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DESIGN GROUP

VISUAL IMPACT ASSESSMENT

DEVELOPMENT APPLICATION
LOT 1 IN DP 1026915
NOS.142-150 NARROW NECK ROAD, KATOOMBA 2780

JANUARY 16 2026

Project Type: Development Application
Lot: 1/-/DP1026915
Address: Nos.142-150 Narrow Neck Road, Katoomba 2780

CONTENTS

1. INTRODUCTION

1.1. Scope and Purpose of Report

This Visual Impact Report has been prepared for Fides Environmental, Planning & Development Management Services and is submitted to the Blue Mountains City Council in support of a Development Application (DA) for a Residential Flat Building at 142-150 Narrow Neck Road, Katoomba 2780 (the site). The report provides an analysis of the proposed development's visual impact in relation to its visual and statutory contexts and is to be read in conjunction with the drawings and other material submitted with the development application.

Figure 1 – Site location shown in yellow overlay.

1.2. The Proposed Development

The proposed development comprises a mixed-use residential and serviced accommodation precinct in the vicinity of the Planetary Health Precinct at Katoomba

1.2.1. The Site and existing property

The subject site is located adjacent to the Blue Mountains Planetary Health Precinct in Katoomba, New South Wales, positioned on elevated terrain offering panoramic views across the Jamison Valley and surrounding escarpments. The land comprises a series of gently sloping and vegetated lots, currently occupied by a mix of low-intensity uses and cleared areas associated with previous residential and ancillary structures. The site benefits from direct access to established road infrastructure and proximity to existing utilities, public transport, and community facilities within the Katoomba township.

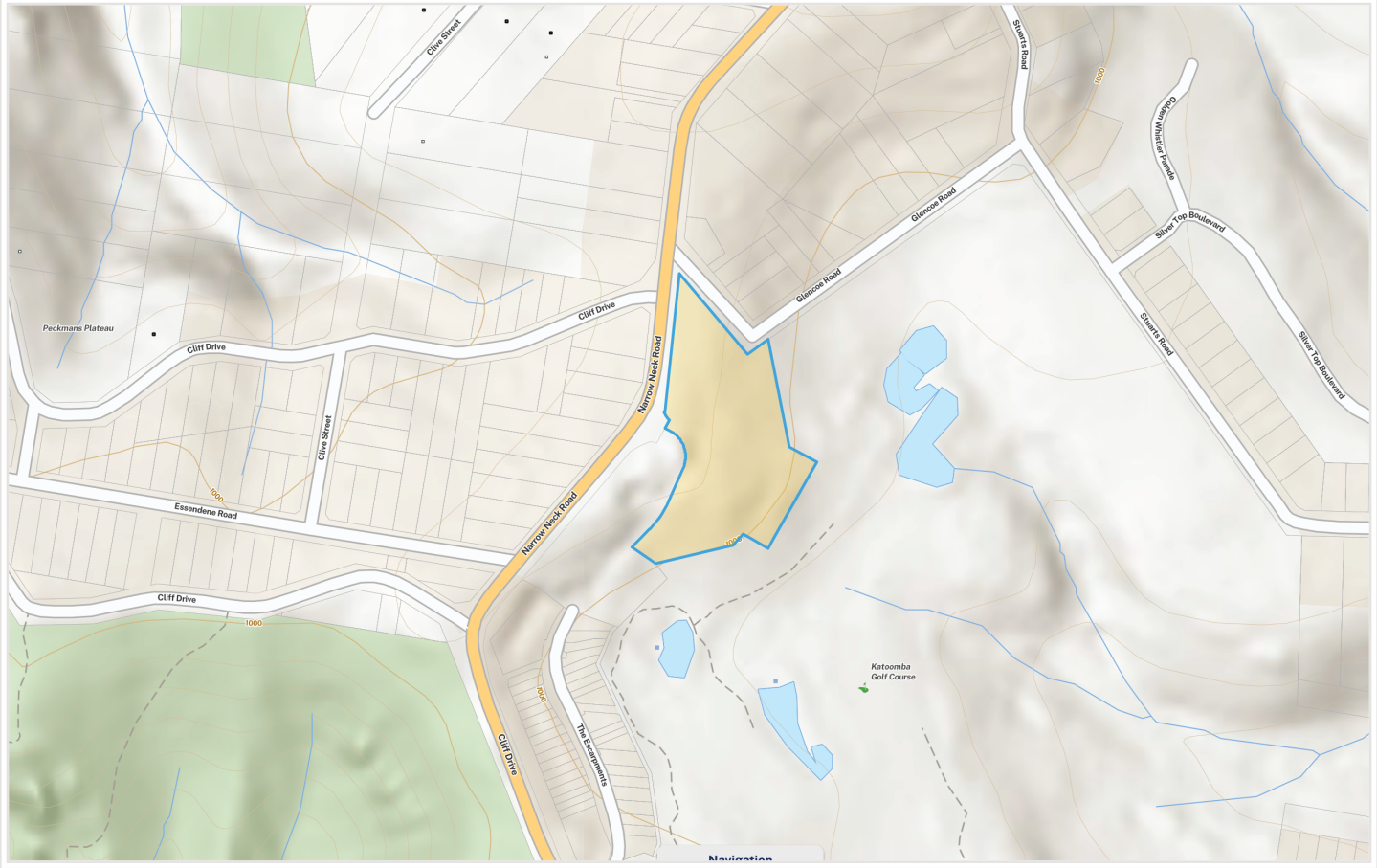

Figure 2 – Subject site shown in yellow overlay.

1.3. Proposed Land Use and Built Form

The proposed development comprises of eight main buildings across the site, each being four storeys above existing ground level with basement parking below, accommodating:

- *218 residential apartments, noting 15% of the residential GFA is allocated to the provision of in-fill affordable housing; and 52 serviced apartments;*
- *Resident facilities (ancillary wellness centre) within Building H;*
- *Corner building that accommodates a restaurant and various information & education facilities; and*
- *Associated site works, access ways, subdivision, and landscaping.'*

Floor plans and elevations are shown in Figures 3 and 4.

