Resilient Building Operations

Where Health, Energy, and Comfort Collide

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Who are we?

"The Way Buildings Work Better"

Established in Vandalia, OH

In business for over 75 years.

Markets include K-12, Medical, Industrial, Higher Education, and Commercial in OH, KY, & IN.

Services include Building automation systems & service, Mechanical service & repair, Energy Management services, Client Services, Plumbing services, Security & Access Control, Analytics & Fault Detection Diagnostics, and Healthy Buildings Services.

Who are we?

WAIBEL
"The Way Buildings Work Better"

BUILDINGLOGIX
BUILDING SYSTEM OPTIMIZATION

2021 Recipients of:

- DBJ's Best Places to Work in Dayton (7th time)
- BBB Eclipse Integrity Award
- Business of the Year – Vandalia-Butler Chamber

Staff comprised of over 120 great associates dedicated to providing the best in technology

WAIBEL
"The Way Buildings Work Better"

BUILDINGLOGIX
BUILDING SYSTEM OPTIMIZATION

We are a COMFORT company

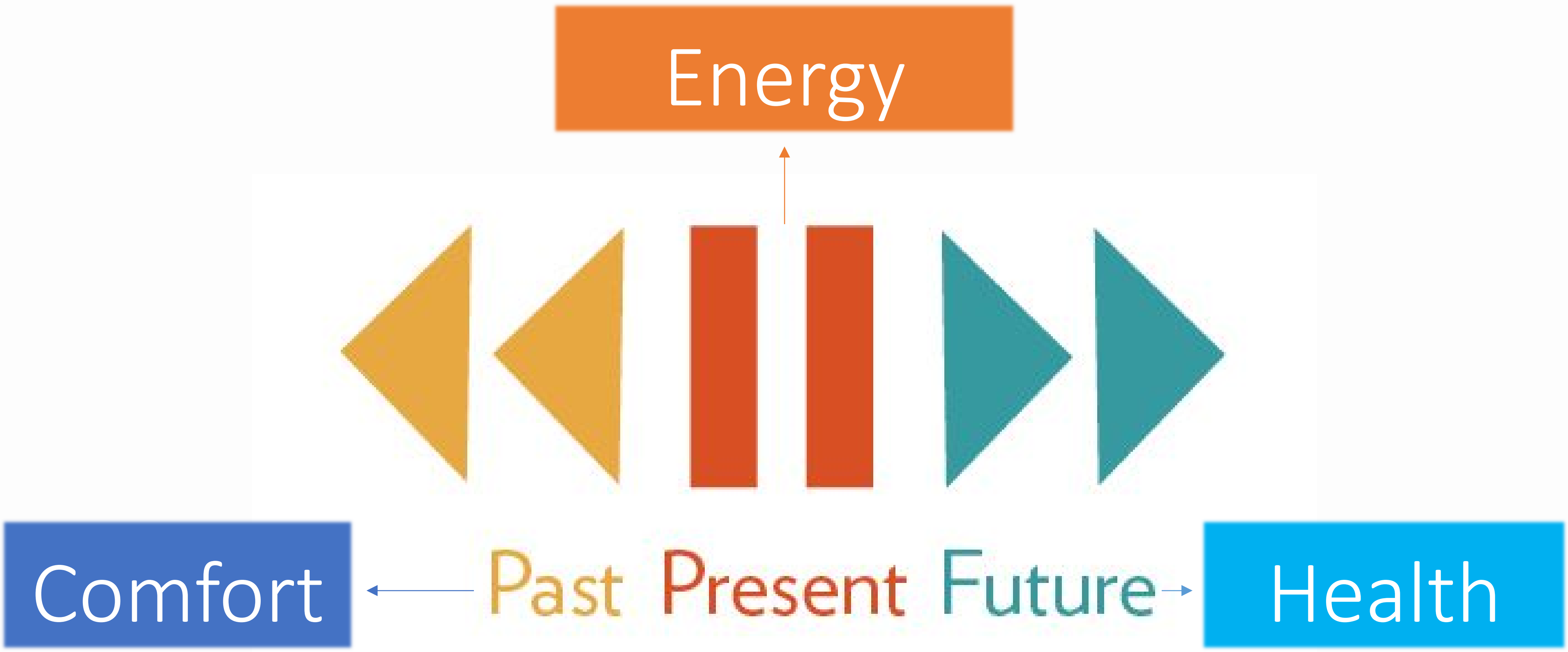
We are an ENERGY company

We are a HEALTH company

We make buildings work better

Objectives

1. Define health and wellness improvements to existing buildings and the design of new buildings.
2. Understanding the capabilities of existing building automation systems to optimize health, energy, and comfort goals.
3. Proactively evaluate and manage major building components.
4. Recognize the critical features of an optimized, integrated building system.


Energy
Comfort
Past Present Future
Health

Energy

NOW

Comfort

Health

Comfort
Energy
Health
Building Purpose

PEOPLE spend
90% of their time **INDOORS**

PEOPLE consume
2700 gallons of air
per **DAY**

INDOOR AIR is
10 times MORE contaminated
than **OUTDOOR AIR**

IAQ is one of the top 5 most urgent environmental risks to public health

An estimated 24-million Americans suffer from asthma, the #1 cause of absenteeism in K-12 schools

50% of all illness is caused by indoor air pollution

THEN

Health is the absence of disease

NOW

Health is the state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity

Nine Foundations of a Healthy Building

Ventilation	Air Quality	Thermal Health
Moisture	Dust & Pests	Safety & Security
Water Quality	Noise	Lighting & Views

forhealth.org, 2020

COVID-19 IMPACTS

- Shifting out of disruption, into recovery
- Focus has shifted to physical environments
  - Office layouts, de-densifying, IAQ, cleaning/disinfecting, etc.
- How has it changed things?
  - Expediting the movement to Healthy Buildings
  - Accelerating Sustainability & Resiliency planning
- Responsible RestartOhio

PERFORMANCE PRIORITIES

- Balance between Occupant Comfort, Energy Efficiency, and Healthy Buildings
  - With Performance Indicators (PI’s) for each
- Proactive Strategies vs Reactive Strategies
- Initiate Facilities Management Planning

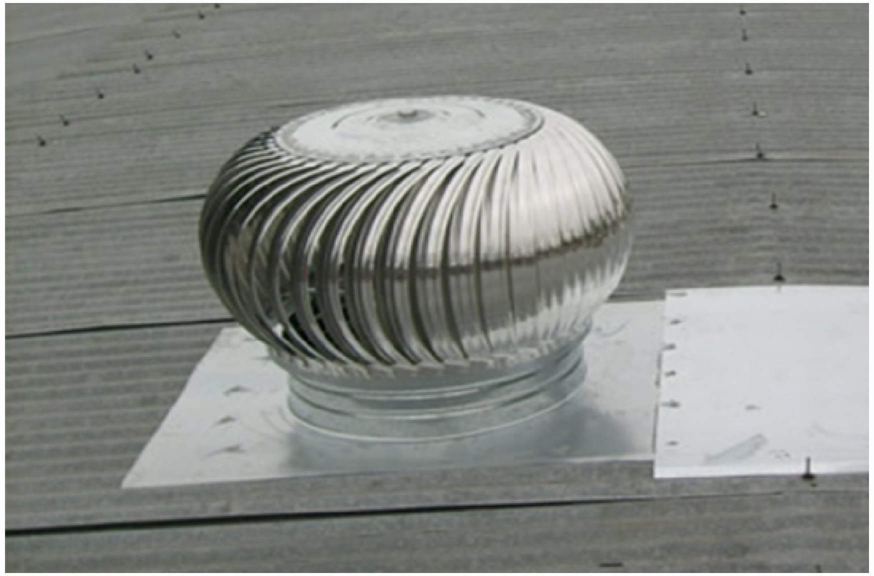
‘NEW NORMAL’ TERMS

- Air Changes per Hour (ACH) or Air exchanges
- Ionization
- MERV
- Social distancing
- Aerosols
- Communicable

Critical Response Measures

- VENTILATION PERFORMANCE
- PURIFICATION STRATEGIES
- FILTRATION REPLACEMENT
- DISINFECTION PROTOCOLS



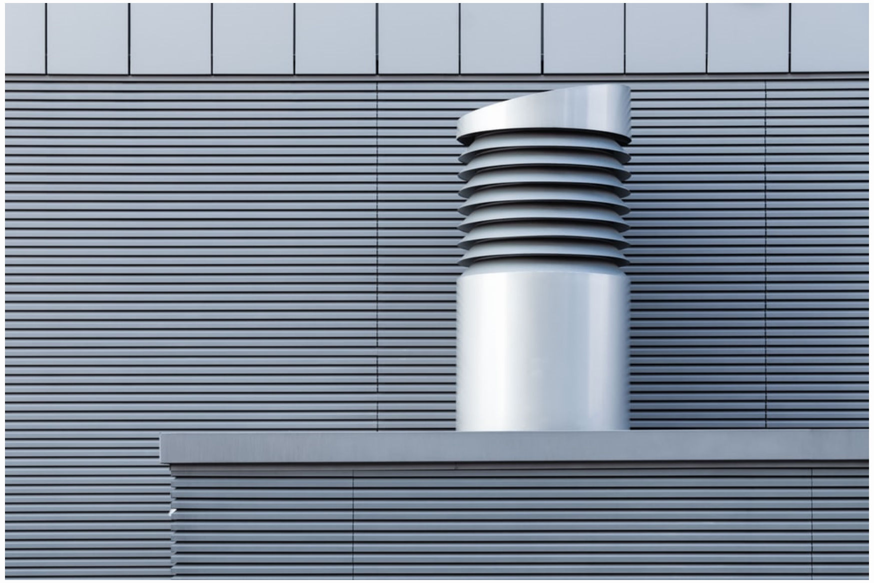



VENTILATION PERFORMANCE

- Increase fresh, filtered air
- Dilute indoor air
- Verify operation of
  - Building Pressurization
  - Air Changes per Hour (ACH)
  - Automated Controls
  - Exhaust fans/vents
  - Dampers

