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Making It Happen: Connected Lighting Systems That Are Changing the Game

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Marketing

Agenda

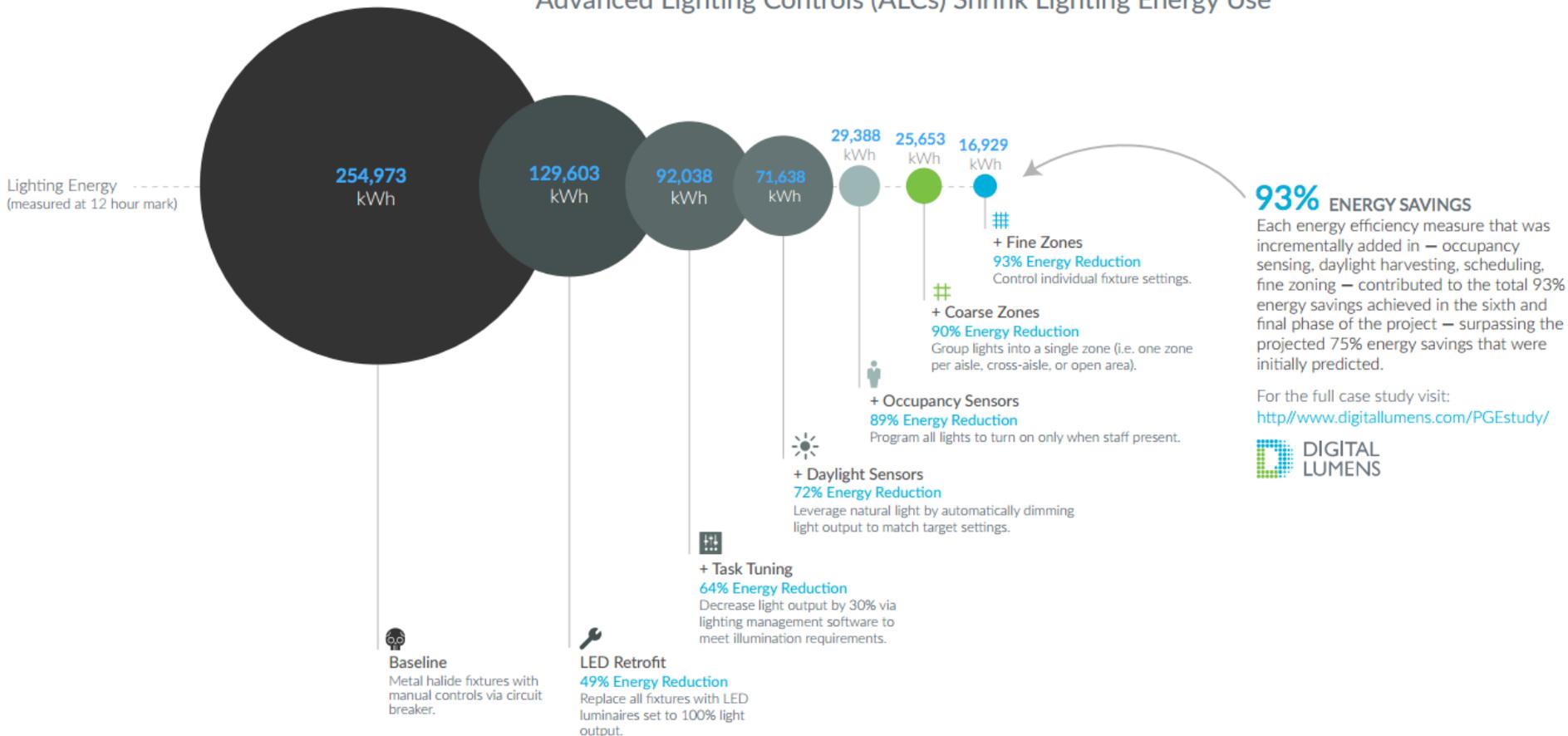
- Project overview – ACE Hardware
- Project Overview – Atlas Packaging
- Other Applications of Connected Lighting

Project Overview – ACE Hardware

- Facility
 - 1,000,000 sq. feet facility
 - 24/7 operation
 - Replacing 102 Metal Halides & 1,551 T5 Fixtures
- Goals
 - 75%+ energy savings
 - Maximize energy savings with advanced controls software



CASE STUDY PG&E / ACE HARDWARE Advanced Lighting Controls (ALCs) Shrink Lighting Energy Use