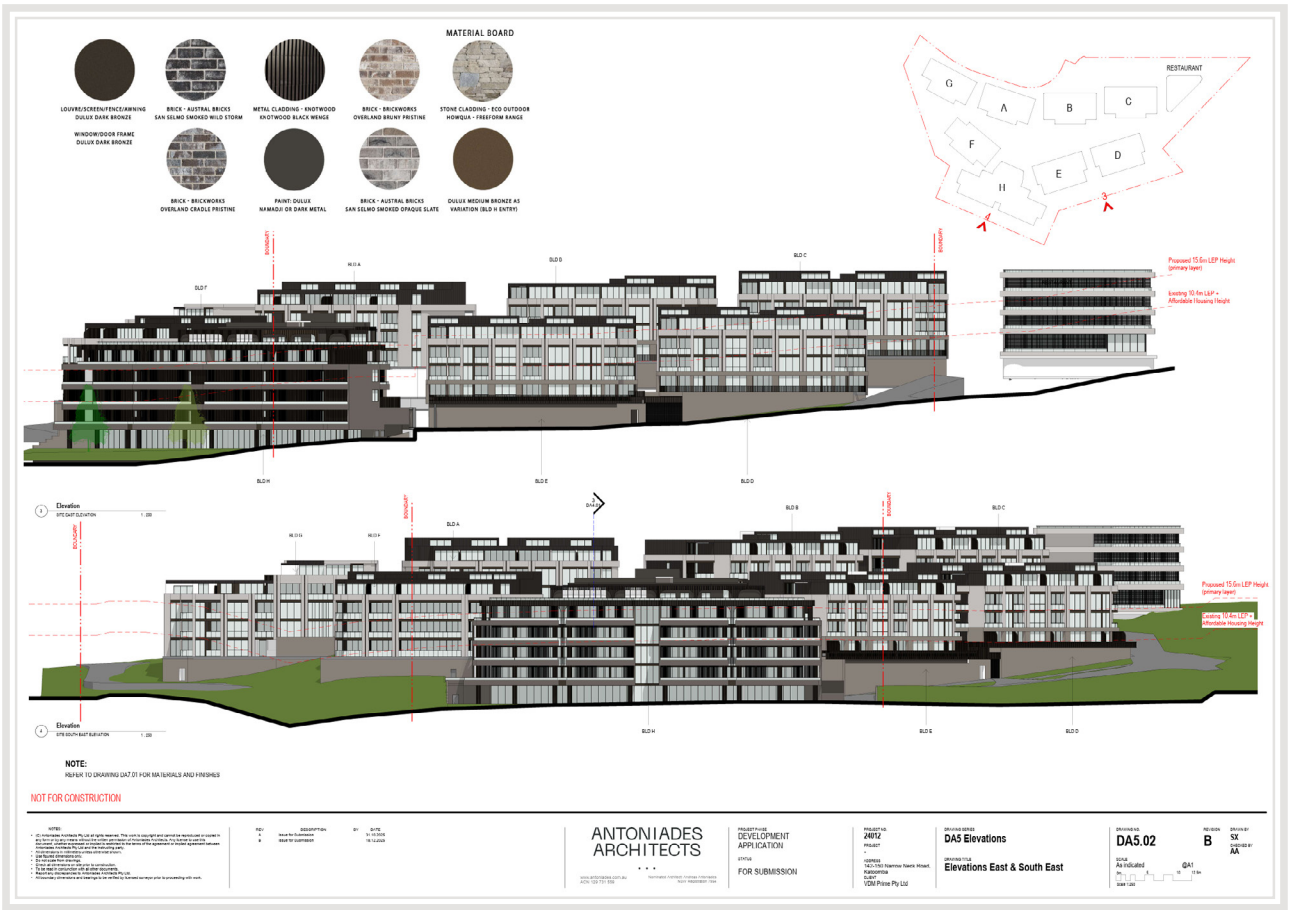

Figure 3 – Elevations of the proposed design by Antoniades Architects.

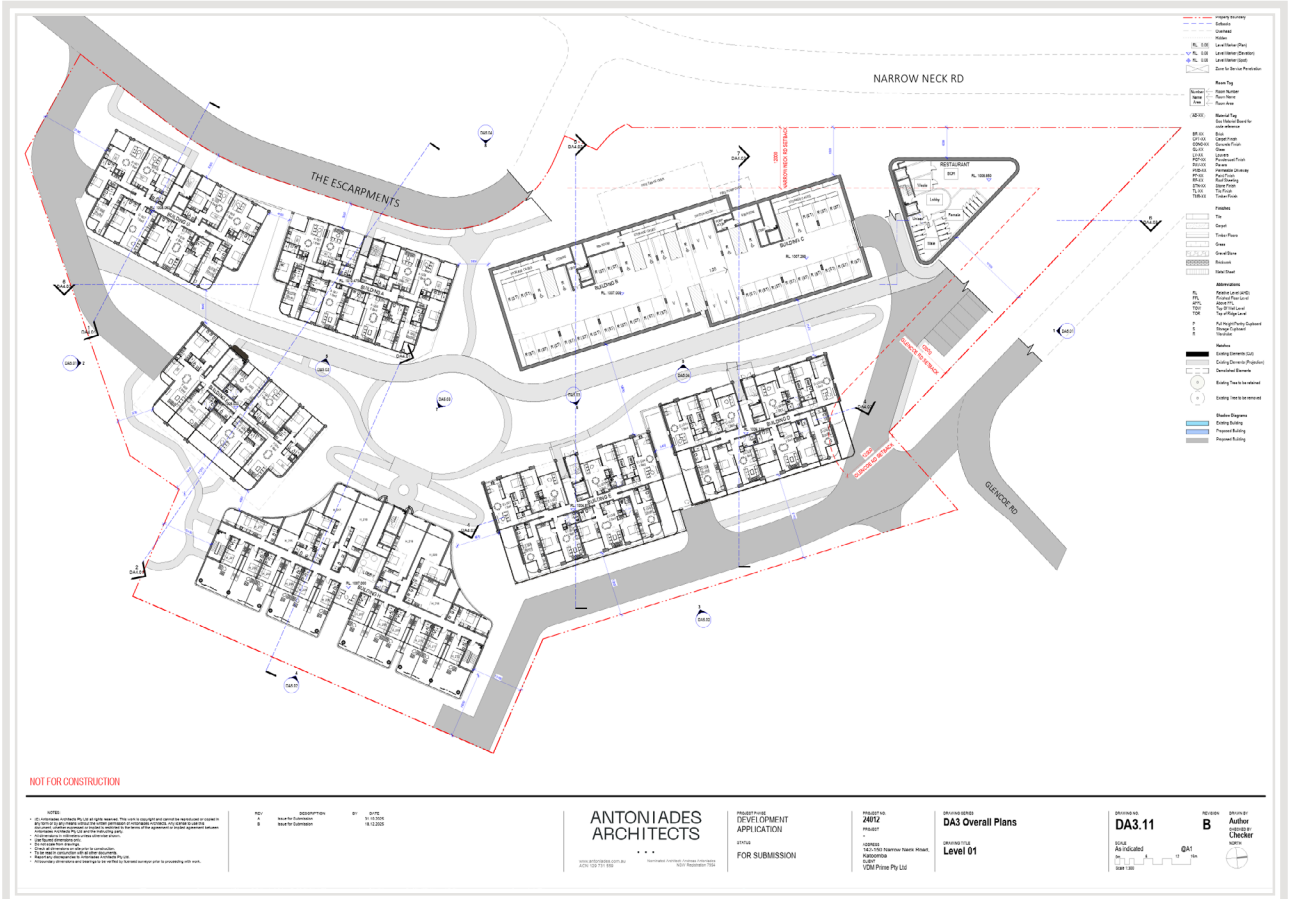

Figure 4 – Overal plan L1 of the proposed design by Antoniades Architects.

1.4. Methodology of Assessment

The methods used by Urbaine, for the generation of photomontaged images, showing the proposed development in photomontaged context are summarised in an article prepared for New Planner magazine in December 2018 and contained in Appendix A. A combination of the methods described were utilised in the preparation of the photomontaged views used in this visual impact assessment report.

1.4.1. Process

Survey, plans, elevations and model of the proposal were sourced from the architect , Antoniades Architects and aligned to the scene using the survey information from Deboke Civil, which accompanies the DA submission.

A drone assessment was undertaken and triangulated into a 3D point cloud which was aligned to ground control points using a RTK GNSS rover with NTRIP corrections. This was placed into the scene and further verified against the survey DWG and a wider area point cloud from the Intergovernmental Committee on Surveying and Mapping (ICSM).

Virtual cameras were placed into the 3D model to match various selected viewpoints, in both height and position. These locations were measured on-site using a survey provided. From these cameras, rendered views have been generated and photomontaged into the existing photos, using the ground plane for alignment at standing height 1600mm.

