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CO-ORDINATION ACTION on Indoor Air Quality and health effects

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Helsinki University of Technology

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Helsinki University of Technology (HUT)

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HELSINKI UNIVERSITY OF TECHNOLOGY

- Largest and oldest technical university in Finland
- The only chair for Heating, Ventilation and Air Conditioning in Finland
- Department of Mechanical Engineering, Espoo, Finland
- Laboratory of HVAC technology: totally 25-30 persons including scientists and staff
- Main areas of research
  - Energy efficient buildings with emphasis on good indoor climate
  - Field studies (residential buildings, offices, schools, day-care centres etc)
  - Performance of ventilation systems
  - Remodelling of ventilation systems
  - Effect of indoor environment on productivity
  - Research and development to implement of Energy Performance Directive in Finland
  - Moisture control in buildings
  - Performance criteria for healthy building

Helsinki university of Technology
Laboratory for Heating, Ventilating and Air Conditioning

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Olli Seppänen, professor, mechanical engineering, head of the laboratory

- about 250 papers in the are of energy efficient buildings and Indoor air quality and climate
- president of Indoor Air 93 and Healthy Buildings 2000 conferences

Jarek Kurnistski, Dr techn, manager of the research projects

- specialising in building physics and interaction of HVAC and building envelope
- 15 scientific papers 50 technical papers

Jari Palomino, lic techn, senior researcher

- 15 scientific papers 50 technical papers
- specialising in performance of building in respect of indoor air quality and climate

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Related EU-projects

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- **Design, Operation and Maintenance Criteria for Air Handling Systems and Components for better Indoor Air Quality and lower Energy Consumption, pre-normative research. Airless. JOR3-CT97-0171**
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- **Integrated System for Day lightning, Natural Ventilation and Solar Heating. Triplesave. JOR3-CT97-0172**
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- **Ecological Cooling for Buildings by Combining a Closed Wet Cooling Tower with Chilled Ceilings. Ecocool. JOR3-CT97-0195**
-
- **Energy Technologies and Indoor Air Quality: State of Art and Review of Significant Trends. ETIAQ. ENK6-CT-2000-80125**
- **Health Optimisation Protocol for Energy-Efficient Buildings: Pre-normative and Socio-Economic Research to Create Healthy and Energy-Efficient Buildings. HOPE. ENK6-CT-2001-00505**

Performance Based Building Process. PeBBu. GIRT-CT-2001-05038

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Related on-going national projects

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Main contractor and leader in the following projects

- Indoor environment and productivity (3 year project)
- Remodelling of existing ventilation and air conditioning systems in schools and office buildings (3 year project)
- Effect of building and ventilation system on the total exposure of particles (3 year project)
- Scientific basis for healthy building design and construction
- Implementation of energy performance and good indoor environment with innovative methods

Partner in the following projects

- Performance of ventilation in detached residential buildings
- Calculation of energy performance of buildings according to the EPDB

Proposed role of HUT in the ENVIE project

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- In WP 3 Space characterisation and sources
  - Task 2 The HVAC systems and indoor environment for health and productivity
- WP 4 Integration and policy interface
  - Task 2 air quality management
  - Task 3 practical measures