



CRE
TECH

The CRE Playbook for Maximizing ROI on Sustainability



BuildingEngines

INTRODUCTION

Building operations in the United States accounts for roughly 40% of all energy consumption.¹ It's a big reason why the commercial real estate (CRE) industry is increasingly focused on making sustainability efforts a top priority. More government intervention is coming in the form of new legislation about sustainable construction practices and requirements such as energy certifications. A sustainability strategy is no longer optional for property owners and operators.

Tenants' desires are playing a role, too. As workers trickle back into offices—and hybrid occupancy changes the game for many property owners—tenants are demanding more robust health and safety protocols. In fact, 40% of real estate professionals saw increasing demand for sustainability among tenants.²

Further, the CRE industry has no choice but to factor climate change impact into its investment plans. Older buildings may present unacceptably poor environmental conditions that require expensive abatement. In other cases, they simply lack the proper equipment and systems to reach necessary levels of efficiency. There's also substantial risk to properties located in some geographic areas that are vulnerable to rising sea levels and erosion. One economic analysis of the state of U.S. office buildings reveals that as much as 70% of the total inventory faces an alarming period of repricing due to fast-paced obsolescence, exacerbated by evolving environmental and health standards.³

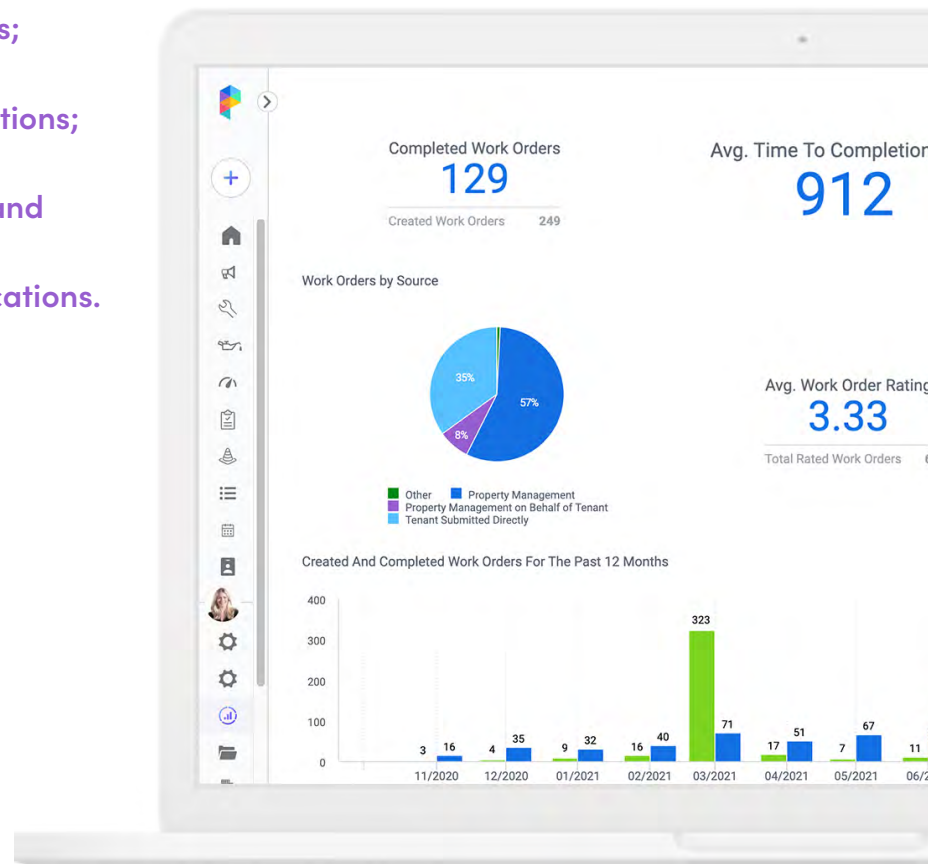


The underlying factors that will get stronger over the long-term are strict new government standards for energy efficiency and growing tenant demands for healthy, safe, and energy efficient office environments with ample modern amenities.

