

Reference report

Stuttgart, Central State Archives



Johannes Renz ([https://commons.wikimedia.org/wiki/File:Hauptstaatsarchiv_Stuttgart_Fassade_zur_Konrad-Adenauer-Str._\[2007\].jpg](https://commons.wikimedia.org/wiki/File:Hauptstaatsarchiv_Stuttgart_Fassade_zur_Konrad-Adenauer-Str._[2007].jpg)), „Hauptstaatsarchiv Stuttgart, Fassade zur Konrad-Adenauer-Str. [2007]“, <https://creativecommons.org/licenses/by-sa/3.0/legalcode>

When structural fire protection solutions have to be sophisticated

Protecting personnel, and thereby securing escape and rescue routes, is a key goal of preventative fire protection. A structural escape and rescue route is generally an emergency corridor and/or stairwell that personnel can either use to move to safety themselves in case of acute danger or be rescued by others.

Escape and rescue routes must be designed as escape tunnels to allow personnel to safely leave the building, evacuate, or to allow for rescue measures.

This means that the escape route must remain clear of fire and smoke for a certain length of time, and that different fire compartments must be formed within the building.

During a renovation, fire protection measures must often be updated to conform with current state of the art technology. This was the case at the Stuttgart Central State Archives, a building constructed in the 1970s. Files and documents going back to as early as the 8th century are stored there, making the Central State Archive a priceless treasure trove of historical objects.

Structural fire protection measures – state of the art technology

Initial situation:

The Central State Archive is housed in a building subject to historical preservation requirements.

Electrical installations and distributors are located in an emergency stairwell. These were structurally separated from the es-

cape route but had no fire protection classification.

Electrical installations, which are in some case located under stairs, are a tricky challenge.

The developer and architects defined the following premises as requirements for the project:

- A fire-resistant bulkhead for electrical systems and distributors which also provides optimal access to the distributors behind it.
- Maintaining or restoring the previous colour shade both for the newly constructed partition and an adjacent fire protection closure.
- Maintaining the existing wire glass, which is subject to historical preservation requirements.

Solution:

Custom solutions are standard for PRIORIT

Projects that would be complex special designs for other providers are nothing unusual for solution provider PRIORIT – they are our standard.

All requirements for visual design, fire protection, and historical preservation were handled using the PRIOWALL modular and individually adaptable wall and room construction system. The adaptability of this system is also ideal for tricky structural situations, as in this case.

All wall and door elements are custom prefabricated. To maintain the wired glass, which is historically protected, the system was planned with a ceiling element incl. cable bulkhead. It was connected directly to an existing girder directly below the wired glass. Therefore, the fire load of the electrical installations was separated by a fire-resistant partition from the emergency stairwell in the alcove. A T90 classified fire protection closure from the same modular fire protection system was used to replace the existing fire protection door.

Thanks to the pre-fabricated elements, installation was quick and almost dust-free. Despite this, it was still possible to adapt the wall elements on site to the structural conditions.

To come as close as possible to the original appearance and colouring, the decorative surfaces of all elements were produced in a shade of blue similar to RAL 5000. This allowed us to create a visually appealing, yet durable surface design. Precise positioning of the individual elements ensured optimal access to the distributors and installations for maintenance work or retrofitting.

To fulfil and take into consideration all building law specifications, historical preservation regulations and structural requirements, the following components of the PRIORIT modular fire protection system were used in this project:

- PRIOWALL wall elements with a fire resistance rating of over 90 minutes
- PRIODOOR EXT inspection opening closures, flush installation, with a fire resistance rating of over 90 minutes
- PRIOCEIL ceiling system with a fire-resistant
- Fire protection closure PRIODOOR FSA with a fire resistance rating of over 30 minutes
- Cable penetration seal integrated into the ceiling element

Project data

Project location:	Stuttgart
Building:	Central State Archives, renovation
Year of construction:	2020
Solution:	PRIOWALL wall system Inspection closures PRIODOOR ETX Fire protection closure PRIODOOR FSA
Material:	Non-combustible panel with surface coating, classification A2 – s1, d0
Fire-resistance rating:	90 minutes
Protective target:	Separating fire compartments and fire-resistant housings of electrical systems in escape and rescue route in consideration of historical preservation requirements
Special features:	Alpine lake blue surface according to historical preservation requirements, wall elements adapted on site, maintaining the glass partition in the upper area



This project was realised by our system partner on site:



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Material
+ Decor
A2 Class

Fire
Resistance
90 Min.

