

QuickFacts

December 2015 | Issue 304

BLUESTONE & HOCKLEY

REAL ESTATE SERVICES

How to take care of HVAC systems and prevent disease

By: Cliff Hockley, President
Bluestone & Hockley Real Estate Services

Why do HVAC systems need regular maintenance?

Owners of commercial buildings sometimes overlook the maintenance of their HVAC (Heating Ventilating and Air Conditioning) systems. I recently had a meeting with clients who own a 20,000 square foot building where they had installed a new HVAC system at the cost of \$100,000. Because it was new they thought did not need a preventive maintenance plan. I explained how this perception would not only put their \$100,000 investment at risk, it would also endanger the health of their tenants.

HVAC units have many reasons for failing. The following charts published in a November 2000 ASHREA Journal article, Smart Maintenance for Rooftop Units, indicates the main reasons for unit failures. Most of these failures are preventable with proper maintenance.

Causes for 'No Air-Conditioning' Service Call	% Total Occurrences
Controls Error	21%
Electrical Problem	20%
Refrigerant Leak	12%
Condenser	7%
Air Handling	7%
Evaporator	6%
Compressor	5%
Cooling Water Loop	4%
Plugged Filters	2%
Personnel Error	2%
Expansion Device	2%
Can't Classify	12%

Table 1: Classification of 'no air-conditioning' cases.

Ensuring proper function of your HVAC unit also prevents health complications related to mold and allergies. The most serious ailment associated with poorly maintained commercial HVAC units is the potentially fatal Legionnaires' disease.

Legionnaire's disease is a pneumonia caused by the Legionella bacteria. The bacteria lives in water, (especially standing warm water keyed off by rising temperatures in the summer months,) and is carried by steam and mist. The bacteria has been detected in drinking water systems and tubs, cooling towers and in standing water that is aerosolized and ends up circulating in building air conditioning systems. Legionnaires 'disease bacteria rarely will cause problems unless water contaminated with the bacteria enters the HVAC system. Well-maintained HVAC systems and air conditioning units without humidifiers are

General Classification Of Faults	% of Total Service Costs
Compressor	24%
Controls Error	10%
Condenser	9%
Electrical Problem	7%
Evaporator	6%
New Installation	6%
Air Handling	5%
Refrigerant Leak	5%
Installation/Startup	4%
Cooling Water Loop	4%
Fan Belt	2%
Others	18%

Table 2: Classification of fault types by total cost.

A Full Service Real Estate Company...

You Can Count On

- Real Estate Sales and Leasing
- Consulting
- Property Maintenance
- Member of MMHA, IREM & BOMA



Property Management Services:

- Commercial and Office Buildings
- Condominium Associations
- Apartments
- Houses
- Mobile Home Parks
- Receiverships

News & Blog

Read this article and more at:
bluestonehockley.com/blog/



unlikely to harbor the Legionnaire bacteria.

How to maintain HVAC systems

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) offers the definitive guide to HVAC maintenance, ASHRAE Standard 180 – The standard practice for inspection and maintenance of commercial building HVAC systems. Key points include:

- Fixing cabinet air leaks.
- Cleaning and adjusting dampers on an annual basis.
- Inspecting the fan, bearings and belts twice a year and replacing them as necessary.
- Cleaning the air ducts every two years to prevent the buildup of dirt, micro-organisms and mold.

The most essential steps one could take to prevent disease include changing filters frequently, preventing pooling water and cleaning the evaporator and condenser coils.

Change filters frequently. Pleated filters are the first line of defense against airborne irritants. They are the item in the HVAC units that keep the air clean. Their efficiency is measured by a MERV rating. The higher the MERV rating, the better their ability to remove dust, dirt and micro-organisms from the air. Changing filters frequently it makes it easier for the unit to pull air into the system. If the filter is clogged, the system has to work harder to feed air into the unit. The frequency is decided by the environment and how dirty the air is. Most commercial buildings require a quarterly filter change and inspections on a contract basis.

Prevent water from pooling around the air handlers.

Mold and water sources near the air conditioner intake create opportunities for spores to be sucked into the air intake. Roofs need to be cleaned regularly and trees cut back from the roof lines to prevent the accumulation of dirt and debris near the unit. Also ensure that drain lines from condensate units drain off of the roof and do not pond under HVAC air intakes.

Clean the evaporator and condenser coils once or twice a year. Evaporator coils tend to stay damp, and allow the growth of mold. In addition to the dampness, the coils are typically in contact with air coming in from the outside (warm and humid air in the summer.) Dirt also gets past the filters and provides the material that mold needs to grow. Treat coils after every cleaning using an antimicrobial treatment. You can consider installing UV (Ultra Violet) lights help keep the coils from being attacked by mold. (This is typically a retrofit item and not all HVAC units have room or a power source for a UV light). In any case it can keep the coils cleaner and reduce the labor to keep them clean.

As Ben Franklin said, “An ounce of prevention is worth a pound of cure.” Proper HVAC maintenance will more often than not keep that unexpected emergency from happening.

Resources:

www.bbjenviro.com/resource-article/hvac-maintenance/

<https://www.ashrae.org/standards-research--technology/standards-interpretations/interpretations-for-standard-180-2008>

<https://www.osha.gov/dts/osta/otm/legionnaires/>

Clifford A. Hockley is President of Bluestone & Hockley Real Estate Services, greater Portland’s full service real estate brokerage and property management company. **Founded in 1972**, Bluestone & Hockley’s staff totals nearly 110 employees, including 20 licensed brokers. The company’s property management division serves commercial buildings, apartments, condominium associations and houses in the Portland / Vancouver metro area, while the brokerage division facilitates both leasing and sales of investment properties throughout Oregon and Washington.

Cliff earned a degree in Political Science from Claremont McKenna College and holds an MBA from Willamette University. He is a Certified Property Manager and has achieved his Certified Commercial Investment Member designation (CCIM). Bluestone & Hockley Real Estate Services is an Accredited Management Organization (AMO) by the Institute of Real Estate Management (IREM). Cliff is a member of the Institute of Real Estate Management and was named Certified Property Manager of the year in 2001 and 2003. Cliff is a frequent contributor to industry newsletters.

Bluestone & Hockley offers **customized brokerage, property and asset management, as well as maintenance services** to property owners and investors throughout the Portland/Vancouver metro area. The company’s full-service approach benefits busy property owners and investors, who know they can count on Bluestone & Hockley for high quality real estate services start to finish.

