

# VIRTUAL IDEAS

Telopea, NSW

Masterplan Visual Impact Photomontage and Methodology Report

# Visual Impact Photomontage and Methodology Report - Telopea, NSW

## BACKGROUND

This document was prepared by Virtual Ideas and includes a methodology of the processes used to create the visual impact photomontages and illustrate the accuracy of the results.

Virtual Ideas is an architectural visualisation company that is highly experienced at preparing visual impact assessment media to a level of expertise that is suitable for both council submission and use in court. Virtual Ideas is familiar with the court requirements to provide 3D visualisation media that will accurately communicate a proposed development's design and visual impact.

Virtual Ideas' methodology and results have been inspected by various experts in relation to previous visual impact assessment submissions and have always been found to be accurate and acceptable.

## OVERVIEW

The general process of creating accurate photomontage renderings involves the creation of an accurate, real world scale digital 3D model.

We capture site photographs from specified positions on location. The camera positions are surveyed to identify the MGA coordinates at each position. Additional reference points are also surveyed at each camera location to assist in aligning our 3D camera to the real world camera position.

Cameras are then created in the 3D scene to match the locations and height of where the photographs were taken from. The lens data stored in the metadata of the photograph is also referenced for accuracy.

The cameras are then aligned in rotation so that the surveyed points of the 3D model align with the corresponding objects that are visible in the photograph.

A realistic sun and sky lighting system is then created in the 3D scene and matched to the precise time and date of when each photograph was taken.

3D renderings of the indicative new building or envelope are then created from the selected cameras at the exact pixel dimensions and aspect ratio of the original digital photograph.

The 3D renderings are then placed into the digital photography to show the envelope of the proposed building in context.

## DESCRIPTION OF COLLECTED DATA

To create the 3D model and establish accurate reference points for alignment to the photography, a variety of information was collected.

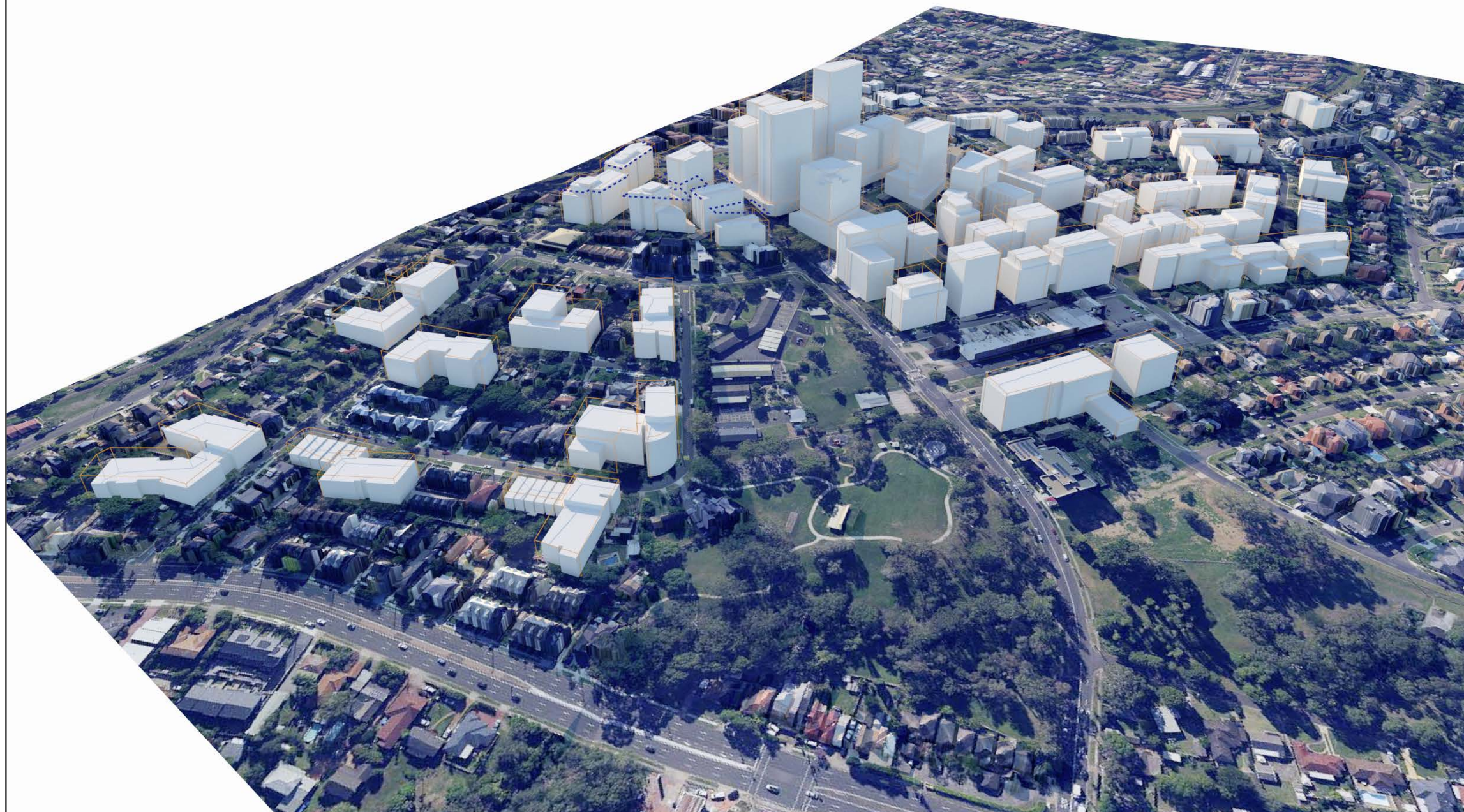
This includes the following:

- 1) 3D models of proposed building envelope
  - Supplied by: Bates Smart Architects and Plus Architecture
  - Format: Sketchup
- 2) Camera location and alignment point surveyed data (Appendix A)
  - Created by: CMS Surveyors
  - Format: PDF and DWG files
- 3) Site Survey (Appendix B)
  - Created by: Craig & Rhodes
  - Format: DWG files
- 4) Site photography
  - Created by: Virtual Ideas
  - Format: JPEG and NEF files



## Overview of development showing proposed building envelopes and indicative buildings

-  LEP Height plane
-  Proposed building envelopes
-  Proposed reference scheme



The proposed building envelopes shown in this report were extruded to the LEP height plane with the exception of the Stage 1a site which exceeds it. Where this occurs it has been marked with a dashed blue line indicating the LEP height plane in that area.

