

Designer Lighting Forum

ARCHITECTURAL DECORATIVE LIGHTING IN AN SSL WORLD

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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

Learning Objectives

At the end of this course, participants will learn about:

1. What is architectural decorative lighting?
2. Changing times (in the lighting industry)
3. Solid State Lighting
4. Design & Development process
5. Communication with A&D community

1. What is architectural decorative lighting?

- a) Definitions
- b) A short history of architectural decorative lighting
- c) Role of commercial decorative lighting



con·tem·po·rar·y [kən'tempə,rerē] *adjective*

Belonging to or occurring in the present

ar·chi·tec·tur·al [är-kə-'tek-chə-rəl] *adjective*

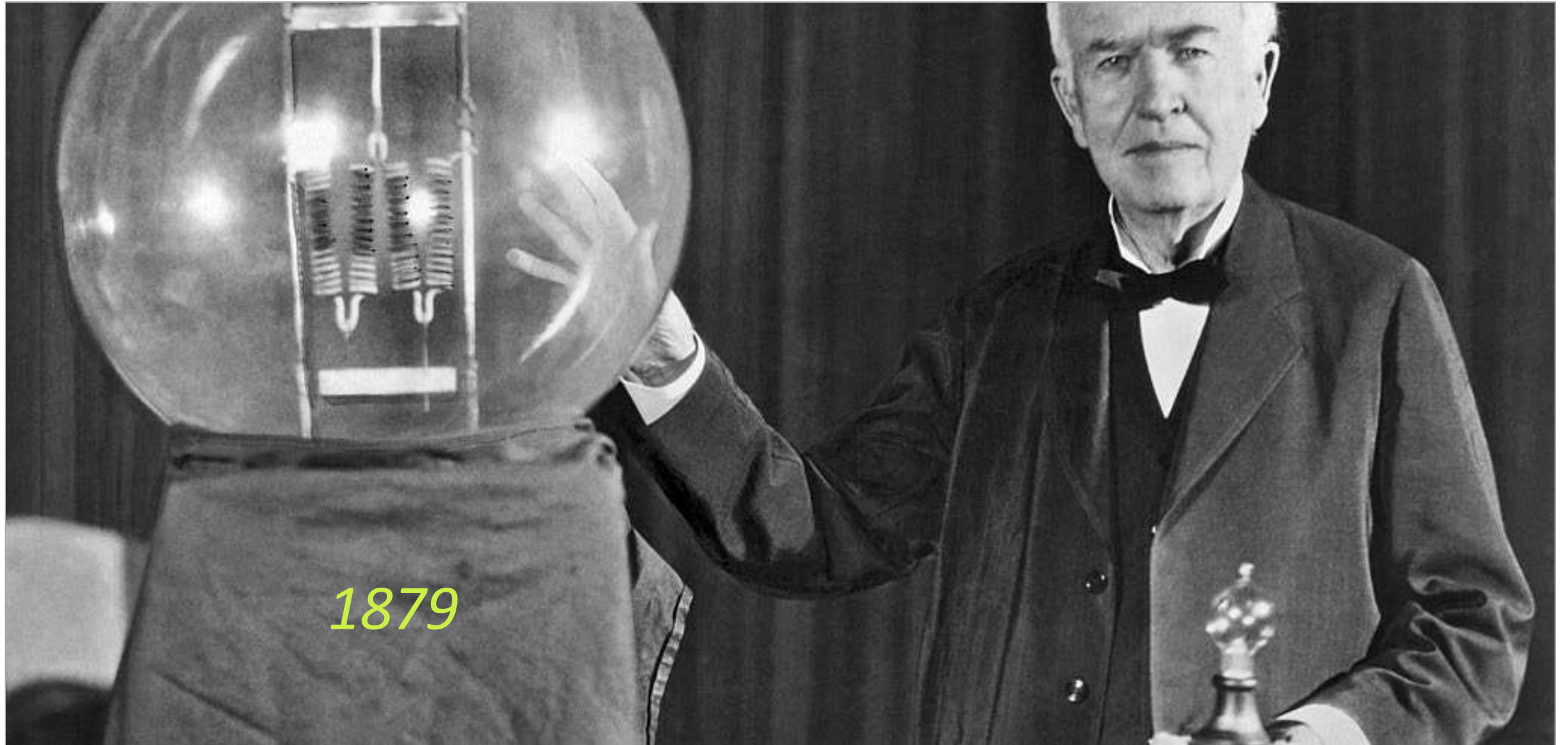
Bearing a resemblance to building

dec·o·ra·tive [de-k(ə-)rə-tiv] *adjective*

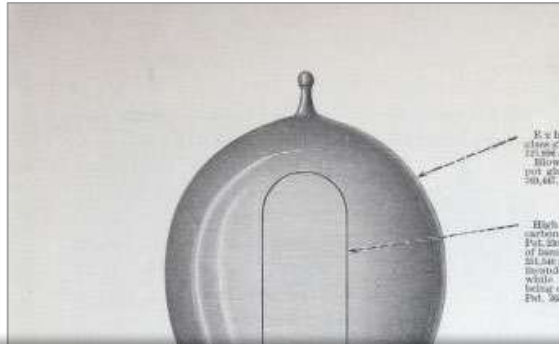
Serving to make something look more attractive

de·sign [di-'zīn] *verb*

Decide upon the look and functioning



Thomas Edison - Golden jubilee anniversary - 1929, with a replica of his first successful incandescent lamp.



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mellow light, absolutely steady and equal to or exceeding in brilliancy the illuminating power of a jet of gas of the quality.

With the use of this form of lamp, the absolute subdivision of the electric current into various units of light is perfectly secured.

The Edison system supplies lamps of 4, 6, 8, 10, 13, 16, 24, 32, 50, 100, 150 and 250 candle power, which can be used at any point throughout

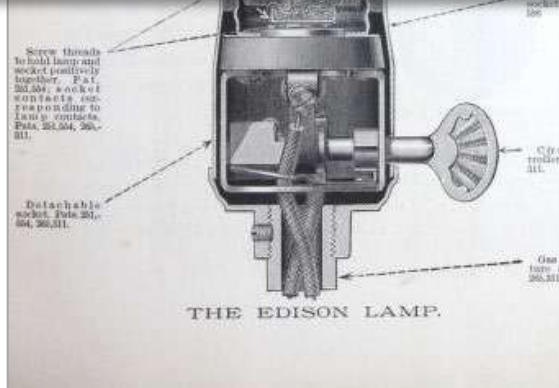
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amount of light. It does not flicker; it does not vitiate the atmosphere; it shows colors in their natural hues, and does not hurt the eye.

ADVANTAGES OF THE INCANDESCENT LIGHT.

THE Edison Incandescent Lamp is the refinement of artificial illumination. As a light for interiors it possesses the following advantages:

“...light becomes to all a necessity rather than a Luxury.”



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problem of artificial light.

ular, and as these manifold advantages are especially appreciated by each individual user, the light becomes to all a necessity rather than a luxury, and, once adopted, it is seldom abandoned, however the user may view its cost as compared with other illuminants.

