VERTIV™

Global Solutions

The right solution for your
unique needs

Standard solutions from Vertiv offer a low risk, high value solution that can be rapidly delivered and assembled on-site, anywhere in the world. Organizations can now add capacity faster and achieve new levels of scalability and performance.

IT, telecommunications and data center managers increasingly recognize the value of integration, both in their IT and communication stacks and in the facilities that support them. We've learned that designing, configuring and fabricating data center infrastructure off-site is creating tighter integration across systems, streamlining processes and enhancing management.

Vertiv innovates in the market by challenging and out-performing the traditional plan, design, build process. Our unique and differentiated methodology applies ultra-modern technology and mass-production principles to enable exceptional scale, velocity and quality for every project regardless of its size or complexity.

Rapid Design

Leveraging repeatable subsystem building block designs enables simplicity, resulting in an efficient, automated, and low-risk design process. Vertiv creates MEP designs that are uniquely constructible, easy to operate and low cost using a system that utilizes a repetitive and standardized modular approach.

Tailored Integration

Highly complex mechanical & electrical integration activities are offloaded to the factory to maintain quality and velocity. We employ dedicated commissioning personnel who use an adaptive approach to projects, maximizing ROI and minimizing timelines, whilst optimizing facility efficiency.

Simplistic Assembly

Concise and clear site documentation provides on-site teams with essential information needed to assemble modules effortlessly, all supported by a dedicated team of specialist Engineers. We can deploy personnel who can embed with your building, facility and operations colleagues to improve team performance.

Global Service

A vast array of maintenance and performance services increase efficiency and reduce complexity anywhere in the world. Our global service organization, located in every world region, is equipped to handle the toughest challenges.

DEFINING SOLUTIONS

Modular solutions from Vertiv are data centers and other critical facilities that are pre-engineered with systems pre-assembled, integrated, and tested in a factory environment to shorten deployment time frame and improve predictability of performance. They are flexible, allowing for faster deployment and lower risk, scalable, allowing for customization and agile response to unforecasted demand, and efficient, allowing for lower total cost.

Our solutions typically include thermal management, power distribution, controls and management software, and services — plus ancillary systems such as lighting, fire protection, physical security and water treatment — pre-configured to create a complete environment for the efficient and reliable operation of technology systems.

The Spectrum of Solutions

Integrated infrastructure solutions have been around for years but in limited sizes and configurations. Today these solutions are widely adopted due to the range of solutions available, including for the following challenges:

Edge Data Center

Vertiv unlocks new possibilities at the edge by designing and delivering scalable, customized data centers that speed deployment, minimize risk, and control costs. Vertiv uses modular integration techniques to tailor solutions for your application while offering the benefits of a streamlined process. And, you have access to the breadth of our portfolio as well as the depth of our experience and our discipline specific partners. With Vertiv global solutions, you can implement uniquely customized modular edge data centers of any scale that are built to maximize flexibility, improve scale, and boost efficiency.
Related Products: SmartRow™, SmartMod™

Core Data Center & Critical Facilities

Vertiv global solutions makes expanding core data centers and critical facility capacity easy. Vertiv uses modular integration techniques to help our customers, contractors, and consulting partners more effectively design and build data centers anywhere in the world. We offer flexible, scalable, and efficient solutions that are pre-engineered, pre-fabricated, and pre-tested, before being rapidly deployed and assembled on-site. By engaging with IT, facilities, network, and security, our solutions team works with you through the whole process, from developing the initial requirements all the way to project execution.
Related Products: SmartMod, Power Module, Prefabricated Modular Infrastructure

CORE DATA CENTER DELIVERY/INSTALLATION

Vertiv partnered with a government agency to deploy a prefabricated modular data center solution for their core data center site. PFM data centers deliver low-risk, high-value implementations with the added benefits of faster delivery and easier on-site installation, resulting in a data center that's up and running in hours or days instead of weeks or months. Watch the video here.

Colocation & Cloud

Vertiv helps colocation companies maximize efficiency, deliver flexibility, and ensure just-in-time scalability with pre-fabricated, tested, and integrated data centers. We provide unique designs, building and executing a high-quality facility that enables adding cooling, power, and whitespace on the fly as needed, while not breaking the bank. Vertiv global solutions takes a holistic view of projects, working with you from the initial requirements all the way through project execution. Our solutions are supported by a global manufacturing and supply chain footprint, built on decades of leadership in data center and telecommunications applications.
Related Products: Power Module, Prefabricated Modular Infrastructure

