



Indoor Air Purification Systems

CASE STUDIES

Hyatt Hotel Andaz

75 Wall Street, New York

The staff at the Hyatt Andaz Hotel in NYC chose rooms 701 and 801 for the Internal Air Quality (IAQ) test as these rooms were identical in size and exposure.

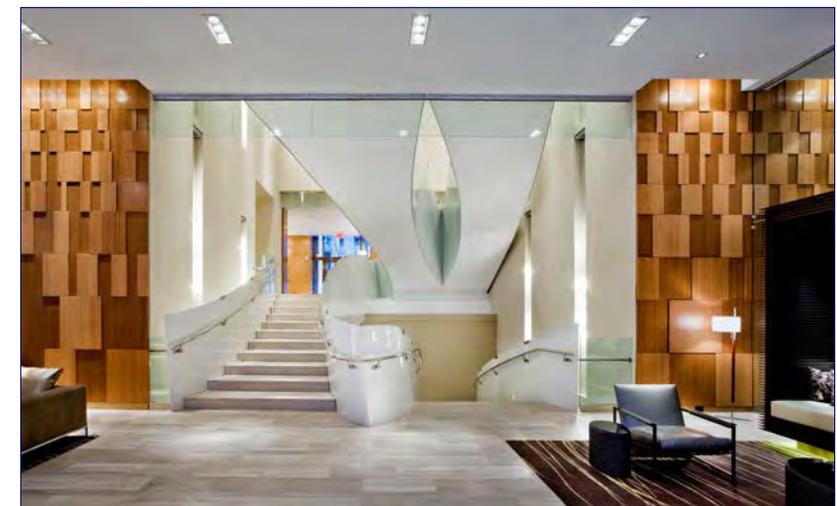
AtmosAir installed an SG-FC100 unit in Room 701's fan coil, and left the normal aircon filter in place.

Room 801 had no AtmosAir unit installed, but the standard filter was replaced with a MERV 13 one inch pleated filter.

Each room was set at 74°F and medium fan speed. The fan was set to automatic so it would cycle on and off as the unit required to maintain constant temperature.

After 1 week, the results showed a 260% decrease in power usage, and substantial reductions in PM's and VOC's.

Test Location	Electricity Usage KWH	PM 10 Particles	PM 2.5 Particles	Total VOC's
		% Reduction	% Reduction	% Reduction
Room 801 MERV 13 Filter only	0.8 kwh			
Room 701 AtmosAir and Normal Filter	0.3 kwh	15% reduction	20% reduction	100% reduction



Alvin Ailey American Dance Theater

New York City

Dancers are elite athletes, and having fresh, pure air is essential to their health and performance.

The Alvin Ailey American Dance Theater is one of the world's most acclaimed modern dance company and school, and is New York's largest building dedicated solely to dance.

AtmosAir was installed to enhance the indoor air quality and save energy. Mike Canarozzi, the Facility Director explained: " I've found that I am saving significant dollars in energy costs, and my filters are much cleaner.

I've noticed a 20% reduction in my fan speed, as the combination of cleaner filters and reduced outside air requires less horsepower. My filter costs have been reduced by 50%. Where previously filters needed replacement every 3-6 months, now with AtmosAir we change them every 12-18 months."

"We now have a pleasantly clean air environment, something which otherwise would be challenging in our busy New York City Midtown West location.



Carnival Cruise Line

“Regal Princess”

In October 2018, AtmosAir was installed in 6 areas of the Regal Princess including the Casino, Gym, Cigar Lounges and Officer’s Cabins. Here are the before and after results.

Before AtmosAir Installation

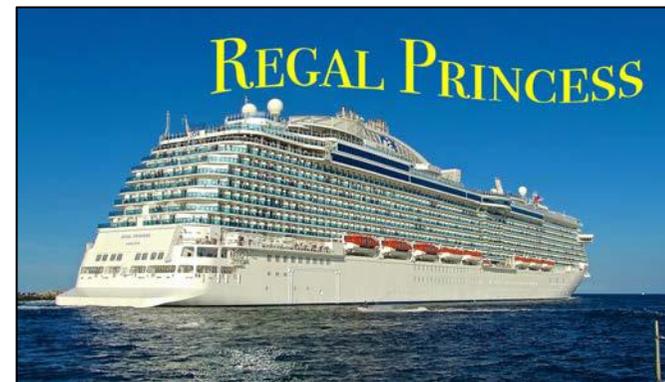
Element	CO2	Temp	RH	TVOC	Ozone	CO
Avg. Values	491 ppm	73 F	48%	40 ppb	0.00 ppm	0.00 ppm
Guidelines	5000 ppm	68 to 78 F	30 to 60%	500 ppb	.10 ppm	9 ppm
Element	PM .03	PM .05	PM 1	PM 2.5	PM 5	PM 10
Avg. Values	N/A	1.88 ug.m3	3.00 ug/m3	7.25 ug/m3	15.83 ug/m3	27.87 ug/m3
Guidelines	N/A	N/A	N/A	35 ug/m3	N/A	150 ug/m3

After 3 days with AtmosAir

Element	CO2	Temp	RH	TVOC	Ozone	CO
Avg. Values	465 ppm	73 F	40%	2 ppb	0.00 ppm	.04 ppm
Guidelines	5000 ppm	68 to 78 F	30 to 60%	500 ppb	.10 ppm	9 ppm
Element	PM .03	PM .05	PM 1	PM 2.5	PM 5	PM 10
Avg. Values	N/A	1.64 ug.m3	2.31 ug/m3	4.06 ug/m3	8.66 ug/m3	16.75 ug/m3
Guidelines	N/A	N/A	N/A	35 ug/m3	N/A	150 ug/m3

Summary of results after 10 days

Element	TVOC	PM .03	PM .05	PM 1	PM 2.5	PM 5	PM 10
Without AtmosAir	40	N/A	1.88	3.00	7.25	15.83	27.87
With AtmosAir	2	N/A	1.64	2.31	4.06	8.66	16.75
% Difference	-95%	N/A	-13%	-23%	-44%	-45%	-40%



Bacteria Type	Pre AtmosAir	Post AtmosAir	% Difference
Bacillus Simplex	7 CFU	ND	-100%
Dermacoccus Nishinomiyaensis	7 CFU	ND	-100%
Micrococcus Luteus	14 CFU	ND	-100%
Staphylococcus Epidemidis	63 CFU	ND	-100%
Staphylococcus Saprophyticus	7 CFM	ND	-100%
Total	98 CFU	ND	-100%

Bacteria Sampling Result after 10 days – 100% kill rate (ND - not detectable)



Chapman Hills Elementary School

Orange County, California

AtmosAir installed one Matterhorn 800 unit in a typical occupied Chapman Hills Elementary School classroom and asked an independent air quality assessment firm, DTS Environmental to monitor the results over a 4 month period according to EPA/SCASQMC and OSHA requirements.

