

Measurement of the indoor climate in residential buildings – purchase of measuring instruments

COWIfonden has provided financial support to the Danish Building Research Institute / Aarhus University (SBI / AAU) for the purchase of measuring instruments. The donation will enable SBI / AAU to extend their ongoing research project on energy savings in residential buildings to ensure that the energy savings generated will not have a detrimental effect on the indoor climate. The instruments will be used for measuring the CO₂ content of the indoor air, its relative humidity and the temperature in a large number of residential buildings during a whole year.

The Department of Energy and Environment at the SBI / AAU is involved in several projects, which focus on optimizing ventilating systems and developing solutions that reduce the pressure loss and stimulate energy-efficient consumption. Energy savings in the ventilation field are important to meet the overall energy-saving targets, for example those set in the latest energy policy agreement.

A solution can be to vary the ventilation according to the need – the so-called demand-driven ventilation. This principle may result in a reduced energy demand, but typically also more complicated and vulnerable systems. As part of an ongoing project on demand-driven ventilation in residential buildings, the SBI / AAU take measurements in 23 newly renovated flats at Gammel Kongevej and Værnedamsvej in Frederiksberg. The measurements will be taken in 2015 and 2016.

The newly renovated flats at Gammel Kongevej and Værnedamsvej are equipped with different types of mechanically-operated ventilating systems. The SBI will take energy-related measurements and analyse both the capacity of the ventilating systems and the measurements of the air quality in the flats. With COWIfonden's support, the measurements will be extended to comprise parameters related to the indoor climate, such as the CO₂ content of the indoor air, the relative humidity and the temperature.

The results of the measurements of the CO₂ content of the indoor air, the relative humidity and the temperature will be generally applicable and give new knowledge on the capacity of the ventilating systems needed to obtain the planned (during the project planning phase) indoor air quality. The findings will be summarized in a separate report and with reference to COWIfonden. The report will be published in June 2016.