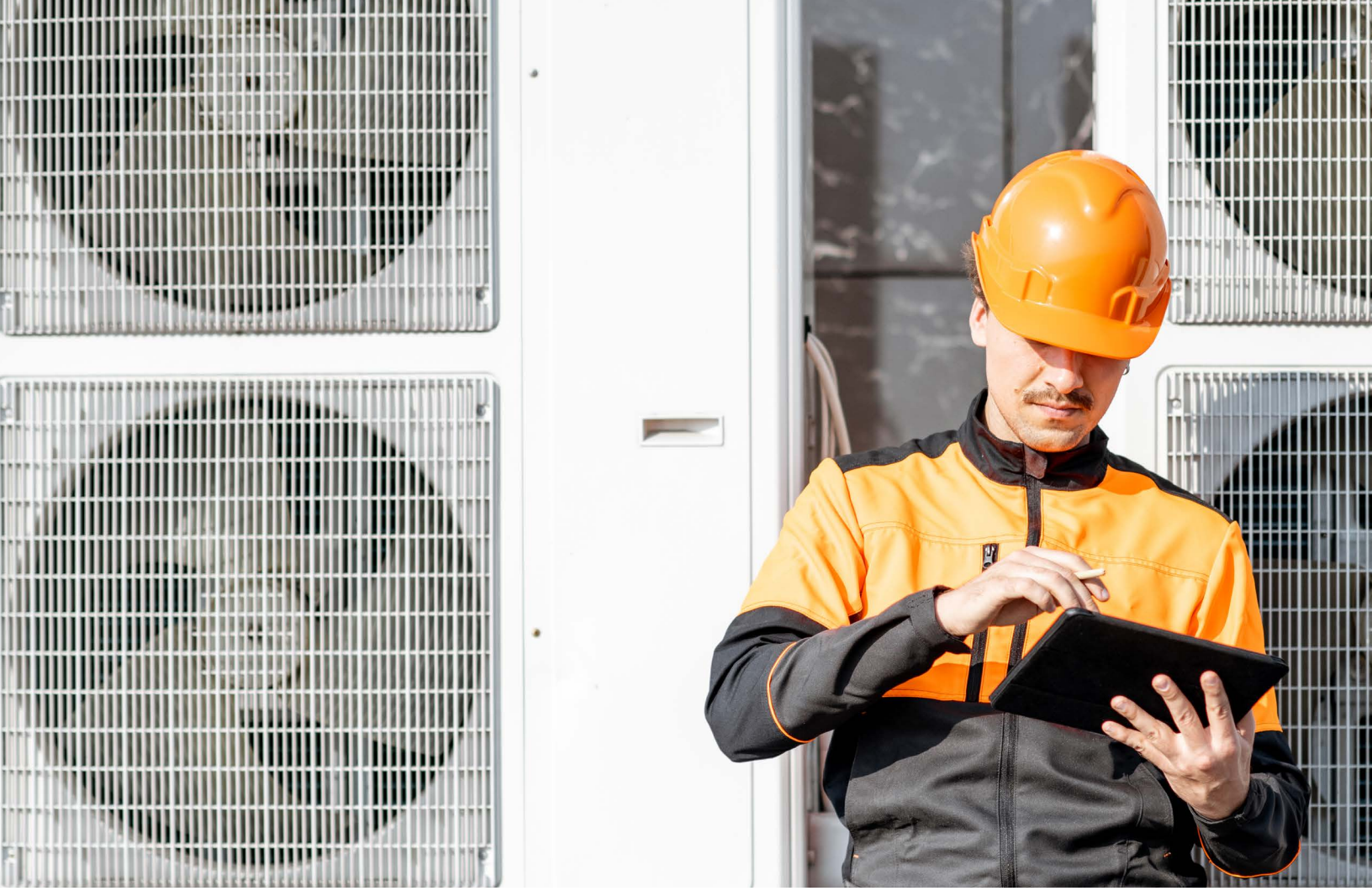

The ROI of HVAC optimization in commercial office buildings

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Challenges of your commercial HVAC system

Managing your commercial real estate portfolio is an expensive endeavor. This is especially true of HVAC systems in your buildings. They're a major capital investment, have complex and various parts, and are a crucial component of any high-NOI building. These climate control systems are the unsung workhorses of buildings, but they're not without challenges.

Tenant comfort requests

According to our CRE industry survey, 70% of commercial building tenant requests are for comfort issues, such as temperature complaints and after-hours climate control.

Which tenant requests are most common for you?

