

A Systems Approach to Achieving Deep Heating Savings through Measurement, Management, and Motivation

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Team



Steven Winter Associates, Inc.
Improving the Built Environment Since 1972



- **SWA** – Marc Zuluaga, Jason Block: broad array of consulting engineering and analysis services drives cycle of identification, development, deployment, and adoption of improvements
- **Sentient** – David Unger: technology/product-agnostic—focused on the best solution to a problem, not just how our product can meet clients' needs
- **Con Edison** – Paul Romano: large utility with a key role in NYS Reforming the Energy Vision (REV) – changing the way utilities make investments and empower customers to drive efficiency
- **E Source** – Melanie Wemple: program planning for 70% of the electricity use in the country—readying this for wider deployment

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The Problem (The Need/Challenge)

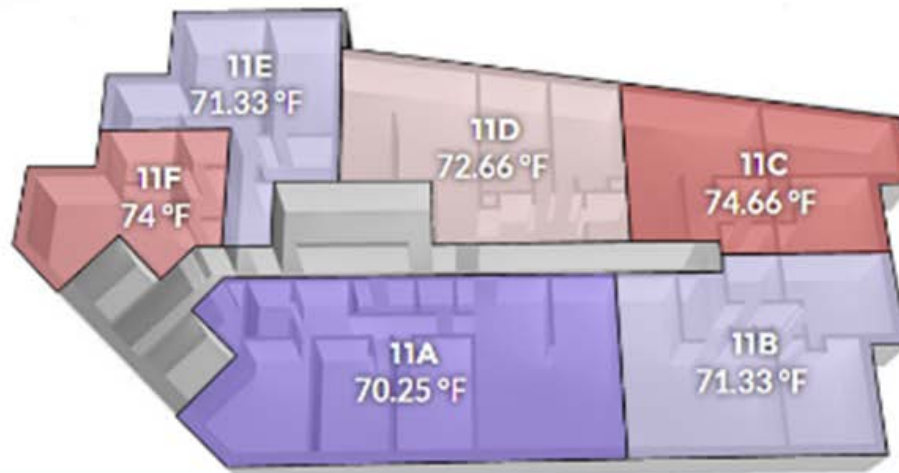
- A significant portion of energy use in multi-tenant and multifamily buildings is driven by a system that gives no direct feedback to the users. Few tenants pay for heat, and if they do, it's not in a meaningful way—it's not rational.
- Data show the average winter indoor temperature across the northeast is 65F. It is 74F in NYC.
- Pending NYC fuel mandate legislation, which could spread to other markets.



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The Solution

- Optimize building performance and equitably sub-meter heat
- Smart TRVs and other sensors tied into central network
- Temperature decay can identify envelope or distribution issues
- Combine dynamic data and static characteristics to infer usage
- Allow owners to shift heating costs off their budget
- Achieve deeper savings than operations or sub-metering alone



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Advantage, Differentiation, and Impact

- Leverage European experience with heat sub-metering and newer wireless components and infrastructure
- Thermal sub-metering is technically more challenging than electric sub-metering, but provides additional benefits (improved comfort, O&M)
- Allows utilities to see more behind the meter with potential for more demand management strategies
- 3-5 demonstration sites
- 3 project phases: pre-retrofit, optimized operations, and heat billing
- Plan for utility program development to roll out in other markets

Thank You

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