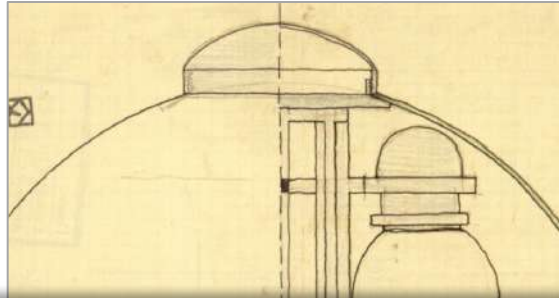
In the case of the electric light, nothing is sent into the bulb but energy, whereby the light is produced, and a very small amount of heat, about 6½ per cent, as compared with

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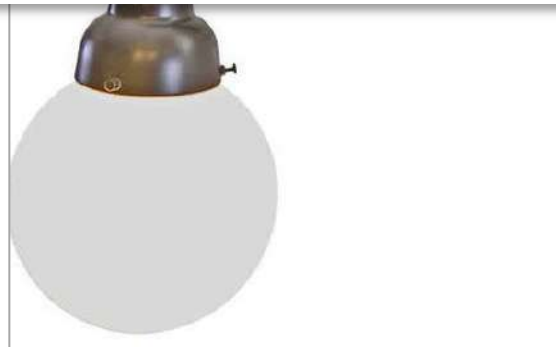
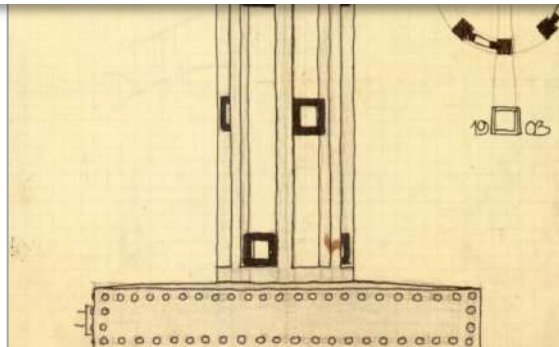
one-twentieth part that given by gas, and about one-fourth that given off by tallow candles. In fact, so little heat emanates

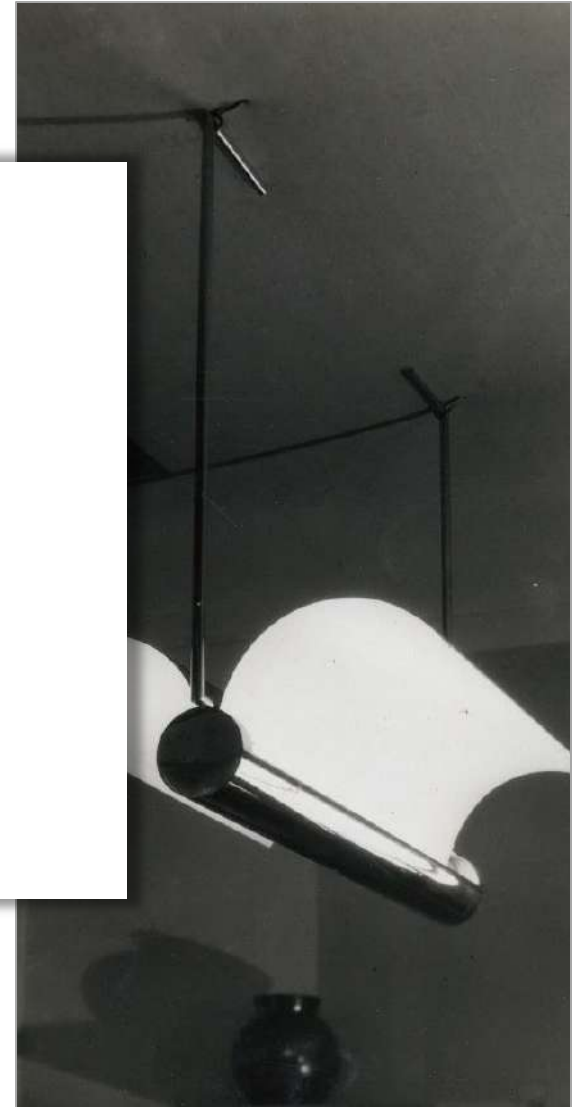
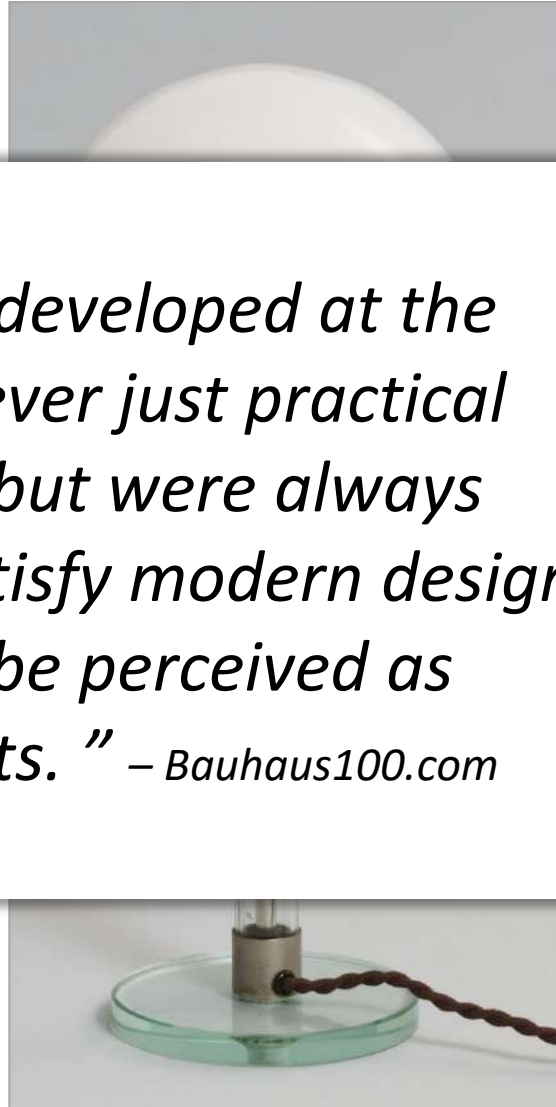
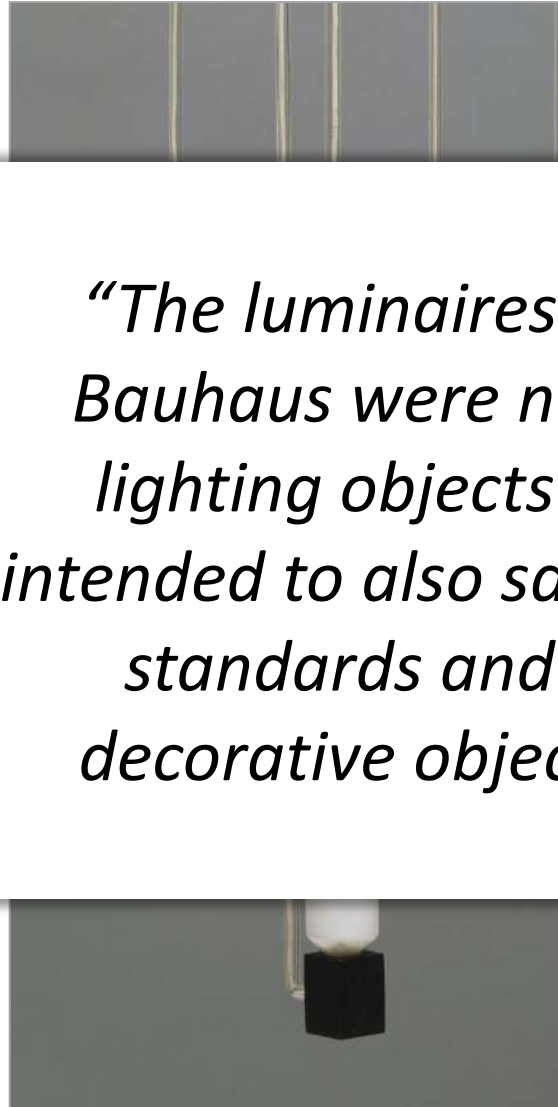


