



...Improving the way YOU manage facilities!



INTRODUCING FEA

Mission:

Provide facility managers and owners with progressive and innovative solutions to facility life cycle challenges

Vision:

To shape the future of how facilities are managed, operated, maintained, and sustained.

Facility Engineering Associates, P.C. (FEA) was founded in 1992 to support owners and managers of existing facilities. Since then, we have grown into a national engineering and facility management consulting firm, whose education and experience as a thought leader in our industry allows us to deliver the solutions you need. Our corporate office is located in the Washington, DC, metro area with regional offices located in Denver, CO and San Francisco, CA. We provide additional support from our satellite offices located in Austin, TX, Dallas, TX, Kansas City, MO, and Richmond, VA. This national presence allows us to provide services to our clients at a personal and local level.

FEA concentrates on post-occupancy issues with existing buildings and facilities. Asset management, operations and maintenance, Facility Management (FM) automation planning/selection/implementation and maintenance planning are at the heart of FEA's work. In short, we aid in *improving the way you manage facilities*.

FEA's staff is comprised of registered engineers and facility management professionals well versed in planning and technology disciplines. FEA draws on the broad experience of senior staff members who have managed and coordinated facility automation needs assessments for all types and sizes of facilities. We also have knowledgeable and experienced facility managers who have come up through the trades and have experience managing various types of facilities.

FM Technology knowledge: FEA conducts frequent research on current CMMS/CAFM/IWMS service providers and products each year for each of our educational programs and specific client projects. The FEA Team members have evaluated many CMMS systems in feature, functionality and cost matrixes. Several specific systems are listed in the CMMS/CAFM/IWMS vendor knowledge section of this document. We routinely review and evaluate performance in the following categories of functionality:

- Work order management
- Preventive maintenance
- Inventory control
- Space management
- Project management
- Capital planning and asset management
- Move management and room scheduling
- Energy management and sustainability
- Financial management and metrics
- Environmental and regulatory compliance

Office Locations

Washington, DC
Denver, CO
San Francisco, CA

Satellite Locations

Austin, TX
Dallas, TX
Kansas City, MO
Richmond, VA

1.877.322.4589
www.feapc.com



FEA has a wealth of experience with private and public sectors, institutional and government projects. These include FM technology projects for the U.S. Department of Treasury, Library of Congress, Smithsonian Institution, UT M.D. Anderson Cancer Center, University of Georgia, Fairfax County Public School System, Lake County- Illinois, DC Office of Property Management, The University of Utah, Brigham Young University, American University, the University of Washington, University of Maine System, the Metropolitan Washington Airports Authority (MWAA), DC Metropolitan Police Departments, Vision Service Plan (VSP), The World Bank, International Monetary Fund, Inter-American Development Bank, Maryland National Capitol Park and Planning Commission, City of Winston-Salem, Covance Laboratories, LDS Church, and the Architect of the Capitol.

Technology can enable facilities management and maintenance best practices and FEA understands how to make that happen. FEA has developed hundreds of successful technology driven preventive and predictive maintenance programs for all sectors of facilities. FEA brings together all levels of facilities staff, from top-level managers to legacy maintenance staff, to build consensus and form an all-inclusive plan that works for your organization. FEA works effectively with facility managers and truly understands FM best practices driven by strong KPI data. FEA implements FM technologies to support these O&M processes and to measure facilities management performance to achieve operational excellence.



EXECUTIVE SUMMARY

Facility Engineering Associates (FEA) is an independent consulting firm that specializes in improving the way facility managers manage their facilities. Our experience with all facets of facility management operations and the Information Technologies (IT) used to support FM business processes makes us uniquely qualified to meet your FM technology needs. We have a proven track record of helping dozens of facility managers get the most out of their FM technologies (i.e., CMMS, CAFM, IWMS, and ERPs). Why is this so important?

