



TECHNICAL DOSSIER

Air Technologies

Case Study Booklet

Advanced UVC & Ozone Air Purification Solutions for Homes and Businesses Across New Zealand

Why Indoor Air Quality Matters

1 in 3

NZ DAMP HOMES

Nearly 1 in 3 New Zealanders live in damp homes.

700k

RESPIRATORY ILLNESS

700,000 Kiwis live with respiratory illness.

70+ Yrs

UV-C TECHNOLOGY

UV-C technology has been used for over 70 years to combat airborne pathogens.

99.9%

MICROBIAL INACTIVATION

Properly designed UV-C systems can achieve over 99.9% microbial inactivation in HVAC applications.

39 ACH

AIR CHANGES EQUIVALENT

UVGI can provide the equivalent of up to 39 additional air changes per hour.



AT10 UVC Air Purification Installation



PROJECT OVERVIEW

Air Technologies recently installed an AT10 UVC Air Purification System into a residential heat pump and air conditioning system in Tauranga for homeowner Ken T. Following a bone marrow transplant, Ken was particularly conscious of the quality of the air circulating through his home and the potential health risks associated with airborne bacteria, mould, and other contaminants. The goal was to create a cleaner indoor environment and provide an additional layer of protection for his health.

TECHNICAL BRIEF

CLIENT

Ken T

LOCATION

Tauranga, New Zealand

PRODUCT INSTALLED

AT10 UVC System

INSTALLATION TYPE

Residential Retrofit

THE CHALLENGE

Like many homeowners, Ken was unaware of what was accumulating inside his heat pump and air conditioning system over time. During an inspection, our team identified significant bacterial and microbial contamination within the indoor unit. While often invisible to homeowners, these contaminants can circulate throughout the home whenever the system operates. For someone with a compromised immune system, maintaining high indoor air quality was especially important.

THE SOLUTION

Air Technologies recommended the installation of our AT10 UVC Air Purification System. The AT10 is designed to be installed directly within a heat pump and air conditioning unit, where it continuously treats the internal coil and airflow using germicidal UVC light technology.

The system works to:

- Reduce bacteria, mould, and other microorganisms within the unit
- Help prevent microbial growth on coils and drain trays
- Improve indoor air quality
- Support cleaner system operation
- Provide continuous protection whenever the system is running

Results & Testimonial



Improved Indoor Air Quality

The UVC system actively helps reduce airborne biological contaminants that may otherwise circulate throughout the home.

Cleaner Heat Pump & AC System

The AT10 helps keep the internal components cleaner, reducing the conditions that allow bacteria and mould to thrive.

Ongoing Health Support

For homeowners concerned about respiratory health and indoor air quality, the system provides continuous protection.

“Levi showed us the bacteria in our old unit – it was disgusting. He recommended installing the UVC lamp which gets rid of the bacteria. Since my bone marrow transplant my immune system has not been as good. I have not been sick at any stage since the UVC lamp installation. This has been very successful for my situation.”

— KEN T, TAURANGA, NEW ZEALAND



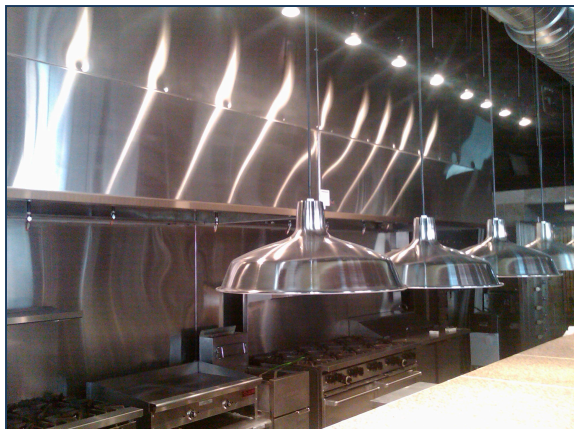
CLIENT OUTCOME

The AT10 installation provided Ken with a cleaner indoor environment and greater confidence in the air circulating throughout his home. While every situation is unique, this project demonstrates how UVC technology can be an effective addition to heat pump and air conditioning systems, particularly for homeowners focused on maintaining the highest possible indoor air quality.

WHY AIR TECHNOLOGIES

Continuous air treatment · Reduced microbial contamination · Cleaner systems · Professional support · Proven UVC technology

From Council Warning to Clean Air: How Air Technologies Helped a Christchurch Restaurant Solve Persistent Kitchen Odour Issues



PROJECT SPECIFICATIONS

Client: Beattie Air

Location: Christchurch

Product: Ozone Kitchen Kit AT-500-1

Application: Commercial Kitchen

Year: 2025

PROJECT OVERVIEW

A Christchurch restaurant was experiencing significant issues with cooking odours being discharged from its commercial kitchen extraction system. The odours had become a concern for neighbouring businesses and residents, resulting in attention from the local council and a warning that corrective action would be required.

