

# Office of School Facilities



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## Major Capital School Construction

On November 4, 2020, the State Board of Education approved the placement of projects 4 (Saco) and 5 (RSU 14) onto the Approved Projects List for the Major Capital School Construction Program. The placement of these projects onto the Approved Projects Lists will now allow the Department to work with the school districts in developing recommendations and timelines for each project.

On August 11, 2020, the State Board of Education approved the placement of project number 3, *MSAD 46/AOS 94, RSU 80, RSU 70/MSAD 4, RSU 41/MSAD 41, RSU 82/MSAD 12, Greenville Public Schools, Tri-County Technical Center* to the Integrated, Consolidated 9-16 Educational Facility Approved Projects List for the 2017-2018 Rating Cycle.

## Leased Space

Approvals of leased and lease-purchased instructional space for FY 2020-2021 have been posted to <http://www.maine.gov/doe/schools/facilities/lsp> under "Resources."

## Indoor Air Quality and Integrated Pest Management

Indoor Air Quality (IAQ) and Integrated Pest Management (IPM) Strategies for Covid-19 provided by the Maine Department of Agriculture, Conservation and Forestry are available online:

<https://mainedoeneews.net/2020/10/15/indoor-air-quality-iaq-and-integrated-pest-management-ipm-strategies-for-covid-19/>.

The Maine Indoor Air Quality Council "IAQ and Energy 2020" Conference featuring international and nationally recognized subject matter experts was delivered online this year October 27-29, 2020. Contact MIAQC Executive Director Christy Crocker at [christy@maineindoorair.org](mailto:christy@maineindoorair.org) to inquire about conference session recordings. <https://www.iaqandenergy.com/>.

Educational Plant Maintenance Association (EPMA) of Maine has provided the attached HVAC Guidelines and Best Practices. Please contact EPMA President Andy Madura at [andy.madura@lakeregionschools.org](mailto:andy.madura@lakeregionschools.org) with any questions. For COVID-19 guidance please see the *Framework for Reopening Schools and Returning to In-Person Instruction* at <https://www.maine.gov/doe/framework>.

# **Educational Plant Maintenance Association of Maine**

## **HVAC -Guidelines- Best Practices- COVID -#19**

The COVID-#19 Pandemic has certainly caused many School Facilities Directors and/or Supervisors to look for ways to increase fresh, clean air in school buildings. These recommendations below are sourced from many HVAC experts, ASHRAE documents as well as best practices being used by many School Facilities Directors and/or Supervisors from around the state of Maine

Please note, it is important for everyone to understand that these recommendations will not eliminate the COVID 19 Virus but are ways to minimize the impact that the COVID 19 Virus could have on Indoor Air Quality of our educational facilities.

### **GENERAL CONSIDERATION IN HVAC CATEGORIES TO HELP IMPROVE IAQ**

- ***Inspection and Maintenance:*** Consider assessing the condition of systems and making necessary repairs.
- ***Ventilation:*** A good supply of outside air to dilute indoor contaminants is a first line of defense against aerosol transmission.
- ***Filtration:*** Use of at least MERV-13 rated filters is recommended if it does not adversely impact system operation.
- ***Air Cleaning:*** Air cleaners such as air disinfection devices may also be considered to supplement ventilation and filtration.

- **Energy Use Consideration:** In selecting mitigation strategies, consideration should be given to energy use as there may be multiple ways to achieve performance goals that have greatly different energy use impact.

There are typically three [3] types of HVAC Ventilation in Educational Facilities in Maine

Non- Mechanical, Mechanical, Direct Digital Controlled [DDC]

### **Non- Mechanical**

Many Maine Schools and Classrooms may have no mechanical systems in place at all.

However, there are a few things that can be done to improve air exchange

If you do not already have mechanical ventilation installed in your building, you can provide adequate ventilation with window fans and simple monitoring devices.

1) Install a 20 by 20 box fan to fit snugly in an open window you can use smaller rectangular fans with the side extensions as well. The fan should be placed so that the air flow is outwards (exhaust mode). Place the fan away from occupants. Crack other windows near occupants a small amount. Caution: if the building has a boiler or other combustion heating appliance, make sure combustion fumes are not getting sucked indoors by using a carbon monoxide detector near the heating unit.

2) Verify sufficient ventilation by purchasing a Carbon Dioxide (CO<sub>2</sub>) detector. (these devices can be found for under \$100). Aim for a CO<sub>2</sub> reading below 800 parts per million (PPM) in the area where people are located.

## **Mechanical Ventilation**

Many School Buildings have various types of mechanical ventilation, from pneumatic type controls, to individual room uni-ventilators to roof top type HVAC units and Energy Recovery Ventilator Units [ERV's] all of these type units bring in fresh air and exhaust out air in a particular area as well as some units are able to provide chilled air or [A/C] Air Conditioning.

All these units need Routine and Preventive Maintenance

Here are some recommendations

1. Filters need to be changed on a regular interval, most manufacturers recommend at least two [2] times a year, however many recommend 3-4 times a year during this COVID Pandemic
2. Servicing of your Mechanical equipment is not just changing filters but making sure the belts are tight and bearing are lubricated.
3. Making sure the dampers are working correctly is very important too.
4. CO2 devices that reduce outside air should be disabled during the Pandemic.
5. Dampers should be set so more outside air can be introduced into the area [ However be mindful of colder weather and the possibility of freezing some pipes.]
6. Make sure books, papers and other items are not stored on Room Uni – Vents that block air circulation.
7. Make sure ductwork and grates are clean and free from debris.
8. Consider longer Occupied intervals, keeping the systems in an occupied mode for longer time frames will help with exchanging the air in the spaces.

## **Direct Digital Control [DDC]**

Many more modern buildings have DDC Control technology most of these control systems were designed to save energy, and in many areas reduce the amount of air exchange based on occupancy and CO2 levels needs.

Due to COVID-#19 these systems must be reprogrammed to make sure that fresh air is being exchanged in the spaces.

Here are some recommendations

1. Reprogram the system to make sure any CO2 devices are disabled
2. Program the Occupied interval to stay on longer to allow air exchange in the space.
3. Make sure the energy recovery wheels are off to allow all exhaust air to be exhausted.
4. Program the system to increase the amount air exchange into the spaces, while being careful to monitor for cold weather and possible freezing of pipes.