

Keeping a tight control on energy

A award winning green development has changed the way its tenants view energy.

Greenhouse, a new development of sustainable offices and homes in Leeds, is setting the standard for low-impact working and living. Sustainable building methods have created well-insulated interiors, which benefit from on-site renewable energy generation. What's more, occupants are able to quickly and simply access information about their own energy and water consumption through their TV screen, using state-of-the-art building control technology from Priva Building Intelligence Ltd.

Spearheaded by developer Citu Ltd, the £26m project has transformed a moldering art-deco hostel in South Leeds into a distinctive multi-use development. The site now boasts 166 high-spec one-, two- and three-bedroom apartments; facilities including a gym and deli; and 17,000 sq ft of sustainable office space set around a landscaped courtyard.

Renewable electricity and heat are provided to the Greenhouse complex through a combination of ground source heat pumps, wind turbines and solar thermal roof panels. Water from showers and basins, plus rain water collected from the roof, is recycled and used to flush toilets and supply washing machines. Low-energy lighting and A+ rated white goods come as standard. However, perhaps the most cutting-edge 'green' aspect of the development is the capacity for all of its occupants to track their own energy and water use.

"We always intended to have a 'green-o-meter' in the building which would demonstrate to occupants the environmental standard to which the building was currently operating," comments Fraser Stride, marketing director at the site's developer, Citu. "After closer investigation, we learned of the ability to monitor each apartment and office's meter separately using the Priva building management system. Ultimately, we were able to provide this information about energy and water use in real time through people's TVs, using IPTV technology."

First Project of its kind

Leeds-based specialist, Keep Keen Controls Ltd installed a Priva internet-based, remote-access building management system (BMS) to monitor and control utilities within the complex. Readings from 735 meters are automatically collected and fed back into the Priva system using Modbus, M-bus and pulse counting. However, what sets this project apart is that this is the first example of a next generation IPTV (Internet and IP Telephony <Tripleplay>) system integrating with building management and monitoring features.

Developed and installed by Reading-based isrightthere, the UK's leading supplier of managed IP based tripleplay



Energy consumption displayed on tv

networks, the IPTV system takes XML data from the Priva BMS and turns it into easy-to-understand, graphical data displays that tenants can view on their television screens. In the first integration of its kind, inhabitants of both the offices and apartments are able to access up-to-the-minute information about consumption of energy and water, calculated in terms of kWh of energy, litres of water, pounds spent or carbon impact.

"The collection of data by the Priva systems has become popular with offices and schools that wish to give occupants more interactivity with their energy and water use," comments John Ward, managing director at Keep Keen Controls. "However, Greenhouse is the first residential development to put in place such measures using such advanced technology."

Unlike many office spaces, where tenants pay a flat fee for their energy and water consumption, at Greenhouse, the data collected by the Priva system ultimately results in tenants only being billed for the resources they actually use, giving a financial incentive to cut their carbon footprint.

"The response from occupants has been fantastic," says Citu's Mr Stride. "Providing real-time information helps people understand how their direct actions affect consumption. In this way, energy and water become tangible resources, rather than being taken for granted. By providing this information in a simple, easy-to-understand format, it motivates residents to reduce consumption as much as possible, because they know it benefits both the planet and their finances."



VRF heat exchange system

Award winning project

The green credentials and innovative approach to energy monitoring at Greenhouse have netted the development numerous awards, including Project of the Year in the RIBA White Rose Awards 2010 and Sustainable Refurbishment of the Year in the UK Green Building Council's Sustainability Awards. The offices and apartments can also claim an impressive A-grade on their Energy Performance Certificates (EPCs).

Citu has firmly established Greenhouse as a market leader in sustainability. And, as more organisations and individuals seek to take advantage of technology that allows them to interact with their energy and water use, rather than just taking these resources for granted, it is likely that many more developments will follow Greenhouse's blueprint.