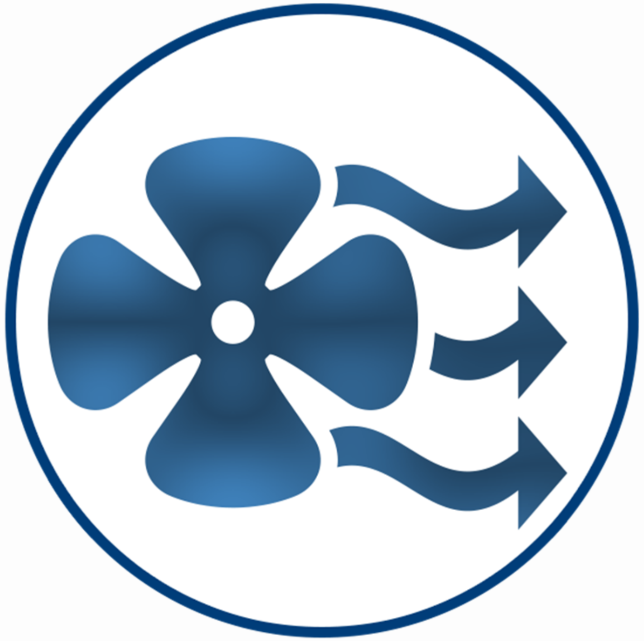
VENTILATION PERFORMANCE

- Space Conditions
  - Humidity
  - Temperature
  - Carbon Dioxide (CO_2)
  - Limit Room Transfer Air



VENTILATION PERFORMANCE

- Considerations
  - Energy Cost Impact
  - System Capabilities
- ASHRAE Standards
  - Standard 62.1 – Ventilation
    - VRP & IAQP Methods
  - Standard 55 –Thermal Comfort



VENTILATION PERFORMANCE

- Energy Impact
  - Evaluating current systems capabilities
  - Need for monitoring of systems
  - Strategic use of demand-based system control
  - Use appropriate criteria for evaluation

PURIFICATION STRATEGIES

- Ultraviolet (UV-C)
  - In Unit
  - Upper Room
- Ionization
  - Numerous Types
- Proprietary Technologies
- Packaged Air Cleaners

PURIFICATION STRATEGIES – UV-C TECHNOLOGY

- UV-C is a shortwave ultraviolet germicidal energy (UVGI).
- Safe to humans in the airstream.
- Harmful to virus, bacteria and germs.
- Passive Air Purification
- Cleans and treats the airside equipment

PURIFICATION STRATEGIES – UV-C TECHNOLOGY

- Considerations
  - Safety measures once installed – warning stickers, door switches
  - Breakdown of plastics, wiring, and filter media
  - Bulb replacement

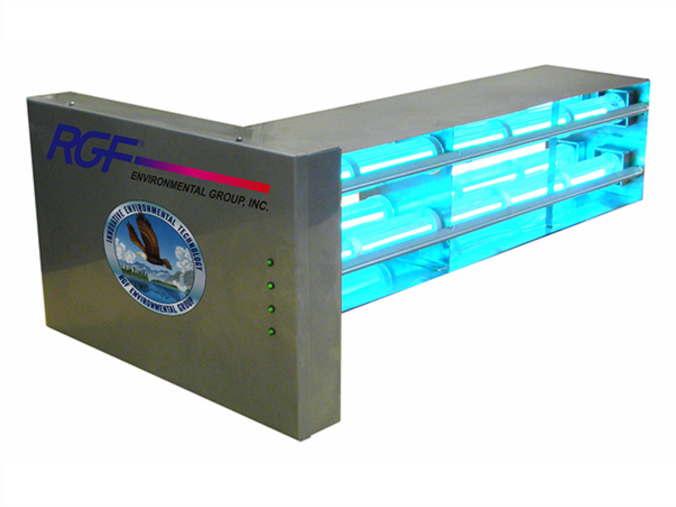
PURIFICATION STRATEGIES – ION TECHNOLOGY

- Purifies air as it passes through positive and negative ions
- Breakdown pollutants into harmless compounds
  - These compounds are then able to collect in the filtration media
- Active Air Purification
- Reduces odor and contaminants

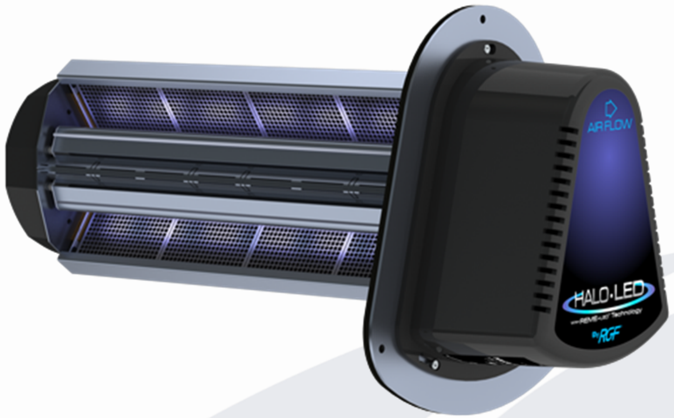
PURIFICATION STRATEGIES – ION TECHNOLOGY

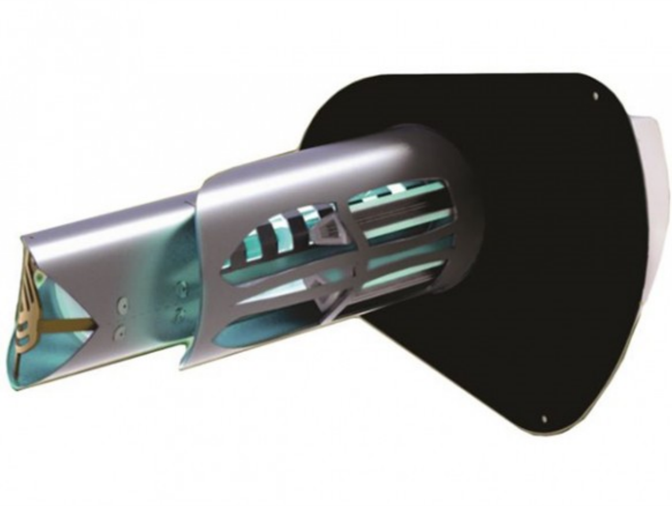
- Considerations
  - No harmful bi-products
  - UL Listed products (867 & 2998)
  - Variety of application/installation methods
  - Low maintenance

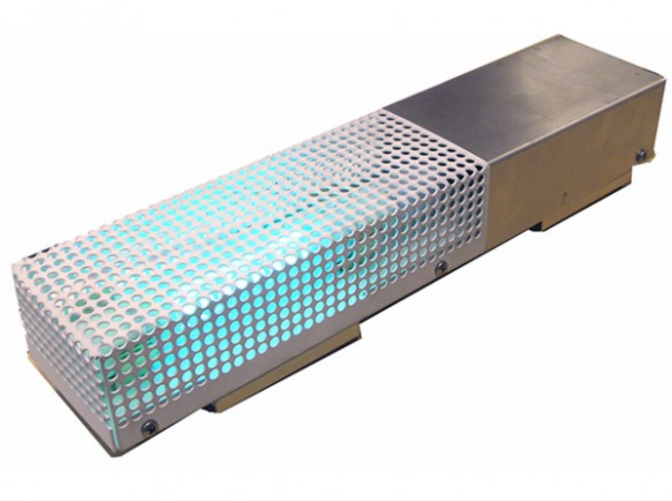
PURIFICATION STRATEGIES – PROPRIETARY TECHNOLOGIES



- Several products now utilize UVGI and Ionization through:
  - Photo-hydroionization (PHI)
  - Reflective Electro Magnetic Energy (REME)
- Active Air Purification
  - Rapid recovery units are available (Reactive Approach)
- Friendly oxidizers (biproducts of oxygen/hydrogen)





