

## A Series of Studies on Assessment of Thermal and Air Environment based on Perception of Indoor Air Quality

Go IWASHITA

The method, which evaluates indoor air quality (IAQ) and thermal environment by using occupied human perception and productivity, was discussed with experiments and researches in the context of sick building syndrome or school health and safe problem. Productivity includes not only performance in office work but also occurrences of absenteeism or accidents.

Human perception includes odor intensity, acceptability, thermal sensation, etc voted by occupants or subjects. Productivity includes not only performance in office work but also occurrences of absenteeism or accidents.

The relationship between the human perception and the physical/chemical factors, e.g., ventilation rate, carbon dioxide concentration, and VOCs concentrations was determined with the experiments.

Time series emission rates of VOCs and perceived air pollutants emitted from building materials were empirically modeled based on the experimental data.

Bioeffluents, which is a constituent of body odor, were analyzed chemically and sensuously.

The influence of IAQ and thermal environment on the work performance was assessed with simple office task and recollection task under different environmental conditions.

As an actually occupied situation, indoor air environment in school was investigated. And the influence on health of pupils was considered.

As an evidence of the productivity in schools, the data of absenteeism of schools and the administrative data of accidents occurred in schools were used and analyzed in accordance with environmental data.