

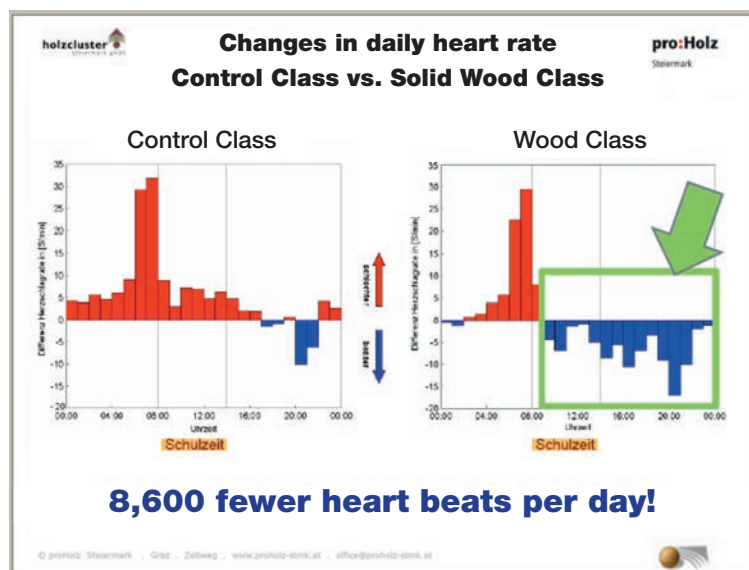
Photo: Schaffner Holzbau

Study „school without stress“

Research scientists at Joanneum Research in Graz (A) wanted to find out the extent to which a timber interior would have a positive effect on the learning behaviour of pupils. In the course of renovation work at the „Haus im Ennstal“ secondary school, two classrooms were given a non-standard wooden interior (oiled parquet flooring instead of linoleum, spruce and pine panels instead of gypsum plasterboard on ceilings and walls, light diffusers made of Swiss stone pine instead of strip lights with mirrored louvers).

During the course of a year the researchers compared the heart rate and vagal tone of the children in the wooden classrooms with those of pupils in standard classrooms. Ten pupils from

each class took part in the experiment and had their heart rates measured every second month during a 24-hour EEG. The results show that the pupils in the wooden classrooms displayed the same concentration levels and score performance as their counterparts but required on average 8,000 fewer heartbeats per day; they also had a higher vagal tone, which is beneficial to the heart. „It is a well-founded pilot study“, says Prof. Maximilian Moser, study director and head of the Institute for Non-Invasive Diagnostics. However, a repeat study at other schools and a crossover measurement design, i.e. the same trial participants taught in a standard classroom and again in a wooden classroom, would be important to verify the observed results.



Summary of results

- | Heart rate: Fell in the wooden classroom group and rose in the standard classroom group during waking hours
- | Vagal tone (cardioprotective factor): Rose in the wooden classroom group and fell in the standard classroom group during waking hours
 - | Social demands placed on pupils by teachers: remained constant in the wooden classroom group and rose in the control group
- | School achievement and concentration performance: no differences between the two groups, although there were fewer concentration-errors in the wooden classroom group
 - | First medical evidence that wood as a construction material has a positive effect on human health
 - | Pupil aggressiveness fell significantly
 - | Greater readiness to learn and fewer concentration-related errors
 - | Better teaching quality through less disruptive pupils