

Hoyts EntX Billboard

Review of visual effects

Prepared for Calder Stewart Development Limited



1.0 INTRODUCTION

A new LED billboard is proposed for the new Hoyts Entx Building located on the corner of Colombo and Lichfield Streets.

This report provides technical advice with respect to the effect that a new LED billboard have on the surrounding environment.

1.1 Overview of Billboard

The Billboard is wall mounted and will wrap around the north-east corner of the EntX building and will have frontage to both roads (refer Appendix A, Figure 1).

The proposed billboard will be 7.8m high by 2.96m long along the Lichfield Street frontage, 10.7m high by 5.98m long along the Colombo Street frontage and a 3.0m long curvature facing the intersection.

The purpose of the billboard will be to provide general advertisement and information sharing. Additionally, the sign will feature moving graphics and images.

1.2 Overview of Site

The Entx site is in the Commercial Central City Business Zone as per the Christchurch District Plan.

The adjacent buildings at the intersection of Colombo and Lichfield Streets include:

- Bus Interchange
- Ballantynes Shopping centre
- 678 Colombo Street, Retail and Office Building

1.3 Overview of Roding/ Intersection

Both Lichfield Street and Colombo Streets are classified as local distributor roads. Recently, this intersection has been upgraded as part of the Accessible City Project. This upgrade included:

- Road upgrades
- Street Lighting upgrade

Both Colombo and Litchfield Streets are classified as subcategory V2/V1 roads that require 10-15lux of lighting levels on the road surface at the intersection.

Refer to Appendix A Figure 2 for a photo of the existing intersection during daytime.

2.0 TECHNICAL REVIEW

2.1 Impact on adjoining properties and local environment

Spill Light:

The Ballantynes Building is located directly opposite the Billboard. The following equation is used to determine the direct illuminance value:

$$E (lx) = I(cd/m^2)/d^2(m);$$

Where: I=175cd/m² (night time)

I=5000cd/m² (day time)

d= 22m

The total illuminance values from the Billboard onto the facade of the adjacent building will be:

0.36(lx) during night time & 10.3(lx) during daytime hours.

Under the Christchurch City Council District Plan, Rule 6.3.6, spill light shall not exceed 20lux. The Billboard complies with this requirement.

Calculations were also carried out using AGI32, AGI32 is a lighting engineering and calculation software package. The increase in ambient light levels on the neighbouring buildings and intersection from the Billboard is negligible.

These calculations are performed in accordance with NZILA Best Practice Guide with a worst-case scenario, where no other lighting fixtures are considered.

Luminance Ratio & Glare:

The Luminance Ratio is the ratio between the Billboard and the background surrounding the Billboard. The Luminance Ratio between the Billboard and façade of the building will not be high, due to the proposed up-lighting luminaires lighting the facade of the building, the lighting in the canopy and the streetlighting fixtures.

Due to the size of the billboard, corresponding large luminous area and relatively low Intensity of 175cd/m² the total amount of light coming from the billboard will also not cause a reduction in visibility.

In comparison due to the size of luminous area of the street lights in Appendix B, figure 6, and the Kiwi Bank sign in Appendix A, Figure 3. it can be observed that the disability glare is significant. This causes the decrease in visual acuity and ability to see the details of this sign. Neither of these attributes will be prominent in the Billboard.

Refer to Appendix C for the simulation completed in AGI18.3 showing the effects the Billboard has on the surrounding buildings and intersection.

These simulations have not factored in any other ambient light sources from adjacent buildings, star light or moon light.

2.2 Impact on environment

This type of electronic sign is made of many very small sources in an array. Each source emits a small amount of light with no significant light spill.

From the above statement we agree that there will be very minimal upward light from this billboard.

3.0 SUMMARY

With the combination of existing ambient lighting, the existing street lighting and existing illuminated signage adjoining the intersection there be minimal environmental impact on the surrounding environment and the light spill from the billboard will be compliant with the Christchurch City Council requirements.

