

## System diverts heat or coolness away from a building and stores it

June 2 2021, by Jennifer J Burke



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Researchers at Oak Ridge National Laboratory have developed a novel envelope system that diverts heat or coolness away from a building and stores it for future use.



Traditional building envelopes, such as roofs and walls, use insulation to reduce <u>heat flow</u>. ORNL's thermally anisotropic building envelope, or TABE, adds thin conductive layers between the insulation. The conductive layers connect to a thermal loop that redirects the heat or coolness to an <u>energy storage system</u>.

Stored energy is then used to heat or cool the indoor space. Sensors and controls determine when to transfer energy between the envelope and the loop to maximize energy savings or peak load reductions.

"Our simulations predicted more than 50% <u>energy savings</u> in a residential building," ORNL's Som Shrestha said. "Results from a one-year field demonstration also showed promising results for TABE when used in walls and roofs."

Provided by Oak Ridge National Laboratory

Citation: System diverts heat or coolness away from a building and stores it (2021, June 2) retrieved 27 April 2024 from <u>https://techxplore.com/news/2021-06-coolness.html</u>

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