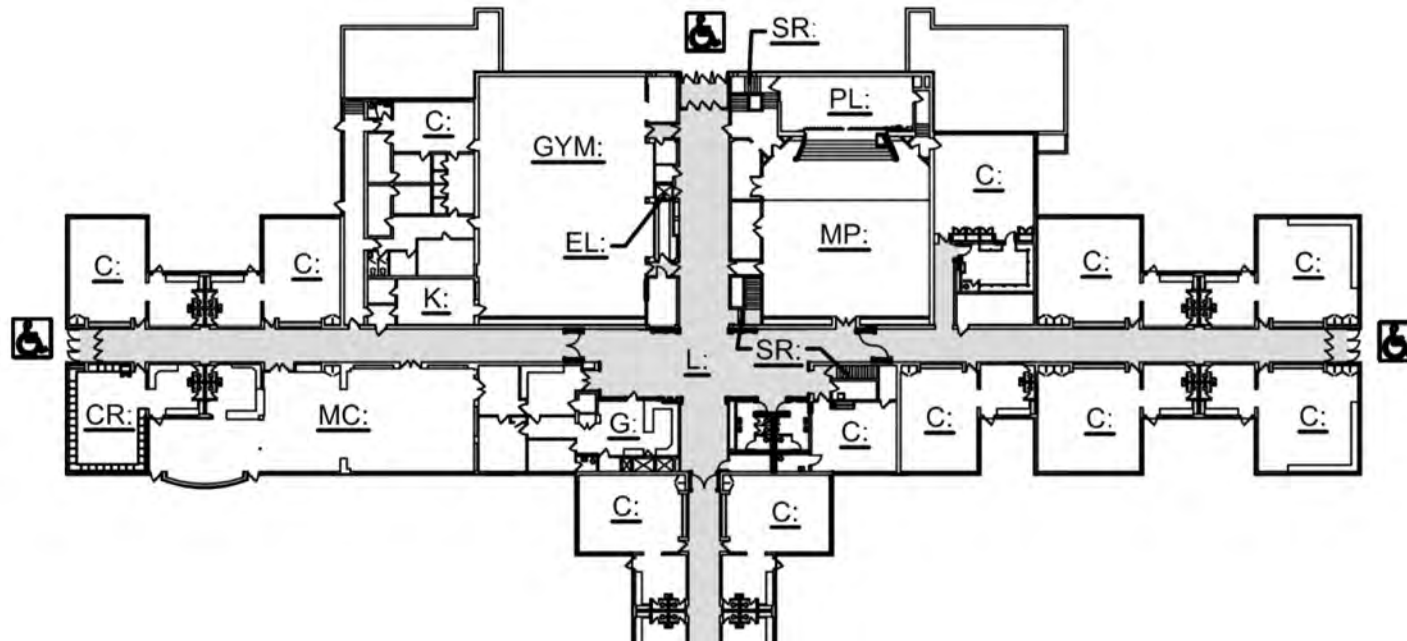


Highlights: Summer 2020 Physical Properties Update

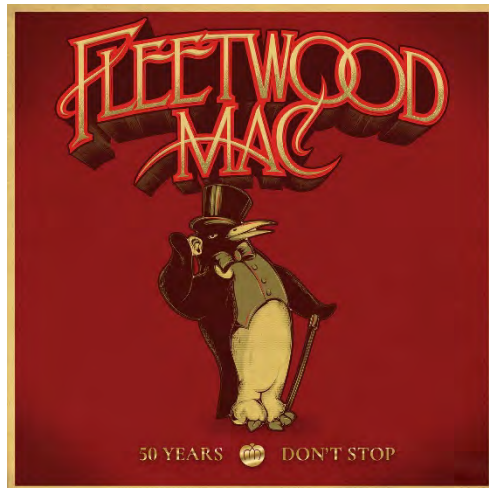
Emile Lauzzana, Executive Director, Capital Projects
Bernerd Rice, Executive Director, Physical Properties

September 30, 2020



Presentation Overview

- Summer Construction and Maintenance Projects
- School Re-Occupancy Preparations
 - Heating Ventilating and Air Conditioning (HVAC) Systems
 - Health and Wellness Signage
 - Social Distance Preparations
 - Plumbing Systems
 - Cleaning and Sanitizing



