BASELAYER

Puget Sound Energy Case Study

June 2018

PUGET SOUND ENERGY CASE STUDY

Mission Critical Data Centers: On Time and On Budget

Overview

The management team at PSE was proud of how quickly and efficiently the entire organization rallied to deliver large and complex new data centers that were able to safeguard the information critical to servicing its customers.

PSE began with years of experience in project management and construction and strong relationships with the cities and the regulatory agencies in the communities they operate. Combining that with a partnership with BASELAYER, PSE managed to build and connect two brand new backup data centers to the grid ahead of schedule, even with significant changes, and under budget.

CHALLENGES

- Single points of failure in IT infrastructure.
- The need for two new data centers in a short timespan (10 months).
- Low operational costs and a high degree of autonomy.
- Logistics of relocating data center modules from storage on lost site to new site.

SOLUTIONS

- BASELAYER deployed modular data center infrastructure
- Integration with the RunSmart DCIM software platform.
- Standardized, repeatable methods that made a complex installation easy.
- BASELAYER added shipping expertise to help with site logistics.

RESULTS

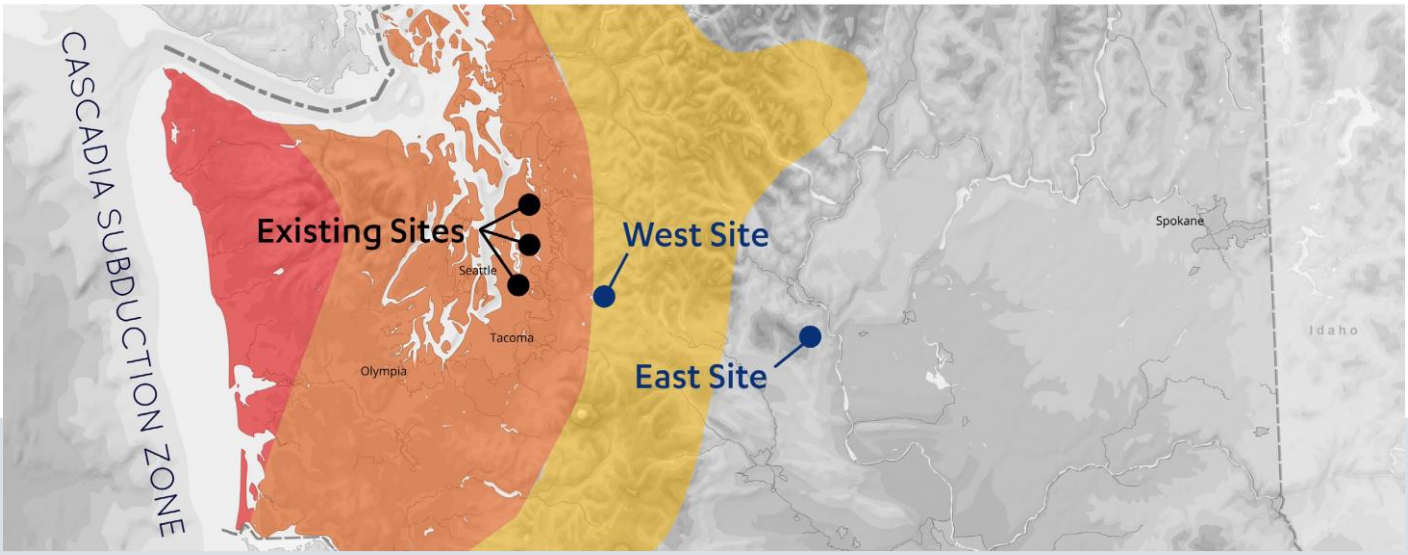
- Two new backup data centers, up and running under budget and ahead of schedule.
- Integrated data center infrastructure and DCIM platform.
- PSE evaluating additional locations for BASELAYER data center modules.