70%

Tenant comfort issues (ie., temperature too hot/cold, after-hours HVAC)

30%

Upgrades to tenant amenities

26%

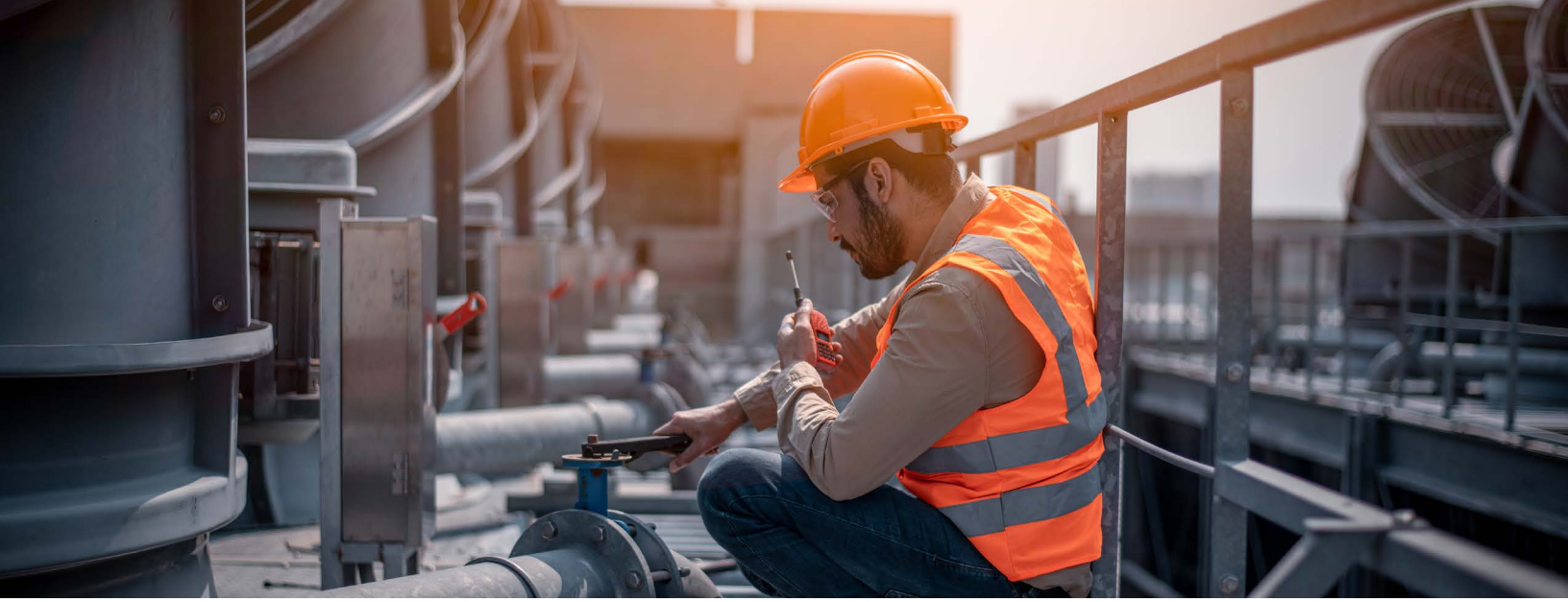
Faster responses to work order/maintenance requests

Cool mornings and warm afternoons can result in outdoor temps that span 20–30 degrees. This results in frequent "comfort swings," when tenants adjust the thermostat to offset the warm or cool outside temps. Some regions experience high humidity, causing your HVAC to run more frequently to keep building occupants comfortable.

Health and wellness are also stronger priorities now, in the aftermath of the pandemic—which means your HVAC has to maintain ASHRAE standards for indoor air quality and ventilation.

Runtime during occupancy fluctuations

Occupancy fluctuations, always challenging, are looming large now in this new world of work. Recent research from McKinsey shows that 87% of employees want a hybrid work model. Yet the average occupancy rate of commercial offices is 47%. Though you rely on your building automation system (BAS)/ building management system (BMS) to control HVAC usage, it simply cannot predict temperature fluctuations and make micro-adjustments in real time to maintain the setpoint.



Useful equipment life

Long runtimes incur high costs and increase the wear and tear on your equipment. HVAC hardware can run into the hundreds of thousands of dollars, and you want to do everything you can to extend its useful life—and not have to rip and replace or make costly, unnecessary upgrades.

High costs

Running your HVAC to meet these demands (or risk losing tenants) requires energy and lots of it. These costs eat away at your bottom line and hinder your sustainability goals. HVAC costs account for:

- **50%** of total energy consumption
- **20%** CRE operating costs

Rising energy costs only compound this. The European energy crisis has driven up the price of electricity, and that trend is expected to continue for the foreseeable future. According to the US Energy Information Administration, a 1.5–2% increase in US electricity prices in the commercial sector is expected this year and every year, which means you're paying more for energy now than when your buildings were full.

Tenant- and community-driven sustainability expectations

Driving high NOI and attracting high-quality tenants requires strong environmental and social governance (ESG). Increasingly, commercial tenants seek to lease buildings that employ multiple sustainability strategies and technologies.

Properties with environmental certifications command higher rents than ones with higher carbon emissions.

Plus, residents in the communities where your buildings are situated don't want polluters in their neighborhoods—not to mention that being seen as a business that doesn't care about the environment hurts your brand reputation.