Cable Landing Station

Vertiv provides the core electrical and physical infrastructure to support cable landing stations, whether a few or dozens, anywhere in the world. We leverage the breadth of our portfolio and experience of our discipline-specific partners to deliver solutions that are repeatable, modular, assembled on-site, and customized for local markets. Our approach relies on proven solutions that we customize to offer the ideal combination of distinctive capability, best value, and rapid delivery.
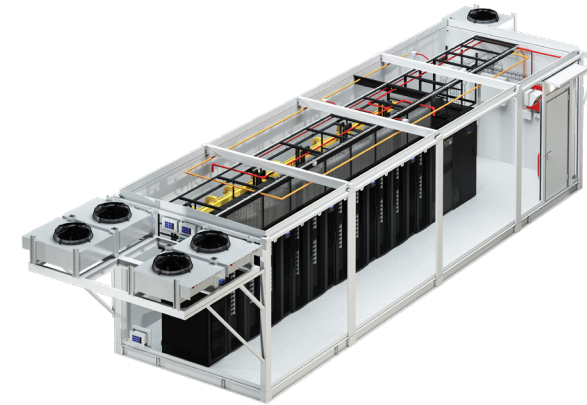*Related Products: SmartMod™, Power Module, Prefabricated Modular Infrastructure*

Solutions Standardized Products

SmartMod™

For small room IT deployments up to 10 racks and 100kW or less, Vertiv™ SmartMod™ offers a simple way to install capacity in a fraction of the time a typical IT build might take. With integrated, pre-engineered, and pre-fabricated infrastructure, you can rapidly achieve your objectives. And you don't have to blow t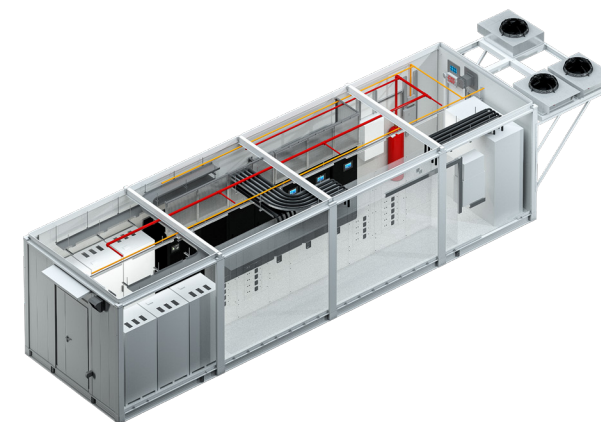he budget, or overbuild based on uncertain future needs – with right-sized systems designed to work together and optimized for constructability and speed to startup, you can build just what you need today and expand as needed in the future. SmartMod leverages core Vertiv Critical Power, Thermal Management, and Monitoring & Control technologies, including modular and scalable Liebert® EXM UPS power protection, close-coupled in-row Liebert CRV thermal management units, flexible Vertiv VR racks, Vertiv rack PDUs, thermal containment to isolate hot aisle and cold aisle airflows, and more. Find out more about the Vertiv SmartMod here.

Power Module 1000/1200

Vertiv Power Module 1000/1200 enables you to deploy isolated, power-dense, critical infrastructure capacity just in time to meet your business demands. You can rapidly construct redundant blocks of 1000 or 1200 kVA/kW critical power infrastructure for your new or existing facility, allowing you to focus on the sensitive areas of the facility that require the most management. And, it can be used in a site architecture that is hot scalable, so you can add capacity by simply adding additional units, without taking the critical loads offline. Vertiv Power Module incorporates Liebert EXL S1 UPS offering industry-leading power density and proven reliability, multiple switchboard configurations offering distribution options for both critical and non-critical downstream loads, redundant Liebert thermal management units, and more. The entire Vertiv Power Module and its subsystems are designed to minimize additional work required at the site – from arrival on-site to startup and commissioning in days instead of months. Find out more here.

SmartCabinet™

SmartCabinet is a complete IT infrastructure solution that contains enclosure, uninterruptible power, thermal management, power distribution, monitoring and infrastructure management all in a simple packaged solution. It is a fully integrated, industry-leading plug-and-play solution with a ready to use IT cabinet space.

SmartRow™

SmartRow is a complete data center in a row. It combines four to fourteen racks with data center grade thermal management, UPS, power management, monitoring and control technologies and cable management all in a single enclosed room neutral system. It's equipped with power and cooling redundancy levels and emergency ventilation.

SmartAisle™

SmartAisle optimizes infrastructure deployment and management with an intelligent row-based system that integrates data center racks, power, row cooling, aisle containment, monitoring and control technologies for spaces with up to 40 racks. SmartAisle configurations can be scaled to fit any size IT environment from a row of racks to large enterprise data centers.

The Prefabricated Development Process

The speed of disruption and the current data surge cycle continues to demand transformation in the data center industry.

The response to these demands brings prefabricated modular (PFM) data centers to the arena - delivering low-risk, high-value implementations with the added benefits of faster delivery and easier on-site assembly.

Traditional approaches, such as the stick-build construction process, have represented the default choice for many organizations seeking to add capacity simply because there has been no viable alternative. But, these traditional processes have proven insufficient in many cases.