Gym Floor Refinishing - Slauson



Gym Floor Refinishing - Scarlett



Gym Floor Refinishing - Skyline Auxiliary Gym



Gym Floor Refinishing - Skyline Main Gym



Roof Replacement - A2 STEAM



Roof Replacement - A2 STEAM



Roof Replacement - Forsythe



Roof Replacement - Forsythe



Roof Replacement - Freeman



Roof Replacement - Freeman



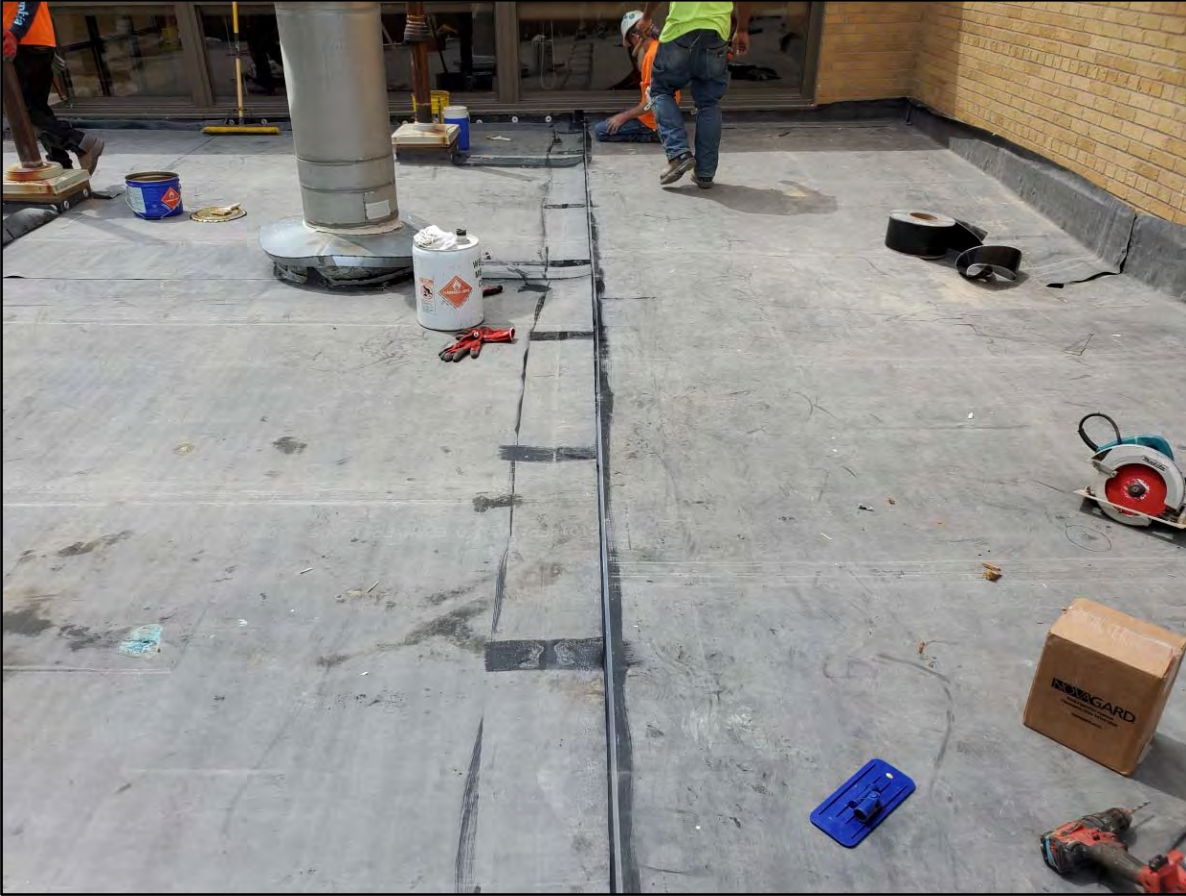
Roof Replacement - Balas



Roof Replacement - Balas



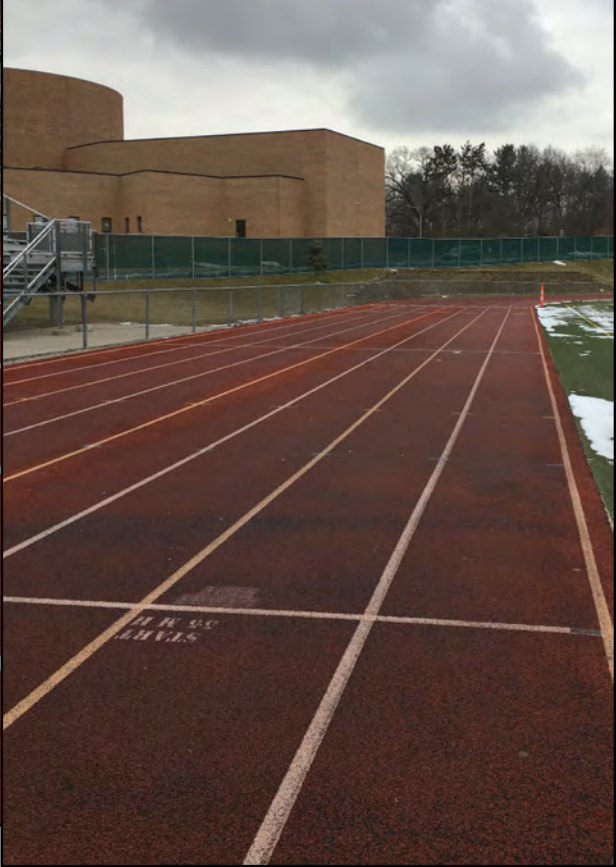
Roof Replacement - Eberwhite



Huron Turf Field Replacement



Huron Track Reconstruction



Pioneer Turf Field Replacement



Pioneer Track Reconstruction



Skyline Turf Field Replacement



Skyline Track Reconstruction



Pioneer Parking Lot Reconstruction



Pioneer Parking Lot Reconstruction - Flag Pole Entrance



Pioneer Parking Lot Reconstruction - Bio-Swale



Scarlett Parking Lot Reconstruction



Scarlett Parking Lot Reconstruction



Scarlett Parking Lot Reconstruction



Scarlett Parking Lot Reconstruction



Freeman Classrooms Renovation - Work Room



Freeman Classrooms Renovation - Wet Lab



Freeman No Mow Progress



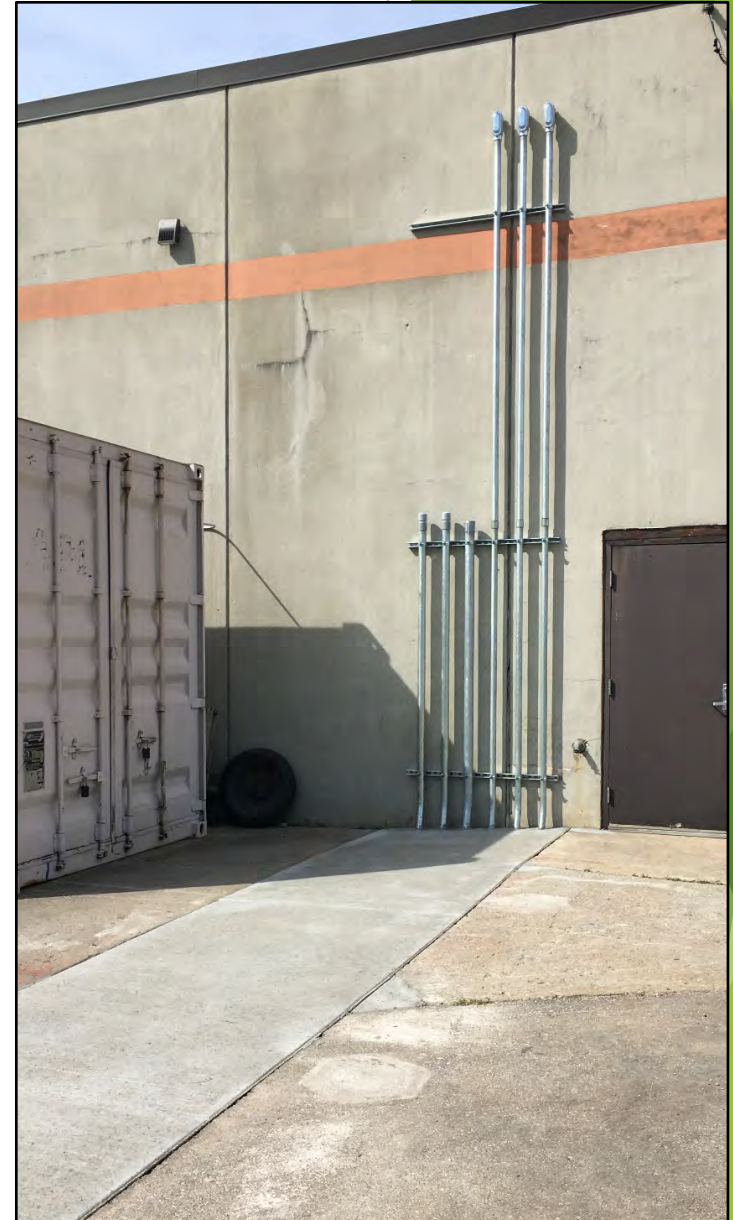
Skyline Dugouts Construction



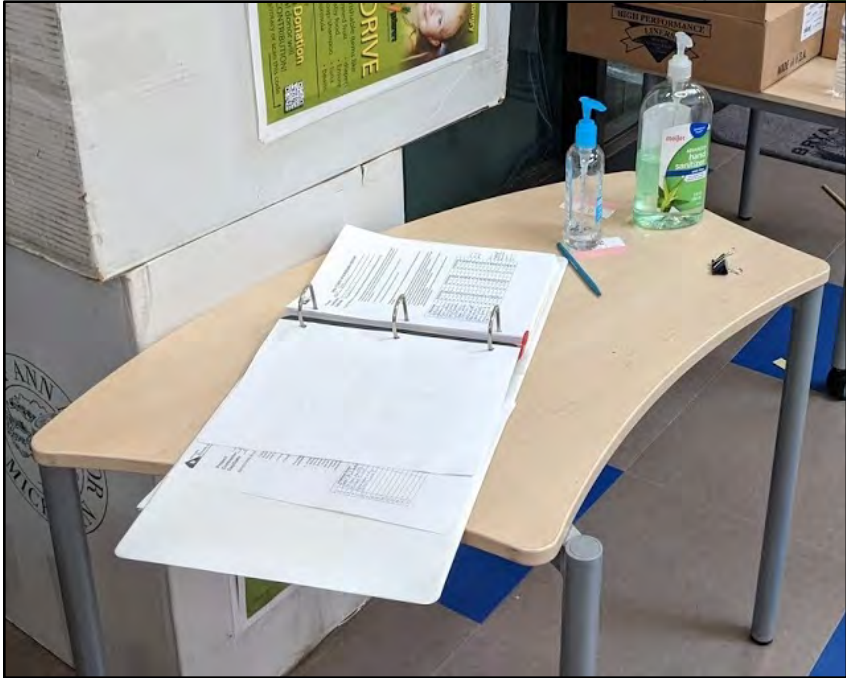