The final selection of images shows these stages, including the block montage of the original development application and concluding with an outline, indicating the potential visual impact and view loss. For the purposes of statutory requirements, the images within the report are of a standard lens format.

1.4.2. Assessment Methodology

There are no set guidelines within Australia regarding the actual methodology for visual impact assessment, although there are a number of requirements defined by the Land and Environment Court (LEC) relating to the preparation of photomontages upon which an assessment can be based.

Where a proposal is likely to adversely affect views from either private or public land, the determining authority will give consideration to the Land and Environment Court's Planning Principles. For view sharing from public locations Rose Bay Marina Pty Limited v Woollahra Municipal Council & Anr [2013] NSWLEC 1046 'planning principle' for public domain views.

The planning principle for public domain views adopted in Rose Bay Marina involves a two stage inquiry: the first factual, followed by a second, analytical requiring both quantitative as well as qualitative assessment.

However, there is no peer review system for determining the accuracy of the base material used for visual impact assessments. As a result, Urbaine Group provides a detailed description of its methodologies and the resultant accuracy verifiability – this is contained within Appendix A.

The methodology applied to the visual assessment of the current design proposal has been developed from consideration of the following key documents:

- *Environmental Impact Assessment Practice Note, Guideline for Landscape Character and Visual Impact Assessment (EIA-N04) NSW RMS (2013);*
- *Visual Landscape Planning in Western Australia, A Manual for Evaluation, Assessment, Siting and Design, Western Australia Planning Commission (2007);*
- *Guidelines for Landscape and Visual Impact Assessment, (Wilson, 2002);*

In order to assess the visual impact of the Design Proposal, it is necessary to identify a suitable scope of publicly accessible locations that may be impacted by it, evaluate the visual sensitivity of the Design Proposal to each location and determine the overall visual impact of the Design Proposal.

Accessible locations that feature a prominent, direct and mostly unobstructed line of sight to the Project are used to assess the visual impact of the Design Proposal. The impact to each location is then assessed by overlaying an accurate visualisation of the new design onto the base photography and interpreting the amount of view loss in each situation, together with potential opportunities for mitigation.

Views of high visual quality are those featuring a variety of natural environments/ landmark features, long range, distant views and with no, or minimal, disturbance as a result of human development or activity. Views of low visual quality are those featuring highly developed environments and short range, close distance views, with little or no natural features.

Visual sensitivity is evaluated through consideration of distance of the view location to the site boundary and

also to proposed buildings on the site within the Design Proposal. Then, as an assessment of how the Design Proposal will impact on the particular viewpoint. Visual sensitivity provides the reference point to the potential visual impact of the Design Proposal to both the public and residents, located within, and near to the viewpoint locations.

Figure 5: Selected private viewpoint locations for visual impact assessments with site outlined in red.

1.4.3. Site Inspections

A site inspection was undertaken to photograph the site and surrounding area to investigate:

- *The topography and existing urban structure of the local area*
- *The streetscapes and houses most likely to be affected by the Proposal*
- *Important vistas and viewsheds*
- *Other major influences on local character and amenity*

The map, see figure 5, indicates chosen locations for site photography.

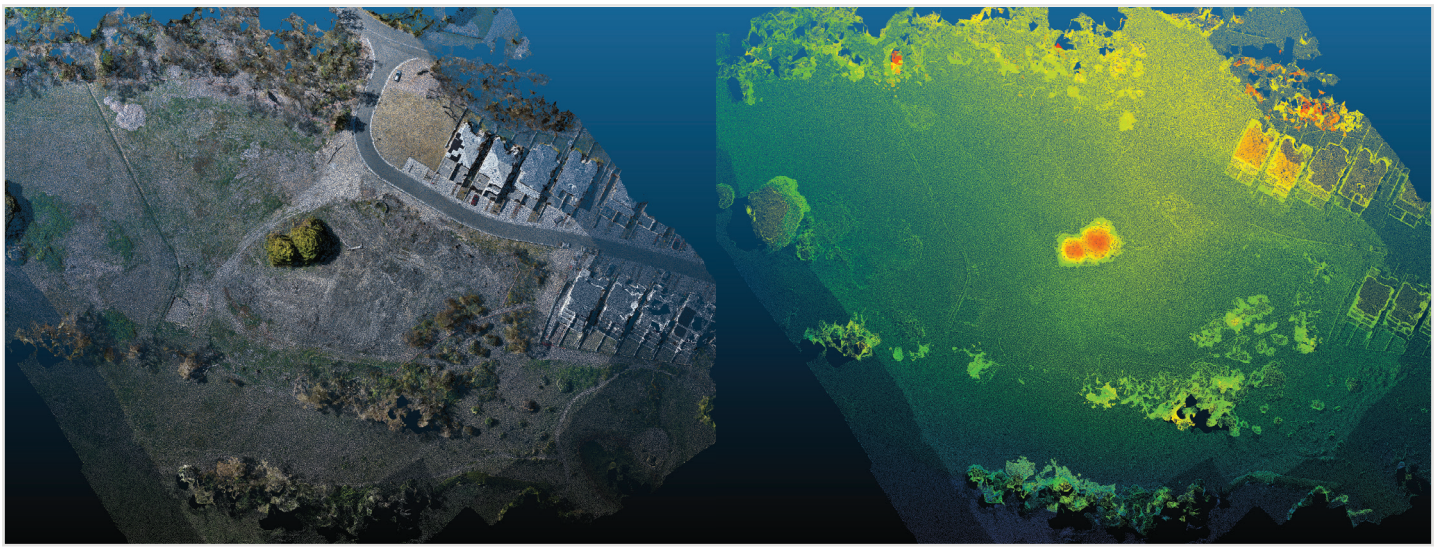

Figure 6: Neighbourhood with gradient ramp - Proposed site ridge height and above in yellow to red, below in green - blue.

Where photography was not possible or impracticable in regards to time, resources and lilkelihood of high value view loss, drone images were taken from the boundary or virtual views were used. The map, see figure 5, indicates chosen locations for site photography.

Virtual analysis was also undertaken to asses the potential for high value view loss base on relative height of the proposal and current site, see figure 6.

1.4.4. Contextual Analysis:

An analysis was undertaken of the visual and statutory planning contexts relevant to the assessment of visual impacts in a Development Application.

1.4.5. Visual Impact Analysis:

The visual impacts of the proposed development were analysed in relation to the visual context and assessed for their likely impact upon the local area and upon specific residential properties.

1.4.6. Statutory Planning Assessment:

The results of the local view impact assessment are included in Section 3 of this report.

