

The Windmill “4 Blades, Kitchen, Bathroom” Based on KNX RF



Figure 1. A windmill with the name “4 Blades, Kitchen, Bathroom”.

In just nine weeks the team of craftsmen from the TV station „Kabel 1“ built „Germany’s Most Beautiful Vacation Home“ in the shape of a windmill with the name „4 Blades, Kitchen, Bathroom“.

The construction site for the five story vacation home is located close to an idyllic lake in the recreational town of Werder at the Havel near Potsdam. The technical fitout of the building is also something special. The upper floor is able to revolve and is therefore always perfectly oriented to the sun. The energy supply is self-sufficient. The blades collect the energy of the sun with photovoltaic elements. In addition, the building is equipped with state-of-the-art building system technology.

Building functions like the control of lighting and light scenes can be operated comfortably and easily. Conventional shutters and blinds were not designed by the architect and could

therefore not be included into the KNX system. The remote controlled windows in the roof with lights, shading system and motorized opening and closing can be integrated into the KNX system at the request of the tenants. The entertainment system in the living and wellness area can be switched on and off in the different rooms. Security is also very important. Residents will be alerted if smoke or forced entry of the windows or doors is detected - ideally via mobile phone.

Central Operation of the Building Functions

KNX RF was utilized to connect the building services. This makes the comfortable control of lights, entertainment equipment, washing machine, stove, recall of lighting scenes, presence simulation and background music possible in the first place. The central operation of the building function takes place via the KNX RF touch panel which is located in the living room. A light tap

on the screen shows the operating interface for lights, scene control and central function via the start menu. The buttons with clear text show the feedback of the KNX system and if the command was successful. Aside from the individual control, a group control functionality of individual areas is possible as well as a “central off command” for the exterior lighting of the entire vacation home. At the central operating terminal, residents can check where lights are still switched on in the house or if the windows are in the desired position (open or closed) without the need to walk through the house again. Similarly, certain lights can

be switched on upon entering the house.

Comfortable Lighting Control with Remote Control

The decentral lighting with a large number of wall and ceiling mounted lights ensure sufficient luminance in the living areas for any occasion. The lighting can be switched on and dimmed with an RF push button or KNX remote control. The state-of-the-art halogen lamps and conventional incandescent lamps can be switched individually or in groups. Memory settings can also be recalled. The scene control allows the combined control of the living room and kitchen lights with the con-



Figure 2. All the building services can be comfortably controlled with the KNX RF remote control.



Figure 3. The operation of the building functions is performed through the touch panel UP 588 which is based on KNX RF.





Figure 4. The KNX RF technology can easily be retrofitted at any time.

control of the projector screen. This allows the lighting control at the push of a button for watching TV, reading, working, eating, or relaxing,

as well as the control of the projector screen into the desired position. The function "central on" resets – at the push of a button – all the lights into the same dimmed setting as they were when the room was left – thanks to the memory setting.

Safety and Comfort with KNX RF

For fire protection purposes, the bedroom and corridors were equipped with smoke detectors. The early warning system has high reliability and was designed to the prEN 14604:2002 standard. It works with an

optical detector and detects smoke and smoldering fire early on and alerts with a loud alarm (>85 dB). At the same time, a red LED starts blinking. Up to 40 smoke detectors of the same type may be hooked up to a bifilar wire. Through the integration into KNX RF, the device sends the alarm message directly to the central touch panel.

This ensures fast reaction (times) in case of an alarm. Doors and windows are desired entry points of burglars.

This is why door and windows switches were installed at the mill. They detect an

open window or door and forward this state to the touch panel via radio frequency and/or the telephone.

Comfort and Safety in the New Home

A luxury residential building like the windmill „4 Blades, Kitchen, Bathroom“ not only needs a stylish design and high-grade materials, but also an appropriate technical fitout that ensures comfortable living in a relaxing environment. Cost effectiveness and safety are also determining factors for choosing the technical equipment.