



# EVALUATING SUSTAINABLE SOLUTIONS

By Eric L. Nelson

Whether part of the due diligence assessment for the purchase of a building or to assist an existing owner in prioritizing and budgeting for projected renovations, the need to properly evaluate both the condition and energy performance of a commercial property cannot be overstated.

Ownership of commercial property requires a constantly evolving plan with regard to maintenance, repairs, and long-term capital planning. Physical condition affects the value of all types of property, no matter the size, use, or location. Working closely with real estate professionals allows firms, such as GZA, to understand the many potential pitfalls of building management, assisting property owners in reducing liability and expense by identifying, quantifying, and prioritizing both immediate and long-term expenditures.

## PROPERTY CONDITION ASSESSMENT

Studying past energy usage is a value-added component when conducting a Property Condition Assessment (PCA). Since professionals are already on-site to assess a range of building elements—from plumbing systems and utility connections to roofing and mechanical system controls—evaluations can be taken a step further by reviewing energy usage, equipment efficiency, and historical operational costs. This type of assessment, in connection with a determination of remaining equipment and component life, can point to areas where savings are likely, beneficial, and practical.

The study of past energy use also provides a foundation for comparison with other similar building types, allowing property owners the ability to benchmark the overall efficiency of their building.

During the performance of a typical PCA, specialized professionals conduct interviews with site personnel and maintenance contractors, and thoroughly review construction plans, records of capital expenditures, historical repairs, budgets for improvements, and other relevant documentation. By supplementing these baseline interviews and research with additional energy inquiries, an overall picture of where savings can be captured begins to emerge.

As an example, the energy auditing protocol exercised by GZA includes visual site walkthroughs. The scope of services performed during a standard PCA includes a visual survey of:

- Site conditions, stormwater drainage, and landscaping
- Pavement and sidewalk conditions
- Exterior building walls for visible signs of distress
- Exposed structural components
- Roof coverings
- Utility connections
- Mechanical systems
- Electrical systems
- Plumbing systems
- Fire protection mechanisms
- Elevators and escalators

PCAs completed under current ASTM standards provide estimates or repairs that require immediate attention. The typical PCA also includes opinions regarding probable costs to remedy physical deficiencies that should be repaired over longer time horizons. Estimates provide general renovation costs based on current market rates, thereby allowing stakeholders to project reasonable budget figures when considering property values.

## LEVELS OF SERVICE

Since budgetary restraints and turnaround times imposed by today's tight due diligence windows are often part of the equation, many consultants offer various level of service. While ASTM standards govern the general content and scope of a PCA, these levels of effort widely vary throughout the consulting industry. It is important for the real estate professional to understand exactly what the consultant is delivering. In order to better clarify our scopes, GZA has defined three tiered levels of PCA. These varying levels of effort and expertise assist in the design of an evaluation program that meets specific client needs, concerns, and budgets.

### ABOUT THE AUTHOR

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A Level I PCA is a visual assessment performed by an individual engineer or other qualified professional, while Level II provides a general assessment, with specific items of concern investigated by one or more specialist in the appropriate respective field. A Level III PCA includes a visual evaluation with specific areas of concern investigated in detail by a team of specialists, and includes operation, sampling, and testing of individual systems or components when necessary.

In 2011, the American Society for Testing and Materials (ASTM) adopted a new standard for disclosure of energy usage at commercial properties involved in real estate transactions. "ASTM E2797, Standard Practice for Building Energy Performance Assessment for a Building Involved in a Real Estate Transaction" is expected to gain traction in the real estate community quickly, much like PCAs and Environmental Site Assessments. In fact, the standard was developed such that the energy evaluation could be performed in concert with a PCA or Phase I ESA. GZA was involved in the development of this standard by participating on the ASTM committee.

### ENERGY CONSIDERATIONS

When energy considerations are added to a PCA, a more comprehensive picture of the property emerges. If components or materials at a property are in good condition but are inefficient with regard to energy use, the useful life of those items may be artificially inflated. The incremental payback associated with accelerated replacement may be well worth shortening the service life.

While each property is different and offers its own unique challenges with regard to energy use, there are some basic strategies that are most often evaluated.

- Upgrading of lighting with higher efficiency fixtures or lamps
- Use of lighting controls such as motion detectors or timers
- Implementation of higher efficiency air-conditioning systems
- Installation of reflective roofing materials
- Increased insulation in walls, roofing, and other specialty use areas
- Installation of variable frequency drives on fans and motors
- Reduced operating hours and/or reduced heating temperatures
- Installation of energy management and control systems

In addition, the energy evaluation should consider the site's potential for sustainable energy opportunities, such as wind power and solar arrays to generate renewable electricity and geothermal systems to reduce air-conditioning costs. The supplemental energy evaluation in our report at GZA also researches and considers incentives, grants, and payback opportunities available through local, state, and federal energy reduction programs.

Aside from market value considerations, the physical condition of property impacts site safety and functionality, in addition to the viability of development and redevelopment plans. Through the implementation of a comprehensive Property Condition Assessment and Energy Evaluation, owners of commercial properties can incorporate effective and efficient sustainable solutions that will result in both cost and energy savings. ■

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