



Environmental Design: Existing Building Sustainability Assessment (E-BSA)

Our society is facing environmental challenges to which building construction and operation is a major contributing factor: climate change, depletion of non-renewable resources, (referred to as peak oil), desertification of large land areas, diminishing access to clean water, as well as social and economic turmoil. Occupied buildings use more energy and resources than other segments of our social structure, and thus present the greatest opportunity for improvement of our environmental future.

Considering the significant number of buildings constructed prior to modern energy performance codes such as the 2006 International Energy Conservation Code (IECC), one can infer that most existing buildings are likely inefficient energy users. There are many tools becoming available to facilitate the efficiency of energy use in existing buildings. For example, building rating systems such as *Energy Star*®, *LEED*, *Green Globes*, and others provide a programmatic means to review a building's current energy efficiency, and provide a systematic approach to upgrading a building's efficiency, as well as other environmental factors. You These ratings systems are somewhat similar to fuel economy figures for vehicles.

Building Owners may achieve beneficial results from determining the relative energy efficiency and other sustainability factors for their properties. Such benefits may include:

- **Cost savings:** Created by reduced energy use and reduced equipment maintenance requirements. This can translate to increasingly competitive lease rates, or and enhanced revenue stream from a building asset.
- **Increased asset value:** Sustainability-rated buildings have been demonstrated to be valued higher than non-rated buildings in terms of desirability. Major tenants prefer to occupy rated buildings due to higher employee attraction and retention rates, creating conditions for increased and longer term occupancy. Investors/shareholders are increasingly attracted to the economic returns provided by rated buildings.
- **Risk management:** Better-performing buildings promote improved indoor air and environmental quality, thus improving occupant health and reduced injury/illness.
- **Preparation for future regulations:** Many communities are adopting increasingly stringent environmental regulations to ensure adequate energy performance of their new and existing building stock. Following federal leadership, communities are beginning to mandate the determination and regular reporting of the energy and environmental performance of commercial buildings within their jurisdiction. Thus, early determination and setting a compliance path to increase efficiency will reduce the potential for future compliance issues.
- **Competitive markets:** Existing building owners face increased competition from new buildings in which the construction and operations meet current environmental and energy performance regulations. Newer buildings are, as such, more desirable and competitively marketed to tenants.

We have developed a systematic approach, adaptable to your specific needs, which will help you determine and thereby manage your energy performance and overall sustainability. Our approach embodies four steps that build to create a holistic and comprehensive solution. Although designed as a complete system, we have the flexibility to tailor this approach to your unique requirements by providing all or select components of the system. In that way, you may integrate only those components of the system that will create value for you, for your investment team, and for your tenants and/or employees. The following is a description of our typical approach:

Step 1 – Baseline energy use assessment

Establish functionality, sustainability, and financial goals, determine existing physical and functional characteristics, compare existing performance to regional benchmarks.

Actions

- Preliminary meeting with owner, owner's representatives, and others to determine project goals;
- Onsite photography, measure and characterize existing building envelope;
- Inventory opportunities – building orientation, physical context, site development characteristics, major building systems, among others;
- Immediate identification of low and no cost improvements;
- Determine existing utility infrastructure and capacities;
- Interviews with building occupants and users, review of occupant complaints;
- Review historic energy and resource use (minimum of 12 months of energy invoices, water usage);
- Comparative analysis of building performance (benchmarking);
- Conduct a preliminary or comprehensive energy audit based upon initial findings, which may include onsite data collection such as digital infrared imagery, detailed usage measurement, pressure testing, assembly leakage testing, and others;

Products

- Building comparative performance report and Energy Star ® rating;
- Energy Audit Report;

Step 2 – Phased Action Plan

Revisit goals, review opportunities, establish concrete objectives, and produce a set of documents describing creative solutions to building performance challenges.

Actions

- Coordination meetings with owner and/or owner's representatives to review goals;
- Establish the framework for possible improvements based upon owner objectives, building and equipment conditions, scheduling, and budgetary considerations;
- Assess opportunities for improvement in terms of performance and financial impacts;
- Investigate availability of rebates, grants, incentives and other financing options;
- Prepare statement of recommendations that outlines the preferred improvements;
- Prepare and present the statement of recommendations, preliminary high level cost estimate and estimated ROI, and proposed phased implementation schedule;

Products

- Action Plan, including summary of findings, recommended course of action, and financial / investment considerations;

Step 3 – Plan implementation

Depending upon the outcome of step 2, this crucial implementation period can vary widely in structure and necessary actions. Our unique perspectives as architects, engineers and builders will provide the background for us to tailor this step to your specific requirements.

Actions

- Coordination meetings with owner, owner’s representatives, and others to review refine the scope of work necessary to fully implement the Action Plan;
- Determine regulatory agency review and approvals for the designated scope of work;
- Assemble architectural and engineering plans and specifications for phased implementation;
- Initiate documentation and support material acquisition as required for building certification;
- Apply for building permits and other necessary regulatory approvals;
- Develop and pre-qualify a set of general contractors and/or vendors and suppliers;
- Issue drawings and specifications for competitive bidding;
- Receive and evaluate bids, assist in bidder awards;
- Project management and construction coordination;
- Verify completion of work as outlined by the plans and specifications.

Products

- Developed drawings of building plans, product and material specifications, construction observations, building system O & M manual, project closeout report, preliminary building certification.

Step 4 – Verification and Certification

To fulfill your objectives we will document your facility in order to achieve certification under your selected building-rating system. We are currently credentialed and otherwise experienced to offer Energy Star, LEED, or Green Globes certification, and may integrate additional credentials as demand dictates

Actions

- Building commissioning or retro-commissioning;
- Coordinate completion of certification review process (Energy Star, Green Globes, or LEED);
- Prepare and present your Environmental Management System report, which summarizes the actions taken, those with delayed implementation, and opportunities / schedules for continual updates and improvements;
- Conduct training for users / occupants;
- Follow up after operations begin to ensure operational success of the systems.

Products

- Commissioning reports, Building Certification, Environmental Management System/policies, and follow up performance reports.

We are uniquely positioned to help you achieve your sustainability goals!

We recognize that you have a choice when it comes to selecting a service organization to provide you with energy and environmental sustainability planning and assessments.

There are a number of facets to our company that set us apart from others:

- We are credentialed and have received training in multiple building certification systems, including Energy Star, LEED, and Green Globes;
- We are Building Performance Institute (BPI) certified for the performance of energy audits on buildings;
- We have over 20 years professional experience with an architectural and engineering background, which provides us with significant knowledge and expertise in the preparation of plans and specifications for changes that may be proposed to your buildings and systems;
- We are accomplished at coordinating and managing complex building projects involving a wide array of parties, users, and functional criteria
- We are vendor neutral, seeking competitive bids for all materials, systems, and integration, which in the long run will provide you with lower life cycle cost overall;
- We practice what we preach – we live sustainably in our homes, work sustainably in our businesses, and advocate for sustainability in our communities.

We are firmly committed to helping guide rational, beautiful, and sustainable development. As such, we will work extra hard to win your business and to impress you with our qualifications and our work on your behalf. We are committed to Green and Sustainable design solutions; we're talented, and quite flexible in our approach to projects and to problems. Our professional staff is very enthusiastic and engaged in the projects that we produce. We have diverse experience and a wide variety of projects in our background, which have helped us to come to this specific position in our careers – to enable us to gather all of the knowledge and expertise that we have accumulated to fully and completely address your problems and provide you with exemplary service.

Kyle Callahan
Registered Architect
LEED-AP, EBOM
Green Globes Professional

Cary Leech
BPI Certified Building Analyst