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Swedish development company Redab Properties Plc is pioneering new technology to save energy costs in the UK while turning a profit.

A new city exp



Left A CGI image of the property at 6 Orsman Road when viewed from the nearby canal

Far right The first floor office space in the 77-79 Farringdon Road building

Below A lobby area in the Farringdon Road complex



Bringing London in from the cold

Swedish development company Redab Properties Plc is among a wave of firms pioneering new technology to save energy costs in the UK while turning a profit. Now the award-winning company is also campaigning for changes in the way that officials rank low energy consumption buildings, *Stephen Neale* reports

LONDON'S DEVELOPMENT in the pre-2012 Olympic era is tied to a commitment. Both the Government and the London Mayor's Office have promised to deliver a greener, healthier city. Leading the way is a small Swedish company, who are pushing the envelope of sustainable development in Europe's fastest growing city, promoting advances in development technology.

CG Pettersson – managing director of Redab – believes there is a long way to go before the UK

catches up with Scandinavia because the best incentive for conserving energy and warm air is living through a Swedish winter in -20C. "We discovered there is a 'feel good' factor to saving energy and taking control over what you use," he says.

Redab's strength is long-time experience in sustainable design and low energy consumption office buildings. But to continue its UK work, the firm must challenge the archaic regulations and laws that define much of what is wrong with

Britain's planning system.

Reputation

The story began 30 years ago in Stockholm, when the company earned a reputation as a forerunner of the 'healthy building' movement.

During the early 1980s, Pettersson introduced a new type of office building that challenged the conventional view that the most energy efficient method was a concrete bunker with small windows and thick walls.

Redab discovered that 'light and tight' builds with large windows kept out the cold best, but also required minimal energy to heat and luminate. "We were going against the convention," Pettersson says. "The buildings were lighter, we installed bigger windows, but we were getting extremely good value."

The firm won an international steel industry prize in 1983 for using materials in a financially efficient way – a good start for a fledgling company. In April 1987, Pettersson arrived in London to successfully complete a £100m project in

Millbank, before turning his focus to launch Redab Properties Plc. From a £1,000 company in 1994, the firm was worth more than £8m in net asset value by 2007.

Though the methodology was advanced for the time, the business strategy was simple: buy, develop, manage and opportunistically sell. Redab sold off all of its properties in 2007 ahead of the market slump.

Using the recession to prepare, new projects are again being formulated for the recovery, with a new portfolio of four that includes premises in Commercial Road, Farringdon Road, Jubilee Heights and Orsman Road. The key focuses for these properties will again be to use natural energy sources conserved within tightly built premises. This avoids waste, cuts cost and reduces the chances of poor health.

Pettersson claims that this approach to buildings is less a remedy and more a philosophy, as results speak for themselves. Healthy workplace and staff translate into improved

performance and better profit margins. As such, Redab has been working with Allergy UK and Healthy Buildings International to take the Healthy Building Concept to a new level in 2010. For this work, the company has been awarded the winner of the widely renowned Allergy UK foundation seal of approval for design.

Designs focus around open floor plans that make use of advanced air filtration and ventilation systems as well as as much natural lighting as possible. Under-floor technology helps to create airy light workspaces. Low maintenance and cost effective, the conclusion is beneficial both to the organisation and the individual.

Pettersson claims the crucial part of creating a stress free environment for staff involves work space innovation, with improved air quality at the centre of this. "Too few builders and developers realise that conventional working environments can increase stress and reduce individual performance," he says. To this aspect, Redab attempt to avoid the conventional, while ensuring the functional remains in place.

Cooling and heating

What excites Pettersson most in terms of potential energy saving is the use of external water – either from lakes, rivers or the ground – for use in cooling and heating properties. Groundwater pumps can be used to push water from inside a building into the ground where warm earth can heat it.

Then there are energy recovery wheels or plates, that extract almost all air leaving a building to avoid the need for heating or cooling. Low pressure, under-floor air conditioning, insulated fabrics and specially fitted windows and doors combine to reduce the need for energy to a minimum. Thermally efficient building fabric, natural light, ventilation, green roofs and solar heating can all work towards achieving this.