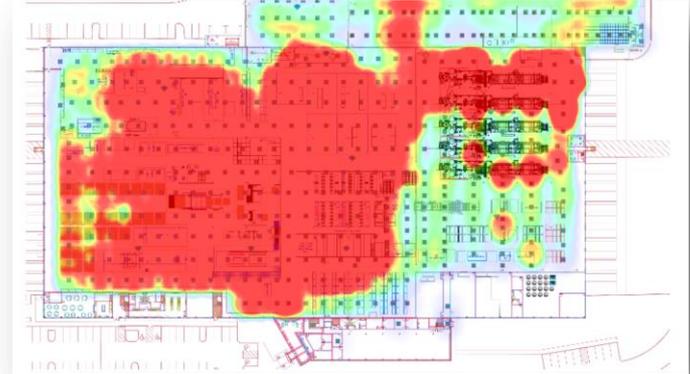
Project Overview – Atlas Packaging

- Facility
 - 500,000 sq. feet facility
 - 16/6 Operation
 - Phase 1: 370 T5/T8 Replacements
 - Phase 2: 525 New Build
- Goals
 - 75%+ energy savings
 - Leverage system for inventory mgmt

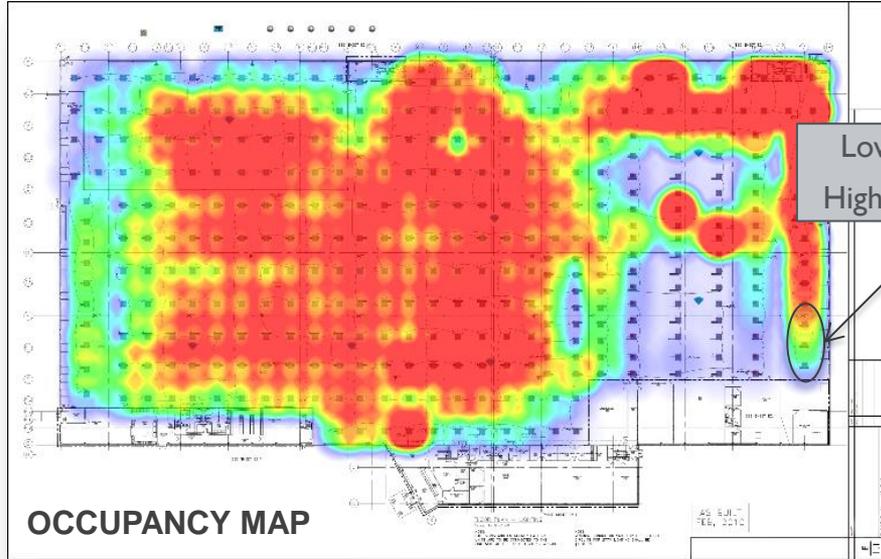


Atlas applications

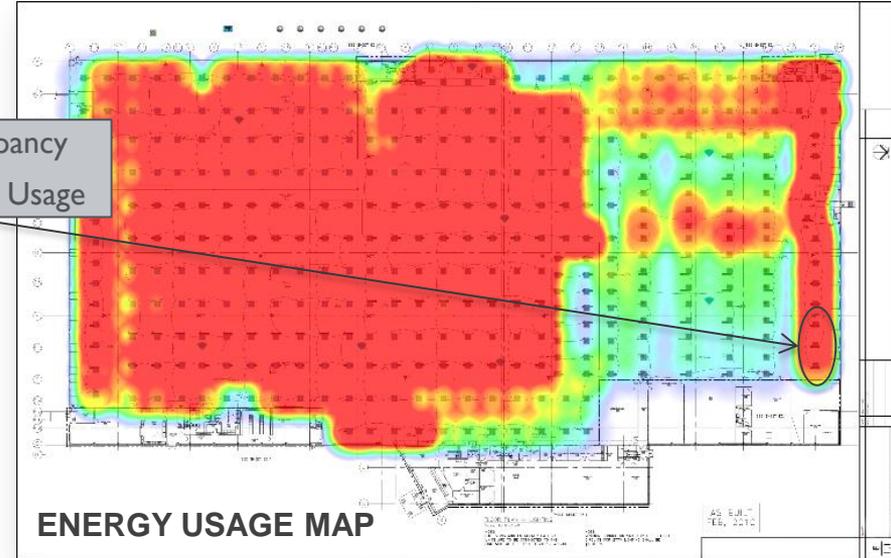
- Inventory Management
 - Using occupancy data for path tracking through the warehouse
 - Optimizing inventory placement for traffic-avoidance
- Power Management
 - Monitoring power consumption of laboratory equipment for capital investment management
 - Monitoring power consumption of production equipment for production costing
 - Visibility into equipment utilization



