

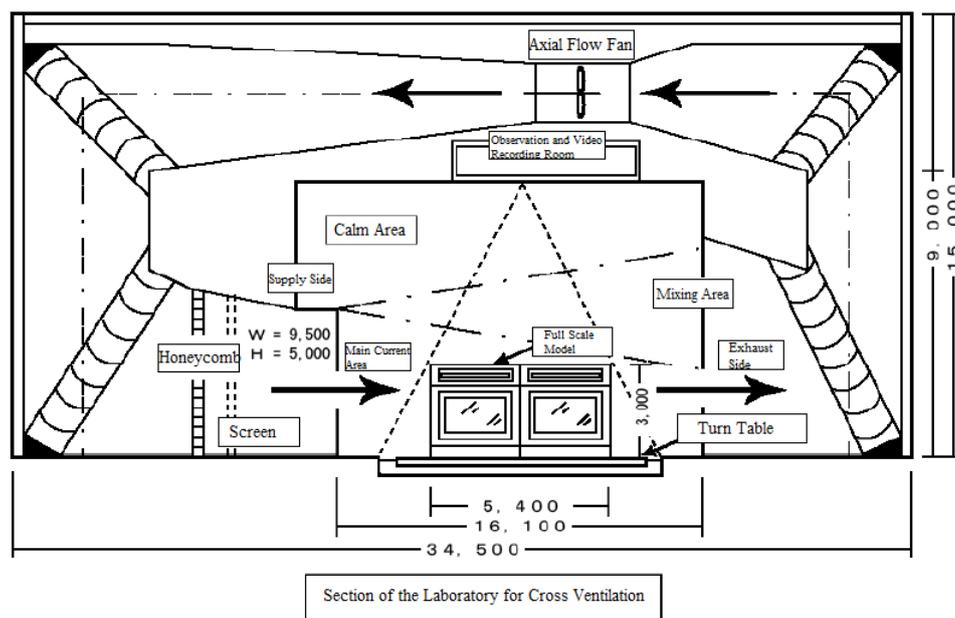
Laboratory for Cross Ventilation

■ Outline

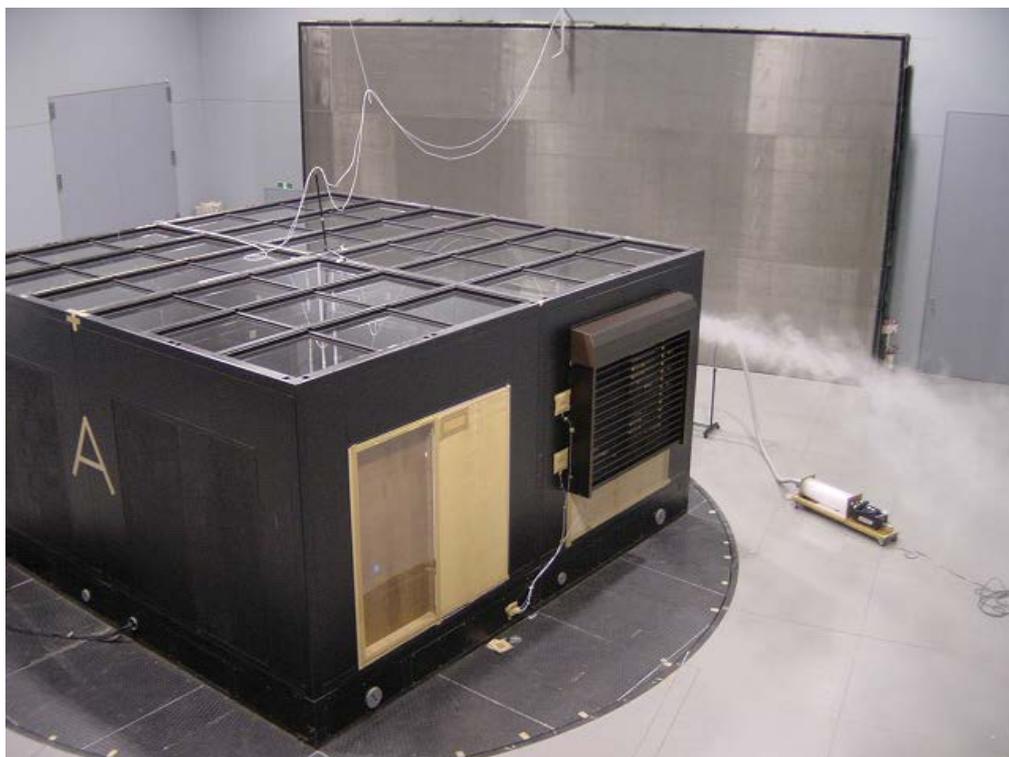
In Japan, Cross Ventilation is important to keep our living environment comfortable, especially in summer, and even milder seasons in spring and fall. Cross Ventilation is one of the important techniques to achieve the coexistence of nature and architecture.

