designing with LED
Longer Lasting/
Lower Maintenance

No ballasts to replace
Expect 20 years
Not all created equally*

White Light
vs
Yellow Light

Better visibility/peripheral vision
More represents daylight

Numerous
Possibilities

Tilt
Symmetric/Assymetric
Different Lumen packages
**EARLY LED**

- Used much less energy
  - > produced less light
- Not good distributions
- No High Mast Options
- Much more expensive than HPS

**CURRENT**

- Use slightly more energy
  - > better light output
  - Better coverage
- High Mast Options
- Price is evening out

**Improvement in Technology** . Good for ALL applications
IES RP-8-14 updates

- Luminaire Classification System (LCS/BUG Ratings)
- Luminance vs Illuminance
- Increased Pedestrian Guidance
- Veiling Luminance
- Adaptive Lighting
- **luminaire classification system**

BUG Ratings
LED unique design challenges

- **Glare**
  - Case Study

- **LLF and Design Life**

- **Multiple Options**
  - Requires more coordination

- **Utility Rates**
  - Metered services points
LED unique lighting benefits

- Dimming
- Adaptive/Controls
- Color Control
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