OCCUPANCY & ENERGY USAGE CORRELATION



Low Occupancy
High Energy Usage



**ONGOING OPTIMIZATION OPPORTUNITY OF LIGHTING CONTROL
FOR OPTIMUM ENERGY SAVINGS**

Occupancy over time: Optimizing Retail Hours

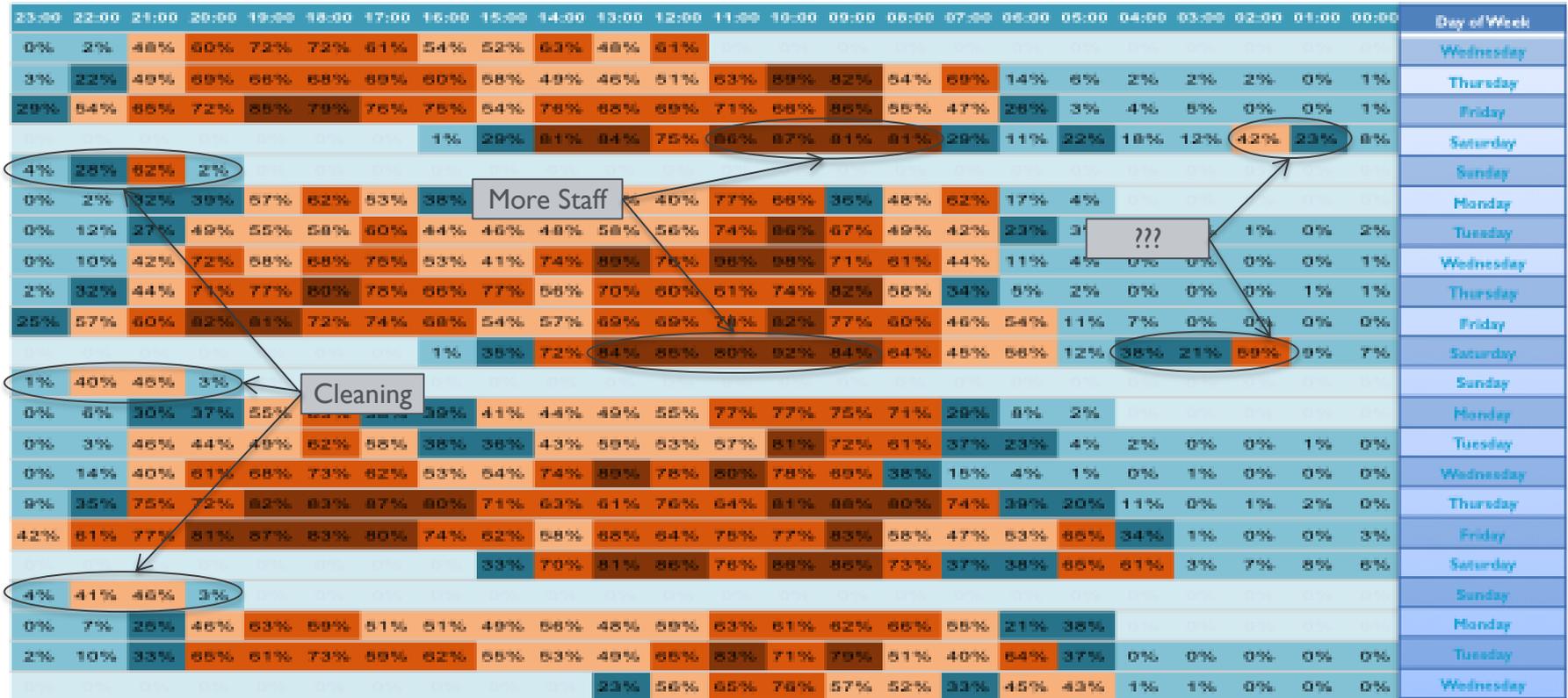
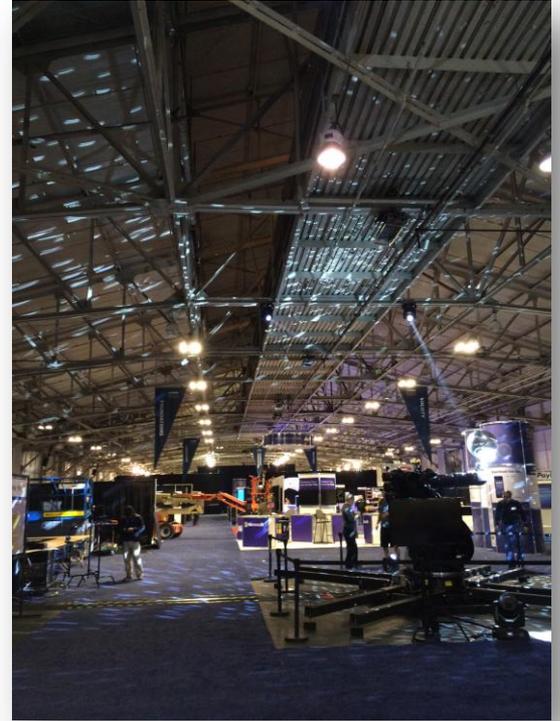


