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# Beyond Lighting:
# LLLC Integration for Smart, Connected Buildings

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# Today's Session

- Luminaire Level Lighting Controls (LLLC)
- Integration Opportunities
- Strategies for Success
- Resources
- Q&A

# What Is LLLC?

**Luminaire Level Lighting Controls (LLLC) = LED Fixtures with integrated sensors**

- Each luminaire functions independently – more control and increased access to data.
- Ability to program each fixture for occupancy sensing, daylight harvesting, scheduling and more.
- Ideal for new construction and major renovation, eliminates need for separate control infrastructure.

# LLLC Capabilities

## Simple Capabilities

- Occupancy sensing
- Daylight harvesting
- Continuous dimming
- High-end trim/task tuning
- Zoning

## Expanded Capabilities

- Asset tracking
- Space utilization
- HVAC integration
- Safety and security
- Circadian support

# Why Does LLLC Matter?

- Energy savings
- Occupant comfort
- Space flexibility
- Data you can use

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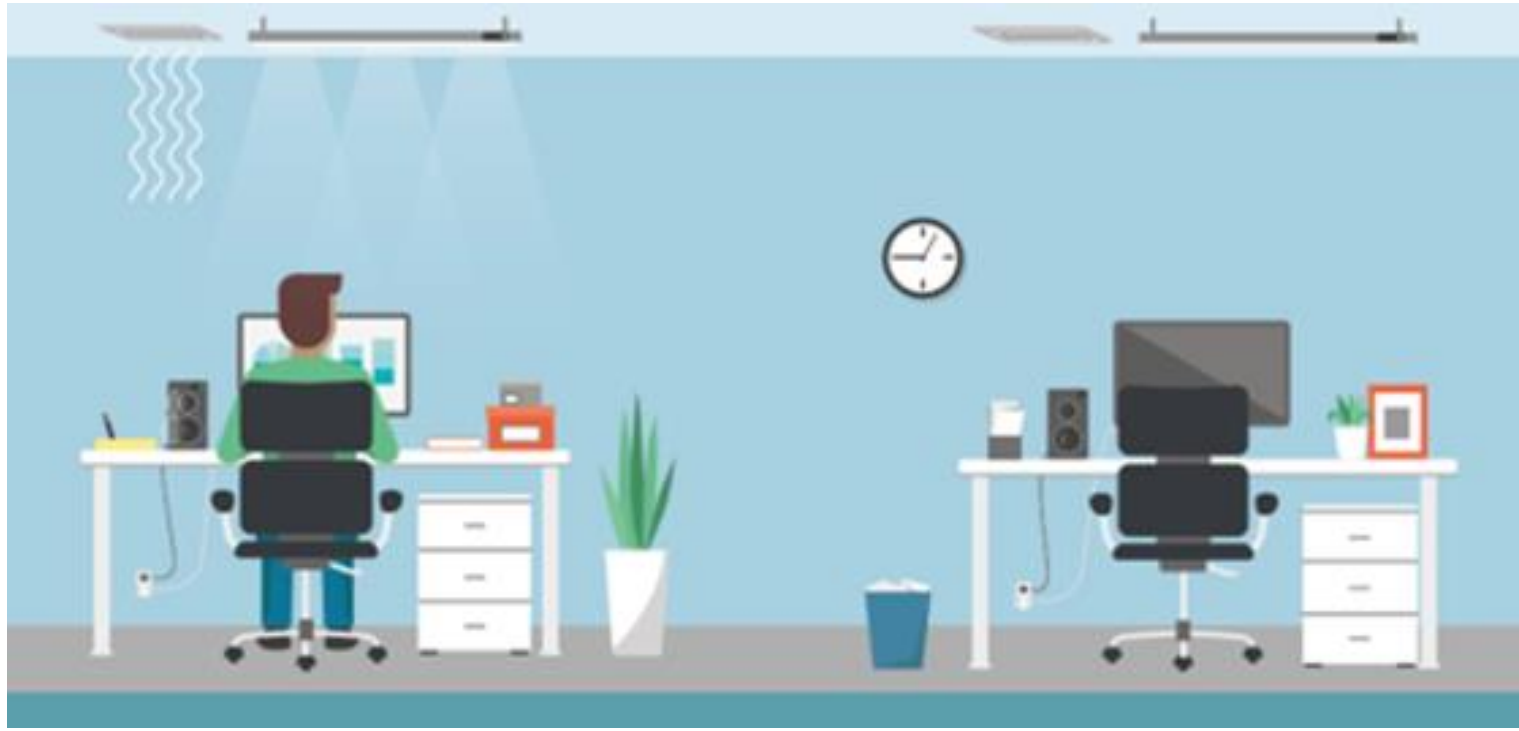
# Integration Opportunities

