Metals Manufacturer Builds a More Reliable, Greener and Organized Data Center

DBG is a custom metal products and services company catering to the Heavy Truck, Automotive, Military, Agriculture, Consumer and Industrial industries. The company operates five North American facilities, three in Canada and two in Mexico; each functioning as a focused business unit that delivers leading edge metal products and services. At DBG's Shawson facility in Mississauga, Ontario, Canada, the primary focus is to supply customers with components and assemblies requiring medium to high tonnage presses. This facility is also supported with auxiliary equipment including robotic weld and automated assembly cells.

Challenge:

When DBG decided to move their IT and finance departments from a neighboring structure into their Shawson facility, the building's second floor had to be renovated to accommodate the added office space and IT equipment which would accompany the move. This was the perfect time for DBG to expand and upgrade the building's small data center with a fresh and innovative approach.

The facilities' previous data center employed open architecture racks from the server equipment manufacturers along with a dedicated server room AC unit which operated at all times plus general building wide AC. Julian Wainwright, IT Manager at DBG, did not feel comfortable relying solely on AC units to cool the equipment. "I have been in the IT industry for over 22 years and have never come across an AC unit that didn't fail at some time. If our AC unit stopped running, we would have to shut down everything or else run the risk of frying equipment, and since the Shawson facility supports most of our other

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>
> Julian Wainwright, IT Manager at DBG

locations' business functions and ERP, the entire organization would be affected. So a solution that minimizes these issues is what we were looking for," explained Julian.
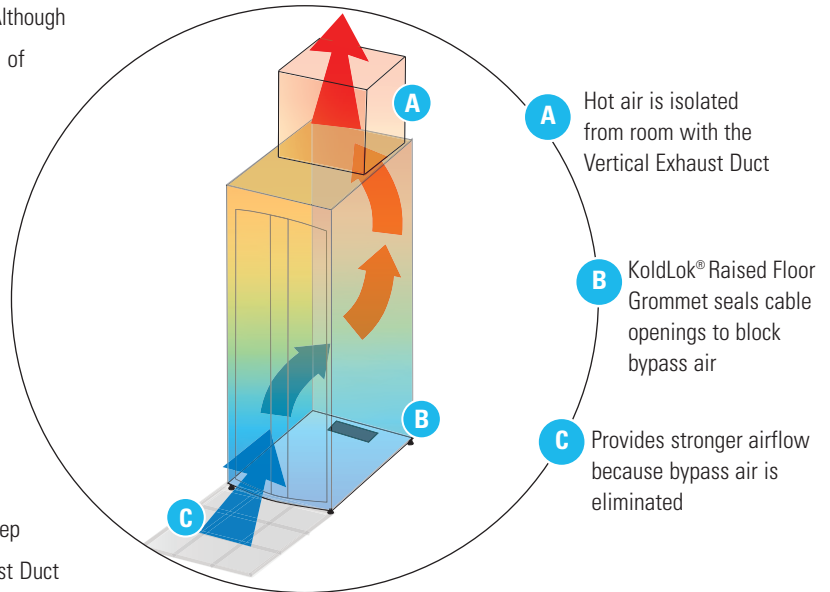
Solution:

When evaluating data center options, Julian focused on solutions that would bypass the risks of failing AC units and resultant equipment outages. Although not necessarily seeking green options, he came across the concept of ducted exhaust cabinets which would offer him the ability to achieve all of his data center goals, while becoming extremely energy efficient. After discussing the design concept with their subcontractors, DBG decided to move forward and implement a ducted exhaust solution, specifically the T-Series SteelFrame Cabinets with CPI Passive Cooling® Solutions. "When I first learned about ducted exhaust cabinet solutions I assumed they were just for large high-density data centers, but they are an ideal option for small ones as well," said Julian.

The Shawson installation includes three 48.4 inch (1229 mm) deep T-Series SteelFrame Cabinets; each equipped with the Vertical Exhaust Duct (or ducted exhaust), a CPI Passive Cooling Solution component. Positioned on top of the cabinet, the Vertical Exhaust Duct helps achieve complete airflow isolation and eliminates the mixture of hot and cold air by channeling equipment exhaust out of the cabinet and into the plenum space above the drop ceiling. During the winter months, the equipment exhaust is directed from the plenum space out into the second floor office area, helping to warm the office space and reduce the amount of auxiliary heat required. In total, CPI's solutions manage exhaust from over 30 front-to-rear breathing servers, switches, SANs, wireless devices and other equipment.

Since the use of CPI Passive Cooling Solutions eliminates the mixing of hot and cold air, the Shawson facility is able to use the ambient office air temperature to cool the data center year round. This air is delivered into the data center through a large motorized louver which supplies up to 2000 cubic feet per minute (CFM) of circulation. "Although the building does contain two AC units, we now only need to run one during the summer, which alone keeps

CPI Passive Cooling® Solution

A Hot air is isolated from room with the Vertical Exhaust Duct

B KoldLok® Raised Floor Grommet seals cable openings to block bypass air

C Provides stronger airflow because bypass air is eliminated

the office and data center operating at comfortable temperatures. In addition, the fact that CPI's solutions keep hot exhaust and cool supply air separated, makes AC unit failure much less of an issue, especially since we only use it during the warmer months," explained Julian.

After implementing CPI's solutions, the Shawson facility has been able to greatly minimize the use of AC units in the data center, and at the same time has reduced the amount of energy used to heat the second floor. The data center now has an average temperature of 75.2ºF to 78.8ºF (24ºC - 26ºC) using the ambient office air temperature. "CPI's ducted exhaust cabinets not only make this data center more reliable and less prone to outages, but also provides great energy savings that we weren't even originally looking for," declared Julian.

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