

Subject: App 2021/92009 Union Mills, Tanyard Road, Milnsbridge, HD3 4NB
Date: 28 June 2021 14:07:54

Having read the submitted information for this application. I am very happy with all but 1 of the points in answer to my comments dated 19th May 2021, that being the car park site lighting.

Please note the below recommended lighting standards for sites where there is an ecology factor for wildlife. This is very likely to become the standard for any future Secured by Design sites.

- Non adoptable areas can be lit to two lighting classes less than the nearest road. For instance, if the adoptable areas are lit to P4 under BS5489 then we can light non adoptable to P6 which is equivalent to moon light so nice low levels but with good uniformity and at least its lit to a recognised standard under a recognised standard.
- Shields, or integral back light reduction optical control, can be used to define a stronger rear cut off behind luminaires to ensure dark corridors are maintained. With the right control light dips to below 1 lux within a few meters of a road or path so it should be possible to maintain the darkness where required whilst providing lighting for the security of human receptors.
- Vertical lux level calculation grids can demonstrate the light that is likely to affect different types of bats. Some fly high and some low, some like light (or at least tolerate it) some are very light sensitive and need different approaches. A designer showing the vertical effects of a design in key areas is a good way to provide comfort to those assessing it that all receptors are catered for. It can also be used for you to see how facial recognition might be ascertained in high crime areas.
- If a dark ecology corridor crosses a road then luminaires can (where possible) be placed either side to give the lowest level of light in the centre of the corridor which should mean levels are kept to something suitable for most species to tolerate.
- **Bollards should not be used on any design unless just for waymarking.** They are unsuitable for bats as they dump all of their light beneath the bollard creating bright patches which are higher than that achieved with lighting columns. They also push light upwards to provide the spread of light and therefore provide increased levels of upward light and spill light (both not good for ecology despite what the new ILP and bat conservation trust guidance may say). A 5-6m high column with the appropriate optical controlled streetlight will always give a better result and lessen the impact against bollards.
- Using a 3000K, or less, colour temperature LED will reduce the blue spectral peak within the light and therefore provide a reduced negative effect on ecology and their food sources. It also reduces the impact on egg identification and predation. See attached image which shows the spectral difference. It's the blue light that predominately affects ecology (and humans) the most so we would always push

for a warm LED (3000K) or below (2200-2700K) for every scheme regardless of ecology.

- Dimming after 10pm (or 11, 12) to 5 or 6am is also a possibility to further reduce any impact once most foot traffic has reduced. This can be done with a stand-alone pre-set dimming driver should a central management system (CMS) not be present or useable. Dimming by one lighting class can be implemented where the risk is okay to do so.
- 0.5 and 1 lux contours should be shown on all drawings to ensure spill light is shown and this enables impacts to be clearly assessed. These levels are around moon light and 1-2lux also is used for obtrusive light limitations for human receptors so this can help identify the potential for glare into bedrooms or disability glare for road users. G classes can also help with the right amount of light for facial recognition however these are now not utilised under BS5489-1:2020 as we have moved to a different method of evaluation. Personally, I would always be looking for a luminaire's G class to be around G4 to G2 which would reduce glare but also provide a little facial lighting to aid identification. G1 is too high a spread of light and G6 is too downward to provide anything on the face.
- For all designs you should insist on an independent lighting designer to produce the work, not a manufacturer or other type of consultant as these will not be compliant.

I would like to encourage the applicants to change the submitted lighting bollards to a lighting scheme that will incorporate the above advice and standards, thus maintaining the requirement for the ecology and site security.

If you have any questions, please come back to me so we can discuss them. At present I am still reluctant to discharge Condition 21 (Crime Prevention) until we have an agreement on the site lighting.

Kind regards

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