



LIGHTSWITCH ARCHITECTURAL™

# What Architects & Designers Want from SSL



Avraham Mor, LEED AP, IESNA  
Partner

[architecture.lightswitch.net](http://architecture.lightswitch.net)

312.288.8777x101

[amor@lightswitch.net](mailto:amor@lightswitch.net)



## Copyright Materials

This presentation is protected by US and International copyright laws. Reproduction, distribution, display and use of the presentation without written permission of the speaker is prohibited.

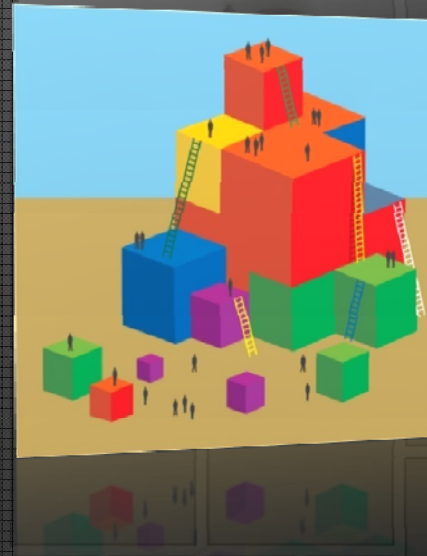
© Lightswitch Architectural 2009





# Learning Objectives

- Who are we?
- Key Issues
- Example
- Next Steps





# THANKS!

- DOE & Energy Star
  - Including IALD Designers into this process
  - Including the IES into this process
- SSL Luminaire Manufactures
  - Great new tools for us to use
- SSL Component Manufactures
  - Supplying the luminaire manufactures with products
- Electrical Contractors
- Electrical Distributors





LIGHTSWITCH ARCHITECTURAL™

# Who Are We?

- Multidisciplinary Lighting & Projection Design Practice.
- Serving a diverse range of clients since 1993.
- Large Team of Designers, Associates, and Support Staff.
- Nationwide Coverage

Chicago

Tower Lakes

Wrigleyville

New York

San Francisco

Los Angeles

Orlando



## What We Do

- Conceptual Lighting Design, Collaboration, and Evolution.
  - LEED Certification Assistance including Daylighting Analysis
  - Full Project Estimating, Bidding and Management.
  - Installation Supervision.
  - Design Commissioning.
  - Existing Installation Evaluation, Refurbishment & Design.
  - Ongoing Design Maintenance.