1.5. References

The following documentation and references informed the preparation of this report:

- *Design Documentation*
- *The design drawings and information relied upon for the preparations of this report were prepared by Antoniades Architects*
- *Blue Mountains City Council*
- *Survey by Deboke Civil*
- *Photography by Urbaine Group*
- *Photomontages by Urbaine Group*

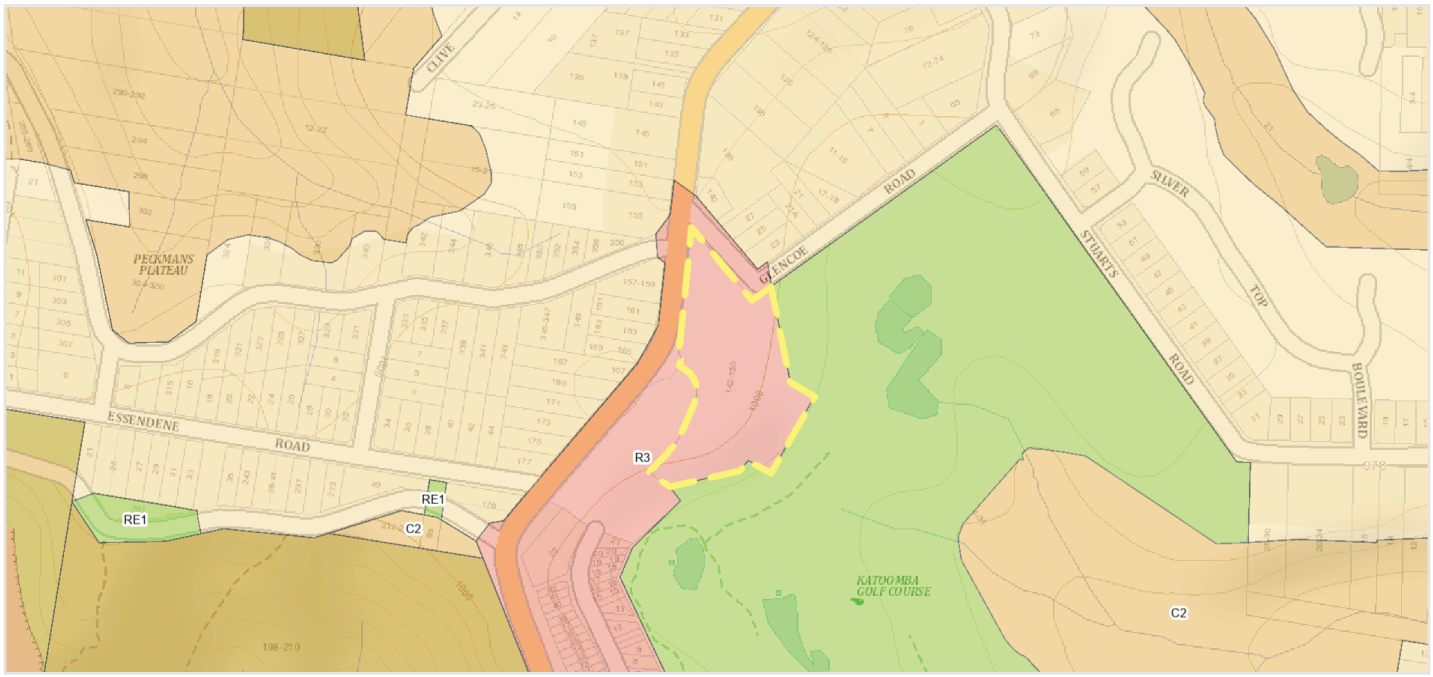

Figure 7: Land zoning map, indicating site with yellow outline.

2. THE SITE AND THE VISUAL CONTEXT

Visual impacts occur within an existing visual context where they can affect its character and amenity. This section of the report describes the existing visual context and identifies its defining visual characteristics.

Defining the local area relevant to the visual assessment of a proposed development is subject to possible cognitive mapping considerations and statutory planning requirements. Notwithstanding these issues, the surrounding local area that may be affected by the visual impact of the proposed development is considered to be the area identified on in the topographical area map, Figure 8.

Although some individuals may experience the visual context from private properties with associated views, the general public primarily experiences the visual context from within the public realm where they form impressions in relation to its character and amenity. The public realm is generally considered to include the public roads, reserves, open spaces and public buildings.

The visual context is subject to “frames of reference” that structure the cognitive association of visual elements. The “local area” (as discussed above) provides one such frame of reference. Other “frames of reference” include the different contextual scales at which visual associations are established and influence the legibility, character and amenity of the urban environment. Within the scope of this report three contextual scales are considered relevant to the analysis of the visual context and the visual impact of the proposed development.

The ‘Street Context’ provides a frame of reference for reviewing the visual relationship of the new development (and in particular its facades) in relation to the adjoining pedestrian spaces and roads. Elements of the development within this frame of reference are experienced in relatively close proximity where, if compatible with the human scale they are more likely to facilitate positive visual engagement and contribute to the “activation” of adjoining pedestrian spaces.

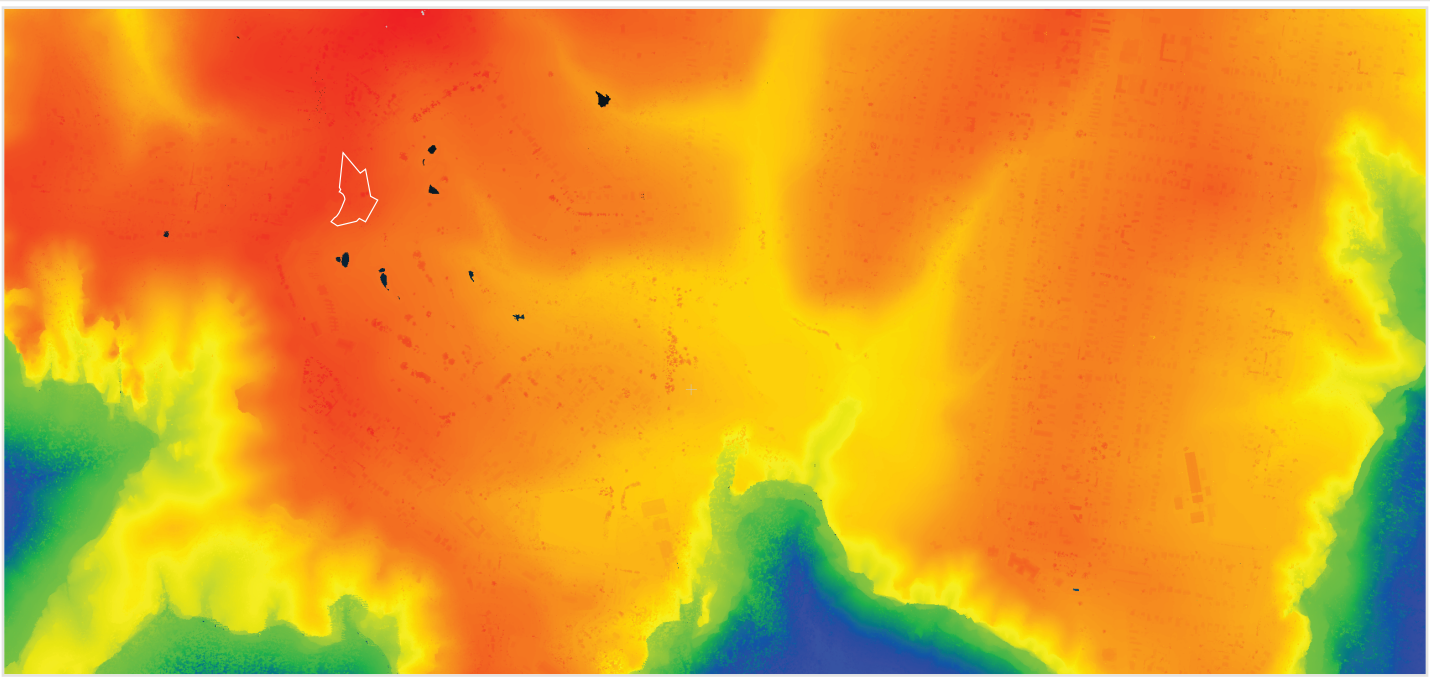

Figure 8: Lidar Point cloud including trees and buidlings with gradient ramp to show topography, propsed site in white outline.

