

Lighting occupancy sensors control HVAC

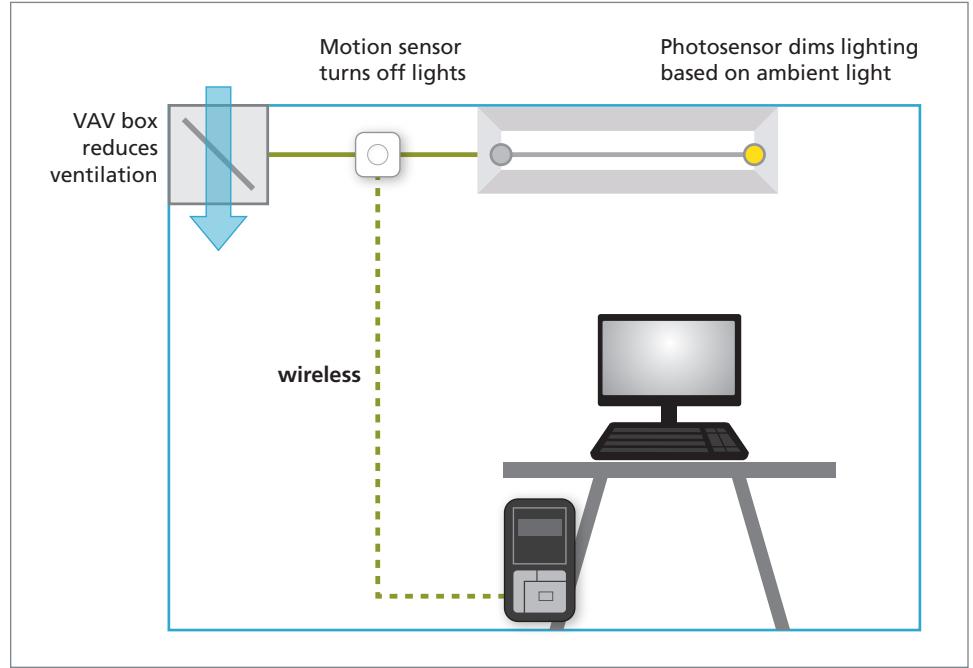
DESCRIPTION

Occupancy sensors are commonly used to control lighting in commercial spaces such as conference rooms that are not continuously occupied. The same sensors can also be used to communicate with the HVAC system, turning down ventilation air flows when the space is unoccupied. In this way, both lighting and HVAC energy consumption could be reduced, while minimizing the capital cost with the overlapping use of a single sensor.

Even greater savings can be realized with advanced occupancy sensors, which count the actual number of occupants in the space and adjust the HVAC more precisely based on those numbers.

DEMONSTRATING THE TECHNOLOGY

Advanced occupancy sensors are a relatively new technology, but common occupancy sensors are widespread. This technology is most applicable to large, intermittently used spaces such as gymnasiums, theaters, classrooms, and conference rooms. It is most easily incorporated in new construction, but wireless sensors may be a good retrofit alternative. Demonstration sites could be recruited through commercial new construction programs or commercial lighting programs.



CRITERIA	VALUE
Electricity savings	1.01 kWh/ft ²
Gas savings	0.11 therm/ft ²
Cost savings	\$0.17/ft ²
Measure life	8 years
2017 simple payback	<1 year
Carbon emissions avoided	1.4E-03 MT equivalent CO ₂ /ft ²
How it saves energy	Turns off or turns down ventilation air flows when the space is unoccupied or sparsely occupied
Non-energy benefits	Potential for improved ventilation
Barriers to adoption	Coordination between lighting and HVAC contractors; occupant pushback

FOR MORE INFORMATION

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