

## LEED Light Pollution Reduction Credit Compliance vs. Prescriptive Standard Compliance

### One Leighton Street - Avalon Housing Phase 1 Tower



minimize light pollution and light trespass across property boundaries.

This building received an architectural review by the City and went through a Planning Board Special Permit process and was approved.

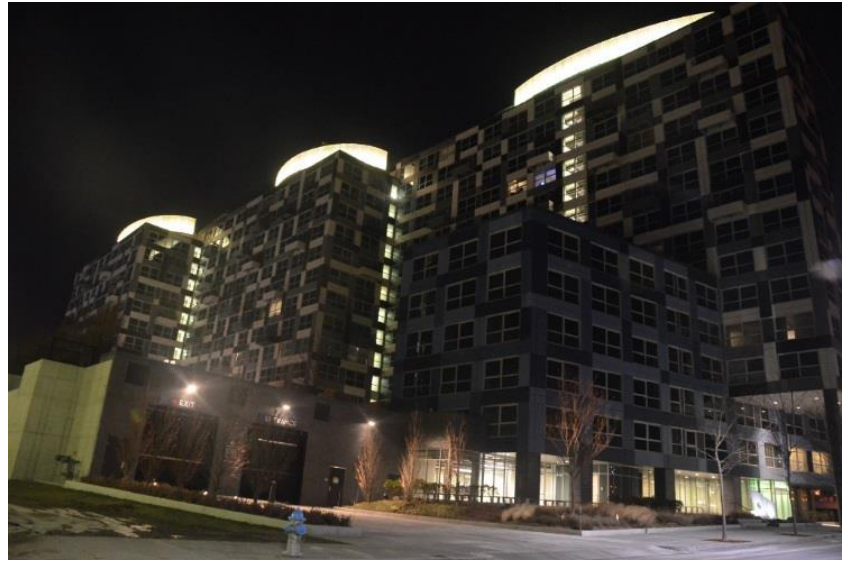
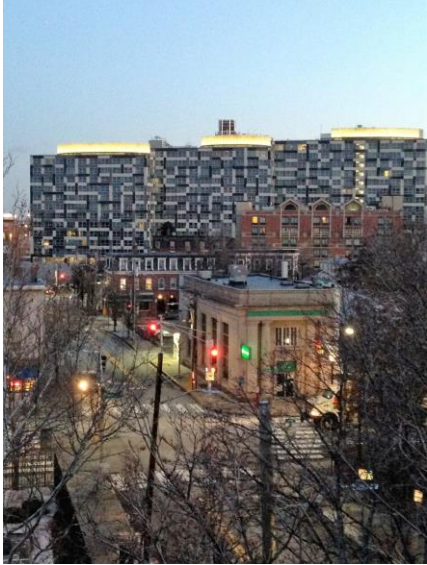
This building is located in the proposed Lighting Zone 3.

Under the proposed Ordinance, these lights would need to follow the Performance Standard or the Prescriptive Standard. Under the proposed definition for “outdoor or exterior lighting” the mechanical space may not be considered inside the “building thermal envelope” if it is identified as unconditioned space. Therefore, the penthouse lights would be considered exterior lighting and would need to comply with the Outdoor Lighting Ordinance.

Under the Performance Standard’s LEED Light Pollution Reduction Credit, the project would need to meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG) method (Option 1) with an uplight limit of 500 lumens for the UH zone and the UL zone, or the calculation method (Option 2), with a 3% uplight limit of total site lumens. Projects may use different options for uplight and light trespass but under the proposed Ordinance the façade/landscape lighting exemption in Lighting Zone 3 has been removed.

If the property owner chooses to follow the Prescriptive Standard then the penthouse light fixtures would be required to be spaced at least 4 feet apart and reduced to 315 lumens each if unshielded or 1,050 lumens if shielded directional AND located, aimed, and shielded so as to

## 22 Water Street – Zinc Residences



This building is located in the proposed Lighting Zone 3.

Under the proposed Ordinance, these lights would need to follow the Performance Standard or the Prescriptive Standard.

Under the Performance Standard's LEED Light Pollution Reduction Credit, the project would need to meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG), method (Option 1) with an uplight limit of 500 lumens for the UH zone and the UL zone, or the calculation method (Option 2), with a 3% uplight limit for total site lumens. Projects may use different options for uplight and light trespass but under the proposed

Ordinance the façade/landscape lighting exemption in Lighting Zone 3 has been removed.

