

Post construction remediation

As part of a major building refurbishment in the heart of Sydney's CBD, Airgene was engaged to undertake a comprehensive HVAC ductwork cleaning across six commercial floors.

The objective was to improve indoor air quality (IAQ) and support the building owner's pursuit of higher NABERS Indoor Environment and WELL Building Standard ratings.



Enhancing Indoor Air Quality for NABERS and WELL certification

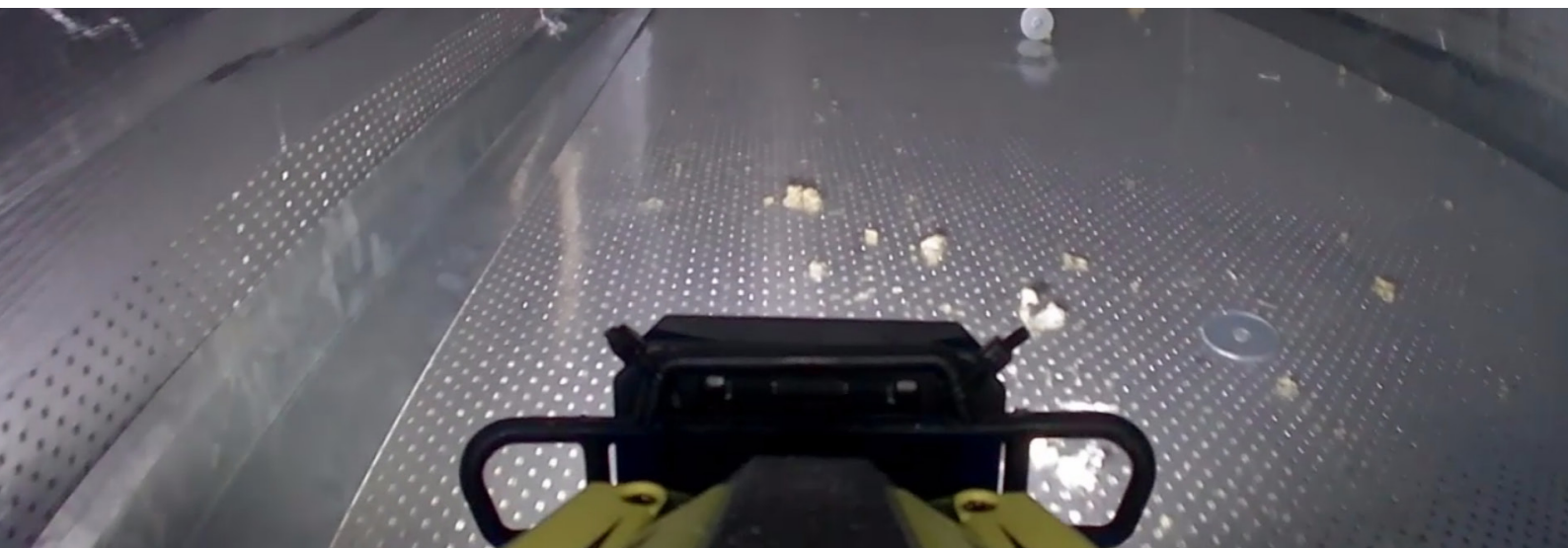
Background

The building's HVAC ductwork had been installed early in the refurbishment process and had accumulated significant construction dust and debris over several months.

Though often overlooked due to its concealed nature, contaminated ductwork can severely impact HVAC efficiency and indoor air quality from the outset of occupancy.

To address this, we aligned with:

- NADCA's ACR Standard "Assessment, Cleaning and Restoration of HVAC Systems"
- AIRAH's HVAC Hygiene Best Practice Guidelines
- IEQ-15 requirements for indoor environmental quality.



Clean ducts, cleaner air, better ratings

Methodology

Visual Inspection and Reporting

A detailed inspection was conducted using mobile camera systems to assess the cleanliness of the ductwork. The inspection:

- Verified cleanliness against NADCA Table 1 definitions
- Identified the system as 'General Use' with a 'Hygiene Level – Light'
- Included photographic evidence and recommendations for remediation

HVAC Cleaning and Restoration

Over 4 weeks approximately 1 km of ducting was cleaned using:

- mechanical agitation to dislodge debris
- HEPA-filtered vacuum systems to capture particulates
- manual wiping in areas with limited access
- Compressed air whips/skippers for deep cleaning

All procedures were performed in accordance with NADCA and AIRAH standards, ensuring no damage to HVAC components and full

compliance with health, safety, and environmental regulations.

Testing and Verification

Post-cleaning, airborne particulate testing was conducted using a TSI DustTrak Model 8533.

Results and Outcomes

- Visual Cleanliness: All ductwork achieved a hygiene level of "Clean" as per NADCA standards.
- Air Quality Targets Met:
- PM10: Reduced to below 20 $\mu\text{g}/\text{m}^3$
- M2.5: Reduced to below 10 $\mu\text{g}/\text{m}^3$

These results met the criteria for:

- NABERS Indoor Environment (IE) : Supporting improved occupant comfort and wellbeing through reduced pollutants and enhanced ventilation.
- WELL Building Standard – Feature A05 : "Enhanced Air Quality Optimisation", which emphasizes low particulate matter levels and pollutant control.

Conclusion

This project demonstrates the critical role of HVAC hygiene in achieving high-performance indoor environments.

By proactively addressing duct contamination, the building owner not only improved system efficiency and occupant health but also positioned the property for enhanced NABERS and WELL ratings—key differentiators in today's competitive commercial real estate market.

IEQ-15 Air Distribution

Criteria

All new and existing ductwork:

- has access provided to both sides of all moisture- and debris-generating components including cooling coils, heating coils, humidifiers and filters for maintenance; and
- is clean, or has been cleaned in accordance with the AIRAH HVAC Hygiene Best Practice Guideline 2010 or the National Air Duct Cleaners Association ACR 2006 Standard.