

Florida Green School Designation Program

Best Management Practice

Indoor Air Quality



Over the past few decades, clean air practices have become increasingly important in progressive hotel management. These changes have not only led to an increase in energy efficiency and reduced exposure to health-related liabilities but have also created positive impacts on the “bottom line” and lessen health risks with schools.

Indoor pollution sources that release gases or particles in the air are the primary causes of indoor air quality problems. According to the U.S. Environmental Protection Agency (EPA), indoor air quality can be up to ten (10) times worse than the quality of outside air.

There are many sources of indoor air pollution. These include the combustion of fuels such as oil, gas, kerosene, coal, and wood; building materials and furnishings as diverse as deteriorating insulation, damp carpets, and furnishing made of certain pressed wood products; products for cleaning and maintenance; central heating and cooling systems and humidification devices.



The EPA has recognized and continues to promote the importance of clean air practices. The following Best Management Practices (BMPs) are recommended for establishing clean air programs at green hotels.

General Indoor Air Quality Best Management Practices

Make indoor air quality a top priority: Facility management should make indoor air quality a top priority because it can impact many areas of operation. Not only are students impacted by poor air quality but so are employees, equipment efficiencies, and insurance premiums.

Develop a plan for providing for and improving the indoor air quality of the school: A written indoor air quality plan should be an integral part of any school’s environmental plan. The indoor air quality plan should outline the overall air quality goals of the school, highlight air quality issues and concerns, and set specific air quality improvement targets based on those concerns.

Communicate indoor air quality policies to students, parents, faculty and staff, vendors, suppliers and contractors: Demonstrate the school’s commitment to good indoor air quality by clearing communicating any policies to all students, parents, faculty and staff, vendors, suppliers and contractors to increase adoption of the school’s policies and plans.

Remove classroom pets and, instead, replace them with an animal “showcase”: Certain people are sensitive to animal fur, dander, body fluids and animal waste products and may experience allergic reactions to these irritants. Removing permanent classroom pets increases air quality.

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Eliminate any cause of mold and mildew: The most common causes of mold and mildew problems are leaks, condensation and poor ventilation. Per the EPA, the key to preventing mold and mildew growth is to control the amount of moisture in a given area. This can be accomplished through:

- Quickly finding and repairing any leaks in the building. In large facilities, the search for leaks should be a continual process.
- Watching for condensation and wet spots.
- Keeping HVAC drip pans clean.
- Properly venting moisture-generating appliances to the outside.
- Maintaining a low indoor humidity. Indoor humidity should be between 35 and 55 percent.
- Performing regular inspections and maintaining any necessary logs.
- Drying and cleaning any wet or damp spots as soon as possible.

Indoor Air Quality Best Management Practices Related to Chemicals

Use environmentally preferable cleaners, whenever possible: Switch from using traditional cleaners to cleaning products that do not contain nitrilotriacetic acid (NTA), chlorine bleach, phosphates, artificial dyes and imitation fragrances. Environmentally preferable cleaners have been shown to reduce liability costs associated with insurance, both student and employee satisfaction and retention and lower the rate of lost-time activities.



Properly label, store, track and dispose of all chemicals: Proper management of all chemicals reduces the likelihood of hazardous exposure to students, staff, and the environment. In most cases, this is required by regulation. Read and publicly post each chemicals SDS (Safety Data Sheet) or have them available in a common area for review when needed.

Integrated Pest Management is used to control pests: Per the U.S. Centers for Disease Control (CDC), integrated pest management is a coordinated system of managing pests that combines inspection, monitoring, treatment and evaluation, with special emphasis placed on the decreased use of toxic agents for control and treatment. The use of integrated pest management will reduce the reliance on generally applied toxic agents for pest control and substitute it with pest-specific controls.

Regularly test for hazardous substances such as radon, carbon monoxide, lead and asbestos: Develop a testing schedule for hazardous substances. Track results and immediately correct any issues that are found.

Use low or no volatile organic compound (VOC) paints and finishes: The use of paints and finishes with high levels of VOCs has been shown to cause temporary health problems including headaches,

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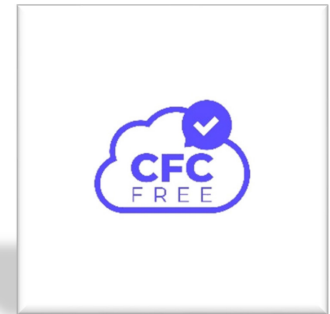
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nausea and dizziness. However, long term exposure, such as that experienced by professional painters, can include major respiratory problems and damage to their liver and kidney. The benefits of low or no-VOC content paints and finishes are wide and varied. These benefits include lower disposal and cleanup costs, reduced amounts of hazardous wastes and toxic fumes, less personal exposure and decreased environmental air pollution.

