

Road of Life

Maximum Flexibility in the Home Special Education School in Bruckfelden at the Bodensee

„Road of Life“ is the name of the new school building of the Camphill home and special education school in Bruckfelden at the Bodensee. For more than 30 years disabled youth and young adults have been living, learning and working as a community at the Camphill school community Bruckfelden. They are being supported in their effort to integrate into a normal every day life. There is no standard way, the individual approach is important and so is flexibility which is also true for the application of the building technology. The installation of a bus system suggested itself to the school management for the new construction of the school.

The construction and project management of KNX/EIB system was awarded to a company with 15 employees which is specialized in the installation from building control systems to multi media networks. This company had been servicing the school for a long time and was familiar with the special demands of the special education school to the electrical installation. On the manufacturer side the project



Fig. 1. The back side of the school building give an impression of the large window areas, which must be managed by the ventilation system. A weather station on the roof supplies data to the central control system.

was supported from the Siemens branch office in Ulm.

The project: A multifunctional school building

It was understood in the beginning that the demands of the school building in Bruckfelden was subject to constant change. The rooms are therefore designed as multifunctional rooms. In addition, the size of many rooms is adjustable which allows the school to react to changing or unforeseen room usage. This demanded a building system installati-

on that would support the flexible use of the rooms. Additional demands were shatterproof materials, central controls, and easy to use controllers. The transparent architecture of the school building provided its own challenges. The large amount of glazing required a smart system for the ventilation, cooling and heating control. In addition, all rooms had to be equipped with PC, TV and phone connections. The control system included the control of lights, heating, ventilation and air-conditioning. Part of the

school building lights are centrally controlled, e.g. during recess and at night time. In the administration wing the lights are switched with motion detectors which is a simple way of saving energy. The gymnasium/multifunctional event room's lights can be dimmed via remote controlled dimmers to set the right lighting for every occasion. Sensors monitor the room temperature and control the increase of room temperature if the temperature falls below the set point. Individual temperature control is



Fig. 2. Behind the older house is the school, whose building engineering is cared for by the company Schwaegler.



Fig. 3. Comfortable room conditions in the winter and the summer can only be maintained through an intelligent shading control system.



Fig. 4. The central control unit of the building control system is located in the mechanical room. Touch screens throughout the school allow access to all important functions.

available through wall control panels. The heating, ventilation and air-conditioning system are connected to a weather station with tempe-

perature, light and rain sensors. On warm and sunny day the heating systems turn down. On hot summer days the air-conditioning and ventilation system provide a cool indoor climate.

How important and useful the decision for a bus system was came sooner than expected. An art area and a workshop were planned for the upper floors that could not be build due to lack of funding.

The entire floor was converted to a living area with individual rooms. Additional interior walls were installed. The required chan-

ges to the technical installation were minimal. All it took was the re-programming of the installed components instead of the installation of new wires and conduits. The future maintenance will be as flexible as the application. The nearby service company still has to come to the school for maintenance work but the entire building control system is also remotely accessible and maintainable.

Well equipped for the future

Cornelius Weichert, managing director of the Camphill school community, prai-

ses the flexibility of the KNX/EIB system: "I have the option of changing the interior partitioning of the rooms to changing demands and can then apply the KNX/EIB controlled building controls to meet these new demands. We rely upon this flexibility since our use of the building is multi functional." Currently only the school building and the administration building are networked together. However, the bus system was prepared to allow the integration of the existing building for a future retrofitting with modern electrical installation.