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# Building Bridges: Perspectives from the Lighting Designer Roundtable



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# Building Bridges: Perspectives from the Lighting Designer Roundtable

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## **Solid State Lighting – a future in lighting design?**

- **Its acceptance by the lighting design profession**
- **Strengths and limitations**
- **A look at design applications in the present and future**
- **Design Guide : Lighting Design with LED's**



**What do practicing lighting professionals think about solid state lighting?**

**Is anyone who knows what they are doing really specifying this stuff?**

**Is this a technology that will have a permanent home in architectural lighting design?**

**Does it hold as much promise for the profession as it is often reported?**



**Think design and functional excellence first!**

**Understand when and where a solid state lighting system is an appropriate tool for the job.**

**Assess its strength and weaknesses in each application as you would any other light source or luminaire.**

**Do not overestimate its charm or short change it for its limitations.**

**The future of the technology as a design tool is strong.**

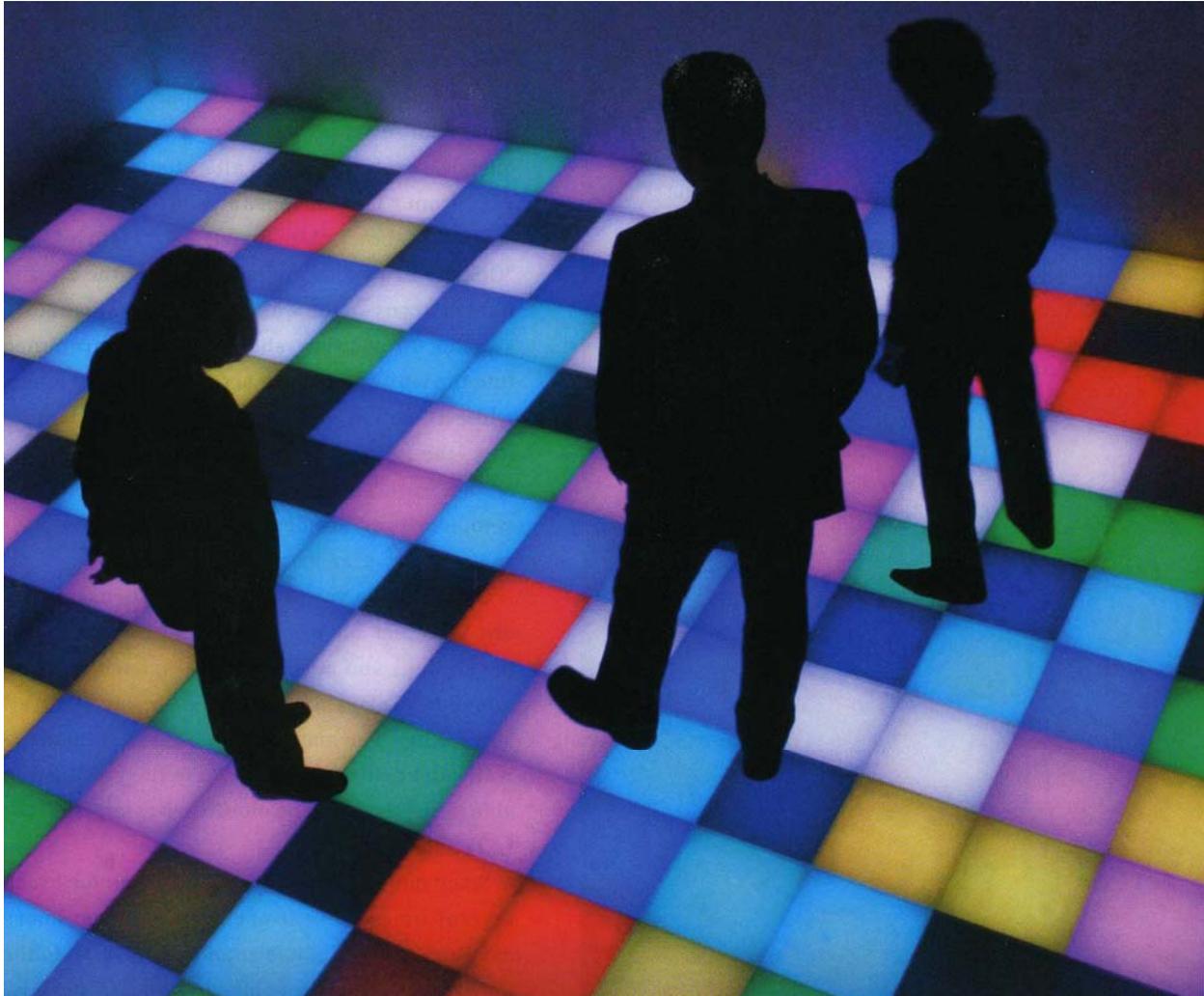


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# Design applications – present and future



