

A new smart-facade lift for older buildings

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Can a smart new facade improve air quality in older buildings, cut energy demands on heating and cooling systems, and perhaps mitigate carbon emissions to some extent? A detailed answer might lie in research published in the *World Review of Science, Technology and Sustainable Development*.

Katerina Tsikaloudaki, Theodoros Theodosiou, Dimitra Tsirigoti, Stella Tsoka, and Dimitrios Bikas of the Department of Civil Engineering at Aristotle University of Thessaloniki, in Thessaloniki, Greece, and Asier Martinez-Urrutia and Julen Hernández González of Tecnalia Research and Innovation in Gipuzkoa, Spain hoped to identify the energy benefits that arise when existing buildings are retrofitted with an advanced ventilated facade system. The system in question is E2VENT system, which comprises an advanced ventilated facade, a [heat exchanger](#), a heat-storage and a smart management system. The team explains that the system can address problems of heat loss during cold periods as well as reduce poor air quality problems that often prevail in older buildings.

The team's case study looked at buildings that house several families and found in all cases that the system reduced heating loads significantly. Cooling loads were reduced by a moderate amount. Overall, there were considerable energy savings for such buildings and concomitant lower emissions of carbon dioxide than with the same type of building left unmodified. The team adds that the E2EVENT system represents a [holistic approach](#), addressing both the opaque and the transparent building elements (walls and windows, in other words) and constitutes an interesting area for further research studies, they conclude.

More information: Katerina Tsikaloudaki et al. Upgrading the building's energy performance with an advanced ventilated façade system, *World Review of Science, Technology and Sustainable Development* (2019). [DOI: 10.1504/WRSTSD.2019.104092](https://doi.org/10.1504/WRSTSD.2019.104092)

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