If the property owner chooses to follow the Prescriptive Standard then the rooftop light fixtures would be required to be spaced at least 4 feet apart and reduced to 315 lumens each if unshielded or 1,050 lumens if shielded directional AND located, aimed, and shielded so as to minimize light pollution and light trespass across property boundaries.

This building received an architectural review by the City and went through a Planning Board Special Permit process and was approved. Rooftop lighting was not approved under that Special Permit process and must be turned off.

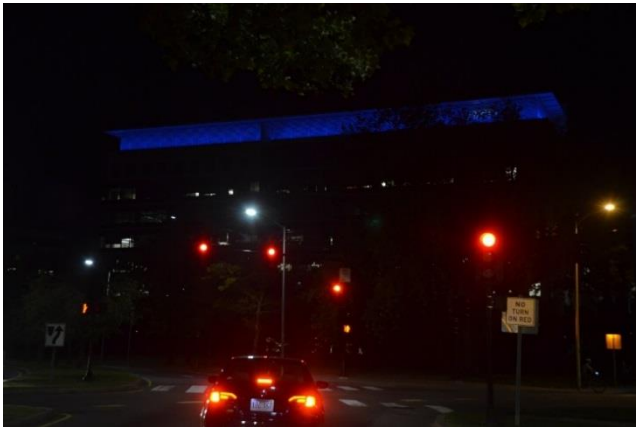
## Holyoke Center



Existing North Holyoke façade from Harvard Yard Initial Design Proposal for Holyoke Facade

The proposed meeting room at the top of the Holyoke Center would be considered interior lighting and would not fall under the Outdoor Lighting Ordinance. However, this design was not ultimately approved by the BZA. Another design is moving forward in the process.

## Amgen



This building is located in proposed Lighting Zone 3.

Under the proposed Ordinance, these lights would need to follow the Performance Standard or the Prescriptive Standard.

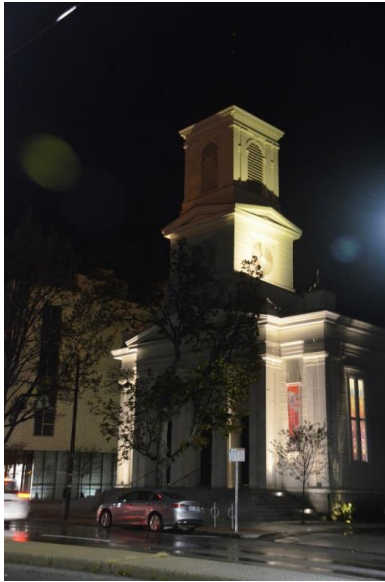
Under the Performance Standard's LEED Light Pollution Reduction Credit, the project would need to meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG), method (Option 1) with an uplight limit of 500 lumens for the UH zone and the UL zone, or the calculation method (Option 2), with a 3% uplight limit for total site lumens. Projects may use different options for uplight and light trespass but under the proposed Ordinance the façade/landscape lighting exemption in Lighting Zone 3 has been removed.

If the property owner chooses to follow the Prescriptive Standard then the penthouse light fixtures would be required to be spaced at least 4 feet apart and reduced to 315 lumens each if unshielded or 1,050 lumens if shielded directional AND located, aimed, and shielded so as to minimize light pollution and light trespass across property boundaries.

In addition, since it is architectural lighting used exclusively for decorative illumination it would be exempt from the Color Temperature limit of 3500K but must still meet lumen limits and shielding requirements.



## Lesley College Lunder Art Center



This building is located in the proposed Lighting Zone 3.

Under the proposed Ordinance, these lights would need to follow the Performance Standard or the Prescriptive Standard.

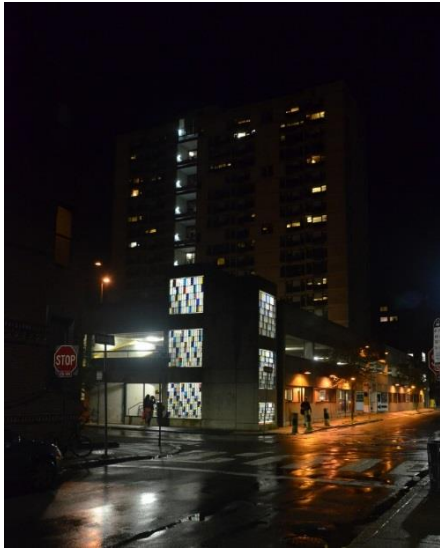
Under the Performance Standard's LEED Light Pollution Reduction Credit, the project would need to meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG), method (Option 1) with an uplight limit of 500 lumens for the UH zone and the UL zone, or the calculation method (Option 2), with a 3% uplight limit for total site lumens. Projects may use different options for uplight and light trespass but under the proposed Ordinance the façade/landscape lighting exemption in Lighting Zone 3 has been removed.