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Spectacular LED  
applications get noticed





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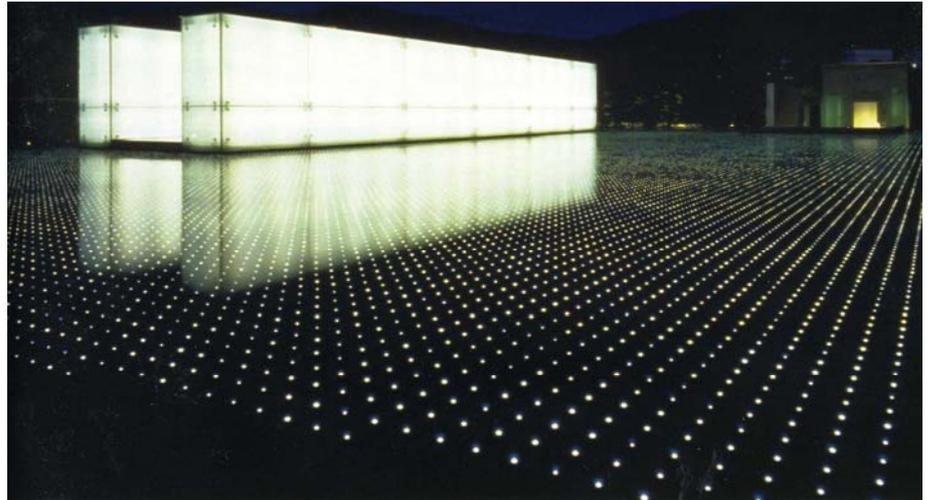
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Visual communication, art, and beyond



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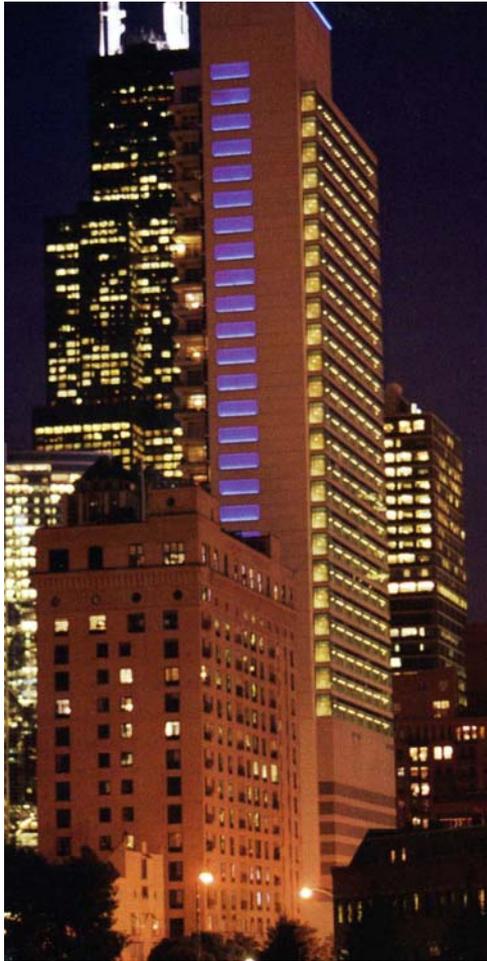


