Steven Winter Associates, Inc.

WINTER GREEN

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WinterGreen is a monthly publication from **Steven Winter Associates** designed to keep you updated on the latest news and information regarding energy efficiency, sustainability, and high performance buildings.

ENERGY STORAGE IN MF BUILDINGS

Large-scale energy storage systems have the potential to normalize the peaks and valleys of electric supply and demand in multifamily buildings, but until recently widespread adoption of the technology has been hindered by costs. Happily, feasibility of using batteries to store energy in multifamily buildings is improving, with a possible payback period as short as two to five years. Additionally, utility companies and grid operators have incentivized the use of battery systems to off-set load on the electrical grid.

Demand Response, Peak Demand Shaving, and Load Shifting

Batteries can aid reducing strain on the electrical grid by discharging during a high-draw event, effectively becoming independent power-stations capable of supplying electricity to all or part of a building. For some buildings, demand charges may make up 40–60% of the electric bill, amounting to a major expense. Batteries can help mitigate demand charges by shaving the peaks off a building's electric profile; discharging during peak hours in order to lessen the building's kilowatt draw. Peaks that would occur during periods of high demand are served by the battery system, which then recharges during periods of lower demand.

Considerations for Application of Batteries

Despite the learning curve associated with adoption of an emerging technology, energy storage systems are becoming increasingly accessible to a range of multifamily buildings types, and the need for such systems continues to rise congruently with the complexity of America's energy landscape. Large buildings may be able to make use of energy storage capabilities for demand response or peak shaving. Buildings that use renewable energy may find storage systems to be a complementary technology, especially when emergency backup is needed. Market behavior indicates that battery energy storage technology for multifamily buildings is trending in a favorable direction, though there is still distance to cover before technology and market equalize and mainstream. Read SWA's Popular MF Retrofits Part III here.

WALL STREET THEATER REVIVED

The Wall Street Theater, located in downtown Norwalk, CT, first opened its doors in 1915 and is listed in the National Register of Historic Places. Slated to reopen in September, SWA guided extensive renovations in line with LEED© Gold certification performance standards. Refurbishment of the theater is an integral part of the greater redevelopment plan of Norwalk's Wall Street area, with the project receiving extensive financial support from the State of Connecticut and the U.S Department of Housing and Urban Development (HUD).

Expected to achieve energy-use and water-use reductions of at least 20% below baseline calculations, the project will target energy efficient measures to the 100 year old structure such as LED lighting and thermal improvements. Green building certification for the Wall Street Theater benefits from the reuse of the building structure, the pedestrian connections to the surrounding community, and the favorable urban redevelopment. For more coverage on the Wall Street Theater's ongoing refurbishment, read the piece published in The Hour, Norwalk's local press here.

GREEN BUILDING PRIORITZES IAQ

Close to 90% of our lives are spent indoors. This statistic should mitigate any questions about the extent to which the places that we live, work, and play affect our health. Green building programs have made significant strides over the past few years to incorporate measures that address sustainability and health.

INTERNATIONAL WELL BUILDING INSTITUTE

One of the newest programs, the WELL Building Standard®, is entirely dedicated to improving human health and well-being. The system incorporates ratings for traditional green building categories, such as air and water, but also includes categories for light, mind, and comfort – topics unparalleled in any existing industry programs. SWA Senior Accessibility Consultant Victoria Lanteigne is among the first in the nation to earn the title of WELL Accredited Professional (WELL AP™), signifying advanced knowledge of Indoor Air Quality (IAQ) in the built environment and specialization in the WELL Building Standard™ (WELL).

The EPA's Indoor air PLUS™ program is a companion to the ENERGY STAR® Homes certification. The program is only available for low-rise residential developments, and measures are practical and can be implemented relatively quickly. The airPLUS guidelines include clear measures and checklists entirely geared toward builders. For those seeking a less intensive avenue to adopt high impact, lower-cost ways to improve indoor environments, the Indoor airPLUS program is an excellent place to start.

EPA Indoor airPLUS QUALIFIED HOMES

Midway between the two aforementioned programs, both LEED® v4 and Enterprise Green Communities (EGC) address a gamut of health-related issues. Many of the measures linked to health are embedded in optional credit areas, such as the inclusion of Active Design concepts. These credits focus on design that encourages healthful habits in everyday life, for example, using stairs versus elevators or traffic-calming strategies to increase safety.

While the design and construction of buildings that prioritize healthy indoor environments is a huge step in the right direction, the efficacy of resultant designs and their overall impact is largely contingent on the enforcement of practices after units or buildings are occupied. Continue to SWA's Party Walls blog to read the complete article examining the certification programs, operational strategies, and occupant behavior trends that contribute to enhanced IAQ.

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