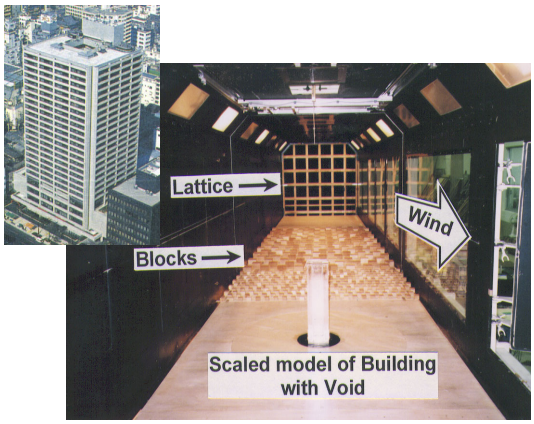
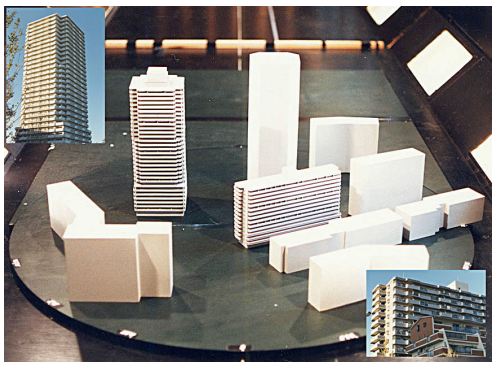
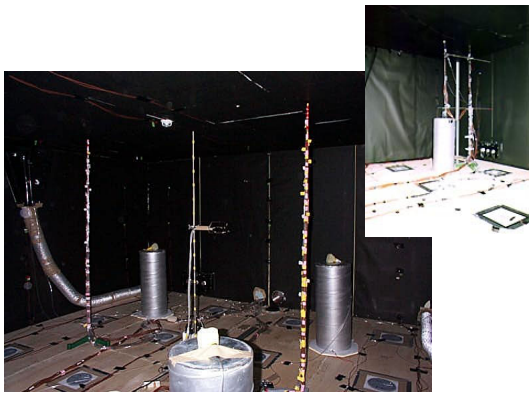
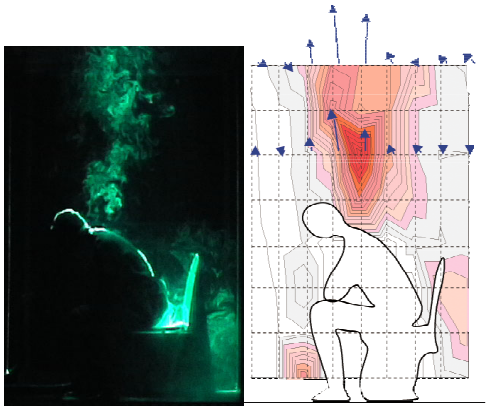


Natural Ventilation
and
Cross Ventilation



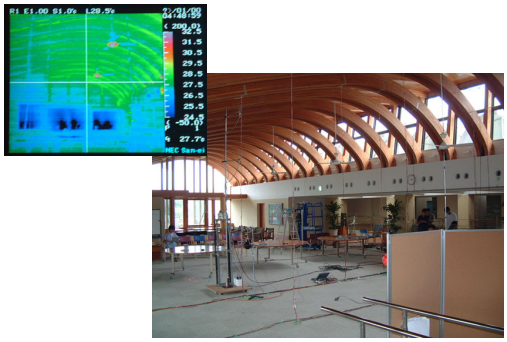


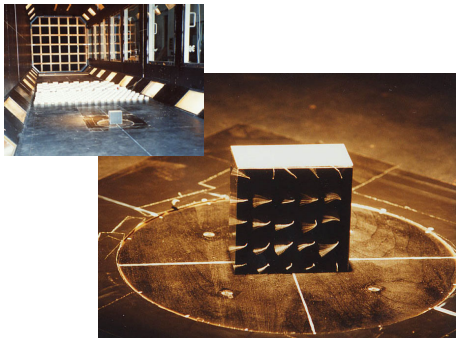
Air Conditioning
with
High Ventilation
Effectiveness



Built Environment Laboratory

Subarea of Architectural and Urban Environmental Engineering,
Area of Architectural Design,
Department of Architectural Engineering,
Graduate School of Engineering,
Osaka University.





Fields of Research and Education

Architectural Environmental Engineering,
Building Equipment,
Building Materials

Research Topics

Natural Ventilation and Cross Ventilation
Ventilation Effectiveness
Air Conditioning Systems
Odor and Indoor Air Quality
Energy Saving
Occupancy Evaluation and Environmental Psycology

http://www.arch.eng.osaka-u.ac.jp/~labo4/index-e.html
E-mail : ***labo4@arch.eng.osaka-u.ac.jp*** **Address : 2-1 Yamadaoka, Suita Osaka 565-0871**

Research in progress

1. Natural ventilation and cross ventilation
   * Use of ceiling fan to assist AC system and reduce cooling load (～2001)
   * Characteristics of single sided ventilation by CFD (～2001)
   * Use of natural ventilation in office buildings (～2000)
   * Similarity law of model experiment in natural and forced combined flow (～2000)
   * Simple model for cross ventilation rate using surface pressure corfficirent (～1999)
   * Natural ventilation design of void in high-rise apartment building (～1993)

2. Ventilation performance inside rooms
   * Ventilation design of lavatory based on odor diffusion characteristics (～1999)
   * Displacement ventilation by floor air supply system (～1998)
   * Local exhaust system in commercial kitchen (～1998)
   * Effect of wall insulation on Displacement ventilation (～1997)
   * CFD anaysis of rooms by means of measured data around diffuser (～1996)

3. Living environment design based on odor sensation
   * Possibility of “smell scape” for evaluation of living environment (～2001)
   * Sensary evaluation of odor from building materials (～2000)

4. Energy saving design in houses
   * Combination of solar chimney and cooling tube in ground (～2001)
   * Thermal performance of solar chimney (～2000)
   * Effect of way of living and thermal performance on thermal load and comfort (～1999)
   * Way of living and energy consumption in houses (～1994)

Members

Staffs

Professor Emeritus	Masaya NARASAKI, Dr. Eng.
Professor	Kazunobu SAGARA, Dr. Eng.
Associate professor	Toshio YAMANAKA, Dr. Eng
Research Associate	Hisashi KOTANI, Dr. Eng
Secretary	Arisa KIMURA

Number of Students

Doctral Cource	2
Master Cource	5 in the second grade
	5 in the first grade
Undergraduate	7 in the fourth grade
(Foreign Student	2 from Hungary and China)