Exhibit Space Granular Control & Occupancy Insight

- Per fixture independent control for per exhibit area configuration
- Optimal lighting during show ours; maximum energy saving during off hours
- Identify areas with high traffic/interest with occupancy tracking



Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

Rooms Status

- ▶ Building 2 Room 1
- ▶ Building 2 Room 2
- ▶ Building 2 Room 3

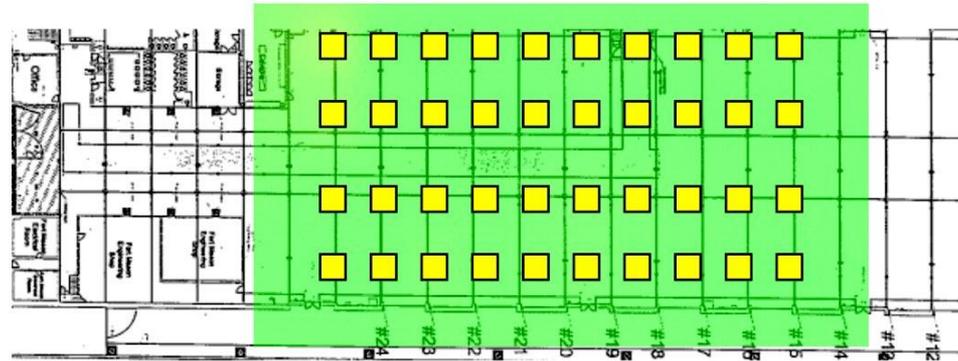


Exhibit Hall Occupancy Data: 6:00am

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

Rooms Status

- ▶ Building 2 Room 1
- ▶ Building 2 Room 2
