

LIGHTING ORDINANCE TASK FORCE WALKING TOUR – JANUARY 15, 2014

TOUR ROUTE: Tour started at entrance of 344 Broadway; down Inman Street to Harvard Street; down Harvard Street to Essex Street; down Essex Street to Massachusetts Avenue; down Massachusetts Avenue to Pearl Street; down Pearl Street to Green Street; down Green Street to Green Street Garage. Tour ended on top floor of Green Street Garage.

Questions considered during the lighting tour:

- 1. Need for Light:** Is this fixture effective?
- 2. Light Fixture Specifications:**
 - a. Is this fixture producing an appropriate light?
 - b. What is the appropriate height for this fixture to meet its purpose?
- 3. Time for Replacement:**
 - a. Can we expect building permits for new construction and renovation projects to improve this lighting practice or does the lighting correction need to be achieved before the normal product life cycle?

COMMENTS SUBMITTED ON SHEET FROM LIGHTING TOUR

COMMENT SHEET #1 – 1/15/14

Inman Street – wall pack very unfriendly

273/276 Harvard Street – exterior floods s/b shielded; unshielded wall packs @ entrance need to be shielded to focus down

Youth Center – nicely shielded fixtures; very appropriate

Prospect Hill Academy – 54 Essex pretty good, low lights on ramp; flood lights very challenging

COMMENT SHEET #2 – 1/15/14

51 Inman – wall lights

272 Harvard – wall pack

265 Harvard – CHA – too much light

COMMENT SHEET #3 – 1/15/14

Bollards – warmer version better – metal halide very blue

51 Inman wall light – very bad – completely visible; excessive glare – need 2 or 3 full cutoffs

276 Harvard – ornamental OK/rear flood – excessive glare, not cutoff, 3000 hours

272 Harvard – over door, no shield, excessive glare

273 Harvard – ornamental unshielded – bulb too bright, lumen of entire fixture

265 Harvard – Courtyard – pole-mounted too bright, too tall; porch lights – each too bright – 3 lamps OK but could be less bright

260 Harvard – Lights over door – too much glare & visible; could use cutoff wall pack

JFK CHA Apartments – courtyard pole lights good height & brightness; shield could be a little lower to conceal the source

Area 4 Youth Center – pole lights – good brightness even without shield

St. Barts Entry – unshielded wall pack too bright; needs shield with cutoff

50 Essex Main Door – wall pack too bright; excessive glare; no cutoff

Prospect Hill – should use Brookline Ordinance for 0 ft candle at property line; max illumination @ ft candle within the lot itself

JFK Park – good fixture for cutoff – TOO TALL; too much spillover property line

42 Essex Porch Light – ornamental great

40 Essex Porch Light – ornamental great

25 Essex Porch Light – ornamental too bright, blue color

Alley next to 20 Essex – unshielded wall pack far too tall; no shield, too much spill onto #20

COMMENT SHEET #4 – 1/15/14

Broadway City Bldg – (metal halides in post) bollards have terrible light trespass – only need lighting on ground, not horizontal

51 Inman Street – Municipal – flood light metal halides – blinds me, meant to light passageway to lower level but instead blinds whole area

276 Harvard Street – Twin PAR lamps – LEDS give more light per

273 Harvard Street – Twin PAR lamps – not pointed down, needs shielding inside – maybe replaced so when standing at property line cannot see source

273 Harvard Street – porch – too bright without shielding – generally allowed for but with low lamps, lumen of entire fixture hot across street – refocus wall packs

269 Harvard Street – wall pack

265 Harvard Street – cut-off wall packs on side alley – in background are low & good – but one closest to street has trespass on sidewalk – it's higher

263 Harvard Street – entry – not enough shielding to direct down; fixture don't need to be that high; too high, too bright, and too blue; porch lights much better

261 Harvard Street – porch – too many bulbs in porch light

Clinton Apartments – don't mind when warm-toned

55 Essex Street – better garden lights but blinding side fixtures too close to residents; across street – well diffused lenses

Prospect Hill Academy – bad wall pack on porch; bad floodlight on pole; nice footlights on ramp; parking lot in back – terrible spotlights; Brookline Ordinance – performance method; food candle in any part of light contained at lot lines – so forces fixtures to be on perimeter shining in.

