

PRIORIT

Fire | Resistant | Components

Reference report

Hoher Dom to Paderborn





Picture: Ludger Schwarze-Blanke

Fire protection in a cultural landmark

Historical building with modern safety

Beautiful and functional fire protection

An “impressive and magnificent church” already stood on the site where the cathedral stands today in the year 799. It was repeatedly destroyed by fire and then reconstructed over the years.

The cathedral was rebuilt in the 13th century. It was then plundered and ravaged during the Thirty Years’ War (1618 to 1648). Restoration began in 1650. At the time, the cathedral was designed in the Baroque style, although the majority of it was destroyed by bombing near the end of the Second World War (1939-1945). Reconstruction of the cathedral began soon after its destruction in 1945.

In 1978, extensive restoration and protection measures began. These lasted for several years.

The sacristy of the Paderborn Cathedral is connected to the altar room on the southern side. Direct access from the outside is provided via a path with stairs on the south-eastern side of the cathedral. A vestibule provides access to the anteroom, from which the main area of the sacristy can be accessed.

The cathedral’s sacristy and anteroom were fully renovated from March to December of 2017. The anteroom, in particular, had been in poor shape and not very inviting for quite some time. In this case, the primary goal was to ensure necessary coverings under fire protection requirements for the electrical main distribution and the electrical connections for the lights, PA system, bells, media and fire protection technology that had previously been covered in only a provisional housing. This equipment serves essentially as the “control centre” for

the entire Paderborn cathedral.

The developer for the project was the Paderborn Cathedral, represented by the Metropolitan Chapter of Paderborn. The office of Ludger Schwarze-Blanke, Interior architecture + Design from Bad Lippspringe was responsible for the concept and design. Drywall work was handled by the company Thomas Thiele Interior Design from Bad Lippspringe.

Modern technology and fire protection are available even for buildings protected as historical landmarks

Modern structural fire protection and historical preservation requirements can be difficult to reconcile. Their goals are too different. Careful design and technical planning are essential to fulfil statutory requirements for comprehensive personnel

protection, while meeting requirements designed to preserve historically important buildings.

Frequently, planners and architectures cannot find the products and solutions they need to combine protection with design and usability. In contrast to planning a new building, in many projects it can be difficult to retrofit fire protection technology in historically important buildings. Existing supply facilities, new distributors, and new personnel protection concepts in escape and rescue routes make this work anything but easy.

In the case of the Paderborn Cathedral, an extensive range of technological components, including a main distributor, PA system, and central fire alarm system, as well as a small storage area needed to be housed in the entryway area to the sacristy anteroom. At the same time, both the rising cable bundles and existing electrical systems as well as the storage area needed to remain easily accessible.

The architect and developer formulated their requirements early on in the planning phase to preserve original, existing historical elements such as the doors and floor while still covering the fire hazards posed by the electrical systems in compliance with building regulations. The structural measures needed to blend in harmoniously with the overall concept. This was not a simple task.