CRE leaders must implement best practices for new construction, retrofitting existing buildings, and making strategic capital investments. Climate change presents a threat to CRE, and enacting solutions that ensure sustainability can appear burdensome. However, they also present opportunities to capitalize on new innovations and changing market desires.

Technology will play a large role in the future of sustainable CRE. Available solutions help:

- evaluate existing inefficiencies;
- monitor and streamline operations;
- improve tenant experiences; and
- achieve critical energy certifications.



What You'll Learn in this Whitepaper

1. The bottom line of sustainability and why not having a strategy can cost you
2. The regulatory pressures regarding sustainability
3. Why tenants are demanding more sustainable buildings and what it means for you
4. How technology can help you leverage today's biggest sustainability opportunities
5. How to build a sustainability strategy that meets goals and achieves ROI

The Bottom Line of Sustainability

Buildings produce 40% of global carbon emissions, making the built environment one of the top global producers of carbon.⁴ That fact alone is enough to warrant immediate and dramatic action by the CRE industry, but there are other factors pushing CRE into a more sustainable future.

REGULATORY PRESSURES

Even as more companies initiate efforts to achieve “net zero” carbon emissions, regulatory pressures will increase the speed at which those changes happen. The UK’s Climate Change Act of 2008 set aggressive decarbonization goals for 2050, and it likely foreshadows similar changes stateside in the near future. In December 2021, President Joe Biden signed an executive order directing the U.S. federal government to reduce its emissions to net zero by 2050. Granted, the order covers only the federal government, but the order is meant to be a catalyst for private-sector regulation.

The order states in part: “As the single largest landowner, energy consumer, and employer in the Nation, the Federal Government can catalyze private sector investment and expand the economy and American industry by transforming how we build, buy, and manage electricity, vehicles, buildings, and other operations to be clean and sustainable.”



Notably, one of the five main priorities of the order is a net-zero emission building portfolio by 2045, which includes a 50% emissions reduction within a decade.

Two of the largest CRE markets in the U.S., New York City and Boston, each have new requirements for building emissions:

New York's Local Law 97 mandates cutting emissions 80% by 2050, with numerous required benchmarks along the way. The first benchmarks must meet new energy requirements by 2024, with more restrictive 40% reduction demands by 2030. Boston's Building Emissions Reduction and Disclosure Ordinance (BERDO) aims for net zero by 2050.

CRE firms will need to meet these requirements or face hefty fines, which means there's a clear bottom-line incentive for firms to decarbonize as soon as possible.

What is Net Zero?

Net zero refers to a state in which the greenhouse gases going into the atmosphere are balanced by removal out of the atmosphere. It's the international scientific consensus that, in order to prevent the worst climate damages, global net human-caused emissions of carbon dioxide (CO₂) need to fall by about 45% from 2010 levels by 2030, reaching net zero around 2050.⁵

WHY IS IT IMPORTANT?

Global warming is proportional to cumulative CO₂ emissions. That means the planet will keep heating for as long as global emissions remain more than zero. This implies that climate damages, caused by global heating, will continue escalating for as long as emissions continue.



CRE sustainability is not merely a political issue. In fact, debt markets have started factoring in emissions and climate change-related risks.

Older buildings are an obvious problem. There have long been costs associated with mitigating health and safety factors, like lead paint and asbestos. At the same time, the pandemic has placed a new emphasis on the need for improved ventilation and air quality.

Faced with aggressive emissions and energy efficiency requirements, owners must consider the overall environmental impact of their buildings and the costs required to bring them into compliance.

Real estate markets in certain geographies are being materially impacted by climate change threats. One of the most dire examples is the Miami-Dade area of Florida, where rising sea levels resulted in nearly \$500 million in real estate losses between 2005-2016 alone.⁶ Meanwhile, California is experiencing problems with coastline erosion, rising sea levels, and wildfires.

