



HealthyAir DOC 5.5 Forum Summary

How to improve indoor air quality? – The European HealthyAir project

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Forum: How to improve indoor air quality – The European HealthyAir project

Chairs: Dr Philomena M. Bluysen TNO Built Environment and Geosciences;
Dr Nadia Nadia Boschi, Sustainability Manager, Bovis Lend Lease CEMEA & LAC;

Speakers/Contributors to the forum:
Mrs Corinne Mandin, CSTB, France

Introduction

Different ways to improve indoor air quality were studied, ranging from source control to education of occupants about how to handle their indoor environment in such a way that the indoor air stays or becomes healthy and acceptable, as well as different means of support. Through literature study, workshops with scientific experts and building professionals, as well as interviews with three stakeholders (producers of construction products, architects and end-users), requirements for information, guidance and actions to improve indoor air quality were identified and are discussed in this Forum. These requirements form the basis for a conceptual approach to improve indoor air quality: education and awareness, regulations and policies, and research and development. Most interviewed parties agree that some kind of regulation is required to make them do something, whether this is on product level (labeling of products) or at building level. To link or merge this regulation with sustainability is preferred, which will most likely increase awareness. From the interviews and the workshop is clear that the awareness of what IAQ is, how you can improve IAQ and who should or can undertake actions, is not good, even though most interviewed persons think they do understand. The *link with health and comfort* (what does a bad IAQ do to your health) could help to want to understand it better. But at the end it is the end-user (client) that really needs to be aware, only then changes will occur with the target groups. It is clear from the state of the art that regulations for IAQ focused on threshold levels are very difficult to make because of lack of knowledge at several levels: at the source, in the air and last but certainly not least at the receiving side (the human being). Another approach (*redefinition of IAQ*) needs therefore to be investigated parallel to the *research in depth on the mechanisms* behind the physical, chemical, physiological and psychological processes occurring. Important aspect in this *redefinition of IAQ*, are to acknowledge that:

- Individual differences, emotions, context and time are important parameters to consider.
- Most likely, a multidisciplinary approach is required to get more grip on the mechanisms taken place at source and receiver, but also on “on the way” mechanisms.
- Positive and negative effects of stimuli should be included as well as interactions with other aspects of the indoor environment.
- And the human body responds in different ways, lead by physical, chemical, physiological and psychological processes. The current applied indicators are most likely not enough to explain the outcome of those processes.

Questions to be discussed

How to make the end-user aware? What is done in your country? (In HealthyAir four were selected: professionals at university, children at school, architects and tenants).

Are we ready for redefinition of IAQ? How can we accomplish this?

Session at Healthy Buildings 2009, Wednesday September 17, 10.15 – 11.30

The session attracted around 50 persons from different countries all over the world. After the introduction by Philo Bluysen and a short presentation of Corinne Mandin of CSTB on the programme that is running in France related to schools, a lively discussion started. The main question discussed was:

How to make the end user aware?

It started off with discussing the question whether an education programme specific for children exists? From the presentation of Mrs Mandin it seemed that the focus is so far very much on the teachers, but also still a lot of R&D is performed to get information on why IAQ needs attention and how IAQ should be handled.

Starting with the latter two opinions could be extracted from the discussion:

- On the one hand, the knowledge is in place but needs to be translated into tools that can effectively reach the intended audience(s) and enable them to put science into action. The interpretation of that knowledge should be interdisciplinary, in order to incorporate results from different sciences and approaches, to give a better and more complete picture of the present knowledge.
- On the other hand, detailed knowledge and new issues are emerging (this was presented at this conference) that need more R&D before it can be communicated to the public. There is also a need for more broad conclusions linked to a wider context.

There was a common agreement that education and awareness is the main way to go. Probably the best way to go is in fact to educate children at school. They are the future and they will teach their parents. This is seen for the awareness of energy use, e.g. use of light. If children at school learn to turn off the light when they leave a room, they will teach their parents at home. It is also easier to teach children than their parents from a practical point of view (parents will not go to school in general). Linking IAQ to sustainability (reduction of CO₂) could work. In fact it was mentioned by several attendants that at small scale some programmes are tried out for children at school.

At political level (EU) IAQ is being recognized as a public health issue. And therefore, according to some of the attendants, we should go for standards and guidelines at European or even global level, forcing the stakeholders of the built environment to follow ‘the rules’. This would ask for condensed information from research, presented to the community in a ‘digestible’ way. This opinion was not shared by everyone. Information should not be over-simplified in an attempt to make it easy understandable, because this can make information useless. This could however also indicate that we do not know enough yet to make that transition to a ‘common knowledge’: at general (putting things together) or even at detailed level. Simplicity is different from simple.

It was concluded that although different countries have different educational priorities (e.g., school, bldg managers), a “*push & pull*” approach will likely be the best way forward. If we (the IAQ community) is not taking any action, the stakeholders who can do something to improve IAQ (architects, product producers, building owners) will not, because nobody asks them to do so (the public doesn’t know what to ask for).

We need to approach education differently and not just translate our technical findings into simple terms. We will have to involve the user and their activities. And approach the

education and awareness from their point of view. Combining engineers with behavioural experts on this matter could be a solution. Education material is needed.

Finally, the role that ISIAQ TF on Education plays at the international level was discussed. Nadia Boschi is leading this TF and she assured us that a proposal for the development of an educational tool for a selected end-user will be put forward to ISIAQ BOD for consideration and approval. The attendants could sign up for this TF on education.