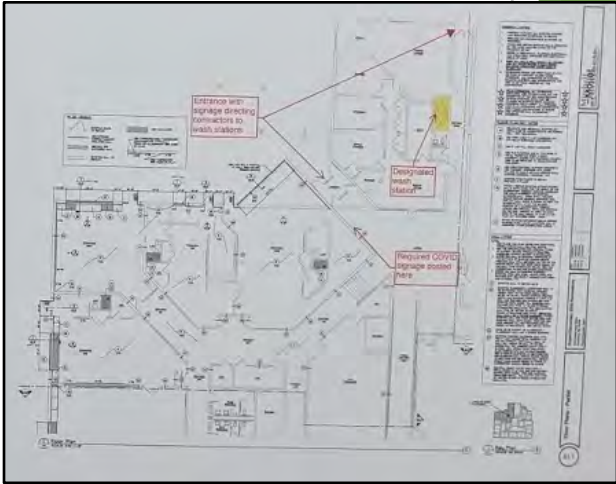
Ellsworth / Bryant Parcel Acquisition



Transportation - Electric Bus Infrastructure



Bryant / Pattengill Renovations - COVID Safety



Bryant Renovation - Demolition



Bryant Renovation - Window Installation



Bryant Renovation - New PK Rooms



Bryant Renovation - Art Room Skylights



Pattengill Renovation - Demolition



Pattengill Renovation - New Sign



Pattengill Renovation - Hallways



Pattengill Renovation - Classrooms



Pattengill Renovation - Classrooms



Pattengill Renovation - Solar



Shiny Floors



Shiny Floors



**Thank You to the
AAPS Community for your
generous support of the
Sinking Fund!**

Thank you

Preparing School Buildings for a Safe and Healthy Return to School

- Heating Ventilating and Air Conditioning (HVAC) Systems
- Health and Wellness Signage
- Social Distance Preparations
- Plumbing Systems
- Cleaning and Sanitizing



Heating Ventilating and Air Conditioning Systems (HVAC) - VENTILATION

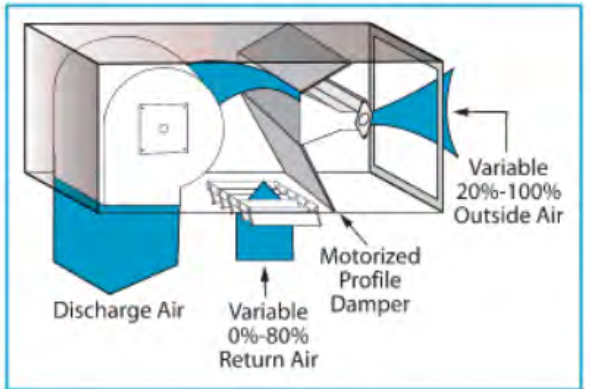
AAPS has retained Fishbeck as consulting engineers to assist in maximizing the healthy operation of our school buildings' HVAC systems. Their work has focused in several areas:

