Towards HEAnZEBs!

Recently, I was invited by a group of civil servants engaged in the update of the current Dutch EPB regulation based of the expected EPBD revision. My contact person asked me, beforehand, to focus my presentation on health and comfort of building occupants in nearly Zero Energy Buildings (nZEBs).

I started my presentation saying: 'I'm worried about this and I truly believe that it is high time that you start worrying about this too.' That maybe wasn't what they wanted to hear, but they asked for my honest and professional opinion which I was happy to share.

Which are my worries? Since the Paris Agreement, everybody seems to be interested in nothing but the energy performance of both existing and new buildings. I do see the need to fight global warming and drastically cut back on CO_2 emissions. There is no time to lose. However, during the last couple of years I have seen (and investigated) a lot of transformed and new buildings, (re)designed with an energy agenda that had unwanted and serious side effects.

For example, some problems that I have come upon in class A (A+) energy performing dwellings, schools and offices include: overheating in summer, underventilation in winter, severely limited daylight penetration, too noisy HVAC systems and overcomplicated climate controls. These are important issues, as a suboptimal Indoor Environmental Quality (IEQ) will affect the wellbeing and productivity of building occupants.

Fortunately, REHVA is aware of the need to look beyond just energy performance improvement. In a previous issue of REHVA Journal, we presented the REHVA position paper on the European Commission proposal of the revised Energy Performance of Buildings Directive (EPBD). In this position paper*, the recommendation No. 1 was: '*Ensure high indoor environmental quality and energy efficiency at the same time*'.

This recommendation is in line with the thoughts behind the original political document, the 2010 EPB Directive. That document states that measures designed to improve the energy performance of (new or existing) buildings should consider indoor climate conditions in order to avoid possible negative effects 'such as inadequate ventilation'. It, furthermore, states that aspects like indoor air quality, adequate natural light and shading should be taken into account when (re)designing energy-efficient buildings.

The good news is that countries that want to ensure that the Indoor Environmental Quality of our future nearly Zero Energy Buildings is adequate can now find examples of IEQ performance criteria in FprEN 16798-1 (the upgraded version of EN 15251). This CEN standard presents requirements that can be used when one wants to avoid problems with overheating, underventilation, installation noise, etc.

Several articles in this special issue of REHVA Journal support the hypothesis that the health and comfort performance of buildings is as important as the energy performance. Authors from Europe, South-America, China and India explain that aspects like fine particle exposure, personal control options and sensor technology aimed at local IEQ improvement should be addressed too.

I ended my presentation with the Dutch EPBD recast group saying that, in my opinion, we should start to systematically create buildings that are *both* healthy and energy efficient. It's a real risk to keep focusing only on energy performance. 'Instead let's create HEAlthy nearly Zero Energy Buildings (I use the abbreviation HEA for HEALTH here, in line with the BREEAM certification scheme). What we need is not nZEBs but HEAnZEBs!

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* http://www.rehva.eu/fileadmin/Publications_and_resources/Position_papers/EPBD_proposal_REHVA_position.pdf