



Koen Verschueren, CEO of FixSus, makes adjustments to the building management system on its widescreen multi-touch panel.

Designed for future enhancements: PC-based control

Consistent system openness in building automation

With 11 facilities and over 1,100 beds, nursing and retirement home operator Anima Care is a major organization in Belgium's nursing home sector. The company was founded in 2007, growing predominantly by acquiring existing facilities. However, since 2012, the company has built and opened no less than four new projects. Based on experience with different building automation systems, Anima Care's managers decided to focus on a single open platform for the future, leaving room for easy enhancements and adjustments, ensuring a high degree of interoperability. The company recently implemented this plan in its newly built "Au Privilège" retirement home in cooperation with FixSus, a new Belgian company that specializes in integrated building automation solutions.

Luc Devolder, head of technology Anima Care, knows from previous experience that openness cannot be taken for granted in the building automation industry: "In the past, we grew predominantly through acquisitions of existing homes, which forced us to deal with a multitude of different building control systems. In some facilities we were barely able to gain insight into how the technical systems worked and how much energy they consumed, due to the fact that the systems were closed solutions. This level of diversity also forced us to deal with different suppliers all over the place, and the nature of these relationships made changes very difficult." Because of this experience, Luc Devolder wanted to install an open building automation system in all his new construction pro-

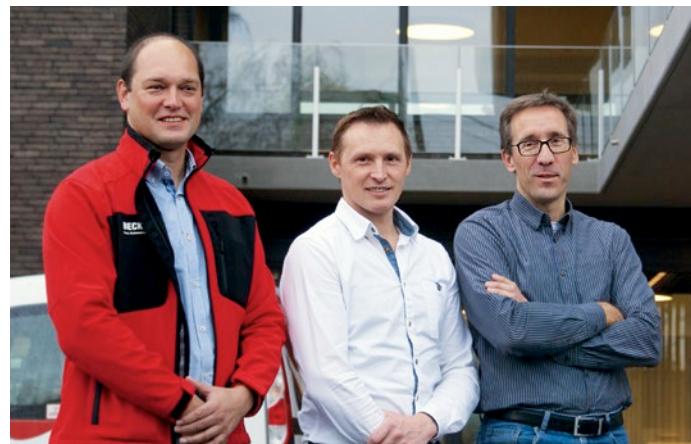
jects. "I have an industrial background, so this pushed me toward implementing the rules I learned there into our building automation systems as well. Together with FixSus, we developed a solution that is transparent and essentially makes us independent of specific suppliers."

Open systems down to the individual components

The "Au Privilège" retirement home, which opened in August 2014 in Haut-Ittre, demonstrates how this works in practice. The entire building management system, from boiler controls to lighting control panels to the access control system and the in-house communication system, runs on a single CPU, a



Anima Care was established in 2007 and currently operates more than 11 retirement and nursing homes with over 1,100 beds.



Ronny Noynaert (Technical Sales Manager, Beckhoff Belgium), Koen Verschuere (CEO of FixSus) and Luc Devolder (Technical Head of Anima Care) in front of the "Au Privilège" retirement home in Haut-Ittre, Belgium, which opened in 2014 (from left to right).

Beckhoff CX5020 Embedded PC. Components such as light switches are linked to EtherCAT Terminals via conventional wiring. There are some exceptions, though. The Modbus-based room thermostats, for example, communicate with the controller via a serial EL6021 EtherCAT Terminal.

"If you decide to install an open system, you must implement the concept consistently, down to the individual components," Luc Devolder notes. This means that light switches – keeping with the previously mentioned example – are normal units that you can buy in any home improvement store, and can therefore be replaced at any time. They are not linked to the bus system, do not have individual addresses, require no configuration, and are connected via standard 24-volt wiring. He continues: "I believe that an open system must, most importantly, be easy to use. This means that the I/O units must be easily replaceable without having to adapt the entire system." Anima Care applied the same concept to its more complex systems, such as heating and ventilation. Even the heating system's cascade control is not implemented separately, but as a fully integrated portion of the building management system. "This requires us to pay attention to openness, even for the smallest component. For example, all I/Os must be directly controllable from the central PC platform."

Entire building management system on a single flash memory stick

The building management system at "Au Privilège", which was developed by FixSus, is called TIBA, or Total Integrated Building Automation. FixSus Managing Director Koen Verschuere explains: "After launching in 2009, we quickly won over several large customers who were looking for open systems. The large players in the building automation field use proprietary platforms, which ties the customer to a single supplier, including all modification and maintenance services. We wanted to break this trend. At the time, we tested several open systems from the industrial automation field and the Beckhoff Embedded PC series, along with the integrated I/O terminal system, looked like the best choice in terms of both performance and price."

The new retirement home has approximately 3,000 I/Os installed in total. "These are connected via EtherCAT Terminals with a CX5020 that has an Intel® Atom™ processor running Windows CE. Our entire building management system is

stored on a flash memory stick. This delivers the advantage that a CPU failure can be remedied simply by inserting a backup memory stick into the new CPU, bringing the whole system back to full operation," explains Luc Devolder.

Energy cost savings of up to 50 percent

Another great advantage of the PC platform is the ability to log all statuses, which takes about four seconds for this installation. During this time, a server at FixSus downloads all the data and uses it to perform various analyses. "Based on this data, we can analyze specific functions and make improvements. This has enabled us to implement up to 50 percent in energy cost savings, compared to similar projects," explains Koen Verschuere. "Further benefits of the open system include our ability to log in remotely, check the current status, and make any necessary modifications. Customers who operate several facilities can thus administer all of them from a single location or ask us to perform this function as a service provider," Verschuere notes.

Flexible expandability

To ensure the openness and flexibility of its system, FixSus developed the programming and the interfaces of its building management system completely in-house. The entire software is contained in modules, which can be reused and/or modified as needed. "For example, if the client decides to control the parking lot illumination with motion sensors, the required hardware can be connected relatively easily. The software requires only an additional module," says Verschuere. These modules can be adapted and enhanced with new features without any system restrictions.

Further information:

www.fixsus.be
www.animacare.be
www.beckhoff.be