

# Lighting and survey of emotions: The case of historic buildings.

**Thanos Balafoutis**

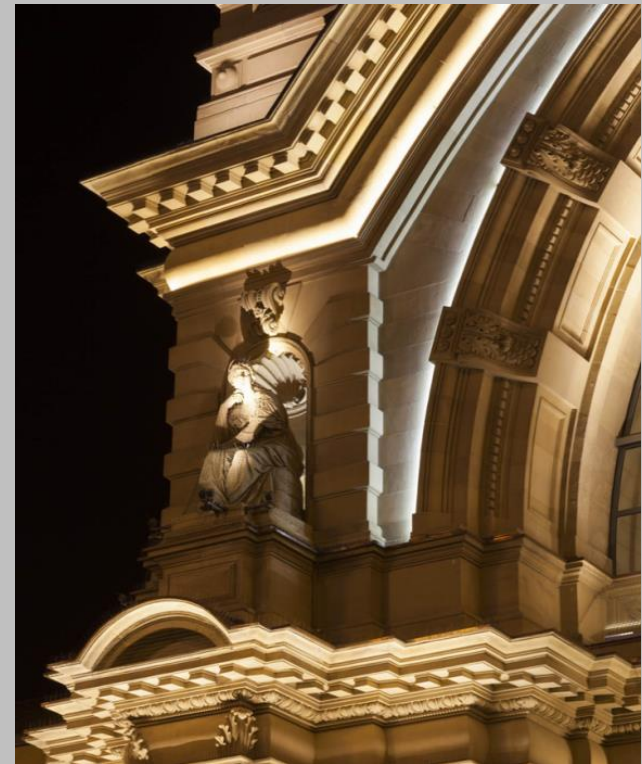
Postdoctoral Researcher H.O.U.

**Stelios Zerefos**

Professor H.O.U.

**Lambros Doulos**

Associate Professor H.O.U.



**180 Wellington, Ottawa, Canada.**  
(Image: Gordon King)

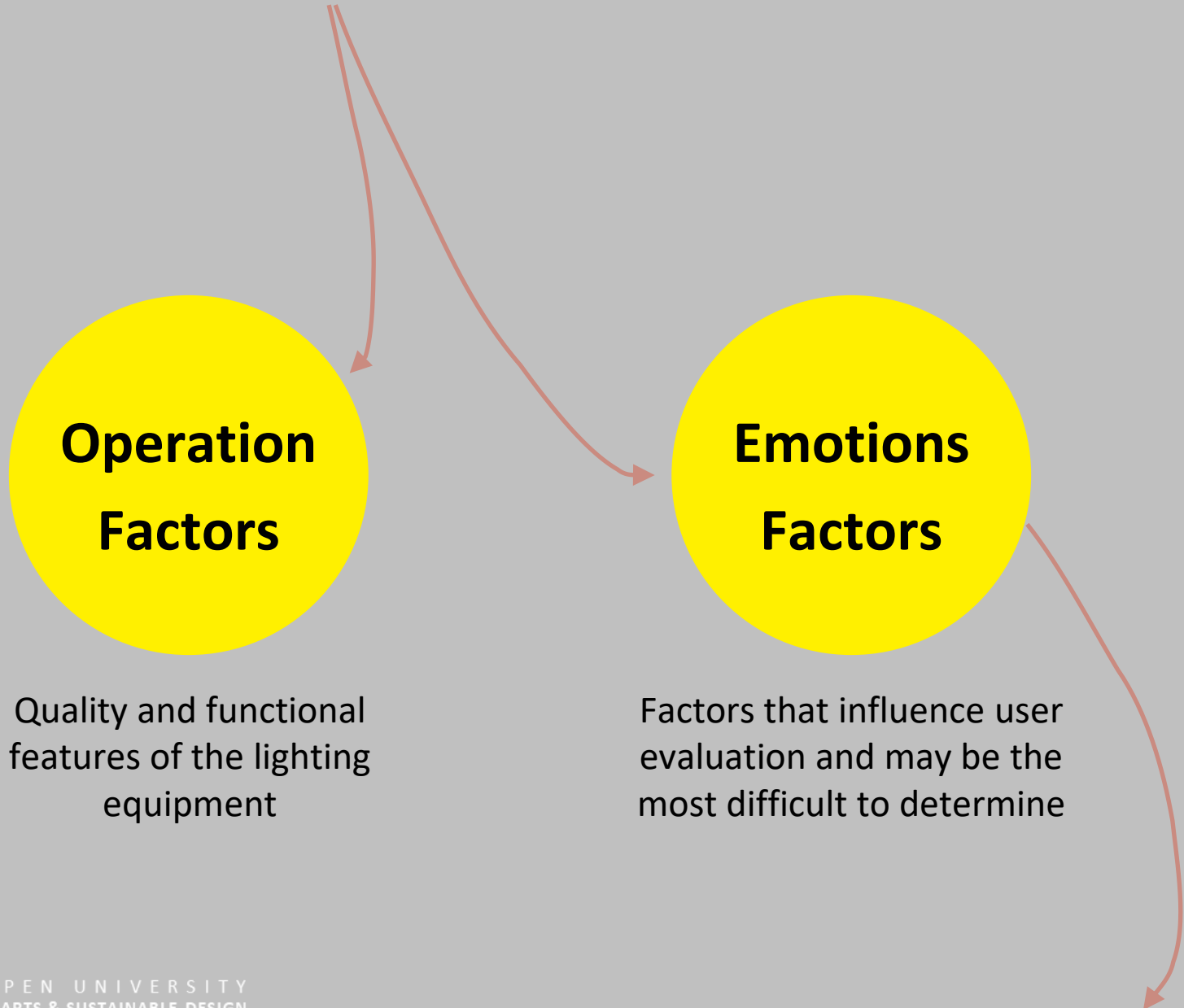
**Frankfurt Central Station, Germany.**  
(Image: Gerhard Thomas Baier Fotografie)



