

CASE STUDY

CONVENT INSTALLED FIBRE OPTIC NETWORK

When repairing and upgrading its data and telecommunications system, the Convent of St. Marienthal in Niederlausitz opted for a complete Fiber-to-the-Office solution from Datwyler.



The Convent of St. Marienthal is situated south of the small town of Ostritz in Saxony, on the left bank of the Lausitzer Neisse. Founded in the 13th century, it is the oldest Cistercian convent in Germany to have survived right through to the present day. The extensive convent complex comprises the convent building with the abbey, the convent church, the priory, the cross chapel and various outbuildings, including a convent market and a historic sawmill. Since 1992 some earlier farm buildings have also housed an international meeting centre which, in the three-border region of Germany, the Czech Republic and Poland, is dedicated to reconciliation and international understanding and which, like the convent itself, has several guest houses.

In August 2010 the expensively restored convent complex suffered the worst flooding since its foundation. The flash flood took everyone by surprise, the ensuing deluge bursting through doors and windows, causing severe damage to gateways and walls, destroying roads and facilities and totally demolishing the interiors together with quantities of equipment and machinery. The damage left by the flood was reckoned in millions. The convent has been busy dealing with the aftermath ever since and is involved in extensive renovation, rehabilitation and restoration work which is set to continue for years to come.

Decision in favour of a fibre optic network

The flooding had also wiped out the EDP infrastructure. The plan was to repair and modernise the data and telecommunications system as part of current rehabilitation work, and the decision was made in favour of a Fibre-to-the-Office-System (FTTO). This type of fibre optic solution with a substantially lower cable volume seemed to be the right choice since these are listed buildings, and therefore have to meet a plethora of requirements relating to cable routing and management.

The Convent of St. Marienthal appointed Werner Vaterodt - ibwv KG, a firm of consulting engineers in Deuna, to carry out planning and site management. The contract was put out to tender and awarded to Datwyler, who submitted the most cost-effective quotation for implementing the new data and telecommunications system.

Fibre optic ring opens buildings up

Datwyler made a start on the work in September 2012. First of all a "flood-proof" main distributor area which will also be used as a server room following renovation was created on the second floor of the convent building. From there all the buildings, including the priory and the convent servants' hall, were



connected by a fibre optic ring. For the fibre optic ring Datwyler used mainly 24-fibre OS2 single mode cables which were terminated on LCD splice boxes. In the convent buildings themselves a star-shaped cabling configuration was installed with four small distribution boards on each floor linked by fibre optics. From these distribution boards on each floor the administrative offices, guest rooms, conference rooms and the nuns' living quarters in the cloister are for the most part supplied with 4-fibre OM3 multimode cables, some also with copper cables. Individual optic fibres were removed from the ring cable and taken to the main data distributor in the priory in order to provide direct supply points for the Internet provider.

Usual end device connections

The fibre optic cabling in the individual offices, guest rooms and other areas terminates in mini switches. Around 90 of these little media converters allow today's users to connect their PCs, laptops and landline phones to the new network using copper connections as before. Mini switches are also used to integrate the wireless LAN.



Long cable runs are routed in thin armoured plastic ducts, often underneath the plaster, as well as in Datwyler's "Hermann clip" multi-cable supports. The installers were able to use a cable tray system in the attic of the convent building, although the historic roof beams meant that it could not be screwed on directly.



Other special features affecting work on the centuries-old building complex included around 30 openings through walls up to one metre thick, and historic flooring where the previously defined floor slabs had to be carefully removed and faithfully re-laid once wiring was complete – all in close consultation with the State Office for the Preservation of Historic Monuments.

Job completed on time

Work progressed without a hitch. The campus cabling was finished before Christmas 2012 as scheduled. Routing and connection work in the buildings, begun in the second week of January and carried out in parallel with the convent's day-to-day operation. It was completed in February. Here Datwyler collaborated closely with a specialist certified partner company which also handled the bulk of the splicing.

(April 2013)