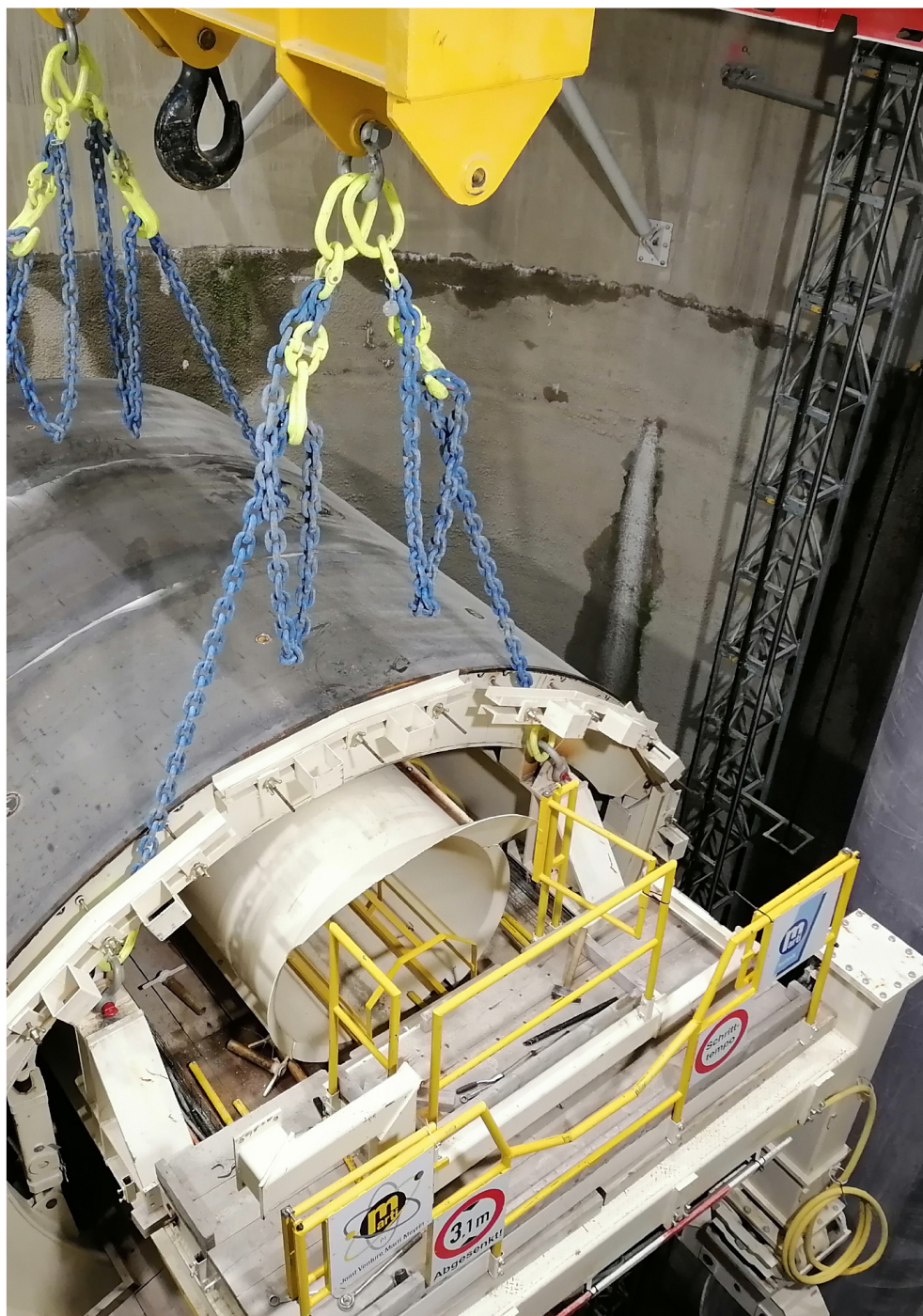


Base segment placement machine and vault formwork

Newly developed base segment placement machine and vault formwork for CERN, Geneva

