



In the small town of Hohwacht on the Baltic Sea coast the approximately 120 square metre holiday home “Sansibar“ is located, overlooking the nature reserve ‚Sehlendorfer Binnensee‘, which impresses not only with its modern architecture and stylish interior design, but also with an impressive KNX installation. We show the extensive control options available for a comfortable holiday in the detached, state-of-the-art holiday home via the PEAKnx visualisation YOUVI as well as through the installed KNX switches.

REFERENCE

INTELLIGENT BUILDING CONTROL WITH YOUVI FOR ENHANCED COMFORT ON HOLIDAY



A smart holiday home that leaves nothing to be desired

The extensive KNX installation in the holiday home „Sansibar“ goes far beyond mere lighting control. From sun protection and air conditioning to presence detectors, a comprehensive security infrastructure, a multi-room audio system, integration of the sauna and outdoor jacuzzi, to the garage with wallbox and the planned home cinema – this chic holiday home has been offering holiday-makers unparalleled living comfort since the turn of the year 2022/2023, thanks to the intelligent installation.

TECDESIGN Elektronik GmbH placed great emphasis on not being dependent on a single manufacturer during the implementation of the new construction project, but

rather on having a variety of control options available. Therefore, during the planning phase, the decision was made to opt for a KNX-based building control system, which allows for integration of a wide range of manufacturers. A mix of manufacturers such as ABB, Gira, Theben, and PEAKnx was carefully selected to find the best possible technical and aesthetic solutions for each application.

When researching a control panel for the property, design and functionality, as well as a reasonable price-performance ratio, were paramount. Additionally, it was important to the owners that even less technically savvy users could handle the touch panel and visualisation, which requires both intuitive operability and a structured layout of the visualization. For guests, a touch panel also offers the advantage that they can start controlling the



smart holiday home directly on the device and enjoy their holiday without having to download and set up an app. Another focus was on a wide range of functions, longevity, as well as regular updates and options for expansion, but also for blocking certain functions. The choice ultimately fell on the PEAKnx Controlpro touch panel in its mid-range configuration.

Visually, the Controlpro with the YOUVI visualisation fits perfectly with the modern ambience and open floor plan of the holiday home. It is centrally located in the transition between the open living and dining area on the ground floor. Here, there are also two bedrooms, a bathroom, and a guest toilet, as well as the outdoor area with a spacious Bangkirai terrace, outdoor jacuzzi, and real, piled-up sand for a homely beach feeling. Upstairs, there is a modern gallery, another large bathroom with a



whirlpool bath, as well as the sauna and two balconies.

Intelligent planning of the KNX installation for seamless building control

Due to the unusually high number of bus participants for a property of this size, structured organization of the KNX project was prioritized from the outset. All physical rooms were consistently mapped as individual rooms in the KNX project, categorized by ground floor, upper floor, and outdoor area including the garage. Correspondingly, the bus distribution was implemented in a textbook manner: two areas with a total of five lines (one per floor, a separate line for the outdoor area, another for the installed security devices, and the main line). This helps reduce the risk of failure and balance the bus load. The numerous RGBW strips installed throughout the house always provide the appropriate ambient lighting and are

