World-class data center advances Moscow's role in global economy

DataSpace develops first certified Tier III data center in Eastern Europe

DataSpace

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—David Hamner, CEO, DataSpace

HP customer case study:
HP Technology Services

Industry:
Data center co-location services

Objective

Launch the first co-location data centers in Eastern Europe with Tier III certification

Approach

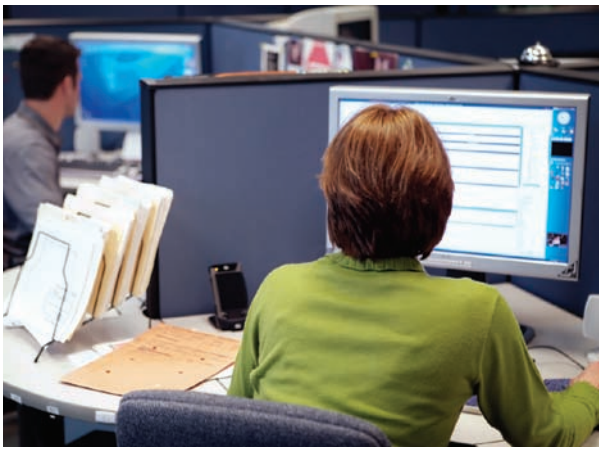
Engage HP Critical Facilities Services consultants to advise on site selection for six new, certified Tier III data centers in Moscow and to develop the detailed designs of the first three facilities

Data center innovations

- Continuity of operation without disruption whether by disaster or planned maintenance
- Operation and infrastructures embed best practices in facility management
- Cost-effective cooling uses outside air, lowering energy consumption and cost
- End-to-end solution integrates and streamlines design-build-certification processes

Business benefits

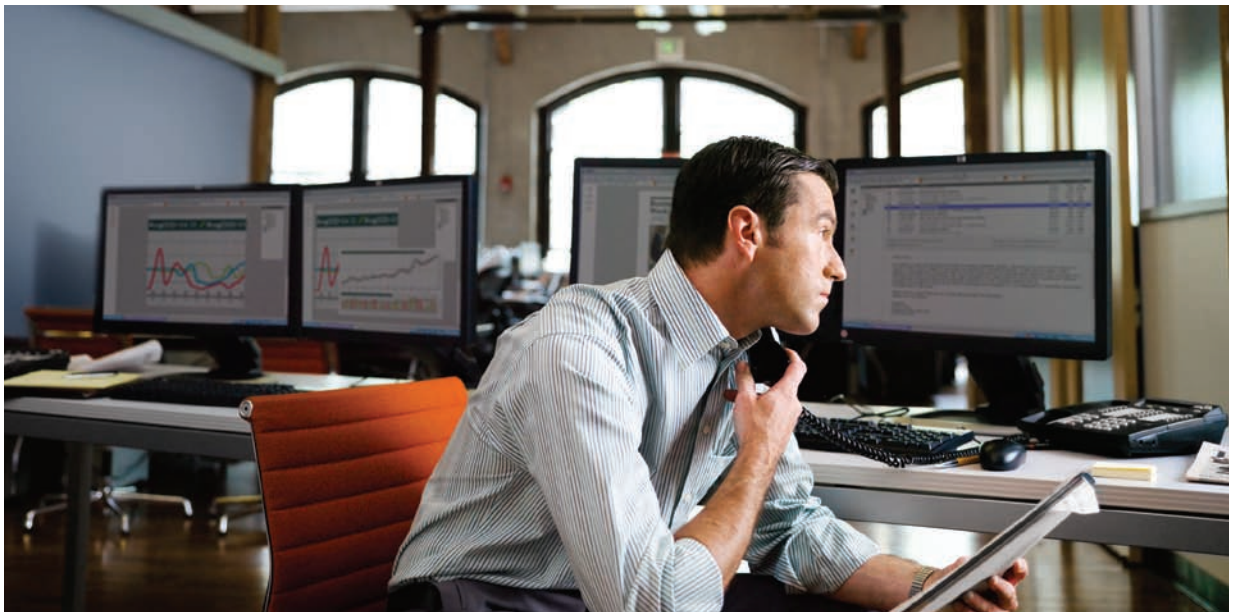
- Adapts to varied clients' needs, including telcos running cloud-based data services
- Sets new standard for co-location services in Eastern Europe
- Differentiates DataSpace from competitors with first certified Tier III data center
- Positions co-location service provider in vanguard of global economic growth in Russia



Moscow-based DataSpace, a developer and operator of business-critical co-location facilities for enterprises and managed IT service providers, has established the first data center in Eastern Europe to receive Tier III certification by the Uptime Institute.

In November 2010, the Institute, a global data center authority, certified the data center's design, which was developed by HP Critical Facilities Services. Ten months later, in September 2011, the Uptime Institute will award Tier III certification to the construction and operation of the four-level facility in metropolitan Moscow, which has 2,850 square meters of white space and 1,000-rack capacity.

DataSpace is the first and only co-location services provider in Eastern Europe to provide a facility with Tier III certification. The facility's continuous uptime is prized by its customers, which include telecoms running cloud-based data services as well as global financial services institutions.



Commissioned in June 2011, the facility will begin serving occupants in January 2012. DataSpace clients will install and operate their servers and storage using their own staff or vendors of their choice.

"We wanted to differentiate ourselves by being first in the region with a certified Tier III facility," says DataSpace CEO David Hamner, who co-founded the company in early 2009 and shortly after, began working with the HP consultants.

"When local engineers and authorities reviewed HP's detailed design, they told us that they'd never seen such a thorough design."
David Hamner, CEO, DataSpace

"We were undertaking a project that has never been done before in Russia," says Hamner. "We ensured our success by hiring the very best designers, HP Critical Facilities Services, the premier experts in data center design.

