

No Cost and Low Cost Preventative HVAC Equals Energy Savings

Heating and cooling accounts for approximately 56 percent of the energy use in a typical U.S. building, making HVAC the largest energy expense hitting your bottom line. HVAC systems that are not regularly maintained quickly turn into energy gluts that can decimate your utility budget. Systems not properly cleaned and repaired can use up to 25 percent more energy just to function. The fall season is the ideal time of year to thoroughly perform preventative maintenance on HVAC systems to reduce energy waste and ensure optimal performance during the cold season.

Completing preventative maintenance on HVAC systems is well beyond cleaning the coils and changing filters. There are many sources for excellent checklists, including the [EPA](#) and the manufacturers of the systems you have in place.

Below are some essential steps that can be done in house to assess the condition of the system, as well as other conservation opportunities for little or no expense. The steps can be used on central or individual HVAC systems:



1. Use manufacturer data sheets to start your check. If you no longer have the hard copies, look online. These sheets will show optimum performance guidelines and steps to keep the system in excellent working order.
2. Watch that thermostat or time clock! Scrutinize the settings and timing to be sure someone isn't tampering with them to increase unnecessary energy use. Is your system set to reduce energy usage when occupancy is low such as evening hours in offices, business centers and common areas?
3. Is anything blocking air intake/exhaust returns or anything being stored around the system that could impede proper air flow to the system?
4. Do you have proper insulating blinds and shades on windows to reduce heat loss in the evenings in offices and common areas? Are they in good repair and being closed nightly?
5. Outlets are a source for air loss. Use safety plugs on all unused outlets to prevent heat loss.
6. Clean all dirt on working and movable components. This includes coils, fan motors, ducts, grilles, drain pans that may be blocked, dampers, heat exchangers and the general exterior of the system as well.
7. Open access doors and check for loose wiring, turning components, fire dampers, valves and replace as needed. Run the system through a heating cycle and check to see that automatic dampers and valves are opening properly and closing tightly.
8. Check to see that the fan is rotating in the proper direction and the speed equals the manufacturer's recommendations.
9. Replace any loose or worn belts or correct belt tension. Check for drive misalignment.
10. Verify indicated temperature against actual outtake temperature.

11. Discontinue use of unneeded exhaust fans, check pump suction and discharge pressures: Do they match manufacturer requirements? Reduce impeller size for greater energy savings where it doesn't interfere with manufacturer recommendations.
12. Install timing devices to reduce heating during low occupancy hours. Close air ducts in little or unused areas not subject to freezing pipes.

Once you've completed your preventative maintenance, make sure you set up a log to keep track of your work and the system's operating standards. Next, compare your energy use (not cost as rates fluctuate) to the same month in the previous year taking into account heating degree day variables. Your goal is to mirror the manufacturer's use metrics for your particular system and maintain or reduce energy usage year over year or identify when the system needs to be repaired or updated based on the energy results.

By taking the time to thoroughly check your HVAC system before the cold hits, you will not only save energy but late night emergency calls from cold, disgruntled residents and uncomfortable explanations to owners about why their building isn't being maintained. Preventative HVAC is time and energy well spent!

Source: EPA

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Kate joined the Minol USA team in August of 2009. She currently oversees the Energy Management Program with a special emphasis on utility provider bill payment, cost avoidance and green initiatives.

Prior to joining Minol USA, she was employed by REIT AvalonBay Communities, Inc. for more than 20 years where she was responsible for increasing water, sewer, electric and gas collections via onsite associate training; augmenting utility reimbursements by instituting a collection and training process, creating and implementing a new utility recovery program, "Hot Water Energy, as well as developing a reinstatement and centralization of the collections programs for AvalonBay's portfolio which consisted of more than 150 properties. While with AvalonBay, Kate also successfully lobbied for the passing of the submetering law in Massachusetts in 2005.

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