



Case study

Polar and Vertiv drive innovation with modular AI solution for their DRA01 data center in Norway

Polar is a European high-performance data center operator headquartered in the United Kingdom with a clear ambition to deliver next generation data centers.



Background

The company develops, owns and operates data centers optimized for artificial intelligence (AI) and high-performance computing (HPC) workloads. Polar's pillars are:

- **Environmental responsibility:** Polar uses 100% renewable energy, particularly hydroelectric power, to operate its data centers, minimizing environmental impact.
- **Responding to market challenges:** Combining Vertiv's modular approach and Polar's agile development methodology, Polar is able to quickly respond to market demand and evolving technologies.
- **Technological innovation:** Polar is accelerating infrastructure to support its customers develop the future of AI with data centers designed to handle high-density, advanced technology workloads.

As a leader in AI-driven innovation, Polar focuses on scaling compute infrastructure to meet the rising demands of cutting-edge AI workloads.

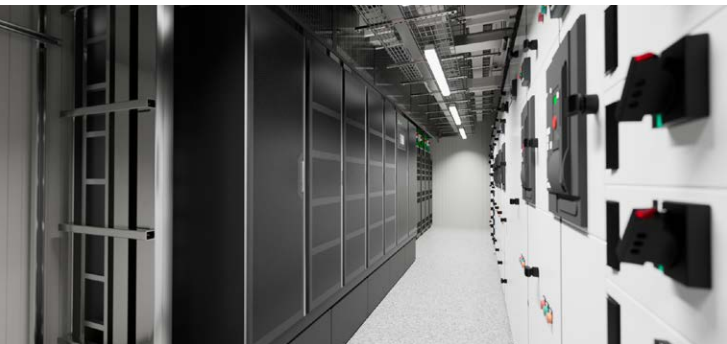


Industry: Data center colocation.

Region: Norway.

Project milestone

- The project design phase was rapidly completed in Q4 2024 in a close collaboration between Polar and Vertiv, leveraging seasoned design consultants and Vertiv's expertise in AI infrastructure.
- The first modules were shipped and installed in Q1 2025 and commissioning will be completed later in the year.





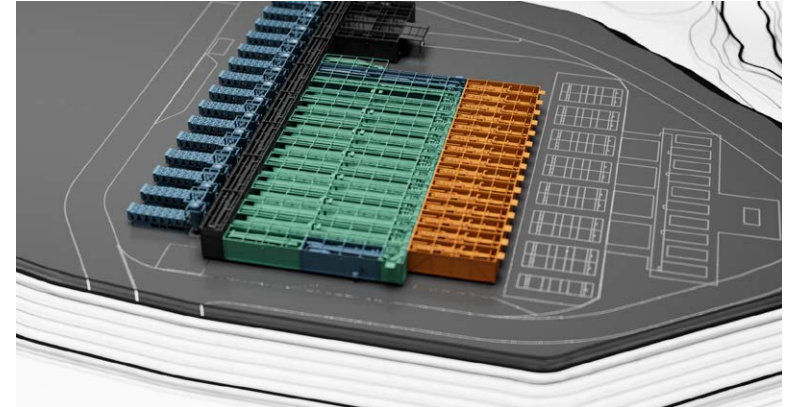
Challenge

Polar places great emphasis on partnerships when developing new facilities and engages providers early in the project. For their DRA01 data center, they needed a trusted advisor to transform conceptual designs into state-of-the-art solutions.

Polar required a flexible data hall design to accommodate diverse liquid cooling technologies and future expansion, while enabling continuous

operation. The solution needed to seamlessly integrate with their existing infrastructure while providing robust power and cooling for mission-critical AI applications.

Vertiv was selected thanks to its expertise in AI infrastructure and unique portfolio ecosystem, particularly its ability to **factory-test technologies** and provide **advanced prefabricated modular (PFM) solutions** for HPC applications.



Solution

In close collaboration with Polar, Vertiv delivered a comprehensive, AI-ready modular data center.

Vertiv's prefabricated modular solutions are fully-fledged critical digital infrastructure units, seamlessly integrated with advanced power and cooling technologies to enable rapid and efficient AI deployment. Data center components are thoroughly tested and assembled directly in the factory, significantly reducing on-site installation time and enhancing overall project reliability and quality.

The innovative installation process prioritizes critical building blocks, enabling parallel progress on-site while completing remaining components in the factory - a clear advantage over traditional construction methods in terms of efficiency and speed.

The scalable setup supports high density racks of 110 kW for a total of 12MW, which can be expanded to support future growth. The IT infrastructure is powered via modules that utilize N+1 electrical topology and dual busbar power distribution for complete redundancy. The system is equipped with a Vertiv™ EXL S1 UPS (uninterruptible power supply), a highly efficient and grid-interactive system, providing backup power through reliable Li-ion battery technology.

