Cost effective use of Lighting Designers

Juliette van Putten

STUDIO LITE
AIA congress Jeddah 2012
Introduction
- What is lighting design
- Background lighting designers
- The design process

Case study
- How to use lighting designers cost effectively
  Case study KACC Dammam
  Briefly explain the project, and focus on the methodology
Learning Objectives

At the end of this program, participants will be able to:

1. **Understand what lighting designers do**
2. **What is the process of lighting design and typical deliveries per phase**
3. **How to leverage on the lighting design expertise for large projects**
4. **Be inspired by the magic that light can do for you**
Lighting Design

- Art & Science of creating the desired ambience with light
- Select the products and the equipment to control the light
- Producing documentation to
  - purchase the lights
  - position the lights
  - control the lights
Back ground lighting designers

- Master degree in Science, Architecture, or Design
- 2 years Master in lighting design
- KTH, Sweden, Hochschule Wismar Germany, Bartlett school of design, London

Combination of visual, physical and biologically knowledge applied to design, technology and health.
The Lighting Design Process
pre-contract

1. CONCEPT

2. DESIGN DEVELOPMENT

3. FINAL DESIGN
The Lighting Design Process post-contract

1. CONCEPT
2. DESIGN DEVELOPMENT
3. FINAL DESIGN
4. TENDER ASSISTANCE
5. COMMISSIONING
Concept phase deliverables

- Concept sketches
- Concept reference images
- Concept renderings
- Initial lighting layout
- Generic product selection
Design development deliverables

- Lighting Layout in cad
- Preliminary product selection
- Preliminary Budget indication
- Light calculations
- Sketches special mounting situations for structural implications
Final design

- Lighting layout.
- Fixture specification booklet
- Final budget
- Final power load
- Architectural Lighting Controls
- Detailed mounting details
Big Developments, Big Team

• Lighting designer one of the many subcons

• Use the specialist consultants in the most critical phase
  – Concept
  – Development of design (schematic +)

• Architect develops to final design with input during workshops from the lighting designers
The Lighting Design Process

1. CONCEPT

2. DESIGN DEVELOPMENT

3. FINAL DESIGN

time involvement per phase
Methodology

PART I

Develop overall design **vision** for the whole area (master vision)

Typical (repetitive) situations, choose **lighting treatment** and **product palette**

Important areas, show **implementation** of vision and light treatment, **rendering**, for **approval**

PART II

Typical situations, work out **layout** and **fixture selection**, for the architects to put in drawings

Atypical structures, situations of important elements, work out way of lighting and construction **details**
VISION

PART I

Develop overall design vision for the whole area (master vision)

Typical (repetitive) situations, choose lighting treatment and product palette

Important areas, show implementation of vision and light treatment, rendering, for approval

PART II

Typical situations, work out layout and fixture selection, for the architects to put in drawings

Atypical structures, situations of important elements, work out way of lighting and construction details
vision
Mood board lighting concept KACC
Design vision horizontal plane

Transition areas
cold/warm light

Cool lighting scheme of blue and cool white at the boundaries and next to water

High structures are treated with cool white light.

Blue light gives an effect of depth, distance, mystery

Warm amber light gives an intimate effect

In the center of the KACC

Warm towards the center

Fresh, sparkling, mesmerizing at the corniche blue, and ice cold white festoon lights
Design vision vertical plane

Vertical light plan

Cool white light on high structures far above human scale

Centre of the area

Boundary next to water

Schematic cross section of vertical light distribution

4200 Kelvin

3000 Kelvin
Part I: lighting treatment & product palette example

PART I

Develop overall design **vision** for the whole area (master vision)

Typical (repetitive) situations, choose **lighting treatment** and **product palette**

Important areas, show **implementation** of vision and light treatment, **rendering**, for approval

PART II

Typical situations, work out **layout** and **fixture selection**, for the architects to put in drawings

Atypical structures, situations of important elements, work out way of lighting and construction **details**
snapshots
Generic lighting principles: areas next to water-blue lighting effect