LIGHTSWITCH ARCHITECTURAL™

# Environments







LIGHTSWITCH ARCHITECTURAL™

# Entertainment







LIGHTSWITCH ARCHITECTURAL™

# Events





# Museums







LIGHTSWITCH ARCHITECTURAL™

# Architecture

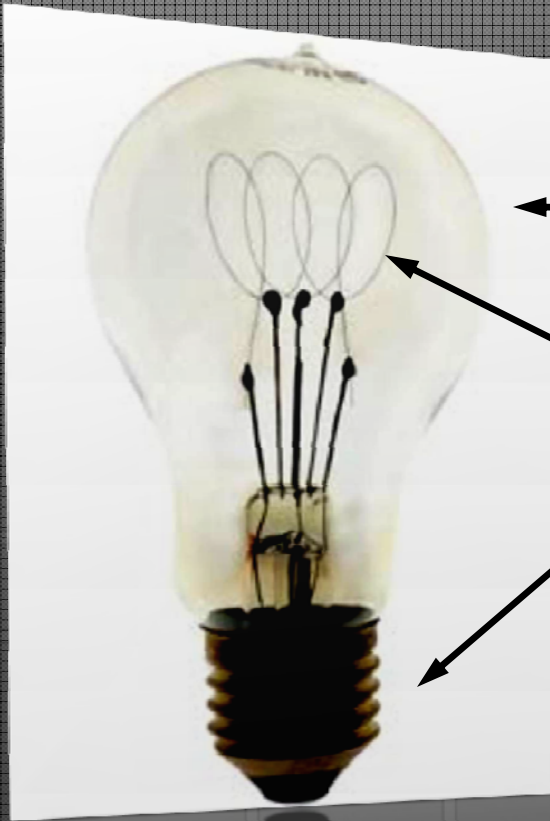






LIGHTSWITCH ARCHITECTURAL™

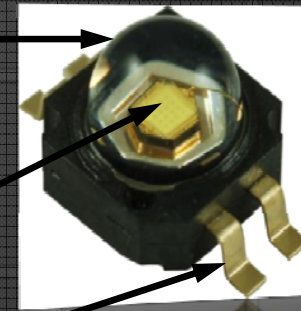
# Anatomy of a Lamp



Bulb

Filament

Base



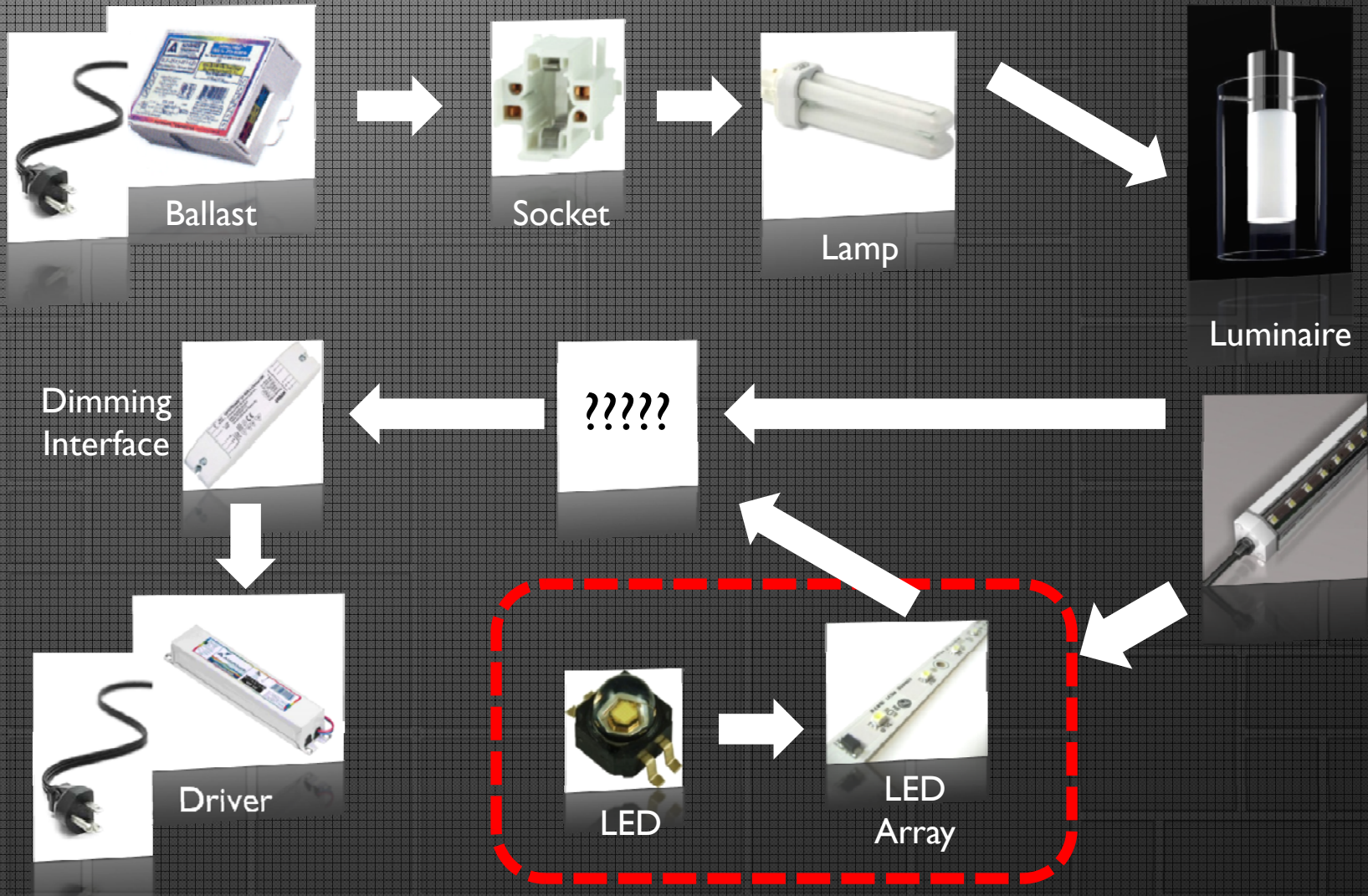
?????





