

13th July 2021

Havant Borough Council Response – Lighting

Response to comments received from Havant Borough Council on 1st July 2021 regarding lighting, in particular lighting on the proposed footpaths on Hulbert Road for the outline planning application with all matters reserved except access, for the development of up to 120 dwellings and associated improved site access, landscaping, footpaths, SuDS and other associated works. Planning Reference APP/20/00441

Tetra Tech's responses are presented below in Blue.

Havant Borough Council

Comment 1:

'I spoke to Chris Hirst at the Highway Authority this week who explained in some detail why the street lighting for the footpaths is required at this stage. His concerns were around ecology, levels and the loss of further trees in the future if this is not agreed at the outline stage.'

Tetra Tech Response 1:

Following a review of the updated plans, the lighting layout has been updated to include luminaires on both footpaths to the north and south of the proposed site along Hulbert Road.

Following a review of the *Bat Activity Survey* Undertaken by Tetra Tech (Dated March 2021) and discussion with the project ecologist, it is understood that the woodland edge and line of trees along the site boundary and proposed footpaths are used as foraging/commuting routes for up to 5 species of bat. Therefore, the lighting design should result in zero upward light spill and light spillage of less than 1 lux onto the retained tree line.

Additionally, the lighting scheme should install LED lamps of colour temperature below 3500K warm white.

In addition to the Bat Activity Survey Undertaken by Tetra Tech (Dated March 2021) and discussion with the project ecologist, the *Tree Survey Plan* undertaken by Barrwell Tree Care (Ref:16030-BT3) has been reviewed. The tree survey plan provides an indication of the tree species, height of trees and quality of trees along the northern and southern footpath. It should be noted that a worst-case assessment has been undertaken, assuming that all trees are of high quality for foraging and community for bats, and the 1 lux criteria should be achieved.

Following a review of the above documents, the lighting layout for the proposed footpaths north and south of the proposed development along Hulbert Road has been designed to avoid light spill over 1 lux on the trees on both the east and west of the footpath.

Figure 1 illustrates the location of the modelled sensitive ecological receptors for the northern footpath and Figure 2 the southern footpath. Figure 3 illustrates the proposed lighting layout for the northern footpath and Figure 4 the southern footpath.

