Emerging Technologies in Lighting
The Hottest, Smartest, & (Mostly) Non-IoT
Design Centric Lighting
(Or Vice Versa)

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Industry Trends

Ledification
Sensorization
Cost Reduction - System Integration
@ Chip & Package Level
Supply Chain Realignment
Embedded Intelligence
Lighting is Part of Building

- **Structural**
  - Roofing
  - Glazing/Fenestration
  - Cladding/Skin
  - Insulation
  - Core Structure
  - Foundation

- **Services**
  - HVAC
  - Plumbing
  - Elevator

- **Electrical**
  - Lighting
  - AV
  - Security
  - IoT
  - Controls

- **FF&E**
  - Furniture
  - Finishes
  - Appliances
  - Equipment
  - Fixtures

- **Stuff that Does’t Move**
- **Stuff that Moves**
- **Stuff That Can Be Moved**
Lighting is Part of Building

Stuff that Doesn’t Move
- Structural
  - Roofing
  - Glazing/Fenestration
  - Cladding/Skin
  - Insulation
  - Core Structure
  - Foundation

Stuff that Moves
- Services
  - HVAC
  - Plumbing
  - Elevator
- Electrical:
  - Lighting
  - AV
  - Security
  - IoT
  - Controls

Stuff That Can Be Moved
- FF&E
  - Furniture
  - Finishes
  - Appliances
  - Equipment
  - Fixtures
Building Evolves Slowly

Driving Factors:
- Risk Management
- Sunk Costs
- Localization
- “Project” Bias
- Complexity

Photo: Wikipedia Commons
Lighting Leads

Circa 1910 - “Internet” of Electricity

Today: Life in the Cloud
LDs: Merely Specifiers?

Lighting is Unimportant
Data & IoT Rule
Humans out of the loop
Lighting Companies are now IT companies
Smart Sockets not Smart Lighting
Lighting is About Design

By definition, Design is Innovation

Photos: Wikipedia Commons, Lauren Manning
Today A Designer Must Be A:

- Researcher
- Behavioral Economist
- Anthropologist
- Psychologist
- Politician
- Engineer
- Artist
- Historian
- Entrepreneur

Photo: Wikipedia Commons
Different Paths to Design

Just...
Build What They Want!
Build It & They Will Come!
(They will want it when they see it)

But...
How do we know what they want?
What if they don’t come?
It’s really hard to make them want stuff they don’t understand
Building is Disruption Averse

Photos: Wikipedia Commons
What About Beauty & Delight?

To claim "truth to materials" is to reduce architecture to construction, and to claim that ornament is crime is risible. Beauty in architecture is perceived in a building's visual qualities. The aesthetic sense assesses the beautiful, while its counterpart, the moral sense, assesses the good.

-C.W. Westfall
Design Is...

Not reflexively innovating to solve problems,

but ensuring that we’re solving the right problems in the first place.
Thank You!

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Panel Discussion Questions

Is it ethical, practical, or even possible to totally automate building controls?

What are the problems most worth solving with lighting?

When and how will IoT be used directly for lighting itself?

What are the most important priorities for lighting research and what’s keeping us from exploring them?
This concludes The American Institute of Architects Continuing Education Systems Course