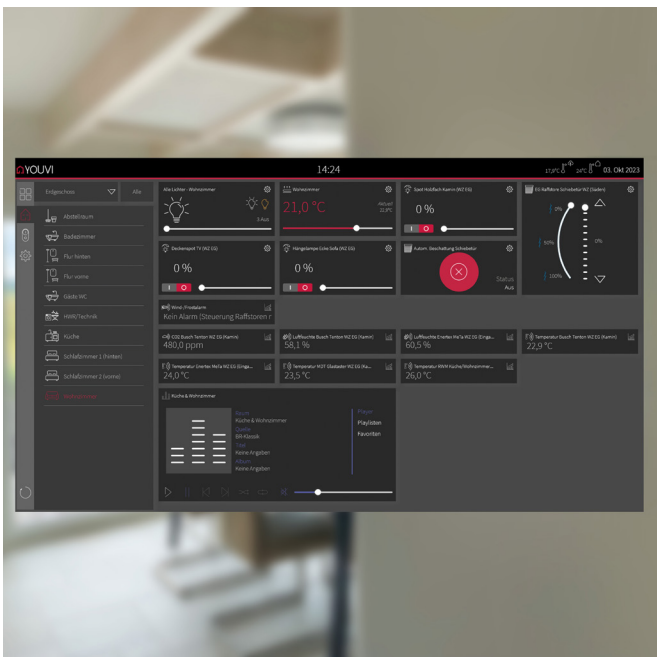




ge, and shed, where a fourth sub-distribution is housed, covering the entire outdoor line.

Maximum user-friendliness for guests and landlords

Everything technically feasible that could enhance comfort for holiday guests was integrated via the KNX bus: Nearly all lighting and a large number of sockets, all roller shutters, the modern ground-source heat pump including cooling function with complete individual room control, and the Sonos multi-room audio system. Even the outdoor jacuzzi is integrated, allowing for automatic freshwater filling including level monitoring or a complete water change and power supply control of the whirlpool to be conveniently controlled from the bus system when needed. YOUVI also displays the water condition (pH and redox monitoring including automatic regulation) of



centrally controlled via dedicated LED actuators from MDT.

The sauna is currently only passively integrated into the bus system: oven status, RGBW lighting, and music control can already be monitored and controlled. Full integration into the KNX system would be easily achievable with a KNX module from the premium manufacturer EOS. For example, the „sauna session“ scene opens the roller blind of the Velux skylight installed in the sauna for an undisturbed view of the nature reserve during sauna sessions and activates a captivating colour change of the RGBW lighting along with suitable background music. This is a comfort enhancement par excellence.

For the sake of clarity, the outdoor area has been divided into different zones: various garden areas, terrace, gara-



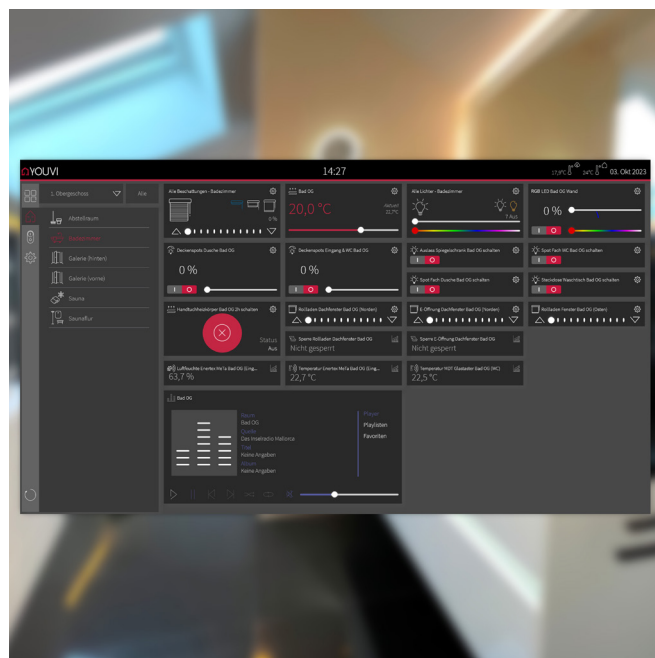
the whirlpool via a web widget on the dashboard page. Additionally, the Hörmann garage door is fully integrated into the system via the manufacturer's bus module.

YOUVI Ferienhaus SansibarAlmost all of these extensive functions in the house can be depicted and controlled via both YOUVI and the KNX switches. To ensure that the changing holiday guests can easily navigate through the various functions, the operation of the numerous functions via YOUVI and the operation of the switches for roller shutters, temperature, light, or scenes were clearly structured and implemented uniformly. Therefore, separate glass switches from MDT were used for the multi-room audio system, which serve exclusively for music control in the house..