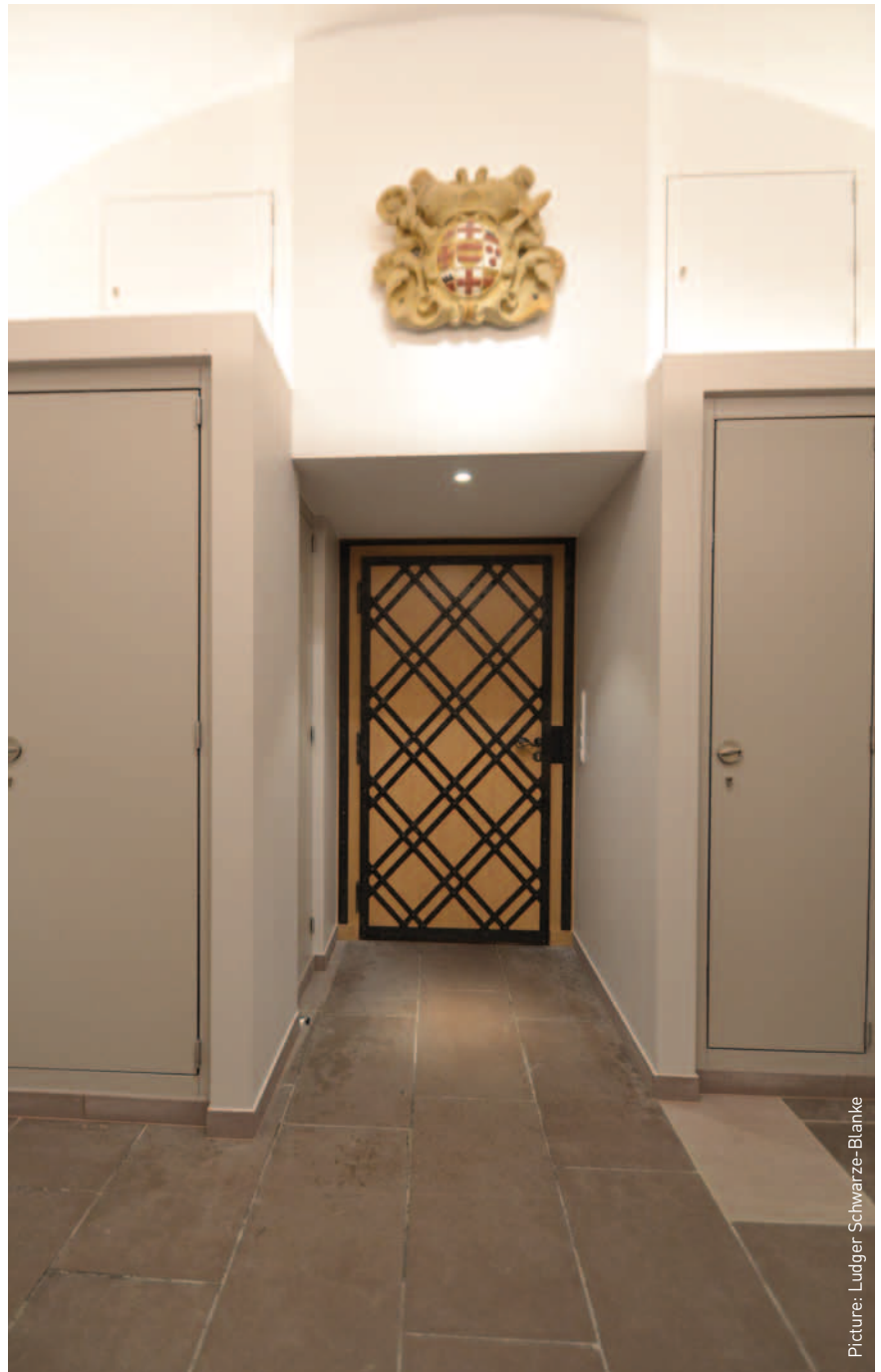
The resulting requirements were:

- Fire-resistance rating over 30 minutes
- Very good access to electrical systems, installations and areas
- Visual adjustment and design options for existing historical building.

The team searched for appropriate solutions. They focused particularly on maintaining easy access to the main distributor.

The team chose System 42 from PRIORIT

To make the best use of the available space in the anteroom to the sacristy, the team chose drywall construction in combination with System 42 from PRIORIT AG. This combination made it possible to create ea-



Picture: Ludger Schwarze-Blanke

Finished cladding with inspection closures in a wide range of variants. From large-format to inconspicuous, visually adapted to the requirements in each case, they allow almost optimal accessibility for re-occupancy or maintenance work.

sily accessible areas, floor-to-ceiling partitions and an overhang for indirect lighting. In addition, the PRIOFLEX 5-leaf inspection closure system was the perfect solution to easily construct the required width and height without a disruptive centre bridge.

