Warming the occupant without heating the whole building

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MIT technology creates personalised warm climates around individuals while maintaining lower temperature around

Researchers at MIT have developed a clever way to keep building occupants warm and comfortable without the need to heat the entire building.

'Local Warming' is a new project that uses wifi-based motion tracking and ceiling-mounted dynamic heating elements to create personalised climates around individuals. Each occupant is kept comfortable and warm while the space around is maintained at a lower temperature. MIT believe the technology could become a clever new way to save energy.

Currently, a huge amount of energy is wasted heating empty and partially occupied buildings. MIT are hoping that the technologies underlying Local Warming could address this problem by synchronising climate control with human presence.

As a visitor enters a room, the person's location and trajectory are spotted using a new wifi-based location tracking technology, explain MIT. This information is then transmitted in real time to an array of dynamic heating elements positioned in a grid near the ceiling.

"Infrared heat is emitted to generate what are essentially spotlights of warmth centred on people a few meters away," Leigh Christie, the project engineer explains. "This ensures ultimate comfort, while improving the overall energy efficiency."

A number of potential early applications for the new technology are detailed by MIT, including creating responsive outdoor heaters and heating sparsely-occupied spaces such as large lobbies and industrial lofts.

"Local Warming" made its debut at the 14th Venice Architecture Biennale.

Images courtesy of Giulia Bruno