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October 29, 2018

Mr. William Eldridge, AICP
Westtown Township
1039 Wilmington Pike
West Chester, PA 19382

Subject: Westtown School, Oak Lane, Conditional Use Application
LaSalle College High School Field Trip

Dear Mr. Eldridge,

On 10/24, this office participated in a visit to the LaSalle College High School to witness the lighting of a soccer field using the same luminaire types as are proposed for Westtown School, Oak Lane Conditional Use Application. Below please find comments on the viewed lighting followed by subsequent recommendations, some of which are followons from previous reviews by this office.

Unfortunately, the venue from which the field lighting was viewed from our van, was somewhat elevated from the grade of the field surface and the lateral view was somewhat narrowed by virtue of the presence of foliage partially blocking view of the entire field surface, thus reducing the ability to fully assess potential off-site glare consequences. The uniformity of the lighting on the field surface was judged to be very satisfactory and no direct glare was visible from the light sources themselves, as seen from the viewing location. Bottom line, the site visit provided an opportunity to witness first hand, the absence of direct glare from the light sources, by virtue of the superior shielding of the luminaires, and to a lesser extent, the tour provided an opportunity to assess the potential off-site light trespass impact, if any, that might be present at the Westtown School proposed fields.

Perhaps partially from the elevated venue from which it was viewed, this observer judged reflected glare from the field surface to be considerable and was therefore caused to speculate just how much of that reflected light might find its way into the night sky.

Turning now to the proposed lighting for the Oak Lane soccer fields, the fields are proposed to be illuminated to an average of 50 footcandles at 3' above finished grade, with a plotted minimum of 42 fc and a maximum of 65 fc. The Illuminating Engineering Society's Recommended Practices, invoked by the Township's Lighting Ordinance, would classify that light level as Class II Play, defined as being appropriate for "competition before up to 5000 spectators." On the other hand, Class III Play, at 30 footcandles average, defined as "some spectators," or Class IV Play, defined as for "Competition or recreational play only, no provision for spectators," carries with it a level of 20 average fc, less than half of the proposed illuminance level for the Oak Lane fields.

For those events involving competition play and with spectators, Class II Play, the proposed illuminance levels, 50 footcandles, would be appropriate. However, for those occasions (perhaps in the majority) when the level of play dictates Class III Play, at 30 fc, or Class IV Play, at 20 fc, there is considerable justification for requiring that the lighting be required to operate at the 30 footcandle level! If the Township rules that the field lighting use is permitted, it is recommended D&O reflect these illuminance level requirement details.

Applicant's submitted lighting design proposes the use of a luminaire mounting height of 80' AFG. Ordinance limits the mounting height to 70', but that a mounting height of up to 85'

may be permitted "when it can be demonstrated to the satisfaction of the Township that the higher mounting height is essential to meet or exceed the other requirements of this section while still controlling off-site glare, light trespass and daytime visibility of the light fixtures as viewed from off site." While the proposed 80' mounting height would facilitate the achievement of field lighting uniformity, it also has the potential to increase visibility of the luminaire clusters as viewed from off-site during daylight hours. It is again recommended that Applicant be requested to explain to the satisfaction of the Township, why the 80' proposed luminaire mounting height is essential to achieving the necessary illuminance levels and uniformity to achieve Ordinance required IES illuminance levels and uniformities, or to otherwise propose a lighting design based on the Ordinance based 70' AFG luminaire mounting height.

If there are questions regarding this review and its recommendations, please advise.

Sincerely,

Stubbe Consulting LLC

A handwritten signature in black ink that reads "C. Stanley Stubbe". The signature is written in a cursive, flowing style.

C. Stanley Stubbe