**Municipal Building, Rieti, Italy.**  
(Image: Luca Petrucci)

**San Francisco City Hall, USA.**  
(Image: Darius Kuzmickas)

# Facade lighting for historical building



**Operation  
Factors**

Quality and functional features of the lighting equipment

**Emotions  
Factors**

Factors that influence user evaluation and may be the most difficult to determine

# Emotions Factors

**A**  
\_Flood Spot 34°



**B**  
\_Narrow Spot 12°



LIGHT POLLUTION  
(EVALUATORS OPINION)

26%

UPWARD  
DISTRIBUTION  
(CALCULATIONS)

61%

USEFUL  
ILLUMINATION  
(CALCULATIONS)



LIGHT POLLUTION  
(EVALUATORS OPINION)

18%

UPWARD  
DISTRIBUTION  
(CALCULATIONS)

67%

USEFUL  
ILLUMINATION  
(CALCULATIONS)



**A**

\_Light Blade Spot - Laser



**BOREDOM**  
30%



**LIGHT INTENSITY**  
(EVALUATORS  
OPINION)

**B**

\_Narrow Spot 12°



**BOREDOM**  
38%



**LIGHT INTENSITY**  
(EVALUATORS  
OPINION)

**C**

\_Narrow Spot 10°



**BOREDOM**  
59%



**LIGHT INTENSITY**  
(EVALUATORS  
OPINION)



**D**

\_Flood Spot 34°



**TRANQUILLITY**  
37%



**HAPPINESS**  
18%



**LIGHT INTENSITY**  
(EVALUATORS  
OPINION)

**E**

\_Spot Angle 8°



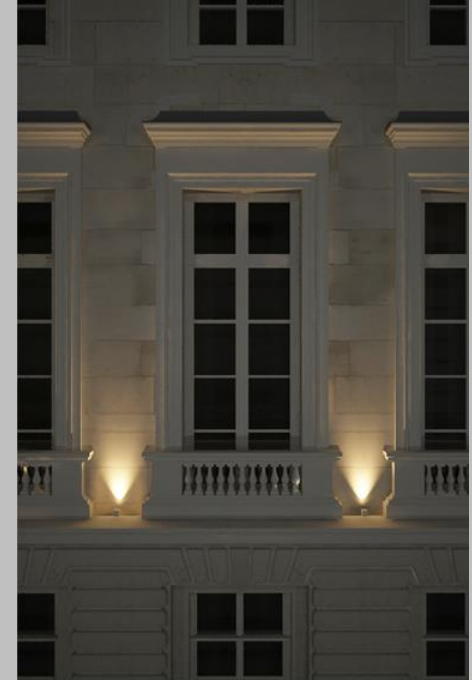
**TRANQUILLITY**  
40%



**LIGHT INTENSITY**  
(EVALUATORS  
OPINION)

**F**

\_Flood Spot 38°



**TENSION**  
44%



**LIGHT INTENSITY**  
(EVALUATORS  
OPINION)





**G**

\_Narrow Spot 10°



**TENSION**  
47%



**LIGHT INTENSITY**  
(EVALUATORS  
OPINION)

**H**

\_Narrow Spot 12°



**TENSION**  
59%



**LIGHT INTENSITY**  
(EVALUATORS  
OPINION)

**I**

\_Narrow Spot 12°



**TENSION**  
61%



**LIGHT INTENSITY**  
(EVALUATORS  
OPINION)

**J**

\_Spot 24°



**AWE**  
20%



**VISUAL IMPACT**  
(EVALUATORS  
OPINION)

**K**

\_Spot Angle 8°



**AWE**  
21%



**VISUAL IMPACT**  
(EVALUATORS  
OPINION)

**L**

\_Narrow Spot 12°



**AWE**  
32%



**VISUAL IMPACT**  
(EVALUATORS  
OPINION)



**L**  
\_Narrow Spot 12°



**C**  
\_Narrow Spot 10°



**E**  
\_Spot Angle 8°




**F**  
\_Flood Spot 38°



 **AWE**  
32%

 **BOREDOM**  
59%

 **TRANQUILLITY**  
40%

 **TENSION**  
61%

Images,  
Balafoutis Thanos, 2021





**BOREDOM**





TENSION





TRANQUILITY



## Conclusions

- VERIFICATION OF THE PREFERENCE FOR MODERATED INTENSITIES
- FOCUSED LIGHT CAUSES TENSION
- THE DIVERSION OF LIGHTING LAYERS CAUSES AWE
- HOMOGENOUS LIGHTING CREATES TRANQUILLITY







# Thank you!

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