

# Orthorectified Thermographic Modeling and Analysis

## The Problem

All building efficiency improvements rely on a diagnosis of envelope or operational deficiencies - you can't fix what you can't detect. Experts hunting for defects are limited to rudimentary, manual, disjointed thermal data collection techniques which lack context and don't form a holistic or comprehensible picture.

*Efficiency analysis and inspection techniques lag far behind in our digital world.*

## The Team



### Gabe Garza

Founder of Reckon Point, 'Scan to BIM' expert, AEC Industry Technology Development



### Ian Howes

Concept, Building Automation, Energy Management, Commercialization



### John Bonnin

SwRI Engineer, Mechanical Design, Control Systems, System Integration



will provide their Mobile Indoor Geolocation Survey robot and Scan-To-BIM expertise.



SOUTHWEST RESEARCH INSTITUTE will integrate thermal sensors into the survey system and develop novel compositing and analysis software.

## The Solution

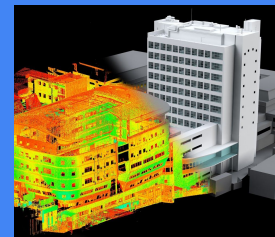
Reckon Point's Robotic Interior Survey Platform



Panoramic Thermal Imaging System



Exterior UAV Thermal+LiDAR Map



**= A Holistic Digital Heat Flow Model**

*A 3D map of the interior and exterior surface temperatures finally permits efficiency analysis to be **computerized**.*

- ✓ Building performance can be **visualized**
- ✓ Building envelope defects can be located **automatically**
- ✓ Expert analysis can be conducted **remotely**
- ✓ Improvements from retrofits can be **quantified**
- ✓ Robotic surveys are **fast**

