Complex Free Form construction for the Tekniska Museet

Stockholm, SE

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Project details

Client	Tekniska Museet Stockholm
Architecture	Elding Oscarson Architects
Project type	Education and research, Leisure and sport
Construction type	Free Form
Services	Timber construction
Construction	2022
Locality	Stockholm
Country	Sweden

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New perspectives on science at Wisdome Stockholm

At Wisdome Stockholm at the Tekniska Museet (Museum of Technology) in Stockholm, tricky and complex issues are brought to life through cutting-edge visualisation technology. Blumer Lehmann developed the Free Form timber structure together with its project partners and is also responsible for its production and assembly.

The building was designed in timber by Swedish architecture firm Elding Oscarson in collaboration with structural engineer Florian Kosche. The architectural competition stipulated the use of cross-laminated timber (CLT) and laminated veneer lumber (LVL) as the main construction materials for this innovative building project. Swedish-Finnish firm Stora Enso supplied the timber materials.

To implement this complex structure, the project team created several mock-ups in the development phase that delivered the insights needed to identify solutions. As a result, a traditional construction style using dowels and plugs for the joints was used for the Free Form vaulted roof. Joined together in grid form, the beams are able to span the large dimensions of the main structure.

Inside, the building houses a hemispherical dome structure, complete with 3D cinema: the Wisdome Stockholm itself. The components for the dome structure are produced entirely in cross-laminated timber (CLT) back in the Stora Enso factory in Sweden.

Specific Contact

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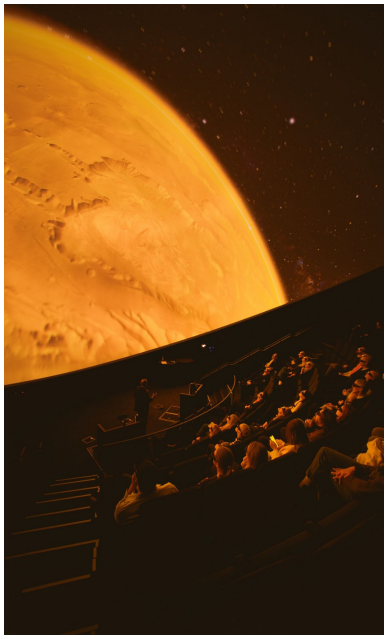
The unsupported Free Form roof made of laminated veneer lumber and arranged as a visible lattice shell spans an area of 25 x 48 metres.



Laser projectors and high-performance computers create scientific 3D experiences on a 300 m2 screen that surrounds the audience 360 degrees.

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Blumer Lehmann joined forces with its engineering and geometry partners to develop the highly complex roof support structure and was responsible for planning and production of the components, as well as assembly.

In total, around 20 km of LVL strips make up the grid of the roof support structure.

In the dome structure, new perspectives on science topics are shown on the hemispherical screen.

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The Planning for the innovative free-form timber construction began in 2021 and construction work construction work could begin.

The Wisdome project builds on the world's leading research in visualisation technology and is led by more than ten universities and research institutions.

The actual dome structure – the Wisdome – is inside the complex timber construction with its curved roof.

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