

Hyperscale Cloud Computing Provider Goes Modular for Rapid Deployment of Needed Capacity



A Vertiv Case Study

Background

Cloud providers need to act fast in scaling computing capacity, especially considering that one of the world's leading researchers of the global cyber economy is predicting that 100 zettabytes, or half of the world's data, will be stored in the cloud by 2025. It's this type of accelerating demand for data that led one hyperscale cloud computing provider to add 60 megawatts (MW) of capacity at its Dublin, Ireland, location via a modular data center that included low-voltage (LV) switch rooms complete with busbar containment, uninterruptible power supply, static transfer switch, communication equipment, and power distribution infrastructure.

Challenge

Due to the tight 20-week timeframe for a project this size, lead times were a concern. In fact, E+I Engineering — a Vertiv company — was brought into the project through one of its engineering partners because of its team's high level of market experience and its ability to design and deliver optimized modular power solutions quickly. Transporting what would become enormous power skids also required careful consideration. Additionally, having multiple engineering and construction stakeholders working on the detailed design and project coordination created its own set of challenges.

Solution

E+I Engineering provided and installed fabricated frames for overhead services and the switch room, as well as the data hall busbar. The team also supplied all 56 of the modular power skids. Each skid, which was delivered on trucks, weighed in excess of 22 tons, was more than 85 feet long, and measured approximately 16 feet wide. The sheer size of the solution required team members to manage a rigorous process of reviewing transport routes, confirming transport size restrictions, and arranging relevant permits at the beginning of the project. Timely access to this information allowed the design team to proceed without risk of any significant design changes due to size.

As E+I Engineering was also required to integrate third-party equipment, building information modelling allowed them to review any potential clashes between switch room services. This as-built approach to design streamlined the project approval process and site install, eliminating the need for on-site rework due to unforeseen issues. And because the power skids were constructed in a controlled factory setting, safety issues were minimized. This environment facilitated a much more efficient quality assurance process and ultimately enabled Level 3 factory acceptance testing prior to delivery, reducing the amount of on-site work and ensuring switch rooms were ready for installation on arrival to the site.

Outcome

With visionary expertise and immersive collaboration, E+I Engineering helped ensure quality control and efficient project phasing. The team overcame the challenges of time, space, and transport to deliver a tailored, [integrated modular solution](#). Despite the complexity, the project was completed with zero lost time or reportable injury within the factory-controlled environment. Using this approach ultimately produced an on-site labor saving of approximately 75% and gave the cloud service provider the optimization, reliability, and efficiency it needed to [scale its computing capacity with confidence](#).

Company Profile

A leading cloud computing provider

Industry

Data Center

Region

Dublin, Ireland

"The client's requirements in terms of speed to market and the scale of deployment drove the decision making toward modular construction. The client recognized that early contractor involvement was essential to meet the challenging deployment dates."

— Engineering Project Director

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