

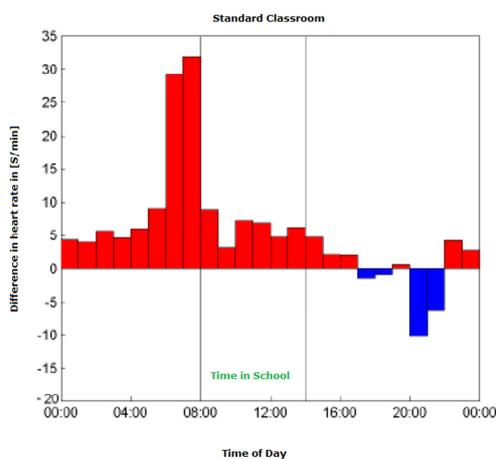
## Positive Influence of Timber in School Classrooms A Study by the Austrian Joanneum Institute

In 2009 the Austrian Joanneum Research Institute in cooperation with proHolz Steiermark did a research project „School without stress“<sup>1</sup> with a Secondary School in Ennstal in Austria.

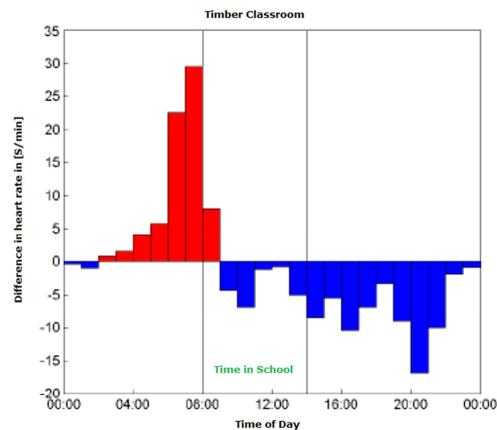
Two classrooms (the “timber classrooms”) were equipped with solid timber flooring, timber ceiling and timber cupboards. Over a period of one year, Joanneum Research provided the children with a so called *Heart-Man* (a portable electrocardiogram ECG device) to log medical values (for instance heart rate and Vagus Tonus) and compared them with the same values taken from children who worked in two “standard classrooms” which were fitted with linoleum floors, plaster board walls and coated chipboard cupboards. The result clearly indicated the positive aspect of solid timber on the health of the children.

### The Results:

The children working in the “timber classrooms” in comparison with the “standard classrooms” children “saved” 8,600 heartbeats – the girls responded even better than the boys. It can be summarized in short, the children noticeably relaxed in the “timber classrooms” – this health promoting effect remains throughout the entire day. Several control values as well as psychological questioning indicated, that timber has a positive effect on the performance as well as the conflict behavior of the pupils.

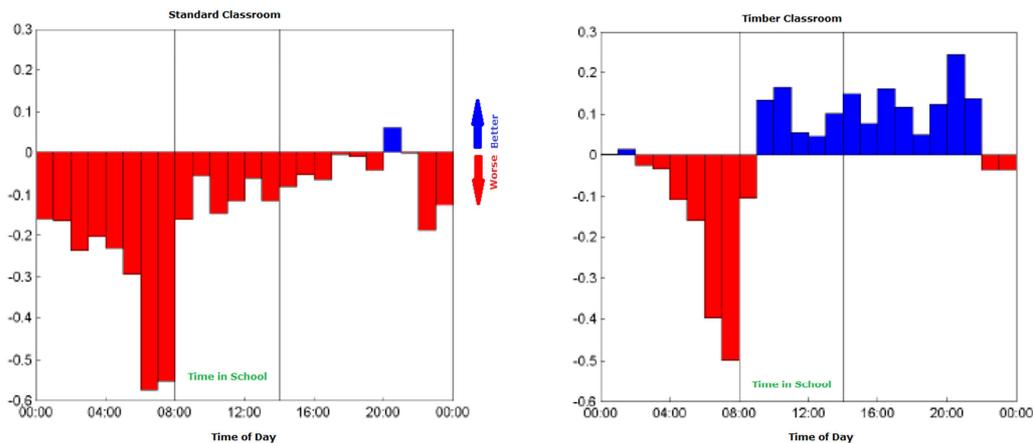


Heart rate values in the standard classrooms



in the timber classrooms

<sup>1</sup> <http://www.ecswe.net/wren/documents/2010-Nov-Artikel-Holzwirkung-Schule-Haus.pdf> for more information



Vagus Tonus values in the standard classrooms - in the timber classrooms

As was to be expected, due to the stress in school the heart rate of the pupils in the “standard classrooms” rose from March (last part of the school term) in comparison to the holiday times whereas such an increase could not be observed with the children in the “timber classrooms”. On the contrary, the heart rate of the children in the timber classes even decreased in comparison with holiday times and stayed significantly below the holiday level until May.

The (heart protecting) Vagus Tonus of the children in the “standard classrooms” decreased; a significant increase was observed with the children in the “timber classes” during the school term. This was very unexpected as the Vagus tonus should decrease during the school year due to the rising school stress.

Cardiac research of recent years indicates that the heart rate has a considerable prognostic value, i.e. the occurrence of heart diseases and even the life expectancy can be estimated from the heart rate values. The slower the heart rate and the higher the Vagus Tonus, the higher is the life expectancy (Lauer, 2009). (The Nervus Vagus represents that part of the autonomic nervous system responsible for relaxation, relief of strain and therefore plays an important part for the entire health).

## Conclusion:

The results of this study should have major influence on the equipment and design of schools. The results, however, should not be limited to school environments but also work places, the private home and other public buildings.

For more information about timber houses and the positive effects of living in a timber house, please visit <http://www.stommel-haus.co.uk>