- **Bridges, quays and docks**
  - Fiber optic spots
  - LED spots

General remark: Studio Lite recommends to use Fiber optic lighting to light up the areas next to water that have a chance to be underwater due to storm, waves or high tides.
Generic lighting principles: pedestrian areas - walkways

(not directly next to the water)

Walkways

- **Lighting selection**
  - Marker lights LED, dots or lines
  - Poles 3 meter height
  - Compact bollards

- **Poles 3 meter** - Leipziger Leuchten

- **Compact bollard, one direction beam**
  - Castaldi-ZACK

- **Insta marker lights**

- **Intra LED lines mounted flush with pavement**
Generic lighting principles: tall mature trees

- Festoon lighting hanging from branches
- Uplighting
- Projector

LED festoon MK lighting-MK lighting

Ares

Erco projector spot
Generic Lighting Principles: Benches

- Concealed LED line or fluorescent batten
- Ready made catalogue benches with integrated light
**Part I: show implementation**

**PART I**

Develop overall design **vision** for the whole area (master vision)

Typical (repetitive) situations, choose **lighting treatment** and **product palette**

Important areas, show **implementation** of vision and light treatment, **rendering**, for approval

**PART II**

Typical situations, work out **layout** and **fixture selection**, for the architects to put in drawings

Atypical structures, situations of important elements, work out way of lighting and construction **details**
Concept implemented in KACC key areas
Royal arrival court-main hall*
Fountain Square
Waterfront park*
Cornice canal section AA
Main hall entrance
Waterfront park
Part II: layout of typical sections

**PART I**

Develop overall design **vision** for the whole area (master vision)

Typical (repetitive) situations, choose **lighting treatment** and **product palette**

Important areas, show **implementation** of vision and light treatment, **rendering**, for approval

**PART II**

Typical situations, work out **layout** and **fixture selection**, for the architects to put in drawings

Atypical structures, situations of important elements, work out way of lighting and construction **details**
1. Spill light from shops
2. Spot ceiling mounted
3. Uplight palm trees
4. Steplights
5. Integrated light in handrail-white cool
6. Blue LED lights at quay wall
7. Light pole in middle of pavement
8. Poles spaced on pavement in front of museum, see plan
Part II: Special structures

PART I

Develop overall design vision for the whole area (master vision)

Typical (repetitive) situations, choose lighting treatment and product palette

Important areas, show implementation of vision and light treatment, rendering, for approval

PART II

Typical situations, work out layout and fixture selection, for the architects to put in drawings

Atypical structures, situations of important elements, work out way of lighting and construction details
Customized light for bridges – Gateways to the area

- Use for these bridges

Color and pattern reference
Aluminium matt

Light effect of base

Centre of the bridge marked with a taller version of the custom made lighting
The shading arcade will play with color and perspective. During the night the arches are the main elements and will form a strong perspective that can be experienced while walking through the arcade. But also from a far distance the view will be different when the viewer drives or walks by.

The cool white and blue continue the concept of KACC, where we use cool whites and blues for areas close to the water.
Shading structure Harbor side promenade-plan

Shading structure will be equipped with fiber optic lighting integrated in the structure combined with LED spots in the top of the structure.

Side Lite cable emits lighting to the side.
Special roof main hall- concept
summary

• Why Lighting designers
• Process of lighting design
• Method for large developments
• Use the LD expertise in the critical phase
• Call assistance when required
• Use your own resources for production work of cad plans
• Design fee 55% lower
Questions???

Studio Lite contact details and office location:

Al Maktoum Road, B62 Building,
P.O. Box 49543,
Deira, Dubai, UAE
Tel: +971 42212030
Fax: +971 42212027
Email: info@studioliteme.com
Website www.studioliteme.com

MEET US ON FACEBOOK
PAGE: STUDIO LITE
“Studio Lite” is a Registered Provider with The American Institute of Architects Continuing Education Systems (AIA/CES). Credit(s) earned on completion of this program will be reported to AIA/CES for AIA members. Certificates of Completion for both AIA members and non-AIA members are available upon request.

This program is registered with AIA/CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product.

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