VERDANT
by COPELAND

Energy Management Challenges Multifamily Buildings Face and How Verdant Solves Them

Overview

As an investment, multifamily buildings are truly unique among other residential properties. Like single-family homes, each unit in a multifamily building generates ongoing revenue that helps finance the overall operation, while the property itself tends to only increase in value over time. On the other hand, multifamily buildings are also communities of their own, where tenants share spaces and amenities as they go through their daily routine.

This communal aspect of multifamily living is at the core of the product experience that multifamily building operators provide. It's something that impacts the price of their rental units and, therefore, the value of their properties. And it's something that comes with its own set of overhead costs.

One overhead cost that is universal to all aspects of multifamily building management is energy consumption. From keeping the lights on to powering the appliances and devices that tenants rely on, there are energy costs associated with every aspect of their daily lives. Fortunately for multifamily building operators, there are a number of strategies and technologies that will both reduce operating costs and increase the value of their multifamily properties.

The Challenge

Multifamily property managers face the ongoing challenge of balancing tenant comfort with profitability. While different tenants have different preferences and fluctuating occupancy patterns, common areas often require continuous heating, cooling, and lighting.

Outdated infrastructure also contributes to energy inefficiency. Many multifamily properties rely on aging smart HVAC systems and legacy thermostats that lack the adaptability to meet modern energy management standards. These outdated systems result in energy wastage and higher maintenance costs.

Smart Solutions

Despite the energy management challenges faced by property managers, Verdant offers a number of smart technologies that can help them reduce energy consumption, manage energy costs, and increase the overall value of their property investment. Indeed, our energy management solutions help multifamily property managers bridge the gap between tenant satisfaction and profitability.

Smart Thermostats

Energy management starts at the user level, where small, everyday decisions significantly impact overall multifamily building efficiency. Smart thermostats allow both property managers and tenants to pre-program temperature settings around their preferences and occupancy patterns, reducing energy waste in unoccupied units and common areas.

Property managers can program smart thermostats in common areas to adjust temperatures to align with high-traffic or occupancy times, ensuring they are not heating or cooling vacant spaces. Tenants can also program their smart thermostats to reduce energy consumption while they are not in the unit. This significantly reduces their own energy bill, as well as operational costs for multifamily property managers.

However, not all smart thermostats are created equal. Whereas consumer-grade brands (such as Nest and Ecobee) are suitable for single family properties, larger multifamily homes with a centralized HVAC system require commercial-grade smart thermostats that are capable of managing multiple units and common areas simultaneously — with features that include as Smart Alerts, Dynamic Recovery, Remote Control, and Flexible Setbacks.

Smart HVAC Technology

While smart thermostats help reduce energy costs on the user-facing frontend, there is also a backend side of energy management smart HVAC technology. Essentially, there are two sides to the smart HVAC coin for property managers. On the one hand, there are the climate control needs of common areas (e.g. lobbies, corridors, etc.). On the other hand, there are the heating and cooling costs that tenants incur within their units which, in turn, impact the value of those units.

Smart HVAC technology helps multifamily building managers (and their tenants) automate energy consumption and management, and minimize their respective energy costs. These smart technologies integrate with both smart thermostats (VX, VX4, and ZX Smart Thermostats) and occupancy sensors and collect data on occupancy patterns, peak demand loads, historical thermodynamics, and local weather patterns.

Verdant's smart HVAC energy management system ensures any given space is neither overheated or overcooled when vacant, and can reduce HVAC runtime by up to 45%. Smart HVAC systems have the lowest payback/breakeven period of any energy management system, with some commercial property managers recouping their investment in as little as 12 months.

Smart Lighting

Keeping the lights on, in the literal sense, represents another unavoidable energy overhead cost for multifamily property managers. Fortunately, smart lighting systems can help multifamily building operators reduce both their own and their tenants' energy costs, ensuring the lights are on active only when needed.

Put simply, smart lighting employs occupancy sensors to adjust lighting to real-time occupancy patterns and time of day (much like smart HVAC technologies do with climate settings). This streamlines energy consumption for both tenants and property managers, cutting energy waste in individual units and common areas like lobbies and hallways alike.