An independent NVLAB accredited laboratory was retained to analyze the results.

The Matterhorn 800 was switched between 2 classrooms during that 4 month trial to get a good sampling of the effectiveness of the AtmosAir Bi-Polar Ionization unit.

After the 4 month trial, the results were impressive:

Total VOC's were reduced by 90%
Mould spores were reduced by 50%



The Dallas Cowboys Star Training Center



The Dallas Cowboys initially installed AtmosAir on a trial basis in their locker room area to reduce dangerous airborne bacteria and allergens including Staph and MRSA.

The initial trial was so successful, the team owners installed AtmosAir throughout the entire 100,000 square foot training facility including the coaches' offices, rehab areas, meeting rooms and administrative areas.

AtmosAir was also installed in the newly designed Dallas Training Center in Frisco, Texas.

Trainers, players and staff – unaware of the new AtmosAir installation – commented on the improved air quality. Trainers distributed fewer medicines for hay fever and allergy symptoms. No MRSA or H1N1 Flu have been reported since AtmosAir was installed.

In addition, the energy savings from the AtmosAir installation were enough to recover the entire system cost.



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Deloitte

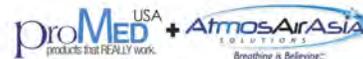
Detroit, New York City, Dallas, Atlanta, Minneapolis

AtmosAir was first installed at Deloitte University in Texas. Deloitte had many employees that were complaining of stale air, odours and other indoor air quality (IAQ) issues.

Testing over a period of several weeks validated the ability of AtmosAir to greatly improve the IAQ at Deloitte University. VOC's were reduced over 75%, and PM10 particles were reduced by 22%. Employees commented that the air quality was no longer "stale smelling" and productivity increased.

As a result of this first installation, AtmosAir has been installed in the following Deloitte locations:

- Renaissance Center, Detroit Michigan
- 30 Rockefeller Plaza, New York City
- Peachtree Plaza, Atlanta Georgia
- Deloitte – Minneapolis Minnesota
- Texas Commerce Tower, Dallas Texas
- Deloitte University, Dallas Texas



Doha Metro

Qatar

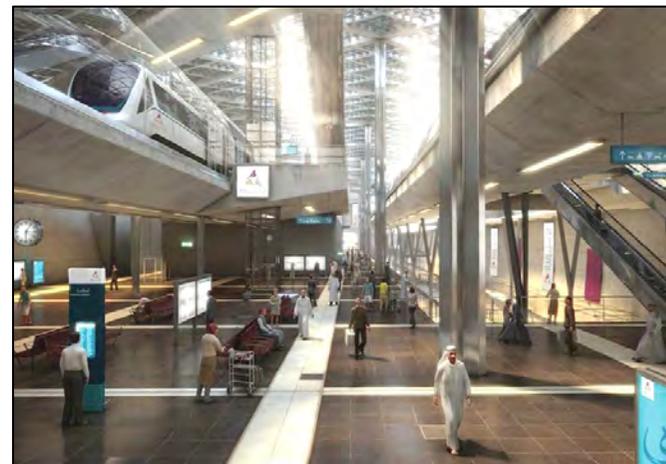
The Doha Metro is a rapid transit system under construction in Doha, Qatar's capital. Due for completion in 2020, there will be 4 active lines with 100 stations covering 300km of rail.

Qatar Rail, the client in charge of the development realized the need to add powerful and effective indoor air cleaning technology.

The largest station which sits at the intersection of the Red, Gold and Green lines is the iconic Msheireb Satation (pictured to the right).

As a trial, AtmosAir was selected by Qatar Rail to be installed in all 36 AHU's that serve the 5 levels of the Msheireb Station.

The trial has been very successful, and Qatar rail will be moving forward to install AtmosAir in other key stations of the Doha Metro as they open.



EMPIRE STATE REALTY TRUST

Results:

- AtmosAir has been installed in 6 ESRT buildings in NY containing over 1.5M sqF of office space
- Energy Star Certification was achieved in all buildings where AtmosAir has been installed
- Substantially improved IAQ has been validated



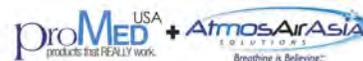
112 West 34th Street, New York City

“I have been working with AtmosAir for years in the United States, where we have installed the AtmosAir Bi-Polar ionisation units successfully in several projects.

AtmosAir delivers superior indoor air quality without emitting ozone.

We have tested AtmosAir in over 300 different spaces for results. Their system reduces viruses, VOC's, PM, bacteria, allergens and the impact on the health and wellness of the occupants is verifiable and quantifiable.”

Dana Schneider, Portfolio Manager, JLL / ESRT





In 2017, Ford had serious odour issues in their new Ford Land Headquarters building in Michigan.

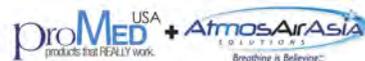
As a trial, Ford installed AtmosAir on the 3rd floor of their offices, and did extensive testing.

The results were impressive, and Ford installed AtmosAir throughout the rest of the building, and several other new projects that were being built.



