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2 December 2024

Auckland Council Plan Change 79
Amendments to Transport Provisions to the Auckland Unitary Plan

Section E24 Lighting - Appeal Process

Lighting Council New Zealand and Illuminating Engineering Society of ANZ

LCNZ and IESANZ - JOINT POSITION PAPER

Condensed version – Supplementary to the full version dated 23 October 2024

Introduction

This is a Lighting Council New Zealand (LCNZ) and Illuminating Engineering Society of ANZ (IESANZ) joint response as part of the appeal process to the Auckland Council - Auckland Unitary Plan PC 79: Section E24 Lighting, proposed changes.

This condensed version is to be read in conjunction with the full version dated 23 October 2024. This version contains only the action points relating to light technical parameter (LTP) recommendations by LCNZ and IESANZ and is submitted as a basis for Auckland Council to form an expert group of planning and lighting professionals to consider the appropriate values and achieve a consensus agreement.

LCNZ and IESANZ have significant concerns regarding the AC mandatory imposition of lighting changes in medium density residential developments. In overview, we consider the AC light levels are excessive. The AC designated values are mid to higher level AS/NZS 1158.3.1 standardised values for public spaces. These AS/NZS values are not intended for application in private residential spaces.

For private space application we recommend a modified schedule of light levels (and other light technical parameters) for AC application, including lower minimum light levels which are more aligned with the lower activity levels encountered in the private residential context. This schedule should include revised provisions for light levels on horizontal surfaces (considering the smaller spatial areas, and the increased light reflectance from pale colour concrete versus dark asphalt) and for light levels on vertical surfaces (considering light reflectance contributions from close-proximity boundary fences and building walls).

With the current E24 requirements a concerning environmental factor is the light pollution impact of appreciably higher light levels and consequent negative effects on human sleep, dark skies, plant and wildlife.

An expert group of planning and lighting professionals should consider these LCNZ and IESANZ recommended values and attain an appropriate consensus agreement that balances the safety, amenity, environmental, and economic factors.

The LCNZ and IESANZ recommendations are as follows:

Attachment A - Independent Hearing Panel Plan Change 79 decision

E24 Lighting amendments

Section 3 - Add a new Standard E24.6.2 as follows:

E24.6.2. Artificial lighting standards for pedestrian access in residential zones

Light Levels - The current E24 states:

"When lighting for access in residential zones is required by Standard E27.6.3.7(2), it must:
c) Meet the minimum P subcategories specified in Table 24.6.2.1 below:

- *Pedestrian access only - PP3, 3.00lx*
- *Pedestrian access adjacent to vehicle access – PR2, 3.50lx*
- *Connecting elements, steps, stairwells and ramps – PA3, 7.00lx*
- *Parking spaces and adjacent pedestrian access – PC2, 7.00lx*
- *Vehicle access for 4-9 parking spaces or dwellings – PR5, 0.85lx*
- *Vehicle access for 10-19 parking spaces or dwellings – PR4,1.3lx*
- *Vehicle access for 20 or more parking spaces or dwellings - PR2, 3.5lx"*

These light levels are at the mid to higher region of the AS/NZS range required for public lighting.

LCNZ and IESANZ recommend the following settings:

c) Meet the minimum P subcategories specified in Table 24.6.2.1 below:

- Pedestrian access only - ~~PP3, 3.00lx~~ PP5 0.85 lx (including 0.02 lx Point Vertical Illuminance)
- Pedestrian access adjacent to vehicle access – ~~PR2, 3.50lx~~ PR5, 0.85 lx

- ~~Connecting elements, steps, stairwells and ramps – PA3, 7.00lx~~ Delete
- Parking spaces and adjacent pedestrian access – PC2, 7.00lx PC3, 3.5 lx
- Vehicle access for 4-9 parking spaces or dwellings – PR5, 0.85lx
- Vehicle access for 10-19 parking spaces or dwellings – ~~PR4,1.3lx~~ PR5, 0.85lx
- Vehicle access for 20 or more parking spaces or dwellings - ~~PR2, 3.5lx~~ PR5, 0.85 lx

Note: For subcategory PR6 (roads in local areas) AS/NZ 1158.3.1:2024 Amendment 1 (October 2024) applies lumen de-rating factors for low CCT LED light sources (native amber and phosphor coated amber LED). AS/NZS standards conformity will call for greater lumen values than would be the case when using higher CCT white light sources (ie 2500K and above).

The above recommended light levels are the lowest levels applicable in each subcategory of the AS/NZS 1158.3.1 range required for public lighting.

E24.8.2 Assessment Criteria

Solar powered solutions - The current E24 states:

"The Council will consider the relevant assessment criteria for restricted discretionary activities from the list below:

(1A) the effects of lighting on pedestrian safety, wayfinding and access;

b) the extent to which any solar powered lighting solution meets the lighting subcategory performance levels outlined in Table 24.6.2.1 throughout the hours of darkness and the longevity of this solution over the following 20-year period from the date that it is installed."

The above E24.8.23 Clause b) is redundant, and should be deleted.

- Provision of the required lighting performance levels throughout the hours of darkness is necessary for standards conformity regardless of the power source of the luminaire (ie both off-grid solar or on-grid mains electricity).
- Inclusion of lifetime requirements for the longevity of physical assets is not a normal inclusion in a lighting design specification, and is not appropriate in E24 as the designer/consultant responsible for E24 compliance usually has no authority over product procurement or maintenance.

If such product durability inclusions are desired then these topics should be addressed in a separate 'asset management' specification and regulation, which should logically include the lifetime requirements for other lighting items e.g. luminaires, control devices, and poles.

LCNZ and IESANZ trust that that this information is of value for improvement of the applicability and relevance of the E24 lighting document, and that this can be instrumental in delivering better lighting outcomes and contributing to wider community well-being.

We would be most happy to provide further information or engage in discussion if required.

Yours faithfully,

Chris Byrne – Chair LCNZ
Bryan King – Executive Director LCNZ

Lighting Council New Zealand
https://lightingcouncil.org.nz

Yours faithfully,

Cedric Williams - NZ Chapter President - On behalf of IESANZ
Ewen Cafe – NZ Chapter Standards Chair - On behalf of IESANZ

Illuminating Engineering Society of Australia and New Zealand
New Zealand Chapter
https://www.iesanz.org/chapters/nz-landing-page