Eliminate or reduce the use of deodorizers, chlorofluorocarbon (CFC) products and aerosols in guest rooms, common areas and office spaces:

Using deodorizers and aerosols with fragrances can lead to respiratory distress in part of the general population. Instead of using these products to mask distasteful odors such as cigarette smoke, mold or mildew, it is better to remedy the causes of the odors so that there is not a risk of reoccurrence. Products containing CFCs have been directly linked to depleting the ozone layer. Any CFC containing products should be recovered, recycled and properly disposed.



Indoor Air Quality Best Management Practices Related to Equipment

Properly maintain heating, ventilation and air conditioning (HVAC) systems by doing the following:

- Prepare and follow a preventative maintenance plan.
- Maintain HVAC system maintenance logs.
- Ensure that HVAC systems are regularly checked for mold, mildew, obstructions to air flow (blocked vents) and clean drip pans.
- Clean all drip and condensation pans regularly.



Use HVAC air filters with a Minimum Efficiency Reporting Value (MERV) of 8 or better:

The use of MERV 8 or better filters will improve the indoor air quality of your school. To not generate unneeded waste, do not replace old filters with MERV 8 filters all at once. The school should prepare a written schedule for gradually replacing the traditional filters with those that have a rating of MERV 8 or better.

**Due to COVID-19, the U.S. Centers for Disease Control (CDC) and ASHRAE, now recommends utilizing at least MERV 13 filters. MERV 13 filters are efficient for capturing airborne viruses.*

Clean air handling units and coils at least once per year: Dust, mold and mildew all thrive in dark, moist environments found in HVAC systems. Regular cleaning of these units will lead to improved air quality.

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Verify that HVAC units are properly drained: Liquid and condensation drainage from HVAC units should be directed into the sanitary sewer not to stormwater drains. Drainage pipes should be checked for blockages, leaks and mildew/algae growth regularly.

Use dehumidifiers to remove excess moisture in wet areas: Dehumidifiers remove excess moisture from the air and can assist in reducing the likelihood of mold and mildew growth. Drip pans and drainage systems should be emptied, cleaned, and inspected regularly.

Regularly clean all fans, vents, and indoor grates throughout the facility: Regular cleaning will eliminate the build-up of respiratory irritants. It is important to remember that while cleaning, proper Personal Protective Equipment (PPE), such as masks, gloves, and safety glasses, should be used.

Outdoor Air Quality Best Management Practices

Begin a habitat restoration project: Construct, install or enhance the school site with habitat restoration projects. This can be done through planting a schoolyard habitat that educates students on the watershed and local ecosystems. Some examples are native plant gardens, butterfly gardens, wetlands, meadows or even a plant-release program.

Utilize your school grounds to create an Outdoor Learning Center where classes can take place: This provides students with hands-on experience and the opportunity to learn about the local ecosystem and problem-solving techniques.



Capture Florida's plentiful rainfall with installation of rain barrels: Rain barrels are used to catch runoff during storms and store the water to be used in the school garden and surrounding landscape. Classes can decorate these barrels.

Provide incentives for fuel-efficient transportation options: Provide preferred parking spaces to employees and visitors that use hybrid-electric, electric, or other energy efficient vehicles, provide preferred parking services rewards to students, guests, employees for driving fuel-efficient transportation. It also publicizes to others that these individuals and the school have made a commitment to environmental protection.

Offer visitors and employees information on reducing or offsetting their transportation and carbon-based emissions: Provide visitors and employees information on ways to reduce their carbon footprint. Publicize creative ways that students and employees have reduced their footprint. Include

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ideas such as participating in National Arbor Day, carpooling, purchasing green tags or carbon sequestration techniques.

Provide innovative ways for the school to offset carbon emissions. Work towards becoming climate and carbon neutral: demonstrating carbon and climate neutrality is one of the leading ways to show environmental commitment. Neutrality can lead to increased publicity and exposure to marketing opportunities while reducing environmental degradation. To become carbon and climate neutral, a school must either reduce emissions which have been linked to global climate change or purchase carbon credits and green tags. Carbon credits and green tags can be purchased through a variety of not-for-profit organizations dealing with deforestation and renewable energy issues.