- ▶ Building 2 Room 3

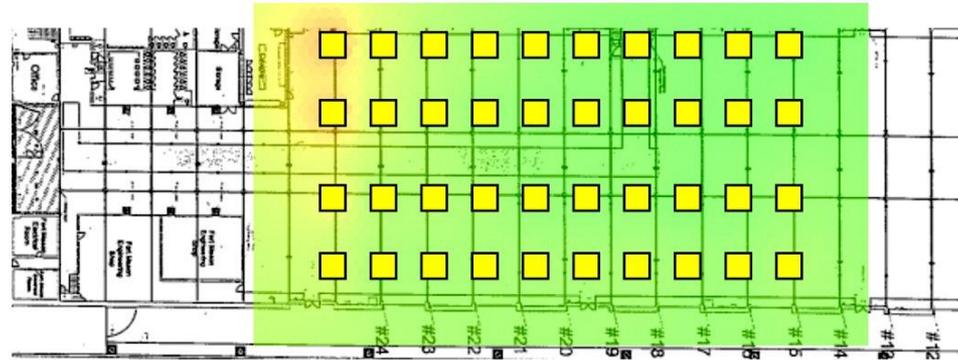


Exhibit Hall Occupancy Data: 7:00am

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

Rooms Status

- ▶ Building 2 Room 1
- ▶ Building 2 Room 2
- ▶ Building 2 Room 3

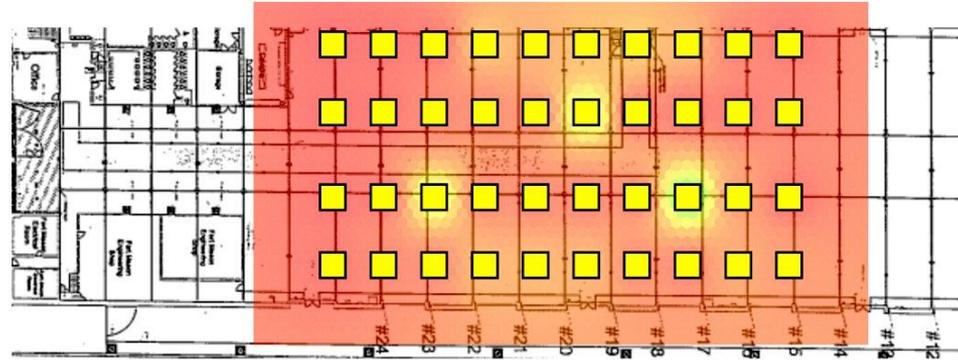


Exhibit Hall Occupancy Data: 9:00am

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

Rooms Status

- ▶ Building 2 Room 1
- ▶ Building 2 Room 2
- ▶ Building 2 Room 3

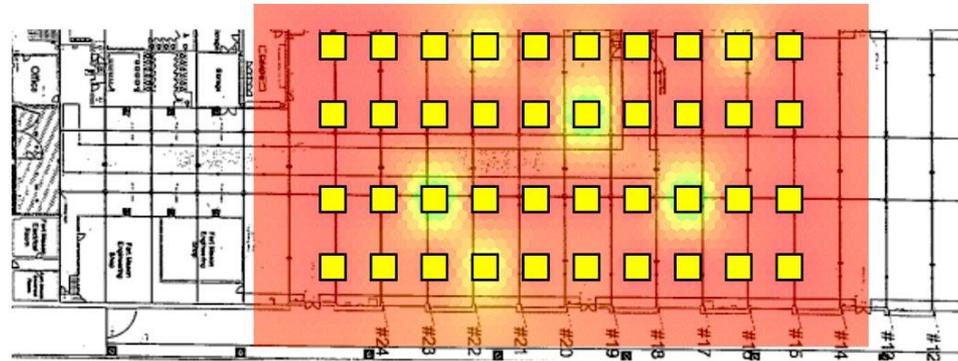


Exhibit Hall Occupancy Data: 10:00am

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