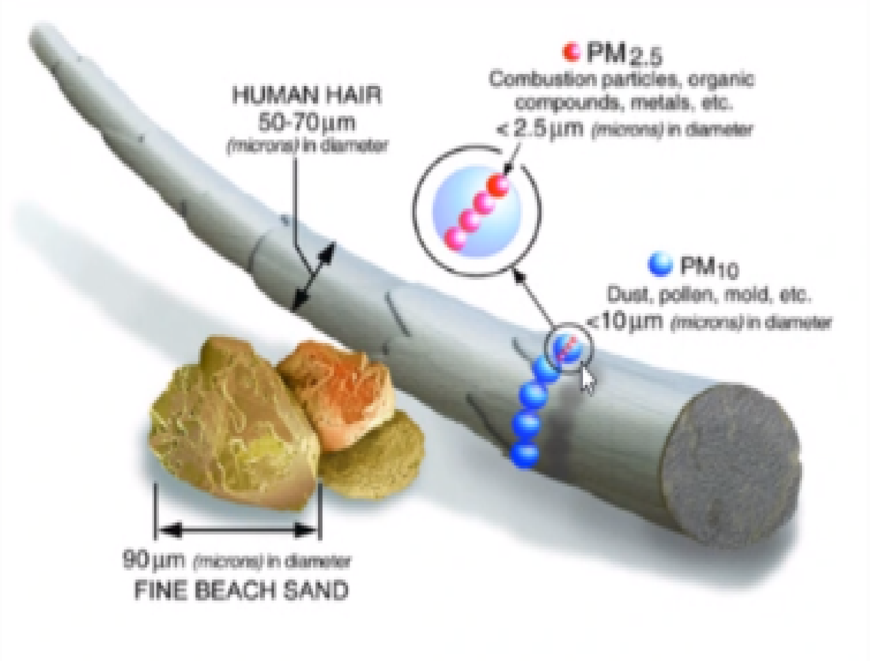


PURIFICATION STRATEGIES – PROPRIETARY TECHNOLOGIES

- Considerations
  - Increased equipment performance
  - UL Listed products
  - Low maintenance
  - Simple installation

PURIFICATION STRATEGIES

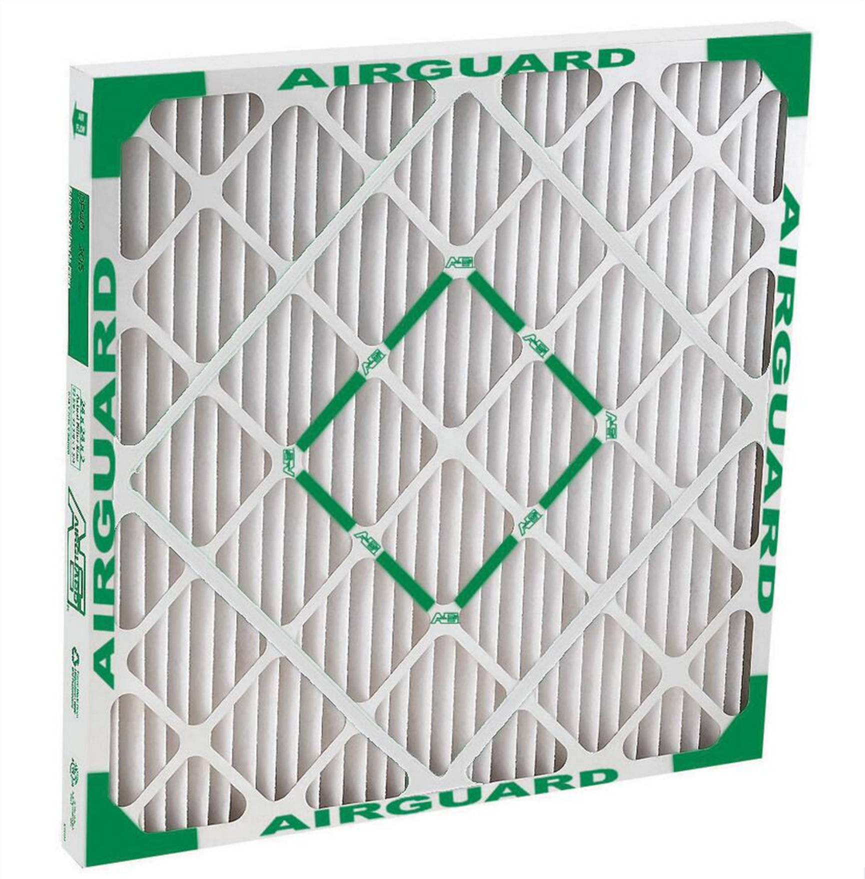
- Energy Impact
  - Compare total costs
  - Include additional benefits
  - How does it impact ventilation performance?
  - How does it impact filtration performance?



www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM

FILTRATION REPLACEMENT

- Increase regularity of changes
- Increase filter rating (MERV)
- Dust collection
- Room level options for HEPA, Carbon, or Charcoal filter equipment.



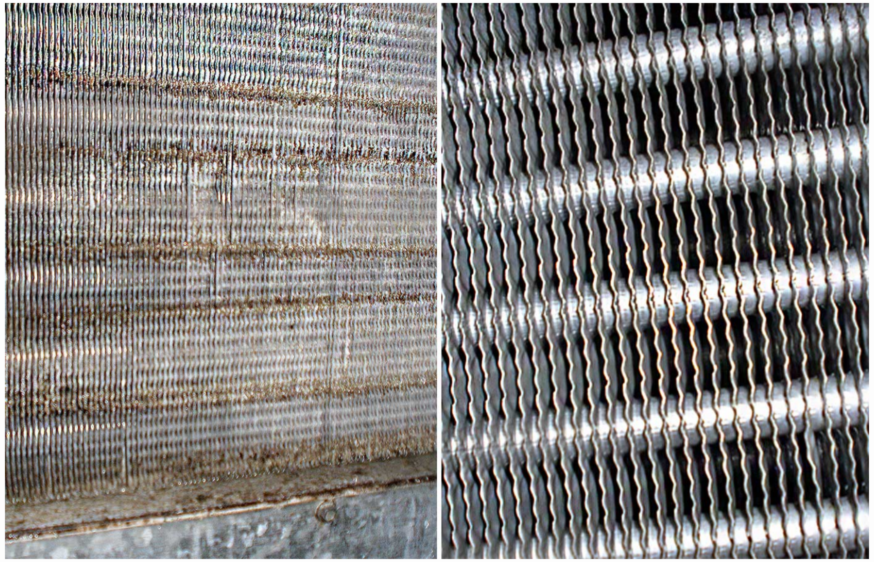
FILTRATION REPLACEMENT

- Considerations
  - System capability
  - System pressure drop
  - Coordination necessary
  - Could increase maintenance costs

FILTRATION REPLACEMENT

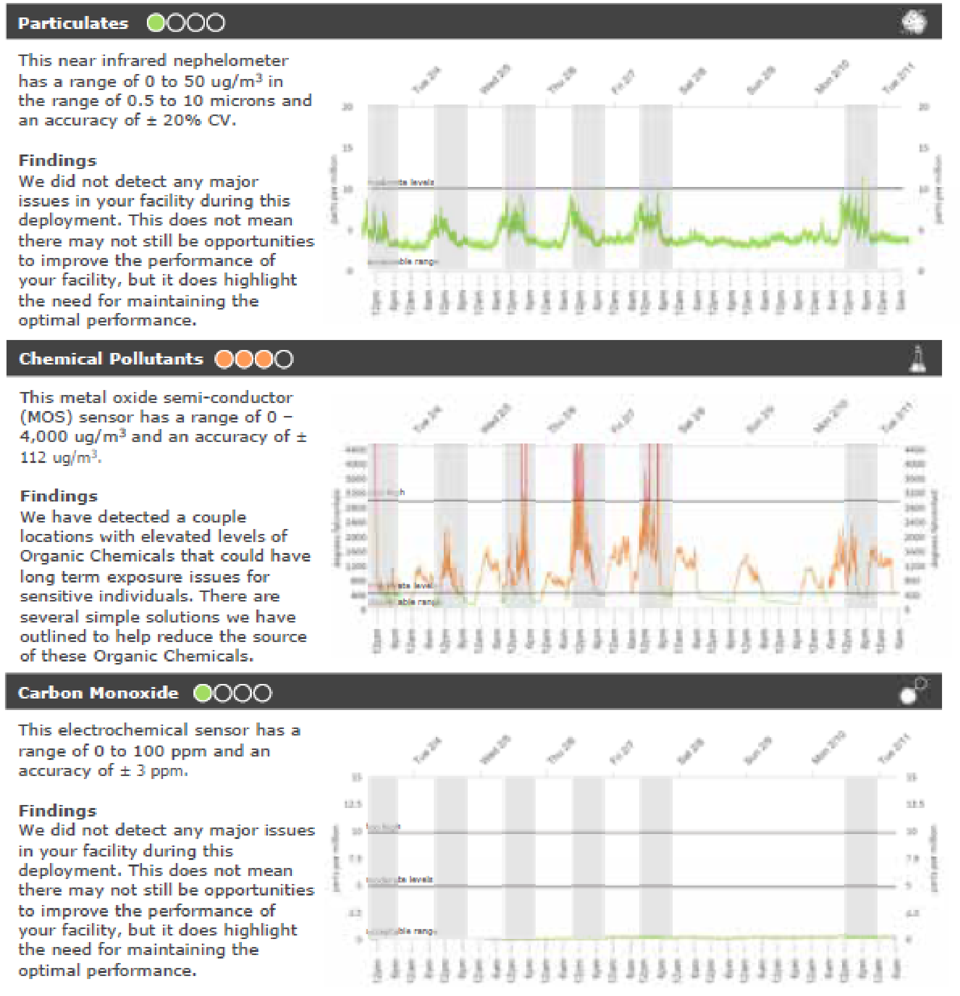
- Energy Impact
  - Compare recurring costs
  - How does it impact preventative maintenance?
- Health Impact
  - How does it impact ACH?

