



Guide to unlocking operational savings across a commercial portfolio

CIM's playbook to help property owners and operators seize maximum cost benefits at the operational level.



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Executive Summary

Ground your cost-cutting strategy with software

Against the backdrop of ballooning expenses and an uncertain market, minimising costs across commercial property portfolios has never been more important. The sector is being confronted with multiple headwinds ranging from structural changes in work habits and rising interest rates, to the spiralling costs of labour, energy, and maintenance. Fortunately, there are counteractive mechanisms at the disposal of owners that are actionable, impactful, and relatively inexpensive.

In our experience monitoring countless buildings globally for nearly a decade, analytics software is the common thread that binds together the most effective cost-cutting strategies. A selection of these make up the central theme in this guide, with smart technology adoption at the heart of each:



Monitoring plant and equipment

Avoid the 10-30% of wasted energy that would otherwise be lost to energy drift.



Optimisation strategies

Reduce energy consumption by upwards of 15% and extend equipment life cycle by an average of 2 years.



Data-driven maintenance

Cut planned maintenance costs by at least 20% through the streamlining of contracts.



Operations team productivity

Boost the productivity of your operations team and the whole supply chain by embedding a tech-enabled collaborative workflow.

** Estimates only, based on what CIM's clients have achieved.*

Monitoring

Keep a constant eye on your portfolio

Energy represents a significant portion of operational costs, with estimates attributing up to 30% of a given building's outgoings to energy consumption. In fact, the United Nations Environment Program attributes 36% of the world's energy use to buildings, while in the United States, this figure rises even further to encompass 40% of the nation's energy consumption. This demonstrates the sheer scale of opportunity for the property sector to contribute to global emissions reduction targets.

There are several strategies that your organisation can use to derive consistent and incremental energy savings, the impact of which can be amplified when combined with the right technology stack.

Continuous asset monitoring is foundational to identify energy cost-cutting opportunities across a portfolio. It offers a high-level view to quickly detect and resolve inefficiencies, with the ability to drill down further to the building or equipment level.

Initial data gathering from monitoring enables you to define a benchmark regarding performance. It can also help you find and address 'bad actors' early. The type of questions you'll be able to answer from asset monitoring include:

- Which properties aren't meeting performance standards? If you know, you can prioritise those that are performing poorly and assign resources accordingly.
- Which properties are excelling in terms of efficiency? Learnings from these can be applied, where practical, to others.



- At what rate are team members and contractors closing out issues? With this information, you can maintain accountability, reward high performers or deliver targeted training to accelerate productivity.
- Which manufacturer has the most performance issues? Knowing this can support more proactive maintenance and a re-evaluation of your preferred list.

Energy savings across your portfolio through monitoring become scalable with digitisation. Digitising your portfolio requires an analytics-led automated fault detection and diagnosis (AFDD) platform like PEAK. By connecting to the BMS and combining multiple data sources, it provides a layer of confidence that complex plant and equipment is being intelligently monitored for issues that might be unnecessarily draining resources. The use case below illustrates the power of AFDD analytics to pinpoint energy saving opportunities across a vast portfolio of close to 60 commercial sites.

The essence of these savings is the prevention of 'energy drift'. In general, when it comes to consuming energy efficiently, buildings do not perform as well as they did when they were first built, and the gradual loss of this efficiency is known as energy drift. It happens for various reasons, including mechanical wear and tear, overnight operation, alterations to BMS controls, schedule overrides, fire alarm failures, fit-out activity or human error. According to research from Texas A&M University and the Lawrence Berkeley National Laboratory, buildings can lose as much as 10-30% in energy efficiency every one to two years, only to 'drifts'.

When it comes to drift, monitoring is essential to prevent the hidden dangers of moving backwards (i.e. entropy). Setting baselines is particularly important in a post-COVID environment where plant and equipment may have not been optimised for the correct loads. 24/7 monitoring of equipment allows you to identify and rectify failures immediately, preventing massive triggers of drift. An added benefit of optimised energy consumption is the lifting of sustainability ratings, which are critical to marketability and justifying a 'green premium'. Our UK research found a staggering 94% of tenants are willing to pay more for a greener office space.

