

ECONOMIZERS: IS YOURS REALLY WORKING?

Consider the example of Pat, a facility manager for a three-story office building in Western Canada. With 50,000 sq feet and an energy spend of \$3 per sq ft, the owners are anxious to cut annual operating costs. After reading up on the benefits of benchmarking (article one in this series), Pat completes the Energy Star process and receives a score of 40. Equipped with detailed information about the building, Pat identifies three simple fixes to improve efficiencies and save money (article two in this series). This article will focus on economizers.

A few years back, Pat chose to install an economizer for the building. There were rebates to be had and it sounded like the right thing to do – make use of free outside air that is the right temperature whenever possible, meet the codes, and reduce the amount of air you have to pay to heat or cool. However, economizers add a dimension of complexity that requires technical training to be used properly.

In fact, economizers are a problem in packaged equipment over 70% of the time.
Source: New Buildings Institute - PIER

Stakes are high for simple mistakes. In Pat's case, the set points were reversed on the controls so that instead of letting in 10% outside air, the dampers were allowing 90%. You can imagine the waste heating that outside air throughout a Western Canadian winter.

Other common problems as identified by Pacific Northwest National Lab are:

- Jammed or frozen outdoor air damper
- Broken or disconnected linkages
- Nonfunctioning actuator or disconnected wires
- Malfunctioning outdoor-air/return air temperature sensors
- Malfunctioning controller
- Faulty control settings

Through the process of benchmarking, Pat identified that the economizer hadn't been professionally serviced in a while. On the next visit by the HVAC service provider, it was added to the 'to do' list and the mix up on the settings was identified.

Economizers are a sleeping giant – you may never know yours is a problem. It is recommended that you have it professionally set up, serviced and tested annually. Statistics show the savings can be anywhere between 5-30% - well worth including on the service list.

**Questions about how to make your plan a reality?
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