



Wildlife Sensitive Lighting Plan.

Land Off, St Marys Avenue, Overton, Wrexham, LL13 0ES

“Lighting in the vicinity of a bat roost causing disturbance and potential abandonment of the roost could constitute an offence both to a population and to individuals under current legislation including Habitats Directive 2010 and Wildlife and Countryside Act 1981”.

The following Wildlife Sensitive Lighting Plan and layout will be adopted on site:

Dark movement corridors will be implemented around the peripheries of the site, particularly in areas where existing mature vegetation exists, to ensure that feeding and commuting corridors are not adversely impacted by the development. These zones are found along the north, east, and south boundary of the site.

Where an individual residence lies in proximity to a section of the dark movement corridor, the design of external and internal lighting will be adjusted to ensure that light spill is kept to a minimum. Specification for internal luminaires is as follows:

- A warm white spectrum will be adopted throughout the scheme to reduce blue light component (<2700Kelvin).
- Internal luminaires will be recessed where installed in proximity to windows to reduce glare and light spill. LED luminaires will be used internally where possible due to their sharp cut-off, lower intensity, and dimming capability.
- Luminaires will always be mounted horizontally with an upward light ratio of 0%.

Plot 23-29 will not have any external lighting installed on their north-facing elevations. It will be acceptable to install a single external garden light, within the following guidelines:

- Any exterior security or decorative lights to be installed on the development site will be less than 3 m from the ground and fitted with hoods to direct the light below the horizontal plane, at an angle of less than seventy degrees from vertical, and shall not be fixed to, or directed at, bat boxes or gables or eaves.
- Security lighting will be set on motion sensors with short timers (<1 minute) and will be LED with a passive infrared trigger.
- External lights will be hooded and directed toward the ground to reduce upward light spill.
- A warm white spectrum will be adopted throughout the scheme to reduce blue light component (<2700Kelvin).

The same measures apply to plots 30-33, but with respect to their east facing elevation.

The street lighting scheme at the site will have the following specifications:

- The scheme is compliant with the ILP GN08.



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE

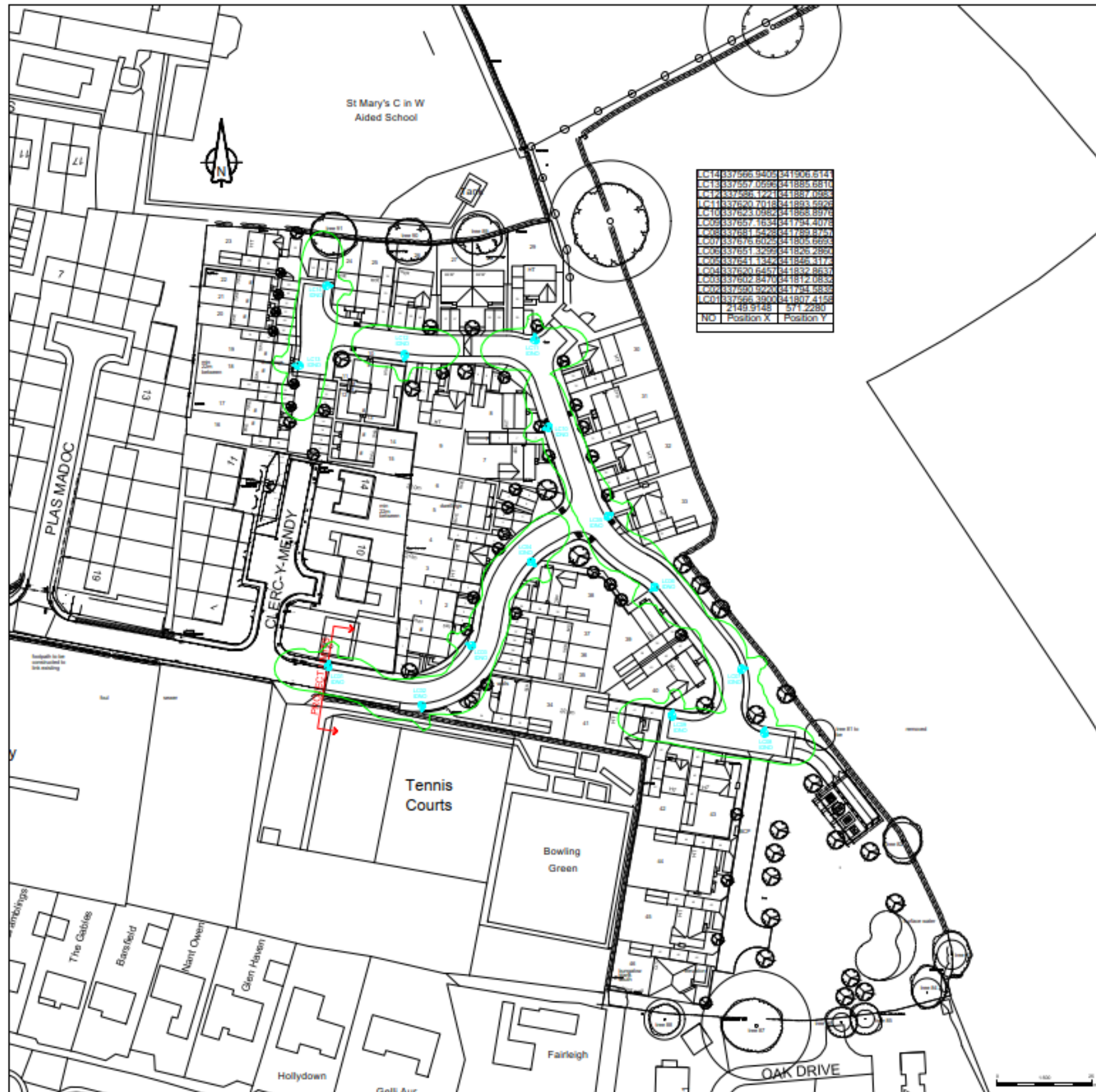
- All light spill areas on the ground and/or boundaries will be at 0.5 or 0 lux. A total of around 2m of adjacent hedge will fall into a 0.5lux light zone. All other boundary features will have zero light spill from street lighting.
- Lighting columns to be installed on site will be 'Vision Illumination, complete with rear shield'.
- Lighting columns will use LED lights with a colour temperature of 2700k.

