VERDANT
by COPELAND

Sustainable Living Starts with Smarter Energy Management: A Guide for Property Owners

Overview

Sustainable living doesn't just consist in ‘doing the right thing’. For property owners, it’s also about reducing operating costs and increasing property resale value. While there are admittedly some upfront costs to investing in sustainable technologies, those costs are more than offset by the cost-savings that they produce down the line — which means an increasing return on that initial upfront investment.

From energy-efficient infrastructure to smart building technologies, sustainable upgrades are reshaping the way residential and commercial properties perform both financially and environmentally. And for owners looking to future-proof their investments, sustainability isn’t just nice-to-have, it’s a requirement.

The Cost of Inaction

To say that choosing not to invest in smart energy technology is a missed opportunity would be quite the understatement. As energy prices continue to rise and sustainability regulations tighten, properties that fail to adopt sustainable technology are becoming harder to operate and even harder to sell.

Higher Operating Costs

Without smart energy management systems, HVAC runtimes stay high, lighting operates inefficiently, and energy waste becomes routine. Over time, these inefficiencies erode profits and drain operating budgets that could otherwise be invested elsewhere.

Reduced Market Appeal

Modern investors and tenants are increasingly sustainability-minded. Properties without smart thermostats, efficient HVAC systems, or any sustainability compliance can struggle to attract long-term residents, outside investment capital, and maximize their resale value.

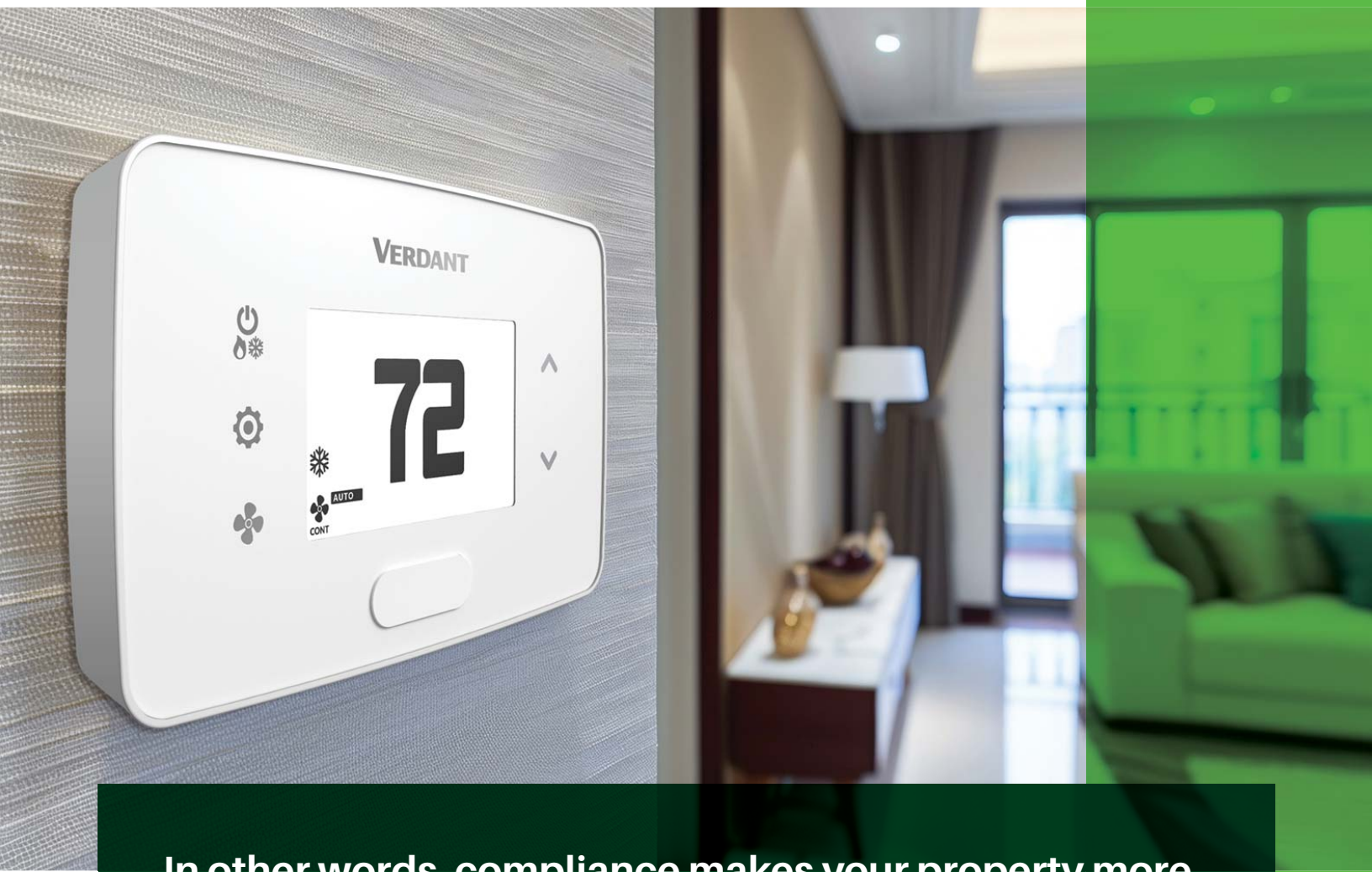
Limited Access to Incentives

Many municipalities and utility providers offer rebates and financing incentives for sustainable property upgrades. So failing to act means leaving money on the table that will significantly offset the initial upfront investment while permanently lowering operating costs.