Source: SIX Maps



## METHODOLOGY

### Site Photography

Site photography was taken from predetermined positions as directed by the planning consultant, Urbis. The photographs were taken using a Nikon D810 digital camera.

The positions of the photographs were surveyed and then plotted onto a survey drawing in DWG format.

### 3D Model

Using the imported surveyed data into our 3D software (3DS Max) as reference, we then imported the supplied 3D model of the indicative building envelope.

### Alignment

The positions of the real world photography were located in the 3D scene. Cameras were then created in the 3D model to match the locations and height of the position from which the photographs were taken from. They were then aligned in rotation so that the points of the 3D model aligned with their corresponding objects that are visible in the photograph.

Renderings of the building massing were then created from the aligned 3D cameras and montaged into the existing photography at the same location. This produces an accurate representation of the scale and position of the proposed building envelope with respect to the existing surroundings.

In conclusion, it is my opinion as an experienced, professional 3D architectural and landscape renderer, that the images provided accurately portray the level of visibility and impact of the proposed indicative building design.

Yours sincerely,

Grant Kolln



## CV of Grant Kolln, Director of Virtual Ideas

### Personal Details

Name: Grant Kolln  
 DOB: 07/09/1974  
 Company Address: Suite 71, 61 Marlborough St, Surry Hills, NSW, 2010  
 Phone Number: 02 8399 0222

### Relevant Experience

2003 - Present Director of 3D visualisation studio Virtual Ideas. During this time, Grant has worked on many visual impact studies for council and planning submission for projects across various different industries including architectural, industrial, mining, landscaping, and several large public works projects. This experience has assisted Grant to develop a highly accurate methodology for the creation of visual impact media and report creation.

1999 - 2001 Project Manager for global SAP infrastructure implementation - Ericsson, Sweden

1999 - 1999 IT Consultant - Sci-Fi Channel, London

1994 - 1999 Architectural Technician, Thomson Adsett Architect, Brisbane QLD.

### Relevant Education / Qualifications

1997 Advanced Diploma in Architectural Technology, Southbank TAFE, Brisbane, QLD







Original photograph



Photomontage of proposed reference scheme



Photograph details

Photo Date  
22nd June 2020

Camera Used  
Nikon D810

Camera Lens  
Tamron SP 24-70mm F/2.8 Di  
VC USD G2 AO32N

Focal length  
35mm in 35mm Film

Original photo indicating surveyed reference points





Original photograph with 50mm crop



Photomontage of proposed reference scheme with 50mm crop



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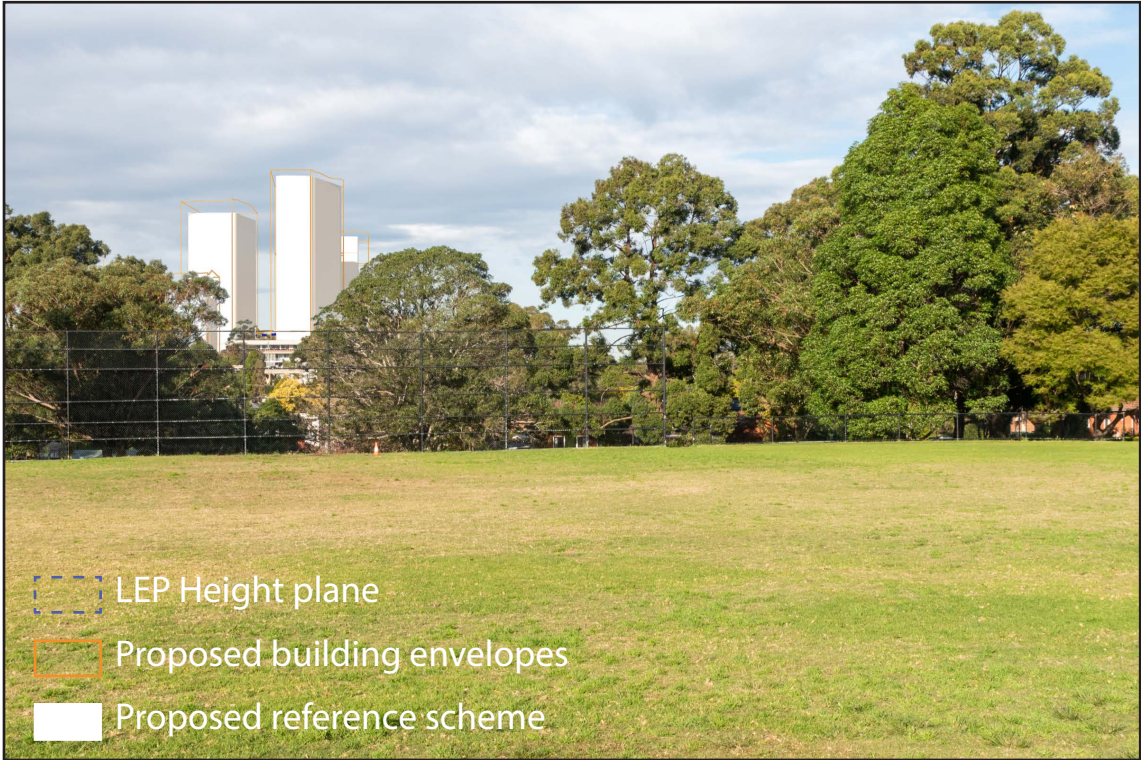