Ford Land Headquarters, Michigan

	TVOC	PM .03	PM .05	PM 1	PM 2.5	PM 5	PM 10
W/O AtmosAir	123.7	N/A	1.76	2.30	2.88	7.83	33.72
With AtmosAir	19.45	N/A	.657	.956	1.15	1.74	4.42
% Difference	-84%	N/A	-62%	-58%	-60%	-77%	-86%



GENSLER

“Jewel Box” Office

Los Angeles, California

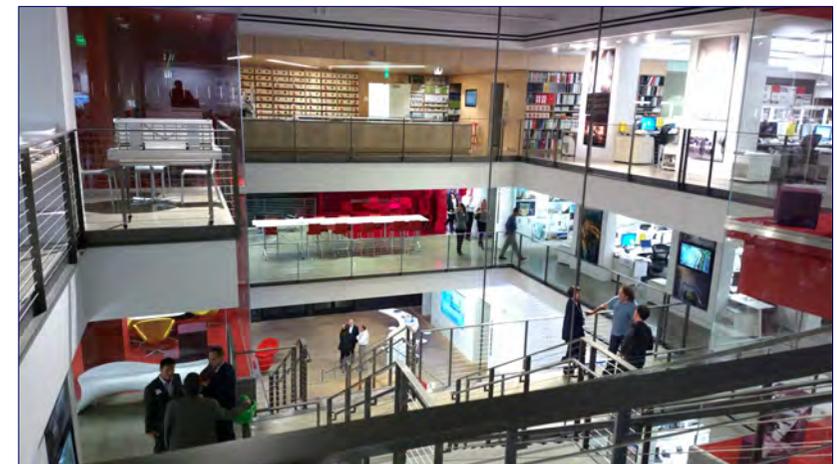
GENSLER is the world's largest architectural firm and a client of AtmosAir.

AtmosAir was installed in their newest Los Angeles office building known as the “Jewel Box” and independent IAQ testing was completed over a 2 week period.

The AtmosAir Bi-Polar Ionization units made a significant difference in the indoor air quality. The reduction in particulate matter and Total VOC's was substantial.

Total VOC's were reduced by 40%
PM10 Particles were reduced by 34%
PM 2.5 Particles were reduced by 30%

AtmosAir systems are currently installed in many GENSLER office facilities worldwide, and AtmosAir has been specified for numerous GENSLER projects worldwide.



GENSLER

Shanghai, China

Gensler is the world's largest architectural firm. They have been an AtmosAir client for years, and have installed AtmosAir's Bi-Polar ionisation systems in many of their offices worldwide, and in their projects around the world.

Gensler just moved into new offices in the beautiful One Museum Place complex in Shanghai. They installed AtmosAir systems and also AtmosAware IAQ Sensors throughout their newly renovated space.

The results were excellent. PM10 and PM2.5 levels dropped significantly, TVOC's were reduced by 60% and they were able to move in immediately after renovation as the renovation odours were minimized.



Real Time IAQ Reading from AtmosAware Sensor

Google

Google has many locations throughout the United States.

In 4 locations designed by Gensler Architects and MEP Consultants, AtmosAir systems were installed to eliminate kitchen odours, VOC's, PM2.5 and improve the general IAQ.

Google has installed AtmosAir Bi-Polar Ionisation Systems at:

- 76 9th Avenue, New York City
- Google Orange County, Irvine California
- Google Hercules Campus, Los Angeles, California
- Google @ 320 Hampton Drive, Venice California



Hilton Homewood Suites, Times Square New York City



Purpose: The Albanese Organization, Owners of the Homewood Suites in NYC decided to improve guestroom air quality and market **Allergy-Friendly rooms**.

Solution: AtmosAir equipment was installed to provide 24/7 air purification for 35 guestrooms.

Guest Benefits: AtmosAir significantly improved indoor air quality by reducing odors, bacteria, mold, mildew, particulate matter, allergens and irritating VOCs.

Pricing Strategy: Homewood Suite sold the Allergy-Friendly rooms for a **\$20 premium**.

ROI: After the first 3 months the Allergy-Friendly rooms were sold out nearly 80% of the nights. The AtmosAir system was paid for, thanks to the \$20 premium in less than 3 months.

Equipment Cost for 35 Rooms		
Number of rooms	Cost per room	Total Cost
35	\$950	\$33,250

Maintenance Cost for AtmosAir		
Number of tubes	Cost per tube	Biennial Maintenance
35	\$240	\$8,400

Homewood Suites Revenue for 35 Rooms at 80% Occupancy		
80% Occ.	Rev. per room	Nightly Revenue
28	\$20	\$560

Homewood Suites PROFIT based on 80% Occupancy			
Year	Cost	Revenue	Profit
1	\$33,250	\$204,400	\$170,750
2	\$0	\$204,400	\$204,400
3	\$8,400	\$204,400	\$196,000

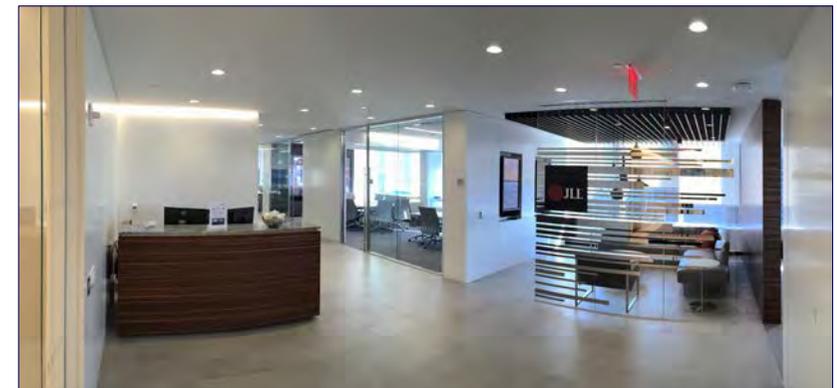
Jones Lang LaSalle

28 Liberty Street, New York

Jones Lang LaSalle (JLL) installed AtmosAir Bi-Polar Ionization units to freshen the indoor air quality, remove contaminants, dust particles, mould, odours, germs and bacteria in their new 10,000 ft² offices.

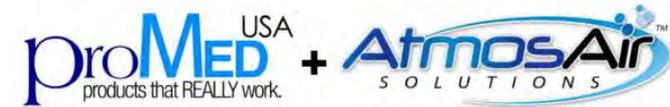
JLL wanted to obtain the air quality standards and higher energy efficiency standards set by the WELL Building Institute and the LEED Platinum Rating from the U.S. Green Building Council.

A JLL Managing Director in charge of their Energy and Sustainability Division, Dana Schneider said: "We are compliant with ventilation code, but it goes beyond just adding outside air, since increasing ventilation increases energy usage. Our balance is to meet and exceed minimum ventilation requirements, but more important than that is the controls that we have in place including AtmosAir to purify the indoor air."