The Problem

Being one of the largest providers of electricity and natural gas in the Northwestern United States comes with unavoidable risks that need management. Widespread power outages that could potentially leave millions of customers in the dark is at the top of the list for Puget Sound Energy (PSE). And in a part of the country where the digital economy is so integral to people's lives and the work that they do, reliable data backup centers are vital to both the physical and economic well-being of large sectors of the population.

"We already had plans in place to build new backup data centers, but the timeline dramatically accelerated when multiple single points of failure in the system were identified," said Chris Perez, Advisor IT Facilities Infrastructure Engineer, PSE. "We knew that having too many data centers in the same geographic location made us that much more vulnerable, particularly in the case of unpredictable weather events or natural disasters. To mitigate this risk, we planned to spread any new backup data centers over a much wider area."

The challenge was that PSE needed two new data centers built and operational before the end of the year, which was approximately ten months. The schedule was aggressive by anyone's measure.



The Solution

The PSE team quickly dismissed building traditional data centers from greenfield as being too costly and time-consuming. A modular build or a colocation arrangement where PSE would lease space in an existing facility were both considered. The trade-off of a colocation would involve lower costs up front, but higher operational expenses over time and a lower degree of autonomy over hardware and software. A clear course emerged: build a modular data center, purpose-engineered to offer scalability with flexible power and cooling options.

The first step was to begin a comprehensive selection process to find a partner who understood the energy industry, could provide best-in-class modular data center infrastructure and would work with PSE to offer a solution that would seamlessly integrate the workflows of a large and diversified operation.

After a rigorous selection process, PSE selected BASELAYER to provide the modular data centers and its integrated data center infrastructure management (DCIM) platform, RunSmart, to monitor and control the system. PSE was first introduced to BASELAYER by another major utility, SRP, who served as an excellent reference and source of information.

The project was in full swing and on schedule until fate threw an unexpected twist at PSE.

"The site which had been selected for the primary east site location and rigorously prepared for construction, became unavailable due to a conservation easement issue," said Perez. "A new site was quickly selected but required twelve weeks of preparation before it was ready for BASELAYER and the general contractor to begin their work."

The project shifted from being two new data centers in ten months to two new data centers in half that time.

Results

Two principal factors made it possible for PSE to deliver on a very tight deadline. One was technological, but the second was the commitment and the teamwork displayed by everyone who worked on the project.

