



RETROCOMMISSIONING CASE STUDY: SYMPHONY TOWERS

OVERVIEW

The Irvine Company, Inc. is a 140-year old leading real estate investment company with over 400 commercial office properties located throughout California, from San Diego to Silicon Valley. At The Irvine Company, energy efficiency is recognized as an important aspect of maintaining a high-quality investment portfolio. As one component of this strategy, The Irvine Company participated in a Retrocommissioning Program (RCx Program), administered by the local utility through a contract awarded to Portland Energy Conservation, Inc. (PECI). The company's 714,000 square foot office building, Symphony Towers, was enrolled in the Program in 2005.

From the onset, the Chief Portfolio Engineer recognized an opportunity to optimize building performance through retrocommissioning (RCx) and saw great value in the whole-building engineering analysis that the Program could offer. The Program supported The Irvine Company by providing Symphony Towers with:

- An in-depth, customized RCx investigation to identify energy savings opportunities
- Documentation and training for building staff on implemented measures
- Ongoing performance tracking of measures to ensure persistence

Retrocommissioning identified potential annual cost savings of nearly \$65,000 at the Symphony Towers. The high savings opportunities coupled with relatively low implementation costs resulted in a payback for The Irvine Company of only four months.

Retrocommissioning

A systematic process for improving an existing building's performance by identifying and implementing relatively low-cost operational and maintenance improvements.

INVESTIGATION & IMPLEMENTATION

FINDING THE SAVINGS OPPORTUNITIES

Through an in-depth analysis of the building operations and by working closely with building staff, the retrocommissioning provider, EMC Engineers, Inc., found that several operational improvements to the cooling tower, chillers, cooling system, and air distribution system could bring significant savings. Specifically, the RCx investigation identified opportunities to:

- Correct uneven flow through the cooling tower
- Improve chiller sequencing
- Adjust chilled water temperatures and setpoints
- Reduce cooling system night operation during the summer
- Optimize the control of air-handling units (AHUs)



:: QUICK FACTS

Building: Symphony Towers

Location: San Diego, CA

Year built: 1980

Size: 714,000 gross sq. ft. with 34 stories

Scope of retrocommissioning project: Chilled and heating water systems, air distribution systems

Project timeline: 2005-2006

QUANTIFIED COSTS AND SAVINGS TO-DATE

Estimated Annual kWh savings: 497,000 kWh

Estimated Annual cost savings: \$65,000

Total project cost: \$76,600

Total program incentive: \$52,800

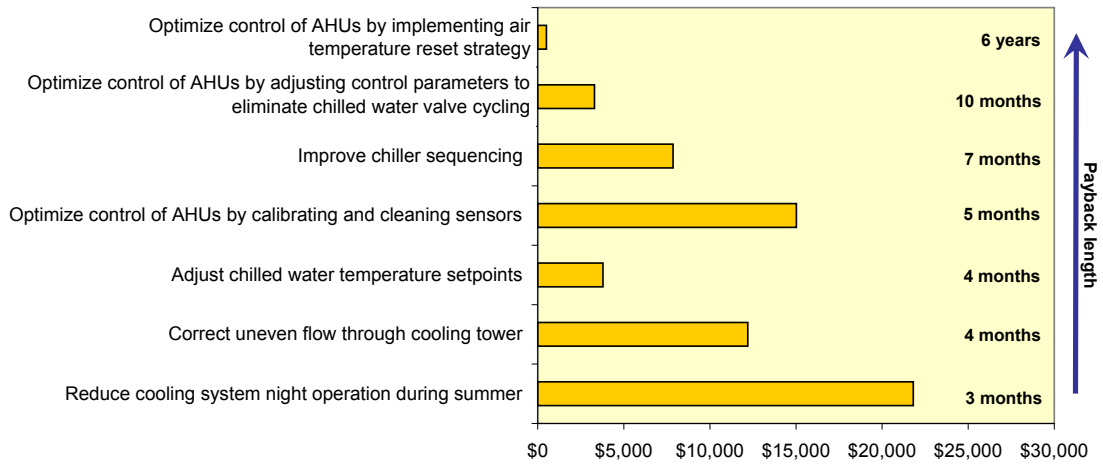
Net owner cost: \$23,800

Simple payback: 4 months

PROJECT BENEFITS

- Improved cooling tower operation and reduced maintenance costs
- Increased chiller efficiency and increase in equipment life
- More efficient operations
- Documentation and training for O&M staff
- Performance tracking of implemented measures and feedback to building engineers

Implemented retrocommissioning measures cost savings and paybacks



Energy savings reflect anticipated project savings based on implemented measures.

IMPLEMENTING ENERGY SAVINGS MEASURES

In all, seven energy saving measures were selected for implementation through coordinated efforts by PECE and Symphony Towers staff. These measures were implemented in less than four months by The Irvine Company’s controls contractor with some assistance from in-house building engineers. EMC Engineers provided implementation oversight and final measure verification. Following verification, specialized monitoring equipment was installed at Symphony Towers by Architectural Energy Corporation (AEC) to track measures remotely. Monitoring activities like these provide valuable feedback to building staff and help ensure energy savings persist.

Both the energy and non-energy benefits obtained through retrocommissioning have helped make the project an ongoing success for The Irvine Company. An investment in retrocommissioning has saved The Irvine Company money, helped improve operations and tenant comfort, and given its staff a better understanding of how they can identify building problems systematically. With the knowledge gained through retrocommissioning, the building staff will be able to continue optimizing building operations over time.

:: FOR MORE INFORMATION

The Retrocommissioning Services & Incentives Program is now available to help Pacific Gas & Electric Company (PG&E) commercial customers retrocommission their facilities. Through the Program, experienced engineers work closely with building owners and their staff to find cost-effective ways to optimize their building’s performance, lower energy bills, and improve occupant comfort.

Visit the program website at www.RCx-Program.com to learn how retrocommissioning can help you improve your bottom line, what to expect as a participant in the Program, and how the program incentives are structured and paid. Please contact us with any questions or to obtain a program application.

Retrocommissioning Services & Incentives Program
 (866) 513-1875
RCx-Program@peci.org
www.rcx-program.com

:: PROJECT PARTNERS

Building Owner:
 The Irvine Company
www.irvinecompany.com

Retrocommissioning Provider:
 EMC Engineers, Inc.
www.emcengineers.com

Performance Monitoring Contractor:
 Architectural Energy Corporation (AEC)
www.archenergy.com

Incentives are provided on a first-come, first-served basis until allocated funds are depleted. This Program may be modified or terminated without notice. Actual energy savings and incentives will vary with each project, including but not limited to the actual measures or equipment installed, building construction, customer operation, age of existing equipment, and location. California customers are not obligated to purchase any full fee service or other services not funded by this Program. This Program is funded by California utility ratepayers under the auspices of the California Public Utilities Commission (CPUC). Los Consumidores de California no están obligados a comprar servicios completos o adicionales que no estén cubiertos bajo este programa. Este programa está financiado por los usuarios de servicios públicos en California bajo la jurisdicción de la Comisión de Servicios Públicos de California (CPUC).