

Clarkson & Woods / Banes – To Inform Bath Planning Guidance

Baseline Lighting Survey Data

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1. Baseline Lighting Survey

1.1. Scope and methodology

Day and night-time site visits were undertaken on the 14th of July and 17th July 2017 to ascertain the current baseline lighting conditions.

The weather conditions on both nights was dry and clear, with a Waning Gibbous/ Third Quarter Moon phase. Night-time measurements were taken between 10:30pm and 2am.

Survey locations were chosen in conjunction with the project ecologist in relation to sensitive ecological receptor locations. These locations are denoted by the prefix E, and are listed in Table 1.1

TABLE 1.1 : ECOLOGICAL RECEPTOR SURVEY LOCATIONS	
Survey Location Reference	GPS Location
E24	ST 74882 64401
E25	ST 74882 64406
E26	ST 74894 64425
E27	ST 74906 64418
E28	ST 74880 64451
E29	ST 74741 64474
E30	ST 74666 64549
E31	ST 74618 64566
E32	ST 74511 64593
E33	ST 74515 64596
E34	ST 74516 64610
E35	ST 74514 64617
E36	ST 74408 64670
E37	ST 74396 64745
E38	ST 74390 64773
E39	ST 74387 64777
E40	ST 74301 64889
E41	ST 74300 64897
E42	ST 74307 64896
E43	ST 74189 65003
E44	ST 74169 64967
E45	ST 74168 64966
E46	ST 74163 64969
E47	ST 74121 65011
E48	ST 74121 65024
E49	ST 74028 65096

TABLE 1.1 : ECOLOGICAL RECEPTOR SURVEY LOCATIONS	
Survey Location Reference	GPS Location
E50	ST 73970 6 5118
E51	ST 73875 6 5136
E52	ST 73858 65135
E53	ST 73846 65136
E54	ST 73852 65131
E55	ST 73852 65141
E56	ST 73804 65140
E57	ST 73667 65141
E58	ST 73546 65077
E59	ST 73544 65070
E60	ST 73537 65075
E61	ST 73518 65066
E62	ST 73430 64970
E63	ST 73308 64927
E64	ST 73286 64916
E65	ST 73235 64891
E66	ST 73196 64873
E67	ST 73142 64852
E68	ST 73119 64850
E69	ST 73115 64851
E70	ST 73062 64829
E71	ST 72843 64864
E72	ST 72842 64867
E73	ST 72840 64862
E74	ST 72743 64875
E75	ST 72690 64882
E76	ST 72690 64878
E77	ST 72689 64879
E78	ST 72686 64867
E79	ST 72251 65036

Measurements of point illuminance were recorded at each of the survey locations. These were recorded horizontally on the ground at each location, and at 1.5m in the vertical plane in the four agreed directions, perpendicular to the river- facing the river, 90⁰ clockwise, perpendicular to the river directed away from the river, 90⁰ clockwise. Measurements were taken using a calibrated Konica Minolta T-10A Illuminance Meter (Serial no: 30014456/ 20012926).

1.2. Measurements of Illuminance at Ecological Receptor Survey Locations

Table 1.2 summarises the levels of illuminance recorded at each view survey location.

TABLE 1.2 : ECOLOGICAL RECEPTOR LOCATIONS - LEVELS OF ILLUMINANCE RECORDED						
Survey Location Reference	Location Notes	Horizontal Illuminance at Ground level	Vertical Illuminance at 1.5m			
			Facing River	90° Clockwise from river	Away from River	90° Clockwise from river
E24		0.36	0.30	0.46	1.08	2.09 0.71 (Vehicles)
E25		0.57	0.30	0.45	0.74	0.47
E26	Under lamp post	2.61	0.65	1.64	2.23	5.67
E27	Under twin head lamp post	43.50	4.32	5.08	6.53	4.27
E28		118.40	16.07	44.90	14.62	4.48
E29	Adjacent to street light	0.08	0.66	0.21	0.36	0.38
E30		6.75	0.15	0.88	6.55	1.58
E31		0.66	0.05	0.04	0.35	0.73
E32		0.02	0.05	0.02	0.03	0.02
E33	5m from survey location 32	0.03	0.01	0.05	0.05	0.02
E34	15m from survey location 32 bottom of bank	0.01	0.02	0.02	0.03	0.02
E35	25m from survey location 32	0.02	0.03	0.08	0.05	0.01
E36	Low Pressure Sodium luminaire close to path (in hedge)	0.98	0.15	0.16	1.86	0.74

Survey Location Reference	Location Notes	Horizontal Illuminance at Ground level	Vertical Illuminance at 1.5m			
			Facing River	90° Clockwise from river	Away from River	90° Clockwise from river
E37	Sainsbury's lamp post not switched on. Internal lighting emanating from building	0.03	0.02	1.30	2.12	0.02
E38	Under bridge	0.00	0.00	0.00	0.00	0.00
E39		0.18	0.16	0.05	0.05	0.09
E40		0.02	0.11	0.03	0.00	0.00
E41	5m from survey location 40	0.00	0.03	0.00	0.00	0.00
E42	15m from survey location 40	0.03	0.00	0.04	0.21	0.12
E43		0.07	0.27	0.09	0.00	0.02
E44		4.05	0.06	1.87	4.30	5.72
E45	5m from water's edge	5.72	0.68	0.70	3.98	4.74
E46	Under lamp post 5m from water's edge	24.96	1.04	1.02	8.03	5.94
E47	On bridge	48.90				
E48		0.58	0.11	0.10	0.93	0.59
E49		0.32	0.31	0.42	2.23	0.29
E50	By floodlight / lit bridge	9.14	0.49	3.67	17.72	1.02
E51	Beside lit bridge	2.94	0.89	4.81	2.66	0.17