JTC Singapore

AtmosAir awarded S\$500,000 Grant
from Jurong Town Corporation - Singapore



AtmosAir was awarded with a research grant of up to 500,000 SGD from Jurong Town Corporation, JTC is Singapore's lead government agency responsible for the development of industrial infrastructure to support and catalyze the growth of industries and enterprises in Singapore.

A smart bi-polar ionization air purification system that can monitor indoor and outdoor air quality and automatically adjust its operational parameters accordingly to maximize the benefits to the building occupants.

LAX

Los Angeles International Airport

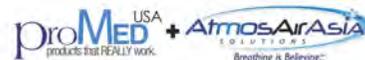
Passengers, Crew Members, and Employees at the Los Angeles International Airport (LAX) were complaining of Jet Fuel Odours (VOC's) inside the terminals, Food and Beverage Outlet Odours, Odours from Retail Outlets, and generally poor Indoor Air Quality (IAQ) causing eye, throat and nose irritation. Being located near a waste water treatment plant added to the odour problems.

AtmosAir's bi-polar ionisation air purification system was first installed at the Tom Bradley International Terminal. Within a short time, the complaints reduced and the indoor air quality was substantially improved.

Today, AtmosAir has been installed in over 200+ AHU's in the Midfield Terminal, and Terminals 1,3,4,5 and 7.

"AtmosAir's Bi-Polar ionisation technology, from what we have found, works well to combat jet fume odours to improve air quality here at LAX. We have all the terminals with AtmosAir systems in place and they require very little maintenance and have worked for us as intended – to purify the air and also clean and purify the HVAC system. We have been very satisfied with this technology".

Rich Yakel, Manager, Los Angeles World Airports, HVAC and Maintenance



The Lincoln Center for the Performing Arts New York City



The Director of Engineering at New York's famous Lincoln Center for the Performing Arts was concerned with mould and air quality in the basement area and areas that were under ventilated.

AtmosAir was selected to improve the IAQ and reduce the mould levels.

RESULT: Greater than 95% Reduction in Cladosporium Mould Spores, and Penicillium / Aspergillus type mould.



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Marriott Residence Inn Chicago, Illinois



AtmosAir tested our Model SG-FC400 in several identical guest rooms at The Marriott Residence Inn in Chicago. The SG-FC400 was installed in the fan coil unit of Room 410. Room 316 was used as the “control room” as the AtmosAir unit was not installed in that room.

Both rooms were left unoccupied, and the aircon's were run continuously for the 2 day duration of the test.

Readings from baseline Room 316 (without AtmosAir) and Room 410 (with AtmosAir)

	Comfort and Ventilation				Air Cleanliness			Building Pollutants		
	CO2 (ppm)	Temperature (°F)	Relative Humidity (%)	**CFM (Outdoor Air PP)	PM 10 (µg/m3)	PM 2.5 (µg/m3)	TVOC (index)	CO (ppm)	Radon (pCi/l)	Ozone (ppm)
Room 316 Non AtmosAir	475	74	21	123	4	4	> 150	0	0	0
Room 410 AtmosAir	503	66	28	102	5	4	10	0	0	0
Typical/Comfort	< 1100	71 - 74	20 - 60	> 15	< 40	< 20	< 10	< 3	< 2	< 0.1
Recommended	< 1100	68 - 78	20 - 60	> 15	< 40	< 20	< 35	< 9	< 4	< 0.1

In comparing the readings as shown, the Total Volatile Organic Compounds (TVOC's) in the AtmosAir Room 410 were lower by 93% than those TVOC's measured in Room 310 which did not have the AtmosAir SG-FC400 installed.

TVOC's are a serious irritant, and are gaseous elements and chemical compounds that are released from cleaning chemicals, furniture, carpeting, adhesives, paint and lacquer as well as outside emissions.

The SG-FC400 unit significantly improved the Indoor Air Quality of Room 410 in only 48 hours.

MicroLab Farms

“Medical” Marijuana Farm California

Regulated by the State of California, Marijuana for “medical” use has become a huge industry. One of the major players in this newly emerging market is MicroLab Farms. They are applying science and technology in a very focused and professional manner to increase yield and develop innovative ways to produce the weed.

One of their techniques is to use shipping containers. MicroLab Farms installed AtmosAir to neutralize chemical compounds and VOC's in the air, sterilize mould and bacteria, thereby increasing their yield.

Further, as they now recycle purified air, their energy costs have decreased substantially as well.

Terry Ubli, President of MicroLab Farms notes: “Our sealed environmental system means 90% less water use, 80% less fertilizer, mould and pests are virtually eliminated and energy use is a fraction of what it was before.” 8

Seems like Terry has found a solution to keep his profits from going up in smoke!



National Resources Defense Council

Beijing, China

The National Resources Defense Council (NRDC), a Chinese Government organization demanded pristine indoor air quality for its facility in Beijing.

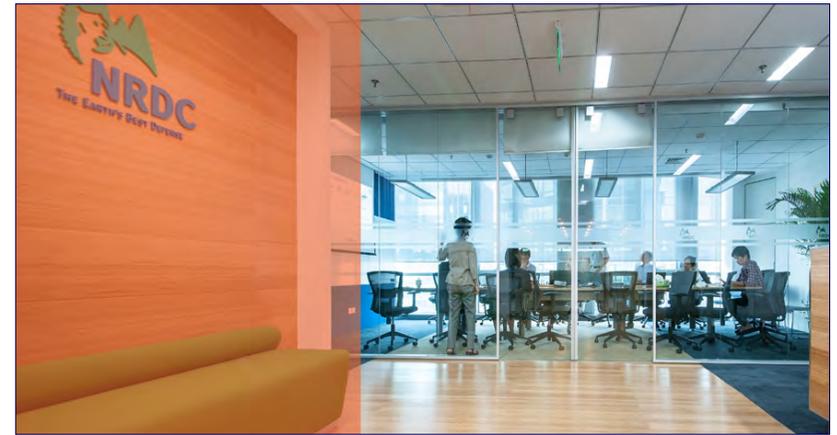
Beijing is known for its poor and toxic air quality, pollution, sandstorms and high levels of PM2.5 Particles.