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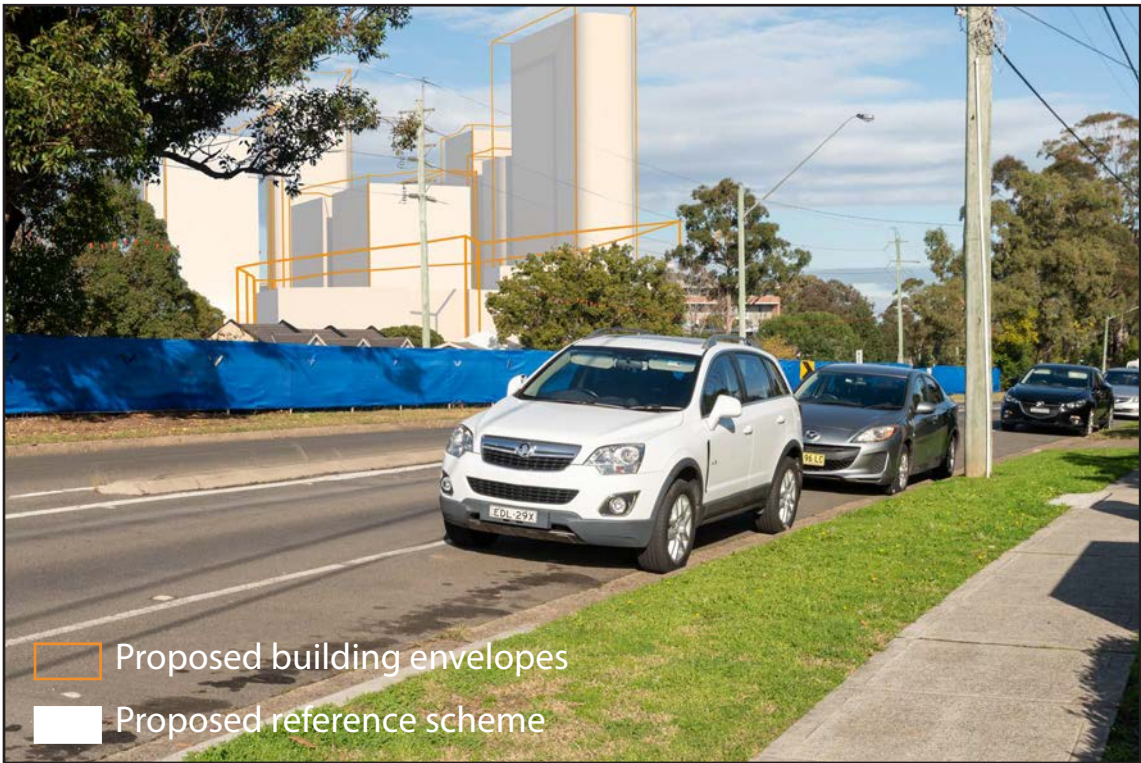




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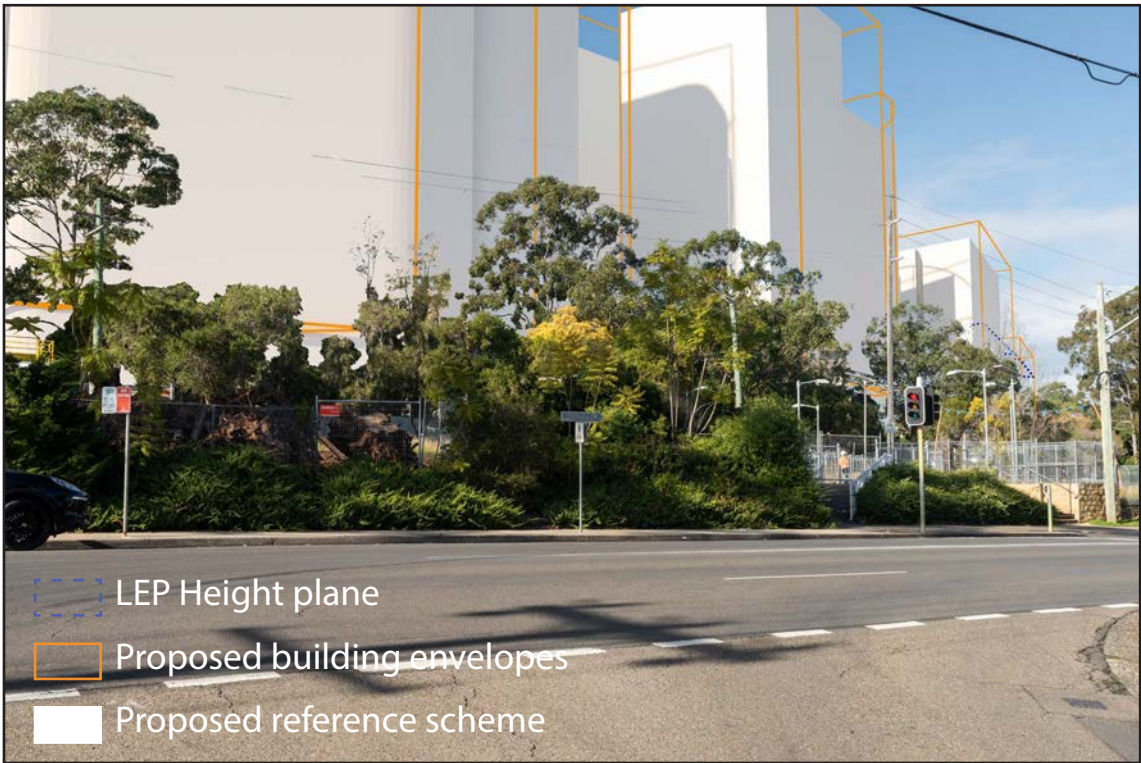