Because debt markets are factoring climate change into real estate costs, CRE owners must follow suit—not only in terms of purchase and resell prices, but also regarding the costs of upgrading buildings and risk management.

Did You Know?

A new economic analysis of the state of U.S. office buildings shows as much as 70% of total inventory faces an alarming period of repricing due to fast-paced obsolescence, accelerated by COVID but exacerbated by evolving environmental and health standards.³



Tenants Demand Sustainable Buildings *(and Energy Efficiency is a Top Concern)*

Tenant demands are also driving changes in CRE. A [survey](#) of commercial property professionals conducted by Building Engines in partnership with the Building Owners and Managers Association International (BOMA) found that respondents’ top software investment priority in 2022 was directly related to the tenant experience.

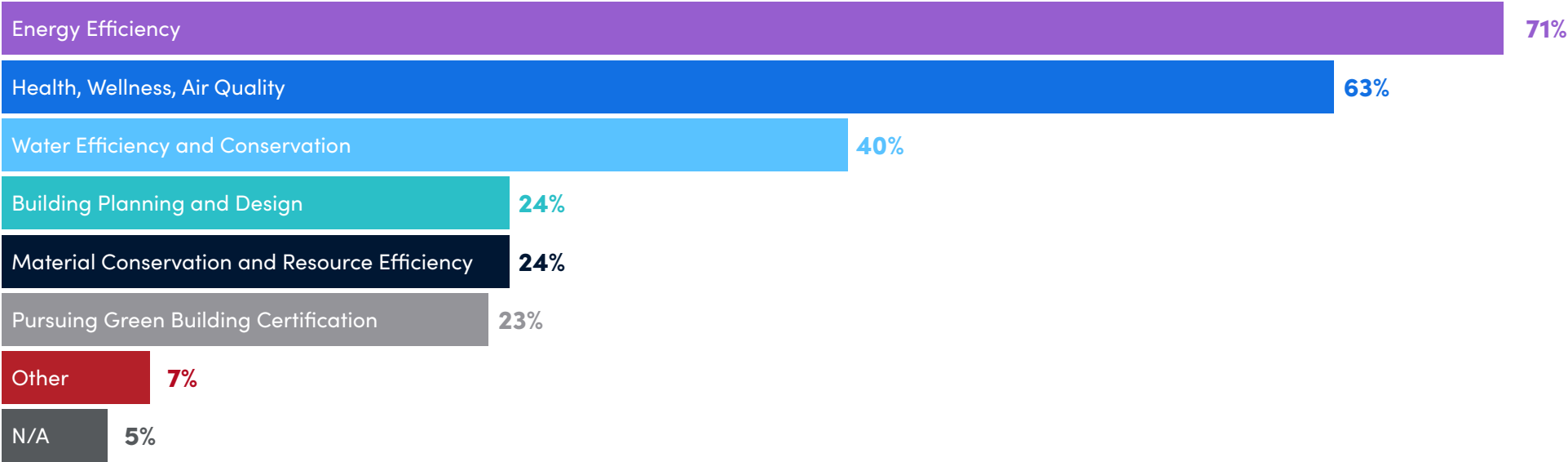
Part of this demand is certainly organic, due to the pressing need to fill pandemic-related vacancies. However, according to the Building Engines/BOMA survey, the clear number two priority is energy management. Energy management is partly related to the tenant experience in the form of comfort and health and safety demands, but for tenants and investors alike, it appears

to also be a value. Therefore, the top two overall priorities are tightly related.

The third and fourth priorities—overall building operations and equipment maintenance—directly impact energy management. In other words, the top four priorities of survey respondents are all tied together and indicate that sustainability has become incredibly important to CRE.

Notably, the survey also found that among sustainability priorities specifically, 71% of respondents indicated that energy efficiency was their top concern. Health, wellness, and air quality was the second largest priority (63%), and water efficiency and conservation was the third (40%).

