

CASE STUDY

Southern California Edison/LA County Retro-Commissioning Program Los Angeles, CA

Making buildings work. **Better.**



E M C Engineers, Inc. (EMC) was contracted by SCE to implement a facility retro-commissioning (RCx) program for 11 county buildings, encompassing 1.7M SF during 2004 and 2005. The purpose of this RCx program was to optimize the operation of HVAC systems.

The major phases included: Benchmarking building energy use; Planning phase to develop the RCx approach; Prefunctional testing of HVAC systems to confirm existing conditions and required repairs, including; Verifying control sequences; Trending data to verify actual operation; Testing of HVAC components at all devices; Airflow and waterflow measurements; and Identifying deficiencies found and repairs required. Implementation of recommended improvements; Functional performance testing to verify HVAC operations after improvements; and Final Report & Training Manuals.

Owner:

Southern CA Edison/
Los Angeles County
(LACo)

Utilities:

Southern California
Edison (SCE)/
The Gas Company

Schedule:

On-going;
EMC is currently
performing subsequent
phases.

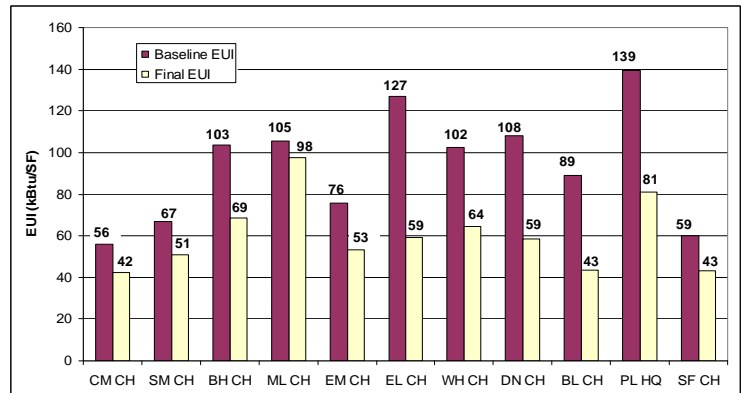
Significant improvements were:

- * Optimized on-off equipment scheduling
- * Repair of outside air economizers
- * Eliminating simultaneous heating and cooling
- * Repair of HVAC control components
- * Resorting Fan Operations
- * Carbon monoxide control of garage ventilation
- * Optimized boiler, chiller, and cooling tower operations

Overall Utility Costs	\$3,500,000
Annual Savings	\$660,000 ~20%
Payback	<1 year

The graph shows the baseline (before) and final (after) energy index. Additional benefits were optimized building operations, comfortable work environments and better IAQ.

During the 2006 heat wave in this region, these buildings also received the fewest, if any, comfort complaints by LACo O&M staff.



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Engineering Excellence Since 1976!

Company Overview

EMC is dedicated to creating sustainable facilities by optimizing performance through energy modeling and analysis, building automation systems application, advanced mechanical and electrical design, construction management, and building commissioning to achieve lower energy costs, improved comfort, and increased productivity.

Experience

Since 1976, EMC has been a leader in delivering high performance building solutions. As a multidiscipline firm, we have strong credentials in mechanical, electrical, and control systems retrofit and modernization and energy engineering and commissioning.

Where do EMC's experts work?

You'll find us in schools, colleges, hospitals, government facilities, healthcare, and all types of private sector structures from supermarkets to office towers. In fact, EMC's engineers and technicians go wherever new facilities are under construction or existing structures or systems are operating at less than peak performance.



Whether you need a retrofit or a modernization or a new high performance building, you can rely on EMC to bring engineering excellence to your project.

Imagine reducing operating costs, improving comfort, increasing productivity, and getting your building's problems fixed quickly. EMC's services are the key!

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Services

BUILDING COMMISSIONING/RETRO-COMMISSIONING

The commissioning process for new buildings and major renovations, provides facility owners with assurance the facility is functioning to meet their project requirements. Commissioning is the only process that assures a quality outcome. Whether you manage a new or existing facility, it's really difficult to know unless an independent commissioning expert has evaluated your systems. EMC's retro-commissioning services provide low cost, high return operating improvements that reduce operating costs. Think of it as a building "tune-up".

SUSTAINABLE DESIGN

More organizations are considering Green building systems and renovations. But to go Green--affordably--you need integrated sustainable design. EMC provides energy simulation modeling, daylighting, and high performance systems concepts to meet LEED requirements. We're ready to advise and coordinate and show you how to make the wise choices that deliver real environmental and economic benefit.

ENERGY ENGINEERING

Energy and how it's used affects quality-of-life and the global environment. Our core business is creating energy systems that optimize energy use. Our energy-engineering services ensure that you meet today's needs while planning for tomorrow's growth. This includes audits, assessments and implementation of energy improvement projects.

FACILITY DESIGN

Integrated systems design is crucial to facility renovation and modernization, particularly in high performance facilities. EMC understands how to take cutting edge mechanical, electrical, and building automation system technology and integrate it into real world solutions. And we can do it while your facilities stay in operation.

DESIGN/BUILD

Identifying your facility's energy issues is just half the battle. You then need a retrofit strategy that maintains the building environment and minimizes system downtime through every phases of construction. EMC is skilled at engineer-led, design/build projects, including efforts funded through Energy Savings Performance Contracting.

TRAINING

Today's building systems are complex. But EMC believes any operations and maintenance team is up to the challenge--if properly trained. We offer an extensive program of live and videotaped training classes and seminars, onsite and hands-on.

WATER RESOURCES MANAGEMENT

With over 30 years of water resource management experience, EMC staff can assist you in securing a cost-effective, long term water supply; reduce your water demand, and decrease your operational costs. We offer expert services to water suppliers, major water users and industries, and to local/ regional governments.

OFFICE LOCATIONS

Denver, CO * Atlanta, GA * Salt Lake City, UT * Irvine, CA * Raleigh, NC * West Palm Beach, FL

WWW.EMCENGINEERS.COM