

Tudományos közlemény:

András Tomor, Márton Balczó: Wind Tunnel Modelling of Ventilation around an Urban Square, Proceedings of the MultiScience - XXVIII. MicroCAD International Multidisciplinary Scientific Conference, University of Miskolc, 10-11 April 2014.

During this research, a small-scale model of the quarter surrounding József Nádor Square in downtown Budapest was prepared and with this 1:350 scale model flow field measurements were carried out in the Large Horizontal Wind Tunnel (LHWT) of the Department of Fluid Mechanics at the Budapest University of Technology and Economics (BME) using Laser-Doppler Velocimetry (LDV).

A large amount of information about the flow characteristics could be obtained, for instance turbulent kinetic energy and velocity distributions on certain horizontal planes were determined. Moreover, vertical velocity profiles were also investigated. The results show the evidence of low air exchange between the square and the neighboring areas as well towards the atmospheric boundary layer, which accounts for the bad air quality observed on-site. Mean flow structures responsible for the complex airflow in the square could be identified. The results of the measurements could later be used as reference data set for validation of urban wind field models.