9,252	12,722	21,974	797.45	0	487
Ground floor hall	1,604	8,421	10,025	700.91	0	479

## PM10 exposure overview

PM10 levels substantially exceeded the 150 µg/m<sup>3</sup> reference in all indoor areas sampled.



## Health and risk considerations

The Yellow mould classification in Front lounge indicates moderately higher airborne mould levels relative to the outdoor baseline and other rooms and suggests that this area might benefit from additional inspection. No rooms were classified Red.

Regarding particulates, the report states: *"The fine particle (PM2.5) exposure standard is 35 µg/m<sup>3</sup>; the coarse particle (PM10) is 150 µg/m<sup>3</sup>. Buildings whose airborne particle concentrations exceed this should be remediated."* Given the PM10 exceedances in all indoor areas, remediation should be considered.

Results are specific to this session and are interpreted relative to outdoor conditions and other rooms scanned. Your technician should provide recommendations for lowering bioaerosol levels based on the Centres for Disease Control and Prevention (CDC) guidelines and industry's best practices

## Dangerous Microorganisms and Mould Overview

It should be recognised here that the Enviroscope cannot distinguish between harmful or typical species of mould or bacteria. It simply identifies levels and provides algorithms of risk and hazard based on all factors

Name	Target Organs/Systems	Key Symptoms	Precautions / Preventive Measures
Mould	Respiratory tract (nose, sinuses, lungs); eyes; skin	Nasal congestion, sneezing, cough, wheeze/asthma flare- ups, sinus irritation, itchy/watery eyes, skin rash; higher risk of infections in immunocompromised individuals	<ul style="list-style-type: none"> <li>- Control indoor humidity (30–50%) and promptly fix leaks/water intrusion</li> <li>- Increase ventilation and use HEPA filtration/air purifiers</li> <li>- Remove/replace water-damaged materials; clean visible mould with proper PPE</li> <li>- Limit disturbance of contaminated dust during cleaning/remediation</li> </ul>

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Bacteria/Virus	Respiratory tract; gastrointestinal system; systemic involvement possible depending on pathogen	Fever, sore throat, cough, shortness of breath; gastrointestinal upset (nausea, vomiting, diarrhea) for certain pathogens; severity varies by organism and host risk factors	<ul style="list-style-type: none"><li>- Hand hygiene and avoid touching face; cover coughs/sneezes</li><li>- Clean/disinfect high-touch surfaces regularly</li><li>- Improve ventilation and use HEPA filtration in shared spaces</li><li>- Stay home when ill and maintain distance from symptomatic individuals</li></ul>
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## Risk Compounding and Recommendations

Indoor Air Quality Session Report performed on 12/29/25 using Enviroscope. This session provided area-by-area measurements of airborne biological concentrations and particulate matter within the structure, alongside outdoor (Ambient) baseline readings.

In this session, multiple elevated indicators were observed in the same indoor areas. Notably, the Front lounge showed the highest total biological concentration, with PM10 levels exceeding the referenced standard in this report. Whilst standards are recognised in general terms, health issues may be caused by much lower levels, and we assess comparison areas as a better guide.

**Conclusions**

PM10 levels ( $\mu\text{g}/\text{m}^3$ ): Basement 666.86, Front lounge 797.45, and Ground floor hall 700.91. The report references the EPA NAAQS PM10 standard of 150  $\mu\text{g}/\text{m}^3$  and states: buildings whose airborne particle concentrations exceed this should be remediated. Building Forensics does not recognise these USA standards, and far lower levels of toxic substances may be present than stated thresholds

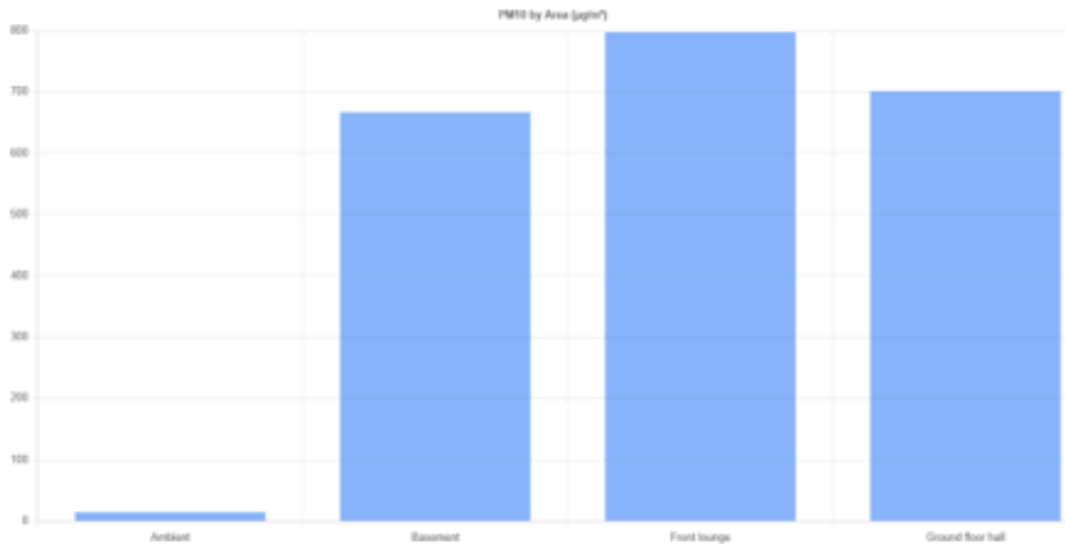
Total Biological ( $\text{p}/\text{m}^3$ ): Front lounge 21,974 (highest), Ambient 11,365, Ground floor hall 10,025, Basement 7,390. Mould ( $\text{p}/\text{m}^3$ ) peaked in the Front lounge at 9,252; Bacteria/Virus ( $\text{p}/\text{m}^3$ ) was also highest in the Front lounge at 12,722.