The ideal blend: security and convenience

To ensure the most efficient use of the installed sensors, the seamlessly integrated contact sensors in the window and door frames are not only used for the burglary alarm system implemented via the bus system but also serve specific convenience functions such as automatic ventilation.

For example, when windows are tilted, the respective roller shutter automatically lifts a few centimetres. All contact sensors are evaluated via tamper-proof security modules from ABB in a separate bus line (KNX Secure). The ceiling-integrated presence detectors from Gira regulate the lighting when the system is in an inactive state but switch to alarm mode when the burglar alarm system is activated, serving as additional intrusion detectors equivalently.



Furthermore, in each room, there are fully integrated smoke detectors from Gira, which can all be individually evaluated via the bus system. This allows, among other things, the display of key parameters such as temperature values as well as status and fault messages via YOUVI.

Luftaufnahme FerienhausAdditionally, a fire alarm system that goes far beyond conventional alarm systems has been implemented: Depending on whether the house is currently occupied or not, the roller shutters are opened, Sonos warning announcements are initiated, and lights are turned on to illuminate escape routes in all areas. Moreover, e-mail and push notifications are sent out.

The Axis network cameras installed in the outdoor area of the holiday home serve not only for video surveillance and potential deterrence of intruders or prevention of

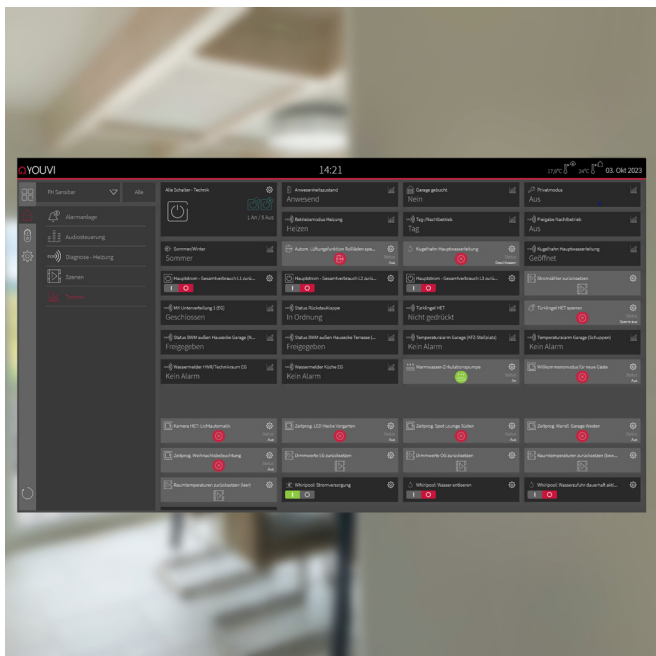
vandalism but also send events via https upon motion/object detection (analysis functions using deep learning) to YOUVI, thus allowing for intelligent control of the outdoor lighting in addition to the motion detectors.

Smart and autonomous

The smart holiday home, thanks to its numerous sensors, always knows whether there are people present or not. This information is used to further reduce power consumption and, when needed, to control the circulation pump of the heating system, specific ambient lighting, and outdoor lighting when different manners are detected.

With the help of smart meters, the total power consumption of the house can also be accessed in YOUVI, and the power consumption of individual lighting circuits can





house responds completely autonomously in such a scenario: the residents are informed via YOUVI, and messages are sent to the panels and displays of the KNX switches throughout the house. Additionally, the landlords are alerted via e-mail/push notifications on their mobile phones.

The legally required backwater pump system for the sewer is also condition-monitored via the bus. Error messages are also reported to the system, and the house itself takes the necessary measures for correction or reporting.