It is difficult to measure the detail of airflow characteristics in a common wind tunnel test with a scale model. However, in this laboratory, the full-scale building model is used to understand the detail of airflow characteristics in and around the model. In the model, the size and position of openings and rooms can be changed. Also, the detailed airflow pattern is examined around the openings especially.

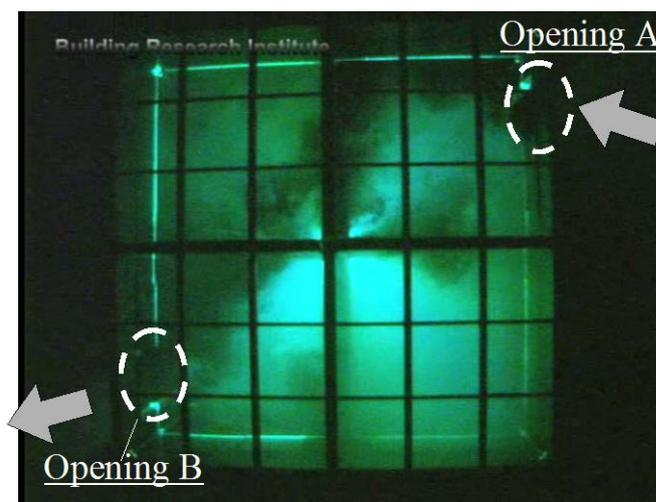
This facility was used for “Validation of Energy Saving Technologies for Residential Buildings and Their Promotion Tools”, under “General Technology Development Project (2001-2005)” by Ministry of Land, Infrastructure and Transport, and other projects. Also, it has been used for the subsequent research project in BRI.



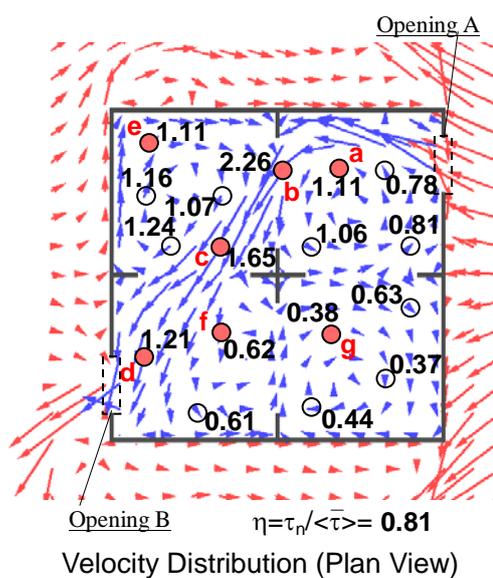
The experiment results improve the design method of Cross Ventilation to save energy consumption and keep comfortable. And the improvement contributes to the countries in hot region (e.g. South Asian countries) as well as our country.



Interior of the Wind Tunnel (Full-Scale Model on Turn Table and Supply Side)



Visualization Result (Plan View)



Velocity Distribution (Plan View)