



# Built Environment Laboratory

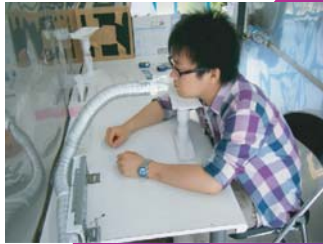
Course of Architectural Engineering,  
Division of Global Architecture,  
Graduate School of Engineering,  
Osaka University

We are dealing with building environment like heat, air, light, and sound from the viewpoint of utilization of **natural energy**, **energy saving**, and designing occupied spaces of **comfort** and **health**.

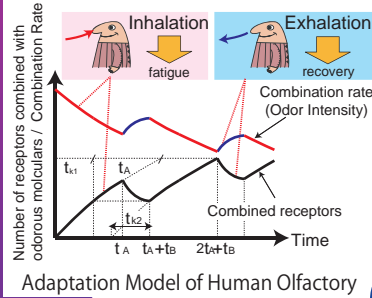
Our research field is spreading from Human to Building and they are categorized as follows

- 1) Environmental Psychology and Physiology
- 2) Built Environment Engineering
- 3) Building Services

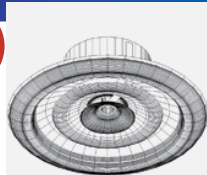
## Odor Environment for Health and Comfort Adaptation process of human olfactory



Sensory Evaluation by Supply Odor Method

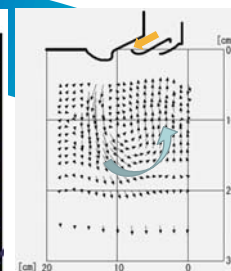
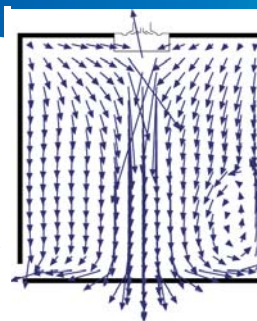


## Airflow Modelling for Reduction of Calculation Load Calculation Method for Airflow from Complex-shaped Diffuser



↑ Anemostat Air Diffuser

CFD Simulation of Room → with Boundary Condition of Air Diffuser

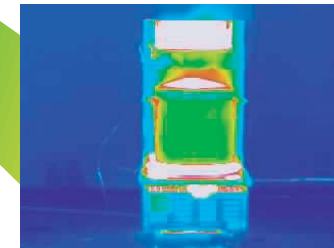


↑ Velocity Measurement around Air Diffuser

## Working Space Design for Safety and Comfort Thermal Environment for Commercial Kitchen

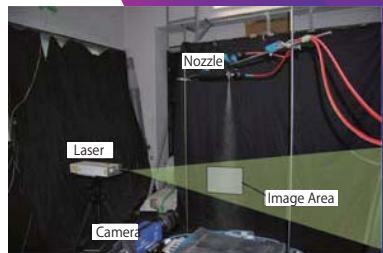


Thermal Environment Measurement

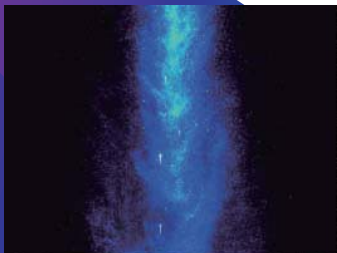


Surface Temperature Measurement of Low Radiation Cooking Equipment

## Deodorant Effect by Spraying Hypochlorous Solution Particle Behavior Analysis using PIV Measurement



PIV measurement for sprayed particle

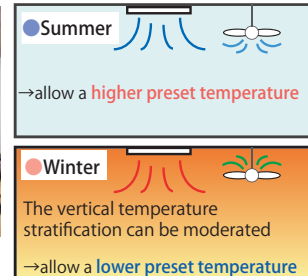


Visualization of sprayed particle

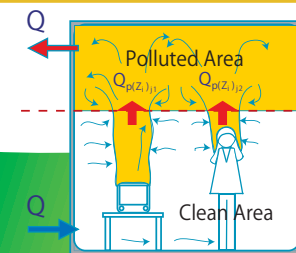
## Ceiling Fan for Thermal Comfort Air Movement and Temperature Control in Class Room



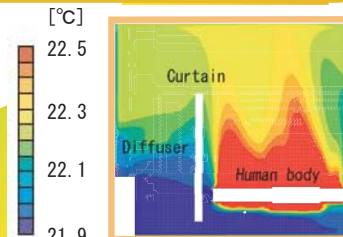
Measurement in Class Room with Ceiling Fan of Osaka Univ.



## Ventilation System for Clean Air Environment Displacement Ventilation System for Sickroom



Displacement Ventilation

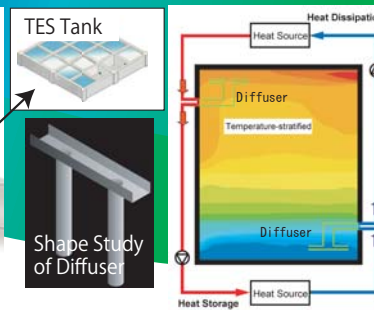


CFD Simulation of Air Temperature Distribution in Sickroom

## Energy Efficiency of Building Services Performance Evaluation of Thermal Energy Storage Tank

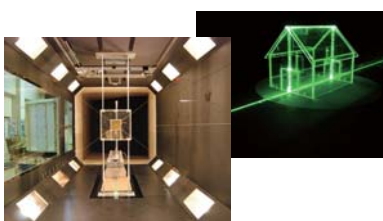


Building with Thermal Energy Storage (TES) Tank

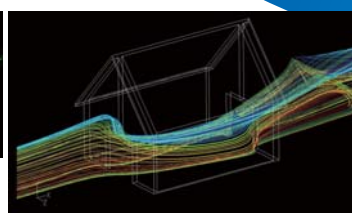


Temperature-stratified Water TES Tank

## Basic Research for Cross Ventilation Prediction Method of Cross Ventilation Rate



Wind Tunnel Test for House



Simulated Result of Flow

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