

CASE STUDY

FROM ZERO TO 6MW IN 140 DAYS:

How Prime Delivered a 6MW Data Center Amid Global Pandemic Restrictions, Supply Chain Constraints and Labor Shortages



ABOUT US

Prime Data Centers is a wholesale data center developer and operator with a global footprint. We excel at designing and delivering custom large-scale data center solutions for leading enterprise clients. Our core product portfolio ranges from 5MW+ data centers to hyperscale and can be build-to-suit, powered shell, or turnkey. We offer flexibility in our financial arrangements, from a standard lease, to sale/leaseback, to unique joint ventures.

In early 2021, Prime Data Centers leased its entire Sacramento, California, wholesale data center facility to a Fortune 500 technology company. The tenant, a global brand, very much knew the market and what they wanted. In addition, they are highly standardized, highly experienced, and were under a time crunch to bring new capacity online as quickly as possible.

At the time of initial engagement, Prime's Sacramento facility had 2MW of critical space commissioned and ready for occupancy, with another 4MW planned for the remaining two data halls. The Prime team felt confident they could meet the Fortune 500 company's aggressive timelines for the remainder of the building. At this point in the challenge, the tenant conveyed to Prime that they wanted to increase capacity at the facility from the additional planned 4MW to 6MW. Normally this would be fantastic news for any developer, however, this requirement initially caused some serious concerns around additional long-lead items.

Fortunately, Prime had the foresight to design for this additional 2MW contingency. Some of the electrical equipment was even pre-positioned for this scenario. Prime felt it was still possible but did not yet have a solid plan. What Prime could not have foreseen was the supply chain constraints brought on by a global pandemic, Covid restrictions, new labor safety laws, etc. Prime did not yet have certain long-lead items such as generators, chillers, CRAH/CRAC units, busways, and more. In addition to the equipment, Prime needed a new design and commissioning plan.

While many considered this aggressive deadline impossible, Prime's flexible vendor partnerships combined with Prime's internal talent to think creatively enabled them to turn the impossible into the possible. It became clear that this project was going to require a multi-faceted approach to general contractor management, equipment procurement, delivery staging, permitting, and more. Most importantly, it would require constant and accurate communication with the tenant. Not all equipment would meet their standards and their SLAs.

THE APPROACH

The first step was clear: Prime had to involve their partners early in the process and document the scope of work as soon as possible. Without a laser-focused dedication to project management, they would not be able to meet the deadlines. Not only did this 6MW have to be built, but also commissioned in 140 days. Prime identified and mobilized a list of their best vendors based on experience and their willingness to engage without 100% of the formal contracts yet in place. A massive request, but without the ability to accelerate the terms and conditions, they would quickly burn through the calendar due to typical negotiation tactics and approvals.

Prime looked both within and outside of the industry for guidance. They knew the seemingly impossible could be done with the proper level of autonomy, partnerships and communication. After studying volumes written on how to approach these projects, including some of the world's most ambitious projects completed in record time for governments, Prime leveraged them all — and quickly deduced that the approach needed more flexibility than typically found in data center development. Prime documented a new set of rules:



1. EMPOWERMENT

The Prime onsite leader must have the authority to make decisions in the field based on real-time input from the engineers, general contractor and sub-contractors. The reporting structure must eliminate the bureaucracy typically built in to control costs (amongst other things). The onsite team would report directly to Prime's CEO and was empowered to make critical decisions on the fly.



2. TEAM

The project team had to be small, experienced and focused. At least daily communication from all disciplines would be required; electrical, mechanical, structural, commissioning, building management and more. Prime kept the team small and tight. Real-time feedback was encouraged, but a disagree-and-commit process was enforced. The decision-making process was clear.



3. VENDOR MANAGEMENT

The vendor teams must be empowered and must take on more than the typical responsibility. Prime made this clear to all contractors on day one. Terms were created to reinforce this concept. For example, Prime had to create a hybrid approach where both the GC and Prime would provide equipment; whichever could secure the equipment more quickly and get it onsite - it did not matter. This means pricing had to take a back seat to delivery SLA's.



4. EQUIPMENT PARAMETERS

To execute #3, approved equipment lists and performance parameters of that equipment must be created and agreed to early in the process. This is where account management becomes crucial. Fortunately, Prime was working with a tenant who was not only invested in their success, but also highly experienced with a dedicated team assigned to the project. Daily meetings and 24-hour turnaround times for all design reviews were agreed to and enforced. This required a significant level of trust between tenant and developer.