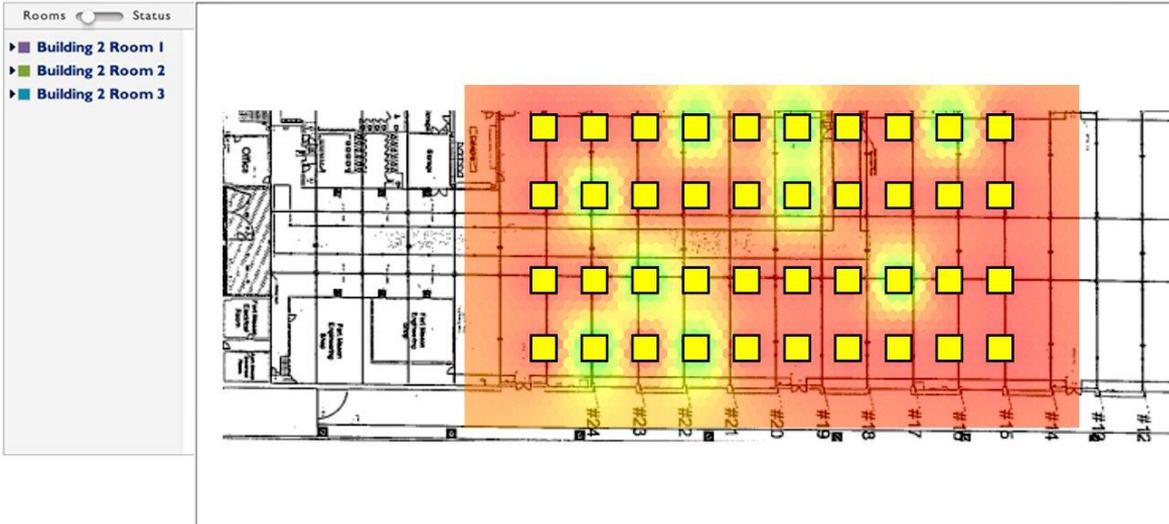


Exhibit Hall Occupancy Data: 11:00am

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

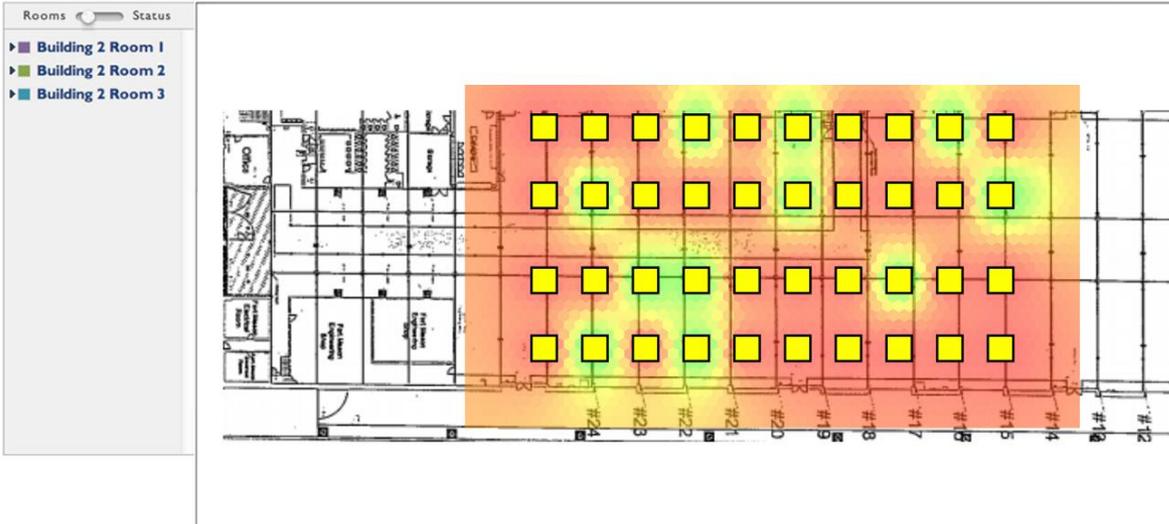


Exhibit Hall Occupancy Data: 12:00pm

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

Rooms Status

- ▶ Building 2 Room 1
- ▶ Building 2 Room 2
- ▶ Building 2 Room 3

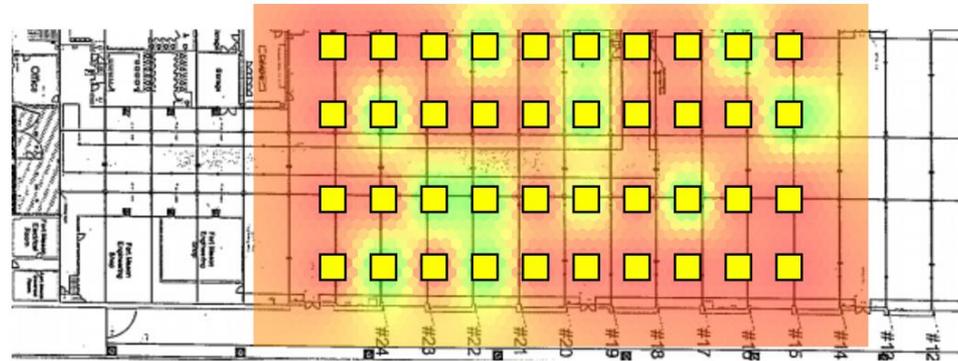


Exhibit Hall Occupancy Data: 1:00pm

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

Rooms Status

- ▶ Building 2 Room 1
- ▶ Building 2 Room 2
- ▶ Building 2 Room 3

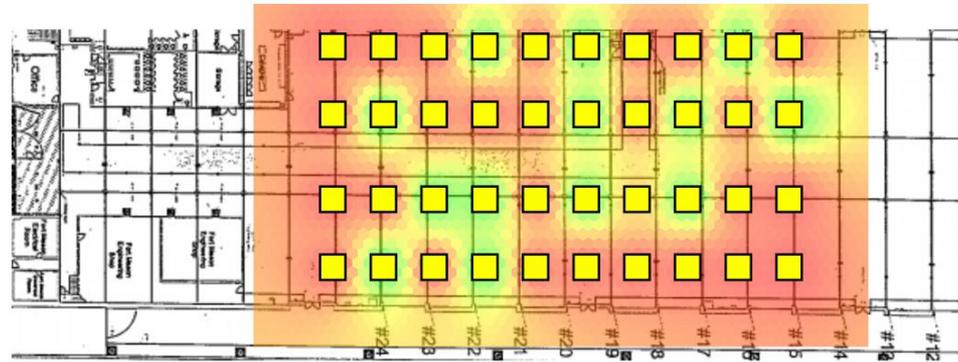