System 42 is a modular, non-combustible

wall and room construction system with a very low wall thickness of just 42 mm that can be used to achieve fire-resistance ratings of 30 or 90 minutes. The single-layer wall, door and inspection elements can be combined in a flexible manner and used to create a wide range of different designs. The individual elements are made of a

panel material with surface which is classified as non-combustible A2-s1, d0 in accordance with EN 13501-1. It is extremely hard and durable and can be coated with a wide range of easy to care for and chemically resistant surfaces. A wide range of surface design options are available. These meet high visual standards and make it possible to combine fire protection with function and good design.

In this case, where the renovation project needed to be handled with special care, the floor-to-ceiling drywall construction was precisely adapted to the structural conditions. Arches needed to be adapted to follow the walls, and custom fire-resistant areas created.

The PA system was installed in the anteroom to the sacristy. This created a room behind it that needed to be kept accessible, since it provides access to other existing installations. An inspection closure in the same look with a four-sided frame was

used for this purpose. Another door handle on the inside of the door ensures it can be opened from the inside if closed accidentally.

Different elements from the modular fire protection System 42 were used in combination with the drywall construction:

- PRIOFLEX inspection closure system 5 leaf without centre bridge, consisting of 1 and 2-leaf Inspection closures
- PRIODOOR EXT inspection closures in 1 and 2-leaf designs, flush installation
- PRIOWALL FLEX wall system with two 1-leaf inspection closures, internal structural division and an integrated ventilation element
- PRIODOOR ETX-A, discreet inspection closures without a visible frame

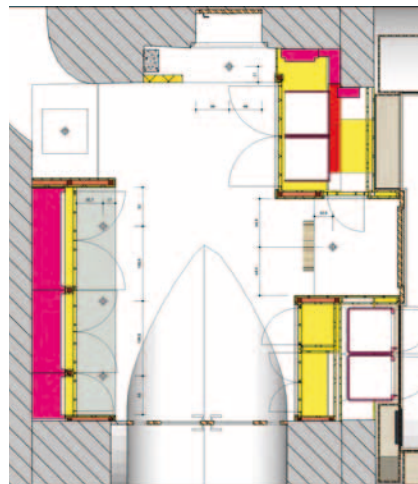
All of the elements have a tested fire-resistance rating of over 30 min. and were custom manufactured. The inspection opening closures were installed in just a few days, quickly and almost entirely free from dust.

The colour selected for the surface decor was the special shade Cashmere 702. This warm shade of beige blends harmoniously with the historical elements.

Overall, PRIORIT was able to offer a system to fully meet the function and design expectations of both the developer and architect, as well as building authority regulations and requirements.

Completed coverings with inspection closures in multiple different variants. From large-format to discreet, visually adapted to the individual requirements, they provide almost optimal access for retrofitting or maintenance work.

Different initial situations - One solution - System 42 from PRIORIT



- electrical systems and installations
- newly constructed drywalls in combination with different elements of System 42



Steel scaffolding to form the drywall construction



Steel scaffolding to form the drywall construction



Fire-resistant enclosure of fire loads - drywall construction in combination with elements of System 42 by PRIORIT



Inspection closure with all-round frame in the same look ensures accessibility



Fire-retardant cladding matched to the colour concept protects the escape route from fire and smoke in the event of a fire in the electrical distribution system. The large-format openings and at the same time provide optimum accessibility.

Project data	
Project location:	Paderborn
Building:	Paderborn Cathedral; renovation with historical preservation requirements
Year of construction:	2017
Solution:	PRIOFLEX inspection closure system 5 leaf without centre bridge; PRIOODOOR EXT inspection closures; PRIOWALL wall system; PRIOODOOR EXT A inspection closures
Material:	Non-combustible panel with surface coating, classification A2 - s1, d0
Fire-resistance:	30 minutes
Special features:	Exterior surface in the special shade Cashmere 702



Picture: Ludger-Schwarze-Blanke