42 Essex Street – nice low/well diffused porch light

40 Essex Street – too bright because not diffused

Buffer zone for boundary areas – commercial should be only seen in commercial zones; International Dark Sky Association

Green Street Parking Garage – fluorescent tube lights on low ramp walls

Green Street – TKKwando Studio – wall pack - too high – unshielded; is it for lighting egress?

COMMENT SHEET #5 – 1/16/14

344 Broadway – Visible light sources in sconces & post top luminaires, bollards, metal halide – bright, varied color.

Inman Place – Flood light aimed at stairs & ramp; high mounting, glare

276&273 Harvard – PAR lamp pairs mounted high with high aiming

269 Harvard – Big glass façade at interior stair feels bright

265 Harvard – cutoff metal halide wall packs @ 8+ ft OK

265-263 Harvard – Saturn metal halide; ~ 2 ½ full cutoff; even illumination, bright lenses

Area 4 Youth Center – KIP post-top luminaires – OK

Essex Street – HPS floods on St. Mary's Property – Glaring

COMMENTS SUBMITTED BY E-MAIL AFTER LIGHTING TOUR

E-MAIL COMMENT – 1/20/14

My comments as both a resident and design professional about the Walking Tour 01.15.14:

- 1) **Fixture mounting height.** Many of both the wall-mounted and pole-mounted fixtures observed appear to be higher than necessary. Should an ordinance limit the height of fixtures subject to special approval? At 263-265 Harvard, the LED wall packs on the alley side were most effective at about 10' above the pavement. The metal halide courtyard fixtures at 16-18' appeared to be higher than necessary with little cut-off of the visibility of the light source. Retail and mixed-use areas would benefit from having their higher illumination levels limited to a maximum elevation above the street (20-25"?).
- 2) **Illumination uniformity.** Existing design programs seem to focus on uniform light levels on the horizontal surface. Within a range, modulation of the light level would be desirable on streets, sidewalks, courtyards, parking lots. Appropriate light level ranges should be targeted, and over-lighting such as at the Green Street Parking garage should be prohibited (street lights and wall packs in close proximity are unpleasant).
- 3) **Light Color.** The 5000k and 4000k LEDs are unpleasantly blue (cool). The lights should be 3000k or whatever warmer temperature is deemed acceptable.
- 4) **Fixture preference.** The proposed LED fixtures on standards currently being tested on the Cambridge Common are examples of high cut-off LED fixtures that would serve well in courtyard installations such as 263-265 Harvard and possible some parking lots. Three of the new fixtures are mounted on the existing standards (13-15'?) and the one apparently selected is on a new taller standard (16-18'?). The lower pole height is better both for reduced direct glare and, depending on the spacing, modulation of lighting levels. The four test fixtures are installed on the path between the Civil War Monument and the cannon. Unfortunately, the new fixtures are not as attractive as the existing metal halide fixtures they are replacing. The existing metal halide fixtures were approved by the Cambridge Historical Commission.

The tour and the input of the lighting consultants and the City electrician were very helpful. I look forward to hearing feedback from others.

Suggestion. Would it be possible to have representatives of NStar, MassSave, and their design consultants attend future meetings? It might further both feedback and education.

E-MAIL COMMENT – 1/20/14

Light trespass onto adjacent homes is a real infringement. Lighting needs to be designed, directed, and shielded to avoid intruding into nearby living spaces, particularly bedrooms. Neighbors need to a way to escalate a legitimate complaint if personal friendly persuasion fails.

Light trespass onto the sidewalk or the street is an absurd notion. We need private lighting to contribute to the streetscape.

Secure levels of light are in the eye of the beholder. Bright lights may be one person's idea of a safe place to walk or to live, but they may offend another as wasteful and intrusive. What's acceptable seems, first, best defined and negotiated by neighbors, not by outside lighting design police. Inspection and citations should be reserved for egregious disruptions of sleep, after person to person discussion has failed to correct the offense.

Lighting design specialists could help by guiding residents and others

-- through print handouts, public presentations, CCTV PSAs and on-air discussions, etc. -- toward good choices and away from unshielded, poorly aimed PAR floodlights (eg., 276 and 273 Harvard), non-shielded wall packs (St Bart's and elsewhere), barn lights, and floodlights not aimed downward (school parking lot).

Offending fixtures and situations are readily apparent to those injured by light trespass on their sleeping space or offended by lights in their eyes as they walk, but won't be apparent to people who may have pressed long and hard for "better" -- i.e., brighter-- lighting of streets, sidewalks, parking lots, and the areas around their homes. Public education will have to take both opinions into account to communicate these issues effectively.

