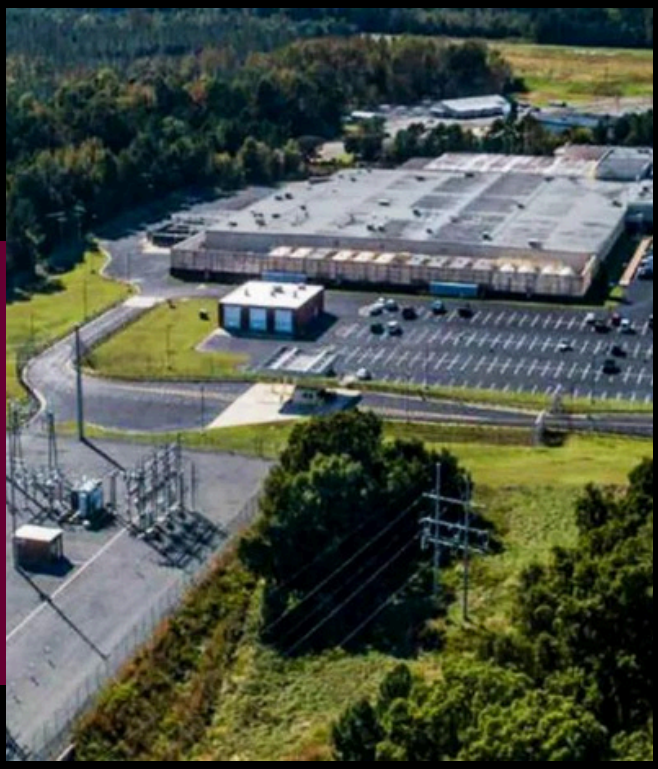
TECFUSIONS

CASE STUDY

A PROVING GROUND FOR ADAPTIVE REUSE



Adaptive reuse has emerged as a powerful strategy in data center design and development. As the demand for digital infrastructure continues to surge, repurposing existing buildings offers an innovative way to meet capacity needs quickly, while reducing environmental impact. This circular mindset challenges the notion that new construction is always better, instead recognizing the immense potential in existing infrastructure. TECfusions' Clarksville data center stands as a testament to the potential of adaptive reuse in the data center industry.

What was once a theoretical approach to data center development has now been proven not just possible, but highly advantageous through TECfusions' deployment in Clarksville. By transforming an existing industrial plant into a state-of-the-art facility, TECfusions has demonstrated the speed, efficiency, and sustainability that adaptive reuse can bring. This approach has proven to be a game-changer for TECfusions, enabling rapid deployment and significant cost savings while minimizing the environmental impact associated with new construction.

AT A GLANCE

- **Faster to Market:** Deploy AI and high-density racks in months, not years.
- **Sustainable Impact:** Adaptive reuse reduces waste and emissions, cutting carbon footprints by 80%.
- **Innovative Design:** Retrofit old buildings with advanced cooling and scalable, future-proof infrastructure.
- **Rapid Transformation:** Convert existing structures into AI-ready data centers in as little as 6 months.

UNPRECEDENTED SPEED TO MARKET: MEETING DEMAND QUICKLY

One of the most remarkable aspects of the Clarksville data center project was its rapid deployment. From the outset, TECfusions was committed to getting the facility online as quickly as possible to meet the growing demand for AI and high-performance computing services. The timeline was ambitious—transforming the existing structure into a fully operational data center within a few short months. TECfusions secured the site in June of 2023 and began construction at the end of August. By September, the site was live, providing 500kW of power. By turning over in phases to bring power and cooling online, Clarksville grew to 24 MW by June of 2024, with plans to add an additional 13 MW by the end of the year.

The adaptive reuse approach allowed TECfusions to bypass many of the delays associated with new construction. By leveraging the existing infrastructure, we could focus on retrofitting and upgrading what was already in place, speeding up the timeline considerably. This quick turnaround was crucial for clients eager to deploy our AI workloads and begin utilizing the center's robust computing capabilities.

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The Clarksville project has set new benchmarks for rapid deployment in the data center industry. By leveraging existing infrastructure, TECfusions achieved what many thought impossible: transforming a dormant industrial facility into a fully operational data center in a matter of months. This unprecedented speed-to-market not only met, but exceeded client expectations, proving that adaptive reuse can be a viable solution for addressing the urgent demand for AI and high-performance computing services.

