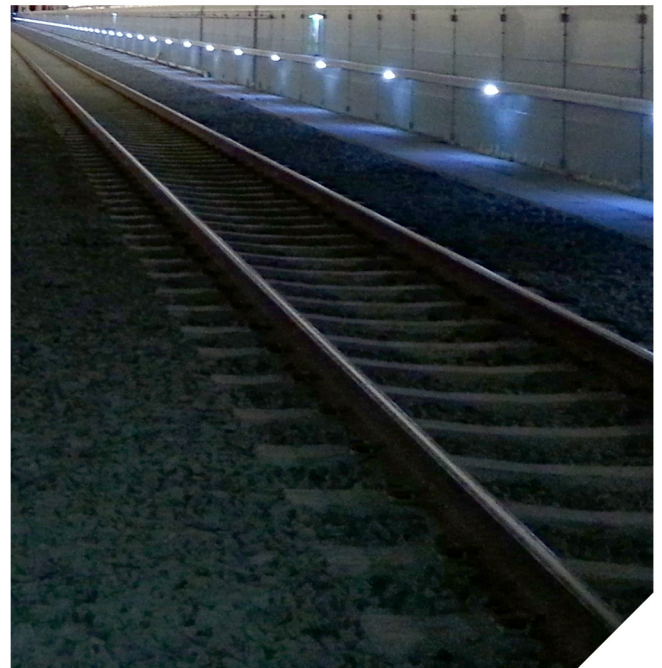
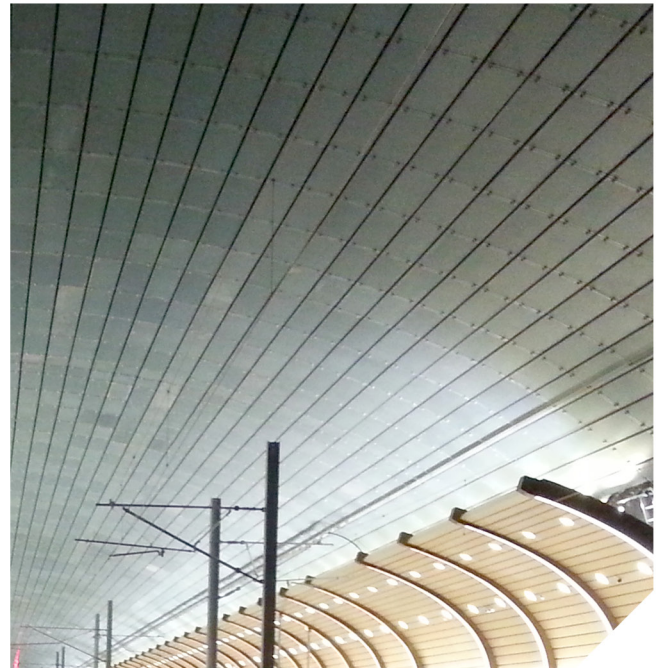


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Holmestrand Station

The new railway station is a groundbreaking project





Sveinung Vegum, Project Engineer in NLI Elektrosystemer (left)
Viggo Larsen, Construction Leader in Bane NOR (right)

CASE STUDY HOLMESTRAND STATION

The new railway station is a groundbreaking project

There has been a railway station in Holmestrand since 1881. But in 2016 the small city in Vestfold county opened one of the world's most modern railway stations. The station plays a major role in the infrastructure of the whole region. During the grand opening ceremony 17. December 2016 the local community proudly presented the world's longest gingerbread train with 1283 wagons and a total length of 370 m.

The station is built entirely inside Holmestrandsfjellet (the mountain in Holmestrand) in one of the world's largest mountain halls. The mountain hall is 870 m long, 30 m wide and have four tracks. Each one of the two platforms is 250 m long.

The decision to create the station inside the mountain was made to facilitate for express trains with a speed of 250 km/h. The mountain hall accommodates high speed, while avoiding sharp curves and minimizing heights.

Advanced technical installations

Sveinung Vegum, Project Engineer in NLI Elektrosystemer, has been in charge of all electro installations. During peak hours more than 70 men were busy at work inside the mountain.

— This is the very first tunnel railway station combining platforms with 250 km/h express trains, explains Vegum. Several measurements have been taken to avoid discomfort for passengers on the platform every time a train passes by.

The station has been built to manage high pressure, noise and vibrations. Many calculations were made to secure that all technical solutions can handle trains passing at very high speed. The speed causes very high pressure of air in the tunnel, which may result in a loud blow.

— When building a mountain hall construction it is necessary to plan for the future, says Vegum. All technical equipment must be able to withstand huge forces. The key is to see security as a whole, covering every single aspect.

Genset delivered by Coromatic

All technical installations are dependent on secure power supply. The power set-up is very secure, however, in the case of a power outage the genset from Coromatic will supply all vital equipment.



Coromatic and NLI cooperated closely in order to choose the right type of genset. In addition to that, it was necessary to manage cooling and air through a central control system. To achieve a complete functional solution ventilation channels were created throughout the station hall.

The genset from Coromatic is the type FG Wilson P500. The team from Coromatic has installed the different tubes underneath the roof of the tunnel, managing heights and narrow spots effortlessly.

Because of the challenge of the pressure from passing trains and the location deep within the mountain, the genset was supplied with a heat exchanger system placed in a technical “corridor” at the station area.

The control system for the genset was also designed and delivered by Coromatic. In case of power outage, the genset will start up and supply all vital equipment in the main switchboard. In case of a long-term power break, a tank is installed with automatic filling functionality allowing the genset to operate for as long as three days. All operational information is monitored remotely by Bane NOR.

Additionally, the system has a UPS installed to secure power supply in the time period between power failure and genset operations. During tests, the genset has delivered power after just 8 sec.

Results

Today, all technical operations are running smoothly and according to plan. Holmestrand station has fulfilled the requirements for both effective public transportation and excellent use of land in a region of growth. The station has become an important transportation hub facilitating growth and development in the region.



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