

**BEFORE COMMISSIONER WASLEY APPOINTED BY NEW PLYMOUTH DISTRICT COUNCIL**

**UNDER**

the Resource Management Act 1991 ("RMA")

**IN THE MATTER**

of an application under section 88 of the Act by **GREGORY AND DEBORAH HOW** to the **NEW PLYMOUTH DISTRICT COUNCIL** for land use consent application to establish and operate commercial accommodation at 1844 Egmont Road, Kaimiro.

**STATEMENT OF EVIDENCE JASON WILLIAM JOHN CUDBY ON BEHALF OF GREGORY AND DEBORAH HOW**

**1. INTRODUCTION**

- 1.1 My name is Jason William John Cudby. I qualified as a Registered Lighting Engineer in May 2012 through Massey University, Albany, Auckland (when I completed the Graduate Certificate in Science & Technology GCertScTech (Lighting)). My qualifications subsequently gained me acceptance into the Illumination Engineers Society (IES) Australia/New Zealand. I currently hold a Technical Membership (TIES) of that society which is awarded to a qualified member who has more than 4 years of experienced practice in lighting design as the main purpose of work.
- 1.2 Currently I am employed by ZG Lighting (NZ) Ltd (formerly Thorn Lighting (NZ)) as a lighting engineer/Senior Account manager and have been in this role for nearly 3 years now. Previous to this I held the position of lighting engineer for nearly 5 years within the same company.
- 1.3 I have been involved in lighting for over 12 years now, and have good experience with projects of a similar nature, which require spill lighting compliance documentation for resource consent applications under the Resource Management Act 1991 ("RMA").
- 1.4 This evidence is given in support of the land use consent application ("the application") lodged by Gregory and Deborah How ("the applicant"), to construct and operate commercial accommodation at 1844 Egmont Road,

Kaimiro including 10 chalets, 24 powered sites for motorhomes and a utilities building with dwelling.

1.5 I am authorised to give this evidence on behalf of the applicant.

## **2. INVOLVEMENT IN THE PROJECT**

2.1 My involvement in the application has included:

(a) I was engaged to carry out computer generated lighting calculations to investigate the potential obtrusive effects of the proposed outdoor lighting and to show compliance with the District Plan and standard *AS4282-1997 – Control of the Obtrusive Effects for Outdoor Lighting*. *Note this is an Australian standard which is referred to by New Zealand standards AS/NZS2560:12002 Spot Lighting and AS/NZS 1680.52012 interior and Exterior Workplace lighting.*

(b) I was also specifically instructed by the applicant to provide further measures to reduce the sites impact on the surrounding environment, people and dwellings – and particularly to minimise the effects on the surrounding natural environment, and to preserve the night sky in such a way that the proposed North Egmont Retreat has little to no impact on the night sky (as discussed further in my evidence).

2.2 I have also reviewed the material produced with the application, including the AEE dated 12 March 2019, the section 92 RMA response dated 20 September 2019, the amended application details submitted to New Plymouth District Council (“NPDC”) on 31 July 2020 and the further section 92 RMA response submitted to NPDC on 25 September 2020 (within the context of my expertise in relation to this evidence).

## **3. CODE OF CONDUCT**

3.1 I confirm that I have read the Code of Conduct for expert witnesses contained in the 2014 Environment Court Practice Note and that I agree to comply with it. I confirm I have considered all the material facts that I am aware of that might alter or detract from the opinions I express. In particular, unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

#### **4. PURPOSE AND SCOPE OF EVIDENCE**

- 4.1 In this matter, I have been asked by the applicant to consider the potential obtrusive light effects on the surrounding residential dwellings and investigate the impact of the lighting on the night sky, with regards to light pollution.
- 4.2 I confirm that I have read the submissions on the Application and the Council Officer's Report. The assumptions, assessment and conclusions set out in my report/plans titled *North Egmont Retreat 1844 Egmont Road Kaimiro – Proposed Lighting – Review and Compliance Report RevC, 13/08/2020* remain valid.
- 4.3 My evidence is structured as follows:
- (a) Design and Compliance Calculation;
  - (b) Calculated Results and Compliance Report;
  - (c) Additional Mitigation;
  - (d) Application site and receiving environment.
  - (e) Submissions;
  - (f) Response to S42A report;
  - (g) Conclusions.

#### **5. DESIGN AND COMPLIANCE CALCULATION**

- 5.1 My evidence provides the following in respect of all the exterior lighting proposed for the North Egmont Retreat at the site 1844 Egmont Road, Kaimiro (the proposed development“):
- (a) My full calculated design results;
  - (b) My detailed compliance report with regards to AS4282:1997 – Control of the obtrusive effects of Outdoor Lighting;
  - (c) The design P#5987 and additional mitigation; and
  - (d) Conclusions.

