



Airflow and Indoor Air Quality Models of Doe References Commercial Buildings

By Lisa C Ng, Andrew K Persily, Steven J Emmerich

Createspace, United States, 2014. Paperback. Book Condition: New. 279 x 216 mm. Language: English . Brand New Book ***** Print on Demand *****.Sixteen reference buildings have been defined by the U.S. Department of Energy, and created as EnergyPlus input files, for use in assessing new technologies and supporting the development of energy codes in pursuing building energy efficiency improvements. Infiltration rates in the EnergyPlus models of the reference buildings were input as constant airflow rates, and not calculated based on established building airflow theory. In order to support more physically-based airflow calculations, as well as indoor air quality analysis, models of the 16 reference buildings were created in the multizone airflow and contaminant transport program CONTAM. A number of additional inputs had to be defined for the CONTAM models, and changes in the interior zoning were required, to more realistically account for airflow. Annual airflow and contaminant simulations were performed in CONTAM for six of the buildings. While the assumed infiltration rates in EnergyPlus do not realistically reflect impacts of weather conditions, there are clear relationships between the outdoor air change rates calculated by CONTAM and weather. In addition, the envelope airtightness values assumed in either approach are seen to...



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