

White Paper

# Sustainability goes mainstream in retail

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## **About Mantis**

Mantis Innovation is the premier provider of smart, sustainable solutions that deliver better building performance, improved energy efficiency, and optimized budgeting through managed facility services and turnkey program management. Mantis leverages expertise from a vast array of professional disciplines in engineering, comprehensive data collection and analysis, technology-enabled solutions, and a network of trusted partners.

We offer a full suite of services including; strategic energy procurement and demand response; climate impact reduction and reporting; solar, roofing, building envelope, HVAC, and pavement, assessment, capital planning, design, and construction management; and lighting, HVAC/mechanical and building automation systems improvements and implementation. Mantis is headquartered in Houston, Texas, with office locations across the United States from Massachusetts to Washington.

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## Facilities sustainability in the retail sector

Leading merchandise, services, grocery, and other retail businesses across the U.S. are decarbonizing and becoming more sustainable — while reaping tangible business benefits along the way.

Last year, Big 4 accounting firm Deloitte released the 2023 editions of two landmark reports: <u>Global Powers of</u> <u>Retailing</u> and its <u>CxO Sustainability Report</u>. One cross-cutting theme rang through loud and clear: sustainability has gone mainstream in the retail sector.

Nearly 3 out of 4 CxO interviewees had increased their company's sustainability spending in recent years. Many ranked climate change a "top three issue" ahead of seven other traditional business concerns, such as competition for talent and supply chain issues.

**Looking ahead**, it's also clear that issues such as embedding sustainability practices into operations, leveraging technology to enhance sustainability efforts, and addressing ESG-related regulations and frameworks will become increasingly central to facility managers' ongoing role at the heart of retail sustainability.

This tipping point has been building for several years. As early as 2021, more than three dozen of the largest retailers in the U.S. had set science-based targets, **reported the National Retail Federation** (NRF). At last year's **NRF 2023 trade show**, sustainability was on display — and on the agenda. One of the big takeaways: "every retail role is a sustainability role," including facilities management and operations.

Now, more retailers than ever are putting sustainability into action like never before.



## Retail facilities leading the way on corporate sustainability

Momentum behind corporate sustainability is at an all-time high. In November 2023 <u>Net Zero Tracker reported</u> that more than half the world's 2,000 largest public companies had committed to reach net-zero emissions, up 40% from the previous assessment in June 2022. And in February 2024, <u>Bloomberg New Energy Finance</u> (<u>BNEF) noted</u> that corporate clean energy buying reached new record levels in 2023.

While it can sometimes feel like it's the tech giants of the world (and their data centers) making sustainability headlines, it's the retail sector that's often been leading the way across seemingly every front of sustainability and decarbonization.

- Excelling at ENERGY STAR: The U.S. EPA's ENERGY STAR <u>Certified Buildings and Plants registry</u> recognizes commercial facilities for superior energy performance. As of mid-March 2024, the list included more than 10,000 retail spaces supermarkets, retail stores, convenience stores, bank branches totaling more than 700 million square feet.
- ▲ Going big on green power: Founded in 2001, the U.S. federal government's <u>Green Power Partnership</u> lists organizations at the front of the pack buying clean energy. Among the Top 100 nationally across all sectors, retailers make up 20% of the top 10 and almost 20% of the top 30. Among the retail sector only, as of late January 2024 the top 30 retailers totaled more than 13.4 billion kilowatt-hours of green power, equivalent to the annual electricity use of more than 1.2 million average American homes.
- Shouting solar from the rooftops: According to SEIA's most recent Solar Means Business report from 2022, retailers dominate the top 25 for installed on-site solar capacity. Big box retailers like Target, Walmart, IKEA, and Home Depot; department stores like Macys and Kohls; and supermarkets and pharmacies like Walgreens and Albertsons are putting their rooftops to work.
- Making strides on distribution centers: Retailers often lease all or portions of distribution centers and have limited responsibility for the major energy-using equipment such as exterior lighting and HVAC. Leading retailers are starting to engage owners about upgrading these systems and adding solar, often prioritizing regions with <u>Building Performance Standards</u>.
- Accelerating electric vehicle adoption: Retailers are helping boost EV adoption and their financial bottom line by building out charging infrastructure in their parking lots. (March 2024 research from Consumer Reports documented a 4% increase in foot traffic and 5% increase in revenue from customers who shop while they charge; nearly 9 in 10 consumers made a purchase while their EV was charging.) Retailers are also bringing socio-economic benefit to communities in <u>EV charging deserts.</u> At supermarkets such as <u>Hy-Vee</u>, at big box retailers from <u>Costco</u> to <u>Walmart</u>, and at retail bank branches from <u>Bank of America</u> to <u>Chase</u>, retailers are full-speed ahead on the EV revolution.

