

# New construction of Altberg observation tower, Dänikon

2010



First prize in the project competition Tower Altberg! A wooden tower with a palisade-like column arrangement on the diagonals of the foundation, a staircase opening upwards and a roofed viewing platform at a good 30 m height.

## The project

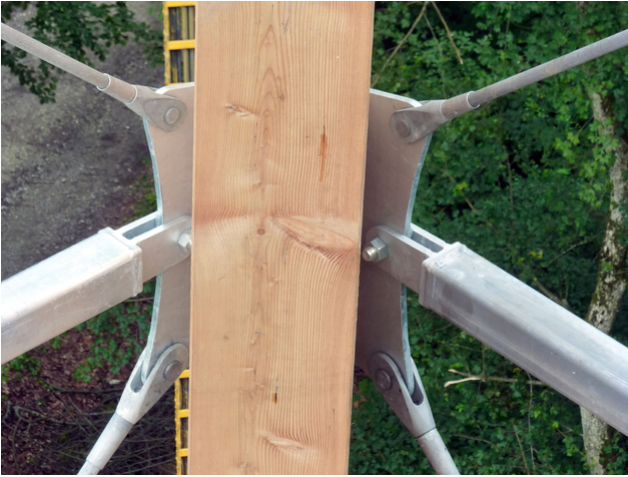
During the competition phase, it was agreed that the tower should be built in as delicate a construction as possible, similar to the Eiffel Tower. But how is the shape of the Eiffel Tower compatible with the footprint? How to create the staircase and a respectable platform that provides enough space for visitors to see all around? So the idea was born to turn the Eiffel Tower upside down and take it as an abstracted negative from a cubic envelope. The spiral staircase spirals outward in the freed-up space until it reaches the platform at a height of 30.15 meters. The viewing platform is located about 5 m above the treetops and provides a good panoramic view.

## The construction

For the wooden structure, we chose larch laminated timber because of its better weather resistance. Primary structural components are made of wood, connections and stiffeners were made with steel components. The main structure consists of four rows of 9 columns each. The load transmission of the main supporting columns into the foundation cross is carried out by glued-in threaded rods (Ferwood system). The outer stringers support the stair treads and at the same time form the distance between the load-bearing columns.

## The challenge

The inner posts, stringers and railings are supported by steel brackets, which allowed for a rather filigree construction. Bracing against external forces such as wind is provided by a tension rod system. The viewing platform is covered by a hipped roof made of hollow box elements.



Tension and compression rod connection



Support platform 1



Support platform 2



Assembling the tower

### Construction Data

- Platform height 30.13 meters
- Ridge point height from foundation 34.52 meters
- Glulam larch 60 m<sup>3</sup>
- Three-layer panel Fi/Ta
- Thickness 27 mm 127 m<sup>2</sup>
- Larch solid wood 5 m<sup>3</sup>
- Concrete volume 53 m<sup>3</sup>
- Steel incl. railing 15 tons

### Services of Timbatec

- SIA phase 31 preliminary project
- Cost estimate
- SIA Phase 32 Construction project
- Structural analysis and design
- SIA Phase 41 Tendering and comparison of offers
- SIA Phase 51 Implementation project
- Site supervision and site inspections

### Timber Construction Contractors

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### Timber construction engineers

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### Building owner

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