

CASE STUDY

85MW Hyperscale Greenfield Deployment.

Ground-up delivery of a hyperscale cloud infrastructure facility grid interconnection, custom substation, and full lifecycle execution in 25 months.

CAPACITY

85 MW

DELIVERY

25 Months

COST / MW

\$7.45M

TOTAL SAVINGS

~\$60M

DEPLOYMENT
TYPE

Greenfield

At this scale, coordination is the product.

DARKNX delivered an 85MW hyperscale cloud infrastructure facility from bare ground to energization in 25 months on budget, on schedule, and with a level of coordination that surprised even the most experienced stakeholders on site.

This was a ground-up greenfield build: no existing infrastructure, no inherited systems, no shortcuts. DARKNX managed every layer from site preparation and civil works through grid interconnection, custom substation development, power distribution, and compute-ready delivery.

At 85MW, the complexity of this project was significant. Multi-vendor coordination, regulatory approvals across multiple authorities, grid interconnection negotiations, and phased construction sequencing all ran in parallel. What the client valued most was not just the outcome it was how controlled the process felt throughout. In an environment where large-scale data centre projects routinely overrun, DARKNX delivered predictability.

<p>85 MW</p> <p>Total commissioned load one of the larger hyperscale deployments at time of delivery</p>	<p>25 mo</p> <p>Greenfield to energization ground broken to compute-ready</p>	<p>\$60 M</p> <p>Total savings vs market benchmark at time of delivery</p>
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Built from the ground up. Nothing inherited. Everything owned.

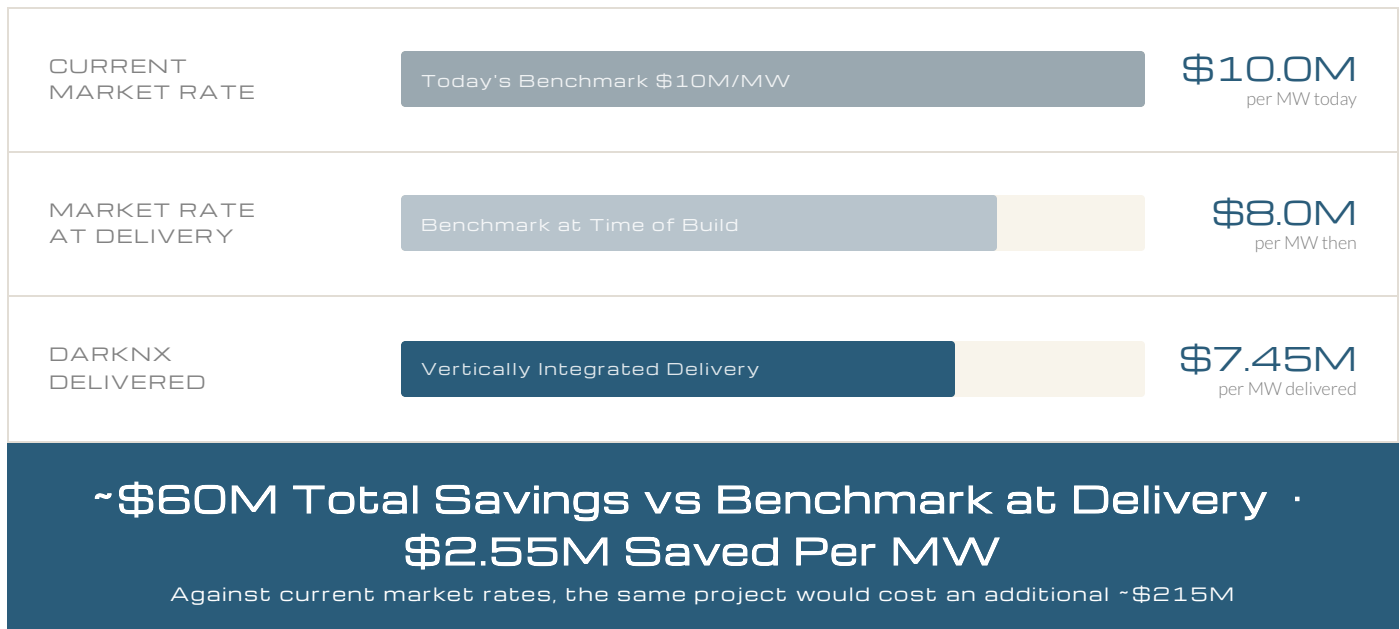
A greenfield data centre deployment is the most demanding form of infrastructure delivery. Every system civil, electrical, mechanical, and compute must be designed, procured, sequenced, and commissioned from zero.