AtmosAirAsia installed 7 systems throughout the NRDC building, and the AtmosAware IAQ monitoring system.

Hourly outdoor PM2.5 readings were taken from the US Embassy's PM2.5 monitor and were compared to the indoor air quality readings inside NRDC.

The results were very impressive:

Daily PM2.5 Particles - reduced by 81.3%
VOC sampling average – less than 0.12 microG/M³



New England Patriots

Gillette Stadium



The New England Patriots are the latest NFL football team to recognise the importance of good indoor air quality to reduce the potential for staph infections and other serious illnesses for their players and staff.

Following the renovation of their facility at Gillette Stadium, the Patriots installed AtmosAir Bi-Polar Ionization systems in their locker rooms, training facility and player areas.

AtmosAir helps to eliminate the potential for infections and other diseases by removing dust, mould, particles, bacteria, germs, viruses and allergens from the indoor air.

The Dallas Cowboys, Jacksonville Jaguars and Kansas City Chiefs have also installed AtmosAir systems with outstanding results in their facilities.





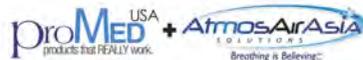
NORWEGIAN CRUISE LINE

NCL was receiving complaints from passengers that gaming and common areas of many of their ships were having odour issues, and smoke issues.

17 AtmosAir SGFC-500 series systems were installed in 13 AHU's serving one trial vessel. Another 6 portable systems, like the ProMedUSA AirPro-1 were installed within areas of the ship where air flow was weak.

Within a week, the crew and passengers saw a noticeable improvement in the air quality, and passenger complaints were greatly reduced.

NCL has since added AtmosAir to it's EPIC, NCL Jewel and NCL Jade vessels.



Paul Allen's Super Yachts Meduse and Octopus

Microsoft co-founder Paul Allen's goal was to be pro-active with the IAQ onboard his two super yachts, Meduse and Octopus.

Octopus, a 416 foot mega-yacht was chosen for the first AtmosAir installation in 2014

Boats often have elevated levels of bacteria and viruses, including norovirus and staph. After installation, immediate results on Octopus were noticed.

Mr. Allen then proceeded to install AtmosAir throughout his second super yacht, Meduse in 2015



Octopus



Meduse



Test Results at Singapore PreSchool – PCF Sparkletots

ProMedUSA+AtmosAir Model SGMH-882 Installation



VERIFIED TEST RESULTS OF PROMEDUSA BI-POLAR IONIZATION UNIT IN KINDERGARTEN CLASSROOM

	OUTDOOR					KINDERGARTEN CLASSROOM				
	Control	Test 1		Test 2		Control	Test 1 ProMedUSA AirPro-1		Test 2 ProMedUSA SGMH-882	
SAMPLING DATE	12 July 2019	26 July 2019	% CHANGE	13 September 2019	% CHANGE	12 July 2019	26 July 2019	% CHANGE	13 September 2019	% CHANGE
TEST PARAMETER										
CARBON DIOXIDE (PPM)	394	399	0%	402	0%	891	1035	+17%	644	- 28%
TVOC'S (PPM)	0.03	0.06	+100%	0.05	+66%	0.57	0.11	- 81%	0.07	- 88%
FORMALDEHYDE (PPM)	NIL	NIL	0%	0.01	0%	0.03	0.01	- 67%	0.01	- 67%
RESPIRABLE DUST (µG/M3)	29	29	0%	179	+517%	25	37	+48%	143	+472%
PM2.5 (µG/M3)	7	11	+57%	41	+485%	7	8	+14%	32	+357%
TOTAL BACTERIAL COUNT (CFU/M3)	65	110	+70%	135	+107%	955	4485	+370%	310	- 68%
TOTAL FUNGAL COUNT (CFU/M3)	120	370	+208%	240	+100%	235	420	+78%	125	- 47%

SEE NOTE 3

These measurements were taken by ALS Laboratories, an NEA Certified IAQ Testing Laboratory



Note 1: Kindergarten Classroom Test 1 – A ProMedUSA Model AirPro-1 was installed. This model is too small for this size classroom, but the SGMH-882 was not available so we conducted the test with the AirPro-1.

Note 2: Kindergarten Classroom Test 2 – A ProMedUSA Model SGMH-882 was installed. This model is the proper size bi-polar ionizer for this size room, and the increased effectiveness of this unit is obvious. Sparkletots purchased the SGMH-882

Note 3: The Respirable Dust count and the PM2.5 count were up significantly on 13 September (+472% and +357%) This is because Singapore was suffering from severe Haze on this day, and the outer doors were continuously opening, letting in Haze.

PCF Sparkletots was concerned about the TVOC's, the high bacterial and high fungal count in the indoor air in their classroom. By installing our model SGMH-882 Bi-Polar Ionizer, we reduced these pollutants by 28% to 88%. PCF Sparkletots was very pleased, and the children and teachers quickly noticed the improvement in the indoor air quality.

PWC Aarata

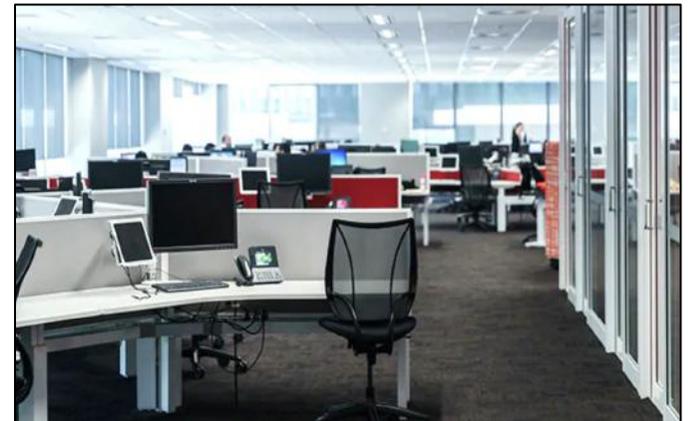
Tokyo

Last year PricewaterhouseCoopers Aarata LLC in Tokyo installed AtmosAir Bi-Polar Ionisation systems in their Otemachi Park offices where they had frequent client and employee complaints of dust, dirt, and serious odours. IAQ studies showed that there also were issues with germs, bacteria and viruses in the indoor air.