Future prospects at the „Sansibar“ holiday home

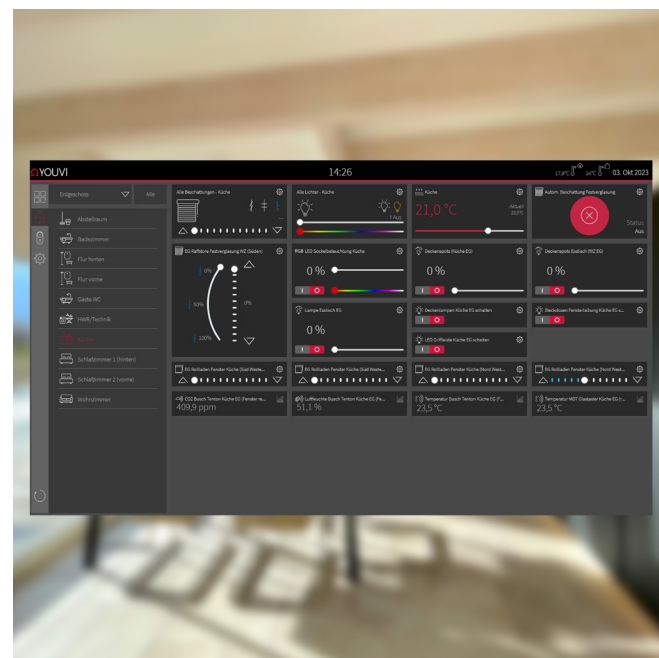
A major advantage of KNX and YOUVI is also that various additional functions can be integrated at any time. Many of the functions used today were not initially plan-



be evaluated thanks to the power measurement capabilities of MDT dimming actuators. Additionally, contributing to „smart living“ is the time-dependent control of the dimming speeds of the lighting. At night, the lights are dimmed up more slowly than during the day to allow the eyes to adjust better to changes in brightness.

Wohn-Ess-Bereich In certain areas of the house, leak detection is also installed. For example, next to the washing machine and under the dishwasher, KNX water sensors from Elsner are installed. These sensors are also connected to the burglary alarm system as technical detectors.

In the event of a potential leak, logics are programmed into YOUVI to, for instance, play warning announcements through the Sonos system and simultaneously shut off the main water supply via a motorised ball valve. The



ned but were gradually added later on. There are numerous plans for the future as well: Household appliances such as ovens, steam cookers, induction cooktops, and washing machines are intended to be integrated into the smart system. For example, a notification function for the timer: If the timer of the oven is set and the kitchen is temporarily vacated, the presence detector should report the absence via an additional module and initiate an announcement through the Sonos speakers.

With the subsequent integration of the Samsung API for the television, the TV can be turned on via buttons in the living room or a scene can be activated. Depending on the sunlight, the venetian blinds should lower or in the evening, the lighting should be dimmed and ambient music turned on. Such scenes can be created at a later

stage using the YOUVI logic editor, which responds and sends an http command to the television via the Samsung API, while the BUS command is sent accordingly via the KNX switch.

Additionally, there are plans for a future projector for the home cinema in the gallery on the upper floor. Controlled via the „Cinema“ scene, the screen, roller shutters, lighting, a Sonos announcement, as well as the LED strips and the sound system will be activated.

At a later stage, the sauna is intended to be completely controlled via a BUS module, including the infrared heater from the manufacturer EOS, so that guests might be able to use the room as a traditional sauna or as an infrared cabin.



For the plants in the outdoor area next to the piled-up sand, there will be irrigation options via a Gardena system in the future, which will be integrated via the YOUVI logic editor.

Thus, all options remain open for the future, and the project continues to evolve. Whether and when the technical feasibility will be achieved remains to be seen.

Conclusion: Completely happy guests and landlords

After over a year of holiday rentals, the feedback from guests of the smart holiday home „Sansibar“ has been consistently positive. Everyone has managed well with the smart controls in the building and has been impressed by the numerous functional possibilities and the associated convenience gains. On-site, guests are



provided with everything needed for a relaxed and enjoyable holiday. An electronic house manual is available for guests to learn more about the smart features of the house at any time.

Press contact

T +49 6151 2791821
presse@peak-group.de
www.peaknx.com

PEAK NX