With accomplishments and accolades like these — and much more as-yet-untapped potential — it's no surprise that NGOs like <u>Environment America</u> see sustainable retail facilities as future anchors of their communities and the U.S. clean energy transition.



## Multi-system controls integrations and lighting improvements at Gerber Collision

**Challenge:** With locations across the U.S. and Canada, the leading auto collision & glass provider manages nearly 1,000 locations, with acquisition sites added regularly. To improve performance, reliability, and cost control — while ensuring it met new light level certification requirements — Gerber sought strategic updates to aging lighting infrastructure, levels, and controls.

**Solution:** By conducting audits systematically across Gerber's North American portfolio, Mantis designed and built turnkey solutions for 200+ locations annually, integrating lighting, electricals, surveillance systems, and more with building controls when present through an energy management system.

**Outcome:** Mantis uncovered millions of kWh savings with improved controls and LED lighting that lowers Gerber's operational expenses significantly year-over-year. The collaborative project also solved visibility issues, enabling employees to better and more safely conduct repairs, and maintain compliance.





### 7 major business drivers for facilities sustainability in retail

Sustainability — including emissions-reduction and net-zero strategies — is not merely a "feel good" exercise for the planet. It's central to retail businesses on multiple fronts.

#### Greater budget certainty

Proactively replacing legacy equipment with smart, energy-efficient systems help retailers minimize unexpected CapEx and OpEx overruns. For example, monitoring energy usage and developing an asset inventory to identify older and less-efficient facilities helps prioritize the right replacements. And with the right building automation system (BAS) integrated with remote monitoring capabilities, facility leaders can pinpoint equipment that needs replacement — and budget accordingly with a single-pane-of-glass view into all the moving parts.

#### Stronger profitability

The retail sector has notoriously thin margins, where every bit counts toward the financial bottom line. From strategic energy procurement to equipment upgrades, reducing energy costs can have an outsized beneficial impact. Case in point: ENERGY STAR analysis found that every 10 percent decrease in energy use could **boost net operating income by an additional 1.5%**.

#### 3 Operational continuity

For retail spaces, staying ahead of potential operations issues (such as a leaky roof, refrigeration unit failures, or downtime due to HVAC failure) and climate-related risks such as flooding helps avoid two major disruptions to business operations: a) forced facility closures that keep retail customers away and b) lost inventory. For example, gone unnoticed, refrigerated case failures could potentially trigger millions of dollars in product loss. Retailers that manage efficient buildings and equipment with modern management systems get the visibility and predictive maintenance opportunities it takes to identify potential failures before they happen, reducing downtime and ultimately keeping doors open.

#### 4 Improved customer experience

Nothing disrupts the shopping experience like broken AC on a too-hot day. Practical sustainability measures like building envelope improvements and upgraded heating and cooling systems can help keep occupants more comfortable. Common sustainability practices such as daylighting do more than save energy on lighting; they enhance the shopping experience. In fact, one <u>commonly-cited study</u> found that daylighting yielded 40% more sales than comparable retail stores without daylighting.



