

Iwan ap Trefor
Traffic and Project Manager
Environment Department
Gwynedd Council
Castle Street
Caernarfon
Gwynedd LL55 1SH
Dear Mr Trefor,

Page 1 of 3

iwanaprefor@gwynedd.llyw.cymru

18 November 2022

Dangerous Road Humps 2

I thank you for your response to my letter of 24 October 2022.

I think you will agree that the Council has an implicit duty of care under the Human Rights Act 1998 to comply with the law and not to cause harm.

Breaking the law by causing drivers to have impaired vision puts citizens at risk and in particular, children at twilight. This did not occur before the council installed speed humps.

With respect, if the council wish to retain speed humps, then it is up to the Council to persuade the DfT to change vehicle headlight regulations.

The fundamental problem is the Council's failure to understand eye-damaging property of LED light.

To assist, attached is a comparison of LED vs Incandescent light (Appendix 1).

To demonstrate how powerful LED lights are, when vehicles with LED or HID lights leave the National Library in Aberystwyth they cause a bright flash that can be seen in Aberdaron 60 miles away.

In the meantime, you are formally advised that should there be an accident as a result of disability glare caused by humps in Gwynedd, you Iwan ap Trefor Traffic and Project Manager, Rhian Wyn Williams Integrated Transport and Road Safety Manager, Councillor Gareth Williams your Director and the Council's Chief executive could be held legally liable.

As requested on 24 October 2022, under the Freedom of Information Act I look forward to advice of the total cost of installing the five speed humps in Botwnnog.

If speed was a concern in Botwnnog, then surely it would have been more expedient (and economic) to extend the existing 20mph zone by Pont y Gof primary school to include the whole village.

In the interests of road safety perhaps the Council will take measures to comply with the law and stop deliberately blinding drivers.

Yours sincerely,



Roy Milnes

cc Councillor Gareth Williams cynghorydd.garethwilliams@gwynedd.llyw.cymru
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BBC Panorama
The Telegraph
The Cambrian News
Caernarfon and Denbigh News
Wales On line

This letter is published at Lightmare.org

Appendix 1 LED vs Incandescent light

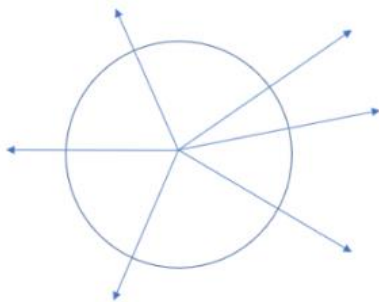
LED lights which are a flat source do not comply with Building Lighting or Road Vehicles Lighting Regulations 1989 which are based upon incandescent point source which emit spherically uniform light.

Dr Nisa Khan, one of the foremost experts in the world on LED lights writes: -

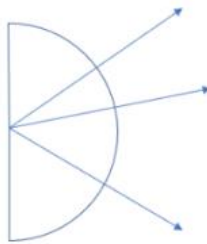
“Flat light sources produce Lambertian light distributions and only LED flat light sources do this. This means that luminous intensity and luminance are both non uniform in space for the source and what the viewer sees. ALL of illumination scientific theories are based on point light sources, which means there is spherical uniformity for luminance and luminous intensity regarding the light source and what the viewer sees.”

Dr M. Nisa Khan, President IEM Lighting Technologies and Author, *Understanding LED Illumination*.

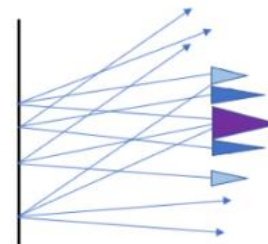
The art and science of illumination for the past 150 years have been predicated on the foundational premise that the light source can be reduced to a single infinitely small mathematical point. From a point source, the light emanates in all spherical directions uniformly, such that taking measurements at any point in space would result in the same readings. This is shown on the left side of the diagrams.



