



Report prepared for: Australian Unity

Report prepared by Dr Richard Lamb, BSc, PhD

ADDENDUM VISUAL IMPACT ASSESSMENT 266 LONGUEVILLE ROAD, LANE COVE

AUGUST 2018



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Views Assessment Report: Updated Plans

Australian Unity

266 Longueville Road, Lane Cove

1 Background

Richard Lamb and Associates have been appointed by Australian Unity to undertake an independent views assessment for the amended development application on the site at 266 Longueville Road, Lane Cove (the site).

RLA are specialist consultants in visual impacts, view loss and landscape heritage assessments. The author of this report is Dr Richard Lamb, whose full CV can be viewed on the People page of the RLA website at www.richardlamb.com.au. A summary CV is attached to this report at Appendix 4. RLA prepared a visual impacts assessment report that accompanied the original DA in 2017 and an updated report on the amended plans in 2018.

This report specifically addresses questions raised by the Northern Joint Regional Planning Panel in relation to whether there are potential views of the proposed building from:

1. Richardson Street West
2. Richardson Street East and the ridges to the east
3. Lane Cove Golf Course
4. Longueville Road south of the Site

This assessment is based on fieldwork on July 24 and August 1, 2017, observations and photography of a drone flown to indicate the likely visibility of the highest parts of Level 7 of the application from the locations above and on and analysis of photomontages prepared by Thomson Adsett on instructions from RLA.

The method of preparation of and certification of the photomontages in this report is below.

1.1 Modelling of effects of the proposed development

1.1.1 The Use of Visual Aids

Photomontages provide a useful objective aid which can assist in determining the potential visual effects and impacts of a proposed development. An accurate 3D model of the proposed development is created and 'fitted' into a photograph so that its visual effects can be easily analysed and any potential impacts quantified. Based on additional observations in the three areas of concern to the JRPP, RLA recommended viewing locations for which photomontages could be prepared to answer the question as to whether the proposed building would be visible and to what extent.



1.1.2 Principles of verification of photomontages

For the certification of photomontages, the fundamental requirement is that there is a computer model of the proposed future development envelopes that can be accurately located in three-dimensional space and merged with representative photographs taken from key viewing places, to produce a photomontage.

The model of the proposed buildings needs to be a 3D model, the location and height of which can be verified with respect to surveyed features of the existing development on the site and/or verified 3D reference points on the site of the immediately surrounding area. The 3D model is then inserted into (merged with) high definition digital images of the existing environment.

This principle is recognised by a Practice Direction of the Land and Environment Court of New South Wales, which requires that the 3D model of the proposed development can be shown to match the physical features of the existing environment, the features of which can be verified by registered surveyors and that the images used are taken at a consistent and known focal length and lens height above ground level, with a camera of known field of views that is capable of providing an image similar to the view available to the human eye.

The key to being able to certify the accuracy of the resulting photomontage is being able to demonstrate that the 3D model of proposed building envelopes has a good fit to known surveyed reference markers or fixed features of the site or locality which are shown on a survey plan that is itself certified for accuracy by registered surveyors.

1.1.3 Photographic technology

The photographs for this project were taken by RLA using a professional quality Canon EOS 5D Mark 3 Digital SLR camera in RAW and JPG format at high resolution (22 mega pixels). RAW format images are sharper, as the camera does not apply smoothing or other electronic image processing to them. The camera lens focal length of 35mm for all images was chosen to suit the horizontal field of view to be represented, because of the overall size of the site and its width in some of the critical views, in which a standard lens for landscape imagery, for example 50mm focal length, would not have a sufficient field of view. As the camera is of full-frame 35mm format, the field of view of the 35mm focal length lens is 54.4 degrees.

The camera also carried a mounted GPS, which writes the coordinates of the images onto the metadata of the electronic image files, as a backup to the surveyed camera locations.

RLA visited each of the viewing locations identified for preparation of photomontages in the presence of a registered surveyor from Criag and Rhodes, who verified the height and location of the camera. The height of the camera lens above ground level was standardised at 1.6m.

Craig and Rhodes certified the coordinates, the location of the camera at each photomontage location and the location of the camera in relation to the highly detailed site survey. The certification, site survey and location of the cameras surveyed are attached to this report in Appendix 3.



1.2 Method of preparation of photomontages by Thomson Adsett

The following description of the method of preparation of the photomontage was provided by Thomson Adsett:

“Photomontage preparation methodology:

Three photos were taken with a Canon EOS 5D Mark III SLR camera with a 35mm focal length in clear weather, with times and locations noted. The photos are of 1.5 image aspect ratio at a resolution of 5760x3840 pixels. All photographs were taken at a height of 1.6m.