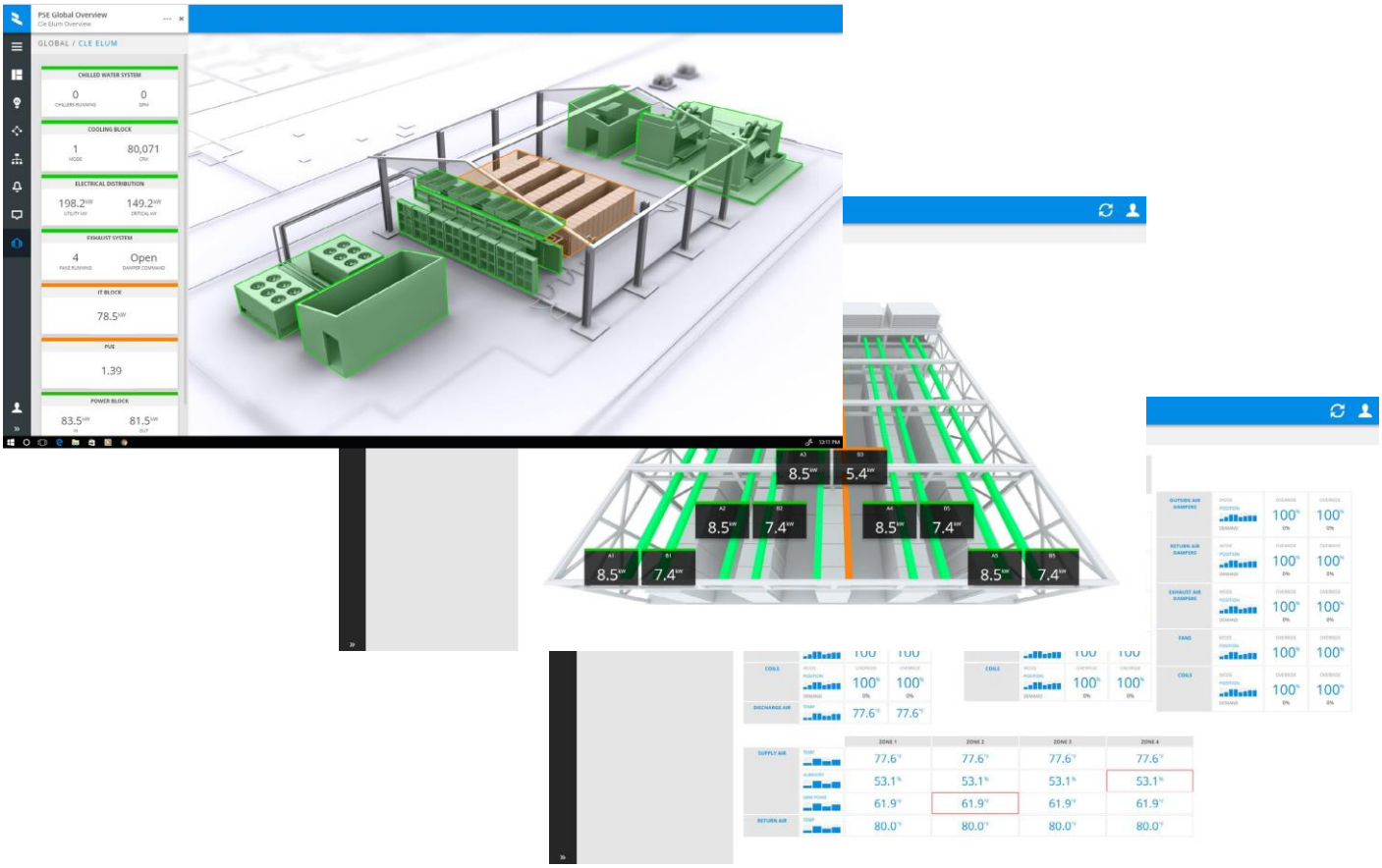
On the 12th of November, there were no data center infrastructure modules on the first site that was lost. Three weeks later, on December 4, there was a new site with an operational data center with all the racks installed and all of the IT gear populated, connected and cabled.

"Given the shifting timelines we encountered, the speed at which the data center was built and operational is nothing short of incredible," said Perez. "It's thanks to the creative thinking, hard work, and collaboration of everyone involved, that we made it over the finish line."

The collaborative nature of BASELAYER's relationship with PSE and the many years of building strong, healthy relationships with cities, municipalities and regulatory agencies was a key factor in the ability to make the deadline. After the first site was lost,

these associations made it possible for PSE to obtain permits for a new site within six weeks. With such large infrastructure projects, having the right contacts in place is everything.

BASELAYER's integrated RunSmart DCIM platform also turned out to be the ideal solution for PSE. The utility had deep experience leveraging centralized software to manage systems throughout its critical infrastructure spaces and was eager to extend that type of efficiency and control to its data centers. RunSmart's intuitive, simple and



user-friendly dashboard not only provides the utility a quick snapshot of the metrics needed to manage its data centers, it gives anyone at PSE the ability to identify a problem and triage the situation without being an IT expert – a feature PSE found invaluable.

The integrated design and versatility of the modular BASELAYER infrastructure is another key asset of PSE's new sites. It fits with the needs of a utility who have multiple locations serving multiple purposes. The different blocks of the BASELAYER modules such as cooling, IT and power, all work in a synchronized and consistent fashion that is factory-tested and proven before it arrives on a data center site. With the combination of BASELAYER and RunSmart, PSE can take control of the data generated, and use it effectively when it wants to scale up or down.

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