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RETAIL FACILITY BUSINESS[®]

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**BrandsMart
USA**

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HVAC: IMPACT OF OPERATIONAL CHANGES
DESIGN/BUILD BENEFITS TO THE BOTTOM LINE

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AIR FILTER FACTS

THE MYTHS ABOUT METAL BUILDINGS

ROOFTOP HVAC REPLACEMENT

HOW TO BETTER MANAGE YOUR ENERGY

Replacement

101

Raising the roof on HVAC replacements and energy recovery ventilation.

BY WALT JACOBE & JIM CONNELL



JACOBE



CONNELL

According to industry experts, a 50/50 divide exists between retail facilities that conduct HVAC rooftop replacements as a result of a complete unit failure and those who conduct replacements as part of a proactive, planned replacement strategy.

Either way, a rooftop HVAC replacement is an investment with long-term consequences. Even an emergency replacement requires a certain amount of preparation because what made sense 15 years ago may no longer apply – especially if changes were made to the building footprint, lighting or energy load. What's more, new utility rebates now exist for installing technologies like energy recovery ventilation (ERV) wheels that help increase energy efficiency and often bring down the size of the overall HVAC unit needed for replacement.

To help guide retail business owners, facility managers, contractors and HVAC specialists through a successful and seamless HVAC rooftop replacement, Walt Jacobe, York National Account Sales Manager at Johnson Controls Incorporated offers the following tips. Walt and a team of JCI specialists work with some of the world's largest retail brands to ensure HVAC and rooftop needs are met and aligning with business goals.

SIX STEPS FOR SUCCESSFUL HVAC ROOFTOP REPLACEMENTS:

1. Prepare an Asset Inventory List

Having an asset inventory list of all existing equipment makes it easier to proactively plan for replacements and make decisions from a holistic viewpoint. An asset list should include:

- Name and location of each piece of equipment beginning with installations approaching 15 years;
- Serial and model numbers of all equipment;
- Voltage;
- Heat type;
- Outdoor air (OA) requirements;
- Control requirements (for example, should the unit have stand-alone controls or hook into a central building management unit); and
- Special options like whether or not new coil coating is needed for coastal applications.

2. Understand the pros and cons of rooftop replacement timing

• *Replace on Fail*

If a unit responsible for heating or cooling an entire retail store fails, it will need replacing immediately. The sense of urgency and action required to ensure minimal business closure and money lost limits the options available as choices are often limited to current inventory and may not include more efficient or cost-effective options that give a higher rate of return. You can also expect to pay expedited costs for shipping, labor, etc.

Despite this, many companies opt to wait until an emergency replacement is necessary

to get the maximum amount of value from the existing investment and reserve cash for as long as possible.

- *Planned Replacement*

Conversely, a planned replacement provides greater flexibility to research the highest efficiency units, utility rebate opportunities and necessary lead times.

3. Perform a space assessment

- Prior to installing a new unit, talk to the building occupants and owner to determine the existing comfort level and any problems or issues.
- Review preventative maintenance schedule on existing unit.
- Make sure you have a preventative maintenance schedule in place for the new unit.
- If adding an ERV unit, make sure it can be easily disassembled for cleaning and maintenance.

4. Determine if a curb adapter is required for rooftop applications

- If so, obtain overall existing curb dimensions.
- Obtain approximate SA/RA opening location if possible.
 - This can be done taking a unit panel off and measuring from one end of the unit.
- Inspect existing roof curb for any deterioration/rusting/structural inefficiencies.
- Be careful not to double up on curb adapters.
 - Too many times a curb adapter is used on top of an existing adapter which can create a dangerous situation.

5. Decide if a like for like replacement makes sense

- Evaluate whether space design, lighting, and application of space has changed and conduct a new load calculation.
- Verify existing vs. replacement unit/adaptor weight with existing structural requirements/design and consult a structural engineer if replacement equals or exceeds an additional 200 to 500 pounds.
- Do NOT replace “like for like” if conditions have changed since the existing unit was installed.

6. Evaluate existing unit efficiency and compare with new available options

- Review operational costs with existing and new unit.
- Conduct a payback analysis and consider good, better and best scenarios. For example, will investing more on the front end deliver a better overall payback?

Inquire about ERV utility rebates. Many utility companies offer rebates for improving energy efficiency, especially through proven and growing technologies like energy recovery ventilation. ERV units provide buildings with fresh outdoor air at 1/3 the cost of conventional systems while improving HVAC system efficiency by up to 40 percent and dehumidification capacity by up to 75 percent. The installation of an ERV unit, designed to last longer than HVAC systems, lowers required mechanical heating and cooling capacity. This reduces the size and cost of the mechanical HVAC systems and allows buildings to qualify for utility rebates. With the segmented and sustainable wheel design, installing ERV allows for minimal maintenance expenses and a more optimal system performance.

Following these six steps can transform HVAC rooftop replacement from a dreaded loss to an energy efficiency gain. Proactive space assessments, organized records and increased awareness of technologies, like easy to install and maintain ERV wheels that save money, will improve energy efficiency and lighten the load of your HVAC unit – and your budget. [RFB](#)

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