- Maximizing the provision of fresh outside air
- Maximizing the effectiveness of air filtration systems
- Developing algorithms for operating AAPS buildings in an Enhanced Indoor Air Quality mode through the District's Building Automation System (BAS)



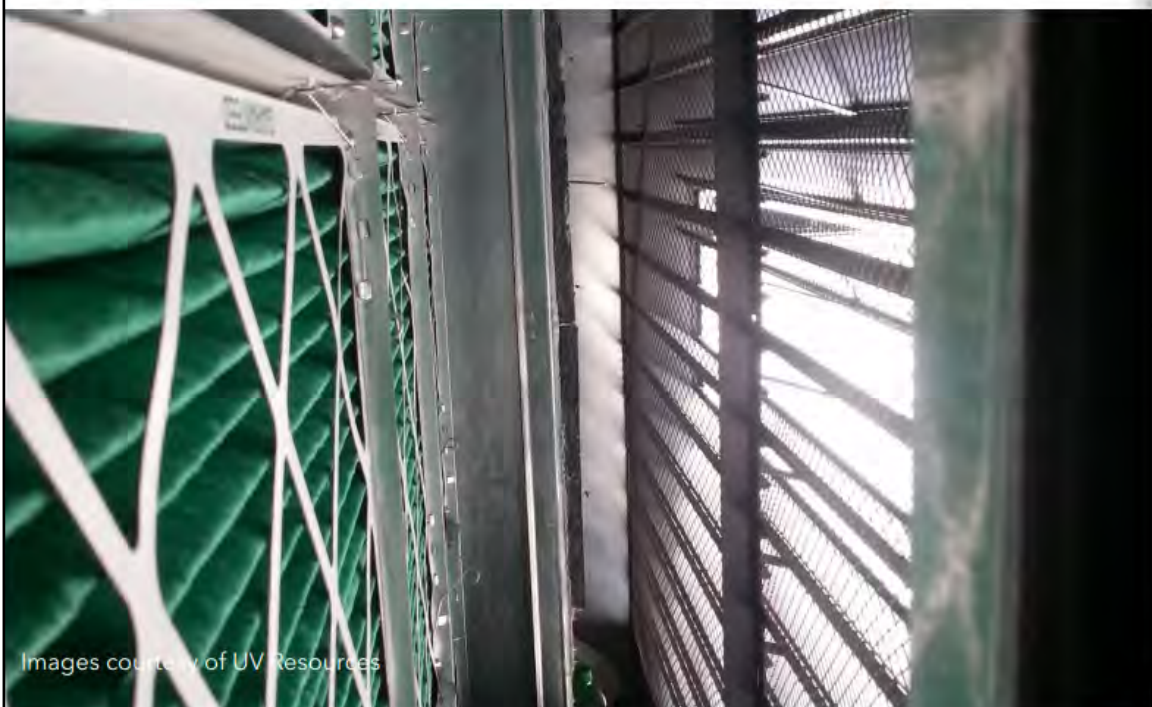
Heating Ventilating and Air Conditioning Systems (HVAC)

TYPICAL AIR SYSTEM CONFIGURATION



ENHANCED INDOOR AIR QUALITY VENTILATION

- Review control system
- Modify sequences and setpoints to allow for an increase in outdoor air
- Implement emergency mode ventilation sequences



Images courtesy of UV Resources

Heating Ventilating and Air Conditioning Systems (HVAC)

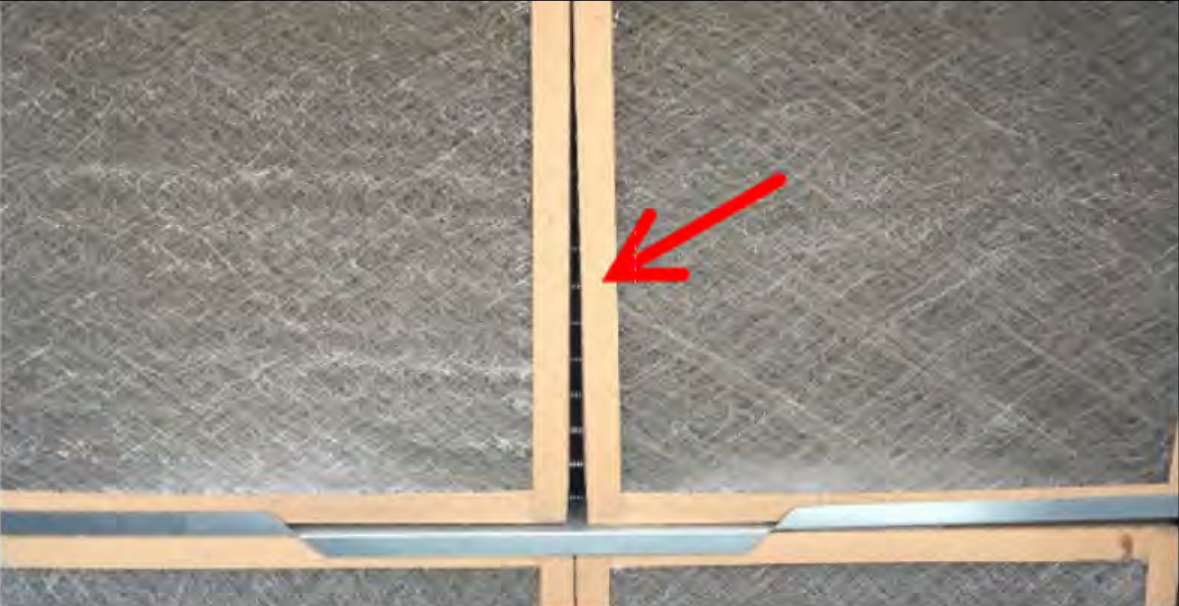
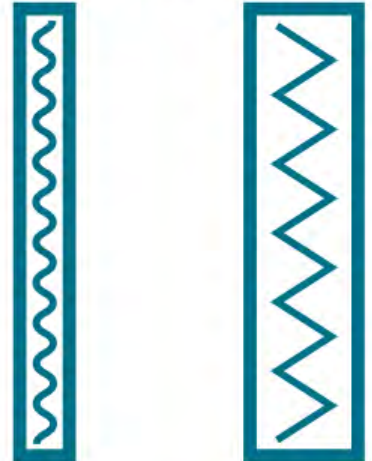
ENHANCED INDOOR AIR QUALITY