The following software was used to generate the photomontages:

- Adobe Photoshop
- Autodesk 3ds Max
- Autodesk Revit
- Landmark Surveying
- Autodesk Autocad
- Chaosgroup Vray Next
- Google Earth Pro

These photos were plotted as part of a measured survey undertaken. The survey contained a digital 2d plan and digital 3d model of the surveyed site area, with easting and northing locations and RL levels of all the camera positions. Contour intervals are at 1000mm.

The project architectural model was exported from Autodesk Revit as a FBX file. The FBX file was imported into 3ds Max.

Both the 2d and 3d survey elements were imported into 3ds Max. The Revit 3d model was positioned to reflect the correct survey RL. Virtual cameras were created in 3ds Max at the same height and locations as per the survey. The Chaosgroup Vray software cameras created were set up to match the resolution and focal length of the physical cameras. The camera orientations were mapped using Google Earth Pro software and the digital survey information. The original photos were used as background images in the virtual camera viewports to confirm orientation. Daylight systems were set up in 3ds Max to match the photos' time and date to generate sun angles for the renders. These daylight systems were set up with Sydney, Australia as the location.

To ensure the accuracy of the photomontage images the virtual camera positions were checked against:

- Camera easting and northing co-ordinates
- Camera lens setting
- Aspect ratio of the original photographs
- Relative height of the camera



Digital renders were produced and saved of the three virtual cameras.

The renders were imported into Adobe Photoshop and overlaid onto the existing photos. The renders were masked behind existing objects and colour corrected and textured to match the existing photo. Photo filters were added to add warmth and contrast to the final images.

The final images were saved at original size and resolution as highest quality JPG files.

The photomontages produced are a representation of the proposed project, that is accurate within the capabilities of the technology used. Some minor inaccuracies might exist due to survey and photographic inaccuracies."

In our experience, this process satisfies the requirements for accuracy required by the Land and Environment Court of New South Wales practice direction for the preparation of photomontages for use in evidence. This has become the industry standard for accuracy of photomontages. We consider that that the photomontages can be certified as being as accurate as can reasonably be achieved in the circumstances and can be relied on to faithfully represent the likely appearance of the proposal.



2 Visual exposure to locations 1-4

2.1 Richardson Street West

The previous RLA reports concluded that the proposed building would be of low visibility to the public domain in Richardson Street West. The proposed amended plans in visual terms move the proposed Level 7 toward the centre of the building cluster and toward the north edge. In our previous report on the current amended plans, we referred to photographs taken with the aid of a drone by Thomson Adsett that were to assist in assessment of potential overlooking of properties in Richardson Road West.

The photographs showed that there is minimal visibility of Richardson Road West itself. However, on close examination, a 'window' of view was discerned in one photograph, which appeared to have part of the roof of a car visible in the street. Other features in the photograph, including the rear of a false gable over a garage entry from the street, aided in identifying the location for a photograph. The view would be the worst-case view from the street, as the drone was not visible from any other location in the street, as a result of blocking by buildings and vegetation, even when flown to a height many metres higher than the northern and leading edge of Level 7.

As a further aid to interrogation of whether any of the proposed building would be visible from this location, the drone was once again flown, this time to indicate the north-west highest point of Level 7 of the proposed building. RLA observed the drone from the street, marked the location from which it was visible and took high definition photographs using a camera mounted on a tripod over the mark and set with a lens height of 1.6m above ground at the mark. The location of the camera was subsequently surveyed by Craig and Rhodes, Registered Surveyors. The Survey data was related to the existing site survey carried out by the same surveyors and to datum reference points surveyed in Longueville Road.

The photograph taken in Richardson Street West was provided to Thomson Adsett, along with the survey data, for the purpose of preparing a photorealistic photomontage of the view. The photomontage is appended to this report at Appendix 2. The location and apparent height of the drone was visible in the photographs and marked on graphics provided to Thomson Adsett. This was not used to determine the accuracy of the photomontages, but as an aid only.

2.1.1 Analysis of photomontage (location 1 on Map 1)

A small part of the building would be visible from the view location in Richardson Street West in the general vicinity of No.49 on the north side of the road. A wedge that is partly the northern edge of Level 7 and part of Level 6 is visible between the roofs of Nos.54 and 56. The building would not be visible in the street from other locations, as it would be hidden by buildings and vegetation in the street.



2.2 Richardson Street East and ridges to the east

Our original report concluded that there were unlikely to be views from the area east of the Site, based on preliminary assessment at the time. We have subsequently revisited the area to test that conclusion. A representative series of images captured from the streets on the ridge east of the site are in Appendix 1, representing viewing places 2-10 (Map 1).