The ’Neighbourhood Context’ provides a broader frame of reference that relates the appearance of the development as a whole to the appearance of other developments within the local area. As a frame of reference, it evolves from the understanding gained after experiencing the site context and the low density of development. Within this context the relative appearance, size and scale of different buildings are compared for their visual compatibility and contribution to a shared character from which a unique “sense of place” may emerge. This frame of reference involves the consideration of developments not necessarily available to view at the same time. It therefore has greater recourse to memory and the need to consider developments separated in time and space. The neighbourhood context is relevant to the visual ’legibility’ of a development and its relationship to other developments, which informs the cognitive mapping of the local area to provide an understanding of its arrangement and functionality.

The ‘Town / City Context’ provides a frame of reference that relates the significance of key developments or neighbourhoods to the town as a whole. The contribution that distinctive neighbourhoods make (or may potentially make) to the image of the city can be affected by the visual impact of an individual development through its influence on the neighbourhood’s character and legibility. Within this context, it is also important to be aware of other proposed developments in the area.

2.1. The Visual Context

Kedumba, or Katoomba is set atop a high ridge at an elevation of approximately 1000m, and full of great natural beauty where water drops off high ridgetops to the major river systems of the valleys below, including the Kedumba and Cox’s River in the Megalong and Jamison Valleys, and the Burragorang, all within the Greater Blue Mountains National Park.

2.2. Visual Features and Local Landmarks

Particular elements in the urban pattern, through either location and/or built form provide visual nodes and landmarks that assist in differentiating locations within the broader visual context. The following visual nodes are considered to be of the greatest significance in terms of their contribution to the character and legibility of the local and surrounding area:

The focus of all the properties is to the distant views of the mountains and escarpments that surround Katoomba on all sides

2.3. Streetscapes

Within the immediate and surrounding areas, Katoomba's streetscapes are a blend of its historic character and modern, evolving elements, featuring traditional residential areas with mature trees and gardens alongside vibrant public spaces like the street art-filled Beverly Place. The area is undergoing ongoing streetscape upgrades to improve infrastructure and public amenities, with a focus on both historical preservation and modern urban design.

2.4. The selected view locations for the local view analysis

As a result of the site’s topography, the visual impact is primarily relevant to the residential properties to the south and east of the subject site. A large number of site photos were taken and a smaller number of specific views selected from these, relevant for private viewing locations, as described above. The selected photos are intended to allow consideration of the visual and urban impact of the new development at a local level and, specifically, from the neighbouring properties and public viewing locations.

2.5. Context of View

The context of the view relates to where the proposed development is being viewed from. The context is different if viewed from a neighbouring building, or garden, as is the case here, where views can be considered for an extended period of time, as opposed to a glimpse obtained from a moving vehicle.

2.6. Extent of View

The extent to which various components of a development would be visible is critical. For example, if the visibility assessment is of a multi-storey development proposal in a low-density context of 2 to 3 storey buildings, it would be considered to have a significant local scale visual impact, whereas if a development proposal is located in an area of a CBD containing buildings of a similar scale and height, it may be considered to have a lower scale visual impact.

The capacity of the landscape to absorb the development is to be ranked as high, medium or low, with a low ranking representing the highest visual impact upon the scenic environmental quality of the specific locality, since there is little capacity to absorb the visual impact within the landscape.

3. VISUAL IMPACT OF THE PROPOSED DEVELOPMENT

3.1. Visual Impact Assessments viewpoint locations

Visual Impact Assessments from 17 viewpoint locations – from public locations.

3.1.1. Method of Assessment

In order to allow a quantitative assessment of the visual impact locations where view impact and view loss,

a Canon EOS Full Frame Digital Camera with fixed focal length 24mm lens was used to take all viewpoint photos, at an eye level of 1600mm.

The photos include location descriptions, to be read in conjunction with the site map, contained in Appendix A. Additionally, information is supplied as to the distance from the site boundary for each location and the distance to the closest built form is provided in Section 3.1.2 below.

To assess the visual impact, there are 2 relevant aspects - view loss of actual substance (landscape, middle and distance view elements etc.) and also direct sky view loss. To a large extent, the value associated with a view is subjective, although a range of relative values can be assigned to assist with comparing views. Figure 9 is a scale of values from 0 to 15, used to allow a numeric value to be given to a particular view, for the purposes of comparison.

On the same table are a series of values, from zero to 15, that reflect the amount of visual impact.

The second means of assessment relates to assigning a qualitative value to the existing view, based on criteria of visual quality defined in the table – see figure 9.

The % visual content is then assessed, together with a visual assessment of the new development's ability to blend into the existing surroundings.

TENACITY / SCALE / VALUE		VISUAL IMPACT	VISUAL QUALITY
NIL	0	**NEGLIGIBLE**	No negative impact on the pre-existing visual quality of the view	N/A
NEGILIBLE	1	**LOW**	A minor negative impact on the pre-existing visual quality of the view Examples: minor impact on natural landscapes no impact on iconic views impact on small number of receivers significant distance between the development and receiver	Predominant presence of low quality man made features Minimal views of natural formations (e.g. cliffs, mountains, coastlines, waterways, ridges etc.) Uniformity of land forms
	2			
	3			
MINOR	4			
	5			
	6	**MEDIUM**	A medium negative impact on the pre-existing visual quality of the view Examples: moderate impact on iconic views or natural landscapes impact on moderate number of receivers located nearby the receiver	Presence of some natural features mixed with manmade features Some views of distinct natural formations (e.g. cliffs, mountains, coastlines, waterways, ridges etc.)
MODERATE	7			
	8			
	9			
SEVERE	10	**HIGH**	A high negative impact on the pre-existing visual quality of a view Examples: loss of iconic view impact on significant number of receivers owershadowing effect directly adjacent the receiver	Predominantly natural features Minimal manmade features, however if present of a high architectural standard Significant views of distinct natural formations (e.g. cliffs, mountains, coastlines, waterways, ridges etc.) Presence of iconic regional views of landmark features
	11			
	12			
DEVASTATING	13			
	14			
	15			

Figure 9: Urbaine Group Assessment Table

3.1.2. Assessment at selected viewpoints

VIEWPOINT 01

Existing site photo

From standing position on The Escarpments
RL + 1000.39m - Distance to boundary 94.36m - Bearing direction 39.39 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

urbaine DESIGN GROUP

Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 39%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 8% :92%*
- *Existing Visual Assessment Scale no: 5 /15 Visual Impact Assessment Scale no: 9 /15*

This is a static and dynamic, public viewpoint taken from The Escarpments, facing in a northeasterly direction towards the subject site. An access road ascends gently to the northeast, leading to the recently built two-storey townhouses. Similar residential buildings are situated further up the hill to the north. The area is characterised by extensive, natural and landscaped vegetation, with bushes, small trees, and potted plants enhancing the house frontages to the northeast. To the far north, the unpaved area beyond the kerb features wild grasses and small bushes, creating a contrasting open space, adjacent to the proposed development.

The visual impact from this location can be assessed as Moderate, given that the new proposal will harmoniously blend with the overall aesthetic of the existing structures. However, it does rise above the existing ridgeline, with the profile clearly visible against the sky. The sole obstruction will be, for the mostpart, to the sky outlook.

Tenacity Assessment Summary:

- *Value of view: Low.*
- *View location: Edge of access road - public viewing location.*
- *Extent of impact: Moderate.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the existing view is considered low value and the impact is not significant.