DISINFECTION PROTOCOLS
SYSTEM DISINFECTION



- Mechanical System Cleaning
  - Coils
  - Drain pan
  - Equipment cabinet
  - Fan wheels

CONFIRMING EXISTING BUILDING PERFORMING



- Without a Building Automation System (BAS)
  - Visual Inspection of Equipment and Dampers
  - Temporary Data Loggers
    - Can help identify scheduling
    - CO_2
    - VOC
    - PPM
    - Temp
    - Humidity

CONFIRMING EXISTING BUILDING PERFORMING

- With a Building Automation System (BAS)
  - Review Graphics
    - CO_2
    - Temp
    - Humidity
  - Query for Points, Overrides
  - Lighting and load control

CONFIRMING BUILDING PERFORMING

- With a Building Automation System (BAS)
  - System Level (AHU’s RTU’s DOAS)
  - Unitary Level
    - VAV’s
    - Unit Vents
    - Fan Coils
  - Opportunity for Analytics and FDD

NEW CONSTRUCTION BUILDING PERFORMING

- Design with a Building Automation System (BAS)
- Outside Airflow Measuring Stations (OAFMS)
- High Rated MERV (13 to 16) Filtration
- Building-level utility meters
- Include Sensors – Temp, RH, VOC, CO_2, PM2.5, PM10, Particle, etc
- Air Purification – Ionization, Ultraviolet, etc
- Analytics & FDD

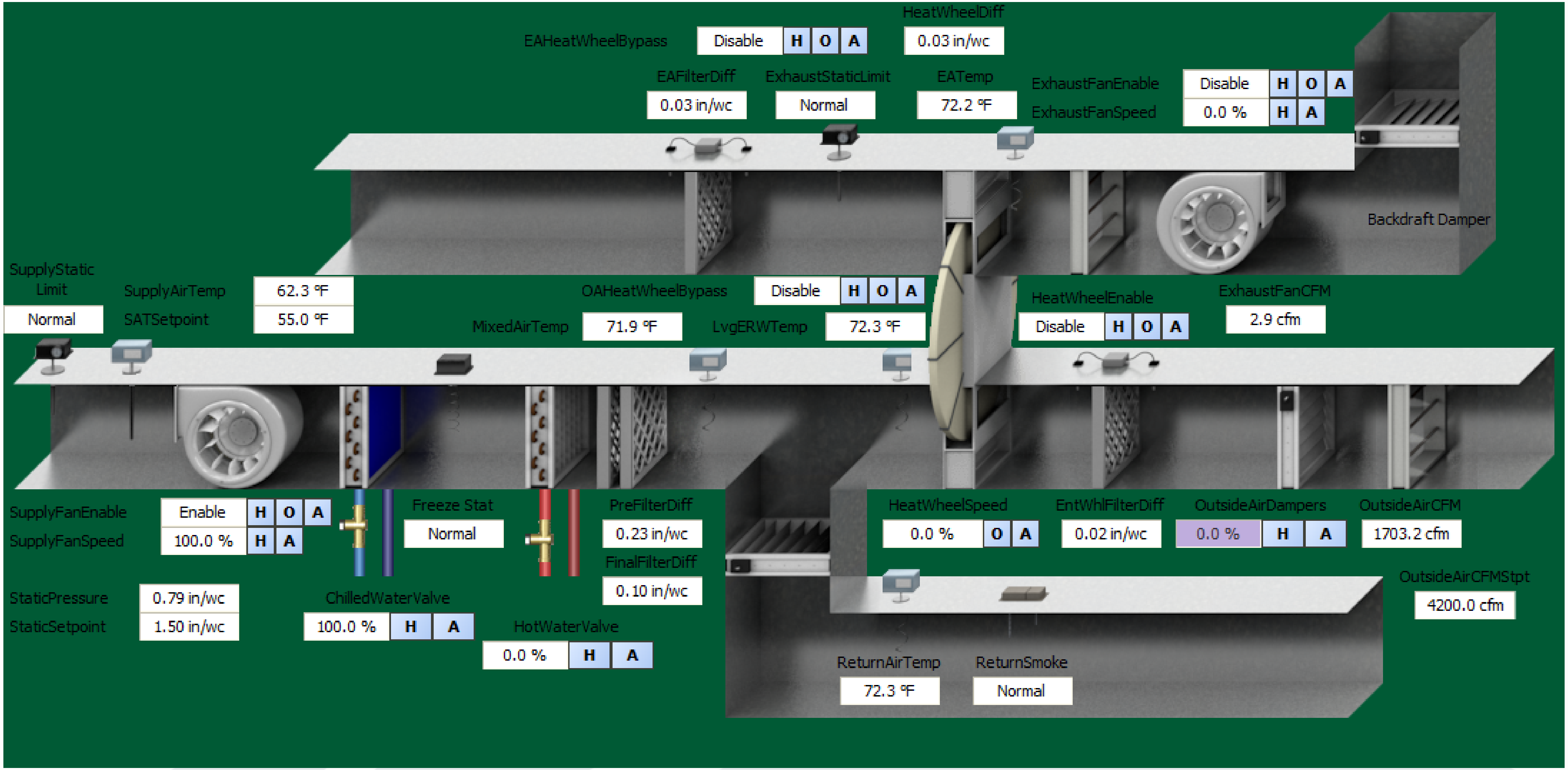
Home | Boiler Plant | Chiller Plant | AHUs | VAVs | Radiant Panels/ Fan Coils | Floorplans | Schedules | Alarms

Air Handler Overview

Mech Name	Serves	Occupancy	DA Temp	DAT Setpt	MA Temp	HW Valve	DX Cooling	OA Damper	Min OA Damper	LL Alarm	SFan Status
AHU A201	Middle School Admin Area	Occupied	79.3 °F	55.0 °F	76.6 °F	0.0 %	On	0.0 %	15.0 %	Normal	On
AHU C201	High School Admin Area	Occupied	60.7 °F	65.0 °F	75.8 °F	100.0 %	Off	0.0 %	10.0 %	Normal	On

Mech Name	Serves	Occupancy	DA Temp	DAT Setpt	MA Temp 1	MA Temp 2	HW Valve	CHW Valve	OA Damper	Min OA Damper	LL Alarm	SFan Status
AHU A202	Classrooms	Occupied	66.0 °F	65.0 °F	74.5 °F	74.2 °F	0.0 %	24.5 %	0.0 %	15.0 %	Normal	On

Mech Name	Serves	Occupancy	Zone Temp 1	Zone Temp 2	DA Temp	DAT Setpt	HW Valve	CHW Valve	OA Damper	Min OA Damper	LL Alarm	SFan Status
AHU C202	Gymnasium	Occupied	71.2 °F	72.4 °F	65.8 °F	65.9 °F	0.0 %	19.9 %	20.0 %	20.0 %	Normal	On



EAHeatWheelBypass
Disable H O A
HeatWheelDiff
0.03 in/wc
EAFilterDiff
0.03 in/wc
ExhaustStaticLimit
Normal
EATemp
72.2 °F
ExhaustFanEnable
Disable H O A
ExhaustFanSpeed
0.0 % H A
Backdraft Damper
SupplyStatic Limit
Normal
SupplyAirTemp
62.3 °F
SATSetpoint
55.0 °F
OAHeatWheelBypass
Disable H O A
HeatWheelEnable
Disable H O A
ExhaustFanCFM
2.9 cfm
MixedAirTemp
71.9 °F
LvgERWTemp
72.3 °F
SupplyFanEnable
Enable H O A
SupplyFanSpeed
100.0 % H A
Freeze Stat
Normal
PreFilterDiff
0.23 in/wc
FinalFilterDiff
0.10 in/wc
HeatWheelSpeed
0.0 % O A
EntWhlFilterDiff
0.02 in/wc
OutsideAirDampers
0.0 % H A
OutsideAirCFM
1703.2 cfm
OutsideAirCFMStpt
4200.0 cfm
StaticPressure
0.79 in/wc
StaticSetpoint
1.50 in/wc
ChilledWaterValve
100.0 % H A
HotWaterValve
0.0 % H A
ReturnAirTemp
72.3 °F
ReturnSmoke
Normal