Meeting Sustainability Goals

Sustainability has become a key priority in property management. By implementing smart energy management systems that make their properties more environmentally responsible, property owners can significantly reduce operating costs and minimize their carbon footprint. These sustainable upgrades can also lead to access to tax credits, more favorable financing options, and increased property value.

Specifically, by implementing smart energy management systems that make their properties more environmentally sustainable, property owners can not only reduce their operating costs, but also become ESG compliant because they've reduced their carbon footprint. And by doing so, they also gain access to tax credits and more favorable financing options, while simultaneously increasing the value of their property because it's now ESG compliant.



In other words, compliance makes your property more sustainable both environmentally and financially.

Essential Smart Energy Management Tech

Energy consumption is part of the minimum infrastructure that any property must invest in to remain operational. From lighting and HVAC systems to specialized equipment, energy consumption is what makes a property usable and have value. In other words, anything that impacts a property's energy consumption will also impact its overhead costs and the minimum investment required to 'keep the lights on'.

Unsurprisingly, advances in energy management technology have had a profound impact on commercial properties across many industries. And that impact has been greatest where it concerns climate control systems.

Smart Thermostats

Energy management starts at the user level, where small, everyday decisions significantly impact overall 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 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 Systems

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.

Smart HVAC technology helps property managers (and their tenants) automate energy management, and minimize their respective energy costs. These smart energy systems integrate with both smart thermostats (such as the VX, VX4, and ZX Smart Thermostats) and occupancy sensors, and collect data on occupancy patterns, peak demand loads, historical thermodynamics, and local weather patterns to both adjust to and anticipate real-time energy needs.

Verdant's smart HVAC energy management system, for instance, ensures any given space is neither overheated nor 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.

Occupancy Sensors

Smart thermostats can be programmed around daily patterns, with occupancy sensors that allow them to respond to real-time fluctuations in a space's actual occupancy and energy needs.

Verdant's occupancy sensors integrate seamlessly not only with our smart thermostats, but also many third-party lighting systems. And in buildings where unitary HVAC is not available, they also reduce heating costs by monitoring temperature and humidity sensors.

Night Occupancy Detection, Dynamic Recovery, and Flexible Setback

Beyond seamless installation and advanced integrations, Verdant's energy management solutions are also equipped with a range of features that can help maximize energy savings.

- **Night Occupancy Mode** detects body motion and heat, ensuring unprecedented accuracy in determining actual occupancy and automatically adjusting heating and cooling settings accordingly.
- **Dynamic Recovery** ensures a seamless transition back to desired temperatures by preconditioning spaces before occupants return, maintaining comfort while conserving energy.
- **Flexible Setback** allows building operators to set custom temperatures based on energy goals and occupant preferences.

When paired with smart thermostats and occupancy sensors, these features help balance energy efficiency with resident comfort.

Verdant Thermostat Manager (Integrated Control Systems)

Managing HVAC system performance across multiple properties is challenging. Varying HVAC settings, different property thermodynamics, and maintenance staff making inefficient adjustments all limit the visibility and contribute to suboptimal system performance and higher energy costs.

Verdant's Thermostat Manager provides a centralized solution, allowing property managers to monitor and control HVAC settings across all their 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.

Additional Sustainable Energy Tech

Of course, smart energy management isn't limited only to HVAC performance. There are a number of other sustainable technologies property managers can invest in to reduce both their carbon footprint and operating costs.

Smart Lighting

Keeping the lights on, in the literal sense, represents another unavoidable energy overhead cost property owners. Fortunately, smart lighting systems can help operators reduce both their own and their tenants' energy costs, ensuring the lights are on 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 (such as lobbies and corridors).

Many smart lighting systems can also integrate Verdant's energy management system, allowing property managers to optimize runtimes for both HVAC and lighting systems simultaneously.

Air Source Heat Pumps (ASHPs)

Another HVAC hardware upgrade that property managers can invest in to reduce their energy costs is Air Source Heat Pumps (ASHPs). These reduce HVAC costs by transferring cold or warm air from outside a facility to the interior, further reducing HVAC runtimes, and ultimately reduce their energy consumption.

ASHPs also offer the added advantage that they can be used as energy efficient space heaters (or coolers) to help manage energy consumption in areas of a property that are thermodynamically problematic — e.g. common areas that are either more poorly insulated or particularly high-traffic.

Energy-Efficient Windows

While energy management technologies help property owners manage energy consumption in real-time, there are other property upgrades that can reduce HVAC runtimes. Specifically, energy efficient windows 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."