Many smart lighting systems can also integrate with third-party energy management systems, giving multifamily property managers the ability to streamline operations, enhance tenant satisfaction, and maximize profitability.

Centralized Management

Managing HVAC systems across multiple multifamily properties is challenging due to limited visibility, inconsistent settings, and untrained staff making inefficient adjustments. This can result in higher energy costs and suboptimal system performance.

Verdant's Thermostat Manager provides a centralized solution, allowing property managers to monitor and control HVAC settings across all units from a single platform. Featuring bulk updates, customizable energy profiles, and real-time monitoring, managers can ensure optimal efficiency without requiring extensive HVAC knowledge.

Verdant Thermostat Manager ultimately helps multifamily buildings reduce energy waste, lower operational costs, and enhance overall system performance by automating energy adjustments.
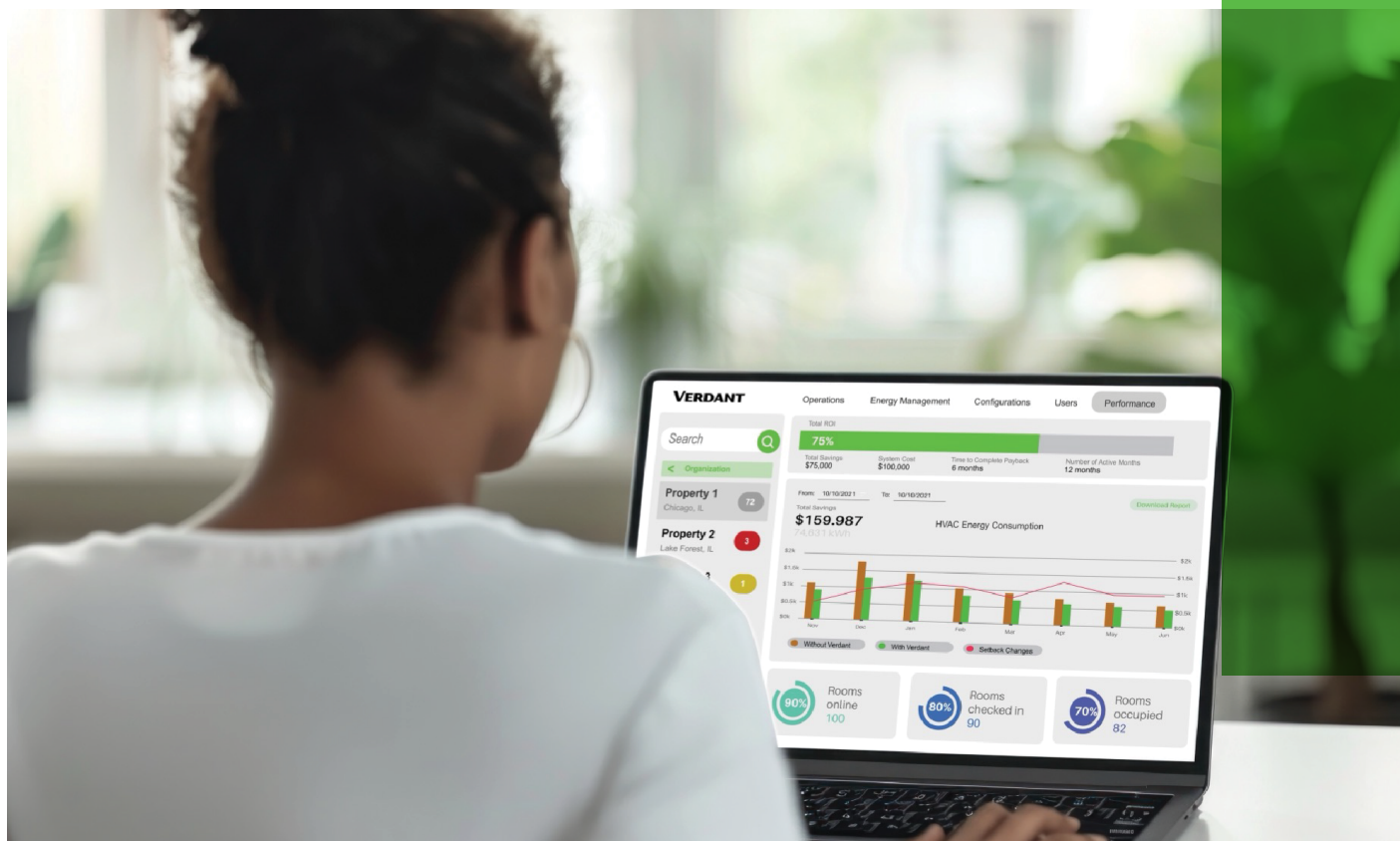
Energy Efficient Windows