The residential area generally to the east of the site and across the valley in the floor of which is the Lane Cove Golf Course, has an irregular grid pattern of subdivision on a ridge. The ridge runs approximately from north to south. A second valley sloping down from north to south occurs to its east. The valleys are drained by Gore Creek.

The main road accessing the ridge is Osborne Road, which branched off the Pacific Highway near Gore Hill and runs down the east slope of the ridge. Two other longitudinal roads are Campbell Avenue, near the topographic centre of the ridge and Third Avenue on the west side of the ridge. Richardson Road East runs perpendicularly to Osborne Road, Campbell Avenue and Third Avenue.

We have analysed the views from all of these roads, which are generally on the ridge. With the exception of potential views from the very western terminus of Richardson Street East, there are no views even in the general direction of the site from the public domain in any of the major or minor streets. The subdivision pattern is such that houses face the streets and have small side setbacks and in some cases substantial vegetation in the gardens. Views are blocked in both the foreground and background, as a result.

The closest street on the ridge other than the western part of Richardson Street East is Third Avenue. The same principle applies to views from this street as was observed above. There are no public views of the Site available. Representative views in the general direction of the Site are shown in the images in Appendix 1 for viewing places 2-10.

The short western section of Richardson Street East from the intersection with Third Avenue and the terminus of the street provides a partial view outward, that is also significantly screened by evergreen vegetation, toward Richardson Street West, over the intervening Golf Course. The roofs of houses in Richardson Street West are partly visible as a result of the clearing of vegetation to create the subdivision in the past. To the south-west, in the view that would be toward the Site, dense vegetation canopy that is significantly higher than the eye line intervenes in the view. There is no evidence of the Site in the view, or of buildings on or near it, such as Timbertops.

One distinctive house, that has a high pitched light green roof, with photovoltaic cells on it and a window in the first-floor gable end, is visible from northern part of the informal carpark adjacent to the Site, in the view east toward the general vicinity of the ridge. This house is at 23 Third Avenue at the intersection with Richardson Street East. It is visible because of the absence of vegetation in the view line over the houses in Richardson Street West. The house is not visible from the Site, as between it and the Site, there is tall and dense vegetation between the house and the Site, in the Golf Course. This observation is confirmed in views from the street in the vicinity of the house, where vegetation that is as tall or taller than the house is evident in the direction of the Site.



Richardson Street East terminates shortly west of the intersection with Third Avenue. From the terminus, walkers can enter the Golf Course by two routes, one on the north side on a recent concrete path and the other via a dilapidated set of concrete stairs. There is no direct view of the Site from either of these locations, as a result of the screening effects of tall vegetation canopy in the view lines.

A series of images, including those from the two paths and from the adjacent part of the Golf Course, represent viewing places 11-13 in Appendix 1.

No photomontages could be prepared to represent the views from Richardson Road East of the ridge to the east, as there is no discernible visibility either of the Site or the air space over it, where the proposed building would be constructed.



2.3 Lane Cove Golf Course

Two fairways of Lane Cove Golf Course occupy the foot of the valley east of the Site. Between the Golf Course and the Site, there is a dense vegetation canopy of woodland and forest trees over a variable understorey. Between the fairways there is also woodland to forest form vegetation of varying densities.

It had been hoped that enough of Timbertops might be visible in some views so a comparison to the proposed building or an overlay of the survey could be done to simplify preparation of the photomontages. There is minimal visibility of the adjacent Timbertops apartment building in views from the Golf Course, which gives an indication of the likely overall low visibility of the proposed building. A series of images representing viewing places 14-18 from the Golf Course are shown in Appendix 1. These illustrate the extent of screening of the existing environment and therefore of the proposed future building would be likely to occur.

One viewing place was located in part of the fairway of the 7/16th hole, where a break in the canopy between individual trees allowed a view of some *Lantana*, which is growing currently on the top of the bank below the eastern-most existing bowling green. The drone was flown at a point representing part of the eastern parapet of Level 6 of the building and could be seen in this window of view. The viewing place was marked and photographs taken as described above, for the purpose of preparing a photomontage. The camera location, as before, was surveyed by Craig and Rhodes registered surveyors.

2.3.1 Analysis of photomontage (location 15 on Map 1)

The photomontage shows that a small part of the proposed building would be visible in the window of view. Some of the lower parts of the building would also be likely to be partly visible through the vegetation after clearing of existing weed vegetation and reduction in the site level, although it would be significantly screened. The topmost part of the building at Level 7 would not be visible, because of the steep upward viewing angle, in which the leading edge of the roof, which is essentially the same height as Timbertops, would block the view.



