

Lighting Controls for New and Retrofit Applications

JASON W. STRANO, CEM

A Quick Background

- ▶ In the electrical field since 2004
- ▶ Started doing energy efficient lighting retrofits in 2005
- ▶ Became a professional energy auditor and junior energy engineer in 2010
- ▶ Worked at two different energy services companies
- ▶ Became the energy sales manager for a lighting rep in 2015
- ▶ Obtained CEM in 2016

Our Objectives

- ▶ Briefly review where lighting has been and where it's going
- ▶ Define lighting controls
- ▶ Discuss what lighting controls that we've had up until recently
- ▶ Review some of the challenges of working in existing buildings
- ▶ Review some of the challenges of working in new buildings
- ▶ Discuss new products that will help relieve the pain of new lighting installations

Lighting-where we've been and where we're going

Interior

- ▶ T12
- ▶ T8
- ▶ High Efficiency T8
- ▶ LED tubes
- ▶ LED fixtures
- ▶ LIGHTING CONTROLS!!!!!!

Exterior

- ▶ Low Pressure Sodium, High Pressure Sodium, Mercury Vapor
- ▶ Metal Halide
- ▶ Pulse Start Metal Halide
- ▶ Capacitive Discharge Metal Halide
- ▶ Induction
- ▶ LED
- ▶ LIGHTING CONTROLS!!!!!!

What Are Lighting Controls?

- ▶ Any device that can turn on or off a lighting fixture
 - ▶ A light switch
 - ▶ An occupancy/vacancy sensor
 - ▶ A time clock
 - ▶ Photo sensor
 - ▶ A lighting control panel
 - ▶ Advanced technology
- ▶ Any device that can change the characteristics of a fixture
 - ▶ Light levels
 - ▶ Color temperature

Challenges Pertaining to Lighting Controls in Existing Buildings

- ▶ Existing Wiring
- ▶ Access To Fixtures/Mounting Points
- ▶ Owners and Occupants
- ▶ Cost
- ▶ Technology

Challenges Pertaining to Lighting Controls in New Buildings

- ▶ Owners and Occupants
- ▶ Cost
- ▶ Fixture Location and Sensor Mounting
- ▶ Technology

Back to Basics

- ▶ Wall mounted occupancy/vacancy sensors
- ▶ Ceiling mounted occupancy/vacancy sensors
- ▶ Time clocks
- ▶ Photo cells