AIR FILTRATION

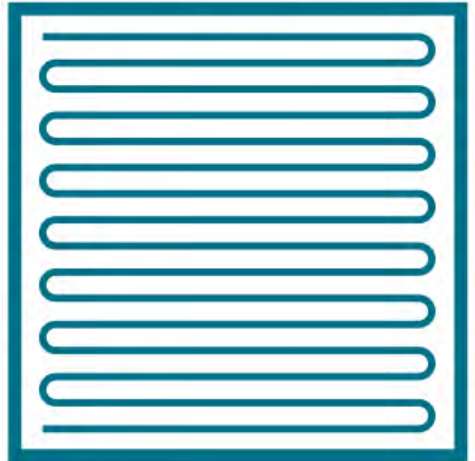
- Verify outdoor and exhaust air paths – Inspect filters, air intakes, and control devices
- Recommend filter upgrades based on fan capability and space available in units



MERV-8 to MERV-13
1" or 2" up to 4" thickness



HEPA Filter
12" thickness



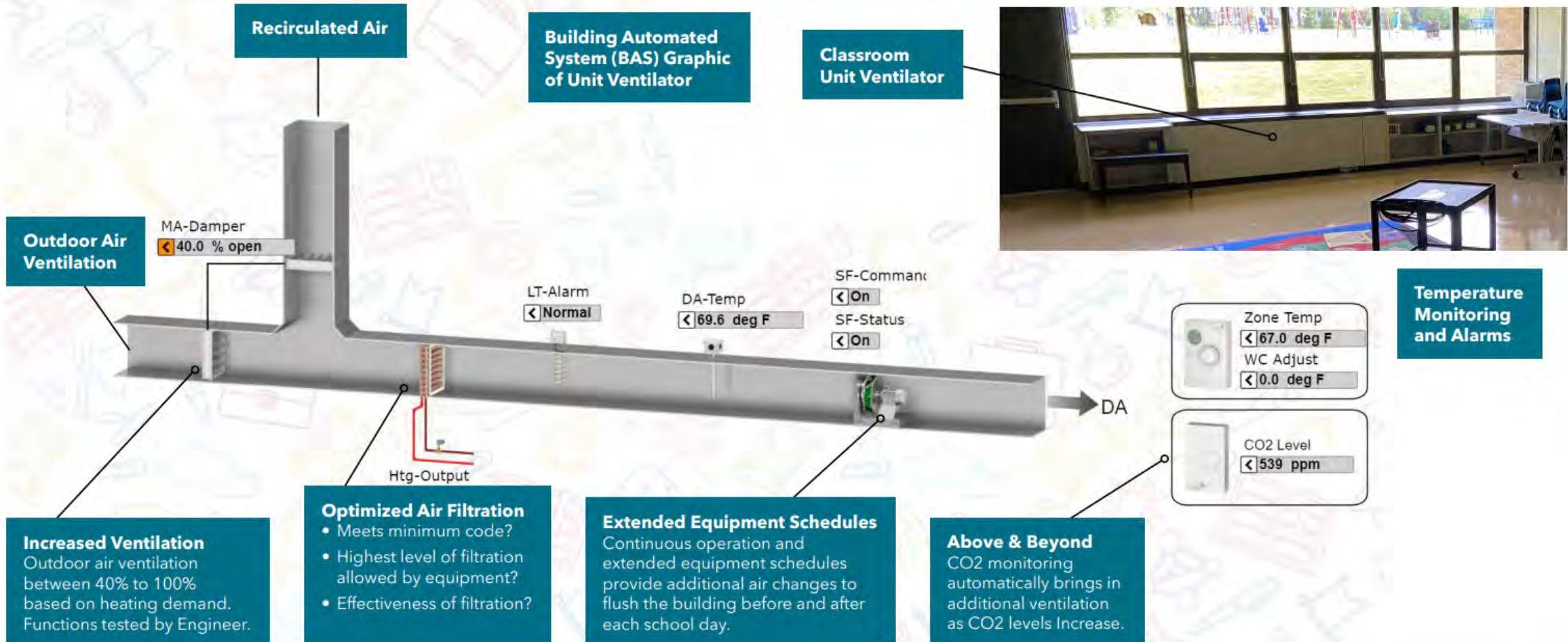
Considerations: Physical size, pressure drop (fan capacity to maintain airflow), availability, and cost vs. benefit



Heating Ventilating and Air Conditioning Systems (HVAC)

ENHANCED INDOOR AIR QUALITY

MECHANICAL VERIFICATION AND TESTING ABBOT ELEMENTARY



Outdoor Air Ventilation

MA-Damper
40.0 % open

Recirculated Air

Building Automated System (BAS) Graphic of Unit Ventilator

Classroom Unit Ventilator



Temperature Monitoring and Alarms

Zone Temp
67.0 deg F
WC Adjust
0.0 deg F

CO2 Level
539 ppm

Increased Ventilation
Outdoor air ventilation between 40% to 100% based on heating demand. Functions tested by Engineer.

Optimized Air Filtration

- Meets minimum code?
- Highest level of filtration allowed by equipment?
- Effectiveness of filtration?

