

MANAGING LEAN AND GREEN 2011-2012

Building Green Behaviors: Workshop Summary

Better Building Performance through Greener Management Practices Session 6: April 19, 2012

Preservation and maintenance of buildings is critical to maximizing their efficiency. What are some approaches that affordable housing owners and managers can take towards improving the operations of their buildings and the quality of life for their tenants? This session focused on green building management strategies and how an integrated, agency-wide approach can increase energy and water efficiency, improve health benefits and save money. Presenters illustrated the benefits of looking closely at building performance and then described policies that can and should be implemented to improve operations.

Reminder: This summary includes notes based on workshop presentations. To see more information included in the Power Points see: <http://shnny.org/events/managing-lean-and-green/2011-2012-workshop-series/>

Moderator: Andy Padian, *Community Preservation Corporation*

- Quantify the problem: how bad are buildings from low to high users? Who's responsible? Management, Accounting, or Maintenance?

Andy Padian, of the Community Preservation Corporation, opened the session by describing himself as an "Environmental Banker" and highlighted the link between improved energy efficiency and economics. As an example, he cited a large Mitchell-Lama housing project that continued to request rent increases from HUD to cover rising utility costs, but neglected to try to bring down usage and costs. When the buildings were finally required to do so, one of the initial steps towards improvement was to train building superintendents to better manage the properties – a reasonable, low-cost way to improve efficiency. However, training only the super is likely to result in unhappy staff if changes that the supers then try to implement are not sustained or replicated because administration does not support them or realize the positive benefits. The solution was to train not only the supers, but other building staff and "bean counters" – the property management and financial officers.

Typically, there is a disconnect between portfolio management, building management and building operations. Facility managers may know how much is spent on utilities, but may not know the amount of resources that are being used. They may more or less know the performance variations between buildings in their portfolio, but can not present specific evidence on the comparative use of water, gas, oil and electricity. They can not pinpoint which buildings are pigs – or why. This is important for any affordable housing provider to know; otherwise they may be pointlessly and unnecessarily throwing away money. The three presenters in this session will each describe methods and approaches that illustrate effective portfolio management.

Presenter: Erica Brabon, *Steven Winter Associates, Senior Consultant, BPI MFBA, LEED AP O+M*

- What are the roles and responsibilities of owners, management & maintenance in upholding the benefits of efficient energy and green retrofits? What policies should be in place?

High performance and healthy living in buildings is not just about installing fancy systems through green design and retrofits, but has to also be addressed through careful operations and maintenance. The building staff must understand the building systems *and* how tenants use them. A multifamily apartment building is home to many people and any changes must be considered in that light; upgrades should be explained so that residents understand the changes being made to their home. They should be motivated to preserve the benefits through

their own actions rather than fight the measures (such as aerators and reduced temperatures) as a threat to their comfort.

Retrofit Case Studies:

Tracking and evaluating building performance is key. *“You cannot manage what cannot be measured”.*

(Slides 3-5) Case #1: Modern apartment building, 102 units. After energy retrofits were installed the building achieved gas savings in the first year. Additional savings in gas and electric were found in Year 2, due to the education and improved maintenance by the operations staff. These improvements were identified because the building was carefully tracking not just costs, but also utility use.

(Slides 6-8) Case #2: Prewar building, 19 units, no central AC. In retrofit of buildings with older, less efficient systems, savings from upgrades can be great, particularly for fuel use. But how people operate it, can still make the added difference, particularly over the longer term. Tracking a building gives an owner the tools to see the variations from year to year.

(Slides 9-11) Case #3: Pre/Post War, 150 units. Once again, this building made positive gains in common area usage, but the “split incentive” makes it more difficult to predict how tenants will use the electric and domestic hot water (DHW). Because tenants don’t pay for DHW, they have less incentive to conserve, and conversely, since the tenant pays the electric bill, there is little incentive for the owner to invest in upgrades within the apartment.

Green Management Policies:

(Slide 13) There are a number of building management policies that affordable housing providers can implement across their portfolio to increase efficiency and help maintain a healthier living environment:

- Benchmarking Energy and Water: *Track utility usage*
- Lighting Assessment for Properties: *Know what’s in the building, how many light and, types of light bulbs.*
- Water Conservation Upgrades: *aerators, toilets, leaks*
- Green Laundry Equipment: *all equipment should be energy star and low-flow*
- Air Conditioner Unit and Sleeve Maintenance
- Integrated Pest Management: *Find out the source of the pest problem – don’t just regularly throw chemicals at it. Where air can move through, so can bugs and animals.*
- Smoke Free Housing: *Obvious benefits, plus major reduction in maintenance costs at turnover.*
- Green Cleaning: *Toxic products are not only bad for tenants, but can be severely problematic for staff, who come in contact more intensely with cleaning products.*
- Waste Reduction, Recycling, and Disposal
- Green Apartment Turnover

Use whatever opportunity is available to get the message across. Offer residents building information when leases are signed, during inspections and when rents are paid. Explain building policies. When apartments are inspected or turn over, use that as an opportunity to take care of items that may need maintenance upgrades. For example, put down boric acid to prevent cock roaches when changing out appliances and have building staff always look for telltale signs; air sealing, leaks, etc.

A Happy House (slide 14) is one in which all interested parties are involved in keeping the building operating properly; regulating bodies, asset managers, superintendent and maintenance staff, site manager, owner and residents. Just training the super is not enough – they do not make the choices on purchases and can not always enforce policies on their own.

