Retro-Commissioning

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What is Retro-Commissioning?

- Commissioning is a process that seeks to improve how building equipment and systems function together:
  - Heating, Ventilating, & Air Conditioning
  - Lighting and controls
- Should occur when building is first constructed and delivered to client.
- Most buildings have not had this process, so RCx brings this process to those buildings.
When to Retro-Commission

- If the building has never been commissioned.
- If the original usage of the building has changed or is over 5 years old — even well-constructed buildings experience performance degradation over time.
- Large building (>100,000 sf) with a building automation system.
- If the building is experiencing:
  - High energy usage & costs (EUI & ECI).
  - Occupant comfort complaints.
  - Indoor air quality problems.
  - Numerous operation and maintenance problems.
RCx Process Overview

- Site inspection.
- Data gathering plan.
- Sensor installation and/or BAS trend logging.
- Data collection and analysis.
- Recommended RCx measures.
- Client implements measures (at least $10,000 worth in Public Sector Program).
- Implementation assistance.
- Measurement and Verification.

Typical timeline is 1-2 Years
Typical Findings from RCx

- Missing or broken equipment/components.
- Incorrect thermostat settings and control sequences.
- Incorrect or missing BAS schedules for fans, pumps, lights, and other key components.
- Malfunctioning control sensors such as outside air temperature sensors, supply air temperature sensors, damper position, etc.
- Heating and cooling systems fighting each other (excessive reheat).
Excessive Reheat
## Incorrect Schedule

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RCx Savings

Controlled 12 fans @ 100 hp each
Saving = $100,000
Typical Results

- Energy & cost savings (~15%):

<table>
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<th>Description</th>
<th>Range of Values</th>
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<tbody>
<tr>
<td>Value of Energy Savings</td>
<td>$0.11 - $0.72/sf</td>
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<tr>
<td>Value of Non-Energy Savings</td>
<td>$0.10 - $0.45/sf</td>
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- The many documented benefits include:
  - Improved equipment performance.
  - Increased O&M Staff Capabilities and Expertise.
  - Increased asset value.
  - Improved Occupant Comfort.
  - Improved indoor environmental quality (IEQ).
Presentations available at:
http://presentations.sedac.org

Web site: www.sedac.org
Contact: info@sedac.org
1-800-214-7954