



Facelift for metro line from Hellerud to Mortensrud

The Østensjø Line is the metro line between Hellerud and Mortensrud. The Østensjø Line was opened as a tram line from Vålerenga to Oppsal in 1926, and in 1958 the tram line was extended to Bøler. In 1967, the Østensjø Line was upgraded to metro standard, and the line was extended to Skullerud. In 1998, the metro line was extended all the way out to Mortensrud. The construction of the Løren Line, which was due to open in 2016, would free up capacity through the city centre tunnel for one train every 15 minutes in both directions. The newly-available capacity in the city centre tunnel would be used to increase the train frequency on the Østensjø Line from a 15 minute service to a 7.5 minute service. At that time, the Østensjø Line was in such poor condition that an extensive upgrade of the line was needed before the train frequency could be increased.

In May 2014, Aas-Jakobsen was hired by Sporveien Oslo AS to design the upgrade of the Østensjø Line. Our sub-consultants on the project were Vianova, Geovita, ElectroNova, ECT, NGI, Grindaker, Brekke & Strand Akustikk, Safetec, Ingenia and Sweco. The engineering design work started in May 2014, and by early 2015 the inquiry for competitive tender had been sent out for five different contracts covering the bulk of the work. Construction work started in April 2015. Together with our sub-consultants, Aas-Jakobsen has completed the design work for a total of 9 contracts for the upgrade of the Østensjø Line. 3D modelling and the use of BIM coordination/VR models have played a key role in the Østensjø Line design work, and the 3D design models were used as survey data by the contractors during the construction phase.

The geographic span of the project stretched from just beyond Hellerud Station, where the Østensjø Line and Furuset Line diverge, up to and including Mortensrud Station. That amounts to a section of metro line of around 8 kilometres. The project has included the upgrade of 7 metro stations to the required standard, renovation of 7 station buildings/technical buildings, construction of 1 new technical building, construction of 1 new personnel building, complete renovation of 2 tunnels, construction of new walkways in 3 tunnels with a combined length of 1.8 kilometres, renovation of a rectifier

Project name:
Upgrade of Østensjø Line

Project period:
2014-2017

Owner:
Sporveien Oslo AS

Client:
Sporveien Oslo AS

In brief:
Engineering design of upgrade of around 8 kilometres. Metro line corridor between Hellerud and Mortensrud

Project size:
909 MNOK ex. VAT

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substation, upgrade/repair of 12 bridges, construction of a new pedestrian bridge, construction of a 280 metre long pile-supported concrete slab under the metro corridor, renovation of the current signalling and interlocking systems, new substructure for 5.2 kilometres of double-track metro line and new superstructure for 5.7 kilometres of double-track metro line.

The upgrade of the Østensjø Line is a project which has had an extremely tight schedule, both in terms of the design and execution of the construction work. Major work had to be completed within a very short time on a site that was long and narrow with limited access and restricted space for equipment and storage.

The upgrade to the section from Hellerud to Bøler was completed by January 2016, when it was reopened to metro traffic. The upgrade to the final section up to Mortensrud was completed by April 2016 and was opened to metro traffic on the same day as the Løren Line. The upgrade of the Østensjø Line has resulted in a reliable section of metro line, with upgraded and customer-friendly stations, and metro customers can enjoy twice as many departures per hour.