



Reference 2324-062 Fee Ltr 01_B
Date 19th September 2023

Shire of Serpentine Jarrahdale
6 Paterson Street
Mundijong, WA 6123.

Attention Mr R Fleming

Dear Ryan,

REFERENCE: OBTRUSIVE LIGHTING AUDIT AT 28 & 42 KARBRO DRIVE, CARDUP, WA 6122.

Focus Consulting WA has been engaged by the Shire of Serpentine Jarrahdale to undertake a review of the Obtrusive Lighting Report prepared by Perth Lighting Consultants dated 27th March 2023 for the floodlighting installation installed at 26 Karbro Drive, Cardup, WA 6122.

Focus Consulting WA also visited the following residential address on Monday 18th September 2023 at 19:00hrs:

- 26 Karbo Drive, Cardup, WA 6122 – The purpose of the visit to this address was to undertake a visual inspection of the floodlights installed and understand the existing arrangement.
- 28 Karbo Drive, Cardup, WA 6122 – The purpose of the visit to this address was to undertake a manual lighting audit at the boundary of the dwelling which contains habitable spaces.
- 42 Karbo Drive, Cardup, WA 6122 - The purpose of the visit to this address was to undertake a manual lighting audit at the boundary of the dwelling which contains habitable spaces.

The manual lighting audits were based on AS4282:2019 'Control of the Obtrusive Effects of Outdoor Lighting'.

In accordance with AS4282:2019 table 3.1, the environmental zone for the residential dwellings in question are categorised as zone A2 'Low District Brightness' i.e., sparsely inhabited rural and semi-rural areas.

TABLE 3.1
ENVIRONMENTAL ZONES

Zones	Description	Examples
A0	Intrinsically dark	UNESCO Starlight Reserve. IDA Dark Sky Parks. Major optical observatories No road lighting -unless specifically required by the road controlling authority
A1	Dark	Relatively uninhabited rural areas No road lighting - unless specifically required by the road controlling authority
A2	Low district brightness	Sparsely inhabited rural and semi-rural areas
A3	Medium district brightness	Suburban areas in towns and cities
A4	High district brightness	Town and city centres and other commercial areas Residential areas abutting commercial areas
TV	High district brightness	Vicinity of major sports stadium during TV broadcasts
V	Residences near traffic routes	Refer AS/NZS1158.1.1
R1	Residences near local roads with significant setback	Refer AS/NZS 1158.3.1
R2	Residences near local roads	Refer AS/NZS 1158.3.1
R3	Residences near a roundabout or local area traffic management device	Refer AS/NZS 1158.3.1
RX	Residences near a pedestrian crossing	Refer AS/NZS 1158.4

The maximum values of light technical parameters as per table 3.2, permits a maximum of 5Lux vertical illuminance at the property boundary in non-curfew hours and 1Lux vertical illuminance at the property boundary during curfew hours as per the extract below:

Zones	Vertical illuminance levels (E_v) lx	
	Non-curfew	Curfew
A0	See Note 1	0
A1	2	0.1
A2	5	1
A3	10	2
A4	25	5
TV	See Table 3.4	N/A
V	N/A	4
R1	N/A	1
R2	N/A	2
R3	N/A	4
RX	N/A	4

Manual results were recorded at the following locations and spacings and at a height of 1.5m above finished floor level and at window height to record the vertical illuminance:

1. The property boundary with habitable rooms at ground level at 2m spacings.

The results recorded at the property boundary of 28 Karbro Drive varied between 0.3Lux and 0.6Lux which represents 12% of the permitted 5Lux allowance in non-curfew times and 60% of the permitted 1Lux allowance during curfew times. The manual results recorded are compliant with AS4282 and consistent with the report prepared by Perth Lighting Consultants.

The results recorded at the property boundary of 42 Karbro Drive varied between 0.1Lux and 0.2Lux which represents 4% of the permitted 5Lux allowance in non-curfew times and 20% of the permitted 1Lux allowance during curfew times. The manual results recorded are compliant with AS4282 and consistent with the report prepared by Perth Lighting Consultants.

The light meter used for the assessment was a Tenmars TM-202 which is fully calibrated.

Please note curfew times are set by the local government and typically range between 9pm – 7am or 10pm – 7am, noting flood lighting would not be operational during daylight hours.

In summary the floodlighting installed at 26 Karbo Drive is compliant with AS4282:2019 'Control of the Obtrusive Effects of Outdoor Lighting' with regards to the neighbouring properties being 28 Karbo Drive and 42 Karbo Drive and the levels recorded are within the acceptable limits for Zone A2 Low District Brightness' i.e., sparsely inhabited rural and semi-rural areas.

Should you have any queries, please do not hesitate to contact the undersigned.

Yours sincerely,



PAUL JEFFS

Director

On Behalf of Focus Consulting WA