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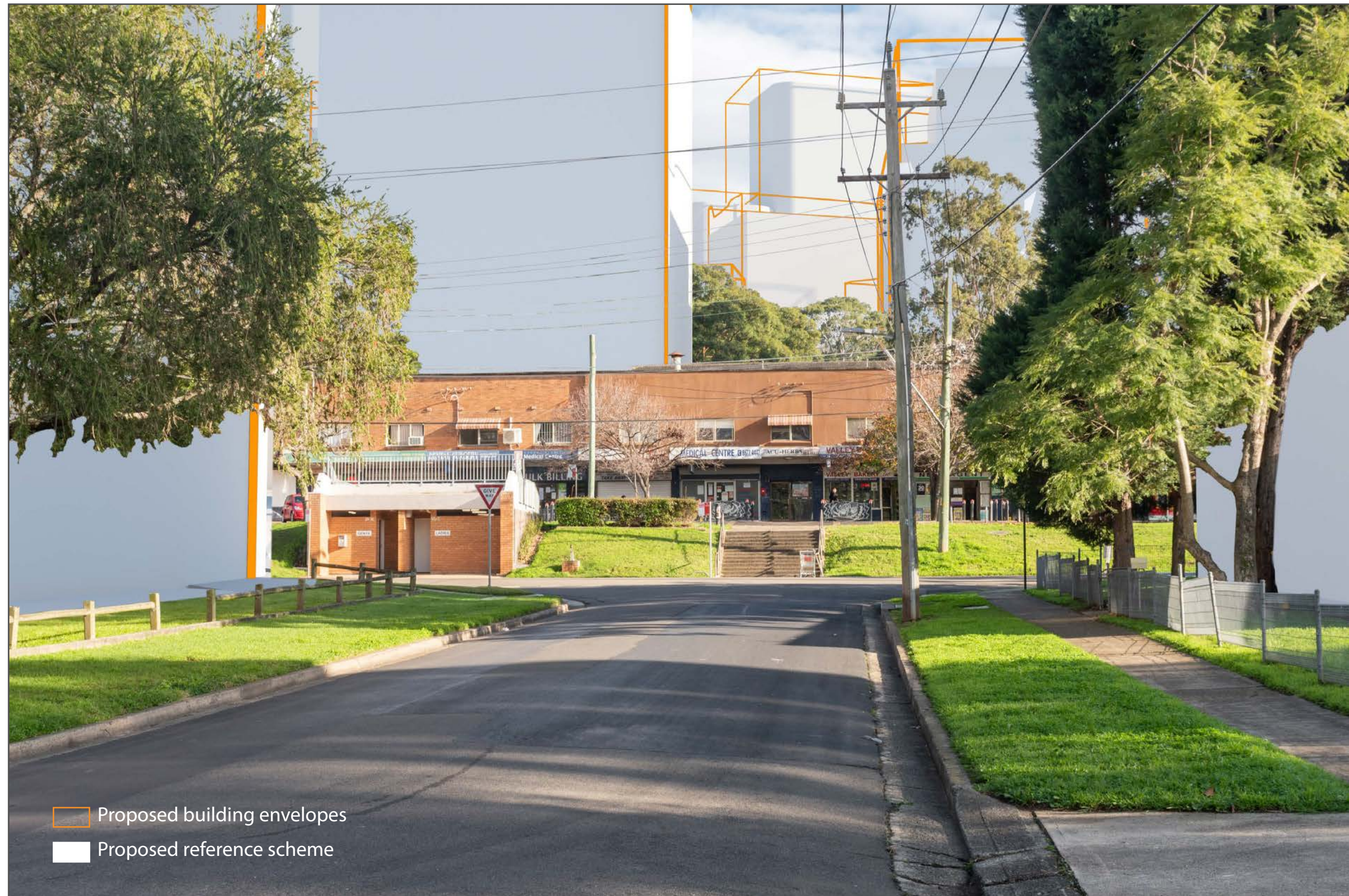










