Strategies for a wider use of timber in urban buildings

Stefan Zöllig, Timbatec AG
Structural Timber Engineers Switzerland
Strategies for a wider use of timber in urban buildings

• Technical: Innovation – Approvals – Building Codes
• Education: Craftsmen – Timber Engineers
• Marketing: Do good and talk about it
• New idea: Steel and concrete avoiding strategies
• New technologies: Columns and slabs, TS3
Technical: Innovation – Approvals – Building Codes


<table>
<thead>
<tr>
<th>Year</th>
<th>Use</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>Wohnen</td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td>Wohnen/Büro/Schule</td>
<td>F30bb</td>
</tr>
<tr>
<td>2005</td>
<td>Wohnen/Büro/Schule/Industrie</td>
<td>R / EI / REI 30  REI 60  REI 60/EI 30 (nbb)</td>
</tr>
<tr>
<td>2015-2025</td>
<td>Alle Nutzungen</td>
<td>R / EI / REI 30 / REI 30 – RF1  REI 60 / REI 60 – RF1  REI 90 / REI 90 – RF1</td>
</tr>
</tbody>
</table>

Holzbautechnische Alternative F0/IV oder F30/IV*
Technical: Innovation – Approvals – Building Codes


Facades self-extinguishing -> lead to allowance of higher Facades
Education: Craftsmenship – Timber Engineers

University of Applied Sciences BFH AHB, Biel, Switzerland

1952  1995  2022
Marketing: Do good and talk about it

Switzerland: National: Lignum (WoodWorks), Regional: 26 RAG
RAG: Initiative Holz BE, Actions

1. Major projects Kt. Berne
2. Cantonal forest ordinance, enforce forest ordinance Art. 5 across all offices
3. Swiss timber procurement guide despite GATT-WTO
4. Agricultural buildings VOL-LANAT
5. ASTRA timber buildings on highways
6. WIKI for timber construction
7. Prix Lignum 2018
8. Institutionalised forest and wood lobbying
9. Advisory groups on timber as a Building Material - List of Objects
10. Timber in educational buildings
11. Timber Startup Incubator
12. Timber for increased density in cities
13. Bernese Timber Day
14. Consultant groups for wood energy
15. Support national campaigns locally, i.e. Woodvetia, Swiss Wood Days
16. Trade fair appearances
17. Closing gaps in the BE wood supply chain
18. Promotion of innovation for existing companies
19. Complete CO2 assessment of wood
20. Equalize building insurance rates
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Action #5 ASTRA timber buildings on highways

**Problem**
Highway structures, i.e. bridges, depots, noise barriers in concrete only

**Goal**
Start using timber for these structures

**Process**
Motivate authorities, educate staff, establish codes

**Structure**
Political representantant, 4 speakers, half-day Code research project

**Budget**
5'000 $ / year
Start 2012, ongoing
Action #5 ASTRA timber buildings on highways

1 pedestrian bridge

2 Highway depots

3 wildlife bridge projects
New idea: Steel and Concrete avoiding strategies

+ Explain to NGOs like WWF, Greenpeace
+ Convince them to get involved in this topic
+ Set up a Steel-and-Concrete avoiding charta
+ Motivate investors to accept this charta
+ Be aware that it’s like a deprivation for drug addicted
+ Be well prepared if that works
+ Have numbers ready, enough timber is available
+ Have examples of built urban projects ready
+ Prepare processes to increase yield

~~ Charta ~~

We recognise that man made CO₂-emissions are responsible for the climate change.

We recognise that the production of steel and reinforced concrete generate more than 9% of global CO₂-emissions.

We acknowledge that there are equally high-performance and cost-effective materials such as engineered wood products that emit much less CO₂ during production and also store large amounts of CO₂.

We are committed to using engineered wood products and not steel or concrete in our investments.

Date:_________     Name:________________
Columns and slabs + butt joint bonding
Built examples
2018 Durability test stand to touch at the Bern University of Applied Sciences in Biel, Switzerland, 140 m²
Built examples
2018 4 residential buildings, 20 apartments, Grossaffoltern, Switzerland, 2'300 m²
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Thank you!