

## How to Achieve High Performance Buildings – for Bottom Line Results

By: Kathleen Taylor

You have a unique opportunity to ensure that your building achieves high performance energy efficiency and occupant comfort – and help impact your bottom line in a positive way.

To start, given that about one-third of a building's energy consumption is related to the heating, ventilation and air-conditioning systems, a 10% savings of these costs could go a long way in helping your bottom line in today's economic environment.

Here's how you can achieve high-performance objectives to improve energy and cost efficiencies while providing a more comfortable, more productive environment for your workers, customers – and yourself.

Typical maintenance involves going through a fixed schedule task checklist. In contrast, the high-performance approach focuses not on calendar-driven tasks but on desired high performance outcomes. This offers the opportunity to redefine building conditions and optimal performance of systems and equipment.

To start, work with a building systems specialist to conduct a review of building and operational goals, and carry out a diagnostic or analytical evaluation that targets existing and potential trouble spots or “gaps” that could prevent organizations from achieving their primary business goals. This evaluation could serve as a baseline analysis and the starting point for a continuous commissioning program, which is a regularly performed validation of system performance to assure it meets all design standards and specifications. In new buildings, this typically begins in the design phase – and ideally it continues through the building's lifetime.

- Conduct an energy audit to evaluate your building's HVAC load, lighting and water usage, as well as its entire baseline utility consumption. This audit will help you target areas to improve performance and conserve energy.
- Evaluate where energy is being used, perhaps excessively, where maintenance or repairs may be necessary and where it might be necessary to consider capital investments to improve energy efficiency or performance. Also take a look at system operating schedules or scheduled building activities and look for other opportunities to cut consolidate use and conserve energy.
- Adjust and evaluate performance of building controls for maximum energy savings. Integrate building comfort with efficiency by coordinating lighting and HVAC systems use with building operating hours and event schedules. Doing so can reduce maintenance time and lower utility costs through monitoring and performing regular system diagnostics. Evaluate the capabilities of current unit controllers and building management system components. Often a few simple upgrades can have a significant impact on overall energy usage.
- Conduct monthly checkups to assure high performance with clear energy consumption objectives. This can be easily done with a performance-defining outcome checklist that determines the activities required to assure sustained, design performance.
- Evaluate savings opportunities by heating with multiple fuel sources. Often you can realize utility savings through reduced energy rates by heating with multiple energy sources such as electric, gas, oil and propane. Flexibility in heating energy choices allows you to heat with the most cost-effective fuel source.
- Negotiate competitive rates via new procurement processes. Research competitive agreements with retail power and gas marketers, also known as “ESCOs,” to take advantage of post-peak energy prices. Keep your building's load demand as level as possible because lower daily peaks reduce demand, which results in more favorable pricing. In non-regulated areas, many electric utilities offer lower rates during off-peak periods, often at night. Perform a complete rate analysis on all utility meters and take advantage of diminishing non-critical loads at peak periods to prevent temporary electrical demands from creating higher annual energy bills.

Performance-based maintenance improves system reliability and reduces risk and cost by assuring a full and productive life to systems, offers the convenience of planning when work should be done, reduces unplanned downtime and productivity losses due to unexpected and costly component or equipment failure, and reduces potential negative environmental impacts, such as refrigerant or oil leaks.

Moreover, the impact of a high performance building is nothing other than positive on your bottom line.

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**About the author:**

Kathleen has 20 years experience in the HVAC Industry. She started as an owner/operator of a sheet metal company. Previous to Trane, Kathleen has also worked 11 years for Carrier Corporation, first in Detroit and then in Atlanta, calling on the Education Market for the State of Georgia. Currently, she is with Trane Building Services as an Account Manager in Existing Building Solutions.



## BOMA Energy Performance Contracting Model

The Building Owners and Managers Association (BOMA) International and the Clinton Climate Initiative (CCI) are pleased to present the BOMA Energy Performance Contracting (BEPC) model, a groundbreaking model contract and supporting documents that allow building owners and operators to execute sophisticated energy efficiency retrofits to existing buildings. BOMA and CCI, in collaboration with major real estate companies and energy service companies (ESCOs), identified the historical barriers to energy efficiency investment in the commercial real estate sector and developed a standardized, user-friendly contracting model that allows building owners and operators to successfully execute larger, more sophisticated retrofits and bring greater operational improvements in investment real estate.

BOMA and CCI's standardized energy performance contracting model removes current impediments to deeper energy efficiency investments. The new BEPC (pronounced like Pepsi with a B) model revolutionizes the process by allowing capital investments that improve buildings' financial and environmental performance to be paid for out of the energy and operational savings created by those improvements. The savings are financially guaranteed by the ESCO performing the work, reducing risk and enabling deeper potential investment.

While energy performance contracting has been offered by ESCOs for more than two decades as a self-financing mechanism to pay for energy efficiency retrofits and capital improvements, the complexity of the contracts and long timelines have impeded their widespread use in private commercial buildings. Another deterrent was that lenders historically required a lien or a personal guarantee from the owner.

In creating BEPC, BOMA and CCI have eliminated many of the common barriers to energy efficiency retrofits. The new contract model and CCI's partnerships that provide lower project costs and funding sources create an opportunity to reduce the time it takes to complete these types of retrofits from 18-36 months to twelve months or less. Furthermore, since the contracts are standardized, real estate professionals need not become experts in performance contracting or energy performance guarantee provisions to execute a successful retrofit project.

As building owners and operators adopt the contracting model and implement energy efficiency retrofits, BOMA will be the unbiased resource and solutions provider to facilitate voluntary, business case driven market transformation of the built environment. CCI will serve as a liaison between ESCOs, owners, operators and financial partners to ensure continuity, focus on the mission and long-term program performance. At the operator or owner's request, CCI will serve in a consultative role, advising on best practices, introducing suppliers and other providers and supporting the project development where needed.

BOMA International is proud of its collaboration not only with the Clinton Climate Initiative, but with major service provider partners, real estate organizations and other leaders, and formally thanks Trane, Siemens, Johnson Controls, Honeywell, and also Jonathan Furr, senior counsel at Holland & Knight, who provided independent legal and EPC contracting expertise to the development of this program.

To download contract template and more information please visit <http://www.boma.org/Resources/BEPC/Pages/default.aspx>