The restaurant engaged Beattie Air to help identify an effective solution. Beattie Air subsequently partnered with Air Technologies to implement our AT 500-1 Ozone Kitchen Kit within the kitchen extraction system.

The objective was to dramatically reduce odours being emitted from the exhaust system while also helping minimise grease accumulation within the extraction hood and ducting. Following installation, odour emissions were significantly reduced, helping the restaurant address council concerns and improve its relationship with neighbouring businesses.

As an added benefit, the ozone system assists in breaking down grease and organic contaminants within the extraction system, reducing fire risk, lowering maintenance requirements, and helping to minimise costly duct and hood cleaning.

The result was a satisfied restaurant owner, happy neighbouring businesses, a positive outcome for council compliance, and another successful project delivered in partnership with Beattie Air.



THE CHALLENGE

Commercial kitchens generate a constant stream of cooking odours, airborne bacteria and organic contaminants, placing ongoing pressure on kitchen ventilation and extraction systems. Key challenges included:

- Increased cleaning and maintenance requirements
- Reduced indoor air quality for staff

Beattie Air was looking for a reliable solution that could enhance air quality while supporting the overall cleanliness and efficiency of the kitchen environment.

THE SOLUTION

Air Technologies recommended and installed an Ozone Kitchen Kit AT-500-1, specifically designed for commercial kitchen applications. The system introduces controlled ozone treatment into the extraction airflow, helping to:

- Neutralise cooking odours at their source
- Reduce airborne bacteria and microorganisms
- Assist in breaking down grease and organic contaminants
- Improve overall kitchen air quality

The installation was completed efficiently with minimal disruption to kitchen operations by working after-hours.

Results & Testimonial

Client: Beattie Air, Christchurch, 2025

THE RESULTS

Improved Odour Control

The Ozone Kitchen Kit significantly reduced cooking odours, creating a fresher environment for both staff and customers.

Cleaner Extraction Systems

By helping break down grease and organic contaminants, the system supports cleaner extraction ducting and extraction equipment, reducing maintenance demands and labour.

Enhanced Hygiene Support

The ozone treatment assists in reducing airborne microorganisms within the extraction stream, contributing to a cleaner kitchen environment.

Low-Maintenance Operation

The system provides continuous treatment, with minimal ongoing maintenance requirements, making it an effective long-term solution for commercial kitchens.



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Air Technologies supported us on a restaurant HVAC system upgrade project in Christchurch. The job required careful coordination around existing system restrictions, with after-hours work needed to avoid disruption to the kitchen operations. Jono and Levi were great to deal with throughout the project. They were responsive and supportive during the work, and continued to assist us after the job was completed to ensure the installed UV system was operating properly. Air Technologies were a pleasure to work with, and we look forward to the opportunity to work with them again.

— MAX S, BEATTIE AIR, CHRISTCHURCH

CLIENT OUTCOME

The successful installation of the Ozone Kitchen Kit 500-1 has provided Beattie Air Christchurch with an effective odour and hygiene management solution that supports cleaner kitchen operations and improved air quality. This project demonstrates how Air Technologies' ozone solutions can help commercial kitchens create healthier, cleaner, and more efficient working environments.

Proven Performance: AT75W UV Lamp Verified

99.4%

KEY RESULT: BACTERIAL KILL RATE

>99% — REDUCTION IN TESTED BACTERIA

TESTED PRODUCT: AT75W UV lamp for Air Conditioning

TESTING AUTHORITY: Intertek — a world-leading, nationally accredited microbiology testing laboratory

TESTING REQUIRED: Technical Standard for Disinfection 2022

TEST ORGANISM: Staphylococcus aureus (tested at 280–285 nm flow rate)

Verification Evidence

The AT75W UV lamp was independently tested by Intertek Parker Testing Services, one of the world's leading quality and safety solution providers. The testing was conducted in controlled laboratory conditions against the Technical Standard for Disinfection 2022.

Result Breakdown

The laboratory results confirm a 99.4% kill rate against Staphylococcus aureus under standardised testing conditions. Samples were collected at timed intervals before and after UV exposure, confirming the lamp's consistent and reliable germicidal performance.

Conclusion

The AT75W UV lamp achieved a 99.4% bacterial kill rate in independently verified laboratory testing. The Intract AT75W UV lamp demonstrated exceptional and consistently high performance, independently verified by Intertek. These results provide confidence in the effectiveness of Air Technologies' UVC technology for reducing harmful microorganisms in air conditioning and heat pump systems, and validate the technology's effectiveness in real-world air conditioning applications.