2.4 Longueville Road

The drone was once again employed as an aid to interrogating the likely visibility of the upper level of the building as seen from Longueville Road. It is considered that the existing photomontages with the DA package give an adequate representation of the view from the frontage of the site, where the higher part of the building to the east is not of significant visibility.

However the question has been asked as to whether and to what extent there could be an impact on the view from the road further south toward the intersection of River Road West, Longueville Road, Kenneth Street and Northwood Road. The drone was barely visible in the context of existing buildings, when flown to represent the south-western corner of Level 7, from the traffic island at the west side of the intersection. As before, images were captured with the camera mounted on a tripod at a height of 1.6m, the location was marked, the location and RL was surveyed and the images were provided to Thomson Adsett for preparation of a photomontage.

2.4.1 Analysis of photomontage (location 19 on Map 1)

The photomontage shows that a small part of the upper level of the proposal at Level 7 would be visible to the north of plant and lift overrun structure on the roof of Level 6. The bulk of the upper level at Level 7 is of minimal visibility and would make no significant impact on the streetscape.



3 Conclusion

The analysis carried out above showed the following outcomes:

1. Richardson Street West.
 - a. The proposed building would be of no visibility from the majority of the street.
 - b. A small wedge of building would be visible between two residences on the south side of the street, from an isolated location on the northern footpath.
 - c. The part of the building visible would include part of Level 7.
2. Richardson Street East and the ridges to the east
 - a. The proposed building would not be visible from the public domain in streets on the ridge east of the Site.
 - b. A cameo view toward the west that includes roofs of buildings in Richardson Street East is available from the western terminus of the street. The Site is not visible as a result of heavy screening of views by vegetation in the view lines that is higher than the proposed building on the Site.
 - c. Partial views heavily screened by intervening vegetation are available from the western terminus of the street where access is available to the Lane Cove Golf Course. The Site is not visible and the proposed building would be unlikely to be visible for the same reasons outlined in 2(b) above.
3. Lane Cove Golf Course
 - a. The proposed building would not be visible from the majority of the Golf Course north or south relative to the Site.
 - b. Part of Levels 5 and 6 of the proposed building would be visible through a window of opportunity between existing trees, from an isolated location on the fairway of the 7/16th Hole, to the east of the Site.
 - c. Other parts of the building may be partly visible from the same or closely adjacent locations, seen through heavy vegetation screening.
 - d. The adjacent building at Timbertops which is at similar height to Level 6 of the proposed building is also of minimal visibility from the Golf Course, giving a clear indication that the likely future visibility of the proposed building would also be likely to be minimal.
4. Longueville Road south of the Site.
 - a. The proposed building would be clearly evident in the street.
 - b. The bulk of the upper level of the building would be of minimal visibility.



Location 1
Richardson Street West, photomontage view location



Location 2
Intersection of Fourth and Third Avenue north-east of the Site



Location 3
Third Avenue, view in the general direction of the site



Location 4
Third Avenue, view in the general direction of the site



Location 5

View of 23 Third Avenue, on the intersection with Richardson Street East. The roof, gable end window and distinctive finial are visible from Longueville Road near the north-east boundary of the Site, over the rear of houses in Richardson Street West. The house is not visible from the Site.



Location 6

View west down Richardson Street East from adjacent to 23 Third Avenue. The Site is to the left in the view and screened by vegetation.