The Standish Group (a research firm that tracks IT implementations) reported that, “66% of all IT projects fail to meet the needs and expectations of the users”. This, in a large part, includes CMMS and CAFM systems. Even FM technologies that are reported to be implemented successfully are pervasively underutilized. Underperforming FM technologies affect not only the effectiveness and efficiency of processes, but the ability to measure performance.

Optimizing the value and utility of FM technologies requires careful forethought, planning, attention to details, and taking ownership of the data. FEA has extensive experience in maximizing the use, optimizing performance and improving the value of FM technologies. We have implemented new technologies and optimized existing systems through process improvement and technology integration. Our services include:

- Technology master planning (needs assessment)
- Process evaluation and improvement
- Technology audits and industry benchmarking
- Implementation support and training (optimization)
- Transitioning from legacy systems
- Technology integration (interfaces, data exchanges, web portals, dashboards)
- Handheld technologies
- Building Information Modeling (BIM)

Our focus is always on achieving the desired outcomes and measuring performance improvement. We have developed proven standards for implementation, data management, and training FEA takes a holistic view to optimizing FM technologies in support of facilities operations, maintenance and capital investment. Through this perspective, we are able to focus technology and process improvement on minimizing the total cost of ownership of facilities, improving decision support systems, and monitoring Key Performance Indicators (KPIs). The bottom line – we can help improve your performance and measure your success.



QUALIFICATIONS AND EXPERIENCE

Your FM Technology Consultation, Planning & Implementing Project demands consultants who work comfortably in the IT environment and who are attuned to specific needs of facility managers. You need consultants which are as familiar with current automation systems as they are with operations and maintenance. Add to this a need for a proven track record in overall management of software implementation, and you have some very unique requirements. FEA has this experience, capabilities, and focus. The FEA team couples this focus with the ability to clearly and concisely manage and document selection/implementation/optimization processes to best serve our clients.

Most Facilities Departments which have requested our services to aid in the evaluation, selection and implementation of a Computerized Maintenance Management (CMMS) or Enterprise Asset Management System (EAMS), also referred to as Computer-Aided Facility Management (CAFM) systems require specialty expertise not found in most firms.

Specifically, our methodology typically accomplishes:

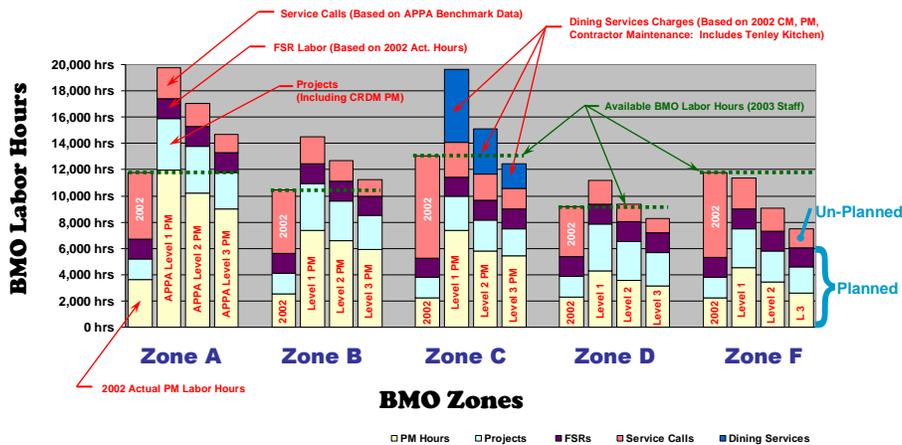
- Identifying and reviewing the needs and procedures of the Facility Operations Departments
- Determining the requirements for a new CMMS/CAFM based on interviews to derive input from the department and other stakeholders
- Identifying key issues, opportunities, advantages and disadvantages of specific CMMS/CAFM systems in relation to your needs and procedures. This will include the development of a cost-to-benefit comparison of the software and hardware options.
- Developing a short list of prospective vendors who can meet your requirements and preferences
- Developing a Request for Proposal (RFP) for the procurement of the system(s)
- Developing a methodology to evaluate responses from the RFP
- Providing consultation services related to the selection of the successful vendor
- Providing system implementation services following the purchase
- Enhancing vendor training programs via process-specific processes

How will FEA help you achieve your goals? Over the past several years, FEA has enabled our clients to achieve their facility management goals by focusing on outcomes and the use of technology to provide knowledge to measure performance. CMMS/CAFM systems when configured properly provide excellent tools to capture training and professional development hours by employee/trade. They can also provide information to enable '360-degree' evaluation programs for supervisors.