Josef Hoffmann

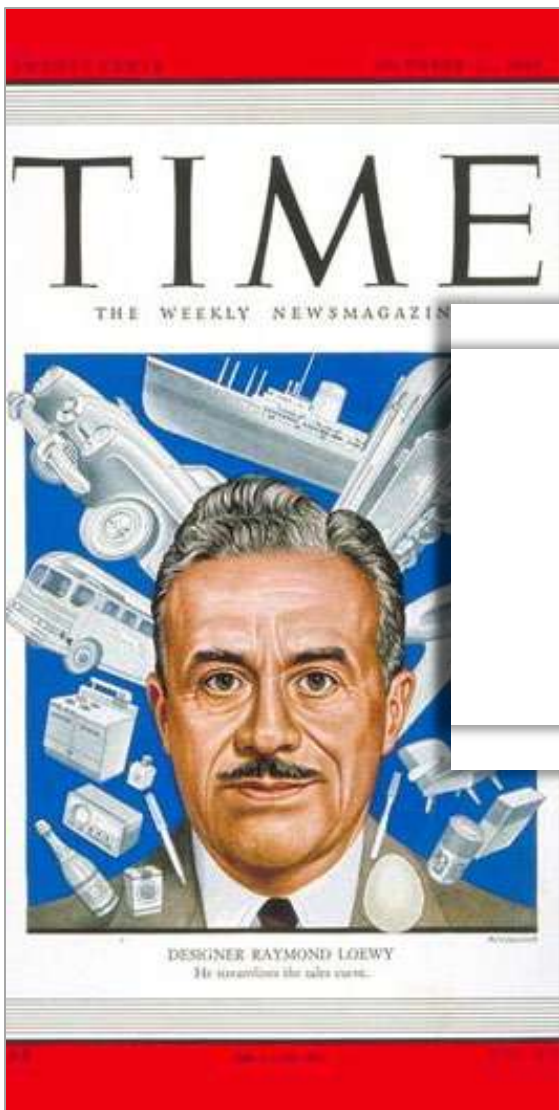


“... that has been misunderstood. Form and function should be one, joined in spiritual union” – Frank Lloyd Wright

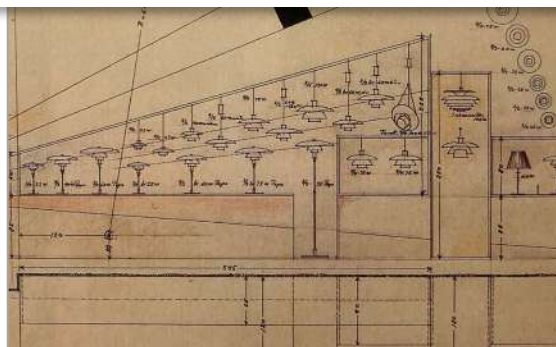




“The luminaires developed at the Bauhaus were never just practical lighting objects but were always intended to also satisfy modern design standards and be perceived as decorative objects.” – Bauhaus100.com

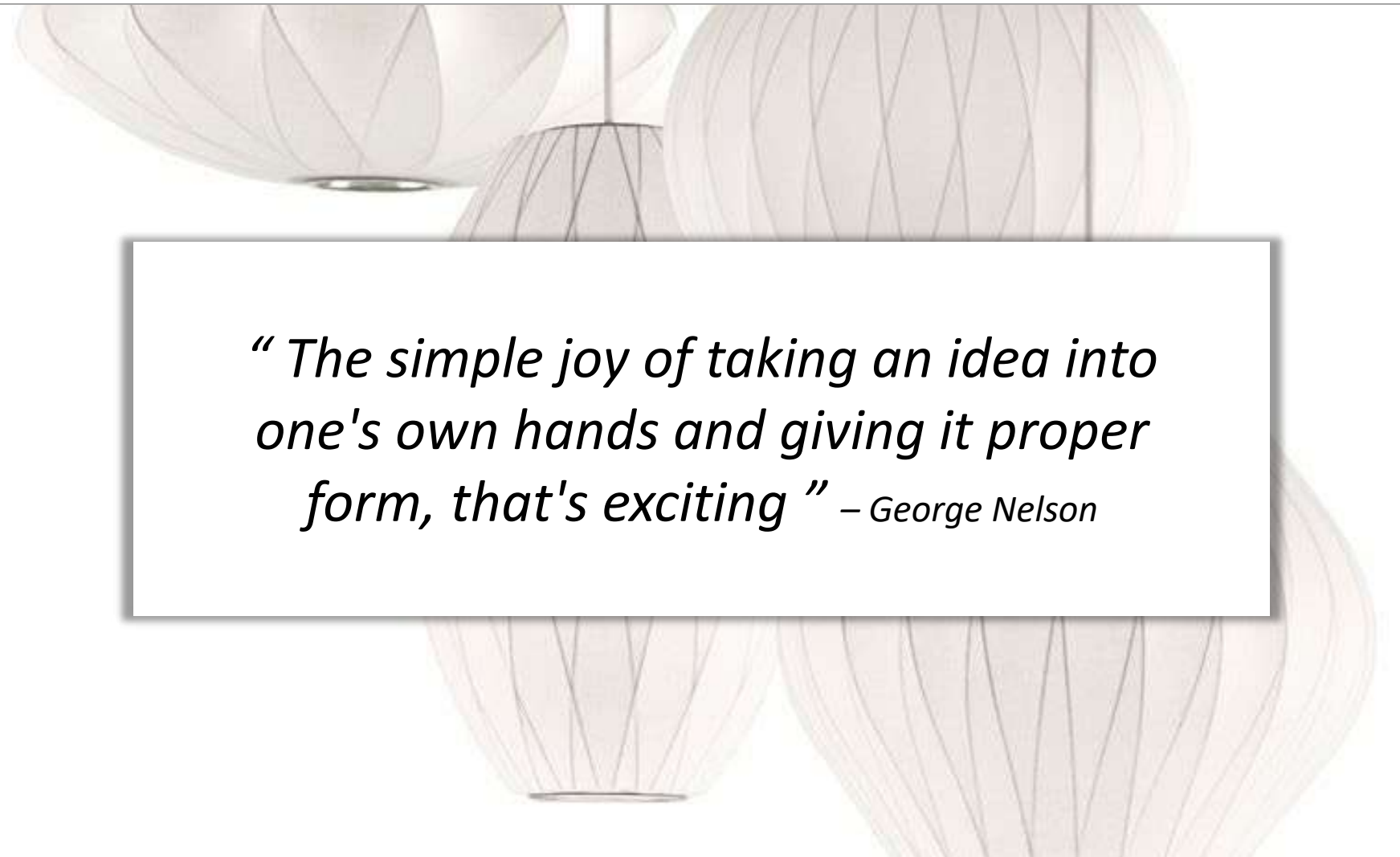


“The most beautiful curve is a rising sales graph” – *Raymond Loewy*





PH Artichoke by Poul Henningsen in 1958

A photograph of several white, bubble-shaped hanging lamps with a ribbed texture, suspended from the ceiling. The lamps are arranged in a cluster, with some in the foreground and others in the background, creating a sense of depth. The background is a plain, light color.