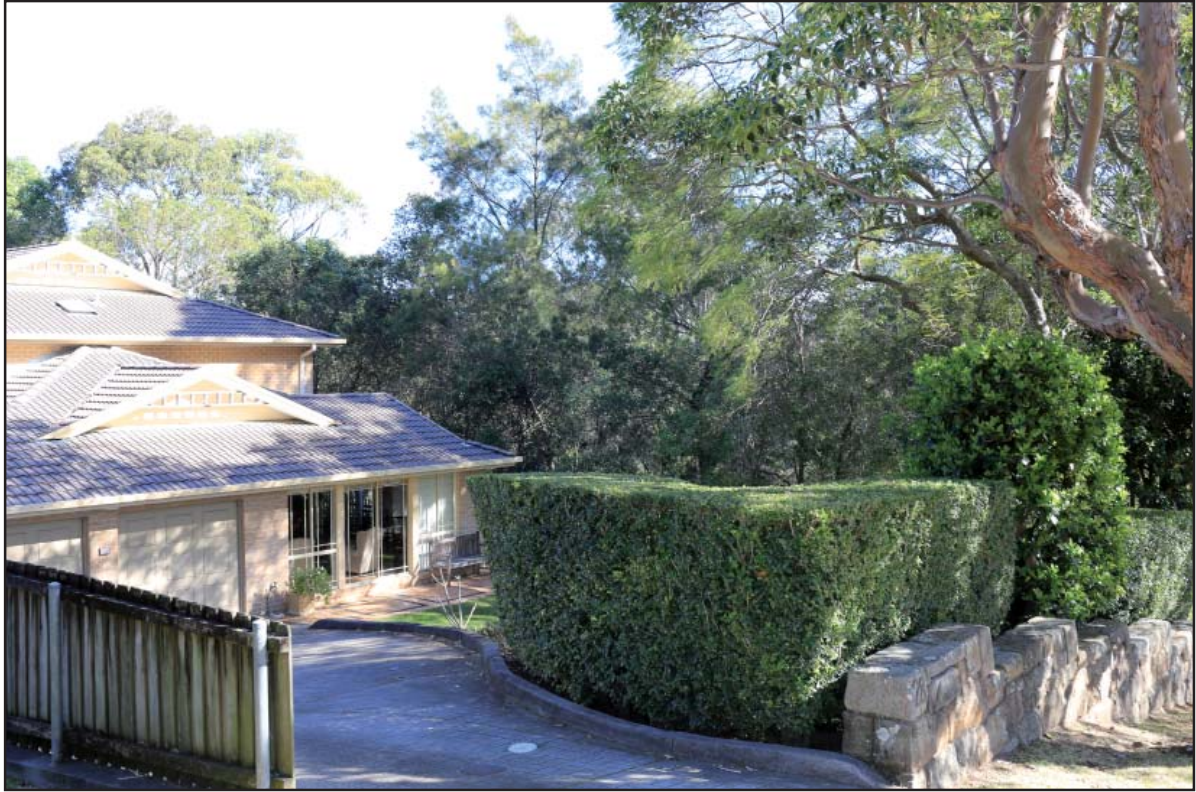
Location 7

View south-west in the general direction of the Site from Richardson Street West at the intersection with Osborne Place.



Location 8

View west near the terminus of Richardson Street West. Roofs in Richardson Street East on the south side of the street are partly visible through screening vegetation. The Site is to the left in the view and not visible.



Location 9

View toward the Site over the last house on the south side of Richardson Street East. The Site is not visible.



Location 10

View toward the Site from the terminus of Richardson Street East where two access tracks into the Lane Cove Golf Course diverge. The Site is not visible.



Location 11

View toward the Site from a set of stairs at the end of Richardson Street East. Neither the Site nor the adjacent buildings to its south are visible, because of the screening effect of vegetation.



Location 12

View of 28 Richardson Street East from the Golf Course. Based on observations from the street at similar levels to the entry and ground floor of the house, it appears unlikely that it could have a view of the Site, as both vegetation in its foreground and the vegetation shown in the view from Location 11 above would intervene



Location 13

View toward the Site and adjacent building at Timbertops from the Golf Course west of the terminus of Richardson Street East.



Location 14

View toward the Site from the 7/16th Hole fairway. A part of the adjacent building at Timbertops is barely visible through screening vegetation on the left side of the view. Part of the upper section of the proposed building may be visible through heavy vegetation screening and would be significantly lower than the canopy



Location 15

Photomontage view location. Part of the building would be visible in the window of view between trees in the centre of the view, with a height significantly lower than the adjacent canopy.



Location 16

View south from part of the 7/16th Fairway toward the clubhouse and residential development in Northwood.



Location 17

View from between fairways toward Timbertops (not visible on the left side of the view) and the Site.