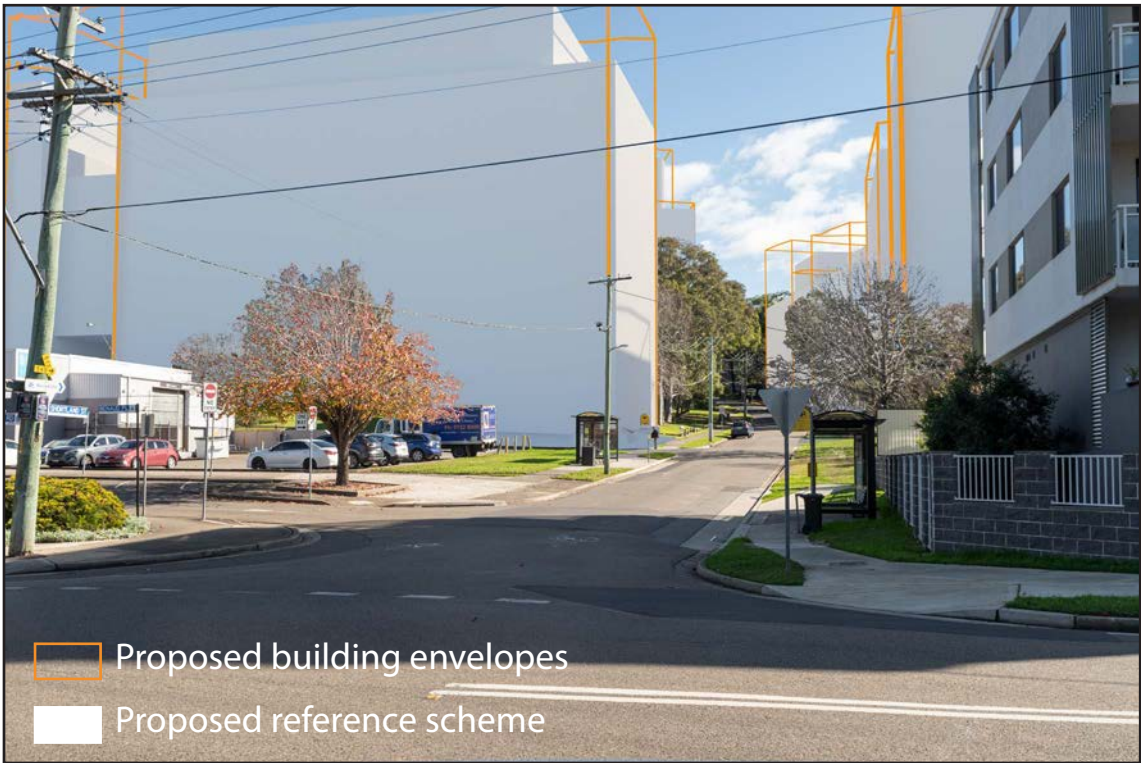




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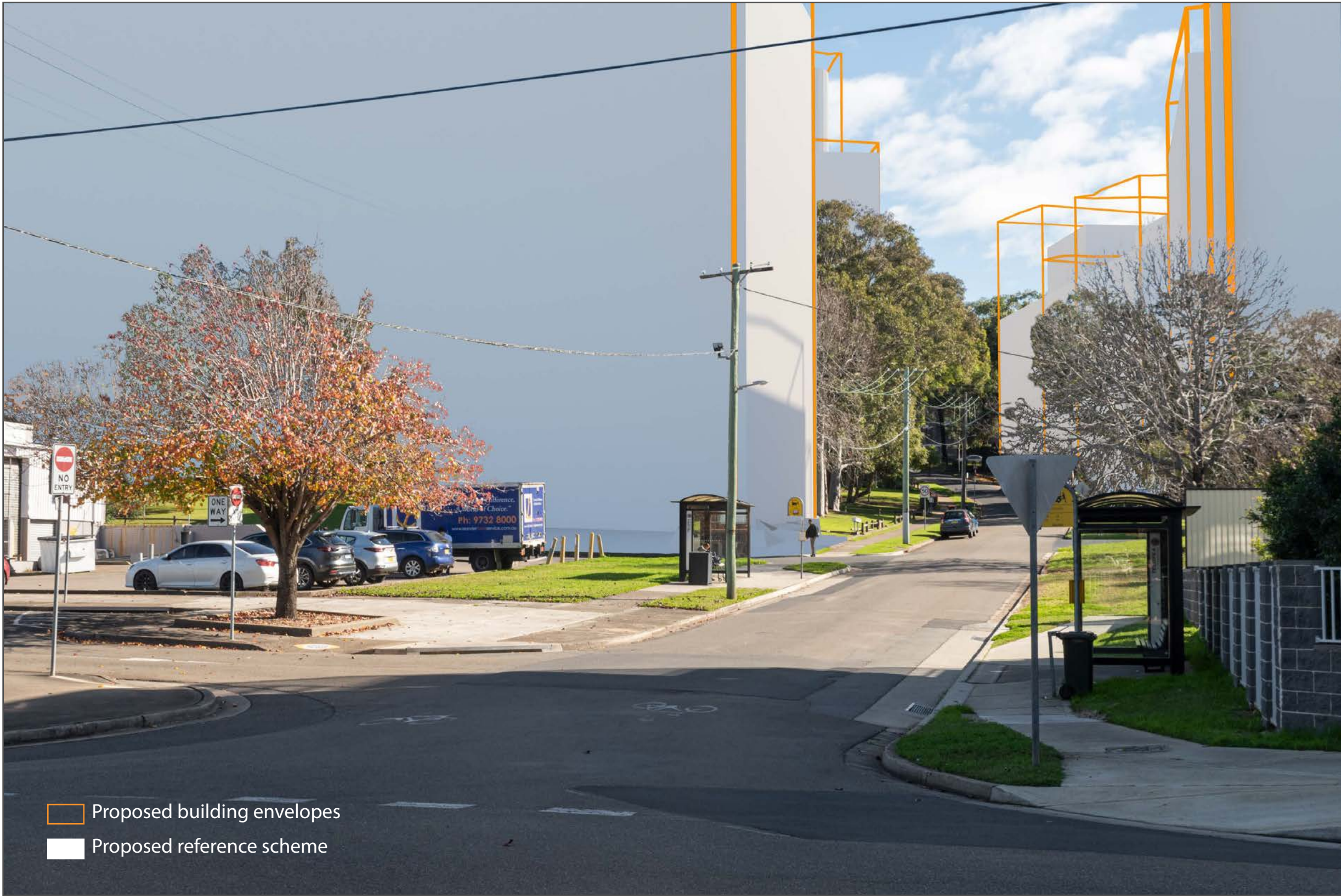










