

RWS

HVAC

Electrical

Plumbing

Fire Protection

Code

200 Wells Avenue
Newton, MA

Existing Site Lighting Study



August 06, 2013

R.W. Sullivan Engineering

The Schrafft Center
529 Main Street
Suite 203
Boston, MA 02129

617.523.8227
www.rwsullivan.com

Prepared for:
DLA Architecture

RECEIVED
Newton City Clerk
2013 AUG - 6 PM 6: 27
David A. Olson, CMC
Newton, MA 02459



(Pole Mounted Flood Lights)



(Bldg Mounted Flood Lights)



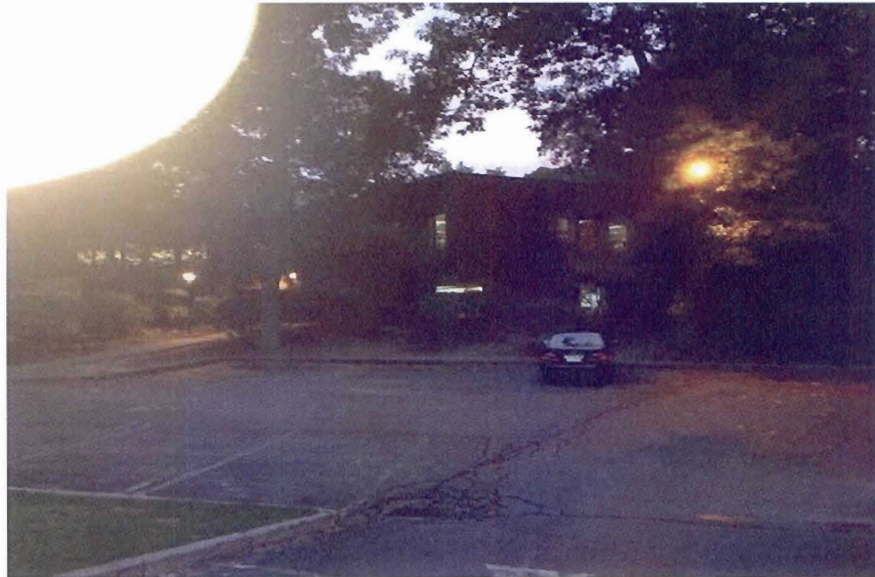
(Parking Lot A Tree obstructions)

Parking Lot B

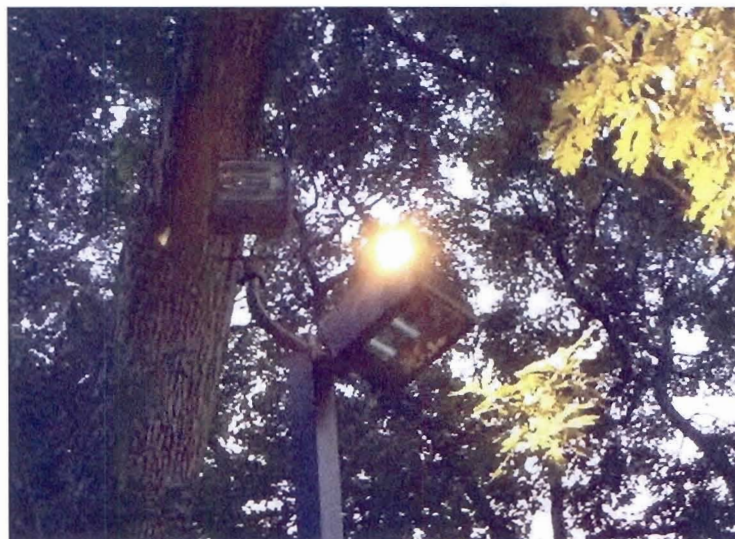
Parking Lot B is illuminated by one (1) 25-0' high site lighting pole with flood light style luminaries mounted on top. The pole mounted luminaries utilizes one (1) high pressure sodium lamp which is assumed to be a 150W lamp.

At the time of our survey one of the pole mounted luminaries required a lamp replacement. RWS recorded the lighting levels on the side of the parking lot which was fully illuminated. The presumption can be made that the remaining areas of the parking lot will have similar lighting levels when the lamps are replaced.