Location 18

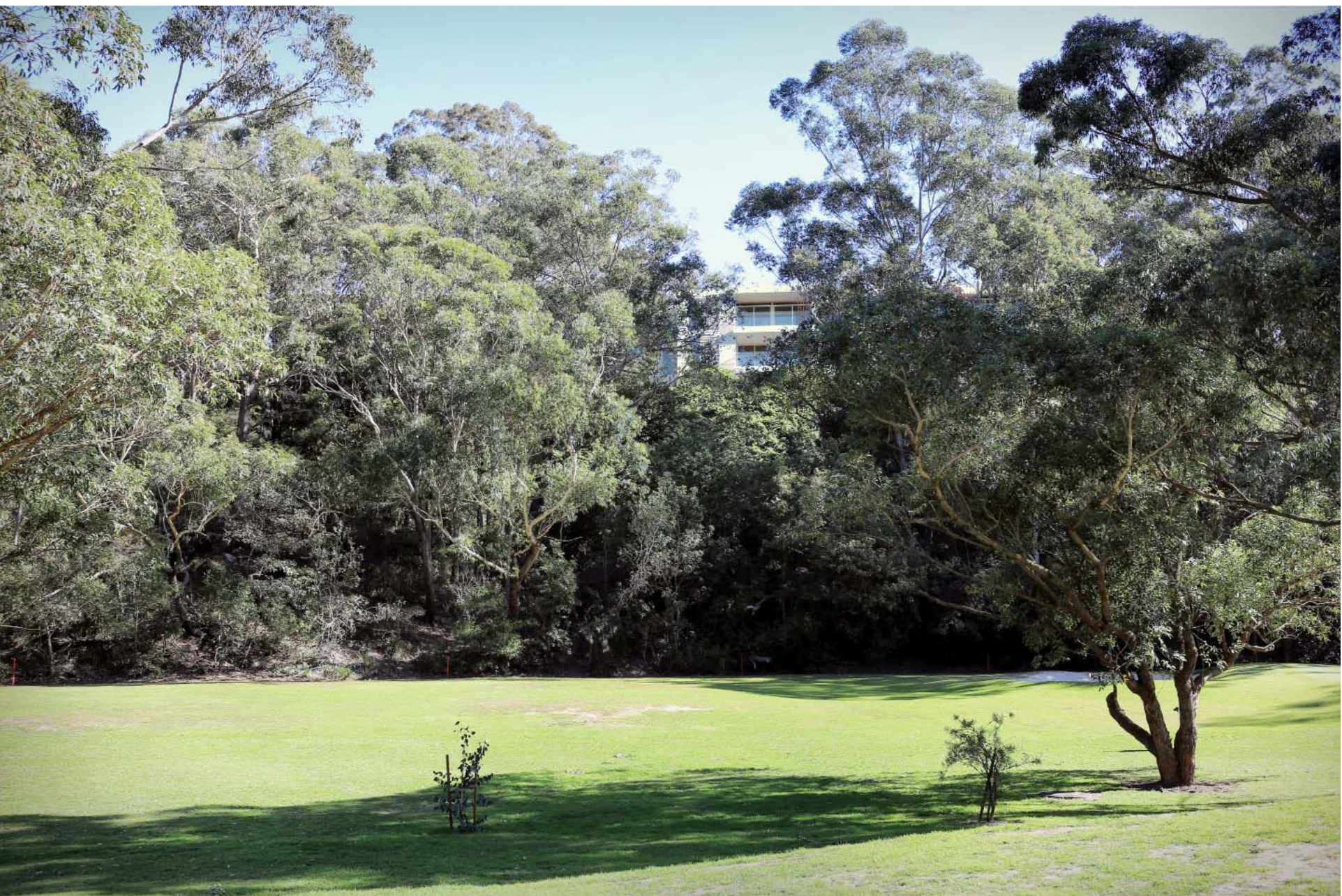
View toward the Site from near the practice tees of the closest fairway to the Site. Timbertops would be in the approximate centre of the view if visible, with the site at centre-right.



Location 19

Photomontage view location. Intersection of Longueville Road, River Road West, Northwood Road and Kenneth Street.







Position 19 Intersection of Longueville Road, River Road West, Northwood Road and Kenneth Street

APPENDIX 3: Survey certification and data



26 June 2018
Our Ref: 257/11

Australian Unity Limited
114 Albert Road
SOUTH MELBOURNE, VIC. 3205

Attention: Claudia Leung
General Manager - Development

Dear Madam,

**Re: Camera Locations for Photomontages
Proposed Development – 266 Longueville Rd, LANE COVE**

Further to the above project, we confirm our site attendance on 7th August 2018 to survey the 3 camera locations as advised by Dr Richard Lamb and provide the following details.

Location	MGA Coordinates		AHD Level	Description
	Easting	Northing		
Camera 01	330826.60	6255949.32	56.42	Traffic Island Longueville Rd/River Rd Intn
Camera 02	330850.16	6256112.80	50.30	Nth Kerb opposite #56 Richardson St West
Camera 03	331020.97	6255985.99	29.30	Western Side- 7 th Fairway, Lane Cove Golf Course

Details of the camera locations are also shown on our survey Ref 257-11G T03[00]
Dated 17/08/2018.(attached).