Bat Conservation Trust (2018) Bats and artificial lighting in the UK. Bats and the Built Environment series, Guidance Note 08/18. Institution of Lighting Professionals.



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE



4014	537566	54006	541506	614
4015	537557	53956	541585	6310
4016	537558	54006	541587	6325
4017	537559	54006	541588	6340
4018	537560	54006	541589	6355
4019	537561	54006	541590	6370
4020	537562	54006	541591	6385
4021	537563	54006	541592	6400
4022	537564	54006	541593	6415
4023	537565	54006	541594	6430
4024	537566	54006	541595	6445
4025	537567	54006	541596	6460
4026	537568	54006	541597	6475
4027	537569	54006	541598	6490
4028	537570	54006	541599	6505
4029	537571	54006	541600	6520
4030	537572	54006	541601	6535
4031	537573	54006	541602	6550
4032	537574	54006	541603	6565
4033	537575	54006	541604	6580
4034	537576	54006	541605	6595
4035	537577	54006	541606	6610
4036	537578	54006	541607	6625
4037	537579	54006	541608	6640
4038	537580	54006	541609	6655
4039	537581	54006	541610	6670
4040	537582	54006	541611	6685
4041	537583	54006	541612	6700
4042	537584	54006	541613	6715
4043	537585	54006	541614	6730
4044	537586	54006	541615	6745
4045	537587	54006	541616	6760
4046	537588	54006	541617	6775
4047	537589	54006	541618	6790
4048	537590	54006	541619	6805
4049	537591	54006	541620	6820
4050	537592	54006	541621	6835
4051	537593	54006	541622	6850
4052	537594	54006	541623	6865
4053	537595	54006	541624	6880
4054	537596	54006	541625	6895
4055	537597	54006	541626	6910
4056	537598	54006	541627	6925
4057	537599	54006	541628	6940
4058	537600	54006	541629	6955
4059	537601	54006	541630	6970
4060	537602	54006	541631	6985
4061	537603	54006	541632	7000
4062	537604	54006	541633	7015
4063	537605	54006	541634	7030
4064	537606	54006	541635	7045
4065	537607	54006	541636	7060
4066	537608	54006	541637	7075
4067	537609	54006	541638	7090
4068	537610	54006	541639	7105
4069	537611	54006	541640	7120
4070	537612	54006	541641	7135
4071	537613	54006	541642	7150
4072	537614	54006	541643	7165
4073	537615	54006	541644	7180
4074	537616	54006	541645	7195
4075	537617	54006	541646	7210
4076	537618	54006	541647	7225
4077	537619	54006	541648	7240
4078	537620	54006	541649	7255
4079	537621	54006	541650	7270
4080	537622	54006	541651	7285
4081	537623	54006	541652	7300
4082	537624	54006	541653	7315
4083	537625	54006	541654	7330
4084	537626	54006	541655	7345
4085	537627	54006	541656	7360
4086	537628	54006	541657	7375
4087	537629	54006	541658	7390
4088	537630	54006	541659	7405
4089	537631	54006	541660	7420
4090	537632	54006	541661	7435
4091	537633	54006	541662	7450
4092	537634	54006	541663	7465
4093	537635	54006	541664	7480
4094	537636	54006	541665	7495
4095	537637	54006	541666	7510
4096	537638	54006	541667	7525
4097	537639	54006	541668	7540
4098	537640	54006	541669	7555
4099	537641	54006	541670	7570
4100	537642	54006	541671	7585
4101	537643	54006	541672	7600
4102	537644	54006	541673	7615
4103	537645	54006	541674	7630
4104	537646	54006	541675	7645
4105	537647	54006	541676	7660
4106	537648	54006	541677	7675
4107	537649	54006	541678	7690
4108	537650	54006	541679	7705
4109	537651	54006	541680	7720
4110	537652	54006	541681	7735
4111	537653	54006	541682	7750
4112	537654	54006	541683	7765
4113	537655	54006	541684	7780
4114	537656	54006	541685	7795
4115	537657	54006	541686	7810
4116	537658	54006	541687	7825
4117	537659	54006	541688	7840
4118	537660	54006	541689	7855
4119	537661	54006	541690	7870
4120	537662	54006	541691	7885
4121	537663	54006	541692	7900