Figure 1 – Ecological Receptor Location - North Footpath



Figure 2 – Ecological Receptor Location - South Footpath

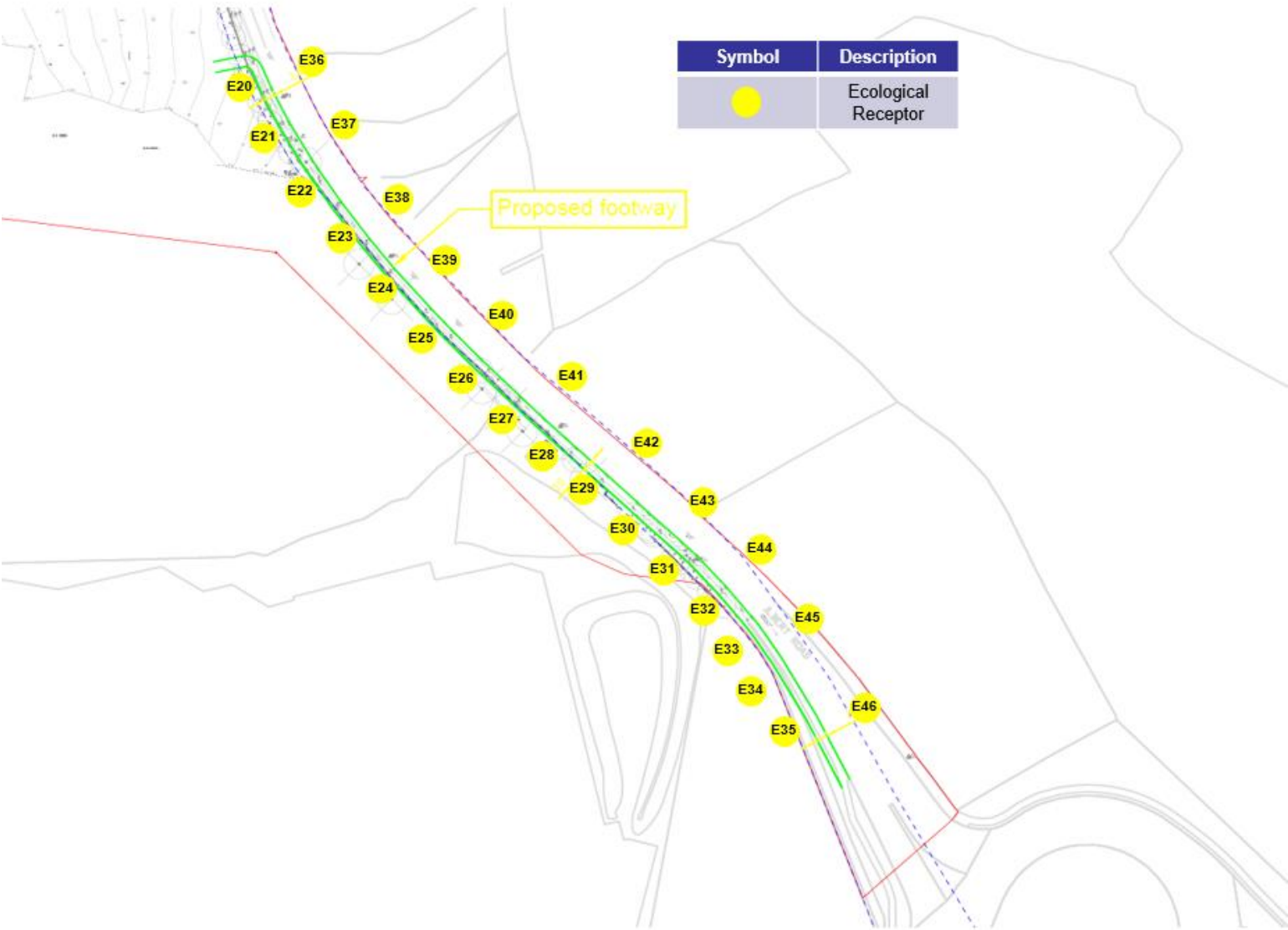


Figure 3 – Proposed Lighting Layout - North Footpath

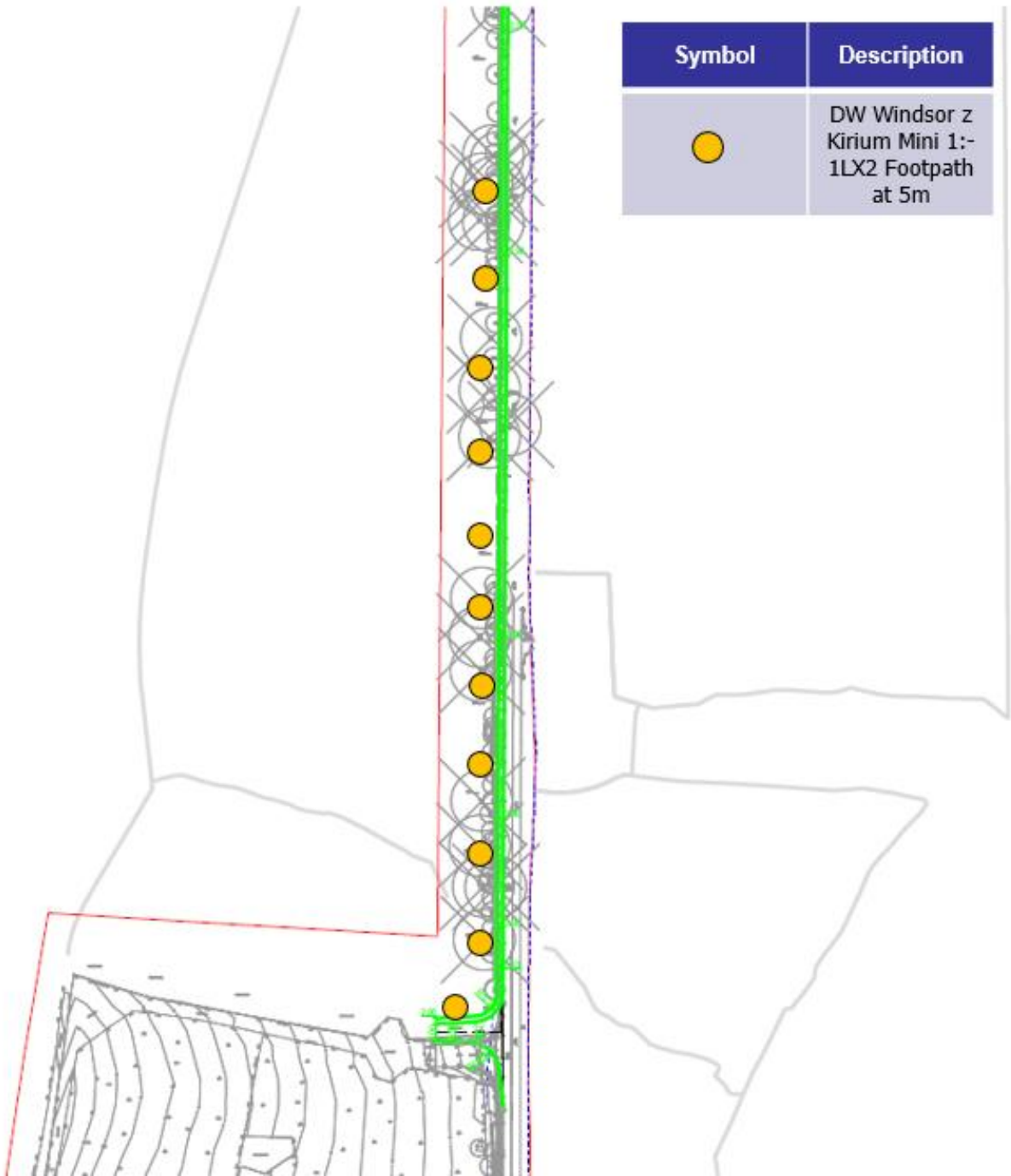


Figure 4 – Proposed Lighting Layout - South Footpath



Table 1 illustrates the lux levels observed at the assessed ecological receptors shown in Figure 1 and Figure 2 for heights between 1m and 5m.

As detailed within the *Tree Survey Plan* undertaken by Barwell Tree Care (Ref:16030-BT3) the smallest tree surveyed is 5m tall. The proposed luminaires, DW Windsor Kirium Mini 1 (3.5k), are modelled at 5m in height. The proposed LED luminaires will result in zero upward light therefore lux levels above the luminaires are 0. As shown in Table 1, the lux levels at 5m and below are under 1 lux and therefore the proposed lighting design will not result in any adverse effects on the assessed ecological receptors.

Table 1 – Predicted Modelled Illuminance at Ecological Receptors between 1m – 5m.

ID	Predicted Model Illuminance (lux)				
	1m	2m	3m	4m	5m
E1	0.5	0.33	0.22	0.14	0.09
E2	0.52	0.35	0.2	0.14	0.09
E3	0.44	0.31	0.21	0.15	0.1
E4	0.43	0.3	0.19	0.13	0.09
E5	0.47	0.33	0.2	0.14	0.09
E6	0.42	0.33	0.23	0.16	0.11
