



PowerSecure
edged



CASE STUDY

Powering the Future of Data

An Edged Data Center Case Study

Data Center Landscape Amongst the Bloom of AI

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In the ever-evolving energy landscape, the demand for cloud computing and for AI-driven solutions are skyrocketing. This surge is placing unprecedented pressure on data centers to scale rapidly while maintaining efficiency and sustainability. As AI workloads demand more power and computational capacity, the need for resilient, energy-efficient infrastructure has never been more critical. This case study delves into the journey of Edged, the leading sustainable data center provider, and PowerSecure as they navigated the challenges and triumphs of building a state-of-the-art data center campus in Atlanta, designed to meet the growing demands of AI training, inference and cloud computing.

THE GROWTH OF AI

Artificial Intelligence (AI) is no longer a futuristic concept; it is a transformative force reshaping industries across the globe. From healthcare and finance to manufacturing and entertainment, AI technologies are revolutionizing how businesses operate. Machine learning algorithms, natural language processing, and computer vision are just a few examples of AI applications that are becoming integral to modern business operations. This surge in AI adoption is driving the need for more powerful and scalable data centers.

However, conventional data centers require vast amounts of electricity to power servers and cooling systems, contributing to greenhouse gas emissions. Additionally, the production and disposal of electronic equipment used in AI and data centers generate electronic waste, which can harm ecosystems. To mitigate these effects, it's crucial to adopt energy-efficient technologies and sustainable practices in data center design and operations.

BUILDING DATA CENTERS

Building data centers to support the growth of AI presents several challenges. These facilities must be designed to handle high-density workloads, ensure continuous operation, and meet operation targets. The following sections outline the key challenges faced by data center developers.

RELIABILITY AND UPTIME

- **Continuous Operation:** Data centers must operate 24/7 to support AI-driven applications. This requires robust infrastructure and reliable power solutions to ensure uninterrupted service.
- **Risk Mitigation:** Power outages and equipment failures can lead to significant financial losses, disrupted operations, and compromised data security. Taking an n+1 redundancy approach, data centers rely on additional power sources to mitigate risks and ensure high reliability.



ENERGY EFFICIENCY AND SUSTAINABILITY

- **Power Consumption:** AI workloads consume substantial amounts of energy, making it essential to optimize power usage and reduce overhead energy consumption. Data centers must implement energy-efficient solutions to minimize their environmental impact.
- **Cooling Solutions:** Efficient cooling systems are necessary to manage the heat generated by high-density workloads. This includes adopting advanced cooling technologies that conserve water and reduce energy consumption, supporting sustainability goals.

SCALABILITY AND CAPACITY

- **High-Density Workloads:** AI workloads require significant computational power, leading to higher rack densities and increased power consumption. Data centers must be equipped to handle these demands without compromising performance.
- **Future-Proofing:** Data centers must be designed to accommodate future growth and evolving technology requirements. This involves anticipating future needs and building infrastructure that can scale accordingly, which can be a complex and costly endeavor.

The Edged and PowerSecure Partnership

To address these challenges, Edged took a new approach to developing a state-of-the-art data center campus in Atlanta, GA, one that included leveraging cutting-edge infrastructure solutions and partnering with industry-leading innovators like PowerSecure. Referred to as Edged Atlanta, the campus is optimized for high-performance compute, including AI training and inference, and features advanced waterless cooling technology along with highly efficient energy systems (delivering an average design Power Usage Effectiveness of 1.15 portfolio-wide).

This partnership combines Edged's expertise in sustainable data center design with PowerSecure's innovative energy solutions.

ENERGY MANAGEMENT

- **PowerSecure PowerBlocks:** These generators meet EPA Tier 4 Final standards, ensuring low emissions reporting without sacrificing reliability.

- **Microgrid Resilience:** The campus incorporates a self-healing network. The 24.9 kV medium voltage distribution system ensures optimal efficiency and minimal downtime.

MONITORING AND MAINTENANCE

- **PowerControl® Monitoring, Maintenance, and Repair:** 24/7 monitoring ensures proper function and optimal uptime. This proactive approach to maintenance minimizes the risk of equipment failures and ensures the data center operates at peak performance.
- **Customer Care:** The Edged and PowerSecure partnership has been over six years in the making, with a dedicated representative and PowerSecure support every step of the way.

"Atlanta is the ideal location for our first North American data center. The project sets a new standard for sustainable development and represents long-term economic investment in the region, bringing hundreds of jobs and millions in funding for Atlanta public schools, the local government and important city services. Together, we are creating projects for positive impact and supporting the region's thriving digital economy."

Bryant Farland, Chief Executive Officer for Edged



By the Numbers

169 MW

Total computing capacity of the Edged Atlanta Campus

27 MW

Critical computing capacity for initial building

100 MW

Capacity of the second facility under construction

42 MW

Capacity of the planned third facility

74%

Reduction in overhead energy consumption
portfolio-wide

663+ Million

Gallons of water saved each year with closed-loop
waterless cooling

80+ Acre

Total campus size

High-quality after-sales service drives customer retention and loyalty. PowerSecure's commitment to premiere customer care ensures that customers are satisfied with their data center solutions, fostering long-term partnerships.

SCALING FOR THE FUTURE

The first building on the Atlanta campus is now delivering 27 MW of critical capacity to the region. The facility joins a growing network of Edged data centers currently under construction across the U.S., including in Chicago, Kansas City, Dallas, Columbus, Phoenix and Des Moines.

With PowerSecure's energy solutions in place, Edged is leading the way in efficiency and sustainability. As demand for AI and cloud computing grows, this partnership ensures that data centers are ready for the future—without compromising on reliability.

The journey of building a state-of-the-art data center is fraught with challenges, but with the right partners and innovative solutions, it is possible to create facilities that meet the demands of modern technology while supporting sustainability goals. Edged and PowerSecure's Atlanta Campus is a testament to what can be achieved through collaboration, innovation, and a commitment to excellence.

To read more case studies and learn more about how PowerSecure can help your facility secure energy independence and maximize efficiency, visit us at:

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