# Integration Map

- HVAC
- Plug loads
- Building management systems
- Security



# HVAC: Smarter Buildings Through Integrated Systems

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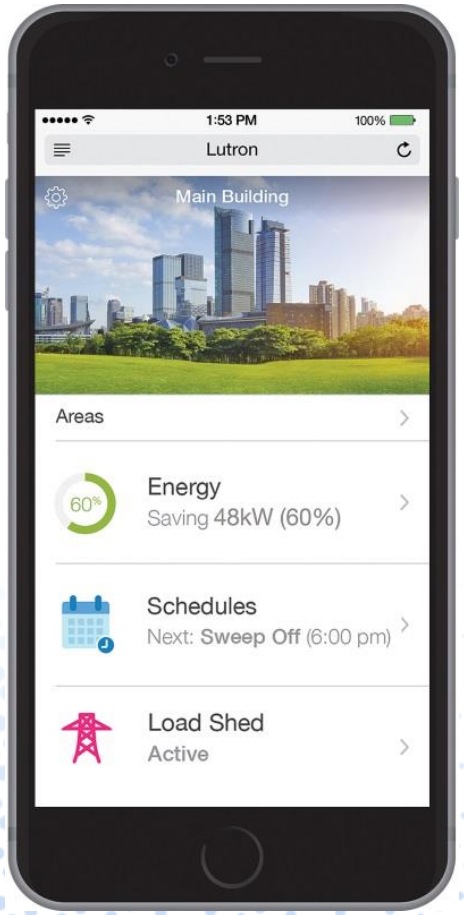
- Lighting and HVAC are two of the largest energy loads in commercial buildings.
- LLLC systems provide granular, real-time occupancy and daylight data.
- Integrating LLLC with HVAC allows for smarter zone control and energy savings.
- Key terms are BACnet, BMS and integration strategies.

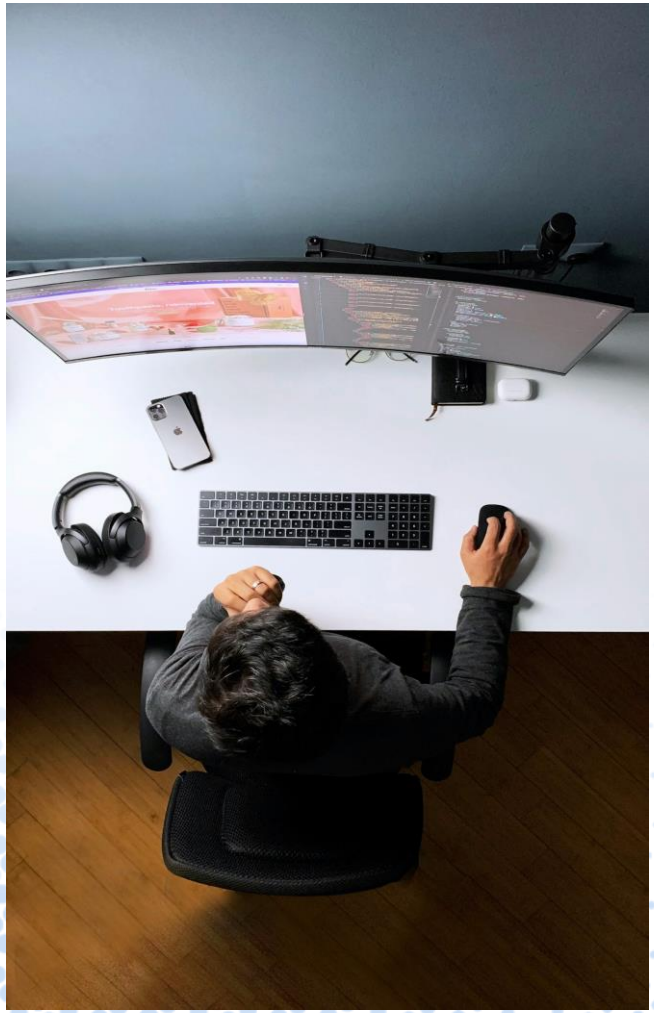


# Plug Loads and BMS

- Phantom load cuts
- After-hours shutoff
- Portfolio dashboards

# Security Integration

- Real-time occupancy awareness
- Smarter after-hours monitoring
- Fewer false alarms, faster response
- Data sharing with access control