#### Competitive (dis)advantage

Once upon a time, sustainability features were seen as a source of competitive advantage that could also justify a pricing "green premium." But as more retail leaders improve their sustainability posture, customers increasingly expect others to do the same. The result is now a "brown discount," which is essentially a penalty (i.e., competitive disadvantage) for doing nothing and failing to keep up with the proverbial Joneses on the sustainability front.

#### 6 Risk mitigation and regulatory compliance

Emissions-based buildings performance standards are on the rise, posing a growing risk for retailers that fail to keep up. Larger box stores above 25,000 square feet are also subject to <u>new U.S. SEC climate</u> <u>disclosure rules</u> that require they disclose physical risk (such as the acute or chronic exposure to the potential for wildfire or flood damage); transition risk (involving how a company adapts to changing policy and legal, technology, market, and reputational factors during the shift to a low-carbon economy); and for some, aspects of their GHG emissions.

#### Enhanced (sustainable) brand reputation

When it comes to retail, sustainability is about more than the brands and products sold on store shelves. It's also about the overall experience in the retail environment — and that includes your facilities. Both January 2022 market research from the Baker Retailing Center at the University of Pennsylvania's Wharton School and February 2023 market insight from McKinsey & Company both confirm that retail executives consistently underestimate how much consumers care about sustainability in retail. 75% of Millennials and Gen Z alike rank sustainability ahead of brand names when making retail purchasing decisions.

The net effect is clear: facilities sustainability is no longer the sole domain of a handful of early adopters. Sustainability is increasingly the new business-as-usual, making it more important than ever to "stay with the pack" and not get left behind — while tapping into the very concrete business benefits that come along with a comprehensive sustainability strategy.



## Energy efficiency at Price Chopper/Market 32

**Challenge:** Like many supermarket chains, Price Chopper/Market 32's outdated systems and long run-hours left it with high utility bills and old equipment in five of its stores.

**Solution:** The Mantis Efficiency Solutions team helped the retailer shape and implement a three-prong efficiency solution across the five sites including LED lighting, fan motors, and demand ventilation control.

**Outcome:** Price Chopper/Market 32 benefited from the sustainability program in several key ways, including: saving on annual maintenance costs, accessing the highest tier of utility incentives — in this case, qualifying for more than \$2 million in utility incentives, resulting in 125% ROI, and less than 1-year payback — all while reducing emissions and regulatory risk.





## The retail "departments" of sustainability and decarbonization

Like your favorite retail store, sustainability and decarbonization efforts for facilities managers usually have a number of typical "departments" you can expect to find — although they often come with special considerations for the retail sector.

Data and analytics strategy: Multi-site retailers need visibility across a range of categories to avoid costly disruptions and optimize performance while reducing emissions. Energy baselining data, for starters, gives retailers important visibility into how much energy a facility has used over a specific period of time, and the costs associated with it — exactly the kind of information needed to support future planning. When you add in an inventory of assets like HVAC and lighting, now a prioritized capital plan can be developed.

Ultimately, collecting the right asset and operational data, tracking data coverage, and being able to assess ongoing accuracy is all crucial to insight and can help retail facility teams motivate and track the required maintenance, repair and replacement tasks needed to safely steer the business toward net-zero emissions.

- The building envelope: Roofs, walls, and windows can help make the most of the energy used for building heating and cooling or actively waste it. From leaky roofs and poorly insulated windows to moisture-trapping walls, a facility's exterior may not be in as good shape as it appears.
- Lighting: Retrofitting facility lighting is usually one of the fastest, least disruptive, and most cost-effective ways for retailers to curb energy use now and into the future. New LED fixture technology together with advanced controls drive savings even further, from single fixture retrofits to highly controlled systems and comprehensive lighting design. Plus, professionally engineered lighting projects may qualify for utility incentives to offset upfront costs.
- Heating, ventilation, and air conditioning (HVAC): Representing an estimated <u>40%+ of a commercial building's energy use</u>, optimizing HVAC management is often one of the top ways for retailers to reduce energy use and costs as well as carbon emissions. HVAC equipment and mechanical system upgrades can be a major 20-year investment, however, so it's vital to look to both long-term outcomes and short-term, low-hanging-fruit opportunities.
- Energy procurement, management, and demand control: Energy is one of the top five operating costs for most businesses, making it an important part of a retailer's organizational strategy. From integrating <u>green power</u> with renewable energy credits (RECs) to facilitating no-risk <u>demand</u> <u>response</u>, today's retailers have a range of opportunities to reduce emissions and costs associated with energy procurement potentially slashing Scope 2 emissions in the process.



