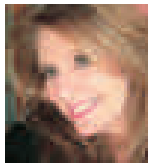




# Seven HVAC Best Practices

By Linda Duttmann

Over the past twenty-five years in the industry, working with both highrise condominium managers and boards, and the commercial building sector, I can say that the HVAC in a building is often overlooked in terms of ensuring that the equipment runs efficiently with as little owner/tenant downtime as possible.



In today's complex environment, we need to ensure we are in compliance with building codes, and of course, health and safety requirements. Sometimes, building owners overlook the HVAC, while trying to meet budget restrictions. Projects like new equipment installations and preventative maintenance contracts are often the first things to be reviewed for cost effectiveness. When this happens, you can jeopardize things like life span, as per ASHRAE Guidelines, along with equipment efficiencies decreasing, which in turn, can cost more money. Your energy costs could be higher, as well as your repairs costs.

Having a good solid maintenance

program in place on your HVAC will ensure extended equipment life, and will limit owner downtime if equipment fails prematurely.

Let's put it in perspective with seven simple 'HVAC Best Practices' (BPs).

## **BP #1: Ensure you have a good maintenance plan in place for your HVAC Systems**

This starts with making sure that you choose a good reputable HVAC contractor. You need to ensure the following:

- How long have they been in business?
- How many technicians do they have?
- If you have a chiller system, do they have their own team of chiller technicians, or do they sub this portion of the contract out?
- What is their response time?
- Are they a union contractor?
- Are they a true HVAC-specialized contractor?

## **BP #2: Building Automation**

Most commercial buildings have a control system (BAS System). Highrise

residential buildings, not typically, but it's a fantastic opportunity to run your building more efficiently, and a great way to save energy. A BAS System allows you to operate your building, and monitor actual operating parameters on a real-time basis. If you don't have one, look into getting one; if you do, make sure you have a non-proprietary system.

## **BP #3 Take advantage of all utility incentive programs available to you**

It's important to ensure you have a contractor you trust. One who can guide you, and who knows the 'ins and outs' on the vast number of everchanging utility programs (i.e., Hydro, Enbridge; Save-on-Energy).

I have, over the years, seen countless buildings that have used a contractor, who for whatever reason, did not provide the necessary information to the utility. Therefore, the building did not receive the incentives that they could have, and should have, received. This can cost you literally thousands of

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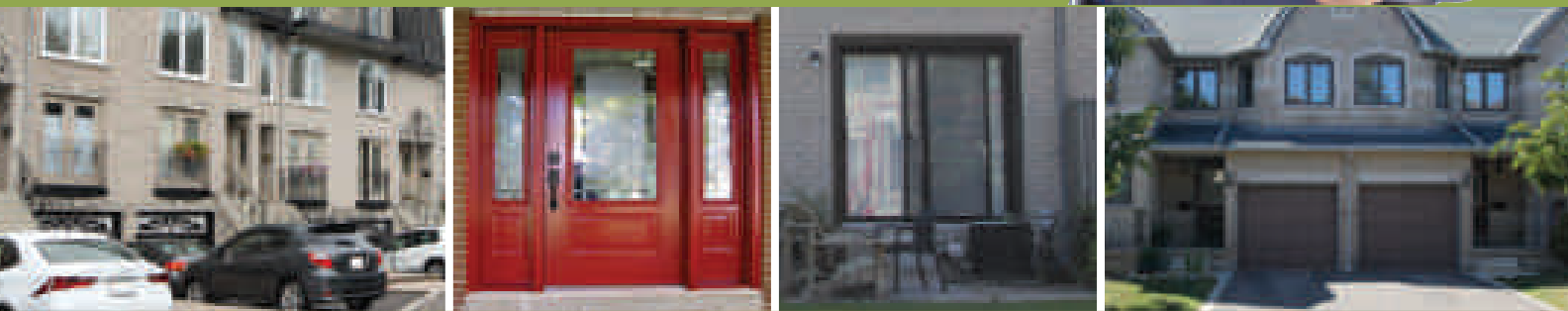
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dollars in lost income, which can help with your project payback.

