

“Making the Grade” in Performance and Energy

by Tom Nicholson, Account Manager, TRANE

School’s almost out, but there’s no break in sight for school business officials seeking strategies to maintain efficiency and ensure building systems are in top shape when students return in the Fall.

Even though any major needed repairs to resolve issues with HVAC systems might already be done or underway, the summer season is the time for officials to ensure that their facility management teams focus their efforts on problem prevention.

Update facility managers about summertime operation and maintenance (O&M) plans and their required tasks and procedures. Review the plan with HVAC service providers to identify any gaps or opportunities to improve efficiency.

- Direct facility managers and service providers to pay particular attention to such key areas as a **Summertime HVAC operation**. Identify the best summertime operating settings for the HVAC system according to occupancy schedules. To conserve energy, cool only the spaces that are in use. However, do not turn off the HVAC system completely. Shutting down the system could result in moisture build-up that results in costly structural damage and indoor air quality problems. It is not necessary to run the HVAC at the same levels as when the building is in full use, just enough to control moisture.
- **Taking precautions during construction**. Summer is often the time when new construction on major renovation projects are undertaken. During such projects, take measure to make sure dirt and dust don’t get into HVAC equipment. Consider any necessary adjustments during painting or cleaning projects. For example, during carpet cleaning, the HVAC system should be on and additional fans, ventilation and dehumidification should be running.
- **Controlling humidity**. The EPA recommends keeping relative humidity below 60 percent. Mold can lead to dust mites and cause illness to building occupants as well as structural damage. Have facility managers check the building envelope. Conduct repairs right away to avoid moisture from entering through window and door openings, seams, roofs or other openings. Consider humidity control equipment for HVAC systems as an investment that could save major costs in mold removal and cleanup.

- **Ensuring Summertime Indoor Air Quality (IAQ).** The summer months are important to maintaining IAQ. Many schools face problems with humidity and mold, which can be dangerous to the school building and to the health of students when they return in the fall.

Older schools suffer the worst IAQ problems. The Environmental Protection Agency (EPA) has found that schools built during the energy crisis of the 1970s have some of the poorest air quality, because they were designed to retain warm air in the winter and cool air in the summer but have limited air circulation.

A walk-through of the building can target any potential areas where further IAQ testing is necessary, such as mold assessment or testing for toxic contaminants. For more tips on IAQ, visit the EPA's "Tools for Schools" kit (<http://www.epa.gov/iaq/schools/actionkit.html>).

- **Achieving energy efficiency.** The U.S. Department of Energy's office of Energy Efficiency and Renewable Energy reports that an efficient O&M program can save school districts up to 20% in energy costs per year over similar buildings that do not have a program in place. Ask facility managers and service providers to outline and undertake measures during the summer to review and document last season's energy performance of building equipment and target areas for efficiency improvements.

Ask for recommendations from facility managers and HFAC service providers on the range of solutions – including many simple measures – to improve efficiency in building operations and maintenance. Programmable thermostats, lighting sensors, and carbon dioxide sensors are some examples of controls that can improve the indoor environment while saving energy. Refer to Energy Star's Fifteen O&M Best Practices booklet (www.energystar.gov) for additional suggestions.

Finally, while undertaking longer term planning during the summer months, apply to state Performance Contract programs to provide the financial resources to increase building system energy efficiencies with equipment upgrades and installation of renewable energy technologies. Many times under such programs, there are little or no front-end costs because qualified service providers, sometimes called an Energy Service Company (ESCO), guarantee the energy cost reductions to result from the capital improvements. In essence, the project's resulting energy cost savings fund the project itself.

With the proper planning and teamwork from their facility managers and building systems providers, school business officials can ensure that their school buildings will "make the grade" in terms of performance and efficiency not only during the summer – but year-round as well.

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