"Our HP team provided us with an end-to-end solution," continues Hamner. "They collaborated with the Uptime Institute as well as our local contractors, integrating design, testing and handover while incorporating the Institute's best practices. HP's ability to work collegially and closely with all parties was critical to our success."

Previously nonexistent in Eastern Europe, certified Tier III co-location data centers are essential to economic growth as Russia and other countries in the region begin integrating into the global economy. Moscow is increasingly drawing the operations of global companies in need of high-quality data centers.

Backed by its parent company, Russia Partners, one of the oldest and largest private equity firms in Russia, DataSpace is working with the HP team to develop a network of six Tier III facilities in or near Moscow, including two more on its expansive urban campus. HP has completed the conceptual design for the network's suburban site and is now designing the next two sites on the central campus. By 2015, DataSpace expects to be running all six of its planned facilities, representing a $250 million capital investment.

Occupying a converted tire factory warehouse, the facility comprises four levels. Mechanical equipment is housed on the ground level. Floors two through four each house four data halls. Each of the facility's 12 data halls has 90-rack capacity.

Pioneering process with proven expertise

The HP Critical Facilities Services team led the design and certification processes, a dual challenge that had not been met before by any data center service provider in Eastern Europe.

The HP team comprised a project manager as well as consultants with specialized expertise in architectural, structural, civil, mechanical and electrical engineering.

They prepared the conceptual design of the chosen site in July 2009 and provided the detailed design three months later, in September, with all permits in place.

The HP team began its engagement with DataSpace by advising and guiding the company in its review of almost 200 sites as possible locations for its planned facilities. The HP consultants devised criteria that helped DataSpace quickly assess the advantages

and disadvantages of each location. They developed conceptual designs for three of the most promising sites, testing their feasibility, assessing the risks and benefits associated with each location as well as analyzing capital and operating costs.

DataSpace selected the property for its Moscow campus, acquired a long-term lease on the land and purchased the building. Despite its central location and reliable access to power—DataSpace subscribes directly to the electricity supplier—the site, a former tire plant, posed challenges. The HP team's conceptual and detailed designs ameliorated the site's drawbacks and capitalized on its advantages.

Meeting local and global requirements

HP simultaneously collaborated with the Uptime Institute and local contractors who provided knowledge and expertise in meeting local requirements. HP consultants developed the detailed design, which was localized by Moscow-based IDE. IDE and Mercury Engineering of Dublin, which constructed the facility, ensured the compliance of the design with local regulations and secured approvals from government officials.

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The HP team also took a collaborative approach to importing the plant machinery and equipment into Russia, a process subject to intensive local regulation and licensing as well as multiple customs and import duties. After observing the testing of plant equipment at the manufacturers' sites, the HP team shipped the equipment to Moscow, where IDE coordinated the necessary approvals and tax payments.

"The HP project manager liaised daily with all parties," says Hamner. "His seamless leadership and the HP team's expertise enabled me to maintain a lean internal real estate/asset management department."

Careful collaboration throughout the design process paid off. "When local engineers and authorities reviewed HP's detailed design," adds Hamner, "they told us that they'd never seen such a thorough design."

Designed-in redundancies and efficiencies

The HP team's detailed design achieves Tier III redundancies while cost-effectively adjusting to Moscow's climactic extremes.

Duplicate chilled water circuits enable operators to take any valve out of circuit without interrupting the flow of chilled water. The electrical infrastructure provides every server cabinet with two completely different sources. If a transformer fails, another will seamlessly take up the load.

While supporting the high power requirements of infrastructures that are both redundant and adaptable to seasonal extremes of heat and cold, HP devised an energy-efficient cooling system.

Weather permitting, the chilled water system makes use of outside air for cooling, a technique that substantially lowers energy consumption and costs and reduces the site's carbon footprint. The cooling system is designed in two parts. Glycol antifreeze protects the infrastructure's primary system, which circulates air through the outer layer of piping and equipment. This external part of the system supplies cooled air to the secondary system, which circulates air into the computer room air conditioning units.

As the facility was commissioned, the HP team transferred best practices in operation and maintenance to DataSpace personnel to ensure ongoing compliance with Tier III standards.

Customer solution at a glance

- HP CFS consultants advise on site selection, perform conceptual designs on three sites, develop detailed design for first data center
- Engagement includes close collaboration with Uptime Institute and local contractors to deliver end-to-end solution
- Facility size: 5,500 square meters overall with 2,850 square meters of white space
- Project duration: Nine months from initial consulting on site selection through approval of detailed design

An all-star team delivers world-class standards

While impressing regulators, the HP design—as well as the resulting Tier III facility—is living up to the highest expectations of DataSpace and its customers.

"As I walk through the facility, I see how much thought went into the design, from the physical security of the building to the people flow," says Hamner. "HP has addressed so many nuances that will benefit us, from how we maintain the facility to how customers bring in, stage and install their equipment."

As DataSpace welcomes its first occupants, Hamner finds that they value the track record of HP Critical Facilities Services as well as the facility itself. "These clients, including Western banks, have seen it all," says Hamner. "They are very impressed, and to have such a facility in Moscow they find even more impressive.

"And when they learn that HP Critical Facilities Services has designed the data center," adds Hamner, "their technical due diligence often stops there. Some have hired HP consultants to design their own enterprise data centers."

Now, DataSpace is working with HP and Mercury to develop two more Tier III data centers on the Moscow campus. "We have an all star team," concludes Hamner. "We spent two years building our first Tier III facility, and we also built these relationships. As we proceed with our next two projects, we're keeping this team together."

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