While energy management technologies help multifamily building operators manage energy consumption, there are also infrastructure upgrades they can implement to reduce energy costs. Specifically, energy efficient windows can significantly improve insulation and climate control in both common areas and private units. As the US Department of Energy explains, "ENERGY STAR® qualified windows [...] filter out ultraviolet light [which saves significantly on] heating and cooling costs."

Pairing these upgrades with window and door switch sensors enhances efficiency by detecting open windows and adjusting climate control accordingly. These battery-powered sensors integrate seamlessly with Verdant smart thermostats, ensuring that heating and cooling are only active when necessary.

Beyond the immediate energy cost-savings, there are additional financial incentives when installing energy-efficient windows, including increased property value. "Energy savings are not the only way to calculate the worth of a new window installation. New windows also increase [...] property value. In fact, installing a set of new vinyl windows could add as much as $12,000 to [a] home's selling price."

Demand Response Programs

Energy management technology is not limited to hardware appliances or infrastructure upgrades. There are other financial strategies that multifamily building operators can employ to reduce their overhead energy costs.

Specifically, Demand Response programs allow multifamily property managers to earn credits (and in some instances, outright cash incentives), against their energy bill whenever they curb energy consumption during peak demand times. These programs operate on an opt-in basis, typically through utility providers, or third-party entities.

Through Demand Response programs, multifamily building managers are notified prior to a forecasted peak usage event, and unless they opt-out of that event, their various onsite appliances (e.g. HVAC systems, water heaters, etc.) will adjust to draw less energy from the grid. This allows multifamily building operators to "sell it back" to the utility company and apply that revenue against their energy bills, reducing their overhead energy costs.

[1]Guide to Energy Efficient Windows: https://www.energy.gov/sites/prod/files/guide_to_energy_efficient_windows.pdf
[2]How Much Do Energy Efficient Windows Cost?: https://modernize.com/windows/energy-efficient

Success Story: The Charleson Case Study

Learn how Verdant's energy management solutions including our energy management system and our smart thermostats, helped the Charleson significantly reduce HVAC runtimes, streamline energy consumption, and increase property resale value.

About the Charleson

Standing 43 storeys tall in the exclusive neighborhood of Yaletown in Vancouver, the Charleson is a mixed-used residential property with 269 units, of which 129 are rentals. This property was developed and operated by the Onni Group, an innovative real estate developer with exciting developments in Vancouver, Toronto, Los Angeles and more.

The Onni Group, like many other multifamily building operators, were faced with the challenge of choosing an energy management system compatible with the HVAC equipment (a 4-pipe fan coil system) inside the 129 rental units. The energy management system had to not only optimize energy usage, but also, deliver a comfortable and seamless tenant experience.

Challenge

The Charleson faced a common energy management challenge among multifamily buildings: streamlining energy usage in units and common areas with inconsistent occupancy patterns.

As a result, the Onni Group required an energy management system that could (1) adjust dynamically to tenant behaviour, and (2) optimize energy consumption without compromising tenant comfort and satisfaction. The energy management system also had to be compatible with the multifamily building's 4-pipe fan coil HVAC system inside the 129 rental units.

Solution: Commercial-Grade Smart Technology

The Onni Group ultimately selected Verdant smart thermostats and energy management system for this project due to their ability to maximize energy savings and efficiency without disrupting the comfort of residents.