## Dynamic lighting environments





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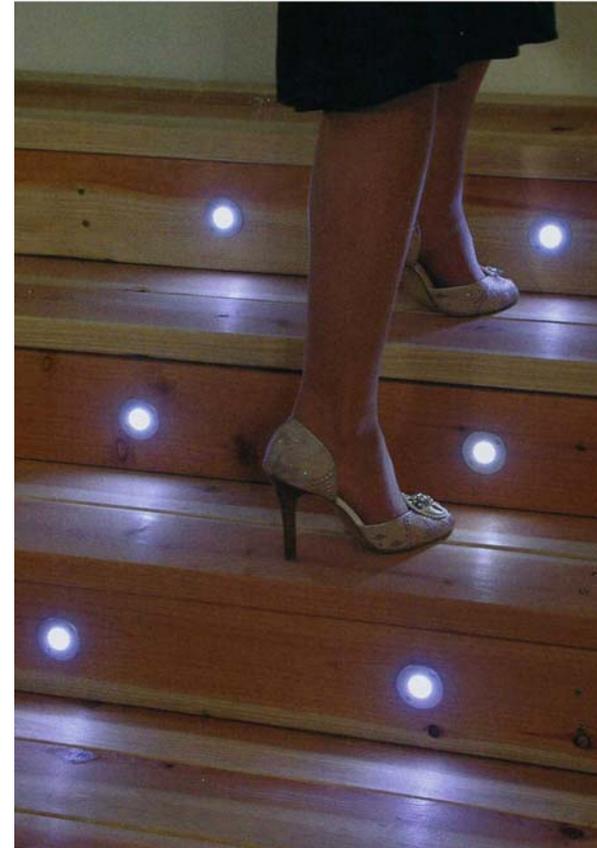


**Applications long the domain of more traditional sources now considering SSL sources**





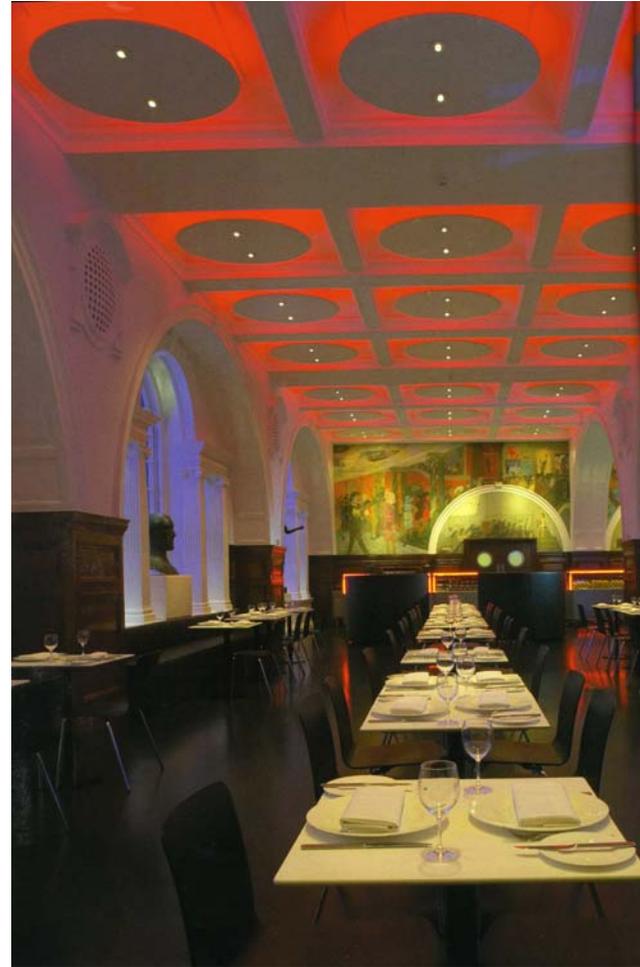
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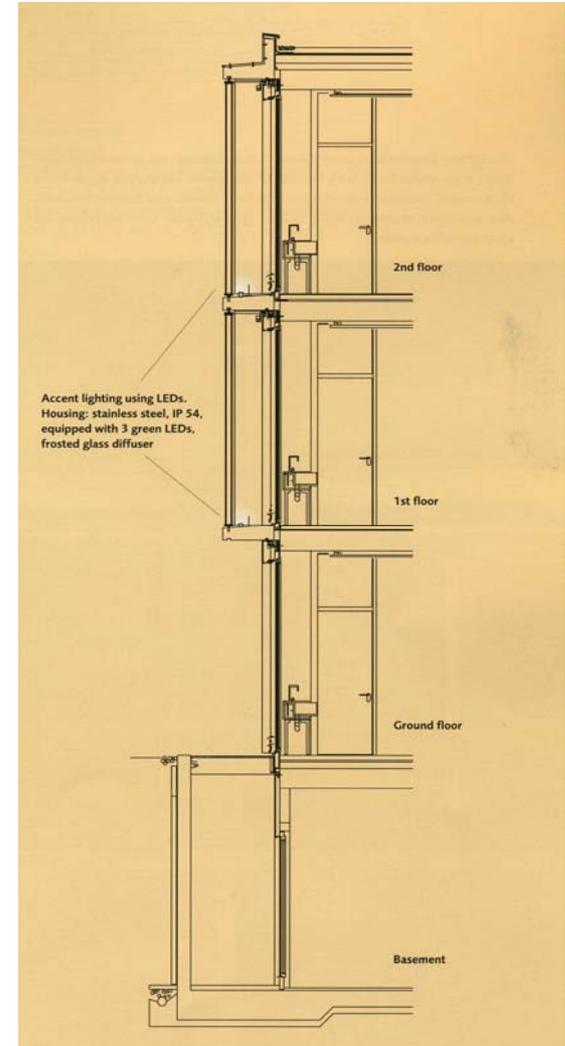
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Alexander Hamilton U.S. Custom House / Designer: Randy Sabers, R/S Lighting Design