Name	Area	Occupancy	Thermostat	Space Temp	Active Setpt	Cool Deviation	DA Temp	HW Reheat	Air Flow	Flow Setpt	Damper	Fan Enable	Occ Ovr Button
VVF-A001	Room A011	Occupied	Lockout Thermostat	70.7 °F	74.0 °F	-3.29 °F	69.5 °F	0 %	401 cfm	400 cfm	53 %	On	False
VVF-A002	Room A009	Occupied	Lockout Thermostat	71.4 °F	74.0 °F	-2.59 °F	69.4 °F	0 %	451 cfm	450 cfm	44 %	On	False
VVF-A003	Room A010	Occupied	Lockout Thermostat	70.4 °F	70.0 °F	-3.60 °F	69.9 °F	0 %	450 cfm	450 cfm	39 %	On	False
VVF-A004	Room A008	Occupied	Lockout Thermostat	70.0 °F	74.0 °F	-3.99 °F	65.6 °F	0 %	687 cfm	678 cfm	22 %	Off	False
VVF-A005	Room A007	Occupied	Lockout Thermostat	71.3 °F	74.0 °F	-2.75 °F	66.8 °F	0 %	687 cfm	678 cfm	41 %	On	False
VVF-A006	Room A004	Occupied	Lockout Thermostat	72.9 °F	74.0 °F	-1.07 °F	69.4 °F	0 %	537 cfm	543 cfm	48 %	Off	False
VVF-A007	Room A005	Occupied	Lockout Thermostat	70.8 °F	70.0 °F	-3.17 °F	70.3 °F	0 %	448 cfm	450 cfm	40 %	On	False
VVF-A008	Room A003	Occupied	Lockout Thermostat	72.5 °F	74.0 °F	-1.46 °F	65.9 °F	0 %	452 cfm	450 cfm	30 %	Off	False
VVF-A101	Media Center	Occupied	Lockout Thermostat	73.1 °F	74.0 °F	-0.90 °F	70.7 °F	0 %	970 cfm	965 cfm	55 %	On	False
VVF-A102	Room A113	Occupied	Lockout Thermostat	79.9 °F	74.0 °F	5.92 °F	107.7 °F	0 %	156 cfm	250 cfm	100 %	On	False
VVF-A103	Room A110	Occupied	Lockout Thermostat	72.1 °F	74.0 °F	-1.88 °F	71.6 °F	0 %	572 cfm	578 cfm	33 %	On	False
VVF-A104	Room A108	Occupied	Lockout Thermostat	73.5 °F	74.0 °F	-0.49 °F	71.4 °F	0 %	449 cfm	450 cfm	23 %	On	False
VVF-A105	Room A109	Occupied	Lockout Thermostat	73.1 °F	74.0 °F	-0.90 °F	72.6 °F	0 %	446 cfm	450 cfm	46 %	On	False
VVF-A106	Room A106	Occupied	Lockout Thermostat	72.3 °F	70.0 °F	-1.66 °F	74.4 °F	0 %	395 cfm	390 cfm	22 %	On	False
VVF-A107	Room A132	Occupied	Lockout Thermostat	71.4 °F	70.0 °F	-2.59 °F	70.4 °F	0 %	648 cfm	663 cfm	38 %	On	False
VVF-A108	Room A105	Occupied	Lockout Thermostat	72.4 °F	74.0 °F	-1.61 °F	72.2 °F	0 %	393 cfm	400 cfm	44 %	On	False
VVF-A109	Room A102	Occupied	Lockout Thermostat	72.8 °F	74.0 °F	-1.18 °F	71.9 °F	0 %	447 cfm	450 cfm	28 %	On	False
VVF-A110	Room A103	Occupied	Lockout Thermostat	71.9 °F	74.0 °F	-2.05 °F	70.4 °F	0 %	456 cfm	450 cfm	51 %	On	False
VVF-A111	Room A136	Occupied	Lockout Thermostat	73.8 °F	74.0 °F	-0.16 °F	69.6 °F	0 %	1734 cfm	1729 cfm	67 %	On	False
VVF-A112	Room A101	Occupied	Lockout Thermostat	73.4 °F	74.0 °F	-0.63 °F	73.1 °F	0 %	558 cfm	553 cfm	39 %	On	False
VVF-A113	Media Center	Occupied	Lockout Thermostat	73.2 °F	74.0 °F	-0.75 °F	68.6 °F	0 %	915 cfm	960 cfm	97 %	On	False
VVF-A114	Room A115	Occupied	Lockout Thermostat	73.1 °F	74.0 °F	-0.89 °F	71.8 °F	0 %	202 cfm	200 cfm	45 %	On	False
VVF-B001	Room B002	Occupied	Lockout Thermostat	72.4 °F	74.0 °F	-1.61 °F	66.3 °F	0 %	579 cfm	578 cfm	22 %	On	False
VVF-B003	Room B003	Occupied	Lockout Thermostat	72.1 °F	74.0 °F	-1.93 °F	70.4 °F	0 %	406 cfm	400 cfm	39 %	On	False
VVF-B004	Room B006	Occupied	Lockout Thermostat	70.8 °F	74.0 °F	-3.19 °F	71.0 °F	0 %	548 cfm	550 cfm	45 %	On	False
VVF-B005	Room B007	Occupied	Lockout Thermostat	71.7 °F	70.0 °F	-2.31 °F	71.3 °F	0 %	525 cfm	528 cfm	14 %	On	False
VVF-B006	Room B012	Occupied	Lockout Thermostat	73.2 °F	74.0 °F	-0.78 °F	73.4 °F	0 %	624 cfm	613 cfm	24 %	On	False
VVF-B007	Room B008	Occupied	Lockout Thermostat	70.7 °F	70.0 °F	-3.31 °F	71.2 °F	0 %	403 cfm	400 cfm	30 %	On	False
VVF-B101	Room B114	Occupied	Lockout Thermostat	73.8 °F	74.0 °F	-0.18 °F	73.2 °F	0 %	1570 cfm	1587 cfm	25 %	On	False
VVF-B102	Room B103	Occupied	Lockout Thermostat	75.1 °F	74.0 °F	1.12 °F	88.1 °F	0 %	698 cfm	1255 cfm	100 %	On	False
VVF-B103	Room B104	Occupied	Lockout Thermostat	74.4 °F	74.0 °F	0.43 °F	77.3 °F	0 %	545 cfm	280 cfm	0 %	On	False
VVF-B104	Room B103	Occupied	Lockout Thermostat	75.3 °F	74.0 °F	1.28 °F	70.0 °F	0 %	750 cfm	1000 cfm	100 %	On	False
VVF-B105	Room B115	Occupied	Lockout Thermostat	76.9 °F	74.0 °F	2.93 °F	80.0 °F	0 %	2595 cfm	1650 cfm	0 %	On	False
VVF-B106	Room B118	Occupied	Lockout Thermostat	73.8 °F	74.0 °F	-0.17 °F	75.4 °F	0 %	315 cfm	317 cfm	39 %	On	False

Device: VVF-A001
Location: Room A011

Occupancy Command:	Occupied
Effective VAV Mode:	Cool

Effective VAV Mode determines which setpt is used for control

Zone Temp:	70.7 °F
Active Zone SetPt:	74.0 °F
Zone Setpt Source:	Lockout Thermostat
Network Setpt:	72.0 °F
Wall Module High SetPt:	73.0 °F
Wall Module Low SetPt:	68.0 °F

Active Cooling Setpt:	74.0 °F
Active Heating Setpt:	70.0 °F

The "Zone Setpt Source" +/- "Occupied Offset" calculates the Active Occupied Clg and Occupied Htg setpoints

Occupied Offset Setpt:	4.00 Δ°F

The "Occupied Offset Setpt" will Effect the Thumbwheel Setpt and the Network Setpt.

Zone Cool Setpt Deviation:	-3.29 °F

The Unoccupied Cool Setpoint is located at the AHU Info Graphics.

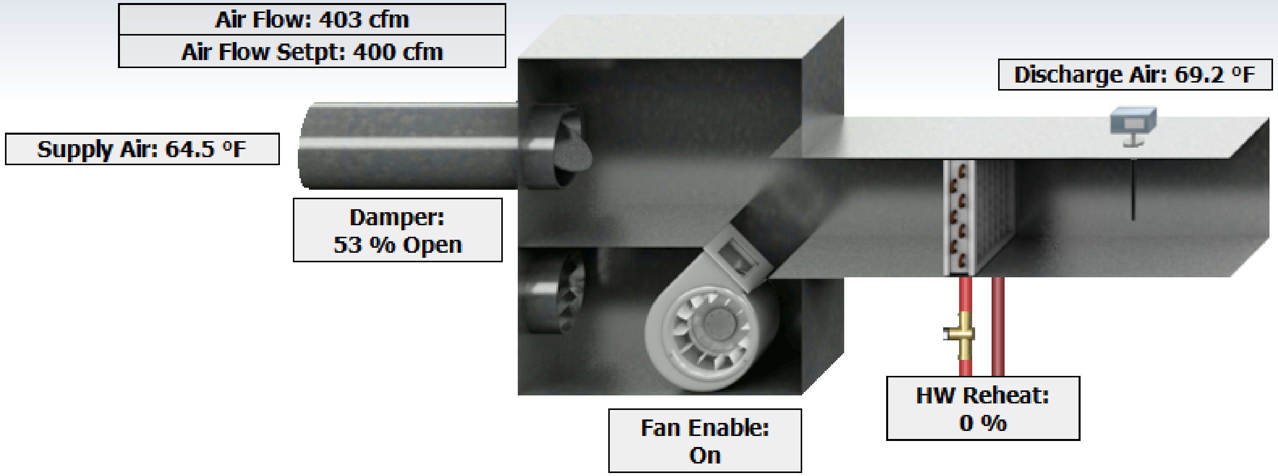
Unoccupied Heat Setpt:	60.0 °F

Max Flow Setpt:	900 cfm
Reheat Flow Setpt:	899 cfm
Min Flow Setpt:	400 cfm

Flow Override State:

