

Light Pollution - Fact from Fiction

There are few subjects in the construction world that are currently receiving more media and internet clamour than outdoor light pollution and the perceived role of LED lighting.

WHY DO WE LIGHT OUTDOORS?

Q Why do we light outdoors at night?

A For human safety, security and well-being

Let's never forget that effective outdoor lighting is essential for safety and quality of life, but artificial light at night can have unintended consequences that are troublesome for people and for the environment if improper luminaire choices are made or the lighting scheme is inadequately designed or installed.

INFORMATION AND MISINFORMATION

Outdoor light at night may be for residential, industry, streets, security, car parks, landscapes or public precincts and the needs of each differ widely. A range of light sources and equipment is required as there is no universal formula. Much media and internet commentary stridently promotes the use of warm white colour temperatures or even amber light. This may be advantageous for night sky outcomes but it may not assist the needs of others who strive to attain outcomes such as human alertness or visual discernment. A careful balance of user group needs is necessary. Additionally, much public outcry surrounds cases of inept deployment, rather than inherent technology challenges.

OPPORTUNITY AND RESPONSIBILITY

The step-change LED transformation has delivered huge economic and energy benefits, but with this upside comes a responsibility for good stewardship. Deployment of ineptly chosen luminaires and poor design, installation, and aiming can undoubtedly create horrors of spill light, glare and nuisance for users, neighbours, the night sky and to wildlife. There is a need to apply the technology with knowledge and care.

LIGHT COLOUR AND SPECTRUM

The effect of blue rich white light is often targeted as an LED issue, but this is also an attribute of fluorescent, metal halide and mercury vapour light sources. However, there is growing evidence to support minimisation of blue rich light sources if possible, and warmer options are recommended if this delivers on project vision and safety requirements. Lightsource spectral power distribution is a more meaningful atmospheric pollution indicator than colour temperature and this information is available from suppliers of more technical luminaires.

AS/NZS STANDARDS GUIDANCE

Impartial guidance on fit-for-purpose outcomes is necessary to accommodate and weigh up the broad range of user and stakeholder needs. There are two main standards applicable:

- AS 4282 Control of the Obtrusive Effects of Outdoor Lighting
- AS/NZS 1158 Lighting for Roads and Public Spaces (series)

Both standards are currently under review and will contain updated light pollution guidelines.

SKILLED LIGHTING DEPLOYMENT

Skilled implementation is vital for successful outdoor lighting projects. For area lighting and residential street and path standards-based applications lumens can often be halved when replacing yellow HPS with white light LED. Floodlighting is a common source of light pollution horrors and local council by-laws prohibit improper use, but effective enforcement is often a shortcoming.

THE WAY FORWARD

Good lighting suppliers can provide guidance on methods to deliver better solutions and to meet standards and by-law compliance requirements. It makes good sense for all to minimise light nuisance, and installers are a prime force to lead and implement better solutions.

LCNZ is the industry association for lighting manufacturing and importing companies in New Zealand.

www.lightingcouncil.org.nz

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