



PRS

Transforming Indoor Air Quality &
Energy Efficiency Worldwide



PRS PILOT: MUMS V MOULD

RESIDENTIAL MOULD MITIGATION

Briefing Document
January 2026

Patents

Granted:

GB 2601361, GB 2614287, GB 2619499, GB 2633940

Applications:

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EU Pending: 23730188.2, 22840285.5

IND: App No: 202417055819

EXECUTIVE SUMMARY

This document synthesizes the findings of a case study chronicling a North London family's severe health crisis resulting from over a decade of exposure to damp and mould in their social housing property. The intervention, a pilot project led by **Pathogen Reduction Solutions (PRS)** after coordination with law firm **DWF** and the campaign group **Mums V Mould**, demonstrated that targeted air sanitization technology can produce rapid, life-changing health improvements, offering a practical pathway for housing providers to comply with Awaab's Law.

The family experienced a range of debilitating physical and mental afflictions, including life-threatening seizures, epilepsy, severe anxiety, respiratory illnesses, and developmental regression, which were directly linked to high levels of airborne mould. Baseline testing revealed concentrations of *Aspergillus/Penicillium* at 10–14 times outdoor levels and the presence of toxigenic moulds like *Chaetomium*.

A collaborative pilot deployed the PRS "Breathe Easy" Sustainable Air Solution, a UVC-based air treatment technology, over a three-week period. The intervention was overseen by a multi-disciplinary team including **DWF**, ventilation specialists **Farmwood M&E Services**, and academics from **The University of Bath**.

The results were immediate and profound. Within days, the family reported significant improvements in sleep, mental health, and skin conditions. Crucially, the adolescent son who had suffered from severe epilepsy experienced no seizures or related symptoms during the trial. Environmental testing confirmed the technology's efficacy, showing an approximate 88% reduction in key airborne mould species and a 50% reduction in harmful particulate matter.

The case study concludes that while the PRS air treatment technology does not remediate underlying structural defects, it serves as a critical, fast-acting public health protection measure. It provides an "emergency response" to mitigate immediate harm to tenants, giving housing providers the time needed to investigate and perform permanent repairs in compliance with the stringent timelines mandated by Awaab's Law. The findings highlight a scalable, evidence-based solution to a systemic housing crisis that currently costs the NHS an estimated £1.4 billion annually.

"My heart goes out to every mother who lives in a damp property and can't escape it. That's why I have created Indoor Air Aware and the Mums vs Mould online community to empower families to protect their health..."

— **Lisa Malyon**, Founder of Mums v Mould

1. THE HUMAN IMPACT: A DECADE OF DECLINING HEALTH

1.1. The Family's Ordeal

The case study centres on a family of six (a mother, her four sons, and her younger sister) living in a social housing maisonette in Islington since 2012. Upon moving in, the mother, **M**, noted signs of disrepair, water damage, and mould. The family, previously in stable health, experienced a steady and steep decline.

Key Health Impacts Chronicled:

- ◆ **Adult Child W (Aged 20):** Suffered from recurring fevers and headaches, leading to a 2019 diagnosis of epilepsy and an anxiety disorder. His seizures became so severe and prolonged that they required multiple hospitalizations, with physicians expressing concern he could break his neck or back. A urine test later confirmed he had mould toxicity.
- ◆ **Adult Child X (Aged 19):** Developed severe anxiety, insomnia, night terrors, and recurring nosebleeds. In 2021, he was hospitalized with a severe infection treated as suspected sepsis.
- ◆ **Child Y (Aged 15):** Experienced developmental regression, losing the limited language he had. He also suffered from sleep disturbance and behavioural challenges.
- ◆ **Child Z (Aged 13):** Developed swollen adenoids, a constant blocked nose, and chronic mouth breathing, which affected his jaw development.
- ◆ **Child S (Aged 12):** Suffered from sensitive eczema, anxiety, and a lack of confidence.
- ◆ **Mother M:** The cumulative strain prevented her from working and led to significant financial losses, estimated at over £30,000 for private medical treatments and replacing mould-damaged property.

