

New cooling system for IS data centre

A new design for Internet Solutions' data centre, which was recently opened in Randburg north of Johannesburg and known as Randview, aims to slash client power costs, increase their data centre productivity, and improve disaster resilience.

It will also give clients greater connectivity flexibility by allowing competitor carriers to connect directly into the data centre.

The Randview data centre has been designed to operate without conventional air conditioning for all but the hottest time (9%) of the year. The data centre will boast a power utilisation efficiency (PUE) of 1.4 versus the industry average of 2.5.

"Cooling is the largest item on a data centre bill, so reducing the need for compressor based air conditioning has a significant impact on a client's data centre costs," says Barry Hatfield, Internet Solutions business development manager for cloud solutions. "It also gives the client a buffer against electricity price increases. Because our PUE is nearly half that of the average, we'll be passing on some very substantial savings to our clients."

Wheel transfers cooler air

Randview's very nearly free cooling has been achieved by the use of three Kyoto Cooling Cells, mechanical devices made of conductive aluminium and some six metres in diameter. Half of the wheel is exposed to outside air, and the other half to the data centre air. The cooler exterior air temperature is transferred into the building as the wheel turns. Because the inside half of the wheel is sealed from the outside, dust and other contaminants in the external atmosphere are not transferred to the interior of the data centre.

Heat is extracted from the data centre interior by means of a hot aisle contained exhaust system and the wheel-cooled air is delivered at volume to the racks. "Kyoto Cooling has been tested and proven in many different applications in Europe and, most publicly, in Sydney Airport in Australia," Hatfield says.

"So, there's no operational risk in using this technology in a data centre. More to the point, because we can use volume instead of temperature differential to cool the servers and we don't lose efficiency through a mixture of hot and cool air over the servers, very little of the electricity we bring in to the building is being lost. Most of what we draw from Eskom is going towards powering the servers."

Preventing damage to cables

In addition, Randview has a number of other innovations to differentiate it from current data centres. Its cabling runs above the racks, preventing damage to the cables and facilitating maintenance and installation. This has also enabled the use of

solid concrete floors, which don't need reinforcing to be able to carry high density, heavy computing devices.

The cost savings generated by Randview's innovative design will make it more affordable for clients to plan for and execute on disaster resilience. Hatfield says that the focus has shifted from an exclusive emphasis on disaster recovery to high availability - preventing a disaster from happening. "Much of that is achieved through redundancy and back up facilities, all of which come with a price tag.

"If, however, your primary data centre is one of our existing data-centres with a DR site in Randview, the large amount of connectivity between our data centres and Randview allows us to offer a compelling value proposition."

Another Internet Solutions innovation has been to make Randview carrier agnostic, enabling client organisations to use their incumbent connectivity providers to access the data centre.

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