Extended Equipment Schedules
Continuous operation and extended equipment schedules provide additional air changes to flush the building before and after each school day.

Above & Beyond
CO2 monitoring automatically brings in additional ventilation as CO2 levels increase.

Heating Ventilating and Air Conditioning Systems (HVAC)

ENHANCED INDOOR AIR QUALITY

MECHANICAL VERIFICATION AND TESTING CLAGUE MIDDLE SCHOOL



Above & Beyond
CO2 monitoring automatically brings in additional ventilation as CO2 levels increase.

Building Automated System (BAS) Graphic of Air Handling Unit

Air Handling Unit (AHU)



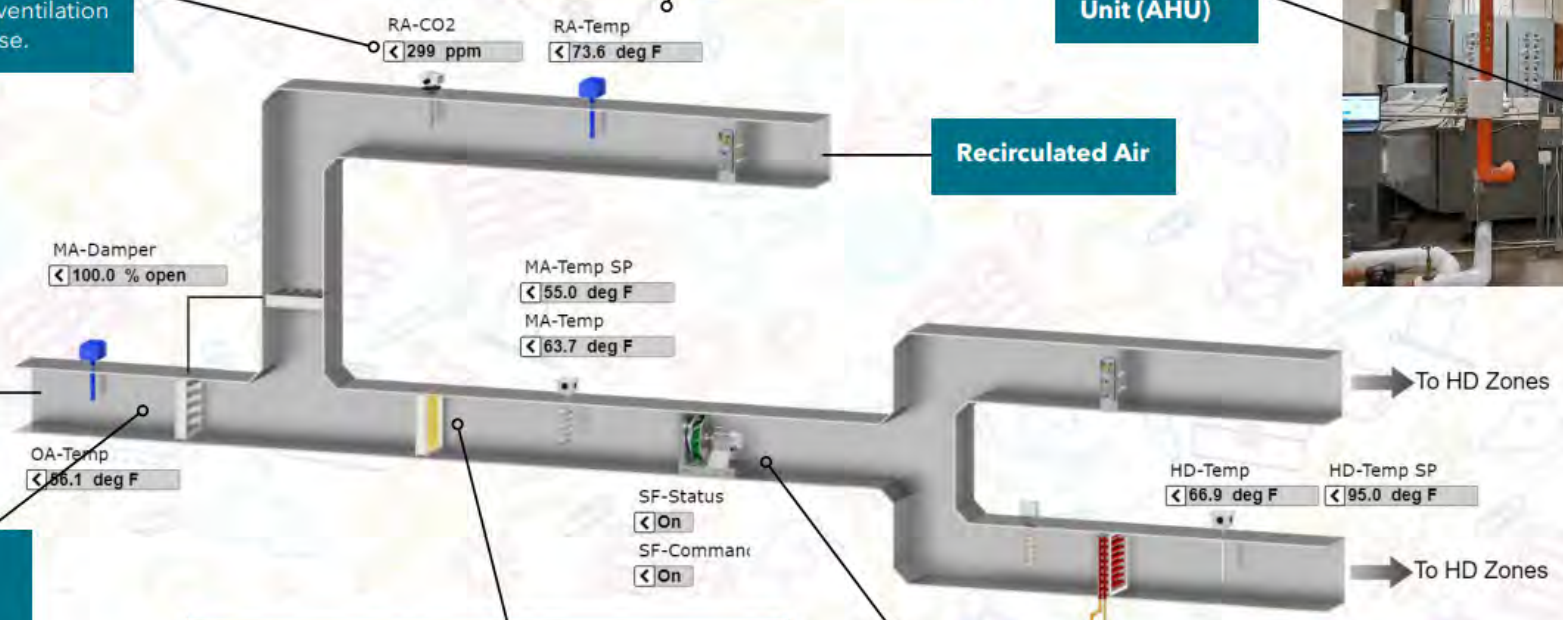
Outdoor Air Ventilation

Increased Ventilation
Outdoor air ventilation between 40% to 100% based on heating demand. Functions tested by Engineer.

Optimized Air Filtration

- Meets minimum code?
- Highest level of filtration allowed by equipment?
- Effectiveness of filtration?

Extended Equipment Schedules
Continuous operation and extended equipment schedules provide additional air changes to flush the building before and after each school day.



Health and Wellness Signage

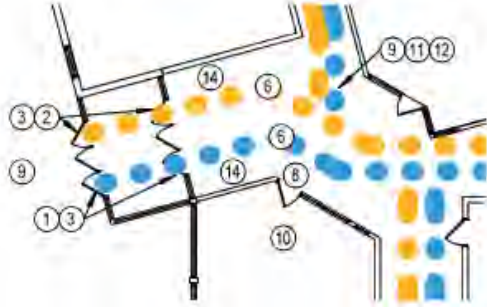
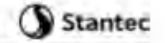
AAPS has retained Stantec consulting architects and planners to develop Informational Signage and Social Distancing strategies. Signage will be placed throughout the school including:

- “In-Only” and Exit-Only” door locations
- Social Distancing Reminders
- Self-Screening Reminders
- One-Way hallway and staircase traffic circulation - Walk on the right side only- “Stay in Your Lane”
- Maximum Occupancy for Elevators
- Maximum Occupancy for Restrooms
- Hand Washing Reminders in Restrooms