And pairing these upgrades with window and door switch sensors further 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. Finally, in addition to the immediate energy cost-savings, energy-efficient windows also increase a property's resale value.

Hotel Brand Mandates

Hotel brands around the world are prioritizing sustainability by mandating energy management systems in new builds and renovations. These requirements help standardize efficiency and reduce operational costs. See how each brand is taking action.

MARRIOTT	**GREMS Mandate**	Verdant becomes an approved vendor	APPROVED VENDOR
Hilton	**Hilton Connected Room**	Verdant is the first approved HCR solution	APPROVED VENDOR
IHG HOTELS & RESORTS	**EMS Mandate**	Verdant has been named IHG Brand Standard	BRAND STANDARD
WYNDHAM HOTELS & RESORTS	**Moving towards EMS Mandate**	Verdant has been named the Preferred EMS solution	PREFERRED VENDOR
CHOICE HOTELS	**EMS Mandate**	Verdant has been named the Qualified vendor	QUALIFIED VENDOR

The Business Case for Smart Energy Management

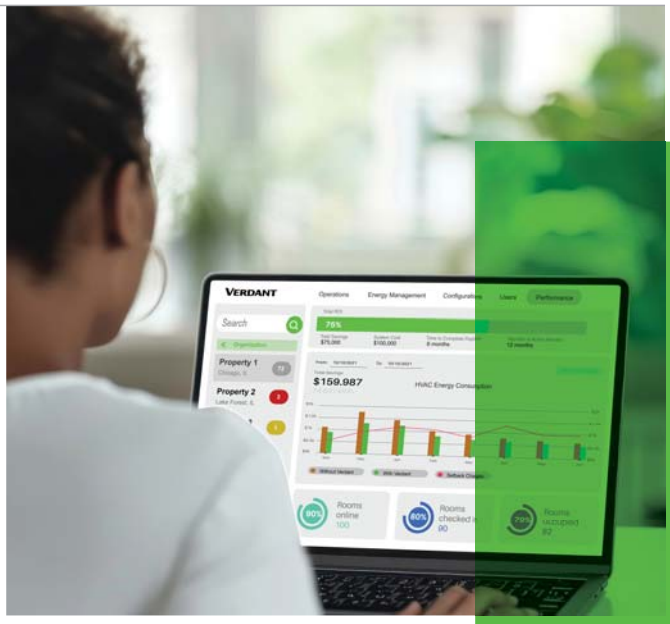
The business benefits of smart energy management cannot be overstated. Indeed, property owners who invest in smart thermostats, occupancy sensors, integrated HVAC systems, and centralized energy platforms see measurable returns across multiple areas of their operations.

CATEGORY	BENEFIT	IMPACT
COST SAVINGS	**Lower Operating Costs**	Optimizes HVAC, lighting, and water systems to cut utility bills and reduce energy waste.
	Short Payback Periods	Systems often pay for themselves in 12–18 months, especially when combined with rebates.
	Reduced Maintenance Costs	Predictive maintenance detects issues early, reducing emergency repairs and extending asset life.
REVENUE GROWTH	**Increased Property Value**	Energy-efficient properties command higher resale prices and investor interest.
	Stronger Tenant Retention	Enhanced tenant comfort and lower utility bills drive satisfaction, occupancy, and renewals.
	New Revenue Streams	Participation in Demand Response programs generates passive income through energy curtailment
RISK MITIGATION	**Sustainability Compliance and Financing**	Positions properties to access green financing, meet investor requirements, and secure favorable lending rates.
	Future-Proofed Operations	Prepares properties for future energy efficiency regulations, avoiding costly last-minute retrofits.

Tailoring Strategies by Property Type

Not all properties are alike. Energy needs differ greatly from residential to commercial building, from hotels to MDUs, and from senior residences to student housing. And adjusting for construction and property location, no two MDUs will have the same energy needs any more than any two hotels or other property types.

Two things that all properties have in common, however, are (1) energy costs are an integral part of operational overhead, and (2) all have their peak seasonal usage times.



Regardless of a property type's location, seasonal energy requirements, and occupancy patterns, Verdant's energy management systems can be adapted to those unique needs. Indeed, our smart energy management systems offer advanced integrations for enhanced operational efficiency. Verdant's energy management solutions seamlessly integrate with Building Management Systems (BMS) and Property Management Software (PMS), delivering a unified platform for streamlined property management.

Our energy management solutions also come equipped with Demand Response (DR) capabilities, giving MDUs the ability to participate in utility-sponsored programs. Demand Response integration not only supports grid stability during peak demand, but also creates additional streams of revenue for your business.

Case Study Spotlight: The Charleson

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 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 MDU'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 9,000 MDUs, 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.

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

$13,105

Cumulative savings over a 12-month period

Getting Started with Verdant

Ready to enhance energy efficiency and reduce costs in your property? 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.

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.

Fully Automated

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

[1]Actual savings may vary according to utility cost, climate, available rebates, and other variables **Entreprise Value Multiples by Sector http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/vebitda.html

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