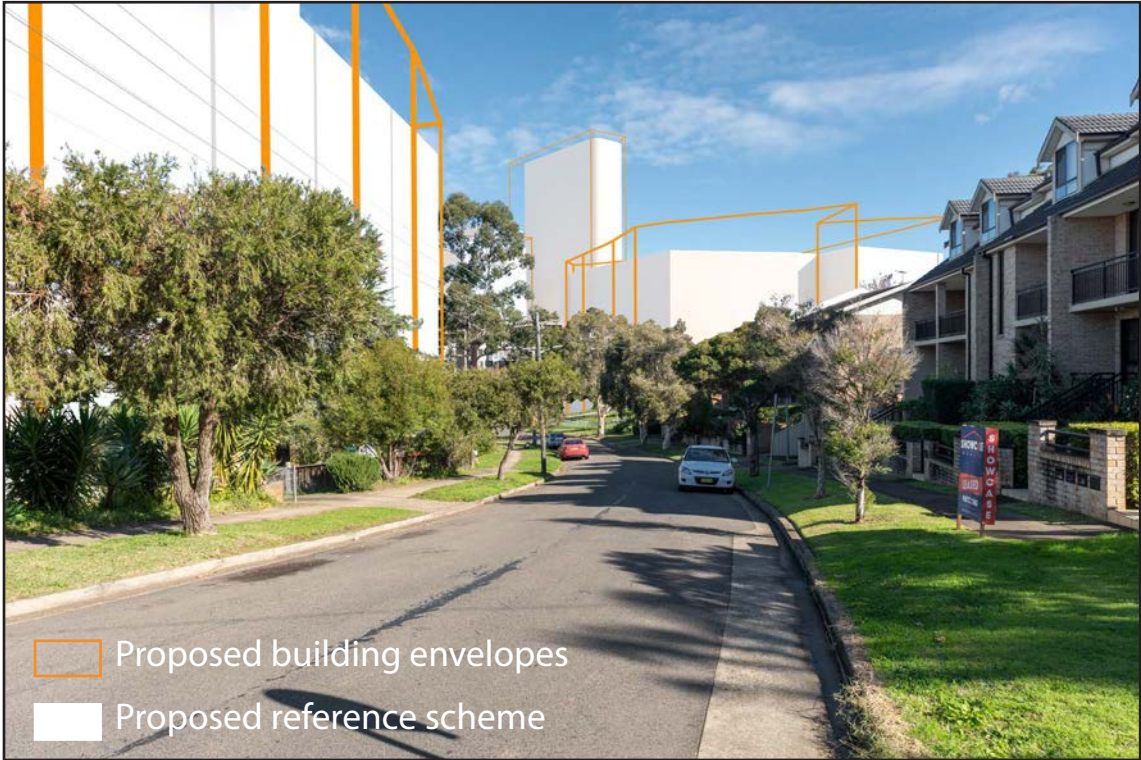




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**CMS Surveyors Pty Limited**A.B.N. 79 096 240 201  
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Page 1 of 3

Date: 26-06-2020  
Our Ref: 19451 Photo LocationsVirtual Ideas  
Studio 71/61 Marlborough Street  
Surry Hills  
NSW 2010**RE: Photo Locations – 57 Adderton Road, Telopea**

Dear Rick Mansfield

As requested, we have attended site and measured the Co-ordinates and Elevation of the photo locations for 57 Adderton Road, Telopea.

Coordinates are MGA zone 56 (GDA 2020) and elevation to Australian Height datum (AHD).

Measurements were taken using GNSS and theodolite.

DWG of locations has also been supplied.

| Point Number | Easting    | Northing    | Reduced Level Ground (RL) | Photo Point          |
|--------------|------------|-------------|---------------------------|----------------------|
| 1            | 319540.883 | 6258453.001 | 39.73                     | VIEW 18              |
| 2            | 319534.480 | 6258453.441 | 39.58                     | VIEW 18.2            |
| 8            | 318996.896 | 6258545.226 | 31.51                     | VIEW 38              |
| 15           | 319087.802 | 6258716.399 | 29.94                     | VIEW 40              |
| 21           | 318806.106 | 6259560.277 | 66.59                     | VIEW 22              |
| 28           | 318938.678 | 6259236.012 | 68.11                     | VIEW 25              |
| 34           | 318657.601 | 6258990.883 | 57.32                     | VIEW 27              |
| 42           | 318598.063 | 6258870.856 | 54.48                     | VIEW 47              |
| 47           | 318573.206 | 6258546.202 | 53.53                     | VIEW 44              |
| 53           | 318667.358 | 6258829.828 | 59.05                     | VIEW 45              |
| 59           | 318755.546 | 6258779.051 | 55.30                     | VIEW 46              |
| 66           | 319099.557 | 6258832.563 | 33.59                     | VIEW 41              |
| 72           | 318943.893 | 6259121.121 | 58.78                     | VIEW 43              |
| 78           | 319420.703 | 6258944.181 | 62.61                     | VIEW 4               |
| 4            | 319510.842 | 6258461.294 | 38.86                     | BOTTOM OF SIGN       |
| 5            | 319501.018 | 6258467.684 | 49.50                     | ANGLE ON LIGHT POLE  |
| 6            | 319509.924 | 6258486.724 | 48.73                     | TOP OF LIGHT POLE    |
| 7            | 319464.622 | 6258499.415 | 47.47                     | TOP OF LIGHT POLE    |
| 10           | 318983.961 | 6258570.827 | 33.38                     | TOP OF TAP           |
| 11           | 318970.109 | 6258565.741 | 33.35                     | BOTTOM OF TREE TRUNK |

