

CASE STUDY

Owner:

General Services Administration (GSA)

Contact:

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Energy Savings:

Prior to 2006, annual energy usage exceeded 100,000BTU/GSF. Current usage is less than 75,000 BTU/GSF and is expected to reduce to 60,000 as remaining energy reduction measures identified during Cx.



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Matthew J. Perry US Courthouse Retro-Commissioning Columbia, South Carolina

Making buildings work. **Better.**



**2007 Federal Energy & Water Management Award Winner*

The 213,000 gross SF General Services Administration's (GSA) Matthew J. Perry U.S. Courthouse, provided the perfect opportunity for the agency to utilize retro-commissioning as a first line offensive to achieve its Energy Policy Act of 2005 and the new Executive Order 13423 energy reduction goals. The comprehensive program investigates not only where the facility fails to achieve the designer's operation protocols but also reviews avenues to embrace new operating practices that better match the current mission of the facility and internalize the newest operating practices where existing facility resources permit. Since, 2006, GSA Region 4 has had a philosophy of commissioning new construction. However, The Perry U.S. Courthouse project demonstrates that the commissioning concept and principles apply equally as well to our existing inventory, having the potential for a significantly larger environmental benefit than the our new construction program alone.

The primary energy design objectives were to: Reduce cooling loads through lighting control and envelope improvements; Identify all life-cycle cost effective energy saving measures; Improve building energy and life safety systems operation and improve the comfort and well-being of the tenants and; Develop a roadmap for future improvement opportunities to sustain an energy reduction glide path necessary to meet requirements.

Key results from the endeavor addressed the following:

- ◆ Initiation of free air side economizer operations.
- ◆ Optimize operation of cooling/heating air handling units.
- ◆ Improve facility exhaust and air changes.
- ◆ Correct facility envelope pressure inadequacies.
- ◆ Optimize building automation control strategies.
- ◆ Reduce unoccupied mode energy load.
- ◆ Optimize chilled water temperature control to better utilize existing equipment to control temperature and humidity.
- ◆ Identify and catalogue additional measures for future improvements.

Thus, the retro-commissioning addressed facility operational deficiencies, improved safety and indoor air quality. The result of the endeavor has been reduced comfort complaints by 31% and improved energy efficiency by 29%. In addition, indoor environmental conditions and safety has been improved.

Engineering Excellence Since 1976!

Company Overview

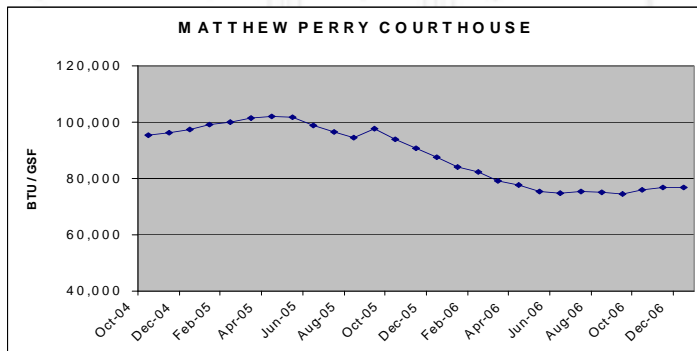
EMC is dedicated to creating sustainable facilities by optimizing performance through energy modeling and analysis, building automation systems application, advanced mechanical and electrical design, construction management, and building commissioning to achieve lower energy costs, improved comfort,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

Making buildings work. **Better.**



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

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