“ The simple joy of taking an idea into one's own hands and giving it proper form, that's exciting ” – George Nelson

*“ The technician should never forget
that he is an artist, the artist never that
he is a technician ” – Poul Henningsen*

Sightron

"It's like a shaft of sunshine on my ceiling!" That's how you will describe your Sightron. Finely ribbed side and bottom surfaces erase lamp images and uniformly diffuse light over the entire surface. The shield is one-piece styrene plastic that won't chip, crack or discolor. Triple-chromium plated end caps blend with your appliances and trim. The modified parabolic inside reflector directs glare-free light to the farthest corners. Because this smart fixture is entirely enclosed, it always looks clean and fresh. Little wonder Sightron was chosen by the Museum of Modern Art for a *Good Design* award!

*7122: 2 lights--20W. fluorescent lamps. Length 26½". Width 7½". Depth 4". Low power factor.

*7123: 2 lights--25W. fluorescent lamps. Length 33½". Width 7½". Depth 4". Low power factor.

*7124: 2 lights--40W. fluorescent lamps.

"Its like a shaft of sunshine on my ceiling"

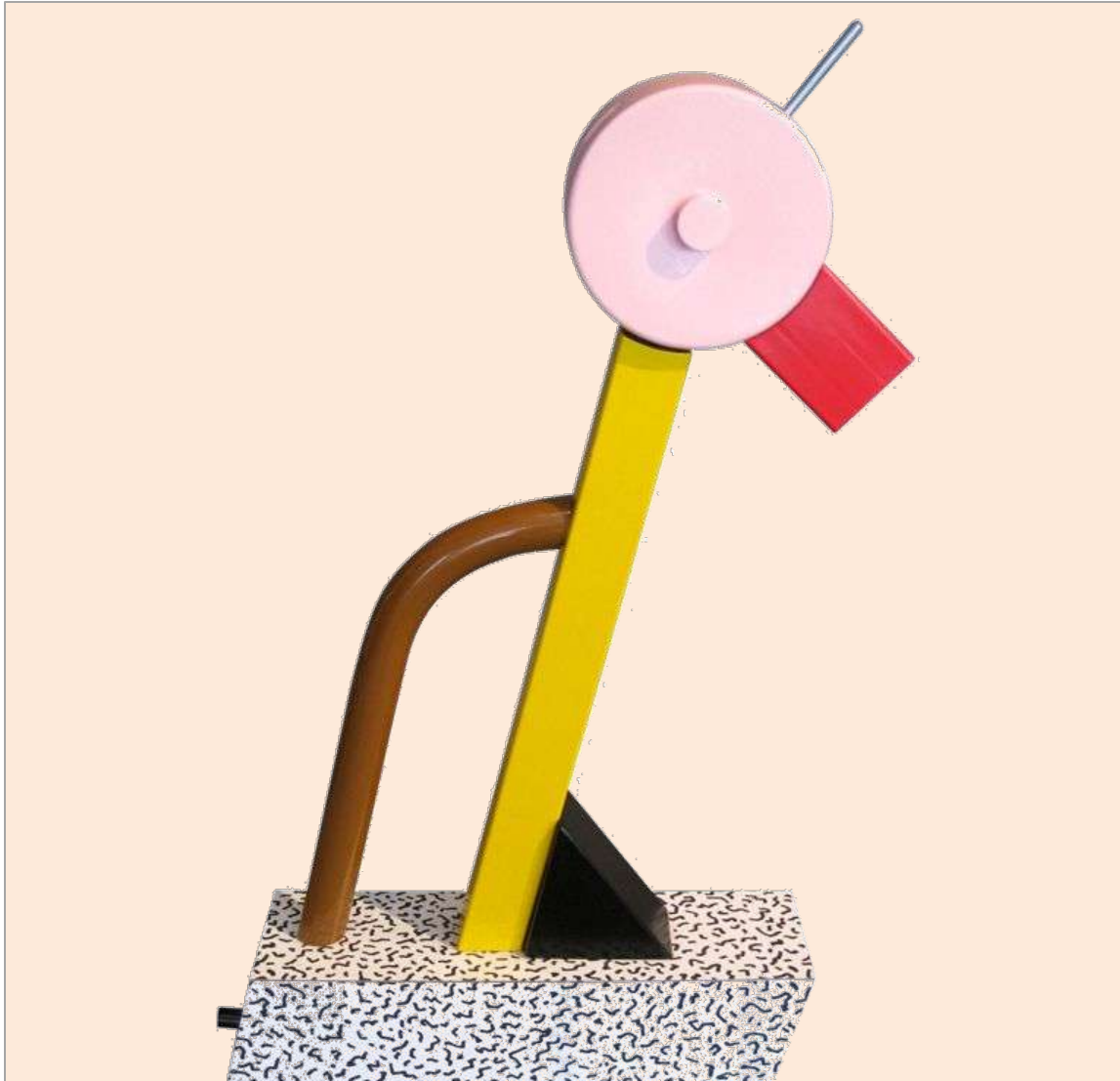


7124



7123





Sottsass; Michele De Lucchi and Giancarlo Piretti in 1986

Role of Architectural Decorative lighting

- Accent
 - Levels of light
 - Highlight features in architecture
- Ambient
 - General lighting
- Design Feature
 - Architecture or Interior Design feature
 - Designer statement
- **Hypothesis**
 - **Architectural = Decorative**
 - **Functional = Beautiful**



2. Changing times (in the lighting industry)

- a) Trends in lighting & interior design
- b) Design statements – Design vehicles
- c) Adaptable A-Types
- d) Ecological design



Trends in lighting & interior design

- Open office + more
- Product life cycle & lifetime shortening?
- Design trends influenced by WWW (global access & small trends spread fast)
- Knock-offs, cost reductions, manufacturing expertise

Design statements – Design vehicles

- Lighting as vehicle for company Brand
- Lighting as vehicle for Architect or Designers Brand
- Lighting for the people (end-user)
- No statement





Adaptable A-Types

- Designers configuration
 - Adaptable to project needs
 - Integration to architecture
- Different ... but not really
 - Classic shapes and geometrics
 - Scale reduced to match source
 - Direct & indirect and everything in between
 - Cost

Ecological design

- Quality vs disposability
 - Award winning design
 - Classic shapes (less fashion)
 - Recyclability
 - Reduced materials
- Electrical consumption gains+
 - LED & Electronics lifetime
 - LED performance (lm/w)
 - Fixture efficiency
 - LEED, WELL, DLC, TITLE 24