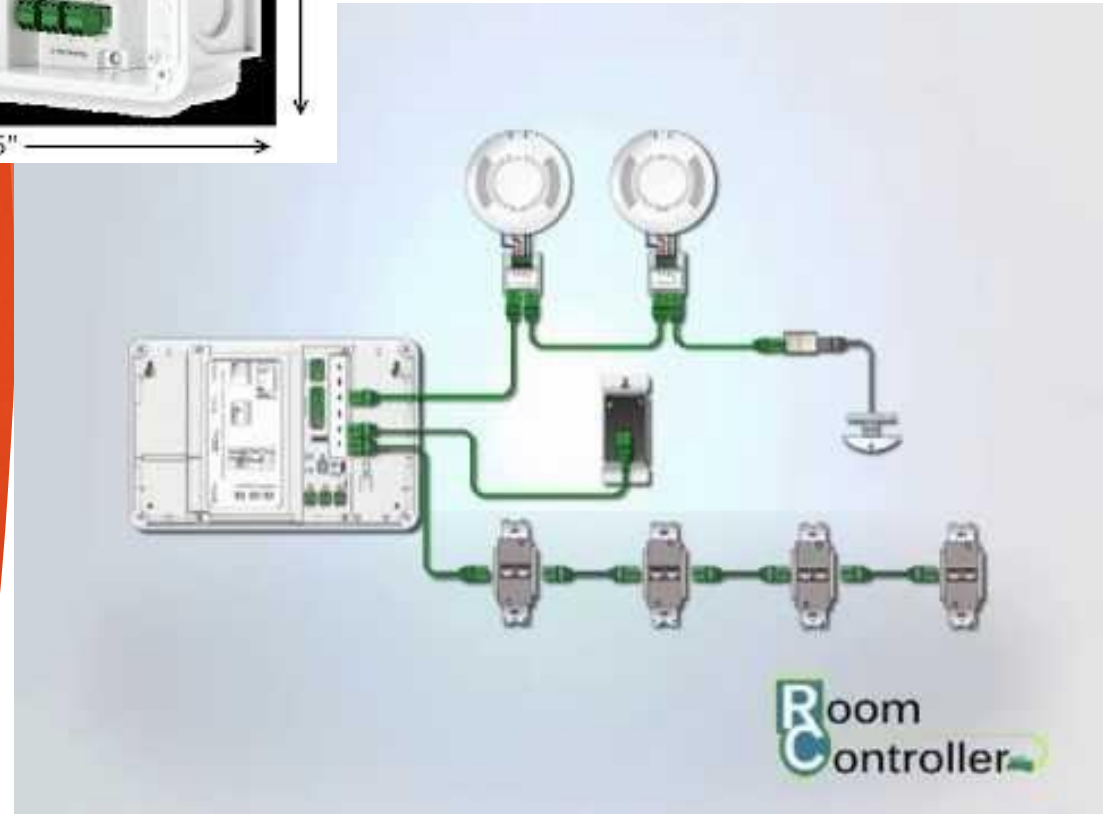
The New Generation of Controls

- ▶ Fixture based options with integrated controls
 - ▶ Networked and stand-alone
- ▶ Centralized Controls
 - ▶ Room controlled options
- ▶ Wired DALI
- ▶ Wireless Controls
 - ▶ With and without centralized hubs

