The Coming Revolution in Building Performance

A “Lighting Controls” Perspective
Advancements in Lighting technology

1. Analog controls evolving to digital control platforms

2. Wireless communication of controls and sensors

3. Lighting controls becoming “light management” solutions
   - integration of controls and automated window shades

4. Light management solutions now share a common building network
Advancements in Lighting Controls

Evolving from analog controls to a digital controls platform.

Analog control functions:
• adjust light level
Advancements in Lighting Controls

Evolving from analog controls to a digital controls platform.

Analog control functions:
• adjust light level

Digital control functions:
• adjust light level
• on/off
• power level feedback
• ballast and lamp status
• modifications via software
  – zoning fixtures
  – associate sensors and controls
  – flexible functionality between controls and light fixtures
Advancements in Wireless technology

• Wireless sensors and controls:
  – reduce installed costs by reducing installation labor
  – enhanced flexibility
Advancements in Light Management

Integrated “Light Management” Solutions

• Integrated, automated electric light and window treatment control
Advancements in Light Management

Integrated “Light Management” Solutions

• Integrated, automated electric light and window treatment control

• New York Times Building
  – reduced installed costs by reducing installation labor
  – 70% lighting energy saved
  – $600,000 saved per year, $1/SF
  – Designed at 1.28 W/SF, using .396 W/SF
  – 1250 metric tons of CO2 emissions prevented each year.
Building Networks Drive Light Management

Light Management:
Sharing a common building network
Building Networks Drive Light Management

Light Management: Sharing a common building network

- Duke Energy Center:
  - Reduced capital and operational costs
  - Simplified building management
  - Built in scalability, reliability, flexibility
  - Improved occupant experience
  - Dynamic interaction with electrical grid
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