Survey Location Reference	Location Notes	Horizontal Illuminance at Ground level	Vertical Illuminance at 1.5m			
			Facing River	90° Clockwise from river	Away from River	90° Clockwise from river
E52	Under lit bridge	0.02	0.06	0.06	0.02	0.10
E53	Beside lit bridge	1.16	0.14	0.15	1.10	1.03
E54	On lit bridge	69.80	7.99	18.56	21.64	10.53
E55	Top of bank next to lit bridge	1.46	0.74	1.40	4.67	5.12
E56	Adjacent to street light	1.39	0.07	0.10	0.94	0.50
E57		0.00	0.05	0.00	0.00	0.08
E58		0.22	0.17	0.20	0.13	0.10
E59	5m from survey location 58	0.04	0.05	0.13	0.09	0.03
E60	15m from survey location 58	0.55	0.22	0.16	0.17	0.47
E61	Opposite – high glare luminaire	0.69	0.00	0.28	1.65	0.14
E62		0.00	0.28	0.20	0.01	0.01
E63		0.05	0.03	0.02	0.00	0.00
E64	Adjacent to building mounted floodlights	2.10	0.07	1.74	2.40	0.10
E65	Adjacent to building mounted floodlights	5.82	0.08	0.85	7.53	0.18
E66		0.01	0.02	0.04	0.00	0.01

Survey Location Reference	Location Notes	Horizontal Illuminance at Ground level	Vertical Illuminance at 1.5m			
			Facing River	90° Clockwise from river	Away from River	90° Clockwise from river
E67		0.01	0.33	0.09	0.01	0.01
E68		0.01	0.39	0.04	0.02	0.02
E69	5m from survey location 68	0.00	0.26	0.00	0.02	0.02
E70	15m from survey location 68	0.04	0.14	0.12	0.02	0.00
Under bridge by Lidl 1m height	GPS Survey location not recorded for this measurement.	0.25				
E71		0.05	0.02	0.02	0.22	0.00
E72	5m from survey location 71	0.04	0.00	0.03	0.29	0.02
E73	15m from survey location 73	0.22	0.00	0.04	0.72	0.05
E74		3.11	0.11	5.71	11.39	0.43
E75	Directly under LED lamp post	14.39				
E76	3m from lamp post (survey location 75)	11.54				
E77	5m from lamp post	8.13				
E78	15m from lamp post (on bridge)	1.48	1.76	0.50	0.57	0.34
E79		0.00	0.00	0.00	0.00	0.00

1.3. Lighting Appraisal and Observations

The images below are reference images for the locations surveyed and show some examples of the various types of lighting currently installed.



Figure 1.01 - 1.04



Figure 1.05 - 1.07



Figure 1.08 - 1.09



Figure 1.10 - 1.12

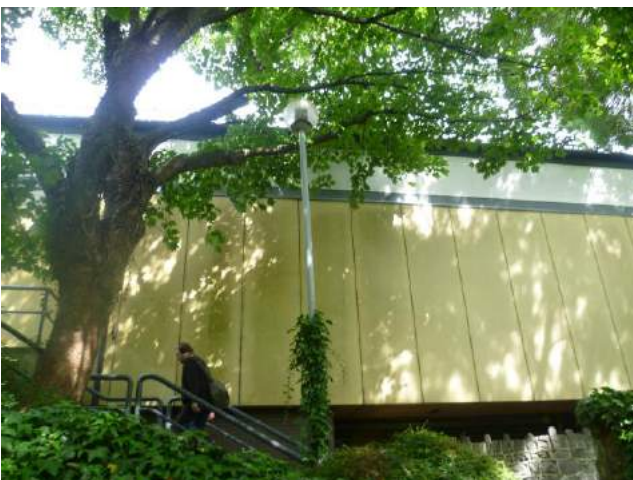




Figure 1.13 - 1.16



Figure 1.17





Figure 1.18 - 1.22





Figure 1.23- 1.25



Figure 1.26 - 1.27





Figure 1.28 - 1.30





Figure 1.31 - 1.35





Figure 1.36 - 1.43





Figure 1.44 - 1.48





Figure 1.49 - 1.53





Figure 1.54 - 1.60



Figure 1.61 - 1.62





Figure 1.63 - 1.69

1.4. Additional Notes

Survey Location 24

- ◆ Angels Place
- ◆ Approx. 7 / small proportion of windows with internal lighting switched on
- ◆ Car park behind- multiple lights not working, including lights adjacent to bank
- ◆ Boats were moored at this location with lights on, which may have effected results
- ◆ 0.38 lux recorded horizontally and 2.21 lux vertically recorded from a transitory lit boat

Survey Location 29

- ◆ Only one floor had internal lighting switched on

Survey Location 44

- ◆ Street lighting columns- approx. 13m spacing. 16 LED luminaires

Survey Location 47

- ◆ Bridge is only lit on one side, handrail lighting- well directed

Survey Location 49

- ◆ Location by lane, before lit bridge
- ◆ 2 x low pressure sodium lights on
- ◆ 1 column and 2 building mounted lights not switched on and directly adjacent to path- lighting levels in this location could potentially be much higher than recorded

Survey Location 51

- ◆ Bridge is very highly lit- would appear to be over-lit considering recorded measurements
- ◆ Profile LED lighting has been installed sideways under handrails (so light is directed at 90 degrees to the ground) and under seating
- ◆ Levels of illuminance recorded ranged from 6 lux minimum, to approx. 64 lux maximum, with 30 lux recorded in the middle of the footpath on the bridge
- ◆ Highly visible from a distance



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