Shortly after installing AtmosAir, PWC told us that they were extremely pleased with the ability of our air purification system to reduce and in many instances eliminate the distracting odours from their offices. Employee moral and focus improved, client and staff complaints dropped significantly.

Recently, there was a serious Flu outbreak in the Otemachi Park complex with over 30 building tenants getting sick on other floors that were not treated with AtmosAir. In PwC's offices that were treated with AtmosAir, there was only 1 case of flu reported. PWC directly attributes this almost zero infection rate to AtmosAir's proven ability to kill airborne germs, bacteria and viruses.

As a result of this success, PWC is proceeding to install AtmosAir systems in all of their facilities in Tokyo.





Ritz-Carlton Shanghai

THE RITZ-CARLTON

Multiple guest rooms at the Ritz Carlton Shanghai were experiencing serious IAQ problems. AtmosAir Bi-Polar Ionisation units were installed and the results were excellent.

AtmosAir IAQ Testing at the Portman Ritz Carlton				
Contaminant of Concern	Before	After	Difference in one wk	Percentage Change
PM 0.3	3,694,251	423,921	3,270,330	-89%
PM 0.5	231,832	41,155	190,677	-82%
PM 1	49,864	28,024	21,840	-44%
PM 2.5	22,077	18,093	3,984	-18%
PM 5	3,374	2,567	807	-24%
PM 10	1,260	957	303	-24%
TVOC (PPM)	96	83	13	-14%
CO (Carbon Monoxide)	1.37	1.12	0	-18%
Benzene	53	42	11	-21%
Formaldehyde	54	10	44	-81%
Weather Data:				
Temperature ©	26.9	26.5	0	1%
Relative Humidity (%)	50	53	-4	-7%



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Sacramento Kings

Golden 1 Center



The Sacramento Kings NBA basketball team is the latest sports team to recognise the importance of good indoor air quality to reduce the potential for staph infections and other serious illnesses for their players and staff.

The Golden 1 Center not only hosts the Sacramento Kings but also concerts, conventions and other entertainment events.

Sustainability was very important to the Golden 1 Center owners, and by installing AtmosAir, they were able to enhance the HVAC energy efficiency, saving tens of thousands of dollars, and reducing peak energy load demand.

Center 1 also uses solar power for clean and efficient energy, is LEED Certified and a member of the Green Sports Alliance.

AtmosAir helps the Sacramento Kings to eliminate the potential for infections and other diseases by removing dust, mould, particles, bacteria, germs, viruses and allergens.



Mold Case Study | Stamford Health System



Stamford Health System
Stamford, CT

Detail

Tully Heath Center's locker room had mold and odor issues. AtmosAir was installed. After installation testing confirmed reductions in mold spores.

Results:

**>95% Reductions in Ascospores,
Penicillium | Aspergillus types**



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Staples Center

Los Angeles

In 2017, AtmosAir was first installed in the Lexus Clubs & Suites, a 30,000 ft² area of the Staples Center, which is the world's most frequented sports arena.

AtmosAir's bi-polar ionisation air purification system was installed to improve the IAQ and reduce energy costs. The results of this trial were so successful, AtmosAir was installed in the entire arena.

Energy savings are projected at about \$220,000 annually, and the percentage of outside air has been reduced by 62%.

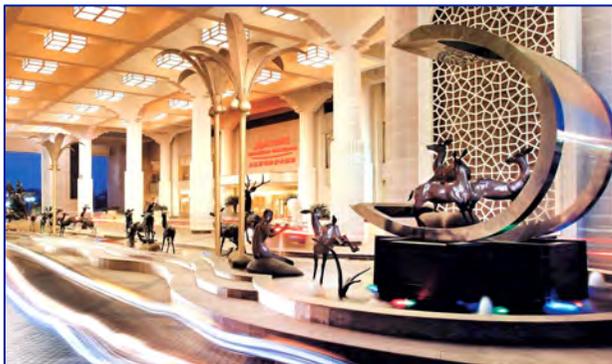


Staples Center IAQ Contaminant Testing Data

Contaminant	Baseline Sampling- NO AtmosAir	AtmosAir Sampling - AtmosAir ON	Difference from Baseline Atmos Air (Performance)
PM10	25 ug/m3	19 ug/m3	-24%
TVOC	13 index	0 index	> -95%
Radon	0.5 pci/l	0.1 pci/l	-80%
Ozone	.015 ppm	.0 ppm	-99%
Ammonia	1.8 ppm	.9 ppm	-50%
Ethanol	670 ppb	30 ppb	> -95%
Iso Alcohol	2.6 ppb	1.0 ppb	-61%
Acetone	7.5 ppb	< 1 ppb	-99%
2-Butanone	1.3 ppb	1.0 ppb	-23%
Ethyl Acetate	1.4 ppb	.92 ppb	-34%
Toluene	1.9 ppb	<1 ppb	-99%



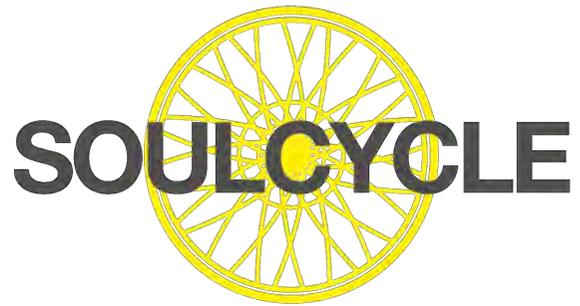
Case Study: Shanghai "XXXXX" Hongqiao Smoking Rooms