FEA’s approach includes baseline organizational and process analyses that are critical to the evaluation and selection of the most appropriate CMMS/CAFM tool to support the way your FM department does work. As part of the process analyses we provide our experience as to how other institutions have improved their processes and provide recommendations for improvements for your FM department. As an example of how we can help you, consider the following services FEA provided for similar clients:

- Manpower evaluations/labor needs analyses
- Warehouse and Work Order (WO) bar coding
- Web-based customer feedback processes
- Development of Key Performance Indicators (KPIs)
- Workflow dissemination through work control center

Labor Needs Analysis



Additional examples of how FEA has helped public and private organizations, educational institutions and government agencies include:

- FM organizational assessments
- FM process evaluations and efficiency improvements
- Warehouse and Work Order (WO) process improvements
- Monitor productivity by trade (open WO’s & PM turn-around time)
- Baseline industry standards for maintenance
- Reduce Corrective Maintenance (CM) and increase PM
- Monitor work by equipment type and asset history
- Develop customized reports
- Group work orders for like equipment
- Track maintenance backlogs by trade and location



- Monitor contractor maintenance & performance
- Implementation of Building Information Models (BIM)

CMMS/CAFM/IWMS PROVIDER KNOWLEDGE

If selected as your consultant, the proposed team members for this project will possess a great deal of experience, not only in implementing various CMMS/CAFM systems, but also in evaluating many more. One of the first discussions we must have at the onset of the project is clarification of your long-term goals for the functionality of the selected system.

The FEA Team members have evaluated many CMMS systems in feature, functionality and cost matrixes. We have integrated, implemented and used only a fraction of these. We are very familiar with most of the best-in-class CMMS/CAFM systems. The members of the FEA Team have either integrated or implemented the following CMMS/CAFM systems for various projects:

- AxisPointe's AxisFM
- AssetWork's FacilityMax (formerly Maximus' FacilityFocus)
- FAMIS
- Maximo
- Aperture
- FM Systems
- Tririga's FacilityCenter (8i and 9)
- Four River Software's iTMS
- Archibus/FM's TIFM
- MicroMain's MS2000 and XM
- TMA's EAM (7.5)
- MainStar
- Mainsaver
- DataStream's MP2 and 7i
- FME's Sprocket
- SchoolDude
- Skire
- FIS (Now FAMIS)
- AutoDesk's FM Desktop

FEA has extensive experience with various application modules from maintenance management to capital planning. We have also supported the implementation of a number of specialty systems including: project management systems (e.g., Skire, MS project, Primavera, eTask, etc.), space management systems, building automation systems (BAS), and CAD/GIS systems. In addition, FEA's staff has helped clients exchange data with a number of related financial/HR systems (i.e., ERPs - PeopleSoft, Oracle, SAP, etc.).

The following sections highlight FEA's experience related to this project:



General Services Administration

Asset Management and FM Technology Consulting Services

Identified deficiencies in asset management data throughout the regions, recommended sites that require re-inventories, and given guidance on achieving a standardized asset management system. The end result will be one national CMMS that captures all existing GSA inventories into one standardized database that has consistent naming conventions and work order processing.

