

# SCHOOL CASE STUDIES AND PROJECTS



## Arizona State University

Energy Innovations project – 16 buildings;  
AtmosSmart for demand control ventilation and  
energy efficiency.



## University of Colorado

ME Engineers; Reduction in HVAC by 15%; Real-  
time IAQ measurement.



## University of Maryland

VOCs and PM reduced, ventilation reduced by  
50%.



## USC

Four buildings on campus with Atmos installed.

# Case Study | University of Maryland



## University of Maryland Seneca Building

### RESULTS

AtmosAir was installed in the Seneca Building which houses the sustainability office.

Air testing was completed.

- TVOC were reduced by 54%.
- All particle ranges measured were reduced.
- PM0.5 was reduced by 30%.

University of Maryland is currently monitoring air quality in real time with AtmosAware.

The next step is to reduce outside air intake by 50%.

Element	TVOC	PM .03	PM .05	PM 1	PM 2.5	PM 5	PM 10
2 <sup>nd</sup> Floor	183	N/A	.589	.803	1.04	1.71	2.25
1 <sup>st</sup> Floor	84	N/A	.453	.609	.842	1.42	1.945
% Difference	-54%	N/A	-30%	-32%	-24%	-20%	-16%

**Seneca Building test results showing decreases in air quality contaminants across the board.**



University of Maryland Seneca Building in College Park, MD

## RESULTS

AtmosAir 508 series systems and AtmosAware air monitoring was installed in the Seneca Building which houses the sustainability office.

Outside air intake was reduced by 50%, resulting in significant energy savings.

Air testing was completed across the building's two floors: one served by AtmosAir, the other without. Despite the reduction in outside air intake, results showed:

- TVOCs reduced by 54%.
- All particle ranges measured were reduced.
- PM0.5 was reduced by 30%.

ASU is currently monitoring their IAQ in real-time on their building management system (BMS) with AtmosSmart.



Arizona State University in Tempe, AZ

Element	TVOC	PM .03	PM .05	PM 1	PM 2.5	PM 5	PM 10
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# Case Study | Rush University Medical Center



## RUSH UNIVERSITY MEDICAL CENTER Chicago, IL



See below a chart of the baseline bacterial sampling results:

Bacteria Type	Pre AtmosAir	Post AtmosAir	% Difference
Bacillus Flexus	14 CFU / m3	ND	-100%
Bacillus Marisflavi	7 CFU / m3	ND	-100%
Kocuria Rosea	28 CFU / m3	ND	-100%
Micrococcus Luteus	49 CFU / m3	ND	-100%
Staphylococcus Lugdunensis	140 CFU / m3	ND	-100%
<b>Total</b>	<b>238 CFU / m3</b>	<b>ND</b>	<b>-100%</b>

ND = Non Detectable

CFU = Colony Forming Unit

**Rush University Medical Center bacteria sampling results showing bacteria measurements that are so low that they are considered undetectable.**

# Case Study | Cherokee Elementary School Atlanta, GA



## Cherokee Elementary School

### RESULTS

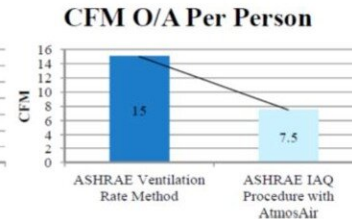
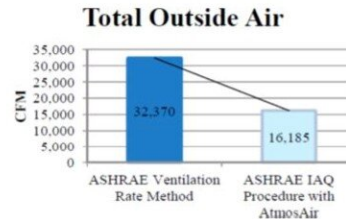
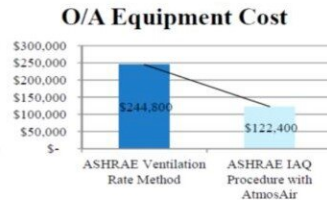
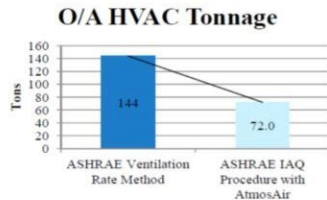
AtmosAir was included in-design for Cherokee Elementary School in Atlanta, GA.

The school was able to downsize HVAC equipment by greater than 70 tons from initial estimates, reducing construction costs by over \$122,000 following the ASHRAE 62.1 IAQ procedure.

Annual energy savings from drawing and conditioning less outside air is estimated at \$19,000.

**Total first year savings: \$141,498**

Cherokee Elementary School Cost Analysis:	
Total Supply Air:	103,750
Occupancy	2158
AtmosAir Cost:	\$106,200
HVAC Equipment using Ventilation Rate Procedure (144 tons)	\$244,800
HVAC Equipment using Indoor Air Quality Procedure (AtmosAir -72 tons required)	\$122,400
Capital Expenditure Savings	\$122,400
Operational Expenditure Savings (Running system with 16,185 CFM of outside air vs. 32,370 CFM of outside air.)	\$19,098
<b>Total Savings Year 1</b>	<b>\$141,498</b>



# Case Study | Orange County Public Schools



**Orange County  
Public Schools**

## Manuel Esqueda Elementary School Test

### RESULTS

AtmosAir M1000s were installed in multiple classrooms in an Manuel Esqueda Elementary School.

Before and after air quality and mold spore testing was performed by a third party, DTS Environmental, an NVLAB-accredited laboratory.

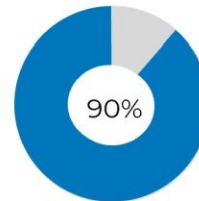
AtmosAir provided:

90% TVOC reductions

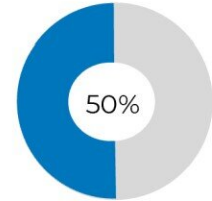
50% mold spore reductions



Manuel Esqueda Elementary School in Santa Ana, CA



Reduction in  
**VOC's**



Reduction in  
**Mold Spores**