Oslo Opera House

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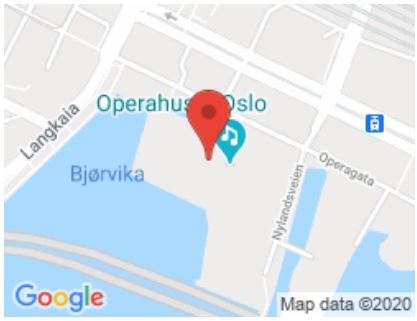

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The soil conditions also posed challenges and in some places the steel piles for the foundations extend to a depth of up to 60 metres before reaching the bedrock. The largest piles were 2.5 metres in diametre. Ruukki delivered the retaining wall structures to keep the sea water out of the working area, some 20 metres below sea level.

Ruukki has delivered most of the steel structures for Oslo's new opera house: the frame, foundation piles and retaining wall structures. The customer chose Ruukki as the supplier on the grounds of best overall value for money, quality and delivery reliability.

The steel frame for the opera house was fire-resistant coated, and the delivery included installation. This impressive building required demanding frame structures. For example, the four inclined columns supporting the roof to the entrance of the building had to be temporarily secured before the permanent roof structure was completed. The roof above the main stage rests on top of a steel structure; this so-called "steel crown" was also delivered by Ruukki.