It is not always  
about the color!





## Architectural integration



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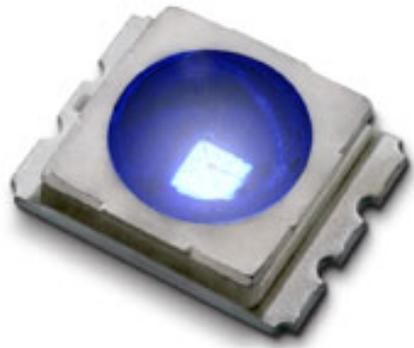


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# Design Guide (DG-XX): Lighting Design With LEDs



Eric Richman (PNNL)  
Samantha LaFleur (Atelier Ten)  
Ruth Taylor (PNNL)





# Why?

- Focus efforts on achievable, marketable products
- Create a common vocabulary for specifiers & manufacturers
- Educate potential users about the good & bad
- Raise good questions for better results
- Drive the market to improve the luminaires



# Who is the intended audience?

- Electrical contractors
- Design / build contractors
- General Specifiers
- Architects
- Product sales people
- Research & Development people

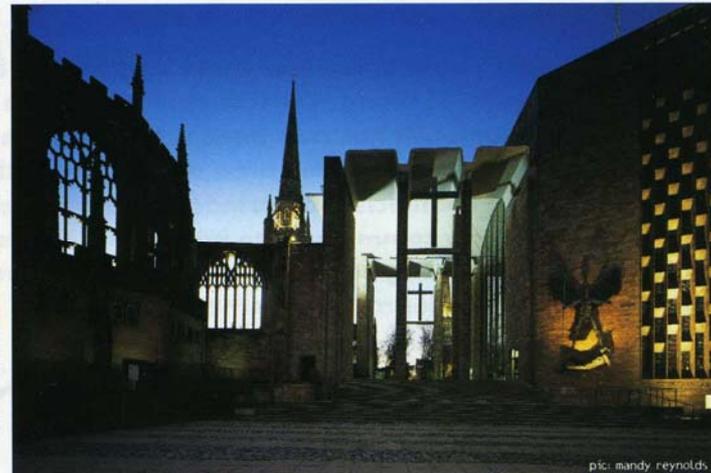


# An Overview of the Guide

- Content and section organization
  - Technical information:
    - Performance
    - Special characteristics
    - Application Challenges
  - Design guidance:
    - Specific application
    - Space type
    - Building type