Exhibit Hall Occupancy Data: 2:00pm

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

Rooms Status

- ▶ Building 2 Room 1
- ▶ Building 2 Room 2
- ▶ Building 2 Room 3

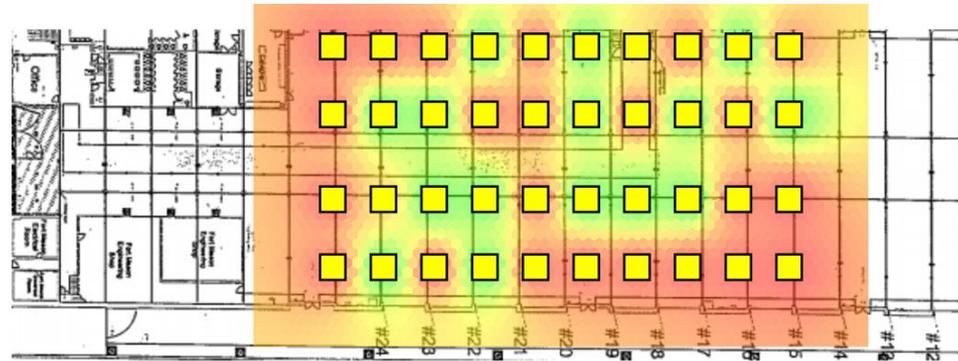


Exhibit Hall Occupancy Data: 3:00pm

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

Rooms Status

- ▶ Building 2 Room 1
- ▶ Building 2 Room 2
- ▶ Building 2 Room 3

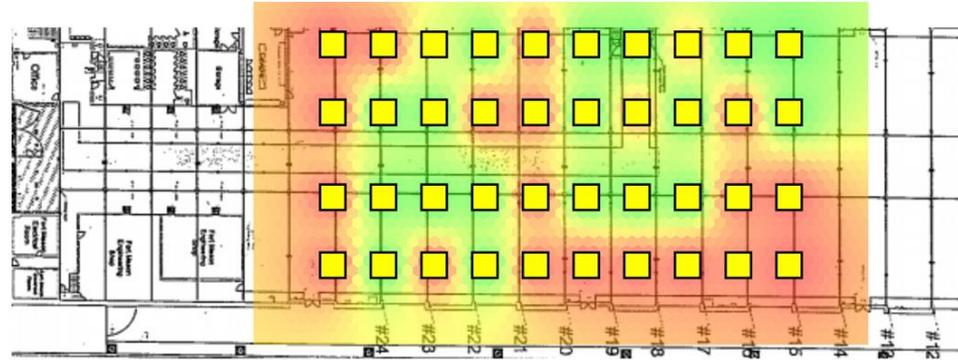


Exhibit Hall Occupancy Data: 4:00pm

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

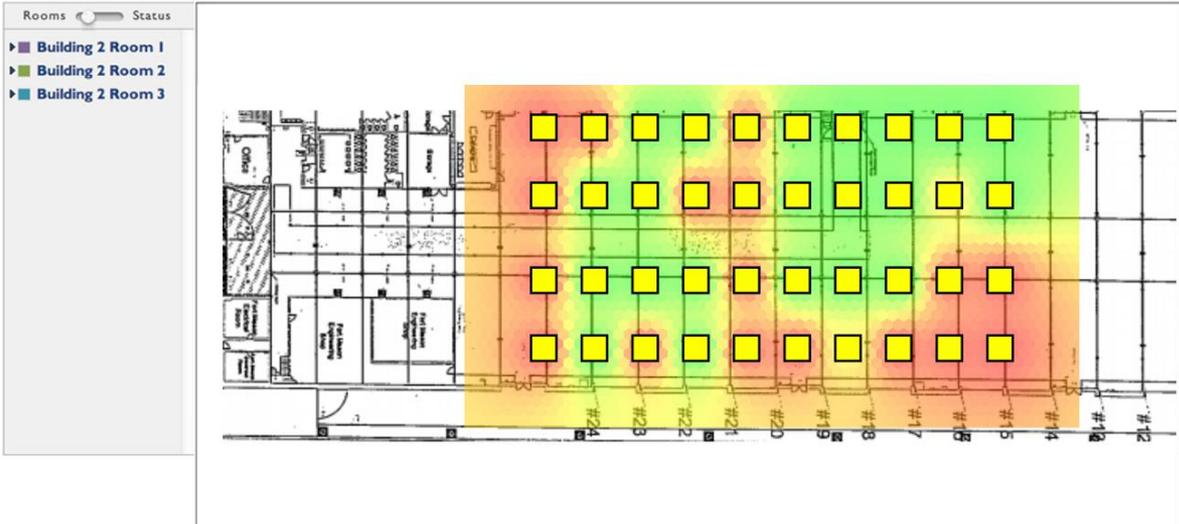