 SOFTWARE IN ACTION

Monitoring drives efficiency across Charter Hall's vast office portfolio

Propelled by a vision to harness the power of a digitised Office portfolio, leading property group [Charter Hall](#) has been reaping the benefits of an operational model driven by data and technology since establishing a partnership with CIM. Supporting Charter Hall's digital transformation journey, CIM's PEAK Platform provides building analytics across 58 properties covering 1.45 million square metres. Key partnership highlights include:

- **Visibility:** Continuous monitoring of nearly 243,000 streaming points from more than 28,000 pieces of equipment.
- **Consolidation:** Combining 13 data providers into 1.
- **Efficiency:** 19% drop in electricity consumption, equating to 17.4 million KWh of energy saved since 2019, 12,000 metric tonnes of (CO2) avoided.
- **Sustainability:** Nearly half of all properties increased their NABERS Energy ratings, with an average portfolio improvement of 0.18 for Energy and 0.14 for Water.
- **Comfort:** Ideal indoor environment conditions maintained 91% of the time, up from 84% pre-deployment.

Optimisation

Improving efficiency through optimised control strategies

Optimisation is another strategy which offers fast returns for minimal cost outlay. Put simply, optimisation seeks to maximise the operational efficiency of existing plant and equipment. With real-time insights derived from your monitoring efforts, you will have accurate baseline data as guidance on how to optimise your assets' operating condition, facilitating peak performance.

You'll know where to reduce drift, and how to improve the efficiency of the most important plant and equipment, including HVAC, air compressors, equipment, coolers, boilers, AHU's, and so on. The analytics you have set in place should help the platform to easily identify when these optimisations are not happening. Together with monitoring, optimisation can easily reduce energy consumption by upwards of 15% and extend equipment life cycle by an average of 2 years.

Consider the results of an *International Refrigeration and Air Conditioning Conference [study](#)*, which quantified the energy impact of common building faults in the USA. The study reported that thirteen key faults across commercial buildings typically increase their energy consumption by 4-18%. Optimisation strategies seek to address these. HVAC systems typically use more than 60% of a building's total energy consumption and up to a third of that energy is often wasted due to malfunction, performance degradation and improperly tuned controls.



Some of the most common faults include:

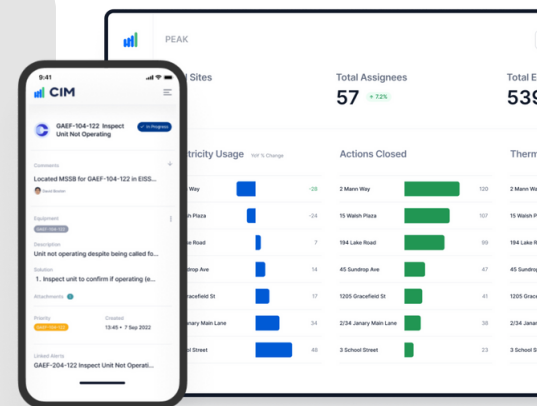
- Software programming errors, such as improper setpoints or equipment operation setups.
- Unbalanced airflow, insufficient evaporator airflow, or dampers not working properly.
- Improper controls hardware installation, such as poor thermostat location, improper commissioning, or controls failures.
- Waterside issues, such as valves not closing properly.
- Refrigeration circuit issues, such as air-cooled condenser fouling or improper refrigerant charge.

When supported by robust software-derived analytics data, simple tweaks to the BMS can drive efficiencies, reduce energy usage, and lower your carbon footprint, all without compromising tenant comfort. For specific recommendations from our AI-powered algorithms, check out our [‘Optimisation tips to improve your buildings sustainability performance’](#). We cover everything from outside air temperature lockouts and boiler heating calls to night purge and economy mode operation.

Achieve your advanced building optimisation goals with PEAK

We're actively helping the world's major property players identify opportunities to use plant and equipment more intelligently.

[Learn more](#)



Analytics-led optimisation facilitates 80% reduction in gas usage

The owner of a heritage-listed Australian office building engaged CIM to deploy their PEAK Platform in mid-2019. A recent highlight from this partnership is a staggering 80% reduction in gas consumption, achieved through optimised controls.

The platform’s gas monitoring identified excessively high usage during the Summer months, with a rule-triggered alert that the hot water system was operational despite high outside air temperatures. This prompted a deeper analysis to evaluate a more optimised approach to the operation of the AHU. The recommendation centred around a revised control strategy whereby the air dehumidification process would use dew point temperature as the preferred parameter to control the AHU.

