

Energy savings from airtight buildings

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U.S. commercial building owners could save substantially on annual heating and cooling energy costs by making buildings more airtight.

A study, by the National Institute of Standards and Technology, used simulation software to evaluate the energy impact of improved air barriers in three typical non-residential buildings in five cities, each in a different climate zone.

With baseline energy, climate and building data from each city, the researchers simulated conditions of a typical, two-story office building; a one-story retail building; and a four-story apartment building in Bismarck, N.D.; Minneapolis; St. Louis; Miami; and Phoenix. Each building was modeled with wood frame and masonry construction.

In Phoenix, the estimated annual cost-savings were 10 percent for two-story building, 16 percent for the retail building and 3 percent for the apartment building, but the savings were higher in colder climates such as Minneapolis, where the predicted energy savings were 37 percent for the office building, 26 percent for the retail building and 33 percent for the apartment building.

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