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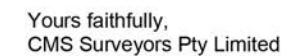
Page 2 of 4

| Point Number | Easting    | Northing    | Reduced Level Ground (RL) | Photo Point          |
|--------------|------------|-------------|---------------------------|----------------------|
| 12           | 318975.135 | 6258574.301 | 33.35                     | BOTTOM OF TREE TRUNK |
| 13           | 318977.970 | 6258597.518 | 32.73                     | BOTTOM OF POST       |
| 17           | 319033.856 | 6258724.014 | 34.59                     | TOP OF SIGN          |
| 18           | 319041.881 | 6258731.473 | 31.58                     | BOTTOM OF SIGN       |
| 19           | 319017.884 | 6258743.784 | 42.15                     | TOP OF POWER POLE    |
| 20           | 319058.786 | 6258734.203 | 30.85                     | BOTTOM OF POWER POLE |
| 23           | 318837.151 | 6259503.914 | 65.37                     | BOTTOM OF LIGHT POLE |
| 24           | 318768.058 | 6259508.322 | 65.53                     | BOTTOM OF LIGHT POLE |
| 25           | 318816.213 | 6259504.246 | 69.60                     | TOP CORNER OF FENCE  |
| 26           | 318786.828 | 6259505.947 | 69.83                     | TOP CORNER OF FENCE  |
| 27           | 318797.783 | 6259508.548 | 65.90                     | TOP OF TRAFFIC CONE  |
| 30           | 318902.606 | 6259165.848 | 81.92                     | TOP OF POWER POLE    |
| 31           | 318902.558 | 6259191.837 | 75.11                     | TOP OF POWER POLE    |
| 32           | 318924.964 | 6259223.692 | 67.96                     | BOTTOM OF POWER POLE |
| 33           | 318885.755 | 6259201.922 | 77.42                     | TOP OF POWER POLE    |
| 36           | 318668.529 | 6258970.132 | 57.84                     | BOTTOM OF SIGN       |
| 37           | 318663.110 | 6258960.159 | 61.84                     | TOP OF TRAFFIC LIGHT |
| 38           | 318657.411 | 6258949.652 | 60.69                     | TOP OF TRAFFIC LIGHT |
| 39           | 318720.089 | 6258924.959 | 87.33                     | CORNER OF ROOF       |
| 40           | 318696.371 | 6258829.932 | 86.11                     | CORNER OF ROOF       |
| 41           | 318650.267 | 6258935.901 | 68.81                     | TOP OF POWER POLE    |
| 44           | 318586.206 | 6258850.003 | 63.55                     | TOP OF POWER POLE    |
| 45           | 318585.156 | 6258820.279 | 53.11                     | BOTTOM OF TREE TRUNK |
| 46           | 318602.987 | 6258852.688 | 56.93                     | TOP OF SIGN          |
| 49           | 318592.967 | 6258566.497 | 65.35                     | TOP OF POWER POLE    |
| 50           | 318599.730 | 6258576.439 | 57.56                     | TOP OF SIGN          |
| 51           | 318616.739 | 6258603.464 | 57.90                     | TOP OF SIGN          |
| 52           | 318592.447 | 6258580.711 | 55.00                     | BOTTOM OF SIGN       |
| 55           | 318670.038 | 6258811.429 | 61.88                     | TOP OF SIGN          |
| 56           | 318665.414 | 6258811.137 | 61.21                     | TOP OF SIGN          |
| 57           | 318656.415 | 6258808.325 | 62.43                     | TOP OF LIGHT POLE    |
| 58           | 318682.339 | 6258790.289 | 59.01                     | BOTTOM OF LIGHT POLE |
| 61           | 318735.543 | 6258766.440 | 58.76                     | CORNER OF SUBSTATION |
| 62           | 318710.250 | 6258759.163 | 60.93                     | TOP OF SIGN          |
| 63           | 318716.716 | 6258773.944 | 61.20                     | TOP OF SIGN          |
| 64           | 318688.251 | 6258774.297 | 63.75                     | TOP OF LIGHT POLE    |
| 65           | 318737.006 | 6258754.435 | 67.20                     | ROOF RIDGE           |
| 68           | 319085.008 | 6258840.028 | 36.15                     | TOP OF SIGN          |
| 69           | 319077.357 | 6258829.284 | 44.11                     | TOP OF POWER POLE    |
| 70           | 319050.629 | 6258848.726 | 43.78                     | TOP OF POWER POLE    |
| 71           | 319022.679 | 6258824.845 | 40.48                     | CORNER OF GUTTER     |
| 74           | 318919.653 | 6259095.655 | 63.32                     | TOP OF POWER POLE    |

