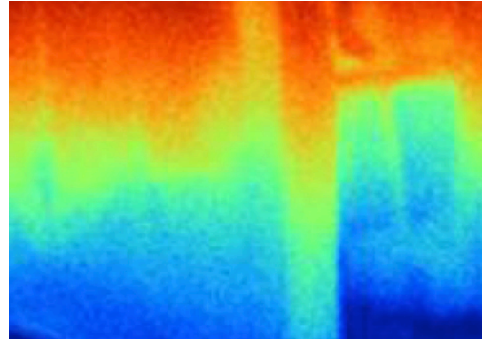


## Portable 3D Thermal Mapping of Building Interiors

PARC is developing a portable thermal mapping system that generates detailed measurements registered on a 3D map of a building or structure, making its use ideal for energy efficiency audits.



*Wearable 3D mapping system prototype*



*Thermal data registered on a 3D map*

In commercial buildings today, energy efficiency is typically monitored by manually gathering two-dimensional thermal or infrared images to identify hot and cold spots. This process requires skilled auditors to collect and interpret the information, leading to a costly and sometimes inaccurate measurement process. PARC has created a prototype system that increases the accuracy of thermal measurements and automates data processing, thereby decreasing thermal monitoring costs and enabling building managers to improve dramatically their ability to manage energy usage.

### **PARC's innovation**

PARC's portable system generates and registers complete 3D thermal maps of a building, enabling holistic thermal analyses as well as quantitative comparisons of temporal thermal profiles taken at multiple times. The device integrates a position tracking system,

a range-finding system, and a thermal camera, which are simply walked from room to room during data collection. The combination of position tracking and range finding enables accurate registration of thermal measurements in space and time. The reliability of the data collected allows for the use of automated analysis techniques that accurately identify internal energy losses occurring at different times of day, including energy losses not detectable via conventional methods. The system's output can also provide precise 'before and after' data comparisons.

### **Improve your energy management system**

PARC can help you commercialize this 3D thermal mapping system for energy efficiency audits, data center applications, or similar analyses. Contact PARC Business Development to learn more.

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