CO<sub>2</sub> levels ranged from 467 to 487 ppm across the scanned environments. The report notes an absence of regulatory standards for acceptable airborne biological levels (including mould). Results are interpreted relative to the outdoor conditions and relevant literature, and indoor levels can be influenced by weather, season, time of day, and local ecology.

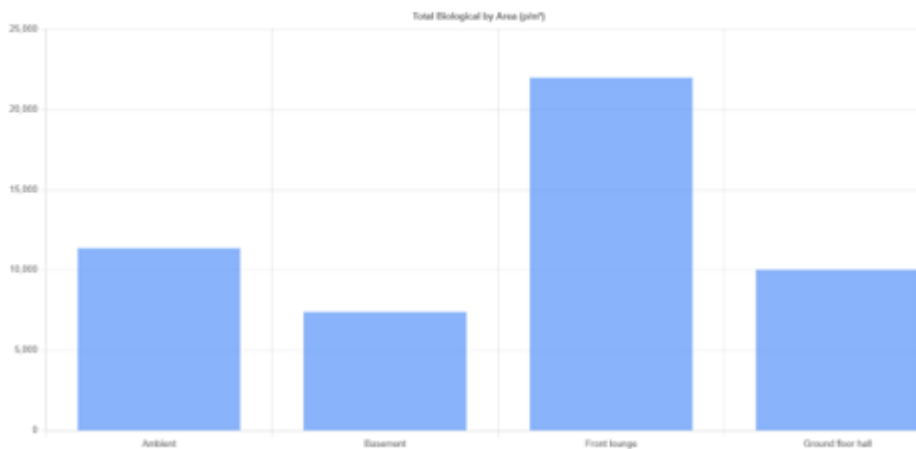
**Key Area Metrics**

Area	Mould ( $\text{p}/\text{m}^3$ )	Bacteria/Virus ( $\text{p}/\text{m}^3$ )	Total Biological ( $\text{p}/\text{m}^3$ )	PM10 ( $\mu\text{g}/\text{m}^3$ )	Mould Classification
Ambient	598	10,767	11,365	15.68	Green
Basement	4,064	3,325	7,390	666.86	Green
Front lounge	9,252	12,722	21,974	797.45	Yellow
Ground floor hall	1,604	8,421	10,025	700.91	Green

## PM10 Comparison



## Total Biological Comparison



### Recommendations

This report serves as a risk assessment based on Enviroscope e measurements. The report notes that technician-led recommendations should follow USA guidelines and industry best practices. For more assistance, contact Building Forensics at 0799 050 0999 or [info@buildingforensics.co.uk](mailto:info@buildingforensics.co.uk).

### Priorities

Further investigation in areas where multiple elevated indicators co-occur. In this session, the Front lounge showed the highest total biological (21,974 p/m<sup>3</sup>) and PM10 at 797.45 µg/m<sup>3</sup>.

Address PM10 exceedances relative to the referenced 150 µg/m<sup>3</sup> standard. Measured values: Basement 666.86 µg/m<sup>3</sup>, Front lounge 797.45 µg/m<sup>3</sup>, Ground floor hall 700.91 µg/m<sup>3</sup>. The report states that buildings whose airborne particle concentrations exceed this should be remediated.

Consider additional inspection for areas with higher mould classification and counts, especially the Front lounge (Yellow; mould 9,252 p/m<sup>3</sup>; bacteria/virus 12,722 p/m<sup>3</sup>).

If occupants experience unexplained health issues, conduct further hazard assessment, focusing on rooms with elevated PM10 and higher biological counts identified in this report.