E7	0.28	0.25	0.19	0.14	0.1
E8	0.25	0.26	0.21	0.17	0.12
E9	0.09	0.12	0.15	0.21	0.14
E10	0.08	0.12	0.19	0.22	0.11
E11	0.9	0.53	0.22	0.13	0.12
E12	0.13	0.14	0.12	0.12	0.09
E13	0.13	0.12	0.12	0.11	0.1
E14	0.17	0.13	0.12	0.11	0.1
E15	0.66	0.36	0.16	0.1	0.09
E16	0.4	0.21	0.13	0.1	0.08
E17	0.02	0.01	0.01	0.01	0.02
E18	0.02	0.02	0.01	0.01	0.02
E19	0.01	0.01	0.02	0.03	0.03
E20	0.18	0.2	0.17	0.13	0.1
E21	0.31	0.31	0.26	0.21	0.16
E22	0.31	0.31	0.26	0.22	0.17
E23	0.51	0.42	0.27	0.2	0.13

ID	Predicted Model Illuminance (lux)				
	1m	2m	3m	4m	5m
E24	0.86	0.8	0.29	0.23	0.15
E25	0.57	0.49	0.29	0.21	0.15
E26	0.74	0.38	0.26	0.19	0.13
E27	0.54	0.37	0.2	0.14	0.1
E28	0.35	0.23	0.17	0.13	0.09
E29	0.54	0.35	0.18	0.15	0.1
E30	0.24	0.26	0.26	0.17	0.12
E31	0.25	0.29	0.23	0.18	0.14
E32	0.25	0.29	0.25	0.18	0.15
E33	0.24	0.25	0.22	0.17	0.13
E34	0.55	0.73	0.26	0.21	0.14
E35	0.42	0.3	0.26	0.21	0.17
E36	0.17	0.12	0.11	0.08	0.06
E37	0.12	0.1	0.12	0.12	0.1
E38	0.06	0.09	0.14	0.12	0.09
E39	0.06	0.08	0.08	0.08	0.09
E40	0.08	0.08	0.08	0.07	0.07
E41	0.04	0.07	0.12	0.09	0.06
E42	0.04	0.05	0.07	0.07	0.06
E43	0.05	0.07	0.07	0.06	0.05
E44	0.06	0.07	0.11	0.09	0.07
E45	0.11	0.08	0.08	0.09	0.09
E46	0.06	0.08	0.1	0.11	0.1

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