Smoking rooms were in use 5 of 7 days

	Smoking Room Before (Marriott HQ)	Smoking Room After (Marriott HQ)	Percent Change	Descriptions	Grade
0.3µm dif	7929531.4	2381580	-70%	Particle pollution includes "inhalable coarse particles," with diameters larger than 2.5 micrometers and smaller than 10 micrometers and "fine particles," with diameters that are 2.5 micrometers and smaller.	Excellent Change
0.5µm dif	745532.4	267197.75	-64%		
1.0µm dif	35809.8	11789	-67%		
2.5µm dif	17358.8	4093.75	-76%		
5.0µm dif	3003.4	946.25	-68%		
10.0µm dif	1541.6	400.5	-74%		
TVOC ppm	0.6875	0.33	-52%	Volatile organic compounds are emitted as gases from solids or liquids, they include a variety of chemicals, some of which may have short- and long-term adverse health effects.	Excellent Change
Carbon Dioxide ppm	1234.75	846	-31%	Carbon dioxide (CO2) is the primary greenhouse gas emitted through human activities.	Good Change
Carbon Monoxide ppm	1.375	0.1	-93%	Carbon monoxide is an odorless, colorless and toxic gas.	Excellent Change
Temperature °C	26.45	26.3	-1%	Temperature is a measure of the average heat or thermal energy of the particles.	No Change
Relative Humidity %RH	55.65	59.3	7%	The amount of water vapor present in air expressed as a percentage of the amount needed for saturation at the same temperature.	No Change
Benzene ppm	0.35	0.1	-71%	Tobacco smoke contains benzene and accounts for nearly half the national exposure to benzene.	Excellent Change
Sensory Measure	Terrible Smell, Discoloration, needed a mask	No Smoke smell, Colors back, air felt cleaner and more comfortable		Comments and feelings from the Tester	Excellent Change

Grade Color Key	
Green	Excellent Change
Light Green	Good Change
Yellow	Little Change
White	No Change
Grey	N/A
Red	Got Worse



SOULCYCLE and Town Sports International use AtmosAir in over 40 of their facilities across the United States as a measure to control odours, skin and soft tissue infections, MRSA, as well as other bacteria such as Staph.

“We are happy to have the AtmosAir system working in our spinning studios. The air is clean and fresh and we feel that we have the best spinning facility on the planet. The air quality is important as we ride and AtmosAir is a great system to have in place.”

Bevin – SOULCYCLE Instructor, NYC



Swiss Bank Bi-Polar Ionization Trial



In a test involving a major Swiss bank office, one group of 309 employees worked in a bi-polar ionized environment. (Group 1)

A second group of 362 employees worked in an untreated (non-ionized) environment. (Group 2)

Over the next several months, the results were quite significant.

For every single day lost to respiratory illness (cold, flu, laryngitis, etc.) in Group 1, **there were 16 days lost due to respiratory illness in the untreated Group 2.** That's a very significant difference.



Major Thai Bank IAQ Study Bangkok, Thailand



Two comprehensive studies were just completed at a major bank's headquarters in Bangkok.

Pretesting at the bank showed bacteria levels measuring over 1,307 cfu/m³ which was 2.6 times the Singapore IAQ standard SS 554:2009 of 500 cfu/m³ for an air conditioned building.

AtmosAir Model SG-508FC units were installed in the AHU serving the test floor (floor 3), and after 2 weeks the bacterial count was reduced by 83% to just 234 cfu/m³ or about half the Singapore standard.

The bank then installed additional AtmosAir units into the Air Handling Units serving 4 more floors (12, 14, 17 and 20) in their building. After 2 weeks, the bacterial level was tested on these additional 4 floors.

The results showed a total reduction of almost 92% or greater on each of these floors. On one of the floors, the bacterial count dropped to only 48 cfu/m³.



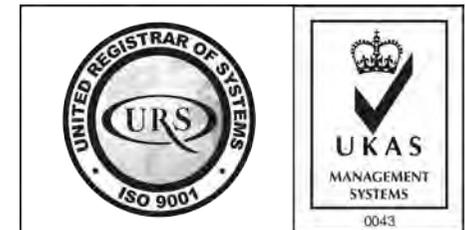
Bangkok Real Estate Developer

ATMOSAIR ACHIEVES HUGE REDUCTIONS IN BACTERIA, MOULD, PM2.5 and VOC's IN JUST 2 HOURS

PROBLEM:

- Indoor Air Quality needed improvement. Bacteria, Germs and Mould were making people sick
- Developer asked the “Safety & Health at Work Promotion Association (SHAWPAT) of Thailand to conduct the 2 hour trial using our model SGFC-400 in several test apartments

	Without AtmosAir	With AtmosAir After 30 Minutes	With AtmosAir After 2 Hours	Reduction
Bacteria Counts (CFU)	275	51	33	88% less
Fungal Counts (CFU)	375	107	46	88% less
PM2.5 Particles	70	43	32	55% less
VOC's	1,400	1,000	900	36% less



RESULTS:

- After just 2 hours, there was an 88% reduction in Bacteria and Mould. PM2.5 and VOC's were also reduced substantially. Imagine the results after 24 hours of use!
- AtmosAir proactively eliminates the contaminants in the space and provides continuous disinfection
- Oxygen Ion levels were restored to ideal levels



University of Southern California

“John McKay Training Center

The John McKay Athletic Training Center at the University of Southern California is a 110,000 ft² state of the art facility.

A total of 13 AtmosAir SG-500F systems were installed in the AHU's serving the facility.

Baseline measurements of IAQ were taken over a week period in the Football Training Area, Weightlifting Area, Locker Room Area, the First Floor and the Second Floor. Then, the AtmosAir units were turned on, and the IAQ was measured once more after 1 week of operation.

Test Location	PM 10 Particles	PM 2.5 Particles	Total VOC's
	% Reduction	% Reduction	% Reduction
Football Training	- 86%	-78%	-100%
Locker Room	-59%	-50%	-100%
Weight Room	-78%	-75%	-87%
1 st Floor	-50%	-50%	-100%
2 nd Floor	-37%	Unchanged	-100%



