



HOW TO

IMMEDIATELY INCREASE

AIR FLOW IN YOUR FACILITY

WHILE CUTTING COSTS

BY 30%

ENVIRO-AIR
CLEANING SPECIALISTS

Jan

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Introduction: The invisible thief at work in commercial facilities

There's an invisible enemy at work in your facility and it's robbing you a little bit more every day. It's nothing you would really notice but you're paying for it anyway.

Dirty heating and cooling systems.

Not only do dirty ducts and coils diminish air quality for people working or inhabiting commercial spaces, they increase heating and cooling expenses due to their inefficiency. Much of this is just the nature of the beast—commercial buildings simply have a large volume of air being sucked into the ductwork. And with that air come dirt, germs and other contaminants that impact the people in the space. Also, the fact that there are usually more people moving about in commercial spaces and that negatively impacts air quality.

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Fortunately, the air quality in commercial buildings can be improved with regular air filter changes and cleaning of coils and air ducts in multiple air handling units, ultimately bumping air flow and cutting expenses by 30-35%. Regular attention to these elements will dramatically improve air quality and decrease energy expenditures. And that's a breath of fresh air for everyone involved.

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Why we wrote this book: To save you money

Every day, facilities managers are being tasked with finding more ways to cut expenditures. With so many fixed costs at work, there may seem to be little opportunity to trim expenses to create any discernible impact. The area of air quality, however, can always be improved upon and offers a big opportunity to cut facility expenses.

When properly maintained, commercial facilities can save 30-35% in energy expenses so it's critical to understand that ignoring dirty heating and cooling systems is something that no company can afford.

How you're losing money: Your system is working too hard

Heating and air conditioning a commercial building is a huge job that demands a lot of energy and can account for up to half of the facility's energy use. And even though the HVAC systems use the lion's share of a company's energy expenditures, they are often poorly maintained. And with each day that passes, dirt, dust, mold and other contaminants can build up, compromising the efficiency of the overall system. Quite simply, the dirtier the heating and cooling system, the harder it has to work, and the more it will cost to run.

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A properly maintained HVAC system will not only reduce energy costs, but also make the environment friendlier for building occupants by minimizing toxic particles in the air and improving comfort through regulated air temperature. It also keeps germs and other toxins to a minimum, reducing contamination risk to people as they move about in various areas of the building. Also when air heating and cooling systems are overloaded with dirt, they are more apt to break down, creating unnecessary discomfort for employees and others in the facility.

DANGER LEVEL 1	DANGER LEVEL 2	DANGER LEVEL 3
<ul style="list-style-type: none"> - Allergens & Particulates - Dusts & Pollen - Mold & Fungi - Mildew - Vehicle Exhaust - Dust Mite Feces 	<ul style="list-style-type: none"> - Infectious Agents - Bacterial Infections - Viral Infections 	<ul style="list-style-type: none"> - Toxic Compounds - Formaldehyde - Carbon Monoxide - Nitrogen Dioxide - Pesticides
HEALTH EFFECTS		
<ul style="list-style-type: none"> - Nose & Throat - Asthma Flares - Runny Nose - Congestion - Sneezing - Irritation 	<ul style="list-style-type: none"> - Bronchitis - Pneumonia - Throat & Ear Infections - Sinusitis 	<ul style="list-style-type: none"> - Memory Loss - Mild Depression - Blurred Vision - Headache - Lethargy

How to fix it: Keep it clean

Change filters regularly

Rectifying a faltering heating and air cooling system begins with a simple maintenance step: change the filters on a regular basis. This will help prevent the coils from getting too dirty. However, coils can be cleaned if they are in generally good working condition and not deteriorating. The coils, which resemble the aluminum fins pattern of a car radiator, can collect all types of debris such as dirt, leaves, bugs and more when the filter is bypassed.

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The coils also have a tendency to build up with condensation and moisture in the summer which sets the stage for mold build-up. And considering that commercial HVAC situations can have an average of 20 filters, there's a lot of opportunity for trapped debris and the build-up of condensation.



There are times when facilities managers are required to improvise when they can't obtain the correct size filters necessary for their system, and they will insert a piece of metal to close a visible gap. Although they have good intentions, this actually reduces the air flow space and creates another unnecessary problem.

Clean the coils

Changing air filters is just one step in improving air quality in a commercial facility. In fact, even if a facilities manager or maintenance manager changes filters every three to six months, there are still years of build-up of dirt and debris remaining on the coils that probably haven't been cleaned in a long time. This occurs, in part, because of the loose fit of furnace filters and the introduction of dirt and other contaminants into the coils.

Facilities managers may think they are doing a good job by vacuuming the outflow supply air diffuser or not delving any further in their cleaning efforts in order to save money, but in order to create a fully clean air system, the coils have to be cleaned. This is critical not only for the sake of air quality for the inhabitants of the building, but also to save money on energy costs.

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What happens when coils are dirty

When air duct coils are dirty, the coils can't heat properly and it becomes very difficult to force air through the coil for heating or air conditioning. The system motor is then forced to work too hard to push air through the duct to heat or cool the building properly.

Turning the thermostat up only makes a minor adjustment in the heating of the building because it takes a much longer time to heat the air due to dirty coils. Turning the thermostat up again and again will not improve the heat in the building because dirty coils are preventing efficient air heating. You can't see anything wrong because the system is blowing air, but the dirty coils are preventing the proper temperature to flow through the ducts unimpeded.

When coils aren't cleaned and filters changed on a regular basis, the HVAC motor is forced to work too hard, leading to hot belts, burned out brushes and more. Many times facilities managers end up having to replace motors which could have been prevented by thorough cleaning of coils or air filters properly.

Clean the ductwork

If a building's HVAC system is congested with dirt and debris, it just makes sense that some of those toxins are going to blow out through the ductwork. Elements such as insulation fibers, bugs, leaves and other debris can also get stuck in the ductwork on the return side where air is being sucked up into the air filter and coils as well as in the fresh air intake on the exterior of the building.

This situation can be exacerbated in the winter when facilities managers shut off or drastically reduce the fresh air intake in order to keep the coils from freezing. That leads to another set of problems, however, because with no or very limited fresh air intake, the air inside the building is just being re-circulated.

Further, when filters and coils get stopped up, HVAC systems have a system mechanism in place that bypasses them and blows all the toxins and contaminants out to the inhabitants of the building. That's why it is critical for the health of the building's staff members that ductwork be cleaned on a regular basis.

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How to keep air safe and clean: Hire professionals

Studies show that 95% of efficiency issues in commercial buildings occur due to neglect of cleaning and upkeep of HVAC air systems. Cleaning coils, changing filters and cleaning ductwork are all critical to maintaining safe environments for a building's inhabitants. Plus when an air system is working efficiently, it costs less to keep it running which definitely helps with budgets.

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Facilities managers do their best to keep air quality acceptable in buildings but their time is usually so overextended that they often can't give air quality the time it deserves. That's why it's a good idea to hire professional cleaners to clean coils (every 2-3 years), clean ductwork (every 5-7 years) and change air filters (every 3 months).

Eliminate the invisible thief that's robbing your building of good air quality. The professionals at [Enviro-Air Cleaning Specialists](#) have the expertise, technology and equipment to remediate and control the air quality in your commercial facility to keep the HVAC system at the optimum level for healthy, efficient operations.

