

Gas Connect Austria operations building

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Building construction



Factbox

Client: Gas Connect Austria GmbH

Contractor: PORR Bau GmbH

Architect: Convex ZT GmbH

Contract Type: Generalunternehmer

Project Type: Construction . Special civil engineering

Scope: General contractor for construction of a new plant . Replacing a gas pipeline

Contract Volume: 9 million euros

Construction Start: 09/2018

Construction End: 11/2019

Following a gas explosion in December 2017, PORR built a new operations building for the Baumgarten gas hub within a remarkably short time.

Safety was a top priority for both the building work and the subsequent use of the building. As well as the operations building, PORR was also responsible for replacing a damaged gas pipeline.

Gas Connect Austria operates a network in Austria comprising 900 km of high pressure natural gas pipelines.

It distributes a transport capacity of 140 billion cubic metres annually, thereby playing a significant part in safe natural gas distribution in Austria and Europe.

Baumgarten an der March is a central node of this network, with various pipelines meeting at the Austrian gas station. The gas, mostly from Russia, is distributed to Germany, France, Italy, Slovenia, Croatia and Hungary. However, in December 2017, there was a serious gas explosion at the station.

Following an exhaustive investigation of the incident and detailed damage assessment, work began on rebuilding the station as soon as possible. The first parts of the plant were operating again within a few weeks.

In light of the urgency, Convex ZT GmbH had plans for the new operations building ready for planning permission in just three months.

PORR was accepted as the best bidder in the resulting tender process.

Start of construction with special contractual features



There is an earthquake-proof raised floor under the control room. Source: PORR

Even before construction began, PORR had to deliver a construction schedule with partial penalties.

It was also contractually agreed that the canteen on the ground floor would be completed by July 2019. In autumn 2018, less than a year after the accident, PORR was able to start the floor replacement work.

In order to find space for the necessary cabling, the raised floor was raised 1 metre and made earthquake-proof. This meant 4 to 5 m high reinforced concrete walls in the shell, which were concreted on site.

The shell was completed in May 2019. To ensure safety during the shell construction work, a drill was carried out with the Marchegg district fire brigade in which the rescue of people from the top floor ceiling was simulated.

The carcass was completed in May 2019. In order to ensure safety during the structural work, an exercise was carried out with the local fire service in Marchegg, simulating rescue of people from the highest point of the construction.

Safety on the company premises

Safety is a high priority on every PORR construction site, but it was a particular focus of this project.

Due to the history and the dangerous environment, comprehensive safety measures and regulations were put in place and rigorously complied with.

No one could so much as set foot on the site without completing safety training covering appropriate conduct on the site – including a multiple choice test to be

passed at the end. Personnel were fully equipped with suitable personal protective equipment before entering the site.

Depending on their construction section, this could include helmets, safety shoes, or a full fire-resistant suit. Failure to follow regulations led to a warning; a second infraction would result in a lifelong ban on entering the site.

All work had to be announced a week before it was started, so that the active 20kV power lines could be disconnected as necessary.



The glass separating walls had to be anchored to both floors and ceilings with specially prepared steel support structures embedded in the carcass concrete.

Markus Huber
Project Manager, PORR Bau GmbH

Operations building: finishing work

The finishing work for the canteen on the ground floor forged ahead under high time pressure.

The 17cm-thick polystyrene insulation and the floor screed were completed within an accelerated 7-day schedule.

Construction of the roof over the canteen was prioritised; the flat roof was insulated with mineral wool and completed with three layers of sealing.

The heat-insulating façade was likewise insulated with mineral wool. The aluminium windows have explosion-resistant film on the plant side.

PORR built double-skin, extremely soundproof separating walls between the offices on the office level.

Since floor screed was to be laid right across this storey, the glass separating walls had to be anchored to both floors and ceilings with specially prepared steel support structures embedded in the carcass concrete.

The changing rooms for plant workers also have an unusual feature: they include lockers with ventilation. There is another striking feature in the inner courtyard: part of the Nordstream 2 pipeline, currently being laid beneath the English Channel, is on display here.

The section of piping was lifted into place by crane. Here at the Baumgarten gas station, it represents the future continuation of gas supplies from the North. The canteen was handed over to the client in July, as contractually agreed, and subsequently opened in September.



The canteen was handed over as contractually agreed in July 2019. Source: PORR

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Numerous embedments such as electric cables and ducts added to the complexity of the pipeline replacement.

Markus Huber
Project Manager, PORR Bau GmbH

Repair of gas pipeline



The damaged pipeline had to be excavated along a length of 140m in preparation for replacement. Source: PORR

In parallel with the operations building being constructed, the tendering process was being held for the gas pipeline damaged in the explosion. PORR was also awarded this contract. The pipeline had to be exposed along a length of 140m while under full pressure.

Numerous embedments such as electric cables and ducts added to the complexity of the work, and a lot of the excavation had to be carried out manually.

For safety reasons, despite the summer heatwave, the team had to wear fire-resistant clothing in addition to the usual personal protective equipment.

Once the pipeline had been exposed, the gas was evacuated and the pipeline was replaced, backfilled with sand and the trench filled in.

Successful handover

PORR successfully completed all elements of the project on schedule. This was only possible due to the dedication of every single member of the team. The new operations building was officially inaugurated at the Baumgarten gas station on 14 February 2020.

A modern three-storey building with offices and a central measurement room was built on an area of 2900m² in just one year of construction work. All the plant areas of the Baumgarten gas station can be monitored and controlled from this building.

Technical data

Gross floor area	2,750m ²
Excavated soil	10,000m ³
Soil exchanged	3,500m ³
Asphalt	3,000m ²
Concrete built in	3,430m ³
Reinforced concrete built in	3,640t
Raised floor	350m ³
Glass separating walls	100m ²
Solar panels	45.6KWp
Mineral wool EIFS system	3,000m ³