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So Far, So Green

Posted by Arthur Cole on June 23, 2008 at 3:02 pm

Everybody's talking about the green data center, but the fact is that few are actually doing it. This is no surprise, considering we're talking about revamping infrastructures and design concepts that have guided the enterprise practically since its inception.

And while most existing centers are cutting power costs by updating to new green technologies like virtualization and energy-efficient storage systems, big savings can also be found in heating and cooling, some of which can be realized only by building an entirely new structure from the ground up.

So in that light, I'd thought I'd draw some attention to the green technology going into the newest data centers to hopefully give people an idea of what their future operations might look like.

Hosting firm Terremark is putting the finishing touches on its **[new facility in Culpepper, Va.](#)**, with a strong eye toward more efficient heating and cooling. Technologies like Rotary UPSes, variable-speed fans and roof-mounted cooling reserves that take advantage of night temperatures to reduce daytime heat are a few of the innovations at play here. A high degree of modularity and reliance on utility computing are also part of the mix.

IBM is laying claim to the **[largest green datacenter in North America](#)**. The company's new facility in Boulder, Colo., measures in at 115,000 square feet, with more than 70,000 square feet of raised floor space. The design features a "free-cooling" system featuring a water economizing module, plus variable-speed motors and pumps in the air conditioning system. The building is also tied to a wind-powered electricity grid slated to produce more than 1 million kilowatt hours per year. It's expected to cut energy costs some 40 percent.

But IBM might not have the size advantage for very long. I found details on a [**new center that Advanced Data Centers**](#) is building in Sacramento, Calif. It is slated to occupy more than 230,000 square feet and features a laundry list of green innovations, such as air-side economizers, hot/cold aisle chiller and fan systems, and support for water-cooled cabinetry. The company is expecting a total cost of ownership of \$0.07744/kWh.

Over in Europe, a company called [**EvoSwitch**](#) recently expanded its center in Amsterdam by 2,000 square meters, forgoing the usual air compression technology in favor of a more efficient system that delivers normal outside air at higher capacities and with less resistance, shaving up to 20 percent off the cooling budget. The company also went with 19-inch racks that can boost the power rating to as much as 20 kW per rack without substantially increasing cooling requirements.

Green technology is such a fertile area these days that virtually every new data center will feature a unique blend of energy-saving techniques and design elements. Some of these will require larger up-front costs than standard technologies, but if energy prices continue to climb, the return will be shorter than you think.