VIEWPOINT 02

Existing site photo

From standing position on Narrow Neck Road
RL + 1015.17m - Distance to boundary 15.58m - Bearing direction 156.56 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

urbaine DESIGN GROUP

Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 16%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 62% : 38%*
- *Existing Visual Assessment Scale no: 8 /15 & Visual Impact Assessment Scale no: 6 /15*

This is a static and dynamic, public viewpoint, taken from Narrow Neck Road, facing south-southwest towards the subject site. The immediate foreground consists of the roadway that gently curves towards the southwest while ascending into the distance. Prominently featured is the junction where Narrow Neck Road intersects with Cliff Drive to the southeast. A substantial cluster of tall, slender trees significantly dominates the landscape, to the left of the view, creating an extensive tree line. The foliage appears relatively sparse, and the ground below is covered with scrub vegetation and undergrowth. On the right side, the roadside verge gradually inclines, showing a well maintained expanse of grass alongside a row of neatly tended low shrubs. Additionally, further to the southwest, a residential building is partially visible at no.159 Narrow Neck Rd.

The visual impact from this location can be assessed as minor, due to the fact that the new proposal will be predominantly obscured by the existing foliage and mature tree canopies.

Tenacity Assessment Summary:

- *Value of view: Medium.*
- *View location: Edge of road, at road junction - public viewing location.*
- *Extent of impact: Minor*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the highest value components of the view remain and the impact of the new proposal is significantly diminished by the screening of the existing mature trees.

VIEWPOINT 03

Existing site photo

From standing position on Glencoe Road
RL + 996.63m - Distance to boundary 82.85m - Bearing direction 209.74 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

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Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 34%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 66% : 34%*
- *Existing Visual Assessment Scale no: 9 /15 & Visual Impact Assessment Scale no: 7 /15*

This is a static and dynamic, public viewpoint taken from Glencoe Road, facing in a westward direction. In the fore-ground, is a narrow ascending roadway, bordered to the northwest by an unsealed road edge verge. This road ascends sharply, vanishing beyond a crest in the distance, indicating that the terrain inclines significantly toward the southwest. To the southwest, a field is visible, enclosed by a wire fence and characterised by lush green grass interspersed with mature deciduous and evergreen trees, which delineate the fringe of a more expansive landscape. Further, to the southwest, the roadside features a gently sloping, well-maintaned lawn with mature trees and dense undergrowth. A prominent tree trunk is partially obsevrable, framing the scene on the far west. Additionally, in the southwest direction, the view is concluded by the steeply ascending road and dense grouping of tall, mature native trees that flank both sides of the road and dominate the hill's crest.

The visual impact from this vantage point can be assessed as Moderate, as the proposed development will largely be concealed by the surrounding vegetation in the foreground of the view. In the far distance, the new proposal is seen above the ridgeline.

Tenacity Assessment Summary:

- *Value of view: Medium.*
- *View location: Edge of road - public viewing location.*
- *Extent of impact: Moderate.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the highest value components of the view remain and views to the south and west are not impacted.

VIEWPOINT 04

Existing site photo

From standing position on Stuarts Road
RL + 996.09m - Distance to boundary 273.53m - Bearing direction 240.23 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

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Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 21%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 4% : 96%*
- *Existing Visual Assessment Scale no: 8 /15 & Visual Impact Assessment Scale no: 6 /15*

This is a static, public viewpoint, taken from Stuarts Road, facing in a westerly direction. The foreground features a two lane road flanked by dry, grass verges. Northwest of these, a wire fence, separates the road from an open field. To the west of this fenced area, a group of evergreen, conifer trees is prominently situated. On the southwest side of the road, the terrain rises into a hill of taller grasses and scattered trees. In the background, the treeline continues, forming a dense, line of canopies along the ridge.

The visual impact from this location can be assessed as Minor-to-Moderate, due to the fact that the new proposal will predominantly be obscured by the existing foliage. The area of the new development that is visible rises above the existing ridgeline, impacting upon the sky outlook.

Tenacity Assessment Summary:

- *Value of view: Medium.*
- *View location: Edge of road, on grass verge - public viewing location.*
- *Extent of impact: Minor-to-Moderate.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the highest value components of the view remain and the impact of the new proposal is significantly diminished by the screening of the existing mature trees.

VIEWPOINT 05

Existing site photo

From standing position on Stuarts Road
RL + 991.92m - Distance to boundary 291.04m - Bearing direction 259.99 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

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Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 18%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 100% : 0%*
- *Existing Visual Assessment Scale no: 8 /15 & Visual Impact Assessment Scale no: 3 /15*

This is a static and dynamic, public viewpoint taken from Stuarts Road, facing in a westerly direction. The foreground features the two lane road, bordered by a wide grass verge and adjacent fence. In the midground, lies a wild grass road verge, enclosed by a horizontal chain-link fence. The midground of the view features a line of trees, with dense ever-green conifers flanking each side and a cluster of mature, deciduous trees in the centre, displaying bright green foliage. Beyond this, the land continues to rise, with a mixture of grasses and trees.

The visual impact from this vantage point can be assessed as Negligible, as the proposed development will largely be concealed by the surrounding vegetation in the midground of the view. The small glimpses of the new proposal that are seen, rise above the existing ridgeline, impacting upon the distant sky outlook.

Tenacity Assessment Summary:

- *Value of view: Medium.*
- *View location: Edge of road - public viewing location.*
- *Extent of impact: Negligible.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the highest value components of the view remain and the impact of the new proposal is significantly diminished by the screening of the existing mature trees.

VIEWPOINT 06

Existing site photo

From standing position on Stuarts Road
RL + 986.13m - Distance to boundary 351.21m - Bearing direction 269.85 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

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Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 31%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 72% : 28%*
- *Existing Visual Assessment Scale no: 8 /15 & Visual Impact Assessment Scale no: 6 /15*

This is a static and dynamic, public viewpoint taken from Stuarts Road, in which the foreground consists of the road edge and verge, lined with a mixture of native grasses and mature trees. In the midground, a chainlink fence runs horizontally beyond the roadside strip. The background showcases a dense line of mixed trees, highlighted by a prominent tall, conifer that serves as a vertical focal point against the sky

The visual impact from this location can be assessed as Minor-to-Moderate, given that only the upper levels can be observed, the new proposal will be significantly obscured by existing trees, preserving the character of the adjacent environment. A small area of the development is outlined against the sky outlook behind.

Tenacity Assessment Summary:

- *Value of view: Medium.*
- *View location: Edge of road - public viewing location.*
- *Extent of impact: Minor-to-Moderate.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the highest value components of the view remain and the impact of the new proposal is significantly diminished by the screening of the existing mature trees.

VIEWPOINT 07

Existing site photo

From standing position on a grass vicinity adjacent to Stuarts Road
RL + 991.56m - Distance to boundary 193.45m - Bearing direction 257.52 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

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Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 88%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 79% : 21%*
- *Existing Visual Assessment Scale no: 11 /15 & Visual Impact Assessment Scale no: 9 /15*

This is a static, public viewpoint taken from the park, located adjacent to Stuarts Road in Katoomba, facing towards the west-southwest. The immediate foreground features a well-maintained lawn area that includes a gently curving concrete footpath. On the southwest side of the foreground, stands a robust, predominantly leafless tree. The midground is characterised by mature shrubs and an assortment of mature trees, which include conical evergreens and broad-canopied species, collectively forming a vegetative belt across the middle distance. In the background, the Escarpment ridge is discernible above this band of vegetation. However, long-range views of The Escarpment development are partially obscured by the presence of the mid-distance trees.

The visual impact from this location can be assessed as Moderate, with the full vertical extent of the proposal visible in the gaps between the existing trees in the midground of the view. To the left of the view, the building profile is outlined, at its upper levels against the sky outlook backdrop. Apart from the paved walkways, the new proposal would represent the only man-made element in the view.