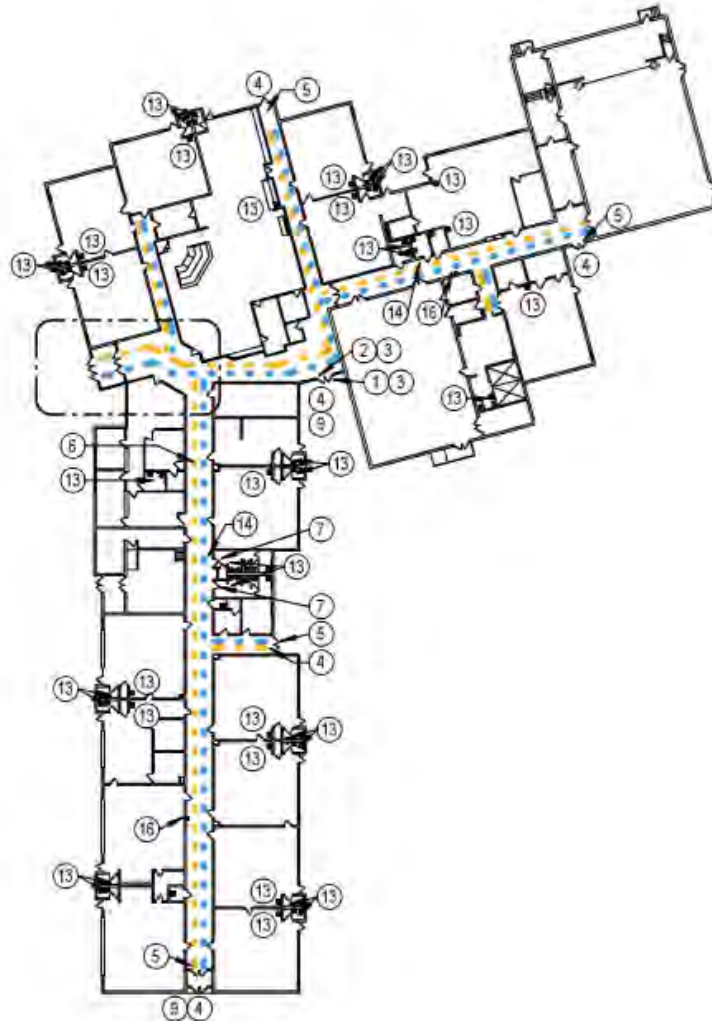


Health and Wellness Signage - Typical Floor Plan

ANN ARBOR PUBLIC SCHOOLS



WELCOME LOBBY DETAIL



SIGNAGE LEGEND

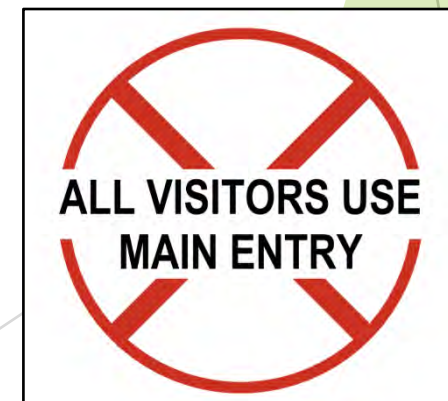
TYPE	QTY
① ENTER ONLY SIGN	3
② EXIT ONLY SIGN	3
③ DO NOT ENTER SIGN (ON BACKSIDE WHERE APPLIES)	6
④ ALL VISITORS USE MAIN ENTRY SIGN	5
⑤ EMERGENCY EXIT ONLY SIGN	4
⑥ CORRIDORS - SOCIAL DISTANCING FLOOR CLING DOTS- 'STAY IN YOUR LANE' - 2 COLORS - LOCATE OUTSIDE OF DOORS AND AT 15' OC MAX, TYP	50 Blue 50 Yellow
⑦ MAXIMUM OCCUPANCY SIGN	2
⑧ WELLNESS CHECK-IN LOCATION SIGN	1
⑨ ENTRANCE SCREENING POSTER	4
⑩ DRAPE-OFF EVERY OTHER CHAIR IN RECEPTION AREA	-
⑪ SOCIAL DISTANCING REMINDER SIGN	20
⑫ SELF SCREENING REMINDER SIGN	20
⑬ HAND WASHING AT SINKS SIGN	38
⑭ HAND SANITIZER STATION	4
⑮ ISOLATION ROOM LOCATION	1
⑯ DRINKING FOUNTAIN SOCIAL DISTANCING FLOOR CLING SET	2
⑰ STAIR SOCIAL DISTANCING FLOOR CLING SET	-

Health and Wellness Signage - Overall Legend

SIGNAGE LEGEND	
TYPE	
①	ENTER ONLY SIGN
②	EXIT ONLY SIGN
③	DO NOT ENTER SIGN (ON BACKSIDE WHERE APPLIES)
④	ALL VISITORS USE MAIN ENTRY SIGN
⑤	EMERGENCY EXIT ONLY SIGN
⑥	CORRIDORS - SOCIAL DISTANCING FLOOR CLING DOTS- 'STAY IN YOUR LANE' - 2 COLORS - LOCATE OUTSIDE OF DOORS AND AT 15' OC MAX, TYP
⑦	MAXIMUM OCCUPANCY SIGN
⑧	WELLNESS CHECK-IN LOCATION SIGN
⑨	ENTRANCE SCREENING POSTER
⑩	DRAPE-OFF EVERY OTHER CHAIR IN RECEPTION AREA
⑪	SOCIAL DISTANCING REMINDER SIGN
⑫	SELF SCREENING REMINDER SIGN
⑬	HAND WASHING AT SINKS SIGN
⑭	HAND SANITIZER STATION
⑮	ISOLATION ROOM LOCATION
⑯	DRINKING FOUNTAIN SOCIAL DISTANCING FLOOR CLING SET
⑰	STAIR SOCIAL DISTANCING FLOOR CLING SET



