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Piloting Turnkey Decarbonization Solutions for Existing Buildings

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Atlanta Tech Village is a technology incubator complex located in the Buckhead community of Atlanta, Georgia.

The most climate-conscious building is the one that already exists. Well, it should be.

Within the new construction industry, there is substantial time, effort, and investment spent developing buildings with all of the latest “bells and whistles” so they can operate as efficiently as possible.

But, if every existing building were to run just 5 percent more efficiently, there would be a massive reduction in energy usage versus the savings created if every new building was constructed to run 30 percent more efficiently. Not to mention the fact that even a brand new “green” building typically emits as much carbon during construction as during the next 40 years of operations.

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2023 was the hottest year on record, according to climate change service Copernicus. Extreme heat and climate change usher in a whole host of obstacles for the commercial real estate industry to hurdle. Finding the best information on how to approach these hurdles can prove difficult. ULI has compiled our best reports, webinars, articles, and case studies covering what you need to know.

Back to the Basics

For over 20 years, Atlanta Property Group has owned and operated six million square feet of office, medical, and industrial space across 50 buildings. As a vertically integrated operator, we've learned firsthand the special attention needed to each building's mechanical systems and the resources required to lower a property's carbon intensity.

Over the decades, we have learned that despite the best intentions of consultants, engineers, architecture firms, and early-stage companies focused on decarbonization, there is still enormous energy savings to be had.

We have developed a unique set of skills in implementing hands-on decarbonization solutions that provide meaningful energy usage reductions with a realistic return on investment. With a team of dedicated engineers and management professionals, we can quickly evaluate the environmental impact and economic returns on potential modifications to mechanical components, effective implementation of energy management systems, addition of distributed solar, and more.

This dedicated focus has allowed us to provide superior tenant comfort, extend the life of mechanical equipment, significantly reduce utility and maintenance costs—and eliminate a considerable amount of carbon emissions. In fact, our current office portfolio operates with an Energy Usage Intensity (EUI) below 40—more than 30. percent better than average for office buildings in Atlanta.

Oftentimes, we see owners utilizing the latest desktop-engineering, proptech, or utility tracking tools, but still not necessarily successfully implementing energy efficiency measures that have an impactful change to carbon intensity.



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Despite economic and political uncertainties, a host of market pressures are driving real estate companies to prioritize sustainability like never before.

Plus, many of these efforts miss the basics, which could range anywhere from ensuring the HVAC distribution system is following the original building design, to confirming that preventive maintenance is being performed on mechanical equipment consistent with the manufacturer's specifications.

After witnessing the energy savings we have accomplished within our own portfolio, we recognized there was an opportunity to help other building owners do the same.

Different buildings have different mechanical designs, and each building needs to be operated individually. Our team understands the design, limitations, tenant base, sun load, and numerous other factors that go into optimizing the performance of a particular building. Protocols that work for one building will not necessarily work in others.

Our process goes back to the basics: get in the building, evaluate for opportunities, physically turn the wrenches, and monitor for success. Bringing on a dedicated, experienced partner that can handle implementing and monitoring decarbonization solutions on a holistic, turnkey basis is the most effective and efficient way of bringing existing buildings into the future.

To prove this, we recently launched a first-of-its-kind pilot program with Atlanta Tech Village, the fourth-largest tech and startup incubator in the country.



Electric consumption is down 26 percent over the first six months of 2023 compared to historical benchmarks. (AFG)

The Pilot

Atlanta Tech Village owns and occupies a 100,000-square-foot (92,903 sq m) building that was built in 1985 in Atlanta's Buckhead submarket. Ownership's goals were increasing member (tenant) comfort, lowering operating expenses, and maximizing decarbonization opportunities.

After on-site and data analysis, Atlanta Property Group recommended the following:

- A new open-protocol energy management system (EMS)
 - The existing system, installed as part of an extensive renovation in 2014, was proprietary, due for an expensive upgrade, and not being properly utilized
 - Improper utilization of an EMS system can account for a 10 percent to 15 percent increases in electrical usage and create additional wear and tear on equipment.
- Numerous new operational and preventive maintenance procedures
 - Preventive maintenance contracts were rebid and rescoped to comply with the equipment manufacturer's recommendations
 - Significant water was being wasted by the cooling tower due to excessive runtime
 - Equipment set points were adjusted, and on-site personnel were trained to appropriately monitor the systems
- Modifications to the building's HVAC distribution system
 - The building's fresh air system had not been calibrated correctly and was causing significant unnecessary runtime
 - As space was built out over time, the distribution system above the ceiling was not modified to efficiently serve all portions of the floors

The aggregate cost to implement these efficiency measures was relatively modest and largely within the property's existing repair and maintenance budget.

We officially launched the program in the fourth quarter of 2022, and results thus far reveal significant improvements when compared to Atlanta Tech Village's historical usage:

- Electric consumption is down 26 percent over the first six months of 2023 compared to historical benchmarks
- Water consumption is down 16 percent over the first six months of 2023 compared to historical benchmarks
- Significant reduction in overall operational costs – including fewer service calls
- Fewer HVAC-related work orders from its members/tenants

These findings demonstrate that especially when dealing with existing buildings, hands-on experience that brings real-life, practical solutions can achieve meaningful cost savings and carbon reductions that may often not be considered by desktop consultants.

We are currently evaluating additional pilot opportunities with other user-owned and occupied facilities and are in the process of making recommendations for

energy efficiency measures that Atlanta Property Group can implement on behalf of the owner on a turnkey basis.

What's Next

Nearly all existing building owners are going to be required to lower their property's carbon intensity—either by their stakeholders or by municipal requirements—or both. In addition, more than 70 percent of companies are prioritizing carbon reduction when making space decisions, according to **CBRE**.

Just this summer, Atlanta Property Group also energized solar plants at two metro Atlanta office properties in our owned portfolio: Palisades and One Point Royal. As an industry, we are collectively focused on doing right by our planet and its people. There are countless ways to integrate decarbonization into building operations, from small mechanical changes to on-site renewable power generation. All learnings and improvements are important in operating climate-conscious buildings and ultimately shaping a healthier future.

JONATHAN RODBELL is cofounder and partner at Atlanta Property Group.

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