

Data Center Space Saving Opportunities

Virtualization and the subsequent years of data center consolidation literally changed the way we think about data centers and computing. One of the unintended consequences of this computing revolution was that it eliminated space from the ‘space, power, cooling’ data center trinity. You might remember [the 2007 IBM ad](#) that showed a solitary rack at the far corner of a large, now completely vacant data center space.

Fast forward to 2019, and space utilization is back on the map. While space requirements most certainly changed, they did not go away completely. We might be so bold as to go on record and say that no customer was able to virtualize 10,000 square feet of white space into a single rack. Marketing hyperbole notwithstanding, space utilization is still a key factor in design decision making. It is driving the new generation of sustainable data centers, as well as the reconfiguration of some old ones.

Since its introduction, the Zonit Z-PDS has played a unique role in the era of post-virtualization consolidation. It is a revolutionary power distribution product that also happens to have some very compelling space-saving features. And a quick word about what ‘space savings’ means to us.

When one thinks about space in the data center, the first thought is the two-dimensional view of the floor itself – the x and y axis of the floor grid. We would suggest that there are space saving opportunities along the z axis, or the vertical space inside and above the rack. There are also electrical space-saving opportunities in terms of breaker space, conduit space, and distribution space, either in conduit or in whips.

The Z-PDS is a localized power distribution unit that shifts RPP functionality to the rack itself. Picture a 2u device that can be mounted inside or above a rack. It is a simple but significant shift in the way you think about power distribution in the data center. Once you start thinking in terms of delivering power on a rack by rack basis, things start to happen from a space-saving standpoint:

On the X and Y Axis: Since it takes over for local power distribution, Z-PDS replaces traditional RPPs. If you can imagine a floor plan without power cabinets in the rack row, it’s easier to see that you now have additional floor space available for more racks. In certain Z-PDS configurations, you can also eliminate rack power strips, which in turn means a layout utilizing shallower cabinets.

On the Z Axis: Z-PDS also eliminates the need for overhead busway. As such, the 18” to 24” zone above the rack normally reserved for busway, tap boxes, and structural support, is free to be used for mechanical or communications distribution. In some cases, it can mean lowering ceiling heights, thus reducing shell and fire suppression costs.

On the Power Front: Some would argue that finding space in the electrical system is far more valuable in terms of cost savings and reliability improvement, and they would be right. Often, the issue with power distribution is not capacity, but rather having breaker space to get power from the UPS to the rack. With Z-PDS, you will use fewer breaker positions and up to 50% fewer branch circuits. This frees capacity at both the panel and in the distribution pathway.

The Z-PDS can also save cost by eliminating rack power strips and supporting future increases in density. These, however, are topics for another day. For more information about how you can balance the capital and operating cost equation, [click here](#) for more information about the revolutionary Z-PDS.