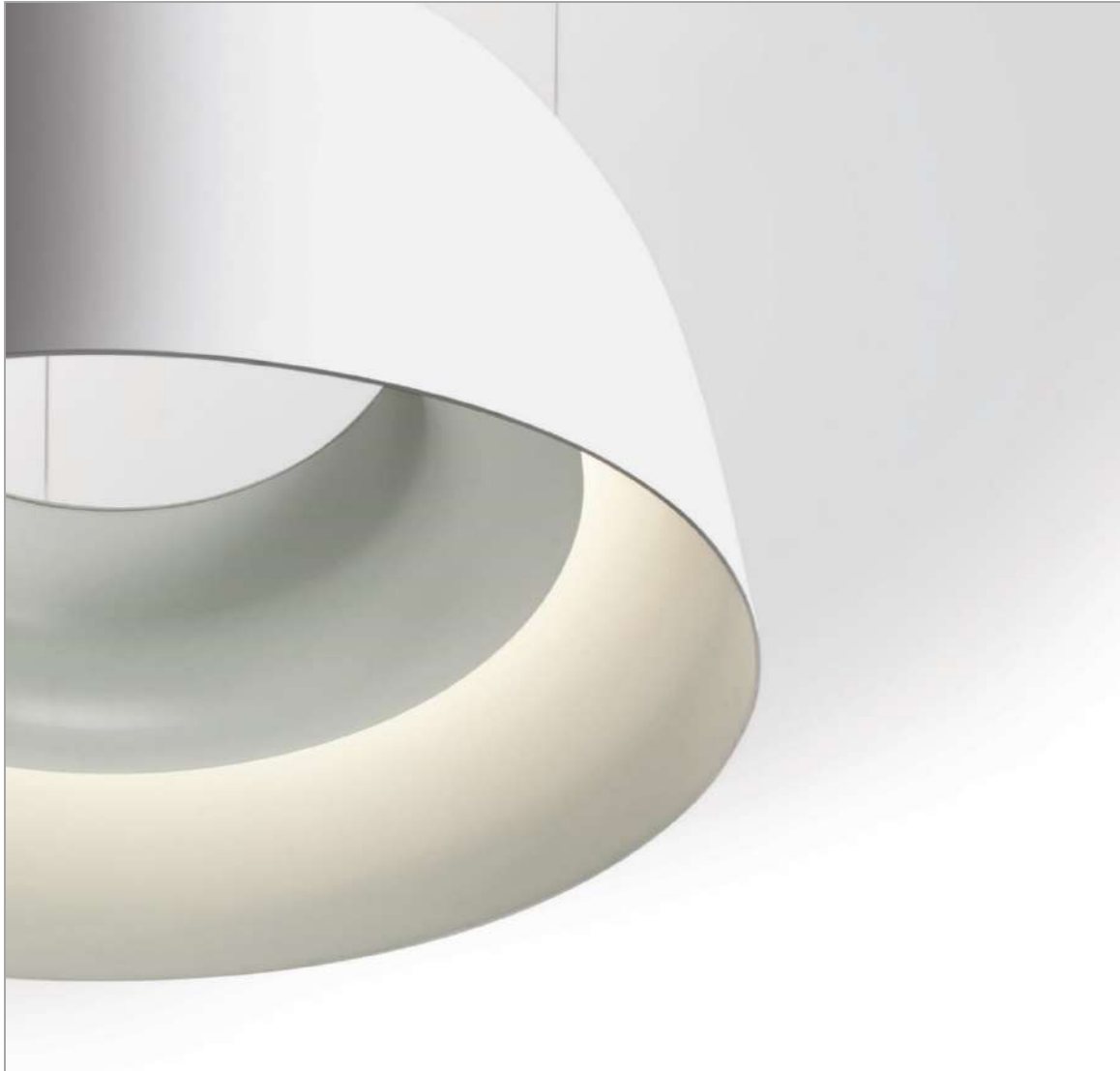
3. Solid State Lighting

- a) Light engines, optics and more
- b) Fixture performance
- c) Control protocols
- d) IoT possibilities

Light engines, optics and more

- LED types
 - Discreet (Low, Mid & High Power, CSP, Colors)
 - COB
 - OLED
- Optics
 - TIRs, Reflectors, Lenses
- Light Guides
- Diffuser material
- Outdoor
 - IPXX vs Wet
 - Finishes
- Thermal Management





Fixture performance

- Color performance
 - Precise CCT and CRI
 - Color tuning & Warm Dimming
- Efficiency – source and fixture
 - lm/w
 - lm/\$
- Acoustics, accessories, material & finish quality
- Certification
 - LEED, WELL, IP, Darksky, LM-79, title 24, DLC

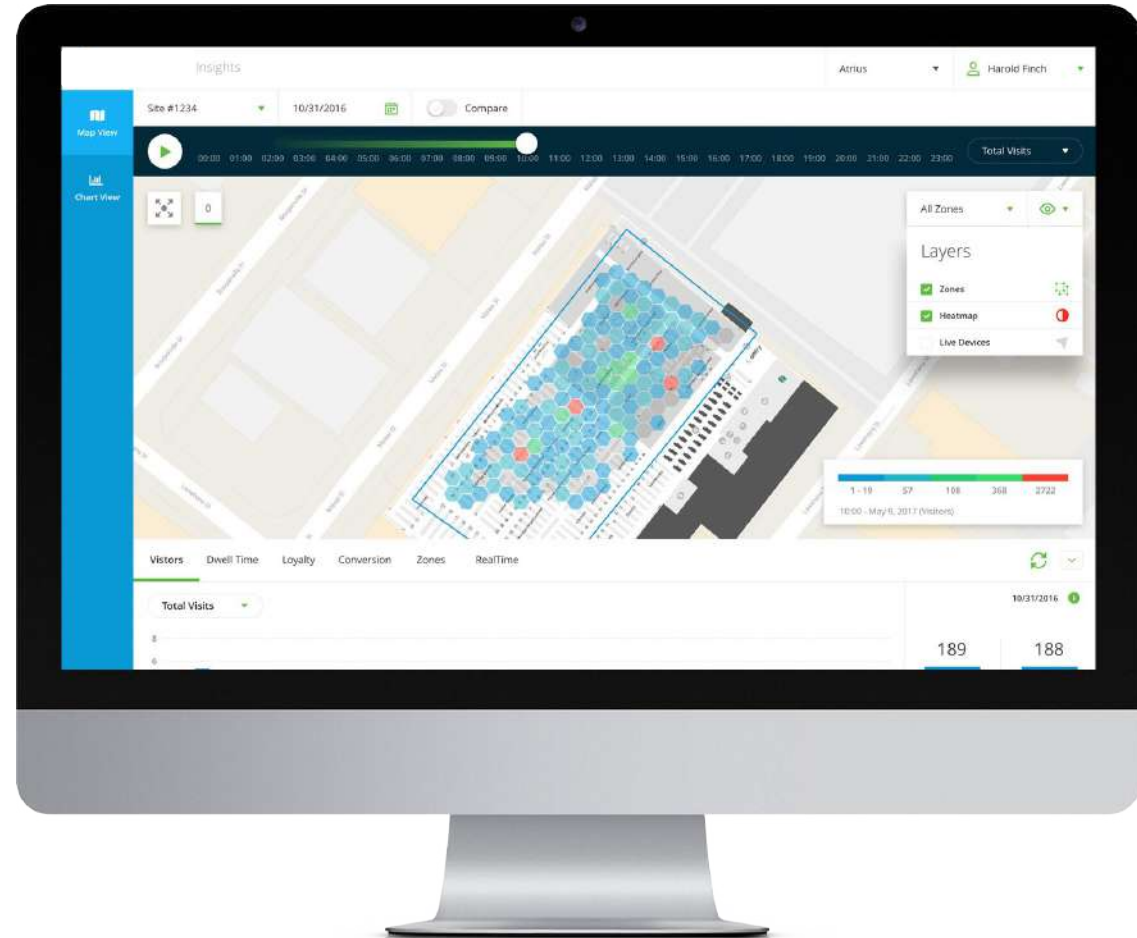


Control protocols

- 0-10V
- Phase Dim
- DALI
- Bluetooth mesh
- Zigbee
- Wifi
- Other proprietary systems

