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Abstract: Ventilation is a process of changing air in an enclosed space. Air should continuously be withdrawn and replaced by fresh air from a clean external source to maintain internal good air quality, which may referred to air quality within and around the building structures. In this work, computational simulation is performed on a real-sized box-room with dimensions 5 m x 5 m x 5 m. Two opening of the total area 4 m² are differently arranged, resulting in 4 configurations to be investigated. A logarithmic wind profile upwind of the building is employed. A commercial Computational Fluid Dynamics (CFD) software package CFD-ACE of ESI group is used. A Reynolds Average Navier Stokes (RANS) turbulence model & LES turbulence model are used to predict the air's flow rate and air flow pattern. The governing equations for large eddy motion were obtained by filtering the Navier-Stokes and continuity equations.