



## Metro line westerly end station

**Avløs Base is one of Sporveien's two workshops and bases for metro train carriages. Avløs Base is along the Kolsås Line. The base was originally built in 1924 when the Kolsås Line was opened. The construction of a new base started in 2012. The project retained the old building and added new buildings beside and at the end, increasing the total building stock from around 1800 m<sup>2</sup> to around 16,000 m<sup>2</sup>. There are 13 indoor tracks, of which 10 are parking tracks, 2 are workshop tracks and 1 is a graffiti-removal shed. There is space for 2 sets of carriages on all the tracks, except the graffiti track, which has space for 1 set of carriages. This means that there is space for 25 sets of carriages inside the sheds. Each set of carriages is around 53 metres long. The cellar of the building contains offices, stores, employee parking, technical rooms, a heating plant, meeting rooms and cloakrooms.**

Aas-Jakobsen was the lead consultant for Avløs Base. The building has a number of complicated interfaces: train detection, electrical, heating and ventilation systems and other technical facilities. There are also relatively advanced electrical connections for the automated processes used by the trains which will drive into and out of the base. The building has been designed to have a relatively large span with only a few support columns on the ground floor. The use of columns in the cellar also allows for a relatively large span in this location, which means that if the building's need changes in the future, these can easily be accommodated. The architect for the base was Arne Henriksen Arkitekter AS.

One of the challenges was to create space for all the functions within the size of the plot. The existing listed building was really far too narrow, and its width also dictated the size of the new extension. In order to create space for all the tracks, a large volume of rock had to be blasted away and a relatively high rock cutting created. This rock cutting also had to be reinforced with a sturdy wall of pipe piles, which were driven and anchored deep into the rock. The entire pipe pile wall was coated and protected against corrosion with fibre-reinforced sprayed concrete.

Inside the base, walkways have been constructed alongside all the tracks, allowing step-free access to the carriages. There is a pit in the workshop shed, and walkways at the floor and roof levels of the carriages. The entire project was executed as a BIM model. All the disciplines and details were incorporated

Project name:

**Avløs Base**

Project period:

2010 - 2016

Owner:

Sporveien Oslo

Client:

Sporveien Oslo

In brief:

Lead consultant and project management; also responsible for the various disciplines in the structural safety design

Project size:

ca. 850 MNOK

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in the model.

The construction period for Avløs Base was extremely tight, and it was important for the base to open as early as possible after the Kolsås Line was complete.