- Building management systems (BMS): Automating facility management with <u>advanced BMS</u> tools can improve building performance dramatically, from reducing time and labor costs with remote resolution, to ensuring the proverbial lights are on only when they need to be. With the right BMS tools and processes in place, in fact, retailers can expect to save an average 10–15% on energy out of the gate.
- Solar photovoltaic (PV) investments: <u>Rooftop solar</u> can be a win-win way to put real estate to better use. It uses one of the cleanest and most abundant renewable energy sources available, bringing down electricity costs, gives customers a visible example of a retailer's ESG commitments in action all while maximizing roof space and/or providing shade for cars and customers in hot parking lots.

For retailers, though, this is about more than low-cost solar reducing energy costs and carbon emissions. Solar also **boosts a commercial property's net operating income**, translating sustainability directly to the facility bottom line.

EV charging: As previewed earlier, EV drivers shop <u>where they can charge</u>. Engineering property-specific solutions across a portfolio is another way to check multiple boxes off the list: sparking brand reputation, winning over more customers, and supporting the electrification transition.

Make sure to understand financial incentives. For example, the Inflation Reduction Act **provides tax credits** of up to \$100,000 for the cost of installing EV chargers at qualifying business / retail store locations until 2032.

At the same time, it's important to enlist energy experts to help you understand how onsite EV charging **might impact a retail facility's overall electricity consumption and peak demand**, and resulting impacts on energy costs.

Refrigeration and cooling: A Making sure facility equipment like refrigerating coolers and air conditioning is aligned with today's requirements isn't all about coughing up precious budget dollars just to comply with the law. (Although that is key considering the <u>ban</u> on remaining production and import of R-22 and R-410A.) But the bigger story, for many retailers, is that newer equipment holds the key to more energy-efficient and environmentally friendly facilities, which leads to long-term cost savings.

Mantis is working with a portfolio of over 16,000 stores to deploy an energy management system that is monitoring key site data points (HVAC, etc.) and directing the facilities team to deliver maintenance, repair, and replacement tasks.



## Managing 225 MW of rooftop solar at a Top 3 retailer

**Challenge:** A major U.S. retailer had installed solar arrays on 500 stores — many of which had roofs that would not last the length of these new solar PV system contracts. Temporarily removing and reinstalling solar PV systems to attend to roof needs would cost the retailer \$350,000 per store. Corporate leaders turned to Mantis to align roof service life with solar lease length to avoid the costs of removing the array to perform roof replacement.

**Solution:** Working collaboratively, the Mantis project team assessed which roofs did not need attention, which could be aligned with repairs (125/500), and which would require removal and put-back of the array.

**Outcome:** Mantis provided a comprehensive repair plan to address which roofs could have their life extended to align with lease length, thereby avoiding excess cost. From planning, the team proceeded to plan, manage, and ensure quality on all repairs.





## The four-step pathway to high-ROI sustainability

Following are select pathways retailers take on the journey to managing regulatory risk and reducing operating cost, while meeting evolving investor and market demand for sustainability performance.

#### Get a "fast start" by understanding current performance and identifying lowhanging fruit

A critical first step for retailers on any sustainability journey is to quickly find early opportunities to reduce energy and maintenance cost, as well as manage local regulatory risk.