They can't meet the accelerated development requirements of dynamic organizations and often don't factor future growth into the design. Relying on these processes, organizations have either had to deploy capacity before it is needed — creating risk and stranding capital — or consistently stay a step behind their own capacity requirements, limiting growth.

Prefabricated and/or modular methods are increasingly the choice of data center owners and operators for the value of its integrated approach. Designing, configuring, and fabricating data center infrastructure off-site is creating tighter integration across systems, streamlining processes and enhancing management of those systems.

For new builds, prefabricated facilities represent an emerging solution. These modular, facility-sized solutions allow organizations to bring new capacity online faster and can be easily scaled. Prefabricated methods design the growth plan into the solution from the beginning.

For expansion and retrofits, building block solutions that range from single enclosed racks to multi-rack contained systems represent a viable solution, as they allow a staged retrofit or expansion that can be accomplished with minimal disruption and allow for controlled growth.

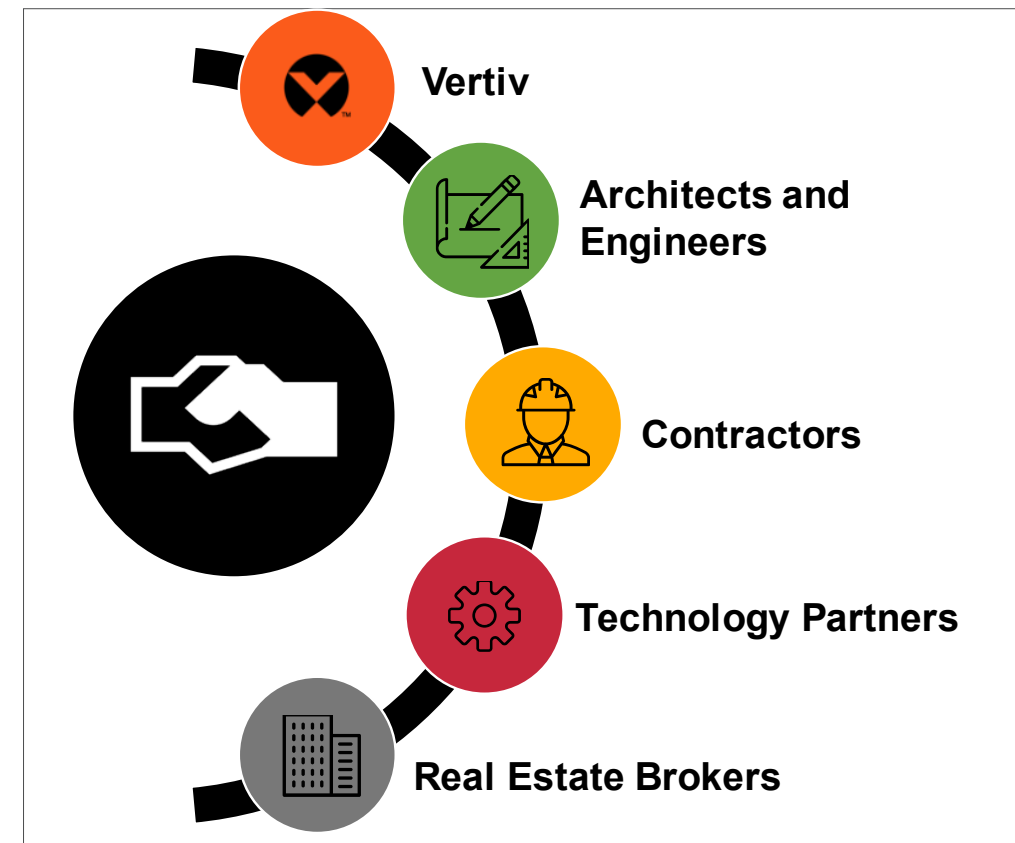**For augmentation of conventional facilities,** PFM units can be deployed to add additional power (UPS) or cooling capacity to a new or existing site that may have sufficient whitespace but that is constrained from a thermal or resiliency perspective.

Vertiv uses modular integration techniques to help our customers, contractors, and consulting partners more effectively design and build data centers.

Our design approach supports an off-site prefabrication process that occurs in dedicated facilities using skilled craftsmen, a team of specialist engineers, and established workflows to drive high quality. The process also supports system-level configuration and testing prior to on-site installation, streamlining commissioning and minimizing the potential for startup problems.

When additional capacity is needed, new modules can be added with minimal engineering and without disrupting existing operations.

Integrated Design and Process Efficiency

Vertiv
Architects and Engineers
Contractors
Technology Partners
Real Estate Brokers

Our prefabricated process is both more collaborative and more efficient than the traditional stick-build process.

By bringing key partners into the design process at the beginning, facility designs can better match infrastructure to site characteristics and are inherently modular because fabrication and transportation considerations are integrated.