Resources for portfolio management:

Benchmarking and continued tracking of buildings is critical. There are three major on-line tools currently available: Bright Power's **EnergyScoreCard** and **WegoWise** are comparable and both upload utility data directly from the utility. EPA's **Portfolio Manager** is required to be used in NYC for buildings over 50,000SF, but does not upload utility information. The ScoreCard and WegoWise programs can transfer information to Portfolio Manager, so they can assist with the ongoing, required NYC benchmarking.

There is still federal stimulus money available for retrofits – check out DSIRE (Database for State Incentives for Renewables & Efficiencies) at <http://www.dsireusa.org/> and look up New York State.

Presenter: Elizabeth Glynn, LISC Boston

- Boston LISC's Green Retrofit Initiative led to the development of LISC's Green and Healthy Property Management Guide. The Green Retrofit Initiative is a portfolio-based project that highlights the importance of pre and post benchmarking and how it can lead to improved property management.

Boston LISC's Green Retrofit Initiative: Boston LISC received a grant from the Barr Foundation to decrease carbon emissions in affordable housing. It was reasoned that by addressing 11 CDC affordable housing portfolios through retrofits and preservation, the greatest impact could be obtained. In looking at a portfolio, there are often strikingly different property management approaches that can affect building performance. A Property Management Guide could help to tackle that issue. However, the initial step was to benchmark every building in the Initiative for energy and water usage; identify the most problematic buildings and then to look where changes can be made.

Betsy detailed a number of reasons why benchmarking and tracking performance is a critical part of building management (slide #10), and emphasized that the corresponding charts which can be easily produced are an excellent way to present information to non-profit boards of directors, funding agencies or financiers. Once the utility use data and building information (square footage, building type, systems, etc) is uploaded, the building energy and water uses can be compared and a threshold, above which action must be taken, can be determined. Easily identifying spikes in utility costs is a helpful tool for trouble shooting real problems, and proving real reductions in utility use can help to get other projects and initiatives supported.

There are also real challenges to overcome; such as the initial chore of gathering account and building information, particularly for independent apartment accounts. (In NYC, for square footage Property Shark and Oasis.net can be used to gather this information, and DEP gives out water use information online.)

Policy and Procedure: LISC's Green and Healthy Property Management Guide

Through a painstaking process that included using consultants in engineering, green and health fields, LISC Boston worked with local CDCs to develop a Property Management Guide that includes practical, workable measures and scheduling, and can be customized to fit specific buildings, staff and tenants.

The primary goals of the Guide, are to identify and focus on management areas, similar to those listed by Erica Brabon of Steven Winter Associates (above) and which can provide an enormous boost to building performance and tenant well-being, if properly implemented. In addition, using the detailed Policies and Procedures will provide preventive measures that can allow maintenance staff to use their time more productively. Examples are given of the importance of pre-emptive maintenance for water related issues and equipment, as well as the benefits of a smoke free initiative (part of a new grant) which can also have enormous impact on health and maintenance.

- Castle Gardens illustrates the significance of agency commitment beyond green building to properly maintaining the building and creating an environmentally educated tenant and staff base.

Background: The Fortune Society is dedicated to working with men and women out of prison, and housing is seen as a way to offer people a safe place to live as they begin to improve their lives. Buildings are seen as a means, not an end. The first Fortune Society residence, the Academy, (known as the Castle) was an old, abandoned building on the Upper West Side that was renovated on a shoestring budget and opened in 2002. The goal was to house people where need was great but money was not, and while the resulting renovation created much needed apartments, it is also an energy hog of a building.

Formerly incarcerated and formerly homeless people often have not lived lives that gave them the opportunity to control their own living environment. This is a population without good or bad habits regarding apartment behavior, and education is a great way to promote the proper habits. (*Editorial note* – it is well known that most New Yorkers, whether they do or do not pay utilities, have pretty bad habits too.)

The Fortune Society owned the lot behind the Castle and had the opportunity to build a residence with 114 units for formerly incarcerated and general members of the community. The Fortune Society was committed to building this building “green” – because it was the right thing to do. The development team included Jonathan Rose Companies as the development partner and Curtis and Ginsberg as the architects.

A Tale of Two Buildings: Numerous green features were included in the new building, Castle Gardens, including: solar shades, energy efficient appliances, occupancy sensors, a high efficiency boiler located on the roof, trickle vents at individual apartments, green roofs and rainwater harvesting system. As anticipated, the result of these features has been 20% lower costs on energy than the first building. In addition, the Fortune Society embarked on a baseline survey of health conditions of residents, and is looking at health identifiers by tracking and reporting the benefits to people coming out of shelters and substandard low income housing compared with living in the building. The study will also track benefits to personal health based on the effects of a supportive community and decreased energy bills – which allow more money to go to monthly living expenses.

Policies: (quotes from JoAnne Page)

- “The Building is an envelope for the community” – The Castle and Castle Gardens hold active monthly building meetings, cooking classes, and partnerships with outside organizations that improve the lives within. Chris Carney, the superintendent, is well attuned not only to the high-efficiency boiler and trickle vents, but to the needs of the tenants, and building management.
- “Green is a part of watching out for each other” - The building uses its green roofs as a place for community interactions, and generates building-wide interest through activities that engage tenants in energy efficiency, such as an electric bill competition.
- “The building is a home within the neighborhood, and it can be used as an avenue for social change”

Managing Lean and Green is a monthly workshop sponsored by the Supportive Housing Network of New York, the Pratt Center for Community Development, the Association for Neighborhood and Housing Development. Enterprise Community Partners and LISC are contributors.