DARKNX managed the complete development lifecycle of this site. This included site acquisition support, geotechnical assessment, foundation engineering and civil works, utility coordination, and full electrical infrastructure from grid interconnection point through to rack-level power delivery.

<p>SITE CONDITION</p> <h3>Greenfield</h3> <p>Bare land. Foundation, civil works, and all infrastructure built from scratch with no inherited systems.</p>	<p>GRID INTERCONNECTION</p> <h3>Custom HV</h3> <p>High-voltage grid interconnection negotiated and delivered directly with the utility. DARKNX managed the full interconnection process.</p>	<p>SUBSTATION</p> <h3>Purpose-Built</h3> <p>Dedicated substation developed on site. Designed, specified, and delivered by DARKNX as part of the integrated power infrastructure scope.</p>
<p>POWER ARCHITECTURE</p> <h3>N+1 Tier III</h3> <p>Full redundancy across power paths. Designed to Tier III standards with no single point of failure across UPS, generator, and distribution layers.</p>	<p>COOLING</p> <h3>Air Cooled</h3> <p>Purpose-designed air cooling infrastructure at 1.3 PUE. Optimised for the rack density profile of the hyperscale workload.</p>	<p>RACK ENVIRONMENT</p> <h3>60 kW / Rack</h3> <p>~1,400 racks across the facility. Mixed server environment combining internal infrastructure and retail compute deployments.</p>

Delivered at \$7.45M/MW. Market has since moved to \$10M.

At time of delivery, DARKNX beat the market benchmark of \$8M/MW by \$0.55M per megawatt saving the client \$60M in total. The market has since moved to \$10M/MW, making this delivery even more valuable in hindsight.



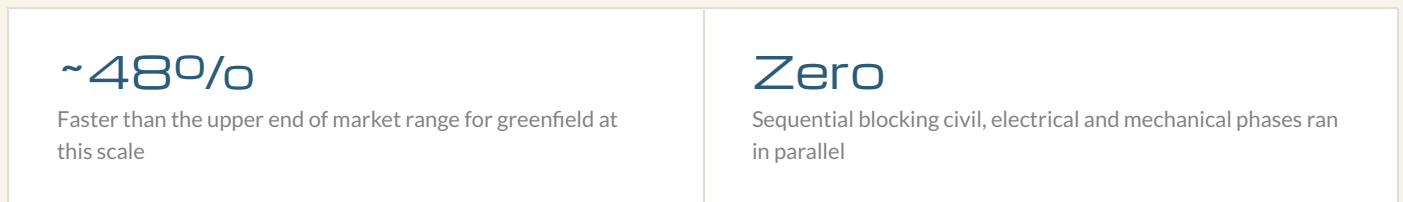
\$2.55M Saved per MW vs benchmark at time of delivery	\$10M Current market rate per MW DARKNX delivered 25.5% below today's benchmark
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25 months. Greenfield to hyperscale compute-ready.

For a ground-up 85MW deployment, 25 months represents exceptional delivery speed. The market range for a project of this scale and complexity typically runs 30–48 months often longer on greenfield sites.



What made this possible: DARKNX's prior experience delivering higher-criticality projects including grid development and utility-scale interconnection meant the team arrived with proven systems, not a learning curve. Manufacturing control over critical power components eliminated OEM dependency. Parallel workstreams across civil, electrical, and mechanical phases compressed the schedule without compressing quality.



EXECUTION PHASES

Every phase run in parallel. Every handoff owned by DARKNX.