SUSTAINABILITY PRIORITIES FOR 2022



CRE Tech Helps Leverage Today's Biggest Sustainability Opportunities

Even as external pressure in its many forms is driving change and creating new challenges for the CRE market to overcome, it's also creating opportunities for investors and owners. Those who meet these expectations proactively will succeed. It's crucial to understand the current CRE landscape and the many ways of solving pain points while balancing ROI.

Green buildings are attractive to investors and tenants alike. That means they're increasingly valuable. The clearest and simplest way to signal that your portfolio is green is to achieve industry certifications for your buildings. There are several such certifications, such as Energy Star, LEED, and GRESB. Achieving those certifications requires actionable steps, including evaluation, renovations, and upgrades, and capital investment planning for both.

Technology can play a large role at all steps in the process. There's software available to help CRE firms use data to:

- evaluate and monitor facilities;
- suggest improvements; and
- plan and track ROI.

How CRE Tech Solutions Can Help Owners & Tenants Meet Goals

FOR OWNERS

- higher rents
- tenant retention
- lower service call volumes

FOR TENANTS

- increased comfort
- improve employee health and productivity
- fewer temperature complaints

↑ 10% Increase to the Bottom Line

3 Pillars of Sustainable Tech

1. AI-POWERED MAINTENANCE AND OPTIMIZATION LEADS TO BETTER OUTCOMES

Commercial real estate technology is innovating the way we operate buildings. The pandemic forced the industry to adapt to a new world. Intelligent buildings and automation are working to shape the future of CRE. That means owners and property managers need more information at their fingertips than ever before.

The lowest-hanging fruit in terms of improving efficiency involves AI-powered maintenance and optimization. For one, [Hank](#) software plugs into an existing BMS/BAS to implement real-time HVAC controls. Such software can:



Quickly reduce energy costs & consumption



Meet & exceed indoor air quality (IAQ) standards



Improve tenant comfort



Reduce the number of HVAC service calls

Hank checks to see if fans shut off at the right time, if filters are clogged, if refrigerant need recharged, and if sensors are working. By autonomously and remotely tracking and adjusting a building's HVAC system, it maximizes energy efficiency and therefore cost savings. In doing so, it also increases air quality and tenant comfort.

3 Parts of Intelligent Buildings and Automation

Mihir Shah, co-CEO of JLL Technologies, says the CRE industry is at the dawn of intelligent buildings and automation. And five years from now we'll be deep into intelligent commercial real estate. That means now is the time for owners and property managers to invest in technology that increases automation and efficiency. He notes three parts to intelligent real estate:

- **Intelligent Buildings:** Buildings with a modern [building operations platform](#) that digitizes all operations. Then, you add a [tenant experience app](#) that acts as a remote control to the building for access and amenities. You then round it out with tech that [addresses energy efficiency and sustainability](#), which can cut 20% off your annual energy costs.
- **Intelligent Spaces:** As hybrid work becomes a norm, this tech can help you understand the utilization of your space. Think in terms of desk hoteling, or a system for employees to book workspaces.
- **Intelligent Advice:** This is where you take in all the data for your building to create intelligent advice and useful insights. You can use these insights to make data-driven decisions that move your business forward.

ROI is built in. Because Hank software integrates with existing BMS/BAS systems, no new equipment is required. And because the software immediately works to automatically optimize HVAC settings, owners and operators can save 20% on a total energy bill. Better usage has the side benefit of prolonging the life of HVAC equipment, thereby reducing replacement costs in the long term.

2. A STRATEGY THAT MEASURES AND TRACKS CAN INCREASE ROI

Regardless of the optimizations building owners employ, a second pillar of a cogent CRE sustainability strategy is measurement. Buildings are full of equipment and lighting, and you need an effective and proactive way to evaluate and optimize what's there and plan for replacements.

For sustainability purposes, software like Hank and Building Engines' Prism platform allows building owners to see how much energy equipment is consuming and how to adjust for better efficiency. This ties into software that performs automated maintenance tasks on systems like HVAC.