So successful are Redab at doing this that many of their developments actually help contribute energy to the National Grid through the excess they create. One recent example is 77-79 Farringdon Road, where, when

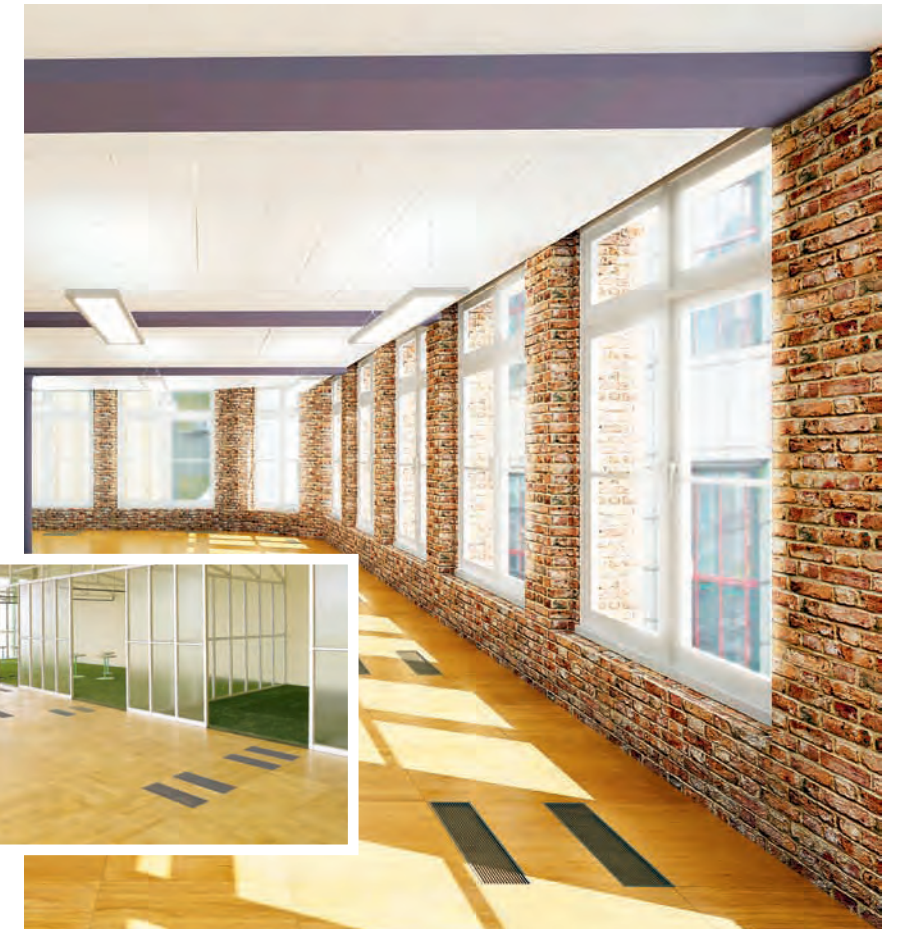
the site was tested by Cambridge University, it was found that the 2,500 sq m office's energy consumption was so low it was equivalent to 132 cars being taken permanently off the streets.

High costs?

Pettersson rejects the suggested claims that low energy builds are too expensive for the average business. "It's the opposite," he says. "These things are easy to install on site. The traditional alternatives are in themselves not cheap and you have to cost in the energy savings."

"If you require heating and cooling you would normally install a boiler and a big chiller. These are not free of charge, they cost quite a lot of money. If you take the water from the lake or borehole, the borehole costs money, the water is free and what you need is a pump and a heat exchanger. The difference in cost is not too much."

"Air conditioning is usually more expensive to fit it in the ceiling. A system installed under



the floor creates a saving of 10 to 15 percent on overall project costs. Individual temperature controls also offer micro climates for users. The improved air quality reduces allergic reaction and improves health."

Orsman Road

Among Redab properties using the latest technology is 6 Orsman Road, on the banks of the Regent's Canal. Borehole technology provides ground heat source pump, saving 71kW. PVP (solar) panels on south facing walls create another 38,000 kW hours. Once all savings are taken into account from heating, cooling, ventilating and air conditioning, it is anticipated the building will use a tenth of the energy a traditional build requires, and has no need for gas.

The irony is that during the Orsman Road development process, Pettersson discovered that regulations and software tools used to calculate energy consumption in the UK penalise developers that don't use a gas supply. "A good

building doesn't need gas," he says. "You will always need a few light bulbs for seeing when it's dark, but that's enough to keep the entire building warm. Office buildings today don't really need heating and if you're having a gas promotion encouraging people to convert from electric – it's just irritating. This system has been put in place by someone that doesn't really understand where energy comes from and how you use it."

Redab has complained in writing to the GLA, Prince Charles, Boris Johnson, The Department of Energy and Climate Change and the European Commission. The company has received a reply from all, with several offering to look into the alternative methods in use at Orsman Road.

Ultimately, London will strive to develop and invest in itself long after the 2012 Games. Redab now find themselves preparing for the eventual recovery of the property market. Hopefully then, the UK will finally come in from the cold and embrace change offered ■