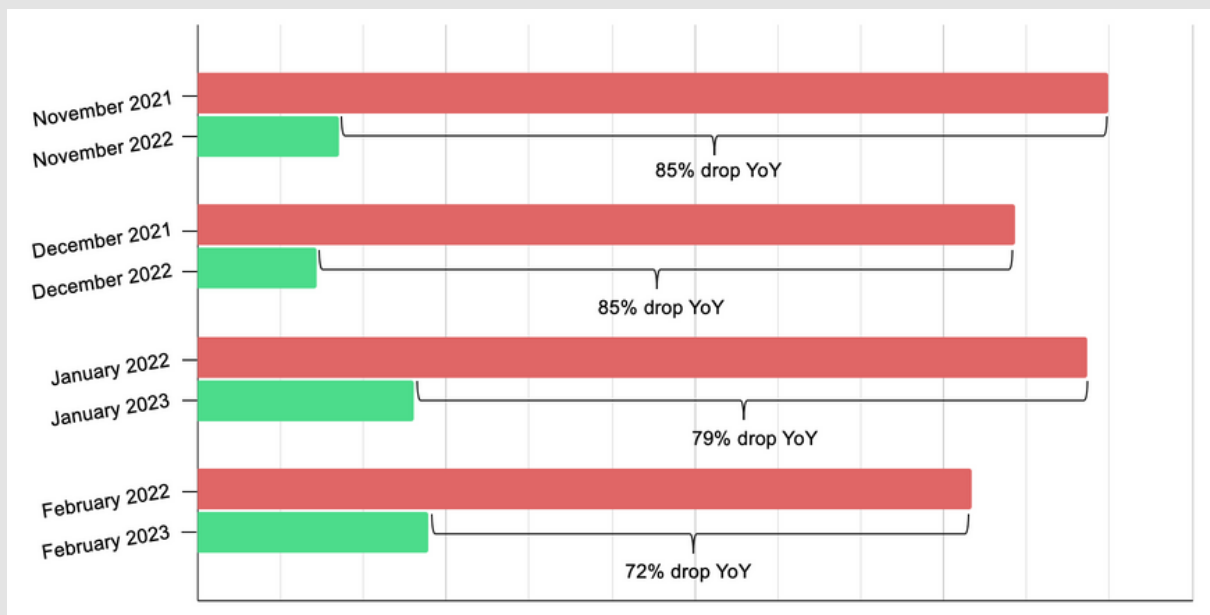


Figure 1: Gas usage at the building in question was significantly lower in the Summer of 2022/23 compared with the previous Summer of 2021/22, representing an average reduction over the 4 months of 80%.

Data-Driven Maintenance

Leverage analytics to streamline maintenance contracts

Planned Preventive Maintenance (PPM) and Unplanned Maintenance (UPM) have historically been the most common types of facilities maintenance. While still very common, both approaches are a huge drain on resources. PPM often requires contractors to check equipment that is fully functional, while UPM occurs purely on a random or reactive basis resulting in highly uncertain budget allocation.

The more efficient alternative is Data-Driven Maintenance (DDM), a methodology favoured by progressive early-adopting property owners. Rather than a contractor regularly checking VAV's or sensors that are working just fine, they can organise their maintenance schedules in a far more targeted manner. For example, [DA19](#), Australia's definitive reference manual for HVAC&R maintenance, specifies the frequency with which equipment is to be manually checked as part of planned maintenance schedules.