5. COST CONTROL

Cost reporting had to be more frequent than typical. Just because Prime had a tight timeline and empowerment in the field, they could not let costs get out of control. This factor necessitated unique contracts with their equipment suppliers. All understood clearly that Prime would have contractual rights such as not-to-exceed pricing and in the case of a delivery miss, liquidated damages.

BEST-IN-BREED DATA CENTER DEVELOPMENT

CASE STUDY: FROM ZERO TO 6MW IN 140 DAYS

Instead of distributing an RFP to many general contractors, Prime decided to choose only three pre-qualified participants, and all had to agree to accelerate the RFP turnaround. Spending months on the typical negotiations was not something that could be accommodated.

After review, it was clear that Holder Construction had the experience, willingness and resources to get the job done. They had an expert team willing to mobilize to Sacramento upon a verbal award. The formal terms were worked out fairly quickly, but having the flexibility and trust in Prime to commit significant resources as early as possible ultimately won them the business.

It was fortunate that Holder Construction and Prime had some informal understanding of pricing and terms for the subcontracted work already agreed upon. Mechanical and electrical were both ready to hit the ground running. The structural, commissioning and finish-work subs would be agreed to within four weeks.

It is important to note that Holder Construction also had to agree to the five rules listed above. They agreed to place their most experienced management onsite and that those individuals could hand-pick their teams. Effective leadership requires trust, so it was important that this was already in place amongst the Holder employees. Prime agreed that those individuals would have the authority to make major decisions, even if those decisions caused cost increases, if they could articulate how the decision(s) would meet or improve the timelines. Major sequencing and overtime decisions were made in real-time by the leadership. Remember rule #5 above — Prime trusted but verified through accelerated cost reporting.



WORKING WITH LOCAL AUTHORITIES

Holder Construction and Prime met with county officials to discuss the permitting process, expediting wherever possible. They partnered with code officials to help navigate the county's "Delegated Design Process." The design was performed by subcontractors rather than the design team. As an example, delegated design packages included the following: seismic bracing, anchorage details, fire protection and fire alarm.

Prime had great resources at the county level, and the benefit of building in an economic development zone called McClellan Park. They worked with the authorities daily, ensuring all submittals were reviewed by Holder's most experienced engineers prior to submission. Holder agreed to manage the process hand in hand with Prime to ensure our relationships were leveraged. Working with the Greater Sacramento Economic Council along with the senior management at the county resulted in accelerated reviews and very few design changes or code violations. Over-communication paid massive dividends here.

OVERCOMING SUPPLY CHAIN CHALLENGES

The global supply chain backdrop to this project was not without its fair share of challenges. Holder Construction and Prime partnered on MEP equipment manufacturer relationships to leverage availability in a challenging market. Prime made it clear to all suppliers that delivery SLAs could not be missed, and they were willing to compensate for that stipulation. Daily meetings were set up with all critical suppliers to rapidly react to any potential delays. Creativity was king here. Prime even agreed to have some equipment shipped unassembled, to be built and tested onsite by the factory personnel.

Holder Construction, Prime and the architects worked together to release long-lead equipment documents including specifications to purchase equipment prior to finished contract documents. In some cases, Prime agreed to pay a premium for this equipment with the expectation they would be first in line with their representatives onsite to oversee installation and testing. Airfreight was used wherever possible, saving weeks of shipping times (and mitigating the risk of labor and truck shortages).

THE OUTCOME

In the end, Prime Data Centers completed and delivered all 8MW of critical load capacity within record time — 140 days. Holder noted that this was one of the fastest data center projects in its company history, and that was only possible by creative thinking and management. The standard approach to approvals, design, construction and commissioning simply could not work with this accelerated timeline.

At the end of the project, the tenant had a build-to-suit facility which met its exact specifications. By involving the Prime operations team early in the construction and commissioning process, the infrastructure was ready to be released to production if it was needed.

The lessons learned are numerous, but the overarching theme of this unconventional project is a highly experienced and empowered team can accomplish incredible results. The project was not without issues and some cost overruns, of course, but at the end of the day, Prime delivered on the commitments made to its new Fortune 500 tenant.

