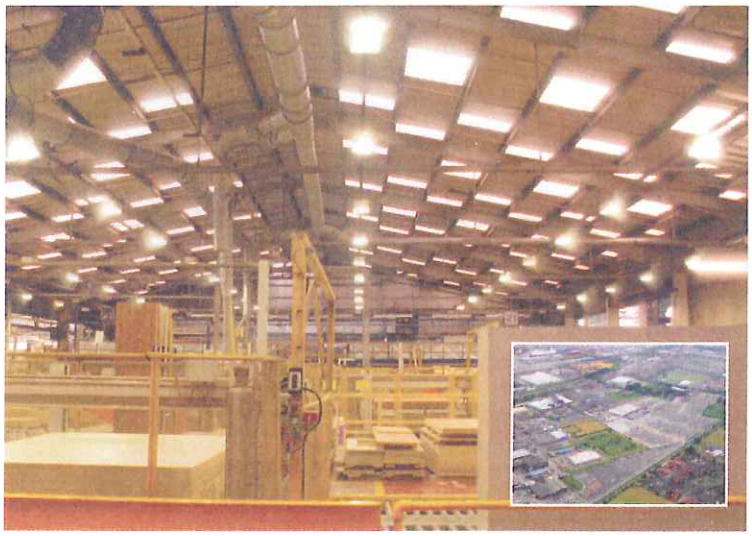
A control solution for testing times

Greater coordination of site-wide controls using a Siemens/KNX installation has yielded massive savings at a manufacturer of static caravans based in Hull

In these economically pressured times, it stands to reason that an increasing number of companies are subjecting their operating practices to rigorous scrutiny. In particular, spiralling energy costs are encouraging businesses in all sectors to re-evaluate their patterns of usage in an effort to make vital savings.

Hull-based Willerby Holiday Homes is one of many companies to have been grappling with such issues in recent times. Last autumn, the static caravan manufacturer approached electrical and mechanical specialist Fairburn Engineering Ltd of Hull with a view to achieving a new installation that would reduce expenditure on heating at its 100-acre principal manufacturing facility. After a thorough evaluation process, Fairburns and Willerby opted to move ahead with a KNX system incorporating equipment from Siemens Building Controls.



Willerby is using an open protocol to control heating and lighting costs at its Hull base

Standards brought together

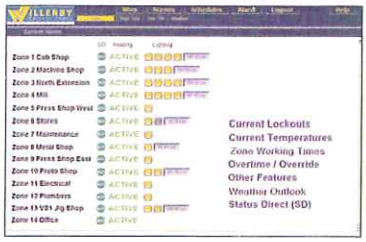
KNX is an international network protocol for intelligent buildings that brings together three previous standards (EHS, BatiBUS and EIB). Owned and administered by the KNX Association, KNX facilitates communication between primary building systems via an open standard, enabling them to respond to users' behaviour and requirements. By doing so, it is possible to minimise unnecessary usage and reduce overall energy consumption of a home, industrial facility or commercial building.

With implementation requiring only a single twisted-pair cable which can be run in existing mains cable containment, KNX also reduced the need for expensive and logistically challenging cabling installations, and leaves the path open to trouble-free future expansion and alteration.

"KNX is an open standard technology that incorporates over 25,000+ products from more than one manufacturer, and that's the beauty of it," says Fairburn Electrical project manager Jim Fairburn, who became a Siemens Building Controls integration partner to enable the delivery of the company's first-ever installation based on this protocol.

After visiting one of many KNX installations incorporating Siemens equipment, Willerby's facilities manager, Graham Kemp, was convinced that this technology provided the most effective approach to reducing the company's heating bills. "Prior to this installation, the heating was controlled by basic time controllers and analogue thermostats. These were stand alone and not particularly accurate so making changes very difficult to manage. As a result, there was very little co-ordination across the site," he explains.

One of the primary objectives for this first phase of work was to tackle the significant loss of heat through the roller shutter doors on the production lines and inappropriate operation of gas space heating. Siemens PT1000 temperature sensors and N146 IP routers were among equipment



specified as part of an installation that, via IPAS ComBridge software and the site's existing IP infrastructure, enables the heating system to reflect employee usage patterns with accuracy.

Lighting control systems

Encouraged by the immediate savings – approximately £10,000 within the first month of commissioning – Willerby re-enlisted the Fairburn team to bring KNX to the building's numerous lighting control systems..

Examples of the new functionality heralded by this second stage of deployment include the regulation of ambient light levels surrounding the frosted glass panels to be found in many parts of the factory. If the level drops below 450 lux, the lights come on automatically; conversely, if it rises above this marker, illumination is ceased.

Additionally, approved users can log into a visualisation web page from any networked PC or wireless PDA – and monitor the heating, lighting, roller door activity and wind speed at the click of a button. Viewers can browse by individual zone or quickly take a look at site-wide figures. The page also allows the user to check the health of all the heaters and boilers.

Easier maintenance and support is another function that means the client has complete peace of mind, explains Jim Fairburn. "The Willerby factory can be fully reprogrammed at any time over the internet, allowing us to respond instantly to client requests. We can also give on screen training to the users – without leaving our premises. Important events, such as controller breakdown, can automatically generate an email to us, so that we can act without even being prompted by the client."

Having completed KNX implementation for all heating and a majority of lighting systems at Willerby's principal site, the focus of the long-term, open-ended scheme is now shifting to the company's secondary facility, also in Hull. In time, the company also hopes to bring KNX control to the compressed air, extraction, ventilation and air-conditioning systems at its various sites.

Siemens Building Controls' business development manager, Phil Peer, observes: "What was a wasteful factory site from an energy consumption point of view has been improved by a very substantial margin, which provides compelling proof of our products' and the KNX system's capability to facilitate more cost-effective – and environmentally-friendly – building control solutions." ■

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