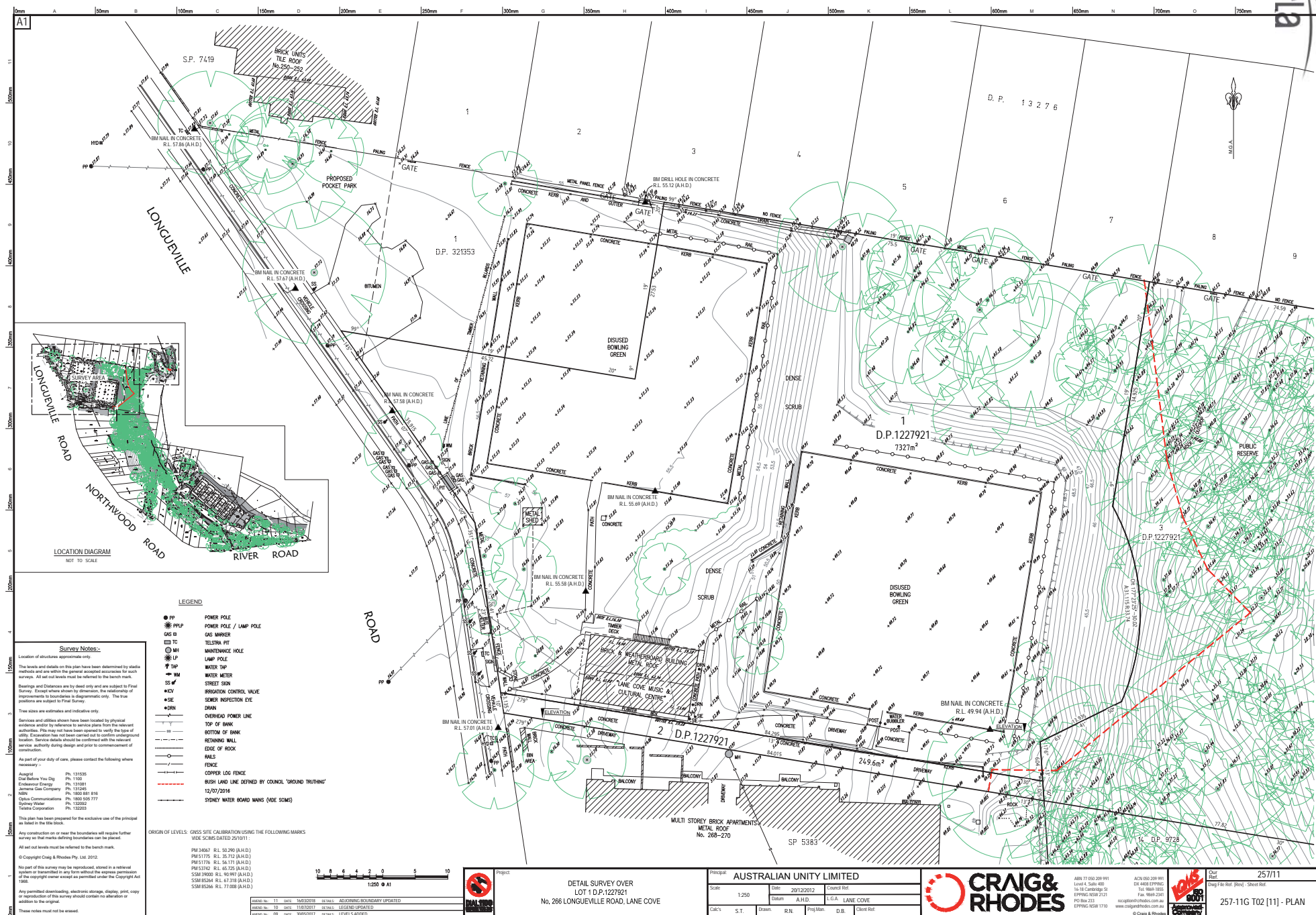
Yours faithfully,
CRAIG & RHODES PTY LTD