UBS

Nashville, Tn and Stamford Ct

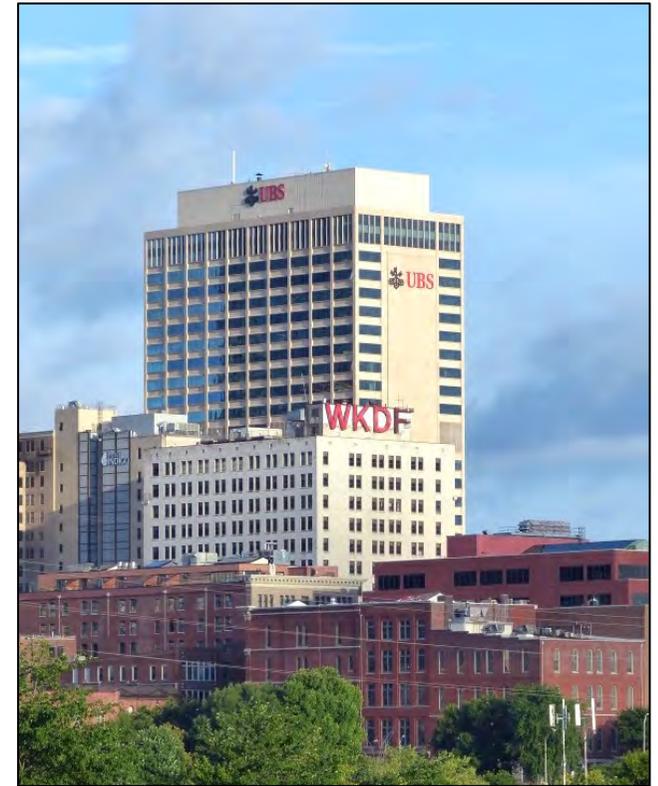
AtmosAir was initially installed to provide cleaner air in the Daycare Centre at the Stamford, Connecticut location.

The results were so impressive, that AtmosAir was then installed throughout the entire Stamford building including the world's largest trading floor.

Then, AtmosAir was installed in UBS's Nashville HQ building, and their Nashville Operations Centre.

IAQ testing showed a 90% reduction in VOC's, a 60% reduction in PM2.5 and reduced outside air intake in compliance with ASHRAE 62.1 IAQP.

"AtmosAir has proved that they can help us provide a better IAQ and workplace for our employees. We have gradually increased the amount of AtmosAir installations throughout our portfolio, and look forward to implementing more AtmosAir systems." Michael Galle, Executive Director, Building Services and Infrastructure, UBS



Nashville, Tn



World's largest Trading Floor – UBS Stamford



United Airlines

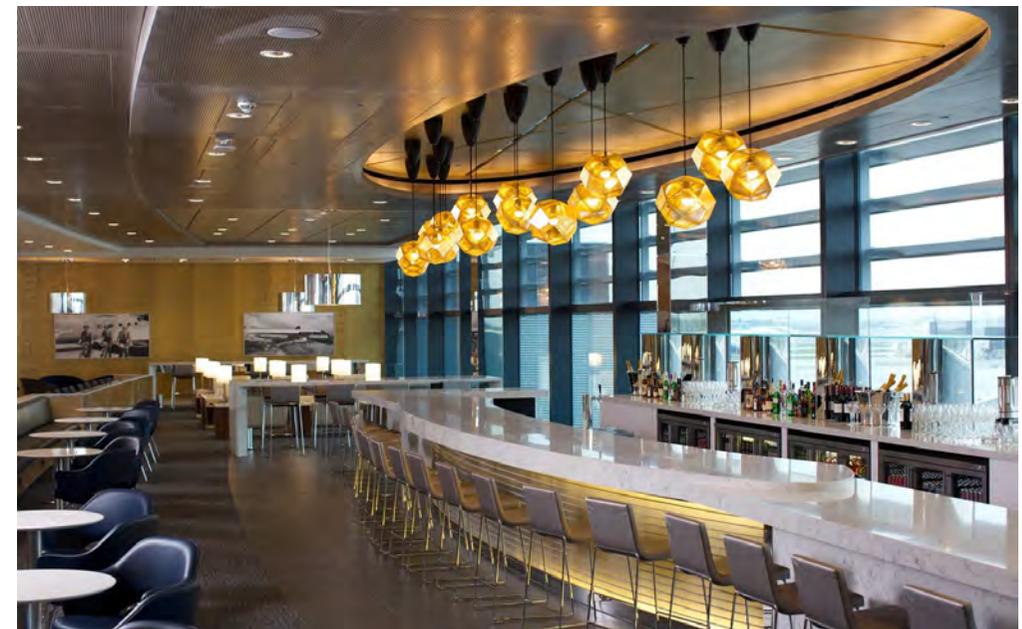
United Club Lounge



United Airlines recently installed the AtmosAir Bi-Polar Ionization system in their newly renovated United Club Lounge at Los Angeles International Airport (LAX) Terminal 7.

Shortly after installation, the lounge achieved Gold-Level certification through the new Audubon International Green Hospitality program.

United Airlines United Club location at LAX Terminal 7 was recognised for its “exemplary indoor air quality and overall dedication to environmental stewardship.”



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US ARMY HQ

Fort Belvoir, Virginia



The Hygiene staff at the US Department of Defense were concerned about mould spores in many buildings at Fort Belvoir. The buildings are older, and a number of them had serious enough problems to warrant the study.

ArtmosAir was first installed in one building on the Fort Belvoir Campus. After 30 days, the results were analyzed. There was over 95% reduction in Cladosporium Mould Spores, Penicillium Mould Spores and Aspergillus Mould Spores. PM10 and PM2.5 particles decreased over 70%, and there was an energy savings of about 16%.



The Army was so impressed that AtmosAir was installed in over 45 additional buildings at Fort Belvoir.



Fort Belvoir Power and IAQ Testing Before After Percentage Difference			
Power			
Outside Air	40%	5% (5 CFM Per Person)	-35%
Energy Consumption Costs	\$363,232	\$306,235	\$56,996
Avg amps/kWh rooftop readings	29.6	23.06	28%
Avg kWh rooftop readings	3.44	2.65	23%
IAQ			
PM2.5	19	5	-74%
PM10	24	7	-71%
Total Indoor Mold Spores	7,480	69	-99%

WeWork

New York City

In 2017, AtmosAir was installed on the 6th floor of WeWork's 18th Street Corporate HQ and "Green Desk" facility. WeWork had many employees and tenants and numerous sources for indoor air quality (IAQ) issues.

AtmosAir's bi-polar ionisation air purification system was installed to help protect WeWork's employees and tenants from illnesses, dust and pollutant particles (PM10, PM2.5), VOC's, Bacteria and Viruses.

The results of that 6th floor trial were outstanding. VOC's, Particulates (including PM2.5) and pathogens were successfully reduced and AtmosAir was installed in the remaining floors of the Chelsea office.

As a result of this first installation, AtmosAir has been installed in WeWork's locations in Brooklyn, Manhattan, Shanghai and Singapore with more locations coming onstream shortly.





Breathe Visibly Cleaner, Pure,
and Fresh Indoor Air Again!

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