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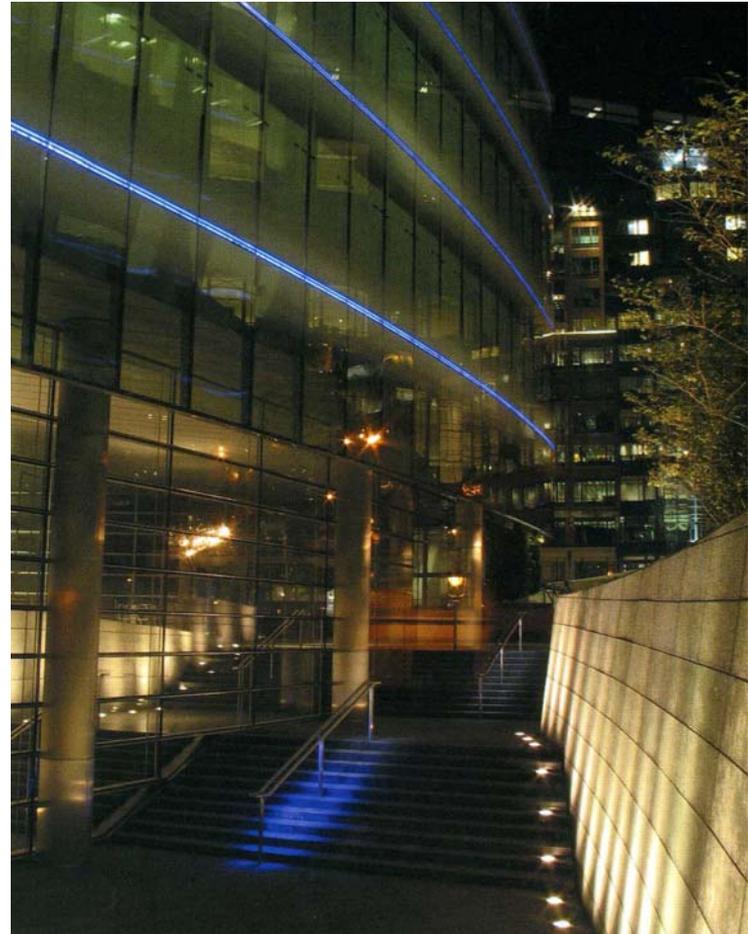


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# LED Performance

- Measuring LED Performance
  - Absolute vs. Relative Photometry
  - Performance Standards
- Light Output
  - Color Quality
  - Correlated Color Temperature (CCT) and Color Rendering Index (CRI)
  - Color Compatibility



# More on LED Performance

- Energy Efficiency
  - Measured LED Luminaire Performance
  - Calculated Traditional Luminaire Performance for Comparison
  - Comparing LED Energy Efficiency to Traditional Light Sources
  - Relating Energy Efficiency to LED Color Characteristics
- Thermal Management
- Product Life



# Special Characteristics

- Controllability
- Directionality
- Size
- Durability
- Cold Temperature Operation
- Instant on/ Rapid Cycling
- No UV Emissions/Little Infrared
- Environmental Impact