Smoke
Protection
min leakage



Wall elements can be customised on site to suit the structural conditions.

Material
+ Decor
A2 Class

Fire
Resistance
90 Min.

Smoke
Protection
min leakage

Precisely prefabricated elements, special colour similar to RAL 5000



PRIOWALL wall system with PRIODOOR ETX inspection opening closures and PRIODOOR FSA fire protection closure in Alpine blue for separating electrical distribution boards and fire compartments in the escape route.



PRIOWALL wall system with PRIOD00R ETX inspection opening closures and PRIOD00R FSA fire protection closure in Alpine blue for separating electrical distribution boards and fire compartments in the escape route.

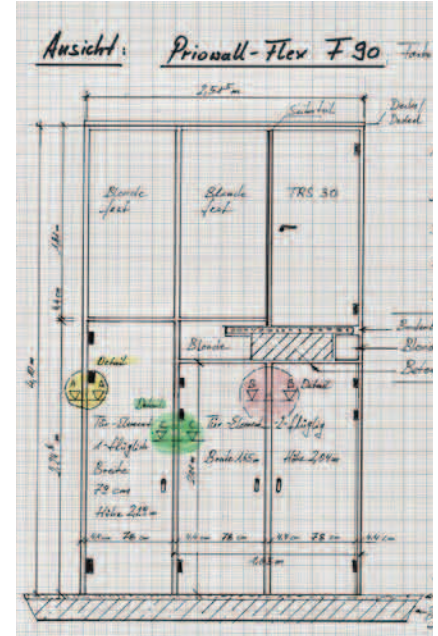
From the idea to the finished solution



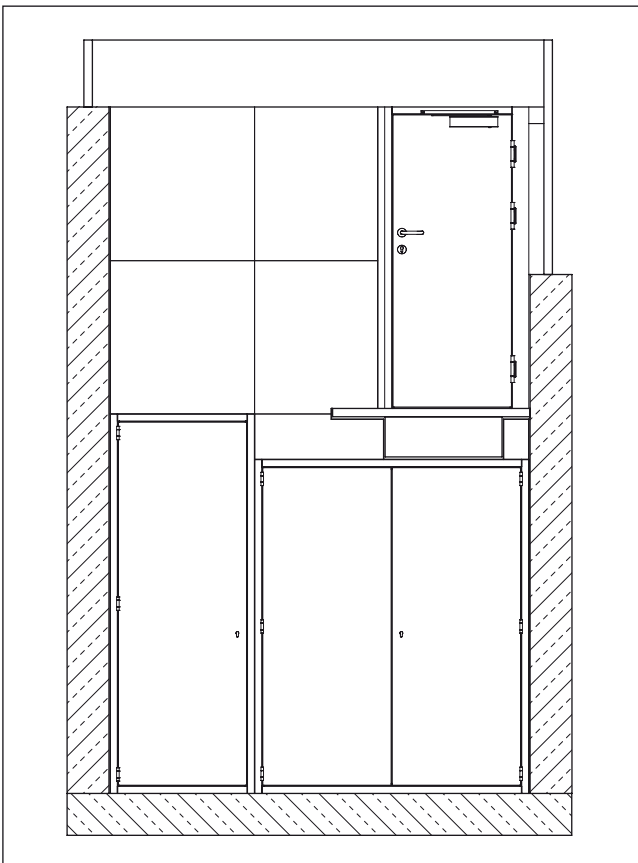
Wall system before the renovation



Measurement for offer planning



Measurement sketch for the calculation



Realisation drawing



Finished version