

**ACOUSTICS2008/3444**  
**Enhancement of impact sound insulation for 'Gründerzeit-Häuser'**  
**build around 1900 during refurbishment using concrete-wood**  
**composite floors or suspended ceilings**

Thomas Bednar  
University of Technology, Karlsplatz 13/206, A-1040 Vienna, Austria

During refurbishment of Viennese buildings that have been erected around 1900 an important aspect is to enhance the impact sound insulation of the old wooden floors. Usually the floors are wood beam floors and the uppermost floor is a massive wooden floor called Doppelbaumdecke. Two important measures are taken to increase the impact sound insulation to achieve the minimum requirement of  $L_n T_w \leq 48 \text{dB}$ . The paper describes the design of an optimal suspended ceiling to avoid additional measures and as an alternative the impact of an additional thin concrete floor on top of the Doppelbaum-floor to achieve minimum floor heights. As the thin concrete floor has a much larger area than the rooms below the measured results showed a big influence of concrete floor area on the impact sound level.