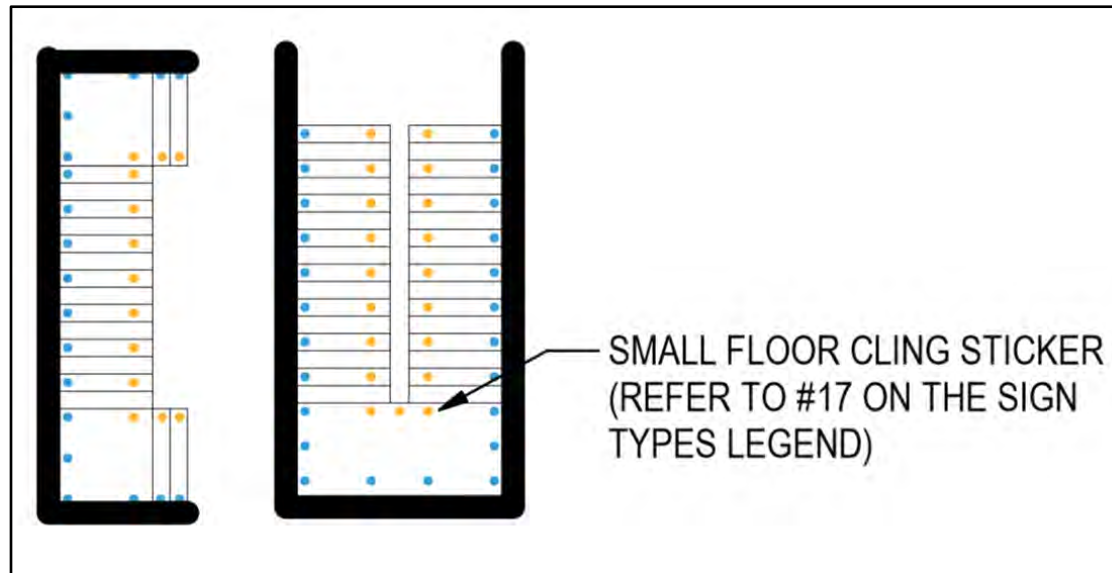
Health and Wellness Signage - Entry and Exit



Health and Wellness Signage - Hallway Circulation



Health and Wellness Signage - Stairway Circulation



Health and Wellness Signage - Maximum Occupancy




Health and Wellness Signage - General Health Reminders

Students: Let's work together to stop the spread of COVID-19


KEEP SPACE BETWEEN YOU AND OTHERS

when outside




6 FT

in the classroom




6 FT

on the bus




try to skip a row if possible




cdc.gov/coronavirus

©2020 HHS, HHS/ASPH


Stop the spread of germs that can make you and others sick!




Wash your hands often




Wear a mask



Cover your coughs and sneezes



Keep **6 feet** of space between you and your friends



cdc.gov/coronavirus

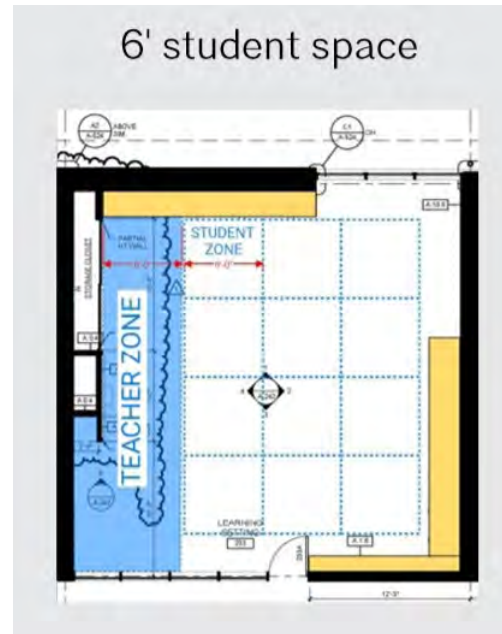
©2020 HHS/ASPH

Health and Wellness Signage - Hand Washing Reminders



Social Distancing Preparations - Furniture

Classroom, Offices and other occupied space will have furniture arranged to maximize social distancing. Unused furniture will be secured and labeled.



- SAMPLE Classroom Layout -*Stantec / American Institute of Architects*

Social Distancing Preparations - Sneeze Guards

Sneeze Guards will be installed in all offices and other transaction locations where maintaining social distance is not feasible



Plumbing Systems

- While buildings are unoccupied, completely flush the plumbing systems weekly to help prevent the growth of Legionella bacteria which can cause Legionnaires disease
- Implement a plan to test water at all AAPS schools for Legionella and Ecoli
- Complete the bi-annual replacement of all drinking water filters
- Remove all drinking fountain bubblers and cap openings
- Begin transition to touchless restroom fixture operation
- Remove all forced air hand dryers and replace with touchless paper towel dispensers



Cleaning and Sanitizing

- Frequently touched surfaces including light switches, doors, benches, bathrooms, will be cleaned every four hours with an EPA-approved disinfectant.
- Staff will wear appropriate personal protective equipment when cleaning.
- Custodial staff to regularly check and restock soap, hand sanitizer and paper towels.
- Doors will be propped open to minimize touch surface contact
- Hand sanitizer will be provided in all occupied spaces and when arriving at school

Touchpoints:



Cleaning and Sanitizing

Should We Use These Disinfecting Techniques?

Product / System	Recommendation	Status
EPA Listed N Products	YES	Follow label instructions for approved application methods and required contact times.
Electrostatic Spraying	YES	Follow label instructions for approved application methods and required contact times.
Ultraviolet, Ozone, or Steam	MORE INFORMATION NEEDED	EPA and CDC are reviewing safety and effectiveness against COVID-19.
Fogging	NO	Increased hazardous chemical exposure and provides no added benefit against COVID-19.
Ultrasonic Waves or LED Blue Light	NO	There is no data to suggest these are effective against COVID-19.

- US Environmental Protection Agency (EPA) and Center for Disease Control (CDC)

References

Center for Disease Control and Prevention (CDC)

- *CDC Activities and Initiatives Supporting the COVID-19 Response and the President's Plan for Opening America Up Again (PDF) Release : May 2020*
- *Considerations for Schools - Get Your Schools Ready for Pandemic Flu (WEB) Release : 2017*

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

- *ASHRAE Epidemic Task Force Reopening Schools (PDF)*
- *COVID-19 Resources (WEB) Release : May 2020*

The School Superintendents Association (AASA)

- *Guiding Principles & Action Steps for Reopening Schools (WEB)*
- *COVID - 19 Resources (WEB) Release : Expected June 2020*

American Institute of Architects (AIA)

- *Re-Occupancy Assessment Tool (WEB)*
- *Reopening America: Strategies for Safer Schools (WEB) Release : Expected July 2020*