The solution also includes a concurrently maintainable chilled water network with thermal energy storage tanks, providing continuous cooling even during power loss scenarios. The Vertiv™ Liebert® AFC glycol-free, freecooling chillers with very low-GWP (global warming potential) refrigerant in N+1 configuration, are designed to significantly reduce carbon emissions while delivering substantial energy savings. Advanced algorithms, combined with the unit's design, allow to maximize freecooling efficiency and reduce annual energy consumption compared to conventional systems. Vertiv's liquid cooling solutions incorporate state-of-the-art redundancy and filtration features to effectively support the latest GPU technologies.



The durable solution features C3M corrosion protection and an EI60 fire rating. The double-roof design facilitates structural integrity under Norway's challenging weather conditions, maintaining optimal safety in extreme climates.

The data center is equipped with an advanced Building Management System (BMS) software for comprehensive monitoring and support. It also includes access control, CCTV coverage, a fire detection and suppression system, lightning protection and advanced chilled water controls.

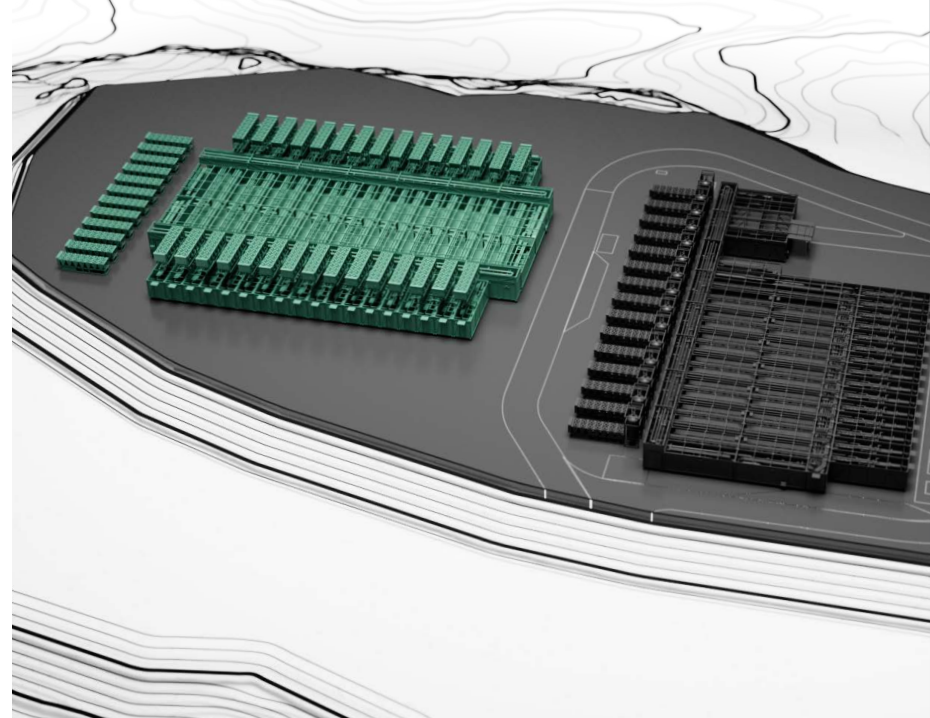
These components are integrated as a system by Vertiv and factory tested. They provide a reliable, efficient and secure environment to support the data center's operational needs.

Outcome

The project is set to achieve significant total cost of ownership (TCO) savings compared to a traditional bricks-and-mortar approach, while providing fast deployment and easy reconfiguration and scalability.

The AI-ready modular solution is set to achieve high energy efficiencies and a PUE as low as 1.15, optimized by the cold climate and Vertiv cooling solutions.

The site will provide 12 MW of HPC and AI-ready IT capacity, with the option to expand up to 50 MW.



"We are excited to collaborate with Polar on this groundbreaking project. Our prefabricated modular solutions, designed to withstand harsh conditions and optimize performance, are a perfect fit for Polar's innovative approach to AI and HPC data centers. This collaboration underscores our commitment to delivering resilient, efficient and scalable infrastructure solutions that meet the highest reliability and quality standards."

— **Viktor Petik,**

Global Vice President, Infrastructure Solutions, Vertiv.

"Partnering with Vertiv allows us to push the boundaries of what is possible in AI and HPC data center deployment. Their expertise and advanced modular solutions enable us to achieve our goals of sustainability, technological innovation and rapid business expansion. We are confident that this collaboration will set new benchmarks in the industry and provide our customers with state-of-the-art infrastructure that meets their evolving needs."

— **Tom Chubb,**

Chief Operating Officer, Polar.