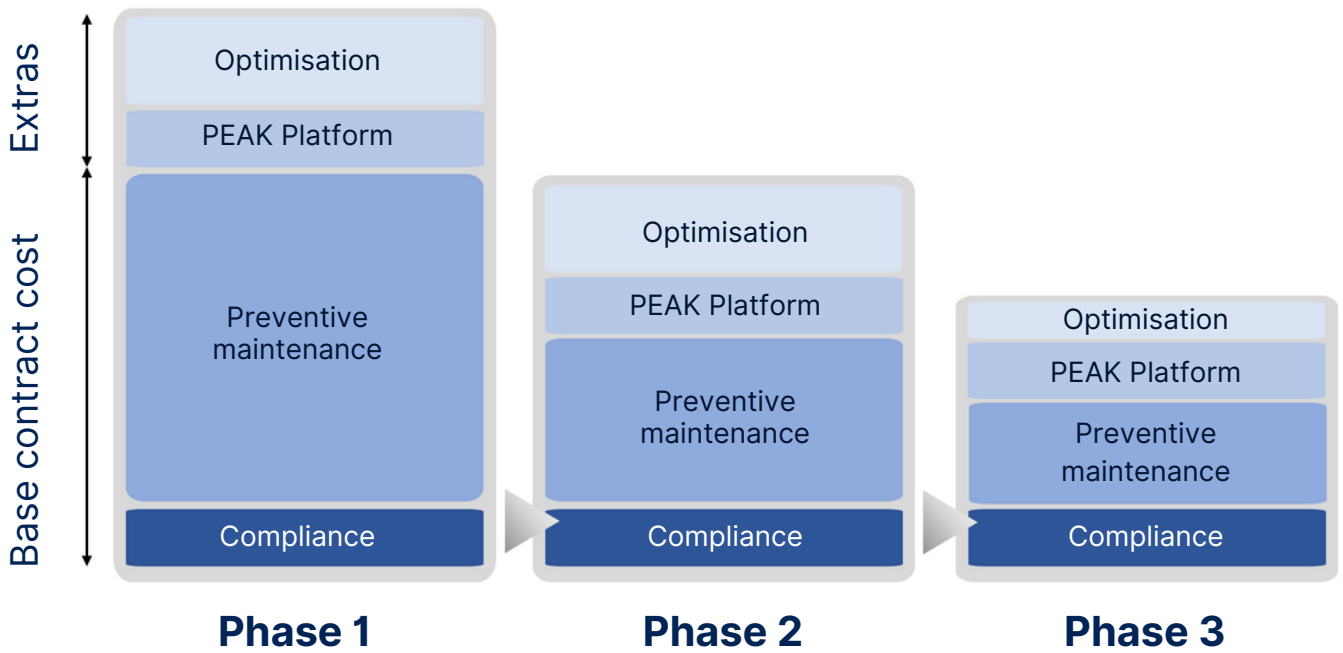
Adjusting this approach with the help of analytics has implications for the negotiation of maintenance contract costs which, with the help of an advanced analytics solution like [PEAK](#), can be reduced by more than 20%. This, coupled with the inevitable energy efficiencies that come with more targeted maintenance, presents a significant cost-saving opportunity.

By directing maintenance to real issues, DDM can:

- Reduce onsite maintenance hours and cost
- Utilise building's data to identify inefficiencies and incorrect operation
- Prioritise necessary maintenance work over routine checks
- Improve plant operation and extend lifecycle
- Evaluate contractor performance against target KPIs



To illustrate this over a series of implementation phases, the figure below breaks down plant and equipment maintenance costs as DDM, contracts and analytics software are gradually embedded across a portfolio. Phase 3 reflects the ideal ‘sweet spot’.



Phase 1

Planned preventive maintenance forms a significant portion of overall maintenance costs, while the costs associated with analytics and optimisation are additional.



Phase 2

Maintenance contracts are realigned to comply with DDM. Planned preventative maintenance costs are significantly reduced, while the ‘extras’ of analytics and optimisation are now captured within the base contract cost.



Phase 3

An ongoing regime after the initial R&M and optimisation backlog has been cleared. Costs are reduced even further across the board.

The case study below illustrates how the PEAK Platform has enabled this strategy, facilitating improved performance, extension of equipment lifecycle and efficiency for one of the world's leading diversified investment firms QIC.

SOFTWARE IN ACTION

Data-driven maintenance drives 5-year extension to chiller lifecycle for QIC

By leveraging PEAK, QIC has been able to implement a highly effective DDM program, whereby maintenance contracts and their associated schedules are far more efficient, economical and effective. In one standout example at Watergardens Shopping Centre, equipment ageing suggested that 5 out of 6 chillers needed replacement in 2020. PEAK conducted an in-depth analysis and found that only one required an immediate upgrade. The control strategies for the existing chillers were updated, resulting in **13.5% savings** on Chilled Water Consumption without compromising customer comfort. Five existing chillers are expected to upgrade in 2025, delivering a **five-year** lifecycle extension.

