

ETH House of Natural Resources

Dienstag, 29. September 2015

17:00 Uhr

Auditorium HIL E3 (Lehrgebäude Bauwesen)

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ETH Zürich



ETH House of Natural Resources

The House of Natural Resources (HoNR) is a novel research and demonstration building at ETH Hönggerberg with innovative structural elements made of hardwood. A post-tensioned timber frame is the skeleton of the upper two storeys of the building. The timber frame, which consists of glued laminated timber made from ash and spruce, has been designed to carry vertical and horizontal loads and demonstrates a non-linear ductile self-centering structural behaviour under horizontal loads. A novel timber-concrete composite slab using beech plates has been implemented in the HoNR for the first time worldwide. The beech plates are used first as formwork, then as steel reinforcing and finally as aesthetically pleasing ceiling. The use of beech plates allows the optimisation of the construction process and costs and leads to a significant reduction of steel reinforcing and concrete in comparison to common reinforced concrete slabs. The building features an extensive monitoring system, comprising a fusion of heterogeneous data in both a static and dynamic regime, permitting the study of the structural behaviour during the construction and operational phase. The outcomes of this campaign will shed light into the short- and long-term performance of these newly developed building systems.

This presentation overviews the novel technologies implemented in the ETH HoNR and reports first results from the field tests and the monitoring system.

Nächster Vortrag: Dienstag, 20. Oktober 2015, 17:00 Uhr, HIL E3
Prof. Dr. Paulo Lourenço, University of Minho, Guimarães, Portugal
"Conservation of monuments and historic structures: Methodology, research and practice"