What are low- and no-cost opportunities for a fast start on energy savings? Which sites are "leaders and laggards" in energy cost per unit of square feet, productivity, sales, and other key indicators? The goal is to get a sense of total operational savings achieved by bringing laggards up to average in short order.

To power these insights, retailers need a thorough review of the relevant technologies currently in place — computerized maintenance management systems (CMMS), utility bill management, and energy management systems (EMS) — as well as analysis of the available asset inventory, such as HVAC, lighting, controls, and motors. Site visits, interviews, focus groups, and workshops may also be essential to engaging interdisciplinary stakeholders across real estate and facilities, energy, procurement, and IT to assess where things are, and where they could and should be.

A project team can thus gain a clear view of which facility updates make sense to prioritize now vs. down the line. Analysis should take into account a range of relevant information, from energy usage leases and asset inventory, to how local climate impacts affect performance and how peer retailers are performing in similar scenarios.



#### **Energy Performance Across Portfolio**

Floor Area



Project leaders should use this phase also to review service provider agreements, looking at how different services work together, or not, and how scopes could be scaled up or down as appropriate to improve various sites in a low-cost way.

Catching up to current regulations likewise counts as an immediate need for many retailers. Evolving federal standards, new SEC disclosure rules, and state and local building performance standards (BPS) can all put retailers at risk of fines for falling out of compliance. For example, if a retailer has buildings larger than 50,000 square feet and located in areas including Boston, Colorado, Seattle, Orlando, or California, they may face new sustainability-related regulatory risk exposure. Every retailer should consider which of their buildings have higher energy or maintenance costs than others, and investigate low/no cost ways to improve those facilities.

By gathering the data on current performance and low-hanging fruit like energy efficiency updates, project leaders can create "should costs" for archetype stores — and move aggressively to adopt low- to no-cost facility improvements.

#### Develop a big-picture decarbonization playbook

So, how does a retailer get from here to there? Which sites are the most vulnerable to risk, whether because of compliance issues or financial ramifications of operational instability and diminished customer experience, and therefore most urgent to address? And for each, how can programmatic and transformational changes be made as opposed to a series of one-off projects?

This step calls for closer analysis of the data and information collected in Step 1 to identify key actions, organized as a "Playbook", that includes recommendations for workflows, software, hand-held diagnostics tools, and a tracking scorecard to motivate the sites toward implementing the decarbonization projects and practices

This playbook should set the stage for the big-picture, multi-year view for medium- and long-term projects alike.



Multi-site retailers face a multitude of single-solution providers, such as for LED lighting or rooftop solar. These providers deploy one project at a time and will overlook higher-ROI opportunities, such as controls commissioning, for the solutions they offer. In sharp contrast, Mantis brings all facilities solutions under one umbrella and delivers a portfolio-level strategy that prioritizes high-ROI investments.



#### Prioritize and implement projects

It's time to plan for and implement more ambitious capital improvements over time, aligning efforts with facilities asset management strategy. This means looking deeper than energy cost savings to drive highly informed implementation of high-ROI projects, and prioritizing sustainability projects — from HVAC and lighting to virtual power purchase agreements (PPA) and carbon credits — based on ROI and impact.

This is the time to clarify the key value drivers associated with proactive decarbonization projects, such as reduced facility downtime and maintenance costs. For example, say a retailer has learned from the inventory analysis that it needs to invest in updating legacy HVAC to keep operations stable, knowing the equipment is beyond its useful life and could fail at any time. By looking at the long-term cost comparison of an efficient model versus a like-for-like replacement, the retailer would likely see that the more efficient model is worth a higher up-front price tag as it delivers higher ROI in the long run with both operational savings and performance down the line.

The entire list of decarbonization measures identified in the previous step should ultimately be fleshed out for implementation. What will it take to accomplish each task? What are the workflows and technology tools needed, and what does one person do versus another? What changes need to be made to contract structures for service providers? And finally, what needs to happen to build and foster a culture of sustainable energy management among a retailer's internal facilities team as well as its service providers?