4122	537664	54006	541693	7915
4123	537665	54006	541694	7930
4124	537666	54006	541695	7945
4125	537667	54006	541696	7960
4126	537668	54006	541697	7975
4127	537669	54006	541698	7990
4128	537670	54006	541699	8005
4129	537671	54006	541700	8020
4130	537672	54006	541701	8035
4131	537673	54006	541702	8050
4132	537674	54006	541703	8065
4133	537675	54006	541704	8080
4134	537676	54006	541705	8095
4135	537677	54006	541706	8110
4136	537678	54006	541707	8125
4137	537679	54006	541708	8140
4138	537680	54006	541709	8155
4139	537681	54006	541710	8170
4140	537682	54006	541711	8185
4141	537683	54006	541712	8200
4142	537684	54006	541713	8215
4143	537685	54006	541714	8230
4144	537686	54006	541715	8245
4145	537687	54006	541716	8260
4146	537688	54006	541717	8275
4147	537689	54006	541718	8290
4148	537690	54006	541719	8305
4149	537691	54006	541720	8320
4150	537692	54006	541721	8335
4151	537693	54006	541722	8350
4152	537694	54006	541723	8365
4153	537695	54006	541724	8380
4154	537696	54006	541725	8395
4155	537697	54006	541726	8410
4156	537698	54006	541727	8425
4157	537699	54006	541728	8440
4158	537700	54006	541729	8455
4159	537701	54006	541730	8470
4160	537702	54006	541731	8485
4161	537703	54006	541732	8500
4162	537704	54006	541733	8515
4163	537705	54006	541734	8530
4164	537706	54006	541735	8545
4165	537707	54006	541736	8560
4166	537708	54006	541737	8575
4167	537709	54006	541738	8590
4168	537710	54006	541739	8605
4169	537711	54006	541740	8620
4170	537712	54006	541741	8635
4171	537713	54006	541742	8650
4172	537714	54006	541743	8665
4173	537715	54006	541744	8680
4174	537716	54006	541745	8695
4175	537717	54006	541746	8710
4176	537718	54006	541747	8725
4177	537719	54006	541748	8740
4178	537720	54006	541749	8755
4179	537721	54006	541750	8770
4180	537722	54006	541751	8785
4181	537723	54006	541752	8800
4182	537724	54006	541753	8815
4183	537725	54006	541754	8830
4184	537726	54006	541755	8845
4185	537727	54006	541756	8860
4186	537728	54006	541757	8875
4187	537729	54006	541758	8890
4188	537730	54006	541759	8905
4189	537731	54006	541760	8920
4190	537732	54006	541761	8935
4191	537733	54006	541762	8950
4192	537734	54006	541763	8965
4193	537735	54006	541764	8980
4194	537736	54006	541765	8995
4195	537737	54006	541766	9010
4196	537738	54006	541767	9025
4197	537739	54006	541768	9040
4198	537740	54006	541769	9055
4199	537741	54006	541770	9070
4200	537742	54006	541771	9085
4201	537743	54006	541772	9100
4202	537744	54006	541773	9115
4203	537745	54006	541774	9130
4204	537746	54006	541775	9145
4205	537747	54006	541776	9160
4206	537748	54006	541777	9175
4207	537749	54006	541778	9190
4208	537750	54006	541779	9205
4209	537751	54006	541780	9220
4210	537752	54006	541781	9235
4211	537753	54006	541782	9250
4212	537754	54006	541783	9265
4213	537755	54006	541784	9280
4214	537756	54006	541785	9295
4215	537757	54006	541786	9310
4216	537758	54006	541787	9325
4217	537759	54006	541788	9340
4218	537760	54006	541789	9355
4219	537761	54006	541790	9370
4220	537762	54006	541791	9385
4221	537763	54006	541792	9400
4222	537764	54006	541793	9415
4223	537765	54006	541794	9430
4224	537766	54006	541795	9445
4225	537767	54006	541796	9460
4226	537768	54006	541797	9475
4227	537769	54006	541798	9490
4228	537770	54006	541799	9505
4229	537771	54006	541800	9520
4230	537772	54006	541801	9535
4231	537773	54006	541802	9550
4232	537774	54006	541803	9565
4233	537775	54006	541804	9580
4234	537776	54006	541805	9595
4235	537777	54006	541806	9610
4236	537778	54006	541807	9625
4237	537779	54006	541808	9640
4238	537780			