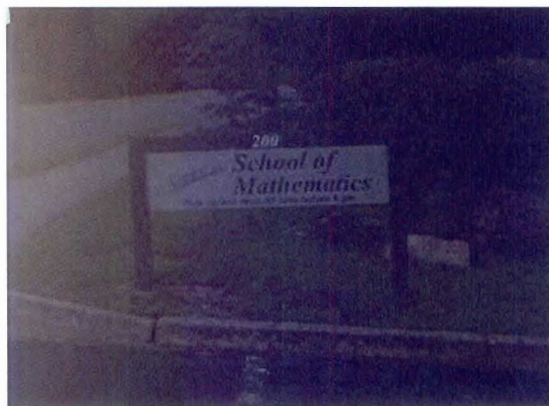
The foot-candle levels measured in Parking Lot B range from as low as 0.3 foot-candles at the entrance to as high 3.4 foot-candles when measured directly in front of the pole mounted light fixtures. Overall, the site lighting coverage meets the minimum IES requirements for "low-level activity".



(Parking Lot B Lighting)



(Parking Lot B Pole Mounted Flood Lights)



(Parking Lot B Entrance)

Proposed Drop off Driveway

Several bollard light fixtures are installed along a walkway path at the edge of wooded area from Parking Lot A to the side entrance of the school facing Wells Avenue. These fixtures provide minimal illumination levels at the adjacent surfaces and are designed primarily for way finding, i.e. to identify the location of the pathway in the woods. The walkway path will be demolished and the bollards removed in order to construct the proposed drop off driveway in the same general location on the site

Currently the proposed drop off driveway consists of a wooded area with no existing lighting. New light fixtures will be required to light this area.



(Walk Way Lighting Bollards)

III. RECOMMENDATIONS

Parking Lot A

With the exception of a few shadowy areas, all areas of Parking Lot A meet the IES recommendations for “low-level activity”. Per conversation with DLA Architecture, the trees on site can be trimmed to eliminate the shadow on the parking lot. RWS recommends trimming trees as discussed.

One of the site lighting poles is located where the new drop off driveway is proposed. Care should be taken when choosing a new location of the relocated site lighting pole. The pole should be relocated no further than needed for the

new road so that the lighting levels in the center of the parking lot are not affected. One of the pole mounted luminaries will require adjusting to avoid light spill across the property light.

Parking Lot B

All areas of Parking Lot B meet the IES recommendations for “low-level activity”. RWS recommends replacing the burnt out lamp in the site lighting pole.

Proposed Drop off Driveway

New site lighting will be required to light the new drop off driveway road. At the time of our visit two options were discussed.

Option A – Building Mounting Lighting

RWS and DLA Architecture discussed providing illumination for the new road via means of building mounted flood lights. RWS believes that this method would require a mixture of building mounted flood lights and pole lights. RWS estimates that this would require building mounted flood lights mounted in a minimum of two (2) locations and one pole mounted light fixture to be installed aside the new road. RWS notes that this option does cause concern of glare from the building mounted flood lights.

Option B – Pole Mounted Site Lighting

To prevent glare, RWS recommends providing new pole mounted lights for illuminating the new drop off driveway road. The pole mounted lights can be selected with a specific roadway distribution to provide uniform illumination on the road. RWS estimates that this would require a minimum of three (3) site lighting poles aside the new road.

Further design work, calculations and site investigation are needed to determine the final design for properly lighting the proposed drop off driveway for options A and B. While pole lighting is preferred, building mounted lighting will minimize the need for significant tree removal to allow placement of the pole light fixtures and to prevent shadowing. Furthermore, the presence of ledge needs to be investigated, that would also affect the process of trenching for new lines and constructing concrete pole bases among the trees next to the driveway.

In any case, the final design for the proposed drop off driveway will provide a uniform level of illumination with a minimum level of 0.6 foot-candles on the pavement pedestrian walkways and 1.0 foot-candles on the pavement of the drop off driveway road to meet the IES requirements for medium nighttime activity. These level are high enough to conservatively address the issues of safety in a location where both motor vehicles and children are present. Due to the higher level of illumination provided at the new drop off driveway, the costly relocation of the existing lighting bollard fixtures would provide no meaningful benefit.

Finally, no new lighting is proposed for the new outdoor play area accessed by the crosswalk since this area will only be used during daylight hours.