If the property owner chooses to follow the Prescriptive Standard then the architectural lighting fixtures for the steeple would be required to be spaced at least 4 feet apart and reduced to 315 lumens each if unshielded or 1,050 lumens if shielded directional AND located, aimed, and shielded so as to minimize light pollution and light trespass across property boundaries.

In addition, since it is architectural lighting used exclusively for decorative illumination it would be exempt from the Color Temperature limit of 3500K but must still meet lumen limits and shielding requirements.

The property owner could apply for a Certificate of Appropriateness for the architectural lighting if the lighting was considered historically significant but the Historical Commission will not make any recommendation or requirement except for the purpose of preventing developments incongruous to the historic aspects or the architectural characteristics of the surroundings and of the historic district.

## Green Street Garage/Tower



## Garage at JFK/Eliot Streets



Green Street Garage at Night  
Eliot Street View at Night

Both garages are located in the proposed Lighting Zone 3.

Under the proposed Ordinance, these lights would need to follow the Performance Standard or the Prescriptive Standard. Under the proposed definition for “outdoor or exterior lighting” the parking deck may not be considered inside the “building thermal envelope” if it is identified as unconditioned space so the parking deck lights are exterior lighting and would need to comply with the Outdoor Lighting Ordinance. The lights in the

stairwell would need to comply with the Building Code and the Outdoor Lighting Ordinance.

Under the Performance Standard’s LEED Light Pollution Reduction Credit, the project would need to meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG), method (Option 1) with an uplight limit of 500 lumens for the UH zone and the UL zone, or the calculation method (Option 2), with a 3% uplight limit for total site lumens. Projects may use different options for uplight and light trespass but under the proposed Ordinance the façade/landscape lighting exemption in Lighting Zone 3 has been removed.

If the property owner chooses to follow the Prescriptive Standard then the penthouse light fixtures would be required to be spaced at least 4 feet apart and reduced to 315 lumens each if unshielded or 1,050 lumens if shielded directional AND located, aimed, and shielded so as to minimize light pollution and light trespass across property boundaries.

## JFK Street



This building is in the proposed Lighting Zone 3.

The lightbox on the JFK building would fall under the Zoning Ordinance, Article 7, Signs and Illumination.

Under the Performance Standard's LEED Light Pollution Reduction Credit, the project would need to meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG), method (Option 1) with an uplight limit of 500 lumens for the UH zone and the UL zone, or the calculation method (Option 2), with a 3% uplight limit for total site lumens. Projects may use different options for uplight and light trespass but under the proposed Ordinance the façade/landscape lighting exemption in Lighting Zone 3 has been removed.

If they choose to follow the Prescriptive Standard, the rooftop lighting could have a maximum mounting height of 12 feet above the surface to be illuminated and reduced to 315 lumens each since they currently appear unshielded. If there is a walkway on the roof then it can be 1,050 lumens, but only if shielded directional.

## CCAE Building 40 Brattle Street



This building is in the proposed Lighting Zone 3.

Under the proposed Ordinance, these lights would need to follow the Performance Standard or the Prescriptive Standard.

Under the Performance Standard's LEED Light Pollution Reduction Credit, the project would need to meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG), method (Option 1) with an uplight limit of 500 lumens for the UH zone and the UL zone, or the calculation method (Option 2), with a 3% uplight limit for total site lumens. Projects may use different options for uplight and light trespass but under the proposed Ordinance the façade/landscape lighting exemption in Lighting Zone 3 has been removed.

If the property owner chooses to follow the Prescriptive Standard then the architectural lighting fixtures would be required to be spaced at least 4 feet apart and reduced to 315 lumens each if unshielded or 1,050 lumens if shielded directional AND located, aimed, and shielded so as to minimize light pollution and light trespass across property boundaries.