There are excellent programs available for most energy savings initiatives, some I have listed below:

- Boiler Retrofit
- Chiller/Tower Replacement
- VFDs (Variable Frequency Drives)
- Intermittent pumping on boilers
- BAS (Automation)
- Make-Up Air Retrofits (VFDs added to control the speed of the fans during specific hours)
- Lighting

These projects are examples of energy savings measures, and are all excellent best practices for your building.

#### **BP #4 Install VFDs (Variable Frequency Drives)**

I felt this BP deserved its own section. It's such a simple way to save energy, at a reasonable cost. Why not add a VFD to your Make-Up Air unit? You can slow the speed of your fan down, which may run at 100 percent speed, to a lower speed during times of day where the corridors have less traffic, or in the nighttime hours when there is literally no one in the hallways.

VFDs can be added to pumps and will save energy no matter the HP of the pump. This is one of the easiest paybacks when doing a retrofit.

#### **BP #5 When Tendering Out**

Over the years I have seen, and been privy to, many contracts. I have reviewed and prepared comparison charts to assist managers in the daunting task of trying to understand why there is such a spread in pricing (both for retrofits and maintenance contracts).

When you tender out a maintenance

contract ensure the following:

- Make sure that your equipment lists/scope of work for all bidders is the same
- Make sure that things like:
  - Your MUA filter frequency is the same
  - That your water treatment visits are the same
- Ensure that all bidders are the same calibre (i.e., either all union; all non-union; all plumbers, etc.)
- Make sure that the scope of the contracts are the same, i.e., comprehensive or preventative maintenance
- Watch out for things like 'limitation of liability' clauses, which can limit the contractors' risk financially
- With retrofit contracts, ensure that the Scope of the Project is the same, i.e., same type of equipment (e.g., condensing versus mid-efficiency boilers).

Bottom line, ensure you are quoting 'like for like.' Too often the low price is chosen, and it's not until after the job is awarded and completed that the 'true' reason for the lower pricing is discovered.

#### **BP #6 Energy Efficiency Retrofits**

When replacing major equipment ensure you have a contractor who can offer you the most efficient equipment available for your system design. Try to work with contractors who can provide to you more than one option, and more than one manufacturer.

There are many different options available, with many different equipment efficiencies. Let your contractor help guide you in the decision-making process. After all, who knows your building system better than your contractor?

#### **BP #7 The Simple Things**

Below are a few simple HVAC tasks

that can make a world of difference:

- Make sure your filters are changed regularly on your MUAs (more often if you are near a high traffic area such as a highway; or an area that has construction going on)
- Make sure all belts are properly adjusted
- Make sure your outdoor condenser coils are cleaned when needed
- Make sure your equipment is scheduled properly
- The HVAC in your building is one of the largest investments you have. By engaging in any of the BPs noted above you will:
  - Enhance your building's performance;
  - Improve owner/tenant comfort;
  - Achieve longer lifespan on equipment; and
  - Save energy both short and long term.

Always ensure you use skilled industry professionals. The low price sometimes really does mean just that. A low price can mean less maintenance hours assigned to your site, which in turn can cause premature failure of equipment, and greater repair costs.

Your chosen service provider is hired by you to ensure you get the best service possible to ensure longer equipment life; and lower energy costs. They need to be well versed in codes, laws, and programs available to you. Choose them wisely.

Last, contractors are your best ally with regards to your HVAC; treat them kindly. ■

**Linda Duttman** is senior territory manager with Ambient Mechanical. Linda has been in the HVAC industry for over 25 years. She has worked for a number of OEMs, and is considered an HVAC specialist in the condominium market. [ambientmechanical.ca](http://ambientmechanical.ca)

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