LIGHTSWITCH ARCHITECTURAL™

# System Parts

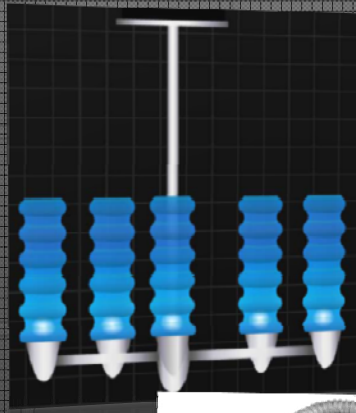




LIGHTSWITCH ARCHITECTURAL™

# SSL Lamp or SSL Luminaire?

How is the “Lamp” going to be changed?







## Lies, Lies, Lies...

- Actual Test:
- Luminaire data sheet indicates 13.3 W
- LM-79 Tests indicates 17 W
- Luminaire data sheet indicates 520 lm, 39 lm/W
- Actual luminaire performance 389 lm, 22.9 lm/W
- Difference:
  - 34% less light
  - 28% more power consumed
  - 70% less efficient



• **LM-79 TESTING IS REQUIRED!!!**



# Dimming...

Do you want it to dim?

- Accessories required
- Control protocol that will be used
  - 0-10v, 120v, Dali, DMX
- Where is all the hardware going to be located?
- Does the product dim as expected?







## the Wit hotel

- 27 story Hotel/Condo building
  - 1<sup>st</sup> – 5<sup>th</sup> Floor, Common Areas
  - 6<sup>th</sup> – 20<sup>th</sup> Floor, Guest Rooms
  - 21<sup>st</sup> – 26<sup>th</sup> Floor, Condo Floors
  - 27<sup>th</sup> Floor, Outdoor/Indoor Bar/Lounge
- Wanted to beat ASHRAE 90.1-2004
  - Maintenance and cost of running the building a major issue
- 3,500 linear feet of cove
  - Incandescent/Xenon
  - Fluorescent
  - Cold Cathode/Neon





# the Wit hotel

- Started with Manufacturer A
  - VE'd from the project
- Manufacturer B
  - Drivers every 16'-0", j-box every 32'-0"
  - DMX control for dimming
- Manufacturer C
  - Great color temperature
  - Solid binning statement
  - Serviceable