No single partner can provide all of the services and support required to construct a data center, regardless of whether the traditional or prefabricated approach is employed. However, the prefabricated process has the advantage of bringing all parties together from the beginning.

Traditional New Build

- PROJECT CONCEPT
- ENGINEER & PURCHASE
  - *Schematic Design*
  - *Design Development*
  - *Construction Documents*
  - *Part Acquisition & Purchase*
- CIVIL WORKS SITE PREP
- CONSTRUCTION
- ON SITE INSTALLATION
- STARTUP

Prefabricated Modular New Build

- PROJECT CONCEPT
- ENGINEER & PURCHASE
  - *Schematic Design*
  - *Design Development*
  - *Construction Documents*
  - *Part Acquisition & Purchase*
- FACTORY INSTALL & TESTING
- SITE ASSEMBLY & TESTING
- STARTUP

PREFABRICATED MODULAR

- CIVIL WORKS SITE PREP
- CONSTRUCTION

■ Data Center Owner
■ Data Center Provider

Example of PFM Success

Dimension Data

The burgeoning growth of data-enabled businesses across the developing markets of Africa has led to an explosion of data center demand closer to users. It is no longer economical to serve these customers from hubs located thousands of kilometers from where the information is produced and consumed. For this reason, Internet Solutions, with their partner Dimension Data made the decision to expand its data center footprint in the increasingly connected center of African commerce, Johannesburg. However, the key challenge in this market is to build a highly reliable, world-class facility in a way that offers future flexibility and enhanced performance.
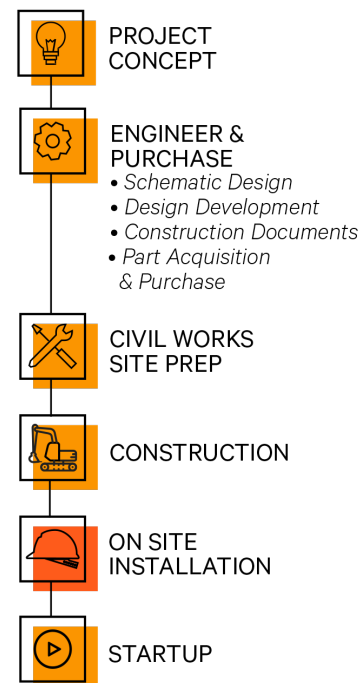
Internet Solutions and Dimension Data turned to Vertiv to deliver a high-quality prefabricated modular Tier III compliant data center system for their Parklands facility. The solution consists of 120 racks with expansion to up to 286 racks and built around industry-leading Vertiv power (including the Liebert® Trinergy™ Cube UPS) and thermal management
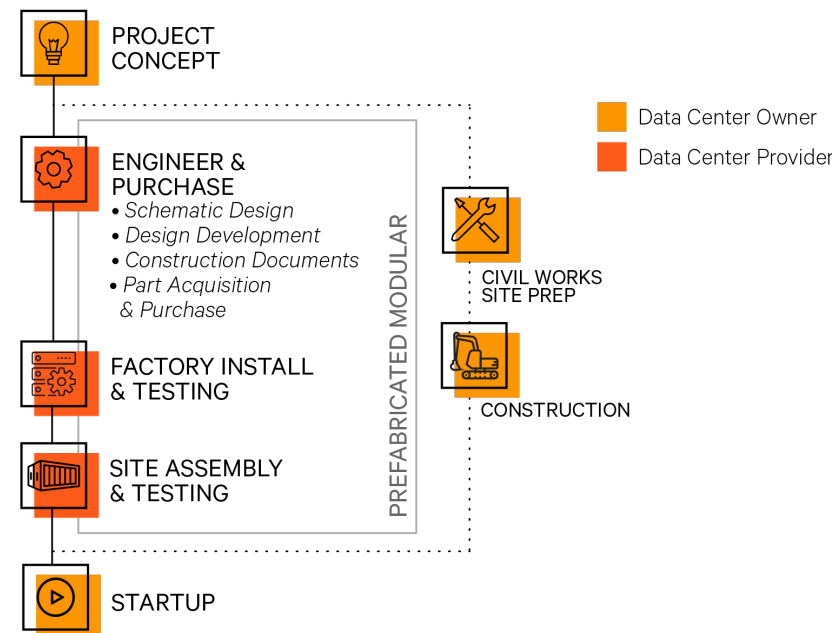

technologies (including room cooling, and SmartAisle containment and control), as well as advanced Lithium Ion batteries for reduced operational expenses. Designed to accommodate ocean shipment, the facility was prefabricated, integrated, and tested in Vertiv's European facility. It was then disassembled into 12 shippable units, packed for transport, and made the journey to South Africa, where it was reassembled on site and ready for testing in under six weeks.

Dimension Data case study