By understanding the economics for any sustainability measure and formulating detailed implementation playbooks, retailers can plan measures out over time in a reasonable way that manages regulatory risk, stabilizes operational performance over time, and meets sustainability as well as business goals as a whole.

Mantis delivered a multi-year capital plan that prioritized energy-reducing projects using factors such as HVAC risk of failure, refrigerant regulations, incentives/rebates, and project specific economics (CapEx and OpEx savings) for a client with over 2,000 retail locations.

#### Account and report

Last but not least, no sustainability undertaking is complete without a plan for demonstrating energyrelated ESG performance by tracking improvements over time.

For this a multitude of key performance indicators (KPIs) need to be captured and tracked over time and across the portfolio, including cumulative carbon and energy reductions for ESG reporting as well as cumulative cost reductions.

In addition to giving regulatory agencies and sustainability stakeholders the data they need, ongoing monitoring can also help assure continuous improvement, by tracking critical maintenance, repair and replacements across the portfolio, together with charting rebates and incentives over time to ensure retailers capture the most value.



## Lighting upgrades at Big Y grocery

**Challenge:** Big Y World Class Market sought modernized lighting that would improve customer experience at strategic locations across Connecticut and Massachusetts — in a year when supply chain issues caused widespread disruption to material lead times

**Solution:** By assessing which locations were in high-incentive jurisdictions and which systems had aged the most, Mantis helped identify 26 locations that would benefit most from lighting upgrades — including tier 3 lighting controls that could be integrated into the existing BMS, case motor retrofits, remote terminal unit (RTU) variable frequency drive (VFD) installations, and carbon dioxide control.

**Outcome:** The project team bundled the projects into one consolidated effort, maximizing available incentives, improving customer experience, and delivering multi-measure high savings projects across all sites with greater remote control for the stores than ever before.





## EMS implementation at a Top 5 dollar store chain

**Challenge:** This portfolio of over 16,000 stores grew via real estate acquisition and found itself with several disparate building management systems. With a transformative commitment to sustainability, the organization knew they needed a single pane of glass into these systems and the right partner to build the program.

**Solution:** Mantis developed the business case for an energy management system (EMS), identifying close to \$80 million per year in value creation and detailing the required processes, tools, and people. The EMS includes monitoring and remote control of HVAC, lighting and refrigeration equipment. Mantis administered an RFP to select a hardware and software vendor and is guiding the installation and programmatic rollout.

**Outcome:** EMS vendor selected and programmatic rollout under development. The program will extend 5–7 years and is projected to achieve a 15% internal rate of return.





## Retail facilities and sustainability: one size doesn't fit all

Under the big tent of retail, sustainability can look different from one company to another, or even within a company across a portfolio of retail locations and other facilities.

For example, consider a grocery store looking to bring more renewable energy into its portfolio. Does it make financial sense to go solar across all facilities? Or is it better to purchase renewable energy credits for some locations? How do the different scenarios track against budget and compliance requirements?

Or for another example, consider a retailer with thousands of stores, some which already have proactive maintenance systems, others that do not. How should they approach building out and systemizing their controls platform, knowing different locations have different asset inventories?

For a third and final example, consider a bank prioritizing which branch projects to tackle now, versus later — such as mechanical system investments at facility X or enhanced controls at facility Y. How can bank real estate and facility leaders evaluate the tradeoffs or relative merits of the needs of one facility against their larger portfolio budget and net-zero goals?

Each of these scenarios will come up with its own answers to what sustainability implementation looks like in practice. There is no "one size fits all approach." That's perfectly normal. And it's a reason to bring sustainability experts into your corner, to help develop a customized strategy and plan that's right for you.

Learn more about how to drive sustainability across your retail facilities by <u>contacting a Mantis Innovation</u> <u>expert today</u>.



Contact us today to see how we deliver net-zero strategies with a near-zero incremental expense for your organization.



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