Auto

Damper Override Position:	+inf %



Notes:

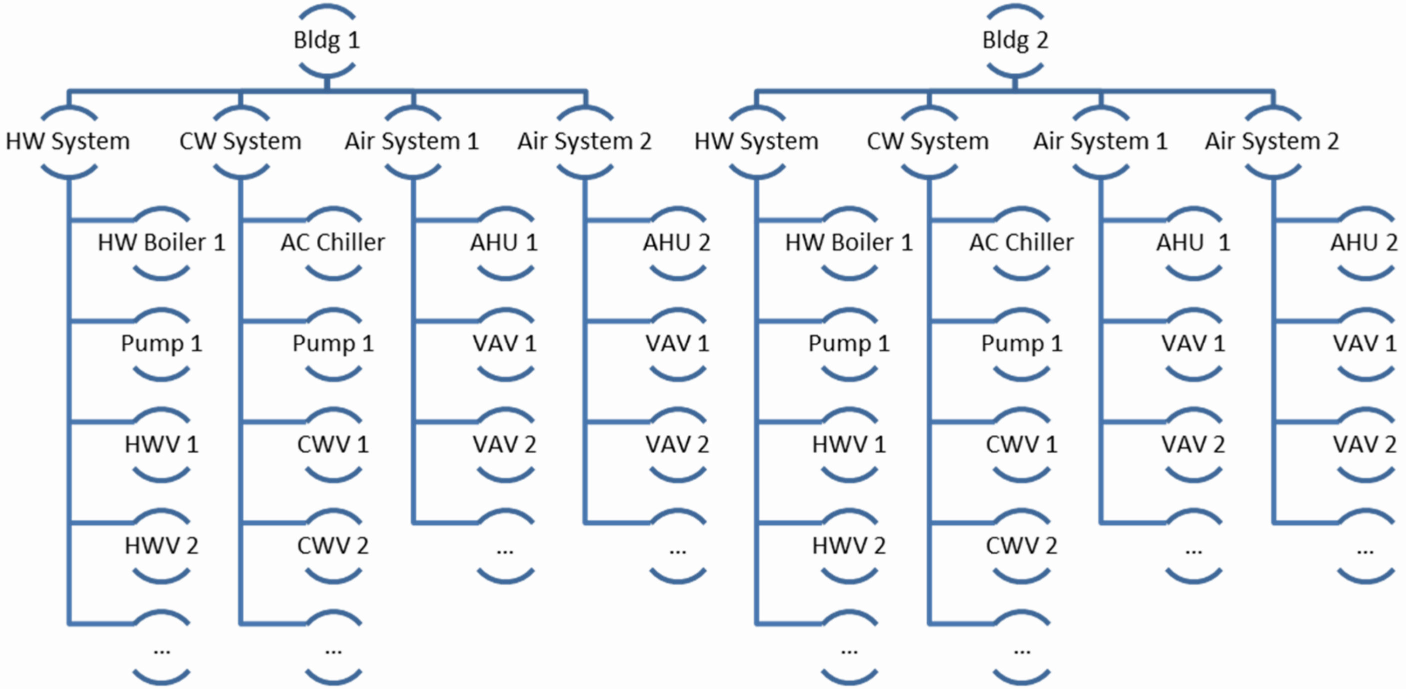
Types Notes here then click the save button

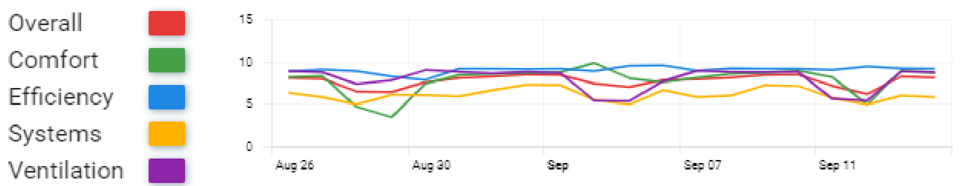
Save Notes

HVAC Analytic Software

- Software that organizes BAS data, records it, and automatically analyzes it for faults
  - Typically, every 5- or 15- minutes log data
- Wanted to change our business
- Turn HVAC services into a proactive and preventative process rather than reactive

COMMON ORGANIZATION





Device Class	Qty	Overall	Comfort	Efficiency	Performance	Systems	Ventilation
AHU Simple Cool Heat	1	6.3	3.7	9.1	10		0
Boiler	4	6.9	0.1	5.1	10		
Chilled Water System	1	7.1	5	6.4	9.8		
Building	1	8	8.3	9.1		6.1	8.5
VAV	123	8.6	8.8	8.8	9.5		7.2
Air-Cooled Chiller	2	8.9	10	6.9	9.9		
Light Commercial RTU	2	9	9.6	8.3			
AHU Internal Face Bypass	23	9.1	7.4	9.3	10		9.5
AHU Stacked Return Economizer	1	9.3	8.9	9.9	10		8
Unit Vent	11	9.5	9.5	8.9			10
AHU Simple Cool Heat Dehumid	2	9.6	9	9.8	10		

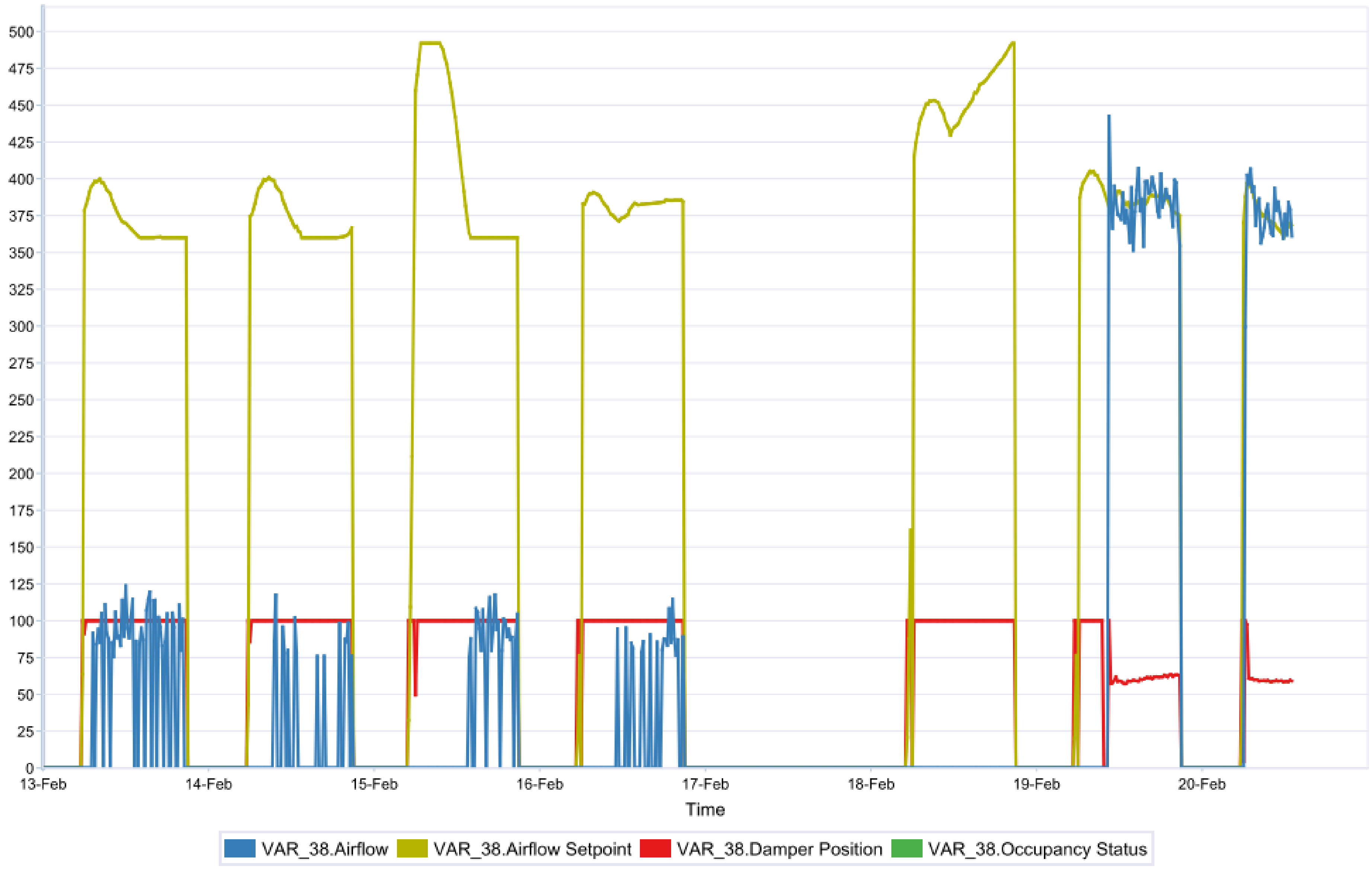
Overall		Comfort		Efficiency		Performance		Systems		Ventilation		Individual Rules	
0	1	3	10	0	6	0	3	0	0	1	44	148	76
19	151	18	131	10	155	3	148	1	0	34	76	111	1767