The family's health improved when they were temporarily away from the property but deteriorated sharply upon their return, establishing a clear link between the home environment and their illnesses.

1.2. Institutional Response and Advocacy

The family's repeated pleas to their Social Housing Provider (SHP) were met with superficial interventions, such as cosmetic fixes and mould washes, which failed to address the root causes of leaks and damp. The SHP initially determined the family's case was not a rehousing matter and that repair requests did not qualify for investment. A legal claim in October 2023 resulted in a low settlement sum and some remediation, but no comprehensive investigation or air quality testing was performed.

Frustrated, **M** connected with **Mums v Mould**, a voluntary campaign group founded by Lisa Malyon. Malyon, whose own family suffered severe health effects from mould exposure, became a key advocate, engaging with the SHP, commissioning mould surveys, and raising the case at a parliamentary meeting.

2. A COLLABORATIVE INTERVENTION PILOT

Through Mums v Mould, the family was introduced to a coalition of experts who mobilized an urgent pilot project on a pro bono basis.

- ◆ **Pathogen Reduction Solutions (PRS):** A UK-based science and engineering company provided its multi-patented UVC optical-cavity air treatment system, the “Breathe Easy” Sustainable Air Solution. The technology is designed to inactivate airborne pathogens, mould spores, and bio-aerosols in real time.
- ◆ **DWF:** A global law firm provided pro bono legal support and facilitated the collaboration between Mums v Mould and PRS.
- ◆ **Farmwood M&E Services:** A ventilation specialist firm, led by Nathan Wood, advised on the sampling strategy, oversaw environmental measurements, and supported the installation.
- ◆ **The University of Bath:** Renowned mycology specialist Dr. Daniel Henck and student Matthew Wareham from the Milner Centre for Evolution provided independent academic review of the testing protocols and developed a detailed health survey for the family.

Within 10 days, two PRS air-treatment units, dehumidifiers, and high-tech monitoring equipment were installed in the property. The intervention ran for approximately three weeks from October 18 to November 7, 2025, before the family was temporarily moved to alternative accommodation for remedial works.

The case study concludes that while the PRS air treatment technology does not remediate underlying structural defects, it serves as a critical, fast-acting public health protection measure. It provides an “emergency response” to mitigate immediate harm to tenants, giving housing providers the time needed to investigate and perform permanent repairs in compliance with the stringent timelines mandated by Awaab’s Law. The findings highlight a scalable, evidence-based solution to a systemic housing crisis that currently costs the NHS an estimated £1.4 billion annually.



Legal Services



Campaign Group



Education & Awareness



Ventilation Services



Testing & Review

3. PILOT RESULTS: A HEALTH TRANSFORMATION

The pilot produced substantial, measurable improvements in both the property’s indoor air quality and the family’s health and wellbeing.

3.1. Environmental Improvements

Baseline testing confirmed a hazardous indoor environment, while post-intervention sampling demonstrated the efficacy of the PRS system. The technology operates by destroying spores and fungal fragments during air recirculation, an outcome that dehumidifiers, extractor fans, or surface cleaning cannot achieve.

Pre vs. Post PRS Air Quality Metrics (18 Oct vs. 22 Oct 2025)

Parameter	Pre-PRS (18 Oct 2025)	Post-PRS (22 Oct 2025)	Change
Aspergillus / Penicillium (avg.)	190 spores/m ³	22 spores/m ³	-88%
Cladosporium (avg.)	760 spores/m ³	575 spores/m ³	-24%
Total Particulate Matter (< 10 µm)	≈ 120,000 /m ³	≈ 60,000 /m ³	-50%
Relative Humidity (RH)	> 60%	45-55%	Stabilised
Nitrogen Dioxide (NO ₂) Indoors	< 10 µg/m ³ (vs. 30-40 outdoor)	< 10 µg/m ³	-70% vs. Outdoor

3.2. Health and Wellbeing Outcomes

The family began experiencing significant health benefits within days of the PRS system’s installation. The daily health diary and formal surveys captured a dramatic turnaround.