## 6. CALCULATED RESULTS AND COMPLIANCE REPORT

- 6.1 I have provided the applicant with a full site calculation for the proposed development; which outlines the lighting levels that would be achieved if the proposed lighting were to be installed, and calculations to prove compliance to AS4282:1997.
- 6.2 The calculations show compliance with the relevant District Plan, Rural Environment Area, Emission of Light, Conditions Permitted, Rules:
- (a) Rur 87 – RESIDENTIAL ENVIRONMENT AREAS or Future Urban Development OVERLAY 10lux (in both the horizontal and vertical plans); and
  - (b) Rur87 – The NOTIONAL BOUNDARY of any RECEIVING SITE located within the rural ENVIRONMENT AREA 10lux (in both the horizontal and vertical planes).
- 6.3 The proposed lighting plan shows further efforts to reduce the sites impact on the surrounding environment by adhering to the International Dark-Sky Association (IDA) main guidelines for lighting outdoors which are;
- (a) Using only a CCT (Colour temperature) of 3000k (warm white) or lower.
  - (b) Using only luminaires which have a 0% Upward Light Output Ratio (ULOR).
  - (c) The use of outdoor light at night is only prescribed when it is strictly needed, where it is needed, and in the appropriate amount for a specific task. The purpose of outdoor light allowed under the Lighting design must be specifically to ensure public safety.
- 6.4 The results in respect of those above District Plan Rules, and in terms of AS4282, are respectively:
- (i) Lux on the notional boundary of any receiving site to not exceed 10lux max in both the horizontal and vertical plans – **Result= 0lux** (at the closest notional boundary of any receiving site to the proposed North Egmont Retreat); and
  - (ii) Intensity on the surrounding dwellings to be <2500Cd (as per AS4282) **Result = 0Cd**. Specifically calculated for 1835 & 1870 Egmont Road, Kaimiro.

6.5 To provide full justification for my calculations and results I refer to the report in **Attachment A** of my evidence; *North Egmont Retreat 1844 Egmont Road Kaimiro – Proposed Lighting – Review and Compliance Report RevC, 13/08/2020.*

6.6 And, to the full site plan and luminaire schedule also in Attachment A of my evidence.

## **7. ADDITIONAL MITIGATION**

7.1 Further measures have been taken to reduce the sites impact on the surrounding environment, people and dwellings. Working on best practice guidelines outlined by the IDA our proposed luminaires (Type B6 and Type B1) have the specifications which meet the IDA guidelines.

(i) Both have a CCT of 3000k.

(ii) Both have a 0% Upward Light Output Ratio.

(iii) The use of sensors to control the lighting has been discussed and agreed to be included in the Lighting Management Plan. An electrical engineer shall include sensor control completing his/her technical submission.

7.2 While these measures are not required to comply with the relevant District Plan permitted activity thresholds and AS4282, they strengthen the lighting management plan's ability to minimise the effects on the surrounding natural environment, preserving the night sky in such a way that the proposed North Egmont Retreat has little to no impact on the night sky. The proposed lighting out performs a typical domestic dwelling, with regards to the preservation of the night sky.

7.3 Further to the preservation of the night sky, the 0% ULOR of the luminaires ensures that an outside observer (such as neighbours at 1835 & 1870 Egmont Road) cannot directly see the light source; which again minimises the effect of the development on its surroundings.

7.4 It should also be noted that the proposed lighting design and my calculations and test results in this case – are based on an open, unobstructed landscape.

7.5 No existing vegetation (either at the applicant's site or on adjacent neighbouring properties) – or proposed landscaping for the development (which I was provided with relevant landscape plans in respect of) – have been considered.

- 7.6 Using this method ensures that we are designing to the worst-case scenario.
- 7.7 In practice, however, the existing vegetation (both at the applicant's site and on adjacent neighbouring properties) – and the proposed landscaping – will in fact positively affect the sites lighting effect on its surroundings.

## **8. THE APPLICATION SITE AND RECEIVING ENVIRONMENT**

- 8.1 The application site and receiving environment are well described in the Section 42a report and I will not repeat this information.

## **9. SUBMISSIONS**

- 9.1 I have reviewed the submissions received and believe my evidence addresses their concerns in the context of my expertise.

## **10. RESPONSE TO SECTION 42A REPORT**

- 10.1 I have reviewed the Section 42A Report for the Application dated 13 October 2020 and generally agree with the lighting assessment (paragraphs 123 – 127).
- 10.2 I also agree with the proposed consent conditions relevant to my expertise (conditions 1.1, 9.1 and 9.2 (inadvertently shown as 9.3)).

## **11. CONCLUSION**

- 11.1 My evidence has assessed the lighting matters that I am aware of in relation to the Application and I can safely conclude that:
- (a) The proposed lighting design and luminaire specification comfortably complies with the relevant District Plan permitted activity thresholds, and AS4282:1997.
  - (b) The proposed site lighting as a whole has been designed to international best practice and goes above and beyond the District Plan permitted activity requirements.
  - (c) This concept ensures that the proposed site will have minimal impact on its surrounding environment, including people and dwellings - and will preserve the night sky in such a way that the proposed North Egmont Retreat has little to no impact on the night sky.

**JASON WILLIAM JOHN CUDBY**

**ZG Lighting (NZ) Ltd**

**27/10/2020**

**Attachment A**

***North Egmont Retreat 1844 Egmont Road Kaimiro – Proposed Lighting –  
Review and Compliance Report RevC, 13/08/2020***