Tenacity Assessment Summary:

- *Value of view: High.*
- *View location: Edge of parkland - public viewing location.*
- *Extent of impact: Moderate.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the view loss is confined to distant trees and a very small area of sky. The scene is dominated by the foreground elements of landscape.

VIEWPOINT 08

Existing site photo

From standing position on Acacia Street
RL + 1004.01m - Distance to boundary 386.48m - Bearing direction 355.36 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

urbaine DESIGN GROUP

Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 67%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 93% : 7%*
- *Existing Visual Assessment Scale no: 6 /15 & Visual Impact Assessment Scale no: 4 /15*

This is a static and dynamic, public viewpoint, taken from the grass verge, adjacent to the roadway, located beside the driveway of the property at no. 30 Acacia Street, oriented northward in relation to the subject site. In the foreground is the broad, asphalt roadway. Positioned to the nort-northwest of this road is a modest expanse of gavel and wild grasses. Dominating the background, on the north-northwest side are substantial, verdant trees, among which the roof of the Katoomba Office, belonging to the NSW Parks and Wildlife Service, is visible, at no. 33-39 Acacia Street. A low wooden fence delineates the boundary between the gravel area, road, and the more remote background. Beyond this fence is dry and grassy terrain that transitions into a dense line of mixed trees and shrubs, effectively establishing a natural boundary in this direction.

The visual impact from this location can be assessed as Negligible-to-Minor, given that only a small area of the elevation can be observed. For the mostpart, the new proposal will be obscured by existing trees, preserving the character of the adjacent environment.

Tenacity Assessment Summary:

- *Value of view: Medium.*
- *View location: Edge of road - public viewing location.*
- *Extent of impact: Negligible-to-Minor*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the highest value components of the view remain and views to the south and west are not impacted.

VIEWPOINT 09

Existing site photo

From standing position on the eastern meadow of the Katoomba Office, NSW Parks and Wildlife SErvice

RL + 1004.01m - Distance to boundary 261.97m - Bearing direction 1.29 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

urbaine DESIGN GROUP

Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 79%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 96% : 4%*
- *Existing Visual Assessment Scale no: 11 /15 & Visual Impact Assessment Scale no: 7 /15*

This is a static, private viewpoint taken from the eastern meadow of the Katoomba Office, belonging to NSW Parks and Wildlife Service, situated at no. 33-39 Acacia Street, facing in a northwesterly direction, toward the subject site. In the foreground, there is a plethora of flowers and shrubs, prominently including a substantial cluster of purple lavender blossoms. The midground is characterised by a prominent conical evergreen tree, which rises at the centre of an expansive, grassy field. Encircling this field are a variety of both deciduous and evergreen trees. To the northwest, in the background, a grouping of recent residential structures at The Escarpments can be observed that successfully integrate with the surrounding landscape and terrain.

The visual impact from this location can be assessed as Moderate, as the new proposal blends into the line of the existing residential buildings along The Escarpments, and integrates successfully with the adjacent surroundings. The lower levels of the development are obscured by bushes and trees, while the upper profile of the proposal sits below the far distant treeline.

Tenacity Assessment Summary:

- *Value of view: High.*
- *View location: Edge of parkland - public viewing location.*
- *Extent of impact: Moderate.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the view loss is confined to distant trees and a very small area of sky. The scene is dominated by the foreground elements of landscape.

VIEWPOINT 10

Existing site photo

From standing position on a footpath at the Escarpments
RL + 1005.04m - Distance to boundary 241.05m - Bearing direction 13.39 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

urbaine DESIGN GROUP

Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 59%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 87% : 13%*
- *Existing Visual Assessment Scale no: 6 /15 & Visual Impact Assessment Scale no: 5 /15*

This is a static and dynamic, public viewpoint, taken from the pavement beside the residential building at no. 25 The Escarpments, facing in a northerly direction towards the subject site. The scene presents a well-organised array of two-storey townhouses, arranged along a gently curving road to the northwest. In the foreground, meticulously maintained gardens featuring flowering shrubs, some exhibiting vibrant red and pink foliage, are positioned alongside the driveways and pedestrian pavements. On the northeastern side of the road, landscaped greenery, retaining walls, and neatly trimmed hedges extend towards the roadway. In the further background, additional buildings and residential complexes are visible below the ridgeline, with mature trees and bushland forming a distant backdrop, which is characteristic of the Blue Mountains region.

The visual impact from this location can be assessed as Minor, as the new proposal a visual continuance of the existing residential buildings along The Escarpments, and integrates successfully with the adjacent surroundings. Only the upper levels of the new proposal are visible from this vantage point, while the upper profile of the building sits below the upper treeline in the far distance.

Tenacity Assessment Summary:

- *Value of view: Medium.*
- *View location: Edge of access road - public viewing location.*
- *Extent of impact: Minor.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the existing view is considered low value and the impact is not significant.

VIEWPOINT 11

Existing site photo

From standing position on Essenede Road
RL + 1001.35m - Distance to boundary 547.79m - Bearing direction 98.23 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal (Unseen)

urbaine DESIGN GROUP

Lack of visual impact in green with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 0%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 0% : 0%*
- *Existing Visual Assessment Scale no: 10 /15 & Visual Impact Assessment Scale no: 0 /15*

This is a static, public viewpoint taken on the grass verge, next to the property at no. 6 Essendene Road, facing east towards the subject site. The roadway is confined in width and flanked by grass verges on both sides. To the northeast lies a residential property at no.8 Essendene road, featuring a modest house, fenced yard, and a selection of young trees positioned along the perimeter. Conversely, the southeastern side of the road is characterised by a thick growth of indigenous flora and bushland, ascending gently and showcasing trees and low-lyng shrubs.

The visual impact from this location can be assessed as Nil, as the complete view of the proposal is obstructed by the thick vegetation along Essendene Road and the foliage adjacent to Narrow Neck Road.

Tenacity Assessment Summary:

- *Value of view: Medium.*
- *View location: Edge of road - public viewing location.*
- *Extent of impact: Nil.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since there is no view loss, or visual impact from this location.

VIEWPOINT 12

Existing site photo

From standing position on Narrow Neck Road
RL + 1013.48m - Distance to boundary 113.99m - Bearing direction 77.15 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

urbaine DESIGN GROUP

Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 37%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 28 % : 72%*
- *Existing Visual Assessment Scale no: 7 /15 & Visual Impact Assessment Scale no: 6 /15*

This is a static and dynamic, public viewpoint taken from the grass verge adjoining the residential property at no.179 Narrow Neck Road, facing north-northeast towards the subject site. A segment of Narrow Neck Road located at its junction with Essendene Roadd features a slightly ascending incline. The road is bordered by vegetation on both sides. To the northwest, there is a grass verge, adjoined by a dense grouping of tall trees. Conversely, the northeastern side consists of a grass-covered verge, with lower scrub and bushes, transitioning into sparser, drought-tolerant trees located on the ridge. In the background, beyond the immediate line of trees and shrubbery, the rooftops of residential properties situated along The Escarpments are seen.

The visual impact from this location can be assessed as Minor-to-Moderate, as the new proposal harmonises with the existing residential buildings along The Escarpments, and integrates successfully with the adjacent surroundings. Only portions of the upper levels of the new proposal are partially discernible from this vantage point, as the surrounding foliage obstructs the view. Some small areas of the upper roofline are seen, in profile against the backdrop of the sky.