Spherical Emitter



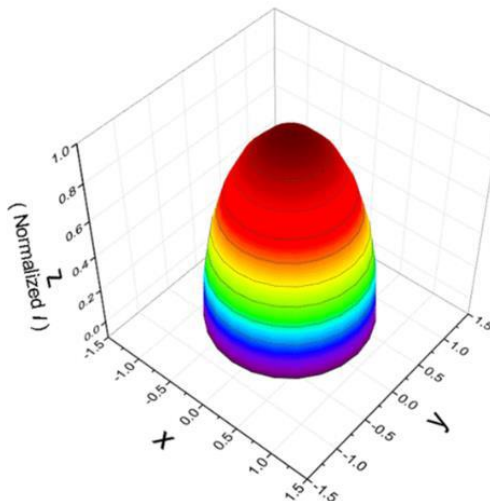
Theoretical Hemispherical Emitter



Flat Surface Emitter



Spherical Emitter



Flat Surface Emitter

Light Emitting Diodes, however, emit light from a flat surface, meaning that there is no curvature. The light leaves the chip surface within a given escape angle and because of the flat surface, the light rays intersect.

The largest amount of intersection occurs in the middle of the chip and the least amount occurs on the chip edges. The resulting shape of the light from an LED is a spatial energy profile resembling a bullet, as shown on the right side of the diagrams.

While human comfort level for the density of visible light is approximately 300 nits, LED chip makers have already exceeded 100,000,000 nits of peak luminance, resulting in high risk of short-term and long-term eye damage, with babies and children being particularly at risk.

In addition, due to the small 1mm x 1mm size of an LED chip, and due to the extreme density of the light, the entire energy emitted by the chip lands on the eye nearly invariant of distance.

The bullet-shaped non-uniform energy profile interferes with normal human nerve functioning, causing seizures, migraines, panic attacks, anxiety, and agitation.

There are no government regulations to protect people from dangerous LED light.

Appendix 3 Response from Gwynedd Council to letter 24 October 2022

From "Iwan Ap Trefor (AMG)" <iwanaprefor@gwynedd.llyw.cymru>
To " Roy
Date 08-Nov-22 17:00:36
Subject Botwnnog Speed Humps

I refer to your letter dated the 24th of October 2022 regarding Speed humps at Botwnnog.

I fully respect your campaign to raise awareness of the dangers headlight can cause during the hours of darkness. Your letter shows that you have clearly researched this matter. You have also made a compelling case for change. However, this is a concern regarding regulations that govern vehicle headlamps and not how local authorities design changes to the highway. I would therefore suggest that you refer the matter to Driver & Vehicle Standards Agency (DVSA).

Speed humps were placed on the road in Botwnnog following concerns regarding speeding. The road is next to the local primary school as well as provides an important walking and cycling link to the secondary school, located on an adjacent road. Speeding is a common problem on the roads in Gwynedd, and a problem which this service takes very seriously. However, I also understand that placing speed humps can give opinion. Therefore this Service aims to ensure that such provision is only placed where necessary. Improving road safety in areas near schools is a priority. As such, this service believes that in Botwnnog there was compelling case for such an intervention.

Although this Service do not intend to remove the speed humps on this section of road, officers will be mindful of the effects of placing speed humps on our highway network, and will take into consideration the effects of lighting when designing changes to the highway in the future. I hope that the above clearly explains our position regarding the matter.

Regards Iwan ap Trefor
Rheolwr Traffig a Phrosiectau/ Traffic and Project Manager

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Appendix 4 Response from Gwynedd Council to this letter 18 November 2022

From "Iwan Ap Trefor (AMG)" <iwanaprefor@gwynedd.llyw.cymru>
To "Roy"
Date 01-Dec-22 16:26:29
Subject ATB/RE: Dangerous Road Humps 2a - Botwnnog

Dear Mr Miles

I apologise for not including the cost of placing the Speed Humps on the road Though Bontwnnog. This information was requested therefore it should have been included as part of the initial response. The cost of placing five speed humps in the village was £7,000.

I fully understand that this matter is important to you however I would like to reiterate that the issue regarding the density of light emissions from vehicles is a matter for the Driver & Vehicle Standards Agency (DVSA) and not the Local Authority. Speed humps have been placed on this section of road to improve road safety for school children and therefore removing the humps is not an option that this Service would consider.

I hope the above clearly explains our position on the matter.

Regards Iwan ap Trefor
Rheolwr Traffig a Phrosiectau/ Traffic and Project Manager

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