

Adoption of Retro-commissioning for Optimising Energy Performance of Buildings in Hong Kong

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Background

Retro-commissioning (RCx) is a systematic procedure to periodically assess an existing building's performance in order to find operational adjustments that can save energy and, therefore, reduce energy costs and enhance the indoor environment (Electrical and Mechanical Services Department, 2018). RCx provides opportunities to reduce energy consumption and carbon emission in the building sector, which helps to minimize the environmental impacts. Therefore, it is crucial to investigate the benefits and barriers of implementing RCx to identify effective measures to promote RCx and suggest recommendations for enhancing the adoption level of RCx.

Findings

- Greatest benefits of implementing RCx are maintaining better building energy savings and building asset value.
- Largest barrier to implementing RCx is the time constraints faced by O&M teams.
- Measures should be able to preserve or even maximize the advantages and break the barrier of utilizing RCx.

	Offering Building Operator Training	Holding Utility Program
Better Energy Savings	Preserve the advantages	Maximize the advantages
Increased Building Asset Value	Preserve the advantages	Maximize the advantages
Time Constraints faced by O&M teams	Break the barrier	Break the barrier

Offering building operator training & Holding utility programs are suggested to promote RCx

Research Objectives

Aims

Investigate the adoption of retro-commissioning, barriers, benefits, and conducive measures in Hong Kong.

1 Review the development of retro-commissioning in Hong Kong

2 Review the common measures, barriers, and enablers to the adoption of retro-commissioning reported in the literature

3 Reveal the views of facility managers on the adoption of retro-commissioning through the industry

4 Identify the adoption level of retro-commissioning in buildings through the industry via questionnaire surveys

5 Propose recommendations to promote retro-commissioning

Conclusion

The research study investigated the current adoption levels of RCx and provided recommendations to encourage RCx adoption in the industry. It has indicated the greatest benefits and barriers to implementing RCx. Based on the indicated barrier and benefits, it is recommended to offer building operator training and hold utility programs to promote it. This can attract an increasing number of companies to participate in RCx projects and enhance the adoption levels of RCx in Hong Kong.

Methodology

Stage 1- Desktop Study:
A list of RCx benefits, barriers, and conducive measures is identified from the literature.

Stage 2- Focus Group Discussion:
Opinions from the FM managers were collected to formulate a questionnaire for stage 3.

Stage 3- Questionnaire Survey:
The formulated questionnaire was sent to a wide range of local FM managers.

Stage 4-Data Analysis:
A thematic analysis was conducted based on the collected data of the questionnaire survey.

Stage 5- Consolidation of Findings:
Recommendations and the conclusion were drawn out.