POWER DISTRIBUTION AND REDISTRIBUTION: OVERCOMING CHALLENGES

One of the most significant challenges in adaptive reuse projects is modifying existing power infrastructure to meet the demands of modern data centers. The original layout of the facility was not designed to handle the high power and cooling demands required by today's AI-driven workloads.

TECfusions had to innovate, relocating power distribution and cooling units to accommodate the increased demands. This process involved significant reconfiguration, including disconnecting, relocating, and tying back in, as well as moving CRAH units to ensure proper cooling throughout the facility. To accommodate the increased demand involved meticulous planning and execution, and our success in reconfiguring and optimizing power distribution at the facility demonstrates that with innovative thinking, team expertise, and dedication to execution, even the most complex challenges can be overcome.

This achievement opens up new possibilities for repurposing a wide range of industrial and commercial buildings that were previously considered unsuitable for data center conversion.

Space redesigned for electrical and mechanical infrastructure requirements

CONSTRUCTION SCHEDULES: A MODEL OF EFFICIENCY

The construction at Clarksville was executed with precision and efficiency, exemplified by the rapid build-out of Hall C, which was completed in just three months—from ground-up construction to full operation. This impressive feat was made possible by TECfusions' proactive approach to purchase necessary equipment in advance and deploy manpower effectively, with over 200 skilled workers around the clock. The ability to coordinate multiple teams and ensure alignment with project goals was crucial, allowing the data center to begin operations sooner than anticipated.

The success of this project hinged on TECfusions' ability to coordinate multiple teams and ensure that every aspect of the build was aligned with the overall project goals. The construction schedule was designed to maximize efficiency, with work happening in overlapping phases to minimize downtime and keep the project on track. This approach not only sped up the construction process but also allowed the data center to begin operations sooner than anticipated, meeting the urgent needs of tenants.

BUILDING FOR FUTURE DEPLOYMENT

The ability to quickly adapt the Clarksville facility for AI workloads has positioned it as a leader in the data center industry. The center was designed to accommodate the unique power and cooling requirements of AI technology, which often fluctuate significantly as workloads ramp up and down. This required a robust, flexible infrastructure capable of handling the demands of AI applications.

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Our approach to adaptive reuse allowed us to create a data center that is not only capable of supporting current AI workloads but also scalable to meet future demands. By integrating advanced cooling systems, optimized power distribution, and cutting-edge technology, the Clarksville data center has become a proving ground for AI deployments. This adaptability ensures that TECfusions is ready to support the next generation of AI innovations, making the Clarksville facility a cornerstone of our data center portfolio.

PROOF OF CONCEPT

TECfusions' Clarksville data center presents a paradigm shift in how the industry approaches data center development and a shining example of how adaptive reuse can be harnessed to create state-of-the-art facilities in record time. TECfusions has proven that adaptive reuse is not just a theoretical concept but a practical, efficient, and sustainable solution to the challenges facing the data center industry. By turning an abandoned industrial site into a thriving hub of technological innovation, TECfusions has set a new standard for speed, efficiency, and environmental responsibility in data center construction.

Development Expertise
Leveraging extensive experience constructing and optimizing data center facilities

Innovative Design
Applying creative and forward-thinking approaches to design data center solutions that meet evolving industry needs

Operational Efficiency
Driven by a commitment to the most efficient, reliable, and forward-thinking solutions.

Microgrid Integration
Enhancing energy resilience and reducing environmental impact, with a 97% reduction in emissions

AI and HPC Support
Implementing advanced technologies to maximize compute power

Fast Speed to Market
Accelerated schedules to meet rapidly growth and scalable infrastructure solutions

About

TECfusions is a global data center operator dedicated to innovative, sustainable technology and energy-efficient solutions. With over thirty sites operational or in due diligence worldwide, we specialize in designing, building, and managing next-generation data centers for AI and HPC. The strategic approach for adaptive reuse of industrial facilities enables rapid deployment and market readiness, delivering capacity in record time. Additionally, we are committed to dedicated microgrid integration for on-site energy infrastructure. Our environmentally enhanced configuration technology is in high demand by global tenants for lower cost data center operations for new build and existing aging infrastructure.

Contact Us

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