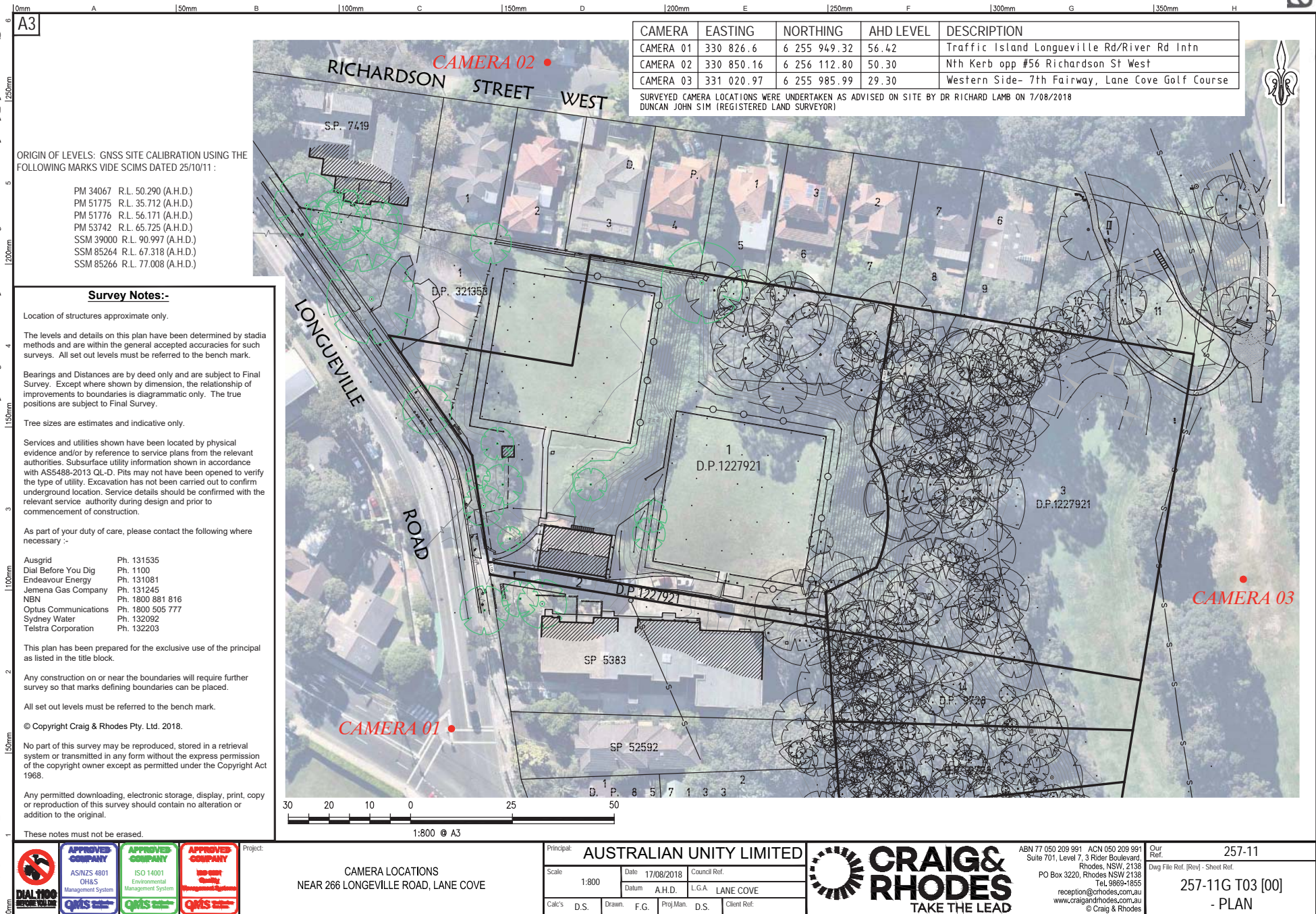

Duncan Sim
Registered Surveyor

Craig & Rhodes Pty Ltd
ABN 77 050 209 991

T 02 9869 1855 F 02 9869 2341
Suite 7.01 Level 7, 3 Rider Blvd, Rhodes NSW 2138
PO Box 3220 Rhodes NSW 2138

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APPENDIX 4: CV Dr R Lamb

Summary

- Qualifications
 - Bachelor of Science - First Class Honours, University of New England in 1969
 - Doctor of Philosophy, University of New England in 1975
- Employment history
 - Tutor and teaching fellow – University of New England School of Botany 1969-1974
 - Lecturer, Ecology and environmental biology, School of Life Sciences, NSW Institute of Technology (UTS) 1975-1979
 - Senior lecturer in Landscape Architecture, Architecture and Heritage Conservation in the Faculty of Architecture, Design and Planning at the University of Sydney 1980-2009
 - Director of Master of Heritage Conservation Program, University of Sydney, 1998-2006
 - Principal and Director, Richard Lamb and Associates, 1989-2017
- Teaching and research experience
 - visual perception and cognition
 - aesthetic assessment and landscape assessment
 - interpretation of heritage items and places
 - cultural transformations of environments
 - conservation methods and practices
- Academic supervision
 - Undergraduate honours, dissertations and research reports
 - Master and PhD candidates: heritage conservation and environment/behaviour studies
- Professional capability
 - Consultant specialising in visual and heritage impacts assessment
 - 30 year's experience in teaching and research in environmental impact, heritage and visual impact assessment.
 - Provides professional services, expert advice and landscape and aesthetic assessments in many different contexts
 - Specialist in documentation and analysis of view loss and view sharing
 - Provides expert advice, testimony and evidence to the Land and Environment Court of NSW on visual contentions in various classes of litigation.
 - Secondary specialisation in matters of landscape heritage, heritage impacts and heritage view studies
 - Appearances in over 270 Land and Environment Court of New South Wales cases, submissions to Commissions of Inquiry and the principal consultant for over 1000 individual consultancies concerning view loss, view sharing, visual impacts and landscape heritage

A full CV can be viewed on the Richard Lamb and Associates website at www.richardlamb.com.au