

TECHNICAL NOTE

Project name **The Racecourse, Mold Road, Wrexham, LL11 2A**
 Project no. **P/2022/054**
 Client **Wrexham AFC**
 Technical Note no. **Erection of freestanding and stand mounted floodlights (and associated work**
 To **Chris Potts; Savills**
 From **Adam Selvey**
 Copy to **Jay Neil; Gardener and Theobald**

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 Approved by **Martin Willis**

1 General comments

Item No	Public Protection Manager's comment	Ramboll's Response:
1	<i>The technical note discusses the potential impact from light spill on surrounding buildings and whereas it does estimate a reduction on the majority of receptors, with the exception of the halls of residence at Glyndwr University where no reduction is modelled. The report does caveat these assumptions by stating:</i> <i>... however there is no guarantee to the aiming of the luminaires that are inoperable are consistent with the luminaires operational at the time of survey. This could potentially lead to higher than double spillage in certain locations</i>	We can confirm that the proposed floodlighting design reduces the light spill on the surrounding buildings and achieves betterment compared with the existing discharge floodlights. When the survey of the existing arrangement took place, several lamps were not operational, this meant lower light levels were measured than if all the lamps operational (i.e. a best case for existing). If all lamps were operations, the light spill from the existing floodlighting would be significantly higher than measured. The flood lighting needs to maintain illumination level performance at the end of their life. Therefore, existing flood lighting light spill at lamp replacement is significantly higher than that at the end of its life. The light spillage from the proposed flood lights can be ensured as LED degradation is significantly lower than existing lighting. It is for these reasons we state that the existing light spillage could potentially be double that which we measured.

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2	<i>The Institute of Light Professionals has published GN01/21 The Reduction of Obtrusive Light. This guide categorises various locations for assessment purposes (table 2) with the most applicable to the Racecourse area being:</i> <table><tr><th>Zone</th><th>Surrounding</th><th>Lighting Environment</th><th>Examples</th></tr><tr><td>E3</td><td>Suburban</td><td>Medium district brightness</td><td>Well inhabited rural and urban settlements, small town centres of suburban locations</td></tr><tr><td>E4</td><td>Urban</td><td>High district brightness</td><td>Town / City centres with high levels of night-time activity</td></tr></table> <i>For E3 categorisation the following light levels are recommended for the control of obtrusive light (Table 3):</i> <i>Pre-curfew 10 Lux</i> <i>Post-curfew 2 Lux</i> <i>The guide makes the following comment about curfew:</i> <i>Depending upon application curfew times often commence between 21:00 to 23:00 and may run until 07:00. However, exact curfew hours should be carefully applied to ensure the reduction of obtrusive light is prioritised within the immediate environment and towards sensitive human as well as fauna and flora receptors.</i>	Zone	Surrounding	Lighting Environment	Examples	E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations	E4	Urban	High district brightness	Town / City centres with high levels of night-time activity	The CIE 150, where the original table exists, gives a clearer definition of lighting zone. E3 is medium Brightness and is for well inhabited rural and urban settlements. Whereas E4 high Brightness is towns and city centres. We believe that the Racecourse Stadium is in the commercial area of the city so E4 is more appropriate (Stadium, University, roadside activities such as petrol station, Rail Station). However, this standard only covers lux levels up to 500lux so doesn't cover the UEFA Category 4 requirements. Note UEFA category 4 requirements are. <i>"For reference purposes, pitch illuminance systems should <u>not produce illuminance levels greater than 50 lux on the vertical plane at a height of 1.5m and a distance of 50–200m</u> from the stadium perimeter. For lower-illuminance level stadiums the stray light produced by the pitch illuminance system should be lower."</i> The curfew time for lighting is for nuisance. However, the lighting level will be reduced post-match and light spill will comply with post curfew requirements. Perceived match-related nuisance from transport and fans leaving the area in the existing condition will continue later than that of the floodlighting operation. We therefore believe the exact curfew time stated adjacent needs to be sensibly agreed.
Zone	Surrounding	Lighting Environment	Examples											
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations											
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity											
3	<i>The technical note models the Lux levels in the vertical plane to be in excess of both the pre and post-curfew recommendations at all of the modelled locations and by a significant margin in two residential cases.</i>	As per above we believe the proposed floodlights follow UEFA Lighting Requirements and are a significant betterment in terms of reduced light spill than the existing discharge floodlight installation. The proposed installation is compliant with the post curfew lighting as the field of play illumination is significantly reduced outside of the match periods. We therefore believe the exact curfew time stated adjacent needs to be sensibly agreed												

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4	<i>It is accepted that the proposed new lights will likely result in an improvement (based on modelled uncertainty as discussed in point 1 above). It is also acknowledged that there are no records of complaints of light nuisance from residents living nearby (both in houses and the student halls). However, given the above it cannot be ruled out that the proposals in this planning application have the potential to cause light nuisance.</i>	If there is no record of complaints about the existing floodlights, we believe any risk in complaints about the new light spill would be minimal as we are making the situation significantly better. Also the use of LED means ramping up and down before and after match can happen quicker than the existing discharge floodlights.
5	<i>The technical note discusses that mitigation will be achieved by: a) Fixing the angles of the LED's to prevent drift during bulb replacement, in effect preventing potentially altering the light spill pattern. b) Reducing the overall time the LEDs will be lit as they will achieve the required brightness in a shorter time frame than the existing bulb system.</i>	Noted – we agree with these comments and the installation will reflect these points.
6	<i>The mitigation would not, however, alter the brightness levels expected at the properties discussed in the technical note, which as has been commented is expected to be in excess of those likely to result in obtrusive light.</i>	The spill light from the proposed flood lights is compliant with the applicable standard (UEFA Lighting Standards). Compared to the existing installation, the light spill from the proposed flood lights will be significantly reduced. As flood lights require regular cleaning and maintenance, We can confirm that the light spill from the proposed solution Will not be worsened over time.
7	<i>Given the complexities associated with this, I recommend that the opinion of a professional light engineer be sought to advise the Economy and Planning Department on the suitability and potential issues associated with this planning application.</i>	Given the improvements against the existing situation, the design of the new floodlights and the very infrequent nature of their use (6 – 9 evening games per season) then it is unnecessary for WCBC to be commissioning external advice. The application has been with WCBC for 2 months and is ready for determination. As also noted in the submission the proposed floodlights offer significant energy and CO2 saving.