HVL - Bryan King Presentation for 1 July 2021

Good morning, I am Bryan King, and I am the lighting specialist for HVL.

Background
I understand my lighting evidence report and my Highlights Package have been pre-read so I will not repeat that material here.

There has been much focus thus far on the subjective aspects of the lighting on the HVL site and on the anticipated effects that these might have.

I have taken lighting measurements to ascertain likely effects on site to provide perspective on the significance of these light effects and how they compare with a variety of established norms and reference points.

My assessment is primarily focused on light emanating from the Synlait site, as that is the closest industrial site to the HVL development, and also because measurements for glare have established that the Synlait site is the predominant source of lighting impact when viewed from the HVL site.

Topographical Cross Sections
In the early part of this hearing new information was presented by the Hynds team regarding line-of-sight modelling using topographical cross sections.

I believe that there are errors in this material and I stand by my original assessment which is based on correct contour information that I have rechecked and verified with CivilPlan Consultants.

Most importantly, my original assessment is based on the finished contours provided by CivilPlan, not the pre-development contours used by the Hynds experts.

In summary, my assessment and conclusion submitted is unchanged by the Hynd's evidence presented at the hearing.

Light Measurements
To obtain reliable light measurements, specialist measurement instruments are required, as well as the expertise to use these and to interpret the results. Mr Ewen Café, of 3D Lighting Design Ltd, was engaged as a specialist subcontractor for these purposes. Mr Café is a long-established expert in this area.

Comprehensive light measurements were taken at various points and orientations on the HVL site for both spill light and glare.

This site plan shows the light measurement points and the viewing directions

Light Measurement Results - Spill Light
The green spot "Position B" is the worst-case point for spill light.

In summary:
- The WDC compliance limit for spill light onto adjacent properties is 10 lux
- The worst-case measured spill light on the proposed HVL residential site is 0.79 lux
- Thus, spill light is less than one tenth of the allowable limit

Mr Cook stated in his hearing presentation that he measured spill light of about 1 lux, "similar to a moonlit night" so on this point we are in agreement as to the level of light spill received on the proposed Havelock lots.

Light Measurement Results - Glare
I have not previously provided the light measurements for glare in evidence because glare limits are not in the Operative WDC District Plan compliance requirements

However, as the subject of "light vistas", "actual visual effects" and glare, have specifically been raised as issues by Mr Cook, it is now opportune to address the directional glare issue with a response based on my field measurements. I also took glare measurements from positions A, B and C.

The maximum glare from Synlait is only 6% of the standards allowable limit, and from Hynds this is less than 2% of the allowable limit. I therefore disagree with Mr Cook's evidence, and will elaborate a little more:

The green spot "Position C" is the worst-case point for observation.

Overall, for glare emanating in the direction of the proposed HVL residential sites the Yashili site has negligible effect, the Synlait site has the predominant effect and the Hynds site has a moderate effect.

The following are the maximum glare values, measured at Position C on the HVL subdivision site plan, the point closest to the Hynds site.

- Synlait Site - Yellow spot "Location 2" (RHS building rear floodlights) = 153 candelas
- Hynds Site – Yellow spot "Location 3" (RHS rear gantry floodlights) = 42 candelas

For context and benchmarking, the maximum limit in the AS 4243:1997 standard (as used by most councils in NZ) for applications "*at the boundaries of commercial and residential areas",* is 2,500 candelas.

Likelihood of complaints about lighting
In my opinion, the evidence for Hynds make it clear that the likelihood of lighting related complaints is of significant concern to them, and that such complaints could result in planning constraints on future industrial expansion.

While I accept that "anyone can complain about anything", in my view a specific and credible lighting complaint should be substantiated by assessment and quantification and be justified as a valid complaint in relation to broadly accepted and established urban lighting practices.

If a lighting complaint arose in future in which WDC had to intervene, a lighting expert assessor commissioned by WDC would most likely undertake an objective and quantitative light measurement process, as I have done, and in my opinion would reach the same conclusions.

Hynds Expansion Needs
Hynds' evidence refers to expansion of its industrial operations. I consider the company has substantial scope available for their expansion before facing constraints related to lighting effects.

The spill light onto the HVL site from the various industrial sites is currently a small fraction of the allowable limit. This indicates that, from a WDC lighting compliance perspective, there is much "headroom capacity" available for future industrial site development and expansion by Hynds (and/or others).

Additionally, the low levels of glare from the Hynds site shows that the Hynds site lighting is being appropriately managed and is not the predominant source of glare emanating from the various industrial sites in the direction of the HVL site.

As far as lighting matters are concerned, there appears to be ample scope for further industrial development by Hynds.

Conclusion
On the basis of this information, I can confirm that my assessment and conclusion is unchanged.