

# VENTILATION PROJECTS WITHIN THE INTERNATIONAL ENERGY AGENCY: OBJECTIVES, APPROACHES AND EXPECTED RESULTS

Per Heiselberg

Aalborg University  
Sofiendalsvej 11  
9200 Aalborg SV, Denmark  
E-mail: ph@civil.aau.dk

## ABSTRACT

Ventilation and air infiltration in buildings represents a large share of the building energy demand and account for approximately 25-50% of the energy use for heating and cooling. Therefore, research in energy efficient ventilation systems and improved building air tightness has been an important topic in the EBC programme since its beginning in 1977.

During the years many annexes has dealt with different aspects of ventilation and air infiltration – in fact 22% (15 out of 69 annexes) of the annexes have had it as its main focus and several others has partly dealt with the issue. Annex 5 “Air infiltration and Ventilation Centre” was established as early as in 1979 and is still running. The purpose of AIVC is to promote understanding of the complex behaviour of air flow in buildings and to advance the effective application of associated energy saving measures in both the design of new buildings and the improvement of the existing building stock. Its main role is to disseminate research results presented in accessible and informative publications and software.

In the recent few years the number of annexes running in parallel has increased and several of them deal with ventilation and air infiltration related aspects, se figure 1.

No.	Annex title	Ventilation Strategies	IAQ	Ventilative Cooling	Airtightness	Energy Legislation	Peak Power Demand	Occupancy
69	Strategy and Practice of Adaptive Thermal Comfort in Low Energy Buildings			X		X	X	X
68	Design and Operational Strategies for High IAQ in Low Energy Buildings	X	X			X	X	X
67	Energy Flexible Buildings		X	X		X	X	X
66	Definition and Simulation of Occupant Behavior in Buildings	X		X		X		X
62	Ventilative Cooling	X		X		X	X	X
61	Business and Technical Concepts for Deep Energy Retrofit of Public Buildings	X		X	X			X
60	New Generation Computational Tools for Building & Community Energy Systems	X	X	X	X	X	X	X
59	High Temperature Cooling & Low Temperature Heating in Buildings			X				
5	AIVC	X	X	X	X	X	X	X

Figure 1. On-going EBC annexes and their relation to ventilation related topics.

This has lead to an increasing need for coordination of research objectives, mutual uptake of findings and strengthening of cross-annex outcomes. It is essential for the EBC programme to achieve sufficient interaction and collaboration between the different annexes and ways to ensure this is currently under development and discussion. This also includes improved cooperation with Annex 5 on the dissemination of research results.

The key note will present the objectives, approaches and expected results of the on-going annexes relevant for ventilation and air infiltration in buildings and illustrate the importance of and expectations to an increased cross-annex coordination and cooperation.