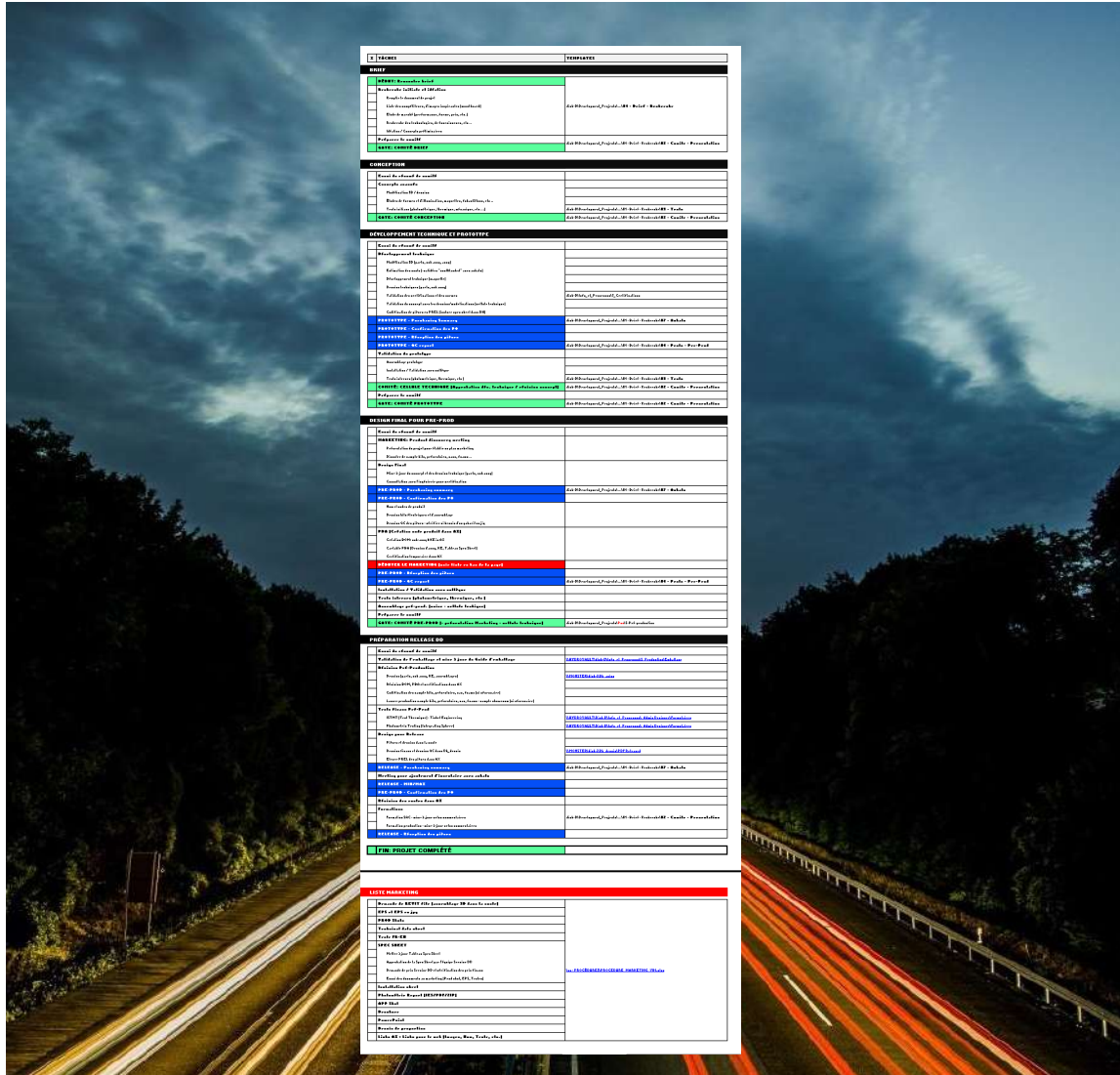
IoT possibilities

- Sensors
 - Motion & Light detection
 - Indoor positioning
 - Asset tracking
 - Contextual Spatial Analytics
 - Gestural control
 - Lifetime tuning
 - Big data
- Alternative power approaches
- Motorization
- PoE
- LIFI



4. Design & Development process

- a) Stages of development
- b) Industrial design & engineering realities
- c) Manufacturing constraints
- d) Certifications, regional standards & testing
- e) Custom lighting
- f) Fast, cheap, design (pick 2)