ANALYTICS & FDD

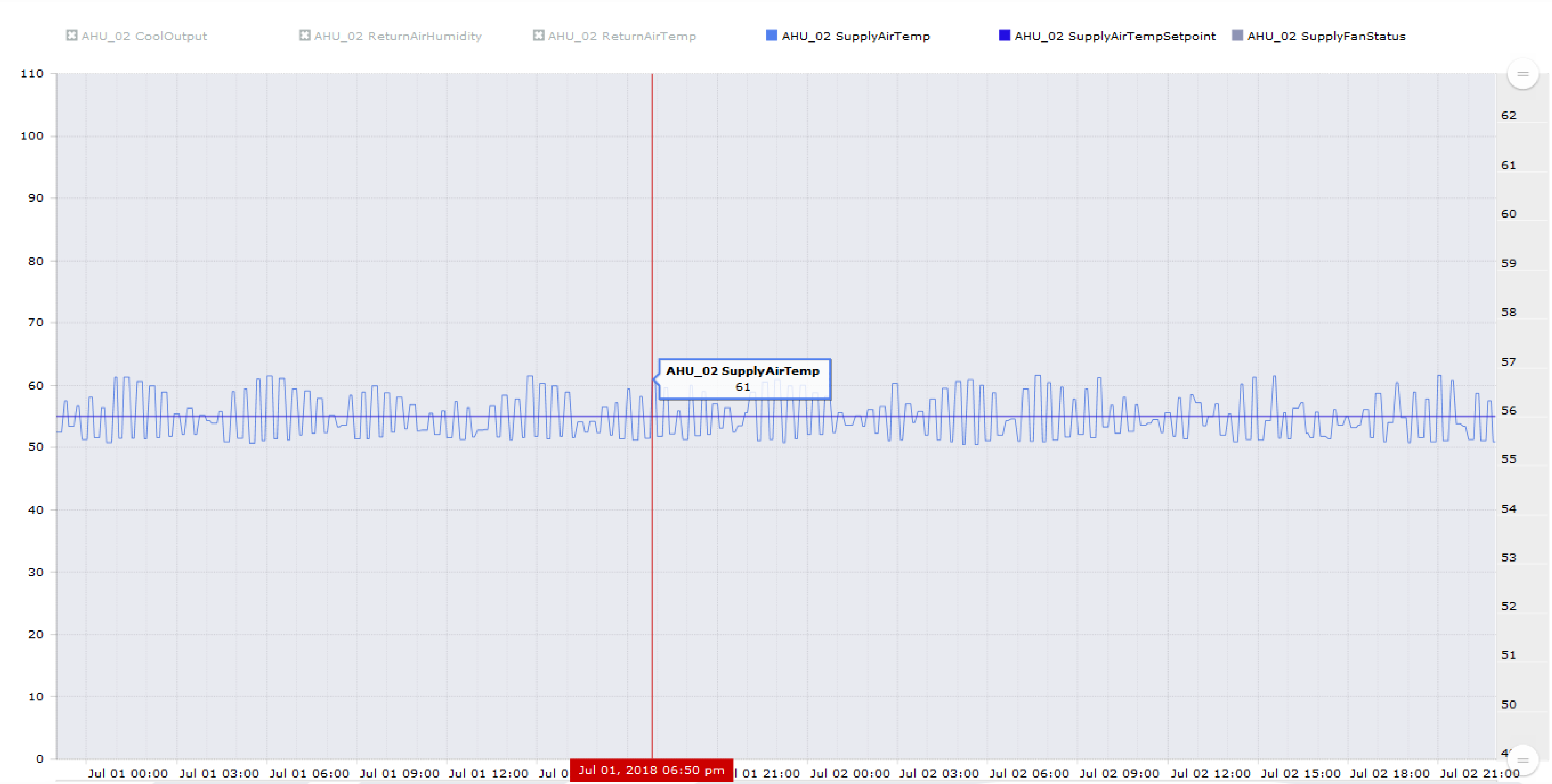
- Outdoor AirFlow
- Outdoor Damper position
- Return Humidity
- Return CO_2
- Zone CO_2
- Zone Temperature
- Zone Humidity
- Zone Minimum Air Flow
- Zone Airflow vs Setpoint
- Zone Air Changes
- Economizer
- Scheduling
- Valve Hunting
- Fan Hunting
- Heat Wheel Performance
- Heat Cool Switching
- Leaky Valves
- Valves not opening
- Air handler static and VAV position
- And many more!

VAV Scores

Device Name	Overall	Comfort	Efficiency	Performance	Ventilation
VAR_38	5.7	10	9.3	3.3	0
VAR_49	5.8	5.8	9.3	7.9	0
VAR_42	6.1	9	9.3	6.3	0
VAR_45	6.2	10	9.3	5.7	0
VAR_41	6.3	10	9.3	5.8	0
VAR_77	7.3	5	9.9	4.4	10
VAR_48	7.6	3.8	7.4	9.2	10
VAR_61	8.1	5.2	9.9	7.3	10
VAR_14	8.5	9.9	9.9	6.3	7.8
VAR_12	8.5	10	9.9	6.3	7.8

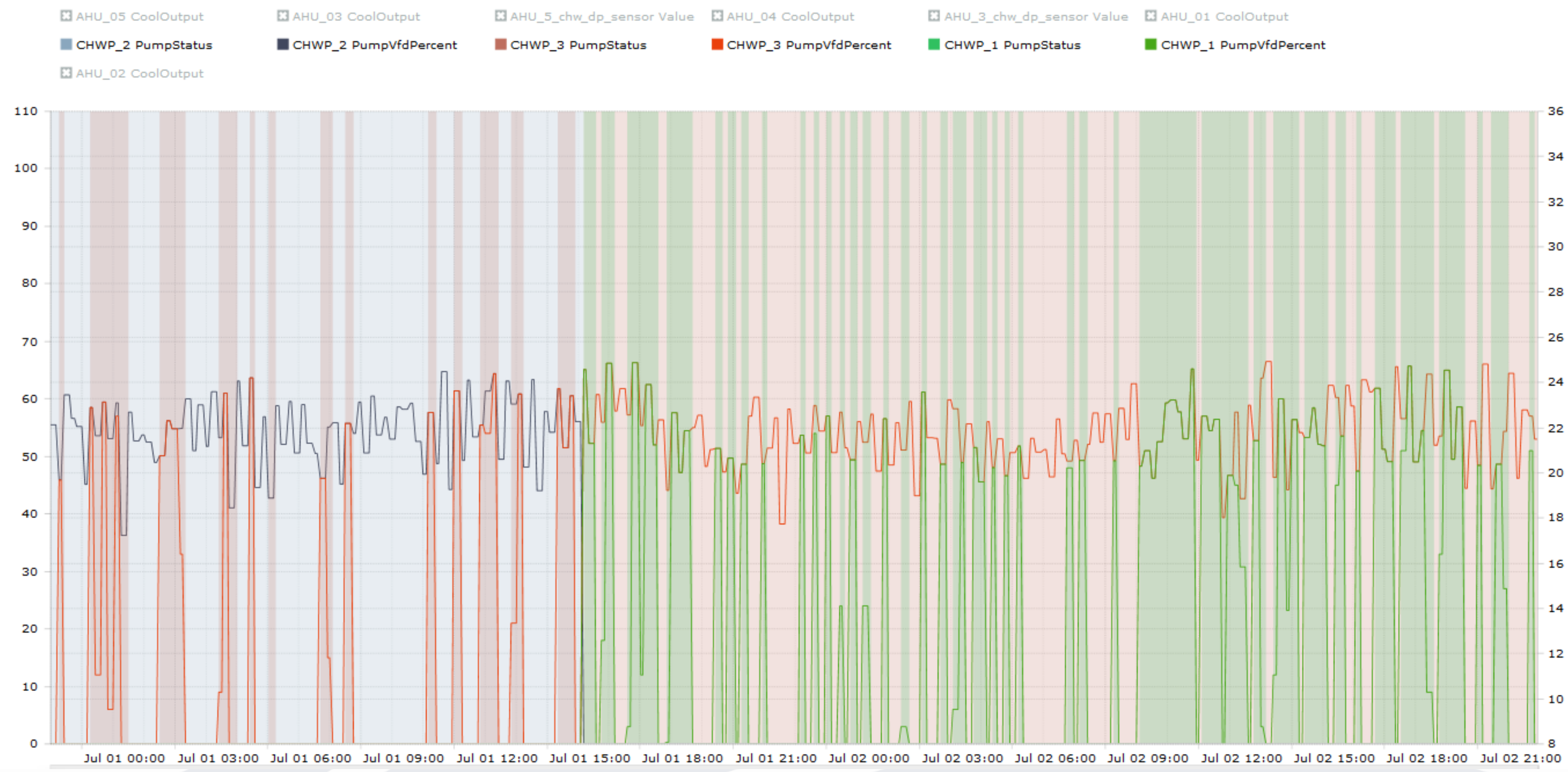


500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
13-Feb
14-Feb
15-Feb
16-Feb
17-Feb
18-Feb
19-Feb
20-Feb
Time
VAR_38.Airflow
VAR_38.Airflow Setpoint
VAR_38.Damper Position
VAR_38.Occupancy Status