General Services Administration Heartland Region

Asset Inventory & FM Technology Consulting Services

Provided assistance to GSA personnel and O&M Contractors who were required to maintain equipment throughout the facility, and keep track of the equipment and its' maintenance in a centralized maintenance management software (CMMS). GSA's Heartland region was utilizing Maximo, version 5.2, to maintain equipment and facility information (work tickets, preventative maintenance, repairs, etc.) then GSA upgraded to Maximo, version 7.1. The ultimate goal of the project was to provide confidence in the data being maintained in Maximo, as well as provide Maximo users with the necessary training to ensure they understood the new version of Maximo and utilized Maximo to gather and maintain data accurately. This enabled the Services Center Division to generate the necessary reports to show key performance indicators (KPIs), such as number of work orders open, and average number of days a work order remains open. The end result was a more detailed accurate inventory and educated facility management support staff. This was an important step in assisting GSA in achieving well operated facilities.



Huntsville International Airport

Staffing Analysis and O&M Process Improvement



Assisted the Huntsville International Airport (HSV) with the analysis of their current facility management (FM) organization in light of a recently implemented \$92 million capital improvement project. As FM services are being conducted by a combination of in-house and contracted staff, the project required that FEA look at HSV’s current operations to help them determine their staffing needs. Currently engaged in the development of the Huntsville Airport maintenance program that will include preventive, corrective, and proactive maintenance tasks. The maintenance plan will also include maintenance processes, expected productivity, a new priority system, and how to utilize the CMMS to track outcomes.

NiSource

FMD Assessment



Conducted a two day workshop involving key individuals from the NiSource facility management team. Prior to the workshop FEA instructed NiSource to gather background information including operating data, current benchmarking metrics, staffing and organizational structure and other operational information which was required for FEA to understand the current operations. During the workshop FEA facilitated the conversation of FMD assessment questions and collective thoughts which would be captured, analyzed and benchmarked for the Capability Maturity Model rating. The final report also included a complete review of their current CMMS program and staffing analysis with recommendations for modifications to improve their overall operations.

University of Maine

Business Process Reengineering



Designed a process to assist UMS in re-engineering their facilities management systems consisting of 4 phases to optimize their computerized maintenance management system (CMMS): Phase 1 - Process Workshop Facilitation; Phase 2 - Socialization - Review & Acceptance; Phase 3 - Standard Operating Procedure (SOP) Development; and Phase 4 - Integration with Information Technology (IT) Systems - Enabling technology



COBie

COBie Challenge

Course and Industry Training Program Development (on-going)

Currently FEA is very excited about COBie and the COBie Challenge. COBie (construction operations building information exchange) is an international standard that supports the collection of facility management data to further populate CMMS, CAFM, and IWMS software; and allows for the development and adoption of a set of standard guidelines within the FM industry. FEA is a proud contributor of the COBie course development process and participant of the COBie challenge.



SUMMARY

Facilities management and maintenance require the integration of many specialties and disciplines to achieve the optimum results. The expanded availability and use of computer technology has dramatically enhanced the ability to accomplish this integration quickly and effectively.

Using the latest technology as a means to improve the planning and design process offers significant benefits in flexibility, evaluating options, visualizing schemes and organizing large amounts of data. The benefits for facilities management include measurable savings in time and overhead costs as well as efficiencies in coordinating maintenance operations and other tasks. The accessibility of detailed data for evaluation and comparison to the facility manager has an incalculable value. FEA is a leading advocate of such applications and has completed projects for governmental organizations, medical facilities, industrial users, institutional complexes, retirement communities and multi-use developments.

FEA's practice has been built in response to the specific needs of the clients we serve: owners and managers of existing buildings. We function like an extension of your in-house staff. With FEA, you have an integrated team of CMMS/CAFM consultants, strategic planners, computer programmers and integrators, trainers and technical support personnel that are available to you within a minutes notice.

These are the services we provide by choice, not by chance. These are front-line services at FEA, not secondary specialties in a highly diversified firm.

We are proud of our capabilities, and the loyal client base with which we work. We also look forward to an opportunity to work as part of your CMMS/CAFM review team.