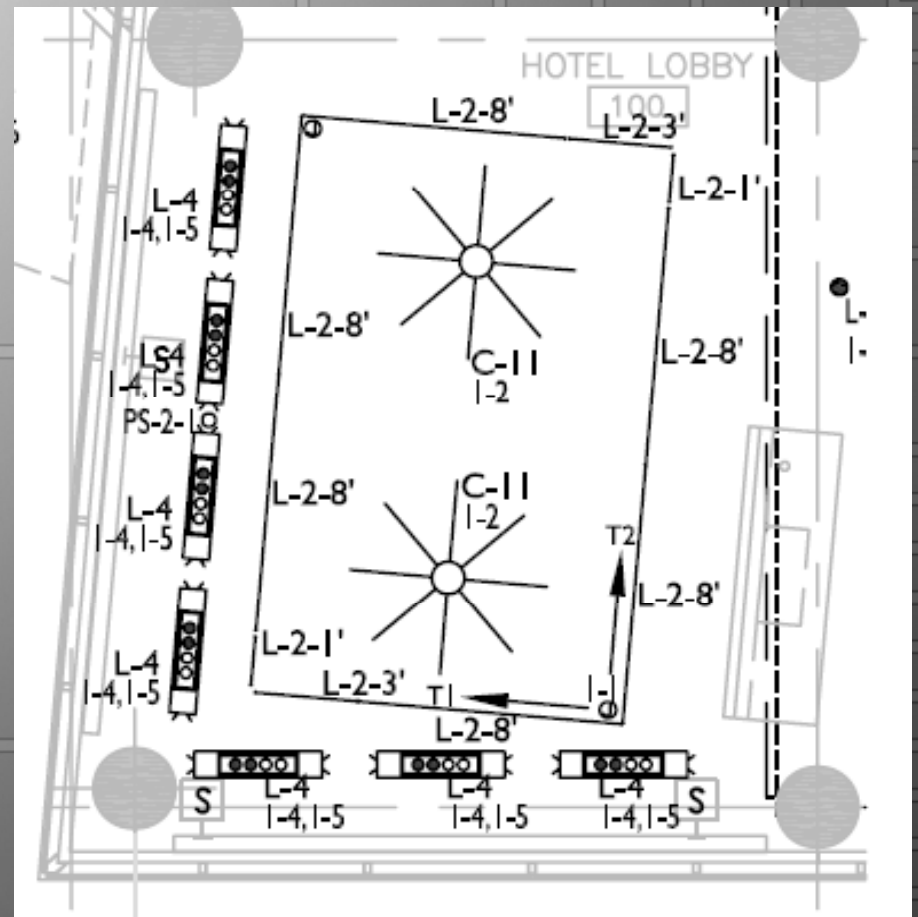
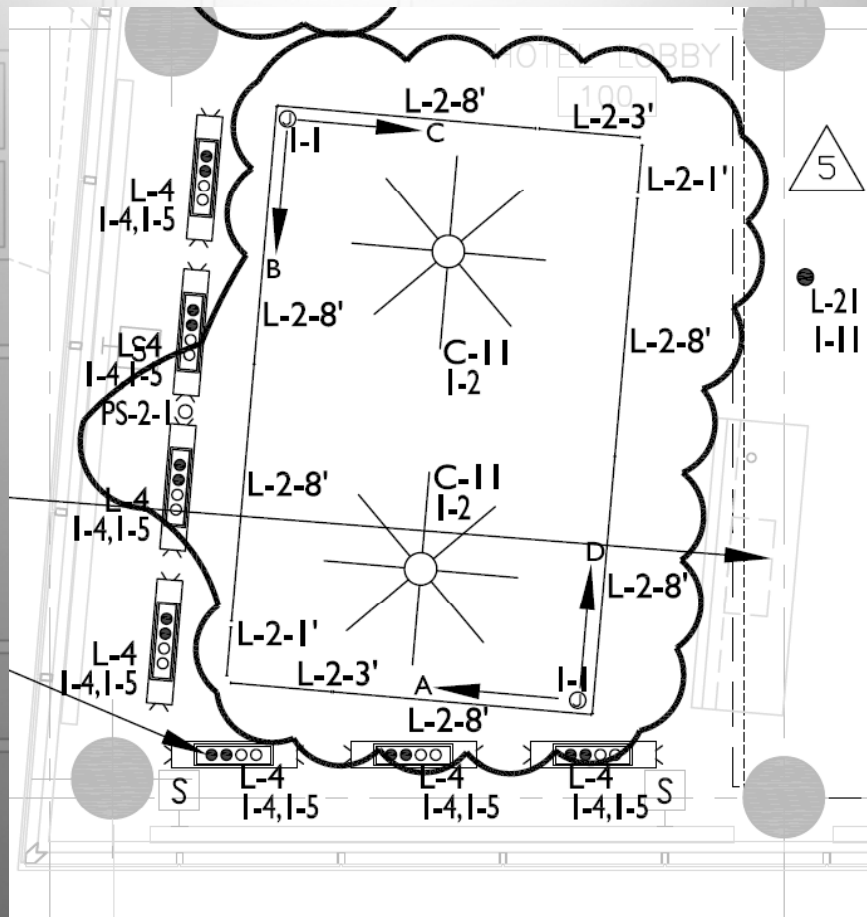
## the Wit hotel

