



Michaels Engineering Energy Brief

RETROCOMMISSIONING - WHAT IS IT?

SUGGESTIONS...

Do you have certain Energy Efficiency topics you'd like to know more about? Send an email with your suggestion to the author listed below and your topic might become a future Energy Brief!

DID YOU KNOW...

...Retrocommissioning (RCx) not only returns the building's heating, cooling, lighting, and process (manufacturing) systems to their original design intent, new technologies can improve performance significantly beyond that.

...RCx involves low-cost / no-cost measures with energy-cost savings of 10-20% (or more) and typical combined payback of 2-4 years or less.

MEET THE AUTHOR



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→ SMELL A RAT?

Why are exterior lights on the building and in the parking lot burning all day long? Why is temperature controlled in the winter by opening the windows, or using space heaters under your desk? We've even seen occupants take matters into their own hands, putting a heater under a thermostat to make the space cooler, or putting a wet paper towel over the thermostat to make it warmer, or making their own variable volume system with cardboard and duct tape! "Sorry kids, your choices today are do that art project or stay warm." Good grief! Something is rotten in Denmark. And people accept this! And, little do most people know that for every obvious waste of energy, there are probably 10 that are unseen. Like rats!

How are these deficiencies and wastes of energy fixed? Retrocommissioning. Retrocommissioning (RCx) not only returns the building's heating, cooling, lighting, and process (manufacturing) systems to their original design intent, but it can also identify additional energy-saving measures made possible by newer technologies.

→ CAN'T AFFORD NOT TO

Here is the real kicker: RCx involves low-cost / no-cost measures with energy-cost savings of 10-20% (or more) and typical combined payback of 2-4 years or less. Try to find a publically traded company in the stock listings that pays annual dividends with 25-50% yield, AND automatically adjusts with fuel escalation rates!

Big energy hitters are typically deficiencies that go unnoticed to occupants. Common flaws revealed during RCx studies include the use of excess outside air, variable speed drives that are not controlled properly, wasteful HVAC control sequencing and scheduling, inefficient lighting, and "band aids" that made a problem "go away" while wasting huge amounts of energy.

→ GOOD CANDIDATES

Retrocommissioning is typically cost effective for:

Buildings that have a fairly modern (roughly 10 years old or less) digital control system, or at least the backbone of a modern system

Buildings that are only 2-5 years old that were not commissioned at new construction - See LEED® Brief on Commissioning. These facilities are good candidates because they typically have state of the art controls that are most likely not optimized for minimizing energy consumption. These buildings should also be providing a substantial amount of outside air. Reducing excessive outside air and treating outside air to avoid simultaneous heating and cooling are typical opportunities.

Buildings that have temperature, humidity, or air quality control problems

Buildings that cannot compromise indoor environment including fresh air supply and temperature and humidity levels - Opportunities like those in the second bullet above are common.

After spending millions of dollars for a new building or significant energy efficiency upgrades, the last thing a building owner might want to hear that more is needed to cut a wasted operating budget. All things considered, you can't afford not to retrocommission your facility.

Due to the vast range of possibilities for savings, several types of RCx opportunities and a case study are forthcoming.

Did I mention that RCx can move your facility a long way toward achieving an Energy Star rating, and LEED® certification for existing buildings? (It's actually a prerequisite for LEED® EB)