

# veriDART® Indoor Infectious Aerosol Modelling in Buildings

(HBI Working in Partnership with SafeTraces)

HBI offer market-leading testing and modelling of building ventilation and indoor air movement, utilising veriDART® technology provided by SafeTraces. This inspection programme assists clients in reducing the risk of aerosol infection transmission while operating buildings in the safest possible manner. Proactive testing can improve Staff Wellbeing giving a reassuring and productive return to office working while delivering potential cost savings when running HVAC systems.

## Background

For an airborne pathogen like SARS-CoV-2, best practices and regulation increasingly emphasize the critical importance of ventilation, filtration, and engineering controls to mitigate infectious airborne exposure risk in all indoor spaces.

Until now, there has been limited ability to measure and verify the transmission risk from infectious aerosols and the efficacy of HVAC systems in removing them. The veriDART® system offers a solution to assess and reduce these risks in your workspaces.

HBI is partnered with Safetraces to provide their veriDART® building testing system. veriDART® is the first and only liquid aerosol-based solution for verifying ventilation and filtration efficacy to assess and mitigate airborne exposure risk to infectious droplet-borne pathogens. Testing can be used to make informed decisions on keeping people safe in any indoor environment.



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The system uses airborne tracers that mimic human saliva and aerosol chemical composition and mobility to verify ventilation and filtration effectiveness. veriDART has been approved and complies with OSHA and NIOSH safe exposure limits.

## veriDART® – How Does it Work?

veriDART® works by releasing aerosol droplets within the occupied spaces in buildings and testing their movement at defined locations. This allows clients to-

- Establish baseline risk assessment by identifying high-risk transmission routes in a building
- Compare building ventilation operating strategies, such as using 100% fresh air settings compared to different percentages of recirculated air
- Assess efficacy of ventilation and filtration by measuring the impact of existing engineering controls and inform potential improvements
- Evaluate remediation actions by measuring the impact of improvements taken after initial testing



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## veriDART® – Service Offerings

### Baseline Survey

This standard baseline assessment uses veriDART® to provide data detailing how aerosols travel through a space and indicate the aerosol concentrations under your building's current engineering controls and HVAC systems. This offering allows you to physically see how your HVAC system moves and filters air throughout the building. It also indicates how quickly aerosols dissipate in smaller enclosed spaces under the current ventilation system.

**The test data allows you to see potential "hot spots", lack of air movement, and how effective the systems are at reducing infectious aerosol transmission, enabling you to make informed decisions on how to optimize systems (if needed).**

## M&V Survey

Understanding how effective different ventilation and filtration settings, configurations, and upgrades affect the removal of infectious aerosols is critically important.

**veridART<sup>®</sup> Measurement & Verification (M & V) helps you assess and evaluate before-and-after results from HVAC upgrades, control changes, added technologies, or increased filter efficiencies in your spaces before making large-scale or building-wide design changes, upgrades, and/or investments.**

## veridART<sup>®</sup> – What are the benefits?

By undertaking a veridART<sup>®</sup> study on a property, a client can see the following returns on investment-

- ✓ veridART<sup>®</sup> delivers actionable data needed to protect occupational safety and health.
- ✓ Reduce Risk – Mitigates occupational health and safety risk of airborne pathogens.
- ✓ Staff Wellbeing – Instil occupant/employee trust and confidence in building safety
- ✓ Financial Savings – Consider informed decisions on HVAC system operation and target remediation actions to the highest value opportunities
- ✓ Environmental Social Governance – Identify optimal HVAC operation to provide adequate ventilation and filtration whilst reducing Carbon footprint and exposure risk

## How veridART Works



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### Plan

Develop test plan based on floor plan, HVAC system, and key risk factors



### Spray

Release airborne tracers at multiple locations according to test plan



### Circulate

Allow airborne tracers to circulate for established time period to simulate virus transmission



### Sample

Air sample and surface swab at points; test with PCR to map mobility patterns and assess filtration & ventilation



### Results

Summarize results in heat maps and dilution curve to inform remediations



### Act

Implement remediations and retest routinely in light of dynamic conditions

Contact HBI to discuss this service and how it could help manage your building risk

Phone: 0118 9889999

Email: [info@hbi.co.uk](mailto:info@hbi.co.uk)