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Flood protection Sihl, Lake Zurich: spillway Thalwil

Bauherr
Canton of Zurich, Office for Waste, Water, Energy and Air

Projektierung
IUB Engineering AG and IM Maggia Engineering AG in engineering consortium

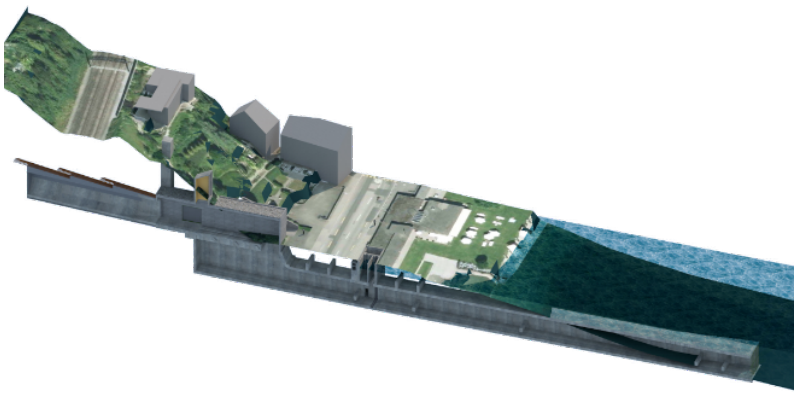
Zeitraum
2020-2026

Baukosten
CHF 109 Mio.

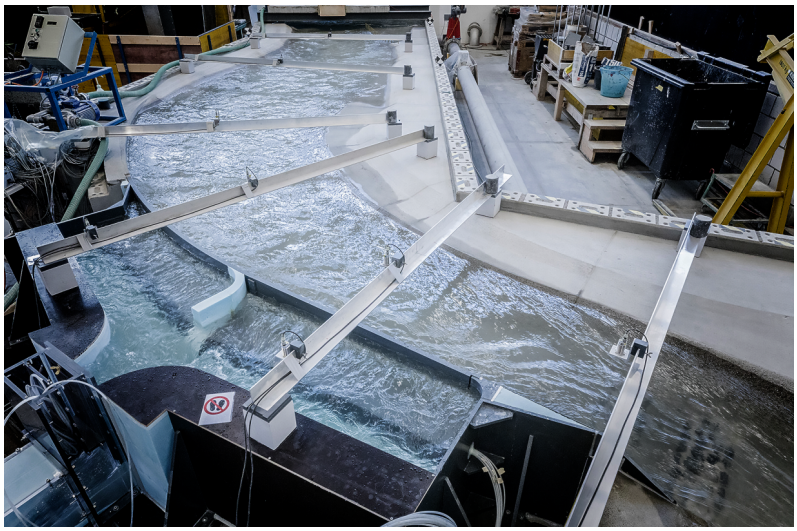
Leistungen
- SIA phases 21-53

Beschreibung
The project serves to protect the city of Zurich from floods from the Sihl. In the area of the left bend below the Sihlwald and the alluvial wood rake, the spillway tunnel with a regulated side outlet takes the flood peaks. From there, they are fed to Lake Zurich via a gravity gallery under the Zimmerberg.
For the spillway, ideal locations were found for the inlet structure in Langnau a. A. (Sihl) and for the outlet structure in Thalwil (Lake Zurich) and optimised in terms of their hydraulic function and costs. Flood peaks are diverted with a pronounced retention effect via Lake Zurich into the Limmat, so that sufficient protection against overflowing of the Sihl is achieved. The feasibility of a robust, durable and simple flood protection concept was demonstrated and confirmed and refined by means of hydraulic and shear engineering model tests at the ETH Zurich.
In order to verify the functionality of the structure, a physical model test was carried out at the ETHZ's Laboratory of Hydraulics for both the inlet and the outlet structure. The 3D models, which were optimised during the tests, serve as the basis for the model construction.

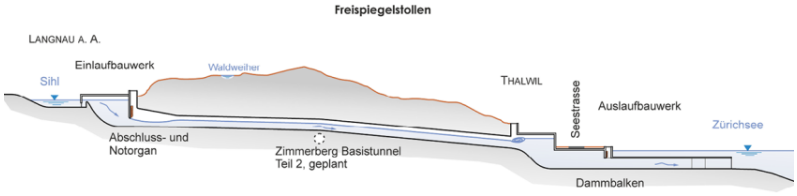
Hauptdaten
- Intake structure with 130-metre-long longitudinal weir and collecting basin
- Free-flow adit with a shooting discharge (length: 2.1 km, internal diameter: 6.6 m, gradient: 1.3 % - 3.3 %)
- Outlet structure with stilling chamber and estuary structure (length: 90 m, three metres below the water surface of Lake Zurich)



BIM visualisation of the outlet structure



Hydraulic model test of the intake structure at the VAW



Schematic length profile of the relief gallery