“The PRS equipment has been life changing for my family and I. Our mental and physical health has improved. In particular sleep has improved substantially for every member of our household.”

— **Mother, M**

“I can breathe better and I feel calmer and happy. My skin is also better”

— **Child S**

Summary of Health Improvements During PRS Deployment:

Health Aspect	Pre-PRS	Post-PRS
Sleep	Interrupted; melatonin used nightly for one child.	Full nights' sleep; melatonin use stopped.
Seizures (Adult Child W)	Regular monthly episodes.	None recorded.
Breathing / Asthma	Wheezing, coughing, and regular inhaler use.	No inhaler needed.
Eczema / Skin	Active rashes and itching.	Healed completely.
Mood / Anxiety	Irritable and anxious.	Calm and stable.
Fatigue	Constant tiredness.	Normal energy levels.

3.3. Health Survey Results

A formal health questionnaire developed by The University of Bath asked family members to rank their wellbeing on a scale of 1-10 before and after the PRS installation. The results showed a profound improvement across all metrics.

Pre vs. Post PRS Air Quality Metrics (18 Oct vs. 22 Oct 2025)

Question	Average Answer Before	Average Answer After	Average Change
1. Physical Health & Energy	2.17	6	3.8
2. Mental Wellbeing & Sharpness	1.83	5.83	4
3. Breathing in Living Room	3	8	5
4. Breathing in Bedroom	2.33	6.5	4.17
5. General Air Quality	2	7.3	5.3
6. Comfort Levels in House	2.5	7	4.5
Overall Average Change			4.46

All family members agreed or strongly agreed with the statements: *“The air quality has improved within the last 24hrs”* and *“Would you like to retain the PRS equipment in your Home after the pilot.”*

4. BROADER IMPLICATIONS AND CONTEXT

4.1. A Pathway to Awaab's Law Compliance

Effective October 27, 2025, Awaab's Law imposes strict deadlines on social housing providers to address emergency hazards like damp and mould. However, remediating the root structural causes can take significant time. This pilot demonstrates a practical, two-step compliance pathway:

1. **Immediate Mitigation:** Deploy air treatment technology like PRS as an "emergency response" to immediately reduce the health risk from airborne exposure.
2. **Root-Cause Remediation:** With tenants protected, undertake the necessary investigations and structural repairs to permanently fix the underlying defects.

The report emphasizes that PRS technology is a temporary public-health protection measure and not a substitute for permanent fabric repair

4.2. The Legal and Governance Landscape

The document outlines the complex legal environment surrounding damp and mould claims. Unlike clear-cut pollution cases, housing disrepair involves a wide range of potentially responsible parties, including landlords, councils, manufacturers, installers, and regulators. The health consequences are highly variable, making causal links difficult to prove.

The report draws parallels between the systemic issues observed in the housing sector and other major UK scandals, noting **corporate governance failings** such as denial, victim-blaming, and a fear of "opening the floodgates," similar to aspects of the Post Office and Grenfell Tower scandals. The new "Hillsborough Law" and its "duty of candour" for public bodies is also noted as potentially impactful.

4.3. The Ventilation Paradox and Economic Costs

The report challenges the view of ventilation as a standalone solution, arguing it can function as a risk multiplier if poorly designed, maintained, or unsuited to the building. In this case, ventilation was insufficient to control moisture, allowing airborne pathogens to accumulate. The rapid improvement post-PRS deployment highlights the importance of direct air treatment as a complementary control.

The societal costs of inaction are staggering. The Building Research Establishment (BRE) estimates the NHS incurs **£1.4 billion annually** treating illnesses from poor quality housing, with a full societal cost of **£18.5 billion per year**. This represents a massive externality borne by tenants and the public healthcare system.



Contact us for further information: enquiry@pathogen-reduction.com | +44 203 393 3560

"PRS provides sustained economic and environmental benefits, significantly reducing energy costs and carbon footprints, while creating a healthier and more productive environment for all..."

- PRS Team



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