# Application Challenges

- Glare
- Flicker
- Color Consistency
- Product Cost
- Product Claims

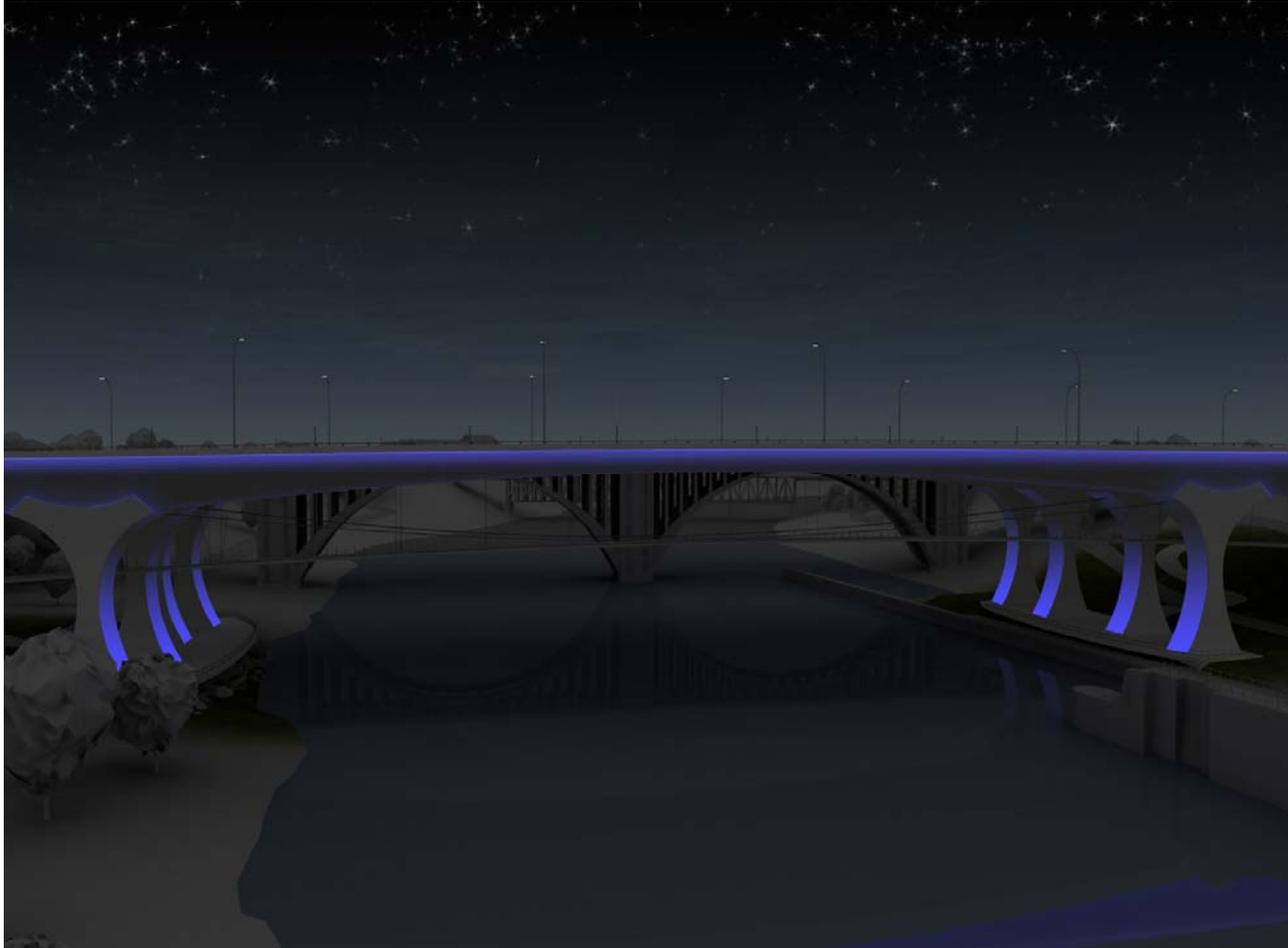


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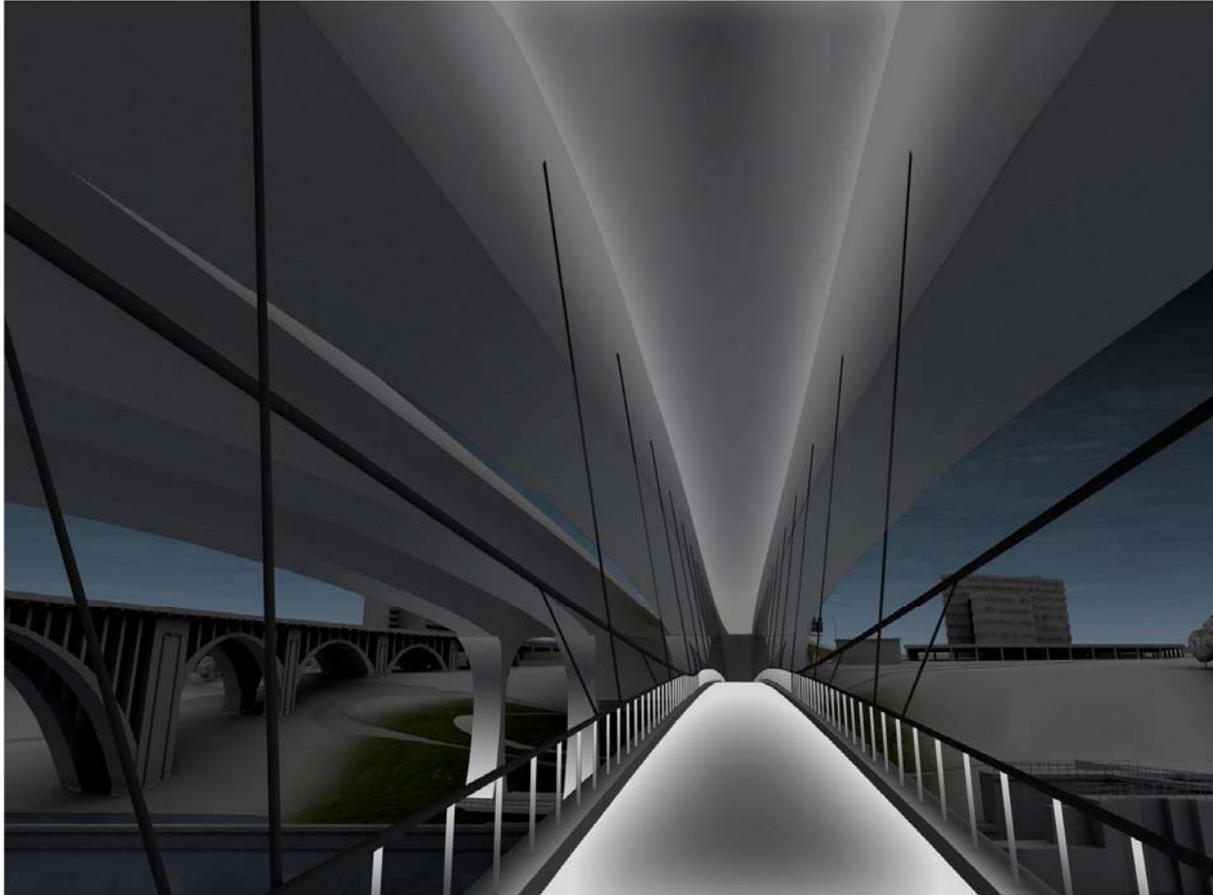