Improving HVAC Hygiene & Reducing Coil Maintenance with UVC



PROJECT OVERVIEW

A multi-level commercial office building was experiencing recurring microbial build-up across the cooling coils of one of its main air-handling units. Despite routine HVAC servicing and scheduled coil cleaning, contamination would gradually return due to the combination of moisture, organic material and continuous operation. The facilities team wanted to investigate whether UVC could provide an ongoing treatment strategy between scheduled maintenance visits, while also supporting indoor air quality and HVAC performance. Rather than implementing UVC across the entire building immediately, Air Technologies recommended beginning with one representative AHU as a pilot installation.

TECHNICAL BRIEF

CLIENT: Commercial Property Facility

LOCATION: New Zealand

APPLICATION: Commercial HVAC / AHU

TECHNOLOGY: 254nm UVC

INSTALLATION TYPE: Coil Irradiation / HVAC Retrofit

PROJECT TYPE: Pilot Installation

THE CHALLENGE

The AHU operated for extended periods throughout the working week and its cooling coil regularly encountered moisture during normal operation. Over time, biological contamination was developing across sections of the coil and surrounding internal surfaces. For the facilities team, this created several concerns:

- Recurring coil cleaning requirements
- Potential microbial and biofilm development
- Maintaining efficient heat transfer and airflow
- Difficult-to-access internal HVAC surfaces
- Maintaining good HVAC hygiene
- Minimising disruption associated with additional maintenance

Cleaning provided an important periodic intervention, but the facility wanted a solution capable of continuously treating the coil between maintenance visits.

THE SOLUTION

Air Technologies designed a 254nm UVC installation positioned to continuously irradiate the cooling coil and surrounding target surfaces. The system was integrated into the existing AHU without replacing the building's filtration, ventilation or normal HVAC maintenance programme. Whenever operating, the UVC system continuously exposes targeted surfaces to germicidal ultraviolet energy, helping inhibit microbial growth in an area that would otherwise provide favourable conditions for biological build-up. The pilot approach also allowed the facilities team to assess the technology on one HVAC system before considering whether there was a business case for wider implementation.

RESULTS

Cleaner Cooling Coil

Ongoing UVC exposure helped control biological build-up across the targeted coil surface, supporting a cleaner HVAC system between scheduled maintenance periods.

Reduced Maintenance Pressure

Rather than relying solely on periodic manual cleaning to address microbial contamination, the facility gained an additional continuous treatment strategy.

HVAC Performance Support

Maintaining cleaner heat-transfer surfaces can help protect coil performance and reduce the performance degradation associated with biological fouling.

Indoor Air Quality Support

By targeting microbial growth at a potential source within the HVAC system, UVC provided another layer within the facility's wider indoor air quality strategy.

Scalable Asset Strategy

Beginning with one representative AHU allowed the facilities team to assess installation requirements, maintenance implications and potential operational benefits before considering additional systems.

CLIENT OUTCOME

The project demonstrated how UVC can be incorporated into an existing HVAC asset without requiring replacement of the underlying system. For the facilities team, the value extended beyond air treatment. UVC became another asset-management and preventative-maintenance tool, supporting cleaner HVAC internals while potentially reducing the frequency and severity of recurring biological contamination.

FACILITIES MANAGEMENT TAKEAWAY

UVC doesn't replace HVAC maintenance. It provides continuous treatment between maintenance visits, targeting microbial growth where it can begin — inside the HVAC system.

Adding Continuous UVC Treatment to a High-Occupancy HVAC System

PROJECT OVERVIEW

A large education facility wanted to strengthen its indoor air quality strategy across several high-occupancy teaching and shared spaces. The building already had mechanical ventilation, filtration and scheduled HVAC maintenance in place. However, facilities management was interested in whether an additional technology could be integrated into existing HVAC infrastructure without introducing portable equipment throughout occupied rooms. A suitable air-handling system serving a high-use area was selected for an initial UVC installation.

TECHNICAL BRIEF

CLIENT: Education Facility

LOCATION: New Zealand

APPLICATION: Teaching & Shared Spaces

TECHNOLOGY: 254nm UVC

INSTALLATION: Existing HVAC System

PROJECT TYPE: IAQ / HVAC Hygiene Upgrade

THE CHALLENGE

Educational buildings experience significant fluctuations in occupancy throughout the day, with large numbers of people sharing classrooms, corridors and communal spaces. The facilities team wanted a solution that could:

- Integrate with existing HVAC infrastructure
- Operate without occupying usable floor space
- Require minimal involvement from building occupants
- Support existing ventilation and filtration
- Target microorganisms within suitable HVAC equipment
- Help maintain cleaner internal HVAC surfaces
- Operate as part of the building's long-term IAQ strategy

The objective was not to replace existing controls, but to add another layer to the building's HVAC and indoor-air-quality strategy.