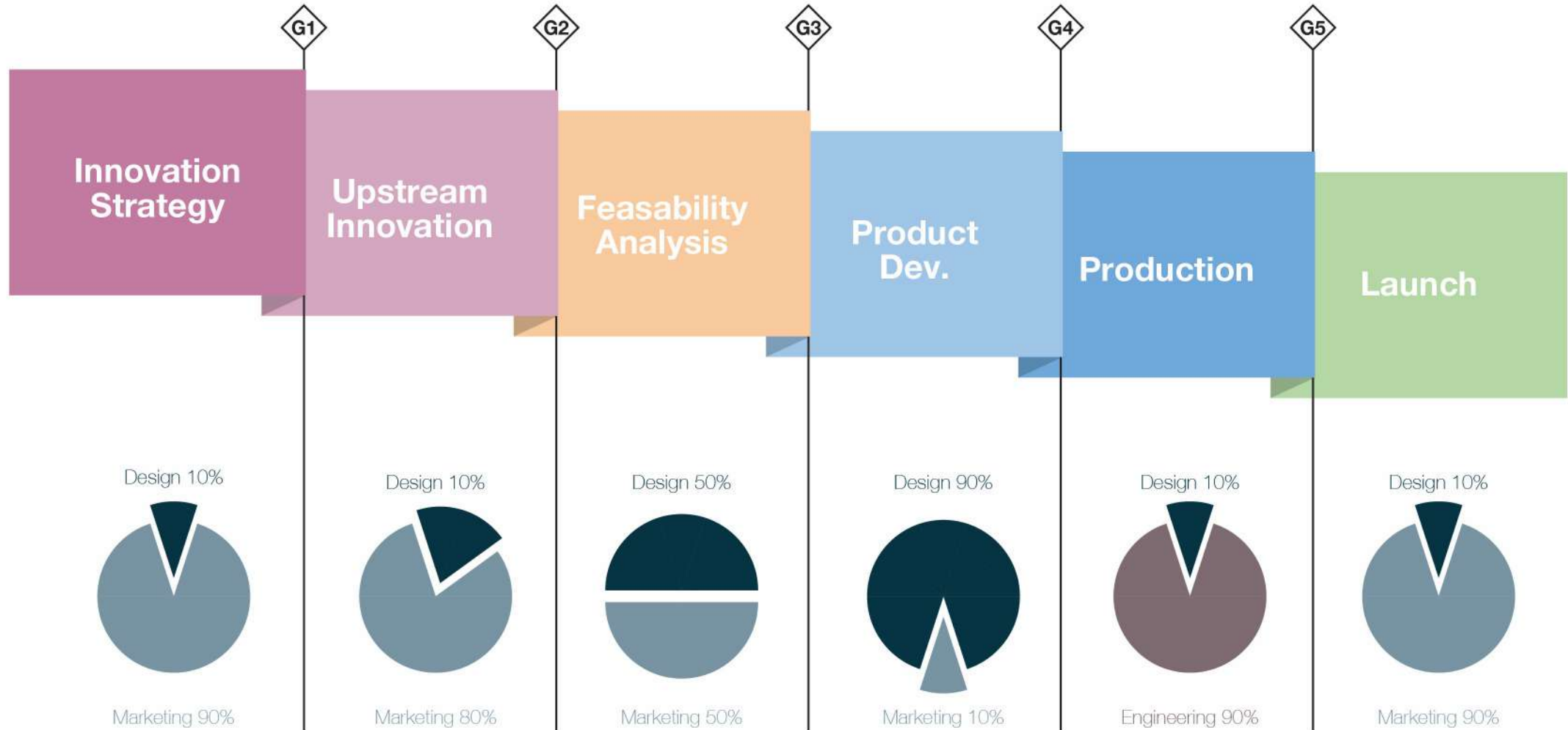


LORECS	TEMPORIS
BRIEF	
<input type="checkbox"/> Define business goals	
<input type="checkbox"/> Conduct SWOT analysis	
<input type="checkbox"/> Develop business plan	
<input type="checkbox"/> Define KPIs and metrics	
<input type="checkbox"/> Identify risks and opportunities	
<input type="checkbox"/> Develop financial projections	
<input type="checkbox"/> Obtain funding	
<input type="checkbox"/> Set up legal structure	
<input type="checkbox"/> Launch MVP	
CONCEPT	
<input type="checkbox"/> Develop MVP	
<input type="checkbox"/> Conduct market research	
<input type="checkbox"/> Develop business model	
<input type="checkbox"/> Define target audience	
<input type="checkbox"/> Identify key features	
<input type="checkbox"/> Develop user stories	
<input type="checkbox"/> Create wireframes	
<input type="checkbox"/> Develop prototype	
<input type="checkbox"/> Conduct user testing	
<input type="checkbox"/> Refine MVP	
DEVELOPING TECHNOLOGY PROTOTYPE	
<input type="checkbox"/> Define requirements	
<input type="checkbox"/> Conduct market research	
<input type="checkbox"/> Develop business model	
<input type="checkbox"/> Define target audience	
<input type="checkbox"/> Identify key features	
<input type="checkbox"/> Develop user stories	
<input type="checkbox"/> Create wireframes	
<input type="checkbox"/> Develop prototype	
<input type="checkbox"/> Conduct user testing	
<input type="checkbox"/> Refine MVP	
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<input type="checkbox"/> Conduct market research	
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<input type="checkbox"/> Define target audience	
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<input type="checkbox"/> Create wireframes	
<input type="checkbox"/> Develop prototype	
<input type="checkbox"/> Conduct user testing	
<input type="checkbox"/> Refine MVP	
<input type="checkbox"/> Develop MVP	
DESIGN FINAL PRODUCTION	
<input type="checkbox"/> Define requirements	
<input type="checkbox"/> Conduct market research	
<input type="checkbox"/> Develop business model	
<input type="checkbox"/> Define target audience	
<input type="checkbox"/> Identify key features	
<input type="checkbox"/> Develop user stories	
<input type="checkbox"/> Create wireframes	
<input type="checkbox"/> Develop prototype	
<input type="checkbox"/> Conduct user testing	
<input type="checkbox"/> Refine MVP	
<input type="checkbox"/> Develop MVP	
<input type="checkbox"/> Conduct market research	
<input type="checkbox"/> Develop business model	
<input type="checkbox"/> Define target audience	
<input type="checkbox"/> Identify key features	
<input type="checkbox"/> Develop user stories	
<input type="checkbox"/> Create wireframes	
<input type="checkbox"/> Develop prototype	
<input type="checkbox"/> Conduct user testing	
<input type="checkbox"/> Refine MVP	
<input type="checkbox"/> Develop MVP	
PREPARING FOR RELEASE	
<input type="checkbox"/> Define requirements	
<input type="checkbox"/> Conduct market research	
<input type="checkbox"/> Develop business model	
<input type="checkbox"/> Define target audience	
<input type="checkbox"/> Identify key features	
<input type="checkbox"/> Develop user stories	
<input type="checkbox"/> Create wireframes	
<input type="checkbox"/> Develop prototype	
<input type="checkbox"/> Conduct user testing	
<input type="checkbox"/> Refine MVP	
<input type="checkbox"/> Develop MVP	
<input type="checkbox"/> Conduct market research	
<input type="checkbox"/> Develop business model	
<input type="checkbox"/> Define target audience	
<input type="checkbox"/> Identify key features	
<input type="checkbox"/> Develop user stories	
<input type="checkbox"/> Create wireframes	
<input type="checkbox"/> Develop prototype	
<input type="checkbox"/> Conduct user testing	
<input type="checkbox"/> Refine MVP	
<input type="checkbox"/> Develop MVP	
FINAL PROJECT COMPLETE	
SCALE-UP	
<input type="checkbox"/> Define requirements	
<input type="checkbox"/> Conduct market research	
<input type="checkbox"/> Develop business model	
<input type="checkbox"/> Define target audience	
<input type="checkbox"/> Identify key features	
<input type="checkbox"/> Develop user stories	
<input type="checkbox"/> Create wireframes	
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Stages of Development

- Brief
- Concept
- Advanced development
- Technical development
- Prototype
- Final design
- Pre-production
- Certification
- Marketing
- Launch

Length (6-24 months)