No phase waited for the previous one to fully complete. DARKNX controlled the sequencing and because it owned the critical path on power infrastructure, it controlled the schedule.

PHASE	M2	M4	M6	M8	M10	M12	M14	M16	M18	M20	M22	M25
Permitting & Approvals 6 months	Regulatory + Grid Auth											
Civil Works & Foundation 8 months	Ground-Up Site Build											
Substation Development 10 months	Custom Substation + Grid Interconnect											
Power Infrastructure 12 months	MV/LV Distribution In-House Mfg											
Mechanical + Cooling 8 months	Air Cooling Infrastructure											
Install & Commissioning 4 months	Full-Load Energization											

DARKNX had delivered grid-level infrastructure before this project. **That experience is what made 25 months achievable** not optimism about the schedule, but genuine command of the systems that govern it.

Credibility earned at higher criticality.

An 85MW hyperscale deployment is a complex undertaking. For DARKNX, it was well within proven capability the team had already delivered projects of greater criticality, including utility grid development and large-scale interconnection infrastructure.

STANDARD EPC APPROACH

- OEM-dependent supply chain transformer and switchgear specs not controlled, utility review slower
- Substation and grid interconnection managed through third parties with limited technical authority
- Sequential phase execution civil must complete before electrical begins
- Fragmented accountability across contractor layers permitting gaps compound delays
- Region-agnostic permitting generic teams unfamiliar with local authorities and processes
- Client absorbs risk of contractor coordination breakdowns at every interface

DARKNX APPROACH

- In-house manufacturing means precise control over transformer and switchgear specs utilities prefer working with the manufacturer directly
- Deep technical documentation, testing data, and rapid redesign capability satisfies utility engineers faster
- Parallel execution model phases overlap by design, not by accident
- Single point of accountability from ground break to energization
- Region-specific permitting teams embedded across North America local authority relationships built in
- DARKNX Enterprise System real-time transparency across all workstreams

The client was initially skeptical about delivery speed at this scale. **What converted them was transparency** DARKNX's execution systems gave real-time visibility into every workstream. Complications arose, as they always do at 85MW. What surprised the client was how coordinated the response was.

25 to 50 authorities. One team that knows all of them.

A greenfield data centre project in North America typically engages 25 to 50 distinct permitting authorities federal, state or provincial, regional, and municipal. Managing that volume is a project in itself. DARKNX brings region-specific permitting teams who have already built those relationships.

01 / FEDERAL

Federal and Environmental Bodies

Environmental regulators, federal energy authorities, water and wetlands agencies, and impact assessment bodies. DARKNX teams are experienced navigating EPA, FERC, Army Corps, and their Canadian equivalents as standard project scope.

02 / UTILITY

Utility and Grid Authorities

ISO and RTO interconnection queues, transmission and distribution utilities, and high-voltage substation review bodies. Because DARKNX is the manufacturer, utility engineers have direct access to equipment specs, testing data, and technical documentation reducing review cycles significantly.

03 / STATE / PROVINCIAL

State and Provincial Regulators

Air quality, water, land use, fire marshal, electrical safety, and heritage authorities. DARKNX's region-specific teams operate with existing working relationships across US states and Canadian provinces, reducing the time spent establishing credibility from scratch.

04 / LOCAL

Municipal and Local Authorities

Zoning, building permits, fire, stormwater, roads, and right-of-way the layer where most project delays quietly accumulate. DARKNX's local teams manage these relationships as a core competency, not an afterthought. Local familiarity is a schedule asset.

On this project, the utility was more comfortable working with DARKNX than with a standard EPC. **Being the manufacturer gave DARKNX technical authority** precise specs, deep documentation, and the ability to redesign quickly. That confidence translated directly into a faster permitting process.

START THE CONVERSATION

Your data centre project deserves certainty.

Whether you are planning a greenfield build, a modular expansion, or a hyperscale deployment DARKNX brings the manufacturing control, execution systems, and delivery track record to make it work. On time. On budget.

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