Fixture Based



Centralized Controls



Wired DALI



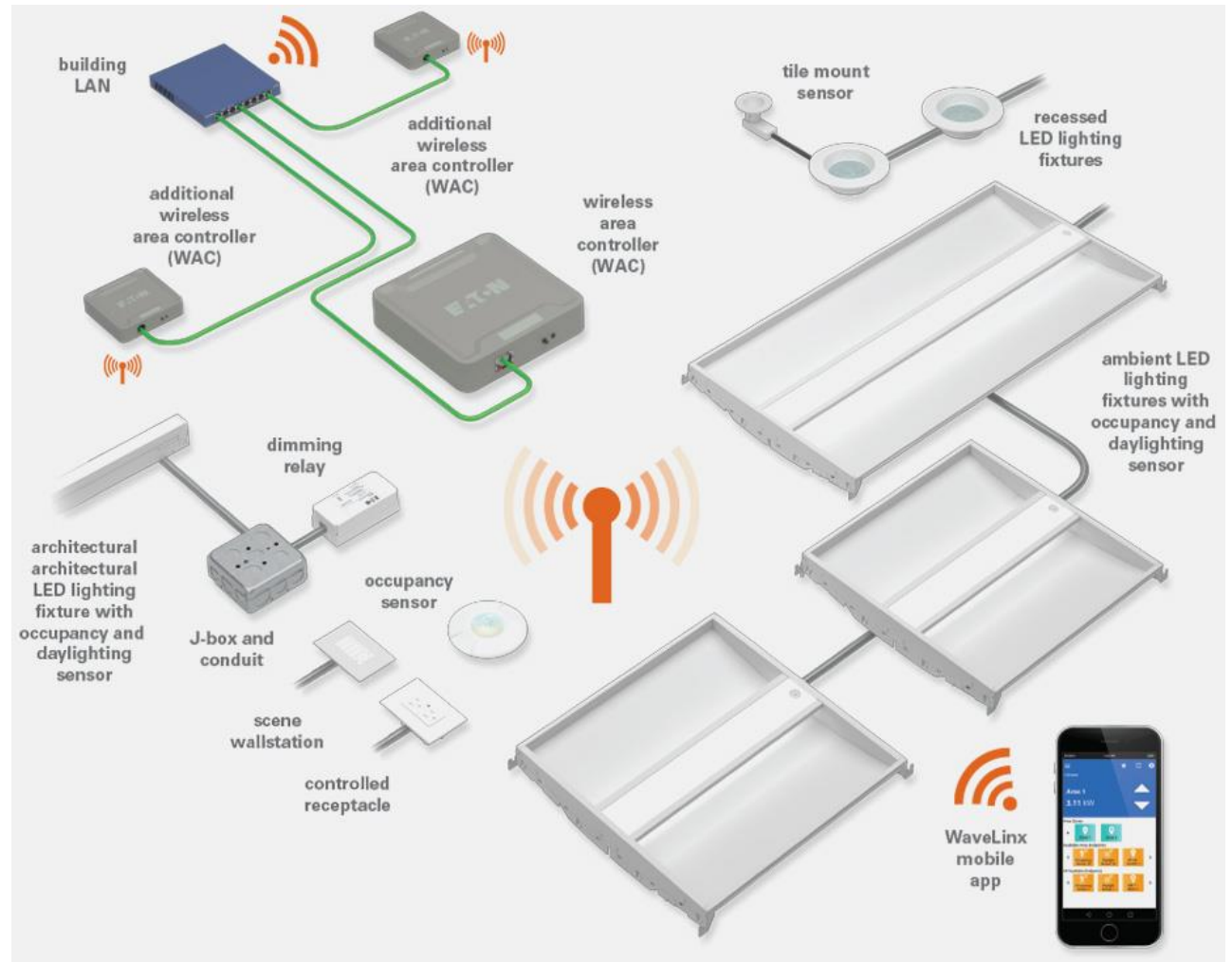
Wireless Controls

BENEFITS

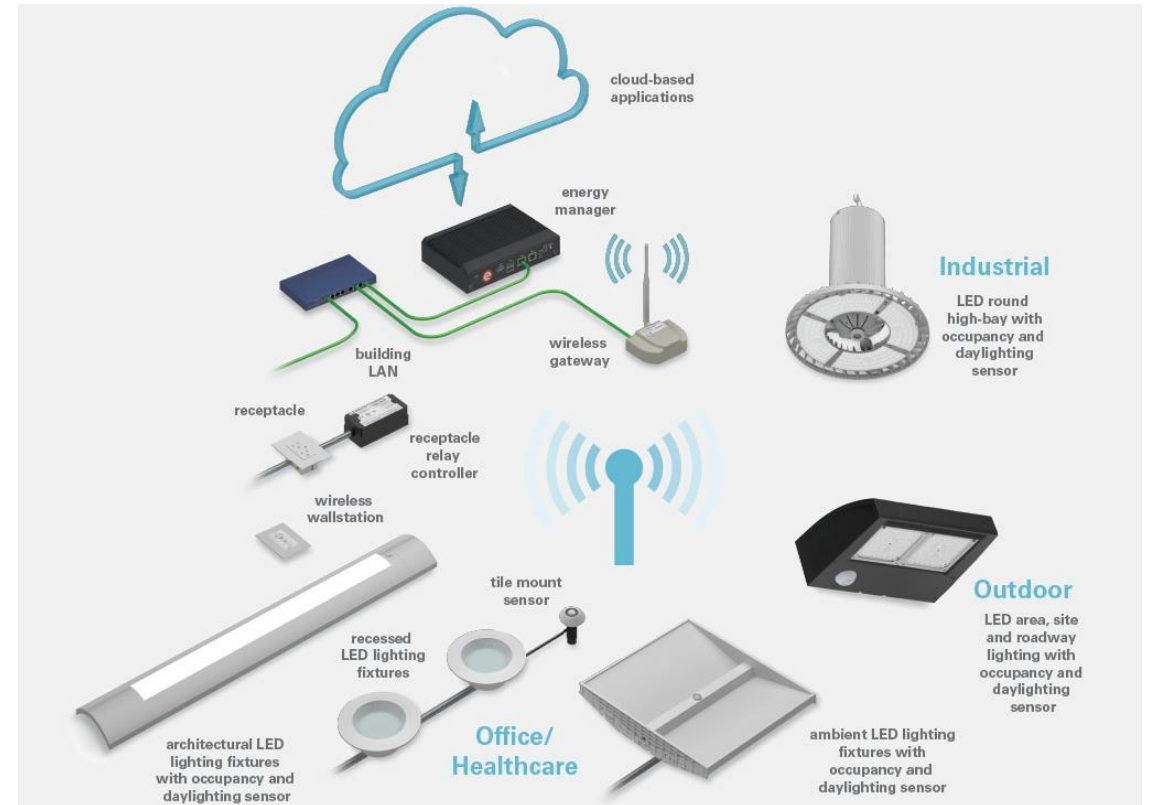
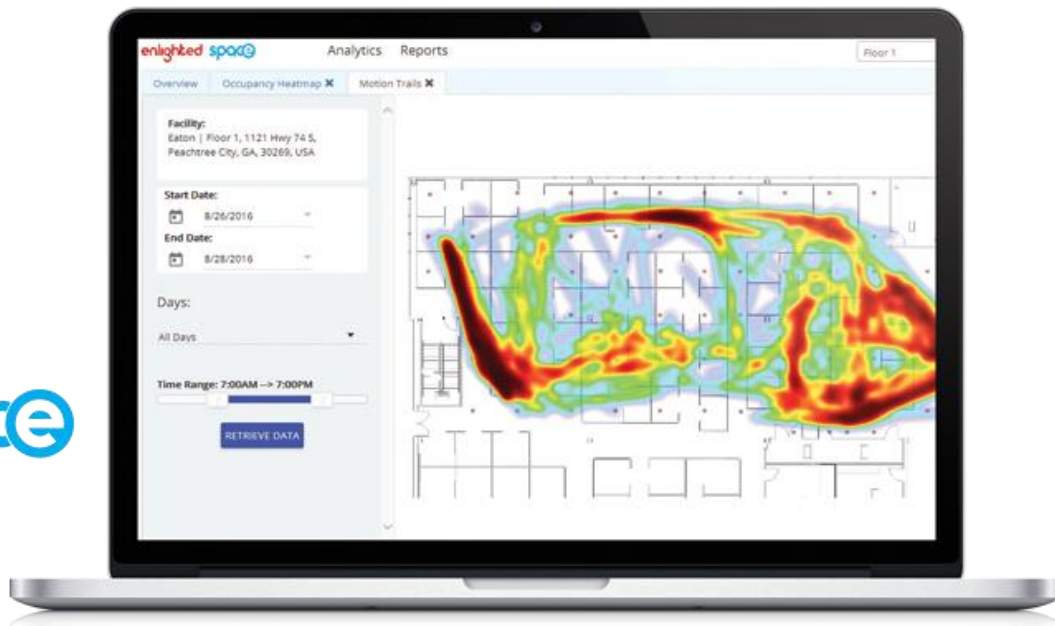
- EASE OF INSTALLATION
- EASILY ABLE TO TIE INTO MODERN LED CONTROLS
- TUNABILITY
- PROGRAMMABLE
- NETWORKABLE
- REPORTABLE
- FEATURES THAT EXTEND BEYOND LIGHTING

Wireless Controls

- Able to accommodate high and low end trim for LED fixtures
- Occupancy, vacancy and daylight harvesting
- Able to meet the toughest energy codes
- Fully programmable for end user functionality



Wireless Controls



Wireless Controls



- ▶ HVAC Integration
- ▶ Asset Tracking
- ▶ Security Management
- ▶ Way-Finding
- ▶ Marketing
- ▶ Geo-Fencing
- ▶ IOT Technology

Choosing a system that is right for your customer

- TALK ABOUT THE CUSTOMER'S NEEDS
- TALK ABOUT BUDGET
- REVIEW INSTALLATION AND TRY TO ANTICIPATE CHALLENGES
- DISCUSS THE SEQUENCE OF OPERATIONS

If you're new to controls, partner with someone who can help you. It will make life so much easier for you and your customer!



Questions?

Jason W. Strano

jstrano@reflexlighting.com

(203)240-1156