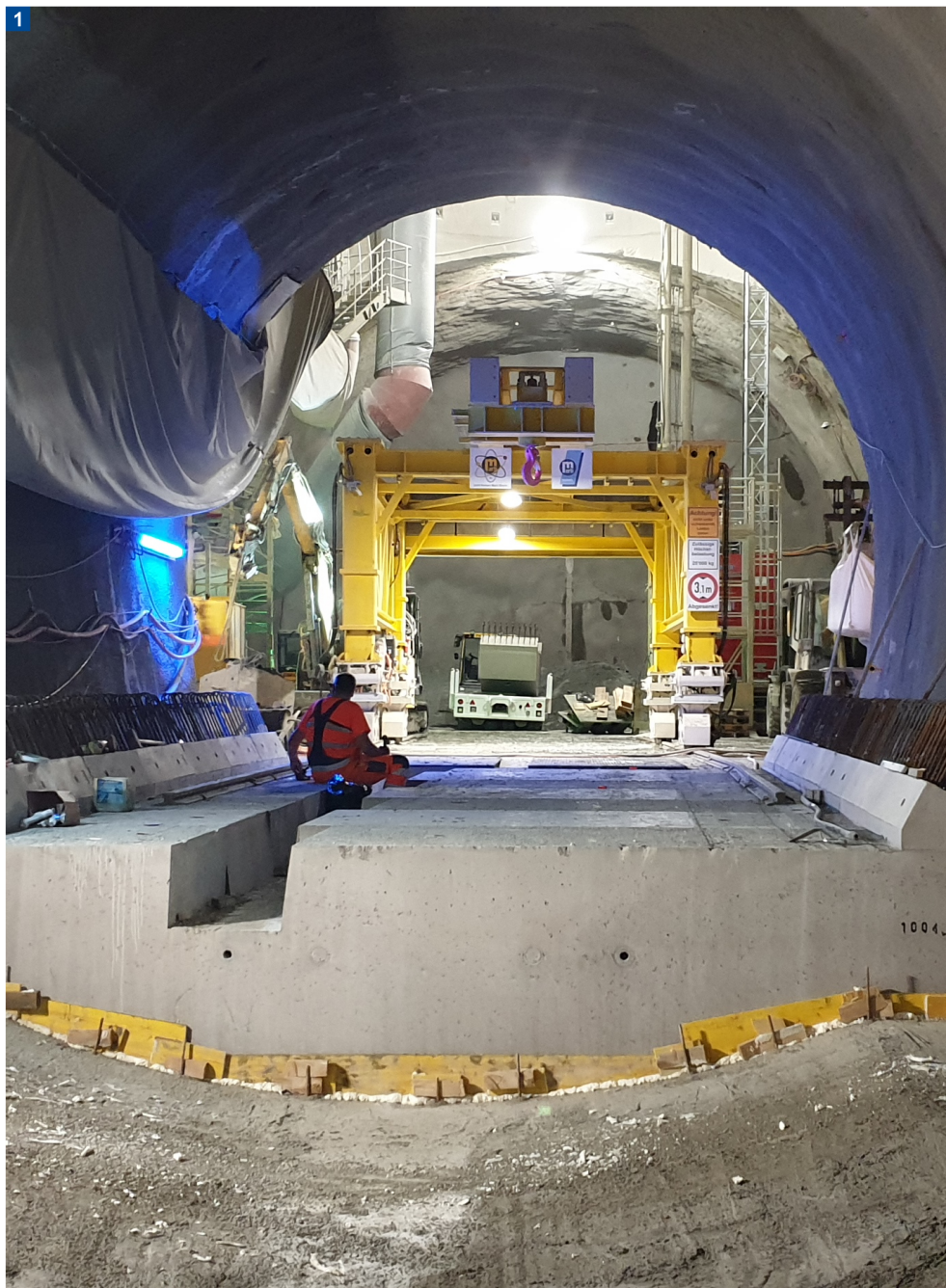


The world's largest particle accelerator at CERN in Geneva is now set to become even bigger.

The main components in the expansion of the LHC comprise a new underground ring tunnel covering a length of 100 km and a particle accelerator with even more powerful magnets. New tunnel sections therefore need to be added to the existing 27-km-long ring tunnel of the LHC that connect the two ring tunnels. Their shafts and caverns are to accommodate the installations of the new particle accelerator.

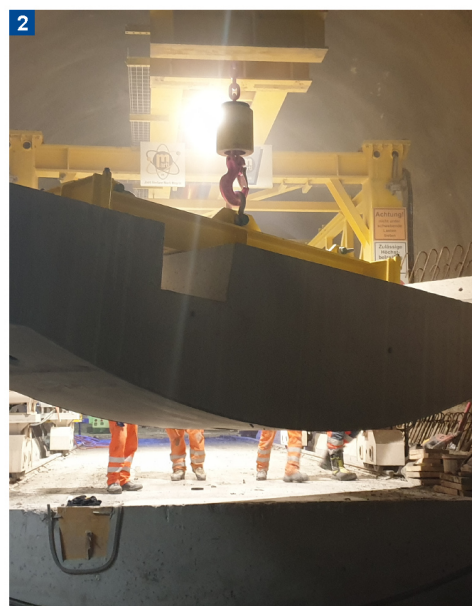
Here, the working group Joint Venture Marti Meyrin is assuming a key role. The project involves a 60-m-deep shaft, the 50-m-long and 20-m-high cryogenic cavern as well as the long power converter tunnels, measuring 300 m in length, and four service tunnels.





Client
Joint Venture Marti Meyrin

Created
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Services provided by Marti Technik AG

The prefabricated concrete elements with a length of 1.5 m and a weight of around 25 t are manufactured at the Klus concrete plant and transported to the construction site by truck. In order to install the concrete elements, we have developed a special base segment placement machine. It is 12.5 m long and 4.2 m wide. The base segments are transported to the installation site lengthways, lifted by the placement machine, manually rotated by 90°, placed in the correct position and bedded in concrete.

Besides the base segment, a concrete inner ring is required for completing the interior construction. A vault formwork was constructed for this purpose, for a block length of 10 m.

Title page: Vault formwork in the shaft
1 base segment placement machine in the tunnel
2 Placing a base segment