

CLIMA 2000 - BRUSSELS 1997

SESSION 1 - INDOOR ENVIRONMENT

DISCUSSION

The title of Mario Costantino's introduction was "From hard to soft ...". Soft means "closer to human requirements".

We see that many building occupants are still not satisfied about the indoor environment even when the engineer is allowed (by the building developer) to design for quality. How can we solve that problem, how to make building occupants satisfied ?

1. The solution is not to limit the intervention of h.v.a.c.-engineers, and to avoid mechanical systems as much as possible. There are also many complaints in natural ventilated buildings. Furthermore, natural ventilation also has to be designed carefully and properly.
2. First of all we have to involve occupants in the design process, by listening to their requirements, and in the operation process, by giving them real individual control opportunities, for instance local stations to meet the individual requirements.

Thus not only take measurements on the equipment and say : "Now it must be comfortable".

We have to pull the occupant in focus instead of the equipment :
"The occupant is the king".

3. Co-operation between engineering and medicine (allergies) and psychology should be reinforced. For instance research is needed about interactions between environmental well-being and stress and also about interactions between the different aspects of environmental well-being (thermal, acoustical, visual, ...).
4. Comfortable indoor environment can only be achieved through a close collaboration of architects, HVAC engineers, building developers, maintenance and operation teams and occupants. This team-work has to be extended to the design of the building as a whole, to design buildings with high indoor environment quality, low energy consumption and low waste production.

The co-ordination role of the architect, with people in focus, has to be restored. If building developers take the leadership on the design, money will be in focus instead of people.

5. The relationship between indoor environment quality and human productivity has to be emphasised, to convince managers and investors that indoor environment quality can be cost effective.
6. More attention has to be given to humidity in comfort, and not only as a factor in the thermal balance.
7. We have to go further in analysing olfactory stimuli, on one hand to fight against emission of bad odours, but on the other hand to look to positive aspects of odours. The best environment is not a one without any odour, but a one that gives the impression of nature.

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