Exhibit Hall Occupancy Data: 5:00pm

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

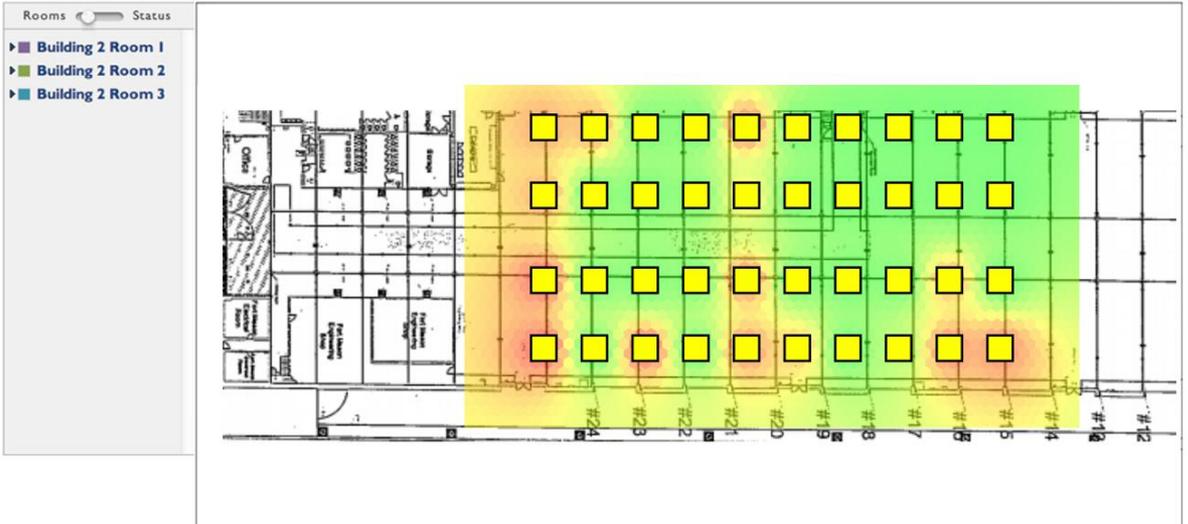


Exhibit Hall Occupancy Data: 6:00pm

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

Rooms Status

- ▶ Building 2 Room 1
- ▶ Building 2 Room 2
- ▶ Building 2 Room 3

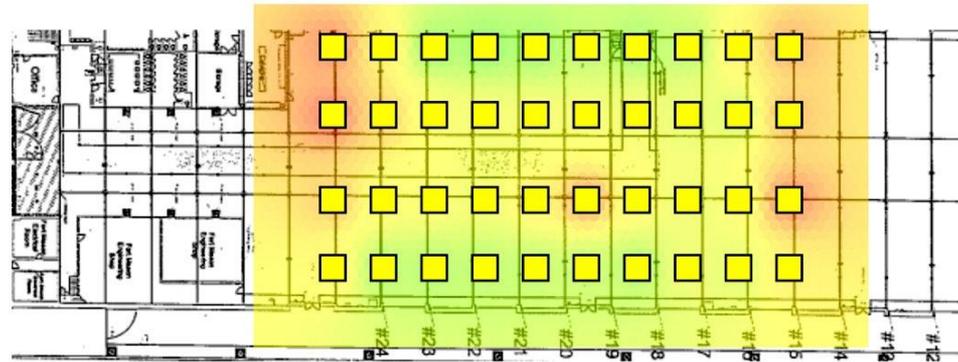


Exhibit Hall Occupancy Data: 7:00pm

Facility Map - Energy Usage

Average Daily Energy Usage (30 day average)

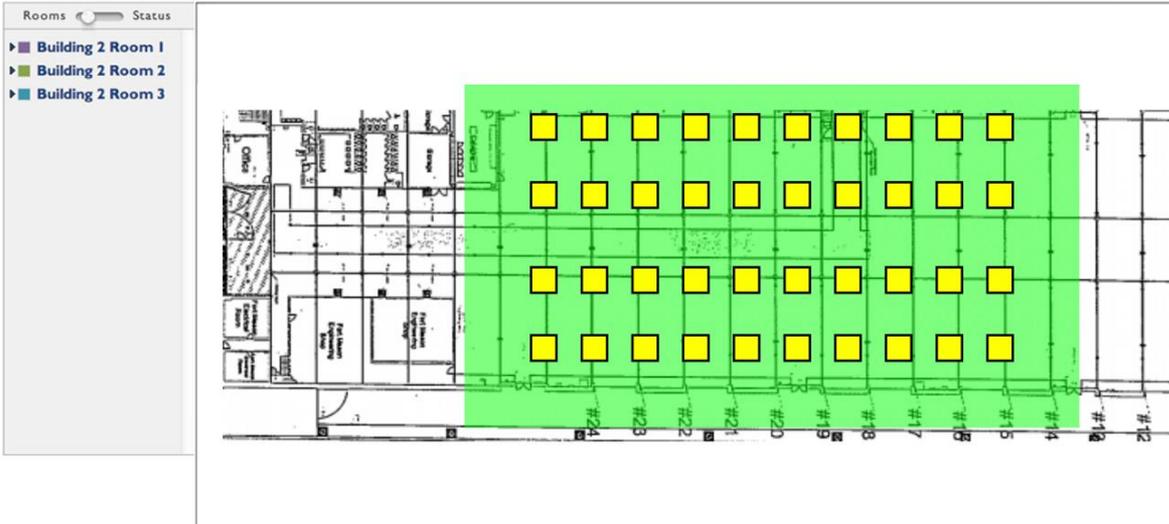


Exhibit Hall Occupancy Data: 9:00pm



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Thank You