Damien Stacy, QIC's National Capital & Planning Manager said, *"Scheduled maintenance checks and servicing is now a thing of the past as the data helps us determine precisely when and where maintenance is needed. We can now actively anticipate and prevent equipment breakdowns which means equipment is more likely to last its specified lifespan, and we don't have to resort to costly fixes or replacements."*

Supply chain productivity

Tools-enable your team for improved productivity

Any commercial building is under pressure to do more with less, as labour gaps exist and will persist. The cost of hiring new headcount and engaging third party contractors and consultants is increasing, too. To address this, optimising labour and maximising productivity are the logical counter mechanisms. Data-driven facilities management bolstered by analytics software results in material productivity gains, equating to substantial portfolio cost savings.

Given the nature of facilities management and property operations, we advocate for prioritising strategies that foster collaboration. But why? Why is collaboration at the heart of boosting supply chain productivity and contributing to wider cost-saving measures?

The power of collaboration

Put simply, collaboration is good for business. Enabling effective team collaboration between all stakeholders — Facilities Managers, BMS contractors, mechanical contractors, Asset Managers and consultants — is imperative to reap cost savings through efficiency, productivity and asset performance. Fostering a collaborative partnership mentality in property operations enables:

- **Shared accountability:** A truly collaborative environment is one where communication doesn't occur in silos. A transparent workflow system allows for this, ensuring lines of accountability are never blurred.



- **Efficiency:** When remote stakeholders are part of the conversation within one hub, the group can collaboratively identify and resolve issues as soon as they arise. With that immediate response, you'll avoid wasted time, energy and resources.
- **Cross-functional synergy:** Operations teams are now wearing more hats than ever and need to be empowered through collaboration, support and spanning leadership. Spanning leadership is a management style that recognises the various skills of direct reports. It ensures a team is well-balanced and individual's expertise are valued and fully leveraged.
- **Resilience:** Adopting a culture of collaboration can strengthen operational resilience. The property sector is dynamic and ever-changing, necessitating teams that are agile and adaptive. Studies have shown that a collaborative approach has a positive impact statistically on the overall resilience of a firm, defined as the *"ability of a company to bounce back from, or even resist, a large disruption"*.
- **Shared wins:** A culture of collaboration increases effective task completion by at least 50%. Alignment on a shared vision and set of goals means that accomplishments are team-driven, delivering more wins while lifting morale in the process.

How to embed a productive and collaborative workflow

With the right tools to guide operations teams, the above benefits aren't impossible to obtain. The answer is, again, technology-enabled digitisation through software. The PEAK Platform, for example, supports an operational workflow that is smart, productive, efficient, collaborative and transparent. It does so by:

- Enabling contractor management within the Actions Manager, allowing users to assign tasks quickly and ensure accountability. Open collaboration features keep the entire communication loop transparent.
- Limiting unnecessary callouts and meetings with PEAK's centralised workflow module. Continuous communication in one hub allows team members to focus on issue resolution, particularly the high-priority ones as they are presented based on impact.

- Minimising the unnecessary noise and alarm fatigue that is characteristic of many other systems. Users don't find the platform a noisy distraction, with less than 1 in 13 alerts muted.
- Improving productivity by upskilling team members. PEAK's advanced analytics engine empowers more informed decision-making by FM's and contractors. Ready access to data helps them better understand the footprint of their buildings, enhancing their knowledge and expertise.
- Reducing duplicate work. The platform provides a cleaner workflow system with shared visibility to eliminate duplications. Centralising workflows reduces time spent on meetings, emails and follow-ups by capturing a complete digital history of issue progress.
- Accessing end-to-end visibility to create a single source of truth for all comments, screenshots, photos and documents. This information gives teams more context for current problems and can inform future decision-making.

Building these workflows with disparate tools or trying to do it internally won't likely deliver the results you expect. You need a comprehensive toolkit that puts all the pieces together for you, as the PEAK Platform has done for so many portfolio clients already. A platform must be benefit-led and usable if it is to be fully leveraged; PEAK subscribes to this, as evidenced by the platform's highly engaged user base attributing a 4.6 out of 5 star average rating on [Capterra](#). The resulting gains in productivity free up team resources and capacity for higher value work like tenant engagement and community building. Find some user feedback on the following page.




