

GUIDE TO FACILITY PERFORMANCE EVALUATIONS



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FORWARD

ISES Corporation has been providing analyses, audits, assessments, evaluations, and programming on large institutional building portfolios for over 20 years. This work remains an integral part of ISES customer services, but, in recent years, we have seen a dramatic shift in building designs. They now incorporate high-tech systems, updated certifications (e.g., LEED), and include more sustainable / renewable energy usage for all types of buildings. Energy performance and energy reductions are mandated for many of our institutional clients, so we have encouraged clients to consider use of facility performance evaluations to assist them in measuring and defining actual performance needs. The data collected is used to create timely feedback for making corrective actions and in creating a long-term adaptive process. The objective is to provide an overall evaluation of the facility, comparing performance against design, to gain improvements in functionality and energy performance over all phases of a building lifespan.

INTRODUCTION

Clients have incorporated commissioning and retro-commissioning into their building energy performance planning, seeking to have a tool to measure building functionality when taking occupancy. We too believe these are crucial for defining building performance, but there is a growing need to conduct an accurate independent measurement, verifying the functionality of buildings, especially in energy performance. Facility Performance Evaluations (FPE) are a fundamental part of the project management process and should be embedded in the structure of a building project from inception. A FPE provides direct time sensitive data essential in refining a new building's operations and for attaining performance as intended. A client utilizes a FPE to complement and enhance the commissioning / retro-commissioning process, in order to assure that they are reaping the benefits of their new building. Listed below are some anticipated FPE benefits.

Benefits an Owner/Operator Should Expect Short-Term

1. Define objectives to meet current operational needs, applying corrections at a much earlier point than previously considered possible
2. Respond to end user repeat concerns, decreasing call out and staff use
3. Measure energy use against planned designed use, create adaptive fixes to gain immediate and long-term best performance, increase ROI
4. Evaluate organizational readiness to operate building, FM plan need for revisions, need for added training, contractor responsibilities, end user behavior, and recommend potential strategies to improve functions
5. Independently validate effectiveness of new features in building design
6. Conduct operational performance review with designers / operators to determine best practices and provide data feedback on equipment choices.
7. Provide time sensitive feedback to planning, eliminating long lead time (sometimes years) for incorporation in new building design / construction



Benefits an Owner/Operator Should Expect Mid/Long-Term

1. Re-define objectives to meet owner's functional need
2. Improve long-term usefulness, lower operational costs, and extend life expectancy of the building determined by continual updates rather than individual changes
3. Improve staff and end user systems knowledge and adapt operating techniques to compliment end user needs and continue to evaluate energy uses, deploy newer technologies, and mandate training on operations and maintenance
4. Account for update of technologies and effects on performance in contract and leasing language
5. Improve decision making processes when considering building improvements using continually collected energy and design performance measurements
6. Revise performance measurements in a timely manner to account for technology updates and changing energy mandates
7. Enhance feedback loops to ensure that knowledge gleaned from operations and maintenance is utilized in new design parameters for systems, energy, staffing needs, and funding requirements

FPE OVERVIEW

There are differing methodologies used to conduct evaluations and a very crucial facet is who will conduct the FPE. Most organizations discussing FPE standards today feel that use of an independent, unbiased vendor provides the most effective data. Here are some items that a client should consider when determining how to complete an FPE:

- Detail level and chosen objectives
- Existing information availability and accurateness of data
- Staff resource availability and costs to make them available
- Timeframe for starting and continuing the evaluations
- Expertise of personnel performing the evaluation and any bias
- Extent to which issues have already been identified in commissioning

The most accurate evaluation can usually be gained from using a combination of techniques, beginning with formal review of plans, processes, and procedure with operations staff, followed by walkthrough observations and review of FM plans, organizational staffing, and contract / leasing obligations. We use a transparent methodology to assure no conflict of interest and provide benchmarking against industry standards and comparisons to our library of corporate empirical data.

ISES uses the direct observation methodology for performing FPEs, and final formatting is dependent on what the client determines as their major concerns (energy, systems, building underperformance costs out of line with projections, etc.). A client must also decide to what level of detail they wish to conduct the FPE.

Specifics on ISES Corporation FPE processes will be discussed with each client for refining the FPE format that meets their individual building objectives. This can be modified for use in other buildings or for establishing a standard for client portfolio evaluations.