Communication and education now are particularly timely, even urgent, as home and other property owner replace incandescent lights and fixtures by LEDs. The risk is high that ill-informed purchases will lock in bad choices for years, even decades, to come.

E-MAIL COMMENT – 1/21/14

I'd add that for interior light sources:

1. Mounting height is part of the problem. Think of multi-story buildings as very large, very tall outdoor fixtures. The interior lights present the same problems for abutters on the same or lower (and possibly upper) floors.
2. So illumination uniformity means that light spills out of the windows at the same intensity. Window glazing and coverings can moderate and even eliminate that, I suppose.
3. Considerations of light color also hold for indoor sources. Compared to warmer hues, blue light disproportionately affects everyone's sleep patterns.
4. As we saw on the tour, choice of fixtures, e.g., LED, can compound the problem of mounting heights. It's not possible to reduce the height of buildings allowed by zoning. Regulating fixtures as well as the opacity and use of window coverings seems necessary, especially since some establishments, especially labs, have constant or irregular work hours. There is also the problem of people neglecting to turn out the lights. Lights in 1030 Mass. Ave., for example, were on all Thanksgiving, Christmas, and New Year's holidays through the weekends. It would be nice to have the dark back, and certainly good for our health.

E-MAIL COMMENT – 1/28/14

Since indoor sources are also to be considered, are there any photos of light trespass from them? They were not on the tour. Analysis and suggestions for remedies are important for them as well.

Cambridge Evening Lighting Tour

January 15, 2014

Photos/commentary by C.L. Alpert



New streetlamp, across from 344 Broadway, on Inman.



344 Broadway

These bollards send harsh light out sideways into the eyes of passersby, instead of downward to path. The ground lighting is actually coming from a higher fixture. The bollards' horizontally-directed lights can be seen on the garbage can and on the bushes behind the one on the right. Proper garden lighting should have a warmer toned light, directed downward onto the path to help pedestrians find their way, but should not blind their ability to see what's around them.



51 Inman, across alley from 344 Broadway.

Purposeless light trespass from metal halide floodlight on a municipal building.
See next slide...



51 Inman, same lamp and the intended target.

A lower-placed directed lamp would better light the intended passageway without blinding passers-by. (Wasn't dark yet, so hard to see the effect.) An alternative: downward pointing walklights at about four feet off the ground along the ramp. This would allow people to see where they're going but also to see if someone is coming toward them without blinding. See example farther down at Prospect Academy.



276 Harvard Street?

Typical wallpacks (?) blinding street pedestrians rather than directed downward at steps and door lock for security of residents.



273 Harvard Street

Side fixture casts shadow as far as public sidewalk (not shown here), extending well beyond necessity to light walkway to this building. Needs shielding inside the fixture. Porch was also excessively bright. Discussion: Idea that there be a limit on total lumens from a porch fixture— not a limit on wattage.



269 or 273 Harvard (?)

Twin wall packs, unshielded, too high.



265 Harvard Street

Lower lights along rear walkway seem appropriate and attractive; however, light front and center is too high, blinds passersby on sidewalk and shines down directly into someone's window.



263 Harvard Street

Metal halide lamps too high, too bright, too blue. Made it feel like a prison yard, rather than a community of homes. Porch lights were nicer, though not shown here.



263 Harvard Street
Gateway entrance lamps also too bright and unshielded.



Ouch.



UFO's landing at Clinton Apartments!
The idea of the downshielding tophat is nice, but completely undone by the bright horizontal blast almost at eye level.



Clinton Apartments – wide view
See how sharp the shadows are on the sidewalk?



The infamous Prospect Hill Academy Parking Lot

... blazing into neighboring apartments.

Discussion: It is assumed that this was the cheapest way to try to light the whole lot. One tour member mentions that Brookline ordinance limits by “performance method” – measuring foot candles on lot line rather than intensity of source. This results in a preferred approach: posting lights on the perimeter of lot, shining towards center.



Prospect Hill Academy
Undirected wall pack at entryway.



Prospect Hill Academy does something nice here...
Footlights along ramp.



Essex Street doorway.

How do you counsel homeowners on the benefits of low-lumen, diffused lighting?



Green Street, across from parking garage
What purpose does this bright, undirected light serve?

The End.