APPENDIX A



Figure 1 - Location of billboard



Figure 2 - Existing road lighting



Figure 3 - 678 Colombo Street - Night Time



Figure 4 - 678 Colombo Street

APPENDIX B



Figure 5 - Lichfield Street



Figure 6 – Colombo Street

APPENDIX C

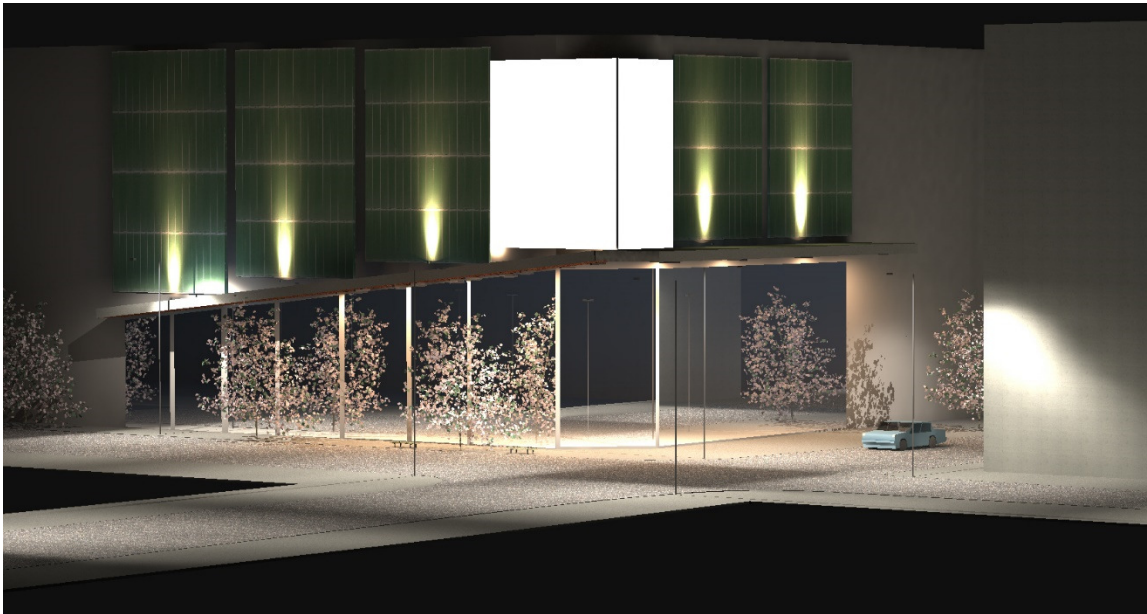


Figure 7 - Simulation with Billboard

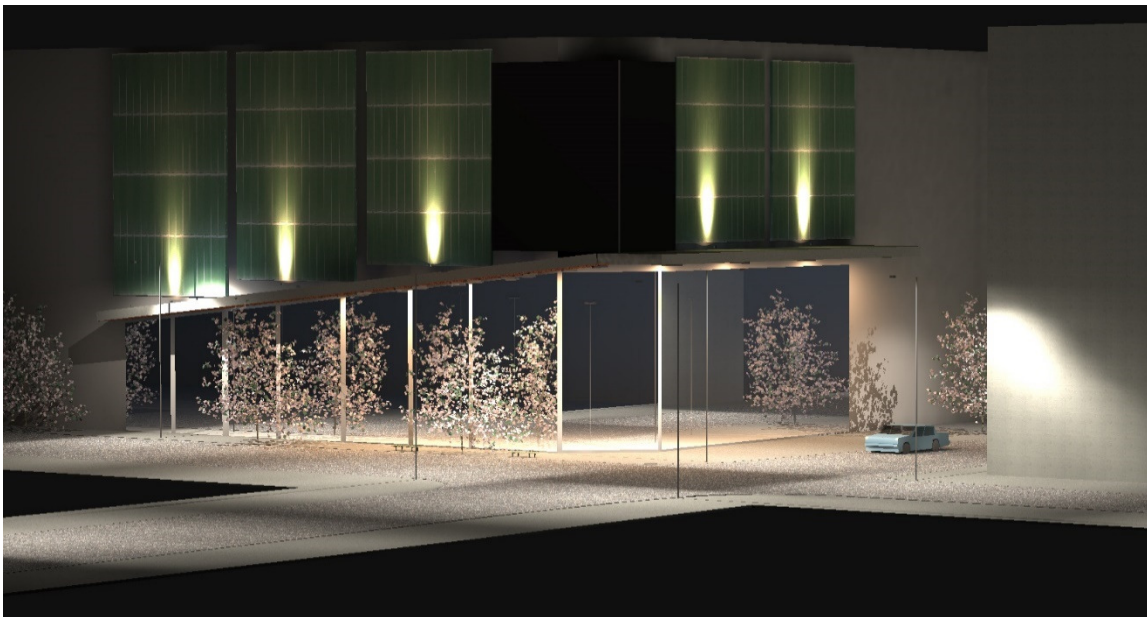


Figure 8 - Simulation without Billboard