

ENERGY AND ENVIRONMENT

Energy spin-offs turn fuel-hungry data centres into hot properties

Waste heat is being diverted into homes, offices and even a greenhouse. By **James Ashton**

WHEN Teletcity began planning its third internet data centre in Paris, one of the first things it did was to look for partners.

In addition to finding customers and hiring a firm to build the facility, it wanted someone to take the centre's biggest waste product—heat.

The internet boom has led to huge growth in demand for the services of data centres. They are like giant warehouses that house row after row of the computer servers that power the digital economy.

The growth of data centres has consequences for the environment. They use huge amounts of electricity, often consuming as much as a small town.

Not only do they need large amounts of energy to power their servers, they need just as much energy to cool them down. That always raises the question: what happens to the hot air that is pumped out of these facilities?

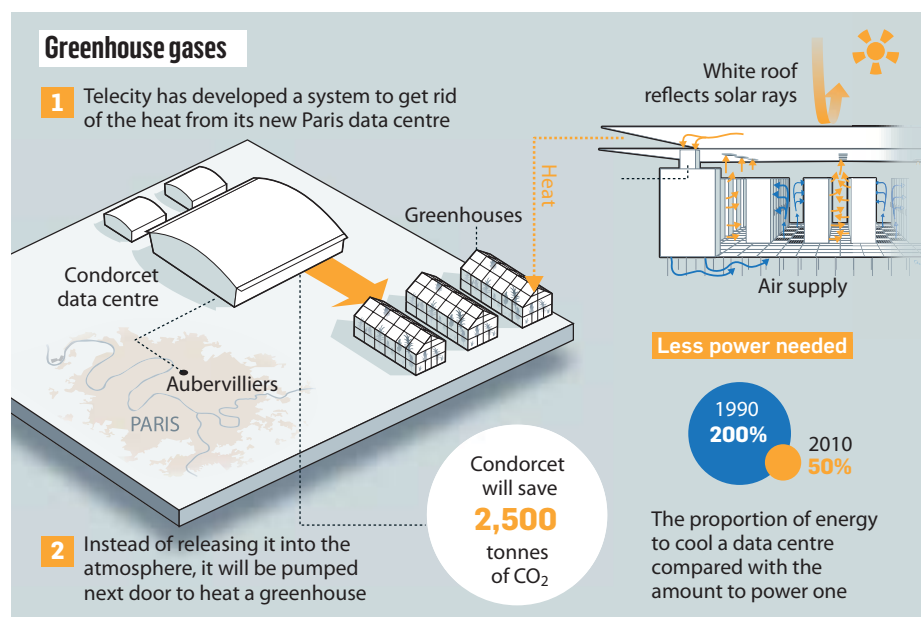
In Paris, Teletcity has come up with a novel solution. Its Condorcet data centre, due to open this month at a cost of £43m, will be the first in the world to be built with a greenhouse next door.

"Our initial thought process is always, is there a way the excess heat can be used somewhere near by," said Rob Coupland, chief operating officer of Teletcity.

In Amsterdam, the excess energy is used to warm the office block where the group has its regional headquarters, and also to heat the water supply of a hospital.

In Paris, it was harder to find a partner. "We looked but couldn't find anyone who was reasonably close," said Coupland. In the end, Teletcity struck an agreement with the French national agronomic institute to build a greenhouse alongside the data centre.

The 500 square metre "climate change arboretum", heated to at least 10C all year round,



will create the climate expected around the Mediterranean in 2050. It will allow scientists to study how plants adapt to global warming.

The development has also helped to cheer up the rundown area of Aubervilliers, north of the city centre, where Condorcet has been constructed on the site of a former Citroën factory.

The energy efficiency of data centres has improved but a great deal more could be done. Coupland estimated that two decades ago it took twice as much energy to cool the centres as it did to power them. That has now fallen to half as much.

Teletcity estimates that Condorcet will save the equivalent of 2,500 tonnes of carbon dioxide each year thanks to its energy-efficient design. There will be external air coolers and the roof will have a reflective white coating to stop the sun heating up the building.

Of course, that doesn't solve the problem of

where the waste heat should go. Julian Frost, head of technology, media and telecoms at the accountancy firm BDO, predicted more partnerships.

"Given the density of data centres in highly populated business areas, the use of such centres to heat office blocks could become reality," he said. "It would also give companies and data centres alike the opportunity to improve their green credentials."

Teletcity is not alone in coming up with new ideas to improve energy efficiency. In Helsinki, the heat from hundreds of servers located beneath the Uspenski cathedral is being channelled into the local area's heating network. The project, managed by Helsingin Energia, will produce enough energy to heat 500 houses.

Coupland said that greenhouses could be built alongside future developments.

TeletcityGroup 
where content meets connectivity