

Facilities

As green initiatives take off, one DC installs a windmill, another sends no waste to the landfill

When Other World Computing decided to build a new 20,000-square-foot DC in Woodstock, IL, the company wanted to go green.

Among the facility's Earth-friendly features are a wind turbine, a porous parking lot, and plenty of green space.

The most obvious green feature is the wind turbine. Mounted on a 131-foot tower, the turbine's blades reach nearly 200 feet into the air. The Vestas V39-500 kilowatt turbine can generate 1.25 million kilowatt hours per year.

The project cost about \$1.25 million, an amount Other World Computing plans to make back in 10 to 14 years through lower electricity bills.

The wind turbine doesn't power Other World Computing's facility all the time. When the wind doesn't blow, the company draws power from Commonwealth Edison.

But when the wind does blow, the turbine creates more electricity than Other World Computing can use. It sells the excess power to the utility.

"At the end of the month, we produce twice what we consume," says Ryan O'Connor, warehouse operations and logistics manager at Other World Computing.

The company decided to go green in part because that's what its customer base of Apple aficionados likes.

Large DCs also going green

It's not just small DCs that are investing in eco-friendly initiatives. General Motors' huge

parts DC in Lansing, MI, also has gone green.

The DC is part of GM's waste-reduction effort. The company says it operates 100 factories and DCs that send no waste to landfills.

That includes the Lansing parts DC, which, in 2011, brought in \$42,358 from recycling 325 tons of cardboard and 1,054 tons of wood pallets. It also generated \$27,947 in revenue from recycling 59 tons of lead-acid batteries.

In another example, the facility engaged in what GM calls the largest vinyl roof recycling project in North America. When GM replaced the DC's old roof with a reflective, energy-efficient roof, the old material created some 120 tons of waste. Instead of sending the used vinyl to the landfill, GM recycled it, using some in the new roof.

GM's recycling effort isn't just about feeling good. The automaker brings in \$1 billion a year by selling

recyclable materials, says Sharon Basel, communications manager for GM's sustainability efforts.

"It feeds the bottom line," Basel says. "Our recycling brings in revenue."

GM recycles about 97 percent of its waste. The other 3 percent, including food waste, is incinerated at waste-to-energy plants, Basel says.

And the parts DC constantly looks for ways to reduce waste. For instance, some parts reach the DC in boxes re-inforced with wood. The scrap wood is turned into compost, but GM is working with the packager to build boxes without wood, Basel says.

How two DCs are going green:

- Use wind and geothermal energy to power the DC.
- Recycle every scrap of waste.
- Urge workers to turn off computers and unplug power strips before leaving for the weekend.

In addition to the zero-waste effort, GM also has tried to use less electricity. The parts facility recently qualified for the U.S. Environmental Protection Agency's Energy Star certification, which requires the DC to perform in the top 25 percent of similar facilities nationwide for energy efficiency and meet strict energy performance levels.

The distribution center performed various energy efficiency measures, including upgrading its lighting from metal halide fixtures to 5,200 fluorescent tube fixtures with motion sensors. The effort cut energy use and costs in half.

GM also has made a concerted effort to encourage employees to turn off their computers and even unplug power strips on Fridays before they leave for the weekend.

"We have pretty sophisticated software to verify all systems are shut down," Basel says.

And when employees return after the weekend, they get a report on how well they did at shutting down for the weekend.

GM includes energy management in its monthly performance review for the facility. The automaker says workers are important to any such effort and must be kept informed.

"Our employees are key to these landfill-free and Energy Star milestones," says Bob Landis, manager of the distribution center. "Their efforts help us save energy, reduce waste, and improve our efficiency every day."

Consider both interior and exterior

GM's Lansing DC was built in 1960, long before green initiatives became popular. But Other World Computing had the advantage of designing a new facility with eco-friendly bells and whistles.

The wind turbine isn't the only green feature at Other World Computing's building. To reduce lighting bills, the DC includes skylights and light tunnels that spread natural light through the warehouse.

To keep the building cool in the summer, the roof is covered in a reflective material. The surface

is more durable than the typical tar roof, and the material emits fewer toxins than the usual flat roof.

And the parking lot was made not with asphalt or concrete but with expensive brick pavers that allow rain water to flow through the parking surface and then be filtered by several layers of rocks and gravel before it returns to the underground watershed.

The property also includes "bio-swales," gently sloped areas designed to collect silt and other rainwater runoff and slow the flow of water. The swales are shaped to collect, but not so sharply as to encourage erosion of the ground and soil.

Native plants in the bioswales absorb water. Because of their long roots, these plants prevent erosion and can survive droughts while soaking up water from heavy rains.

The Other World Computing site is near a wetland, so water management is a big deal. Much of the 40-acre property is undeveloped, and the company built a walking trail through the open space.

In yet another green feature, Other World Computing uses geothermal heating and cooling. Unlike a standard system that uses Freon or another coolant, geo-thermal energy taps into the temperature of the earth 200 feet below the floor of the DC.

Using the concept of heat exchange, Other World Computing pumps water through pipes to a depth of 200 feet, where the temperature is always about 50 degrees.

In the summer, the liquid moves heat from the DC into the ground. In the winter, it does the opposite, providing pre-warmed air and water to the heating system of the building.

In addition to high-investment projects such as the windmill, Other World Computing also has made a point of streamlining its packaging.

"Anywhere you can eliminate shipping materials, you can eliminate cost, but you can also eliminate dunnage," O'Connor says.

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