SOFTWARE IN ACTION

Transforming an HVAC technician's workflow

To demonstrate the real-life application of DDM, let's look at how PEAK has transformed an HVAC technician's workflow. In this [case study](#), David explains how PEAK's analytics engine guides him as to when and where maintenance and repairs are required.

David explained, "I wouldn't get nearly as much done if it wasn't there. I normally have to go through and find all the issues myself, but the platform makes some really good pickups for me to prioritise."

David identified four key areas in which PEAK has markedly improved the efficiency of his maintenance checks and boosted productivity:

- Greater **focus** on the most critical issues.
- Ease of use in the field or **remotely** with the ability to review a digital history of all jobs.
- Elimination of the back-and-forth between different trades, as all **communication** happens on the platform.
- Less time spent writing service **reports**.

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"We have learned about issues related to our facilities which we never knew we had! As a manager of the facility, I have far more visibility and awareness than I would have with the BMS alone. Working with the CIM team is a pleasure and a learning experience every day."

- Engineering & Facilities Manager, UK

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"I love the fault alert system and the fact that we can create actions for those faults and assign them to specific contractors for follow up. The actions tab also has a graph to see the trend and the fault trigger logic. The overall workflow is efficient and user friendly."

- Services Manager, Australia

About CIM

CIM delivers innovative building analytics software that helps run large buildings at their peak performance. Our award-winning SaaS solution, the PEAK Platform, integrates building intelligence and machine learning to improve efficiency, sustainability and comfort across property portfolios. CIM's customers include large real estate investment trusts, superannuation funds, governments, major cultural institutions and property portfolio owners and operators globally.

The platform empowers property teams to work smarter and more collaboratively - generating significant operational efficiencies across properties or entire portfolios. Critical operational activities are automated and the completion of key tasks are accelerated by leveraging digital workflows across the entire supply chain.

What does the PEAK Platform give you?

01

Prioritised alerts with detailed fault identification & solutions to limit alarm fatigue.

02

Effortless 'Click to Assign' workflow, so contractors can fix issues before they escalate.

03

Deep dive & interrogate building performance, today and historically.

04

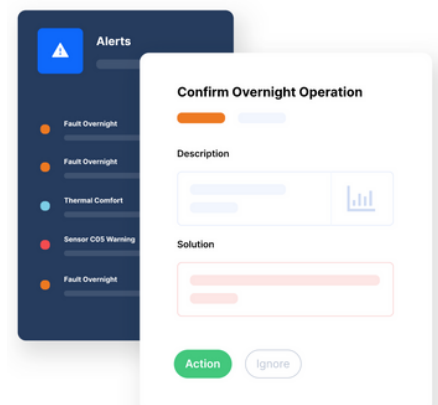
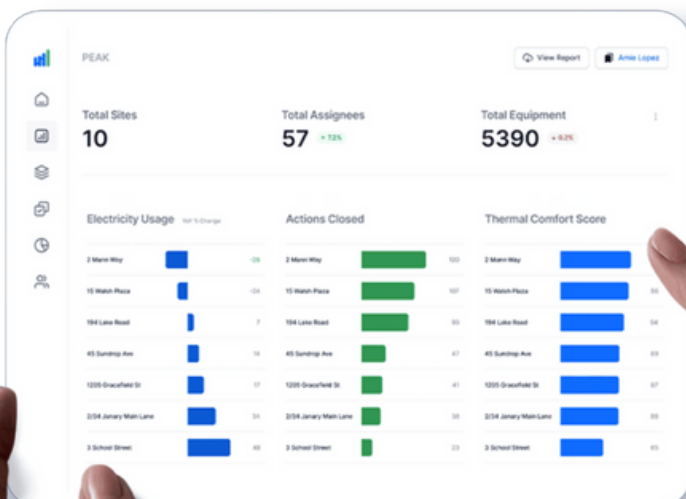
Centralised tracking of contractor performance across multiple buildings.

05

Address issues like temperature and humidity before a tenant complains.

06

Deliver sustainability wins to drive environmental impact.



Unlock cost saving opportunities by deploying the PEAK Platform at your property or portfolio.

Get in touch with the experts at CIM today.

 [Request a callback](#)

 Email us at smarterbuildings@cim.io

 Learn more at cim.io

 **CIM**