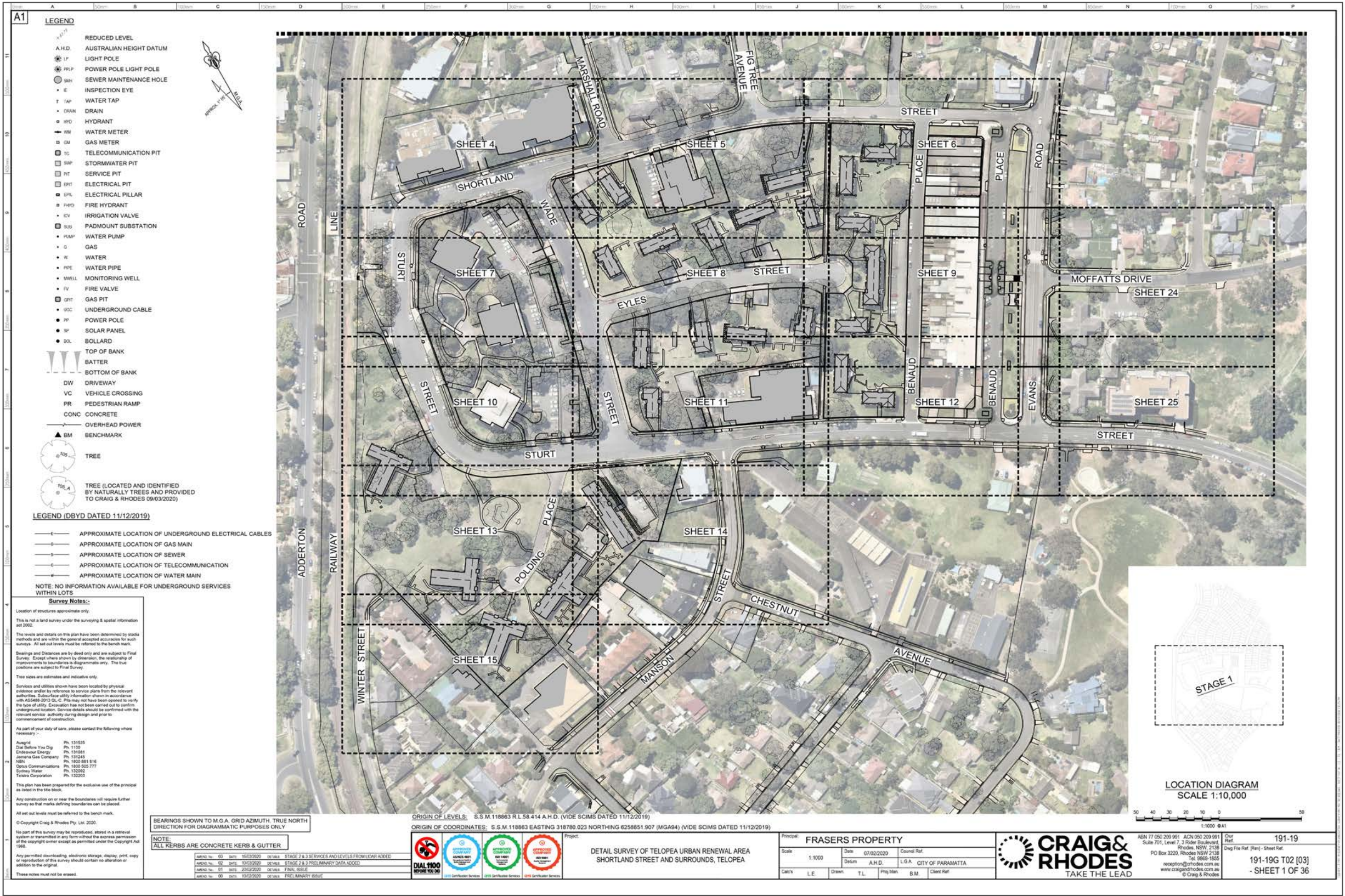
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**Note: Ground level of camera positions are surveyed. Camera height of 1.65m to be added if required.**









## DIGITAL CAMERA LENSES FOR PHOTOMONTAGES AND VISUAL IMPACT ASSESSMENTS

The intention of a photomontage rendering is to visually communicate how proposed built form sits in respect to its surroundings. To achieve this, a digitally rendered image from a digital 3D model is superimposed into a digital photograph to provide an accurate representation in terms of light, material, scale, and form.

Camera lens selection also plays an important part in creating a photomontage that communicates visual impact. There are several things to consider with respect to lens selection.

### Field of View of the Human Eye

The field of view of the human eye is a topic that varies depending on the source of information. In many cases, the field of view of the eye is stated to be 17mm. Other opinions claim a smaller field of view of around 22-24mm.

Whichever the case, it is accepted that the human eye has a wide field of view. When a person stands close to a subject - for instance a building - their field of vision can potentially read all of the top, sides and bottom of the building simultaneously in a single glance.

In addition to this, the human eye can change focus and target direction extremely rapidly, allowing a person to view a large structure in a very short period of time, effectively making the perceived field of view even larger.

### The Perspective of the human eye

It is difficult to accurately reproduce what the human eye sees by the means of a printed image. The eye's image sensor - the retina - is curved along the back surface of the eyeball, whereas the sensor on a camera is flat. Consequently, the perspective of a photograph can look quite different to how a person views a scene in the real world, especially when comparing to a photo captured with a wide camera lens.

In digital photography circles, it is widely accepted that using a longer lens (approximately 50mm) reduces the amount of perspective in an image and therefore more closely replicates what the human eye would see in reality. This, however, only addresses how the eye perceives perspective and does not consider the field of view of the eye.

If a photo is taken of a scene using a 50mm camera lens, printed out and then held up in front of the viewer against the actual view at the same location as the photo was taken, it is unmistakable that the human eye can see much more of the surrounding context than is captured within the photo.



## DIGITAL CAMERA LENSES FOR PHOTOMONTAGES AND VISUAL IMPACT ASSESSMENTS

### Changing the field of view on a digital camera

The main difference in using a longer lens vs a wider lens is the amount of information that is displayed at the edges of the subject. Changing the lens to a smaller FOV produces the same result as cropping in on the wide angle image, providing that the position and the angle of the camera remains constant while taking the photographs.

In short, a lens with a wider field of view does not create an image that has incorrect perspective, it simply means that the perspective is extended at the edges of the image showing more of the surrounds in the image.

### Summary

With regards to visual assessment, there is no definitive solution for camera lens selection.

Longer lenses produce images that are more faithful to the perspective of the human eye, though the field of view is more limited, making it difficult to capture the entirety of a subject or enough of the surrounding context in which the subject resides.

Conversely, the perspective of wider camera lenses can make subjects appear further away than they would appear through the perspective of the human eye. This also limits a persons ability to accurately assess visual impact.

For these reasons, Virtual Ideas has taken the view that it is not possible to exactly replicate the real world view of the human eye in an image created with a camera and for visual impact photomontages, camera lenses are selected that strike a balance between these two considerations and can accurately display the built form in its surroundings.

The most effective way to accurately gauge visual impact and achieve a real world understanding of scale, is to take prints of the photomontages to the exact site photography locations and compare the prints with the scale of the existing built form.