Practical Applications of HDR Photography with Radiance

Radiance Workshop 2011
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Overview of High Dynamic Range (HDR) Photography Applications:

- HDR Photography for Calibration of Radiance Model
- HDR Photography – a poor man’s Reflectometer?
- HDR Photography for Architectural Detail Evaluation
- HDR Photography for Aiding in Luminaire Aiming
HDR Photography for Calibration of a Radiance Model

San Francisco Old Mint
Historic Photograph of San Francisco Old Mint

Revit Model Export to CAD

Radiance Model

Section through room for Study – Southeast exposure
Study done on September 16
HDR Photography
A poor man’s Reflectometer?

Terrazzo Floor Material Study
White Terrazzo Floor Material in Direct sunlight - specular reflection visible.

White Terrazzo Floor Material in Direct sunlight - pseudo-color analysis.

White Terrazzo Floor Material in Direct sunlight - no specular reflection visible.

White Terrazzo Floor Material in Direct sunlight - pseudo-color analysis.
Blue Terrazzo Study
HDR Photography for Architectural Detail Evaluation

Cove Construction Study
**Fixture:** ColorKinetics eW Graze Powercore
**Accessory:** Louver
**Placement:** maximum offset from wall
**Cove Aperture:** 4 inches
**Architectural Lip:** none

**Fixture:** ColorKinetics eW Graze Powercore
**Accessory:** Louver
**Placement:** maximum offset from wall
**Cove Aperture:** 5 inches
**Architectural Lip:** none

**Fixture:** ColorKinetics eW Graze Powercore
**Accessory:** Louver
**Placement:** maximum offset from wall
**Cove Aperture:** 8 inches
**Architectural Lip:** none

**Fixture:** ColorKinetics eW Graze Powercore
**Accessory:** none
**Placement:** maximum offset from wall
**Cove Aperture:** 8 inches
**Design Note:** A dark band was noticeable from the louvers from 4 inches to 8 inches beyond the cove aperture. This was a result of light reflecting off the white cove (façade) surface and the cut-off from the louvers leaving a dark gap of light on the wall surface.
Fixture: Birchwood Ashley (2) 2ft T5HO fixtures
Accessory: none
Placement: maximum offset from wall
Cove Aperture: 5 inches
Architectural Lip: none

Fixture: Birchwood Ashley (2) 2ft T5HO fixtures
Accessory: none
Placement: maximum offset from wall
Cove Aperture: 8 inches
Architectural Lip: none

Fixture: Birchwood Ashley (2) 2ft T5HO fixtures
Accessory: none
Placement: maximum offset from wall
Cove Aperture: 12 inches
Architectural Lip: none
FIXTURE: ColorKinetics eW Graze Powercore
ACCESSORY: none
PLACEMENT: minimum offset from wall
COVE APERTURE: 5 inches
ARCHITECTURAL LIP: none

FIXTURE: ColorKinetics eW Graze Powercore
ACCESSORY: Louver
PLACEMENT: maximum offset from wall
COVE APERTURE: 5 inches
ARCHITECTURAL LIP: none

FIXTURE: Zumtobel LED Slotlight - 450 lm/ft
ACCESSORY: none
PLACEMENT: centerline of cove
COVE APERTURE: 12 inches
ARCHITECTURAL LIP: none

FIXTURE: Birchwood Ashley (2) 28 TSHO fixtures
ACCESSORY: none
PLACEMENT: maximum offset from wall
COVE APERTURE: 12 inches
ARCHITECTURAL LIP: none
HDR Photography for Aiding in Luminaire Aiming

Bridge Lighting Installation
Center Street Bridge – Des Moines, Iowa

Deck Lighting

Arch Luminaires