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STOVNER TOWER: ACCESSIBLE PEDESTRIAN WALKWAY TO THE FIORD VIEWPOINT.

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Keywords: steel; timber; walkway; serpentine; aesthetics; viewpoint; accessibility; integration; nature; fiord.

The Stovner Tower forms part of an activity park in the Stovner district of Oslo. The tower, providing a serpentine walkway through the tree tops with a maximum height of 15m, is designed to be universally accessible. The route is based on a series of straight lengths connected with abrupt changes of direction based on a turning radius of 4m or 7.5m. The 2m wide walkway has an overall length of 270m with a constant 1:15 slope. There are four intermediate horizontal platforms of variable size intended as relaxation and viewing areas, to enjoy the nature surrounding the tower and the great views of Oslo city and the fiord for the top.

The structure is slim and light and the materials and colors are natural in order to integrate in the park with the minimum visual impact. The principal deck structure is steel, formed from a central tube with a diameter of 762mm. The tube is made up of a series of 2m long straight segments which form the walkway change of direction. Steel cantilever ribs are located at 1.5m centres to support the solid timber decking and the guardrail. The central steel tube is supported at multiple locations by tripod columns formed from three glulam timber sections of variable size depending on their height.

The timber columns are anchored to the bedrock located close to the surface in this area. Steel walkway sections were shop welded in transportable lengths with bolted on-site connections. Timber to steel connections were also bolted. Steel is painted for corrosion protection and all timber is treated for external use. A 3D SAP2000 FE model was used for verifications, including a buckling analysis for the slender timber columns, and a modal analysis to check for frequencies that would make the structure susceptible to pedestrian-induced vibrations.



Fig. 1. Left: Aerial photograph of the structure during construction. Photo: Monir Jonas Kadah. Right: Stovner tower structure. Photo: Jiri Havran.