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# Strategies for Success

# Keys to Success

- Define integration goals
- Sequence of operations (commissioning checklist)
- Train operators

# Case Study: Fluke Corporation

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"We identified the need for LEDs and lighting controls in our different spaces, including factory, offices, hallways, stairwells, cafe, and maintenance, and mechanical rooms. The more we learned about lighting systems, the more we understood Luminaire Level Lighting Controls (LLLC) offered a lot of great capabilities that met our needs of enhanced controls and flexibility.

—Deson Jackson, Facility Administrator and Project Manager, Fluke

# BetterBricks: Industry Voices

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**Novanta**
Manufacturing
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# Resources and Incentives

# LLLC Incentives

- **Standard Lighting Application**
  - Available for ALL eligible non-residential rate code customers
  - $1.50/watt controlled (capped at $75/fixture)

- **Small Business Direct Install (SBDI)**
  - Available through authorized SBDI Program Allies
  - For eligible DS-2 and DS-3A non-residential rate codes
  - $1.75/watt controlled (capped at $75/fixture)

For more information, contact the Business Call Center:

**Phone**: **1.866.800.0747**

**Email:**
**IllinoisBusinessEE@ameren.com**

# NXT Level Lighting Training 1 & 2

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DESIGNATED NXT LEVEL 1

## NXT Level 1 Training

Advance your career with the latest lighting techniques and technologies.

**No Cost**
Free of cost thanks to your local utility

**On-Demand**
Web-based and available whenever you are

**Increase Exposure**
Join the exclusive NXT Level Designation List

**Access Incentives**
Align projects with utility incentives, where applicable

**CEUs**
Earn up to 8 continued education units

nxtleveltraining.com

DESIGNATED NXT LEVEL 2

# Free Resources That Educate and Help Sell

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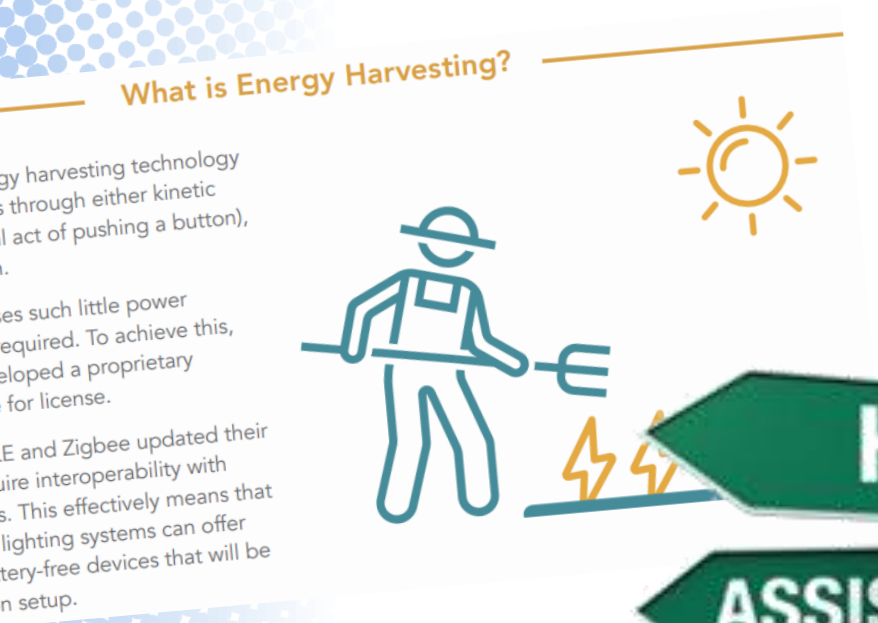




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# Questions?

Thank you!