

Viewing tower with resource-conserving design

Wangen, DE



Project details

Client	Stadt Wangen im Allgäu Landesgartenschau Wangen 2024
Architecture	ICD und ITKE Universität Stuttgart
Project type	Leisure and sport, Art and culture
Construction type	Free Form
Services	Joint GC building shell
Construction	2024
Locality	Wangen im Allgäu
Country	Germany

Accessible highlight at the National Horticultural Show

An innovative viewing tower was developed for the National Horticultural Show as part of a collaboration between project partners ICD University of Stuttgart – Prof. A. Menges, ITKE University of Stuttgart – Prof. J. Knippers, Wangen National Horticultural Show in Allgäu 2024, and Blumer Lehmann. As general contractor, we were responsible for the manufacture and constructional implementation of the structure, and we were also involved in development of the execution schedule and production methods.

The research project is the first accessible tower in the world to use curved wooden components made up of glued cross-laminated timber formed by the natural shrinking process of the wood. As a large-scale demonstrator, the tower should exhibit the innovative use of wood as a construction material at the National Horticultural Show. Made up of six prefabricated elements, the structure was erected in just three days. The height of 22 m and location on top of a hill posed a structural challenge. After all, the tower needed to be environmentally friendly and light in both its design and its materials, while at the same time, the construction needed to be capable of withstanding high wind loads.

Sustainability is also very much at the forefront with regard to the viewing tower's footing, comprising a base area of 50 m²: the foundation is made of recycled concrete and cement produced with low CO₂ emissions. The rear-ventilated, 20 mm-thick exterior cladding consists of vertically mounted solid larch wood panels. The viewing platform is accessed by a steel staircase with 113 steps.

Specific Contact



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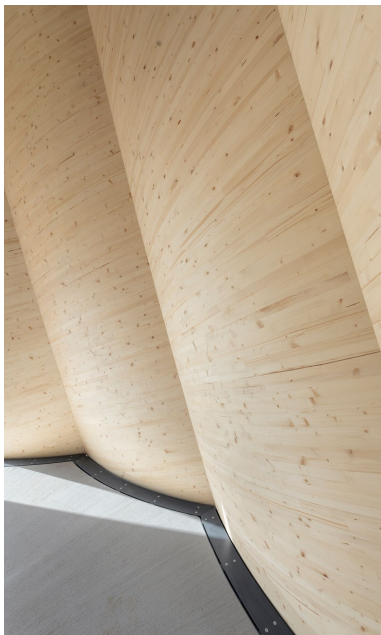
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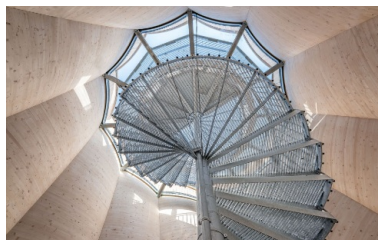
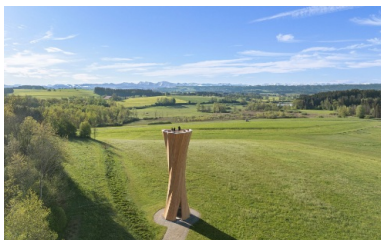
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The tower demonstrates the environmentally friendly and efficient use of wood as a building material on a large scale. | Foto: Nina Baisch



The observation tower was constructed from cross-glued, curved wooden components that mould themselves through the natural shrinkage process of the wood. | Foto: Nina Baisch



At the Wangen im Allgäu 2024 State Garden Show, the 22-metre-high tower will showcase innovative construction methods using wood. | Foto: Roland Halbe

A 113-step steel staircase leads visitors to the viewing platform of the resource-saving tower. | Foto: ICD/ITKE/IntCDC University of Stuttgart

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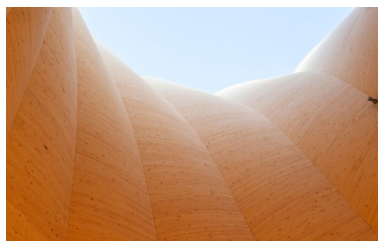
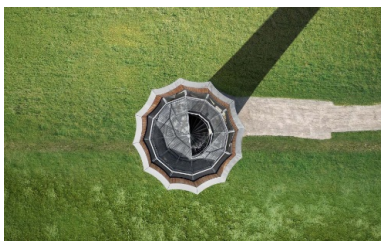
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Sustainable materials such as recycled concrete and CO₂-reduced cement were used for the foundations of the observation tower. | Foto: ICD/ITKE /IntCDC University of Stuttgart



The vertically mounted solid larch panels give the tower's outer skin a robust and natural look. | Foto: Nina Baisch



As general contractor, we took on the detailed development, production and construction of the world's first accessible tower made of curved timber components. | Foto: Nina Baisch

The cooperation of renowned project partners made the development and construction of this sustainable viewing tower possible. | Foto: ICD/ITKE/IntCDC University of Stuttgart