Our energy management system and smart thermostats integrated seamlessly with the Charleson's 4-pipe fan coil HVAC system, delivering optimal climate control tailored to each unit's occupancy patterns. This seamless integration minimized installation challenges and reduced upfront costs, ensuring a smooth implementation process.

> *"Choosing the Verdant energy management system for The Charleson was an easy decision. Apart from the system being perfectly compatible with the FCUs we had spec'd, the Verdant system had already demonstrated considerable savings in some of our other properties. The Charleson was no different – we saw substantial runtime reductions from the beginning without any complaints from residents."*
>
> — Ben Libby, Senior Project Manager

How it Works

Trusted and installed in over 7,000 multifamily buildings, hotels, senior living, and student housing properties, Verdant's energy management system maximizes energy savings without compromising comfort. Our smart thermostats combine occupancy sensors with patented software to reduce HVAC energy usage and HVAC runtimes.

Verdant collects real-time data from energy meters, sensors, and other sources to track energy consumption patterns. Our energy management system then analyzes the data to identify areas of inefficiency and wastage. These data-driven insights can be used to implement energy-saving solutions such as automation, scheduling, and load balancing.

Results

Verdant's Energy Management system achieved an outstanding reduction of **34%** runtime of the Charleson's HVAC units in the 12-month period between October 2018 and September 2019. This translated to an average reduction of **$1,093** on both electric and natural gas bills.

Additionally, Verdant's Energy Management System resulted in **$8.50** in monthly average savings per room with an added resale value of **$218,460**. Verdant ultimately delivered significant energy savings on multiple fronts, while satisfying the comfort standards of the Charleson's occupants.

Quick Payback Period

When planning a capital expenditure, one of the most important considerations is "how long will it take to recoup this investment"? The Charleson achieved a swift return on investment with Verdant's energy management system, realizing a payback period of just 2.2 years. This rapid ROI was driven by significant energy savings, reduced HVAC runtimes, and lower utility bills.

Significant Long-Term Savings

Verdant's Energy Management System maximizes energy-savings both in the short- and long-term, delivering **$8.50** in monthly average savings per rental unit in the Charleson. This translated to **$13,105** in cumulative savings on electric and natural gas bills over the **12-month period**. These consistent savings ensured a quick return on investment and ongoing energy efficiency for the Charleson.

Increased Resale Value

Verdant's Energy Management System not only reduced operating costs but also significantly enhanced the Charleson's property value. In fact, in the 12-month period Verdant's energy management system was installed, the Charleson saw a **$218,460** increase in resale value, underscoring the long-term financial benefits of an energy management system.

HVAC Runtime Reduction

Verdant's energy management system achieved a remarkable **34% reduction in HVAC runtimes** over a 12-month period. This significant decrease in runtime resulted in improved energy efficiency, minimizing energy consumption and reducing wear on the smart HVAC system. As a result, operational costs were lowered, driving meaningful long-term savings.

34%
Runtime reduction over a 12-month period

$218,460
Increase in resale value

Getting Started with Verdant

Ready to enhance energy efficiency and reduce costs in your hotel? Join the industry-leading partners who trust our energy management solutions for exceptional long-term savings. Learn how you can reduce HVAC runtimes by 45% on average with Verdant's plug & play, award-winning energy management system and book your web demo today!

Book a Web Demo
verdant.copeland.com/book-a-web-demo

Optimal Savings

Optimizes settings in real-time, ensuring you get the maximum energy savings possible.
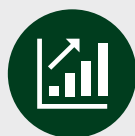
Compatibility

Verdant thermostats are compatible with most PTACS, VTACS, split units and fan coil systems.

Self-Installs

Your staff can self-install each smart thermostat in less than 10 minutes.

Quick Payback

Cuts room HVAC runtimes by 45% on average* and typically pays for itself in 12-18 months*[3].

Fully Automated

Automates guestroom HVAC energy management at your property, without any involvement from your staff.

VERDANT

72

❄ AUTO CONT

VERDANT
by **COPELAND**