

Local Warming by MIT: at Biennale the future of climate control.

Local Warming, a project by MIT Senseable City Lab, offers a new vision of architectural climate control; it will be presented at 14th Biennale di Venezia and will be one of the key installations, filling a room at the main Central Pavilion of the Giardini named “Elements of Architecture” by Rem Koolhaas.

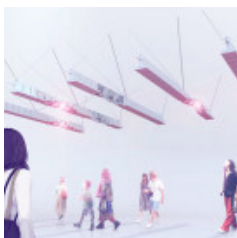
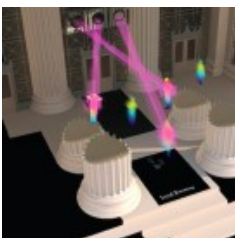
“Today, a staggering amount of energy is wasted on heating empty offices, homes and partially occupied buildings. – explains **Carlo Ratti, director of the project**- Local Warming addresses this asymmetry by **synchronizing human presence with climate control**”.

An array of responsive infrared heating elements is guided by **sophisticated motion tracking, creating a personal climate** for each occupant. **Intelligent thermostats synch with smartphones** and detect use patterns, to better control temperature over time. **Individual thermal ‘clouds’ follow people through space**, ensuring ubiquitous comfort while improving overall **energy efficiency** by orders of magnitude.

The project will be an installation of **90 infrared lenses, integrated motion tracking and digital control** systems, hanging in a grid near the ceiling of the room. As the visitor enters the space and picks up a symbolic object tag, Local Warming will sense his presence and focus the lenses to cast heat directly onto him. Warmth will follow as he moves throughout the space, and even allow sharing heat with others. Local Warming accommodates preferences in comfort – the system learns from individualized user interactions and tailors heat accordingly.

Local Warming will present a **captivating, tangible and social experience as participants engage with their climate directly, and the impact of new technologies** – within both daily life and on the collective urban scale – will be brought to light through visualizing a new paradigm of sustainable, localized and personal climate control.

A new paradigm of local warming could **spark vibrant encounters as people share their personal climates**. The radical inversion of the hearth is complete: man no longer seeks heat, heat seeks man.



Local Warming credits:

Expanded Format

MIT Senseable City Lab

Carlo Ratti – director

Assaf Biderman – associate director

Yaniv Jacob Turgeman – research lead

Leigh Christie – engineering lead

Miriam Roue – project lead

Matthew Claudel – curator

Carlos Graeves – electrical engineer

Rex Britter – environmental engineer

Saverio Panata – project architect.

Motion Control and Visualization : Matthias Danzmayr, Jacob Fenwick, Shan He, Pierrick Thebault.

Fabrication and Design: Ricardo Alvarez, Thomas Altmann, Dorothy Bassett, Clara Cibrario Assereto, David

Dowling, Feifei Feng, Sebastian Grauwin, Chris Green, Elyud Ismail, Sam Judd, Aaron Nevin, Jessica Marcus, Oleguer Sagarra Pascual, Kristopher Swick, Michael Szell, Remi Tachet des Combes.
MIT Computer Science and Artificial Intelligence Lab
Dina Katabi – director
Deepak Vasisht – motion tracking designer
Jue Wang – motion tracking designer

Related Articles



Energy efficiency and filtering blinds at hospital.



Archibuto: Cino Zucchi's "graft" for Italian Pavillion at Biennale.



Fundamentals, the Biennale without archistars by Rem Koolhaas.



UNDERHouse: light ducts for underground living.



Mail.ru: 27 floors of vitality, Moscow (UNK Project).

Posted on **4 June 2014** by **Renata Sias**

Like Tweet Share