In addition, since it is architectural lighting used exclusively for decorative illumination it would be exempt from the Color Temperature limit of 3500K but must still meet lumen limits and shielding requirements.

The property owner could apply for a Certificate of Appropriateness for the architectural lighting if the lighting was considered historically significant but the Historical Commission will not make any recommendation or requirement except for the purpose of preventing developments incongruous to the historic aspects or the architectural characteristics of the surroundings and of the historic district.

## Cambridge Police Department



This building is in the proposed Lighting Zone 2.

The blue lights are a public art installation that was commissioned by the Cambridge Arts Council and would be exempt under the Outdoor Lighting Ordinance.

The remaining architectural lighting would need to comply with the LEED LPRC for Lighting Zone 2 or follow the Prescriptive Standard. Under the Performance Standard's LEED Light Pollution Reduction Credit, the project would need to meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG), method (Option 1) with an uplight limit of 50 lumens for the UH zone and the UL zone, or the calculation method (Option 2), with a 1.5% uplight limit for total site lumens.

If the property owner chooses to follow the Prescriptive Standard then all fixtures outside of the public art installation would be required to be spaced at least 4 feet apart and reduced to 315 lumens each if unshielded or 1,050 lumens if shielded directional AND located, aimed, and shielded so as to minimize light pollution and light trespass across property boundaries.

## Matignon High School



This building is in the proposed Lighting Zone 2.

Under the Performance Standard's LEED Light Pollution Reduction Credit, the project would need to meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG), method (Option 1) with an uplight limit of 50 lumens for the UH zone and the UL zone, or the calculation method (Option 2), with a 1.5% uplight limit for total site lumens.

If the property owner chooses to follow the Prescriptive Standard then all fixtures would be required to be spaced at least 4 feet apart and reduced to 315 lumens each if unshielded or 1,050 lumens if shielded directional AND located, aimed, and shielded so as to minimize light pollution and light trespass across property boundaries.

The unshielded fixtures at the entrance would need to be reduced to 630 lumens. It would not be allowed to light the flag pole from the roof.



## 95 Cushing Street



This building is in the proposed Lighting Zone 2.

Under the Performance Standard's LEED Light Pollution Reduction Credit, the project would need to meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG), method (Option 1) with an uplight limit of 50 lumens for the UH zone and the UL zone, or the calculation method (Option 2), with a 1.5% uplight limit for total site lumens. Projects may use different options for uplight and light trespass.

If the property owner chooses to follow the Prescriptive Standard then the lighting fixtures would be required to be spaced at least 4 feet apart and reduced to 630 lumens each if unshielded or 1,050 lumens if shielded directional AND located, aimed, and shielded so as to minimize light pollution and light trespass across property boundaries.

ISD will confirm the process for reviewing complaints..



## 118 Holworthy Street



This building is in the proposed Lighting Zone 2.

Under the Performance Standard's LEED Light Pollution Reduction Credit, the project would need to meet uplight and light trespass requirements, using either the backlight-uplight-glare (BUG), method (Option 1) with an uplight limit of 50 lumens for the UH zone and the UL zone, or the calculation method (Option 2), with a 1.5% uplight limit for total site lumens. Projects may use different options for uplight and light trespass.

If the property owner chooses to follow the Prescriptive Standard then the lighting fixtures would be required to be spaced at least 4 feet apart and reduced to 315 lumens each if unshielded (if not a main entry) or 1,050 lumens if shielded directional AND located, aimed, and shielded so as to minimize light pollution and light trespass across property boundaries.

ISD will confirm the process for reviewing complaints.

## Additional Light Examples



The lighting would need to comply with the LEED LPRC for Lighting Zone 2 or Lighting Zone 3 or follow the Prescriptive Standard. Under the Performance Standard's LEED Light Pollution Reduction Credit, the project would need to meet upright and light trespass requirements, using either the backlight-uplight-glare (BUG) method (Option 1) or the calculation method (Option 2).

If the property owner chooses to follow the Prescriptive Standard then the lighting fixtures on the front porch would be required to be spaced at least 4 feet apart and reduced to 630 lumens each if unshielded or 1,050 lumens if shielded directional AND located, aimed, and shielded so as to minimize light pollution and light trespass across property boundaries. The unshielded globe would need to be reduced to 315 lumens.

ISD will confirm the process for reviewing complaints..