

ENERGY AND ENVIRONMENT

Invisible ear listens out for water leaks

Danny Fortson

LAST month, a Vauxhall Meriva was swallowed up by the earth in Woking, Surrey, after the road beneath it gave way.

In August, a mudslide in Croydon swamped train lines to Gatwick, stranding tens of thousands of travellers. In July, a 60ft geyser burst through a residential street, flooding homes in Huyton, near Liverpool.

This is not evidence of the end of days. The calamities were caused by something far more prosaic: burst water mains. And winter, when the cold weather wreaks havoc on the water supply, is high season.

James Dunning, chief executive of a startup called Syrinix, has come up with a tool that he says will prevent such disasters.

Trunkminder is a circular device, about 25 centimetres wide, that is attached to the outside of the pipe. The technology is packed with sensors that continuously listen for and sense the tiniest signs of a leak. This information is relayed to the water company's computerised monitoring systems.

A problem that ends with a geyser erupting through the street may start months or years before as a languid trickle.

"When you get a leak, it creates a tiny vibration in the pipe. We can compare it to the previous day's reading, filter out lorries, trains, people, and apply our algorithm to locate the leak to within a metre," Dunning said.

"Small leaks are like the squeal when you let air out of a balloon. Large ones are quiet. With this technology, at least the utilities will know the leak is there and they can check it out, rather than carrying on in blissful ignorance until it blows."



Burst mains cost millions in damage and disruption

Dunning claims interest in Trunkminder from utilities has been high, especially because Ofwat, the regulator, uses leakage reduction as a criteria when setting tariffs and imposing fines on companies.

The challenges for Trunkminder are typical for any new technology that is being peddled by a startup.

Syrinix was spun out of the University of East Anglia in 2004. The company, based at the Hethel Engineering Centre near Norwich, has worked on a shoestring budget to hone the device over the past seven years. It is backed by a few "angel" investors as well as the university.

A testing programme on a few lines owned by Thames Water in 2008 proved that it worked, Dunning said.

With nearly 10,000 miles of trunk mains running under our feet, the opportunity is large. But utilities are conservative, and

the problem with Dunning's device is that a large hole must be dug to install it.

Trunkminder is made of near-military-grade gun metal to reduce the effects of harsh underground conditions and contact with water.

The system requires one to be placed every 750 metres along a trunk main. A few locations will already be accessible via existing underground chambers used for normal monitoring and maintenance. The rest will need to be dug.

Dunning is convinced that companies will see that Trunkminder is worth the trouble.

"We are very much out of the 'will this work?' phase and into the growth phase," he said.

"Water is seen increasingly as a precious asset. This transforms the way utilities can manage their assets."

