

Energy Efficiency Expert Evaluation

Facility Assessment Program

E4 stands for “Energy Efficiency Expert Evaluation.” Introduced in 2007 by the Department of Energy’s Federal Energy Management Program (FEMP), it is an innovative multi-disciplinary process that combines the most practical elements of an energy audit with commissioning for existing buildings. The intensive 2-4 day on-site workshop engages all energy and facility personnel in a team approach to improve operational performance and reduce energy costs.

E4 - A Comprehensive, Multi-disciplinary Approach to Energy Solutions

The Federal government is the largest single energy consumer in the nation. The Federal government is also the nation’s largest holder of real estate – owning or operating more than 500,000 buildings and facilities. These facilities range from office buildings, hospitals, and laboratories, to military bases, large research campuses, and national parks.



With this large real estate ownership comes an equally large responsibility to manage and operate these facilities efficiently and cost-effectively for American taxpayers. E4 can help you meet the challenge.

Four Phases of E4

1 Planning Phase

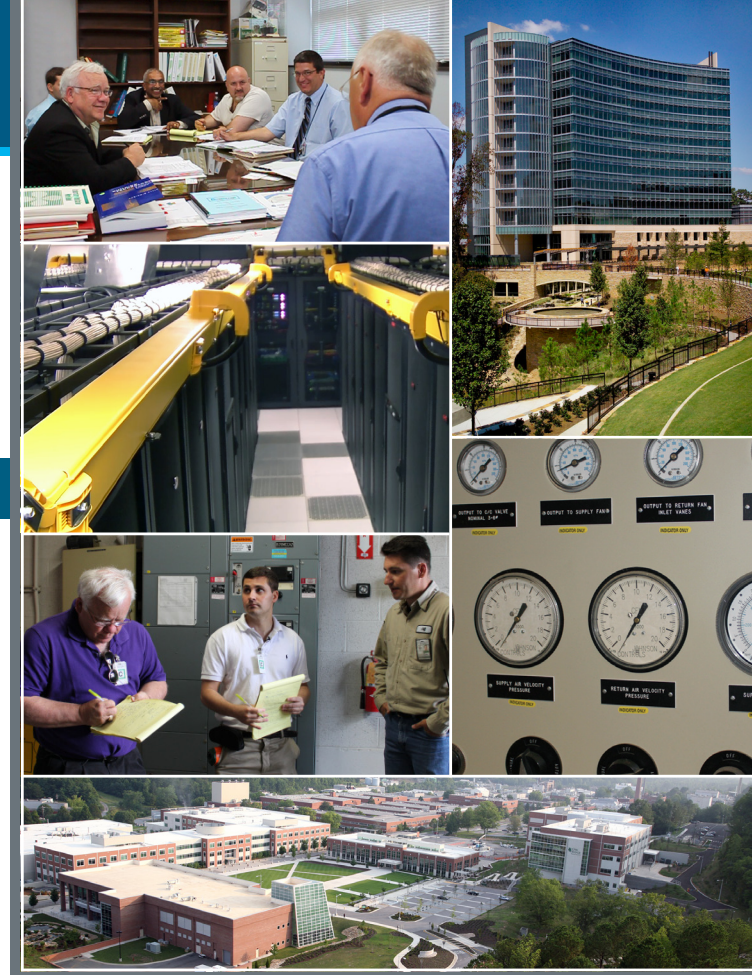
Before on-site work begins, facility management reviews where problems have occurred, prioritizes objectives, and identifies key performance goals. Current and comprehensive facility documents are reviewed, including utility bills, energy intensity base-line data, architectural and engineering documents, and operations and maintenance manuals. Based on the project goals and scope, a project team is assembled that includes qualified in-house staff and third-party specialists.

2 Discovery Phase

A kick-off meeting is held to introduce the multi-disciplinary team and discuss site-specific building performance issues and goals. The team conducts a preliminary walk-through of the site to talk with building occupants and observe daily operations.

3 Correction Phase

As part of the Correction Phase, facility personnel participate in a training session on preventative O&M measures and troubleshooting methods. This “train-the-trainer” session underscores that training is a continuous process critical to achieve on-going savings.



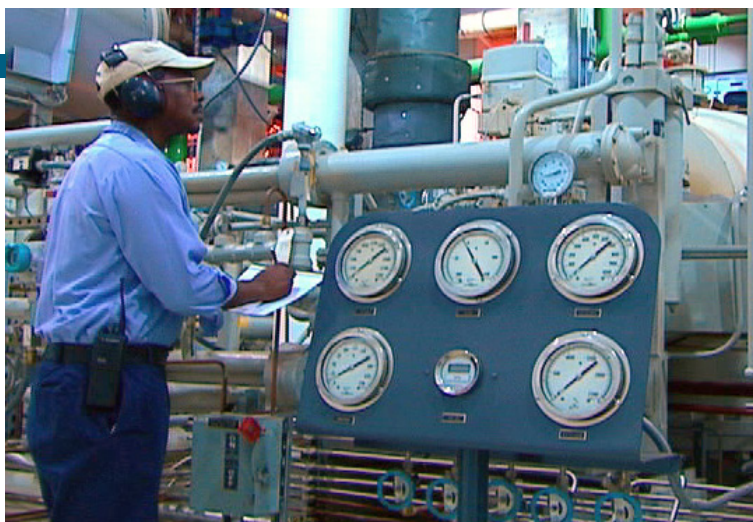
After the training, the E4 team begins an in-depth inspection of buildings and equipment. The team walks through the site to pinpoint problems, including structural design, equipment, technologies, and O&M practices. Regardless of facility size or type, the E4 team utilizes proven diagnostic methods.

4 Hand-off Phase

Immediately following the site inspection, while observations are fresh, the E4 team gathers to develop a preliminary short list of solutions. The team develops a “shopping list” of energy conservation measures and their estimated savings.

E4: ENERGY EFFICIENCY EXPERT EVALUATION

A final report with a master list of findings is then produced to help building management understand where to concentrate implementation efforts. Top priority is often set on no cost/low cost improvements that see quick paybacks. Recommendations for longer-term capital improvements are also included. These can often be used to validate and justify project funding opportunities such as Energy Savings Performance Contracts (ESPCs) or Utility Energy Service Contracts (UESCs).



The E4 combines the principles of an energy assessment with retro-commissioning to address:

- Overburdened or untrained staff
- Aging facilities and equipment
- Excessive energy consumption
- Poor system performance
- Poor indoor environmental quality

The result is improved building performance and energy savings.



How is E4 Different?

Energy assessments and existing building commissioning have had proven success for decades, and both improve facility energy efficiency. E4 combines the best elements of both processes to uncover the root causes of systemic inefficiencies.

The E4 process also emphasizes a team approach that gathers input from a wide array of building stakeholders – not just the owner or manager. Brainstorming sessions lead to new and innovative ideas for improving building performance; many of which are no-cost or low-cost solutions.

E4 ensures that facility personnel are directly involved in every step of the process and are trained to maintain energy-saving procedures.

How Do I Learn More?

DOE's Federal Energy Management Program (FEMP) and Sustainability Performance Office (SPO) offer resources to familiarize you with the E4 process.

Visit the FEMP website and the Sustainability Performance Office website to learn more.

Visit:
<http://femp.energy.gov>
<http://eere.energy.gov/sustainability/>

For more information, contact:

Jennifer MacDonald
Jennifer.MacDonald@ee.doe.gov

Ab Ream
Ab.Ream@ee.doe.gov

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