IEA-EBC Annex 86: a performance based assessment method or a rating ecology?

Jelle Laverge

Ghent University
Jozef Plateaustraat 22
Gent, België

ABSTRACT

IEA-EBC Annex 86 '*Energy Efficient IAQ Management in residential buildings*' proposes an integrated rating method for the performance assessment and optimization of energy efficient strategies of managing the indoor air quality (IAQ) in new and existing residential buildings.
The energy performance of new and existing residential buildings needs to be radically improved to meet ambitious climate change goals and residential buildings are by far the largest component in the total building stock. A central boundary condition in constructing energy efficient buildings is doing so while maintaining a healthy, acceptable and desirable indoor environment. While ventilation is the main strategy that is adopted for IAQ management, other technologies influencing IAQ (e.g. air filtration) are available as well and a large number of ventilation strategies exist. There is, however, no coherent assessment framework to rate and compare the performance of IAQ management strategies. The annex therefore focuses on assessing the performance trade-off between and identifying the optimal solutions for maximizing energy savings while guaranteeing a high level of indoor air quality in new, renovated and existing residential buildings.
To achieve this, the annex gathered the existing scientific knowledge and data on pollution sources in buildings, looked at the opportunities that spring from the rise of IoT connected sensors, studied current and innovative use cases of IAQ management strategies and assessed the continuous performance of the implemented IAQ management strategies over their lifetime.
In the annex, experts from different fields including mechanical engineering, building science, chemistry, data science and environmental health worked together with other stakeholders towards consensus on the basic assumptions that underlie such a performance assessment and practical guidelines and tools to bring the results to practice.
The goal is to accelerate the development of better and more energy efficient IAQ management strategies to address rapidly changing expectations of the home environment due to challenges such as peak oil, climate change or pandemics. In this presentation, we will look at the main results of the Annex as either an assessment method or a rating ecology and discuss the merits of either approach.

KEYWORDS

IAQ management, Rating, Assessment, Ventilation, Smart materials