- Back to Manufacturer A
  - Amazing photometrics
  - Required drivers every 8'-0" (j-box every 16'-0")
- Manufacture D
  - 12v low voltage track system, 300 watt transformers
  - Max run length 37'-0"
  - Track fixtures removable and replaceable
  - Simple dimming



LIGHTSWITCH ARCHITECTURAL™

# the Wit hotel



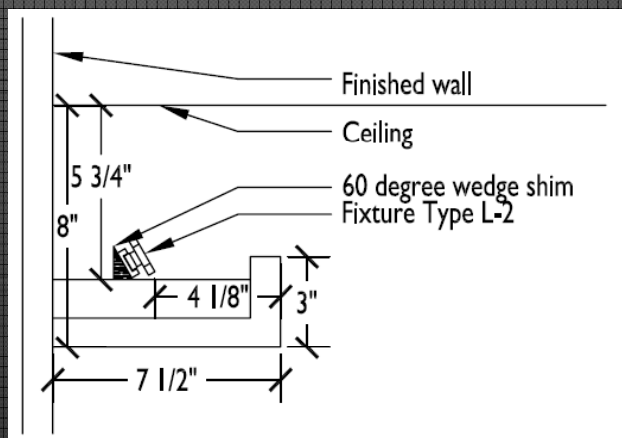




LIGHTSWITCH ARCHITECTURAL™

## the Wit hotel

- 3,500 Feet of linear track
- 10,500 SSL Track fixtures (4" centers)
- 46 Transformers
- \$150,000 Track, Fixtures, & Transformers
- Opens May 2009





# Luminaire Manufactures

- Luminaires need to be serviceable
- Miss-reading drawings creates bidding errors
- In Chicago you cannot pass 120v from fixture to fixture (depends on your inspector)
- Unreasonable payment requirements leads to VE
- 0-10v dimming is too complicated and costly
- You need to provide a complete system with all enclosures
- You need to provide locking, focusing adjustment





# Component Manufacturers

- Don't forget...you make a component, not a luminaire
- We need brighter LED's
- Make the LED's smaller
- LED binning, but...
- "How it's Made on LED's"
- Need a driver larger than 100 watts
- How about a dimming driver larger than 25 watts
- Let's use digital controls DALI, ACN, or 120v control







# Our SSL Requirements

- LM-79 Photometry
- See at least two samples of the same CCT
- Written *Luminaire* Binning policy
- Written *Luminaire* End of Life policy
- Energy Star & Lighting Facts Label
- Spares, Spares, Spares
- All system components from SSL manufacture with warranty and labor to fix/replace
- Commissioning and Dealer/Distributor Supplied

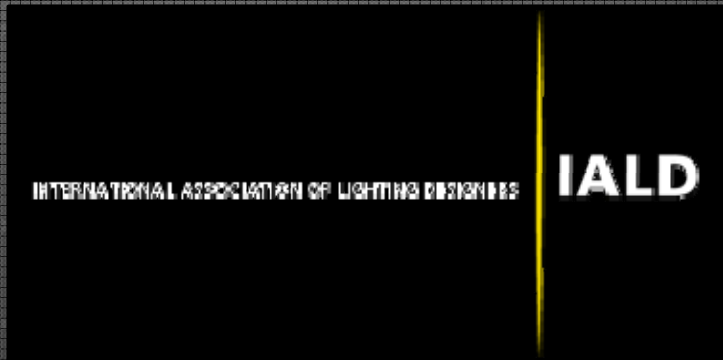






LIGHTSWITCH ARCHITECTURAL™

# Change is Coming







LIGHTSWITCH ARCHITECTURAL™

# Questions?



**CHICAGO**  
EARTH HOUR



[architecture.lightswitch.net](http://architecture.lightswitch.net)

312.288.8777

[amor@lightswitch.net](mailto:amor@lightswitch.net)