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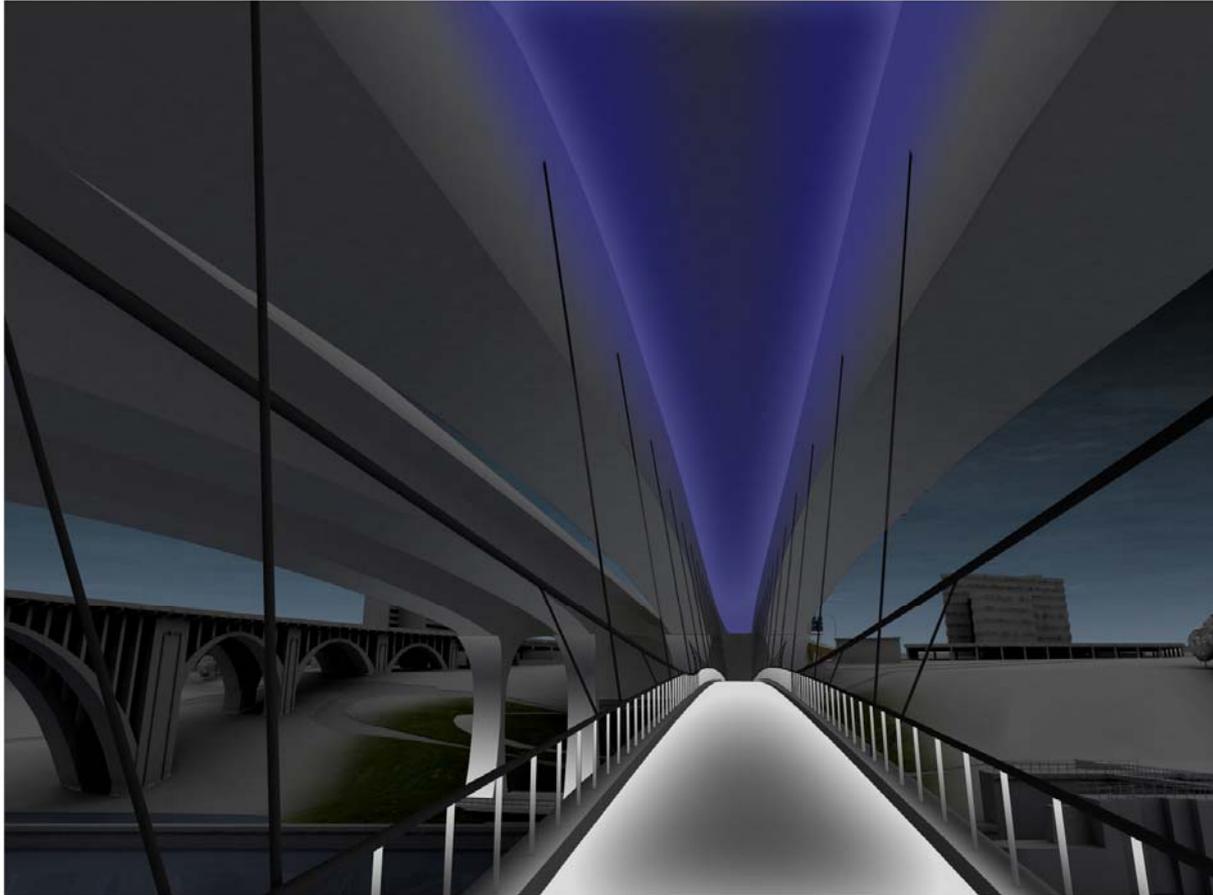


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Thank you