AHU_02 CoolOutput
AHU_02 ReturnAirHumidity
AHU_02 ReturnAirTemp
AHU_02 SupplyAirTemp
AHU_02 SupplyAirTempSetpoint
AHU_02 SupplyFanStatus
110
100
90
80
70
60
50
40
30
20
10
0
62
61
60
59
58
57
56
55
54
53
52
51
50
AHU_02 SupplyAirTemp
61
Jul 01 00:00
Jul 01 03:00
Jul 01 06:00
Jul 01 09:00
Jul 01 12:00
Jul 01, 2018 06:50 pm
Jul 02 00:00
Jul 02 03:00
Jul 02 06:00
Jul 02 09:00
Jul 02 12:00
Jul 02 15:00
Jul 02 18:00
Jul 02 21:00

AHU_02 CoolOutput
AHU_02 ReturnAirHumidity
AHU_02 ReturnAirTemp
AHU_02 SupplyAirTemp
AHU_02 SupplyAirTempSetpoint
AHU_02 SupplyFanStatus
110
100
90
80
70
60
50
40
30
20
10
0
Jul 01 00:00
Jul 01 03:00
Jul 01 06:00
Jul 01 09:00
Jul 01 12:00
Jul 01 15:00
Jul 01 18:00
Jul 01 21:00
Jul 02 00:00
Jul 02 03:00
Jul 02 06:00
Jul 02 09:00
Jul 02 12:00
Jul 02 15:00
Jul 02 18:00
Jul 02 21:00



AHU_05 CoolOutput
AHU_03 CoolOutput
AHU_5_chw_dp_sensor Value
AHU_04 CoolOutput
AHU_3_chw_dp_sensor Value
AHU_01 CoolOutput
CHWP_2 PumpStatus
CHWP_2 PumpVfdPercent
CHWP_3 PumpStatus
CHWP_3 PumpVfdPercent
CHWP_1 PumpStatus
CHWP_1 PumpVfdPercent
AHU_02 CoolOutput
110
100
90
80
70
60
50
40
30
20
10
0
36
34
32
30
28
26
24
22
20
18
16
14
12
10
8
Jul 01 00:00
Jul 01 03:00
Jul 01 06:00
Jul 01 09:00
Jul 01 12:00
Jul 01 15:00
Jul 01 18:00
Jul 01 21:00
Jul 02 00:00
Jul 02 03:00
Jul 02 06:00
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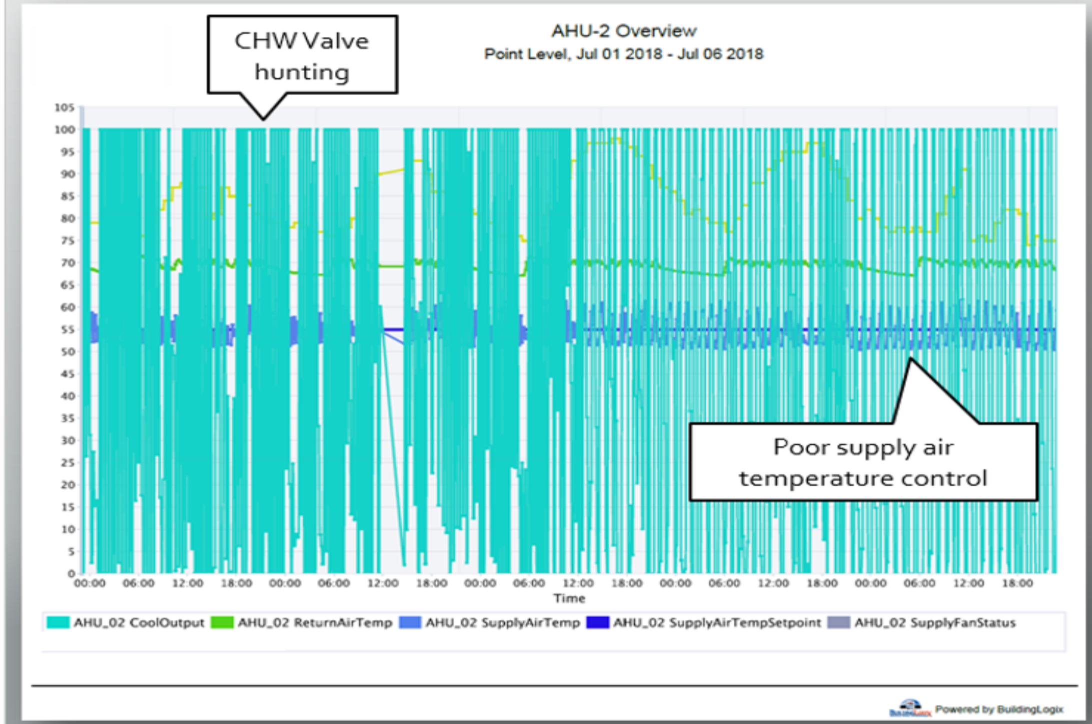
Jul 02 18:00
Jul 02 21:00



CHW Valve hunting
AHU-2 Overview
Point Level, Jul 01 2018 - Jul 06 2018
Poor supply air temperature control
Time
AHU_02 CoolOutput
AHU_02 ReturnAirTemp
AHU_02 SupplyAirTemp
AHU_02 SupplyAirTempSetpoint
AHU_02 SupplyFanStatus
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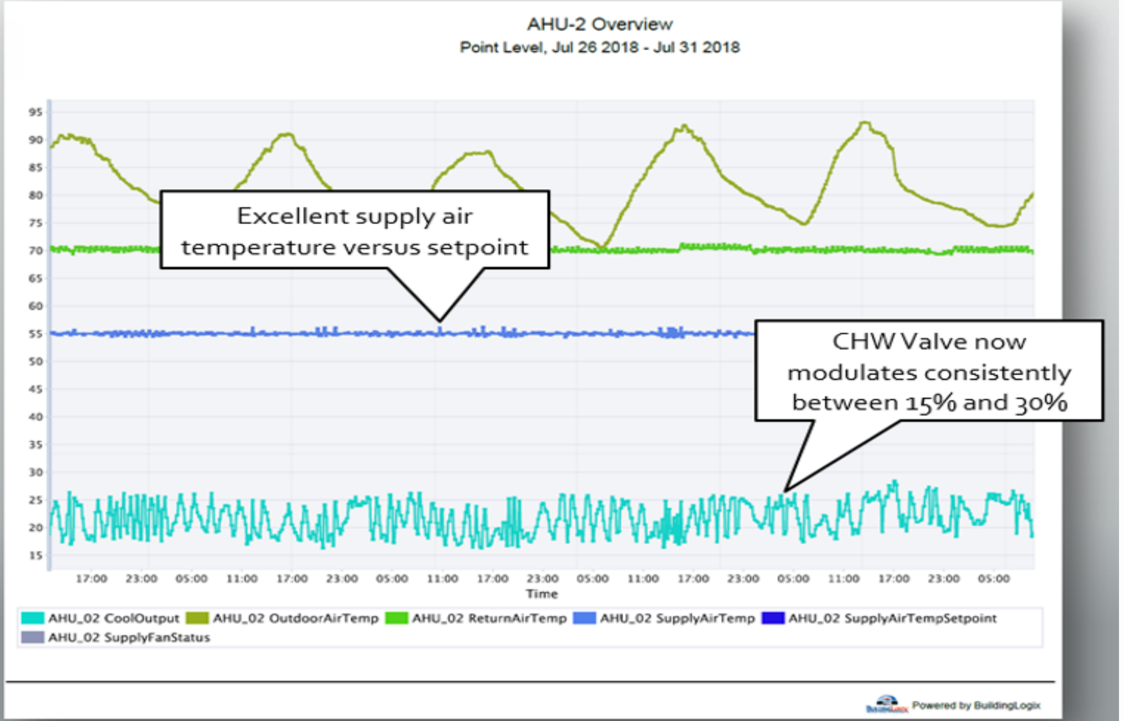

AHU-2 Overview
Point Level, Jul 26 2018 - Jul 31 2018
Excellent supply air temperature versus setpoint
CHW Valve now modulates consistently between 15% and 30%
Time
AHU_02 CoolOutput
AHU_02 OutdoorAirTemp
AHU_02 ReturnAirTemp
AHU_02 SupplyAirTemp
AHU_02 SupplyAirTempSetpoint
AHU_02 SupplyFanStatus
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Questions?

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