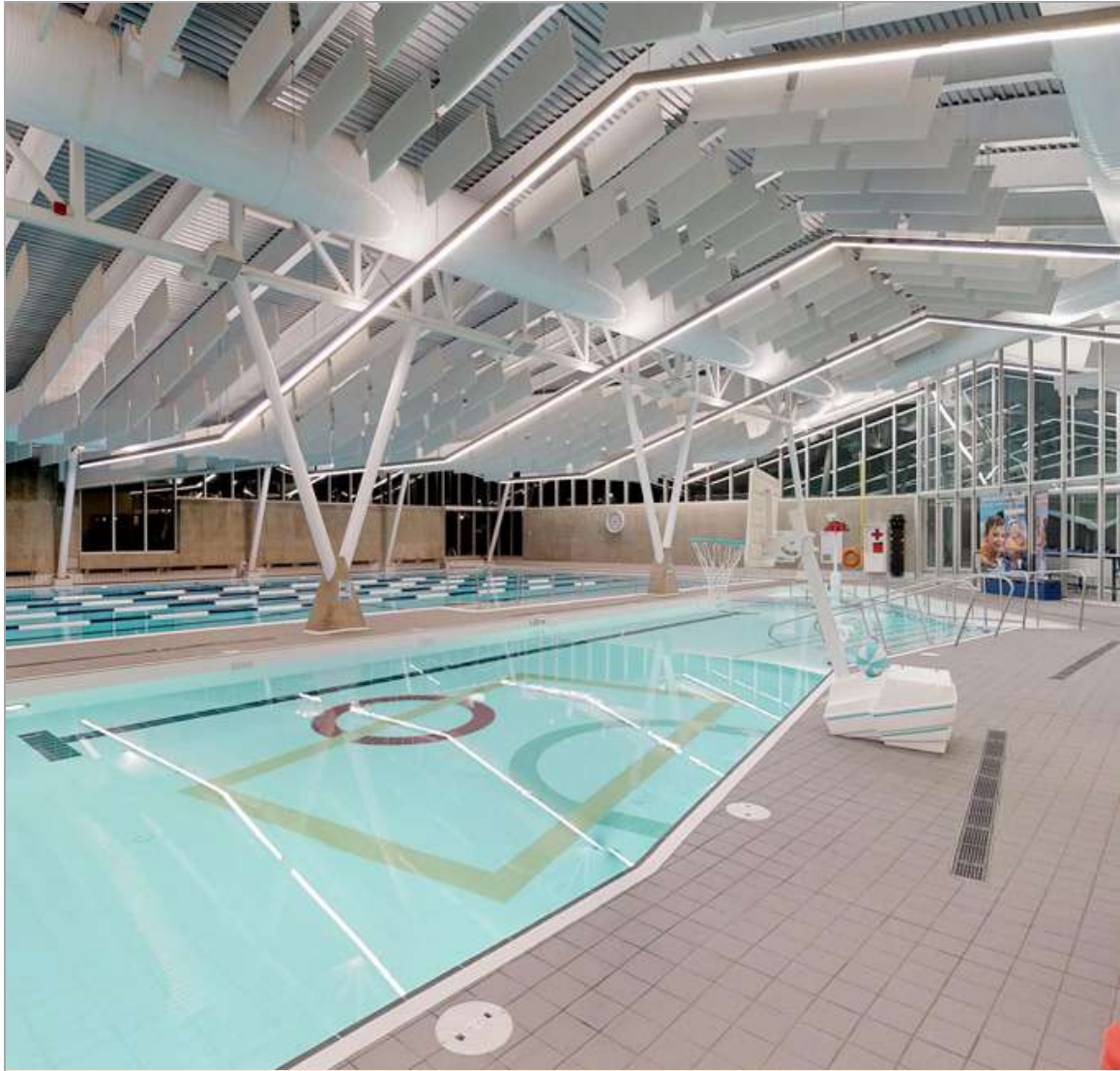
Manufacturing constraints

- Aluminium
- Steel
- Glass
- Injection Molding
- Die-Casting
- High/Low Pressure Molding
- Polymers
- Sound absorbing Materials
- Extrusions
- Machining, CNC, Welding
- Sheet Metal
- Thermoforming
- Rotomoulding
- Metal Spinning

Certifications, standards & testing

- Safety certification
 - UL, CSA, ETL and more
 - Standard, Norms
- Performance testing
 - Photometric
 - Acoustic
 - IK
 - LM-79
 - DLC





Custom lighting

■ The Dream

- Design Statement
- Perfect application
- Solving problems

■ The Reality

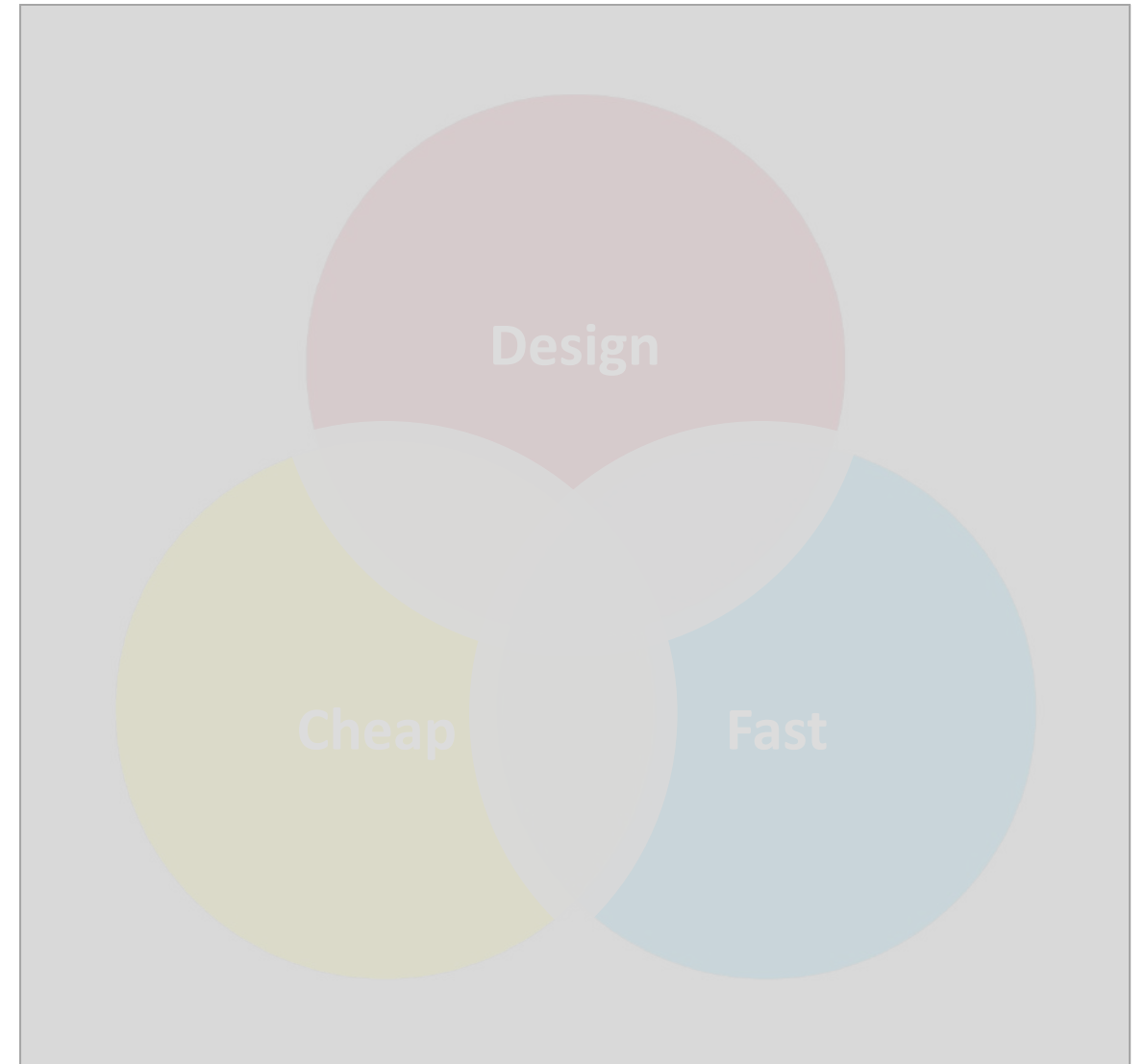
- Overpriced prototypes
- Time delays
- Small quantities
- Design Changes & errors

■ Designed for customization

- Configurable
- Standard Modified

Fast, cheap, design (pick 2)

- Design (Novelty, quality, performance, aesthetics ...)
- Large scale volume = **Design + Cheap**
- Designer / Brand Lighting = **Fast + Design**
- Knockoff = **Fast + Cheap**



5. Communication with A&D community

- a) Feedback loop from field
- b) Managing expectations
- c) Panel discussion



Feedback from field

- More, More, More...
- Voice of the customer
- Special events
- Trade shows
- Factory tours
- Sales reports
- All the Media

Managing expectations

- Diligence
- Honest + communication
- Under-promise + Over-deliver
- Positive attitude
- Keep innovating



Now is a great time for some feedback!

Talk to us 😊



This concludes The American Institute of Architects
Continuing Education Systems Course