The larger impact of an effective evaluation platform and strategy has to do with NOI, ROI, and capital planning. Improved energy efficiency usually results in greater NOI simply because of energy cost savings and prolonged equipment life. Armed with measurement insights, though, building operators can also get a clearer and more granular view into how and when to plan for capital improvements and replacements. More effective measurement leads to better ROI.

The ROI of Energy Efficiency

A 170,000-square-foot office building leveraged Hank. Results with the first year include:



\$50k
Annual Energy
Reduction



\$30k
Annual HVAC
Service Reduction



\$50k
Tighter Control to
Setpoints Across all Zones

3. INSIGHTS FROM REAL-TIME DATA HELPS YOU MEET GOALS FASTER

Building owners who handle and manage proactive maintenance, measurement, optimization, and who make effective changes, will be in a position to benefit from green certifications. In addition to the cost savings and improved energy efficiencies owners glean from these changes, green certifications like the Energy Star, LEED, and GRESB are marketable features.

However, there's a certain amount of documentation required for certifications. CRE software can help monitor key aspects like energy usage as well as where energy usage is coming from. For example, it matters for certification purposes where energy is purchased, and submitters need proof points to show that. The software also helps owners then submit all the collected and formatted information to certification bodies.



Your Playbook for How to Plan Ahead in a Constantly Changing World

For the CRE industry, there is no choice but to face the current and future climate change-induced sustainability challenges. CRE leaders must begin to do things differently in their buildings. Energy usage must decrease, and efficiency must improve. Tenant demands for healthier and more sustainable workplaces must be met.

The playbook for achieving these goals exists already, and it involves technology. With everything at stake, it's no longer an option. Technologies enable property teams to:

- enhance energy management practices;
- prioritize health, wellness, and air quality;
- perform proactive maintenance;
- prolong equipment lifetimes;
- measure and evaluate the effectiveness and efficiency of existing systems;
- plan for capital investments; and
- achieve key energy certifications.

There are many ways that property teams can move toward net zero carbon neutrality. Some require large investments, but many—including most first steps and software like Hank—do not require extensive capital and have strong built-in ROI. Technology can help in every case and is imperative at this point.

Though daunting, the need to cut carbon emissions rapidly and dramatically is important and presents an opportunity. Those willing to lean into green building construction and sustainable operational practices will see their portfolios perform better. Those who don't will be left behind.

“All building owners need at least some technology support. With everything at stake, it's no longer an option.”

How to Solve Your Energy Efficiency Issues

The Hank AI-powered virtual engineering solution empowers CRE companies with end-to-end HVAC and energy management. It's proven to help you solve many of the bottlenecks you face as you work for your buildings to become more energy efficient.

PROBLEM	HOW HANK SOLVES IT	NOI BENEFITS
You're under- or over-ventilating your building, wasting money and putting your occupants' health at risk.	Quickly increases or decreases fresh air exchange	• Improved tenant experience • Higher tenant renewal rates
You lack HVAC management, leading to poor visibility into how and where energy is being wasted.	Continuously identifies and executes ways to reduce energy consumption in real time	• Reduced operating expenses – Hank regularly saves 20% on energy bills.
You're getting excessive hot/ cold complaints from occupants, frustrating tenants and wasting engineers' time.	Proactively manages building temps to stay ahead of problem zones before they start, and adjusts HVAC automatically when complaints do come through	• Improved tenant experience • Reduced operating expenses • Save up to \$400 for each vendor service call

Are you ready to:

- ✓ Quickly reduce energy costs & consumption?
- ✓ Improve tenant comfort?
- ✓ Meet & exceed indoor air quality standards?
- ✓ Reduce the number of HVAC service calls?

About Building Engines

Building Engines, a JLL company, improves net operating income across the world's most successful commercial real estate (CRE) portfolios. Our customers increase revenue, deliver the best occupant experience, and reduce operating costs with Prism – the industry's most innovative and powerful building operations platform.

To learn more please visit: www.buildingengines.com



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Exceptional Building Operations. Extraordinary Business Outcomes.

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