Apartment house Bachstrasse, Buchs

2021

On Bachstrasse in Buchs in the canton of Aargau, a multi-family house was built in timber construction, which was originally planned as a reinforced concrete structure. The TS3 technology made it possible to change the material in the planning phase.

The project

The three-story apartment house was once planned entirely in solid construction. Today, the client enjoys a building that combines the advantages of timber construction and solid construction: The house offers a pleasant living atmosphere, has a low ecological footprint, high flexibility of use and could be realized quickly and within the planned budget. The floor structure is very slim at less than 40 centimeters. Sound measurements show that in the area of impact sound the minimum requirements are clearly exceeded, and in the case of airborne sound even the increased requirements are met.

The construction method

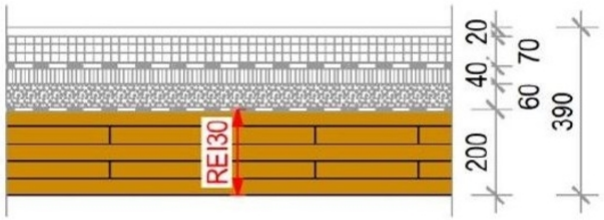
The floor slabs made of cross-laminated timber are connected with TS3 joints to form large areas. They rest on very filigree reinforced concrete columns and on the load-bearing exterior walls. With this construction method, a total of 190 m2 of TS3 floor area was realized. For apartment buildings with low height (under 11 meters), staircases may be RF2 (combustible materials) instead of RF1 (non-combustible materials). This is made possible by the beautiful oak staircase.

The challenge

The connection details of the very filigree reinforced concrete columns to the ceilings made of cross laminated timber and the staircase in timber construction are the exciting challenges of this project.

Interior view

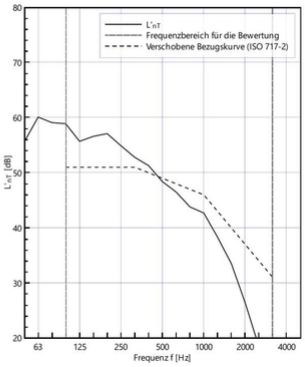
Airborne sound measurements



Structure floor ceiling

Frequenz f Hz	L'_{nT} Terzband dB
50	55.6
63	60.1
80	59.1
100	58.9
125	55.7
160	56.6
200	57.1
250	54.9
315	52.8
400	51.3
500	48.4
630	46.5
800	43.8
1000	42.7
1250	38.3
1600	33.5
2000	26.4
2500	18.4
3150	≤ 10.9
4000	≤ 8.8
5000	≤ 7.0

≤ bei diesem Messergebnis wurde die Messgrenze erreicht



Impact sound measurements floor ceiling

Construction Data
- CLT 35 m3
- C24 15 m3

Construction costs
- BKP 1-9: CHF 1.60 Mio.
- BKP 2: CHF 1.50 Mio.
- BKP 214: CHF 430'000.-

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- Fire protection planning
- Fire protection Quality assurance QSS1
- Cost estimation
- Technical site management and site inspections
- TS3

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