Sustainability trends in commercial real estate

One JLL study revealed that CRE industry priorities are shifting toward increased sustainability, reduced emissions, and investment in technologies to achieve these goals:

- **61%** of CRE professionals are prioritizing energy efficiency and expense reduction.
- **49%** of CRE property teams are investing in energy management/sustainability technologies.
- **24%** of industry pros are prioritizing ESG reporting.
- **20%** of the industry has its sights set on the path to net-zero emissions.

You can no longer afford to be complacent or indecisive when it comes to your ESG and sustainability goals. Tenants, lawmakers, and communities demand responsible stewardship of the environment. **And optimizing your costly, energy-hungry HVAC system is one key way to increase energy efficiency and curb your emissions.**

Benefits of an optimized HVAC system

Considering that HVAC use accounts for half of the total energy consumption of your commercial office buildings, why wouldn't you optimize yours with AI-based technology that can predict space-temperature fluctuations, extend the life of your equipment, and slash tenant comfort complaints? Those results alone deliver a massive return on your investment.

But the benefits aren't strictly monetary.

Tenant comfort

When your HVAC system predicts temperature fluctuations in a world where offices are less than half-full most of the time, it can adjust the temperature to compensate. When there's little deviation from the tenant setpoint, no matter the time of day or number of people in the office, there are fewer complaints. Fewer complaints equal happier tenants, and happier tenants mean less churn in your real estate portfolio and higher NOI.

Sustainability goals

Imagine you could improve sustainability metrics for your entire portfolio, enhance your brand's perception, and be more energy efficient. An HVAC system powered by machine learning and AI does just that, and it can also help your buildings qualify for key energy incentive programs—furthering your ESG goals and improving your bottom line.

Improve your bottom line

More energy efficiency, less energy use, less equipment runtime, less wear and tear—it's easy to see how an intelligent, optimized HVAC system saves energy costs and results in lower operating expenses.

And with fewer tenant comfort complaints and being able to tout your HVAC as more eco-friendly, your buildings can command higher rents and attract more top-tier tenants, which raises your NOI.

Customer story: Nome Capital saves big with Hank

Nome Capital Partners purchased a newly renovated building which was 98% leased.

Challenge

Nome hired a company to provide an energy assessment of the building to reduce overall energy consumption and demand. The company made upgrade recommendations but offered no suggestions to improve the HVAC system. Additionally, the anchor tenant on the fifth floor had an upcoming lease renewal, and they were unhappy they couldn't maintain their setpoint when the building took on a high solar load.

Solution

Hank, from JLL Technologies, reprogrammed the existing system that was 100% reactive and depended on running all HVAC equipment at maximum consumption for 14 hours a day. Hank used machine learning to make micro-adjustments to the rooftop control by forecasting space-temperature fluctuations. This enabled precise control over the chiller plants, boilers, and air handler—ensuring predictable supply-air temperature during high-load periods. Hank also used predictive control to pre-cool the fifth floor before the solar load hit, to improve the key tenant's comfort.

Results

- **45%** HVAC energy savings
- **20%** total energy savings
- **60%** less deviation from tenant setpoint
- **2x** increase in fresh airflow
- **3- to 5-year** extension of equipment life

> "Working with Hank, we are seeing cost reduction not only in our energy bills but our HVAC vendor costs.
>
> **Ling Martin**
> *Asset Manager at Nome Capital Partners*

What is Hank, and how does it work?

What is Hank, and what does it do?

Hank, by JLL Technologies, is an AI-powered platform that integrates with your BMS/BAS (any platform/brand) to monitor and learn how the equipment operates. It uses machine learning to understand your HVAC system and then leverages AI to make micro-adjustments that optimize your system in real time—including settings for building pressurization, zone minimum airflow, and minimum damper position to maximize tenant comfort and minimize runtime.

Hank also leverages its AI, and its team of support engineers, to serve as your building's virtual engineer partner—ideal for properties with a part-time (or no) onsite engineer.

Benefits of Hank

Simply put, Hank can do everything you want from an AI-powered HVAC system—without any capital expenditure. With Hank, you can:

- Reduce your energy consumption by 20% (typical outcome).
- Slash temp-related tenant complaints.
- Exceed indoor air quality standards.
- Extend the life of your HVAC equipment.
- Detect and report faulty equipment in real time.
- Reduce your HVAC-related operating costs.
- Improve operational capacity of the onsite building staff.
- Reduce deviation from tenant setpoints.
- Minimize your dependence on costly contractors.
- Increase your NOI by making your building more attractive to tenants.

Conclusion

When you choose to supercharge your HVAC with Hank's powerful AI platform and machine learning capabilities, your energy costs will drop, your tenant complaints will dwindle, and your NOI will go up—all with no capex. Sound too good to be true?

It's very real—see for yourself with a free Hank assessment in one of your buildings.