THE SOLUTION

A 254nm UVC system was installed within the selected HVAC equipment, with the installation designed around the existing airflow, equipment configuration and target surfaces. Unlike portable room-based equipment, the UVC technology became part of the building's mechanical infrastructure. The system operates continuously when required, treating targeted HVAC surfaces and/or the moving airstream depending on system design. Importantly, the existing ventilation, filtration, cleaning and maintenance programme remained in place.

RESULTS

Integrated IAQ Strategy

UVC provided an additional engineering control within the existing HVAC system rather than requiring standalone equipment throughout occupied spaces.

Continuous Treatment

Once installed, treatment occurs within the HVAC equipment without requiring teachers, students or other occupants to operate the technology.

Cleaner HVAC Internals

Continuous irradiation of suitable internal surfaces helps control microbial growth in moisture-prone areas such as cooling coils and drain pans.

Minimal Impact on Occupied Spaces

Because the equipment was incorporated within the HVAC system, there was no loss of classroom floor space and minimal visual impact within occupied areas.

Long-Term Facility Management

The installation gave the facilities team another tool that could be considered during future HVAC upgrades, refurbishments and preventative-maintenance planning.

CLIENT OUTCOME

Rather than approaching indoor air quality as a single-product issue, the facility incorporated UVC as one component of a layered strategy alongside ventilation, filtration, cleaning and HVAC maintenance. The project demonstrated how existing HVAC infrastructure can potentially be upgraded to provide continuous treatment without fundamentally redesigning the building's mechanical system.

Targeting Persistent Microbial Build-Up Inside a High-Use AHU



PROJECT OVERVIEW

A food manufacturing facility identified recurring contamination on cooling coils within an air-handling system serving a production-related area. The facility already operated comprehensive cleaning, hygiene and preventative-maintenance programmes, but the internal environment of the AHU remained challenging. High operating hours, moisture and difficult-to-access coil surfaces meant biological build-up could return between scheduled cleaning events. Air Technologies was approached to investigate whether UVC could provide continuous treatment directly at the source.

TECHNICAL BRIEF

CLIENT:	Food Manufacturing Facility
LOCATION:	New Zealand
APPLICATION:	Production HVAC
TECHNOLOGY:	254nm UVC
INSTALLATION:	AHU Coil Treatment
OBJECTIVE:	HVAC Hygiene / Asset Mgmt

THE CHALLENGE

The issue wasn't a lack of cleaning. The challenge was what happened between cleans. Moisture around the cooling coil created conditions where microbial contamination could gradually re-establish on internal surfaces. For facilities and engineering teams, repeated contamination can mean:

- Additional cleaning
- Increased maintenance labour
- Difficult access to internal coil surfaces
- Potential biofilm formation
- Coil fouling
- Unplanned maintenance

Ongoing HVAC hygiene concerns. The facility wanted to address the underlying environment rather than simply increasing the frequency of manual cleaning.

THE SOLUTION

Air Technologies assessed the AHU configuration, coil dimensions, airflow and available installation space. A UVC system was then positioned to provide continuous irradiation across the targeted cooling-coil surface. The technology was introduced as an additional HVAC hygiene measure, not as a replacement for the site's existing food-safety programme, filtration, cleaning, environmental monitoring or preventative maintenance. This distinction was particularly important within a controlled manufacturing environment.

RESULTS

Continuous Coil Treatment

The cooling coil received ongoing UVC exposure between scheduled maintenance periods.

Biofilm Control Strategy

Targeting the wet coil surface helped address conditions where microbial growth and biofilm could otherwise develop.

Maintenance Support

The facilities team gained an additional preventative tool rather than relying exclusively on reactive cleaning after contamination became visible.

Asset Performance

Keeping cooling coils cleaner can support heat-transfer efficiency and help protect HVAC performance over time.

Existing Hygiene Controls

The UVC installation complemented rather than replaced the facility's existing cleaning, filtration, maintenance and food-safety controls.

CLIENT OUTCOME

The project shifted the facility's approach from periodically removing contamination to continuously managing one of the environments where contamination could develop. For the engineering and facilities teams, the installation provided another preventative-maintenance tool while supporting the cleanliness and long-term management of an important HVAC asset.



ABOUT AIR TECHNOLOGIES

Air Technologies provides advanced air purification solutions throughout New Zealand, specialising in UVC and ozone technologies for commercial, industrial, and residential applications. Our systems are designed to improve indoor air quality, reduce airborne contaminants, and create healthier environments for people to live and work in.



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