Tenacity Assessment Summary:

- *Value of view: Medium.*
- *View location: Edge of road - public viewing location.*
- *Extent of impact: Minor-to-Moderate.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the highest value components of the view remain and the impact of the new proposal is significantly diminished by the screening of the existing mature trees.

VIEWPOINT 13

Existing site photo

From standing position on the eastern boundary of Katoomba Falls Reserve
RL + 943.58m - Distance to boundary 999.84m - Bearing direction 313.26 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

urbaine DESIGN GROUP

Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 3%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 0% : 100%*
- *Existing Visual Assessment Scale no: 11 /15 & Visual Impact Assessment Scale no: 1 /15*

This is a static, public viewpoint taken from the eastern boundary of Katoomba Falls Reserve, facing in a northwesterly direction, towards the subject site. In the foreground and midground, lies an expansive, gently sloping oval. This area is flanked on either side and in the background by a dense mixture of woodlands and mature trees. To the north, a cluster of taller trees is prominently positioned. The remainder of the background is characterised by a substantial array of diverse trees and shrubs, exhibiting a range of green and brown foliage, running into the far distance.

The visual impact from this location can be assessed as Negligible, as almost the complete view, of the new proposal, is concealed by the mature tree canopies within the Katoomba Falls Reserve.

Tenacity Assessment Summary:

- *Value of view: High.*
- *View location: Edge of public oval - public viewing location.*
- *Extent of impact: Negligible.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the highest value components of the view remain and views to the south and west are not impacted.

VIEWPOINT 14

Existing site photo

From standing position on Cascade Street
RL + 1019.99m - Distance to boundary 1585.33m - Bearing direction 234.63 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

urbaine DESIGN GROUP

Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 47%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 100% : 0%*
- *Existing Visual Assessment Scale no: 11 /15 & Visual Impact Assessment Scale no: 3 /15*

This is a static and dynamic, public viewpoint, from Cascade Street, facing in a southwesterly direction towards the subject site. In the foreground, the streetscape gradually descends toward a lower elevation. The road is observable, in the foreground, following a gentle downward slope, past the intersection with Warriga Street. A green-painted timber fence delineates the property on the western side, which is surrounded by lush grass and mature trees. In the midground, a small side street descends, flanked by dense vegetation and flowering shrubs. In the background, there is an expansive view towards the Blue Mountains escarpment, featuring densely landscaped hills and ridgelines. This panorama highlights the elevated nature of the area.

The visual impact from this location can be assessed as Negligible, most of the new proposal is obstructed by the dense mature landscape. Only the roofline of the new proposal is slightly visible above the tree canopies.

Tenacity Assessment Summary:

- *Value of view: High.*
- *View location: Edge of road - public viewing location.*
- *Extent of impact: Negligible*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the highest value components of the view remain and the impact of the new proposal is significantly diminished by the screening of the existing mature trees.

VIEWPOINT 15

Existing site photo

From standing position on Waratah Street
RL + 1000.27m - Distance to boundary 1398.15m - Bearing direction 248.56 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal (Unseen)

urbaine DESIGN GROUP

Lack of visual impact in green with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 52%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 100% : 0%*
- *Existing Visual Assessment Scale no: 10 /15 & Visual Impact Assessment Scale no: 4 /15*

This is a static, public viewpoint taken at Waratah Sreet, facing southwest towards the subject site. The foreground features a segment of fence, alongside the pavement, bordered by large mature trees on the right, which casts shadow upon the pavement. In the midground, on the opposite side of the street, there is a notable structure of Katoomba Gospel Chapel, accompanied by smaller residential dwellings characterised by pitched roofs. In the background, the vista expands toward bushland and distant ridgelines, highlithing the natural landscape surrounding Katoomba. The terrain gently descends, revealing glimpses of tree canopies and open sky into the far distance.

The visual impact from this location can be assessed as Negligible, most of the new proposal is obstructed by the dense mature landscape. Only the upper levels of the new proposal are partially visible above the tree canopies, whilec a very small area of the upper roofline is seen, in profile, against the sky.

Tenacity Assessment Summary:

- *Value of view: Medium-to-High.*
- *View location: Edge of road - public viewing location.*
- *Extent of impact: Negligible*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the highest value components of the view remain and the impact of the new proposal is significantly diminished by the screening of the existing mature trees.

VIEWPOINT 16

Existing site photo

From standing position on the parking area of Radio Blue Mountains
RL + 1030.98m - Distance to boundary 1644.74m - Bearing direction 236.40 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal

urbaine DESIGN GROUP

Visual impact in cyan with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 49%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 100% : 0%*
- *Existing Visual Assessment Scale no: 12 /15 & Visual Impact Assessment Scale no: 3 /15*

This is a static, public viewpoint, from the parking area of Radio Blue Mountainsv, facing in a northwesterly direction. In the foreground, a grassy expanse is delineated by a low brick wall on the west side and a black metal fence positioned near the midground. Additionally, the midground showcases several mature trees along with a small parking area associated with the commercial building, located at no 29, Parke Street, partially obscured by the surrounding foliage. In the background, the vista unfolds to reveal the distant ridgelines and valleys of the Blue Mountains, characterised by layers of forested hills, extending toward the horizon.

The visual impact from this location can be assessed as Negligible, most of the new proposal is obstructed by the dense mature landscape. Only the roofline of the new proposal is slightly visible above the tree canopies.

Tenacity Assessment Summary:

- *Value of view: High.*
- *View location: Edge of road - public viewing location.*
- *Extent of impact: Negligible*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since the highest value components of the view remain and the impact of the new proposal is significantly diminished by the screening of the existing mature trees.

VIEWPOINT 17

Existing site photo

From standing position on Wells Street
RL + 1029.81m - Distance to boundary 1692.93m - Bearing direction 224.19 °

Camera - Canon RP
Lens - 24mm

Photomontage of Proposal (Unseen)

urbaine DESIGN GROUP

Lack of visual impact in green with red outline

Visual Impact Assessment:

- *Visual impact – Amount of new development visible in view - 0%*
- *Visual impact ratio - view loss (including buildings) : sky view loss: 0% : 0%*
- *Existing Visual Assessment Scale no: 11 /15 & Visual Impact Assessment Scale no: 0 /15*

This is a static, public viewpoint taken from Wells Street, facing in a western direction. In the foreground, residential rooftops at no.10, Wells Street can be observed, partially obscured by the adjacent trees. Beyond these residences, the landscape descends into a densely forested valley, predominantly populated by eucalyptus trees, most of which exhibit a combination of green and brown foliage, characteristic of the indigenous bushland. Further in the background, the horizon presents a series of gently rolling ridgelines and plateaus against the sky, which is typical of Katoomba's elevated location and its panoramic mountain vistas.

The visual impact from this location can be assessed as Nil, as the complete view of the proposal is obstructed by the thick vegetation to the east of the subject site.

Tenacity Assessment Summary:

- *Value of view: High.*
- *View location: Edge of road - public viewing location.*
- *Extent of impact: Nil.*

Reasonableness of proposal: Within the context of the development's height compliance, the proposal can be deemed acceptable, since there is no view loss, or visual impact from this location.

4. SUMMARY ASSESSMENT

This Visual Impact Assessment from Urbaine Design seeks to provide an objective approach to the likely visual impact on the surrounding areas from the development proposal at 142-150 Narrow Neck Road.

This Visual Impact Assessment has undertaken a review of the proposal, within its future setting and concludes that, although there are locations within the neighbouring properties that are impacted by the new development, the relevant views, as selected within the report, are all observed from public viewing locations within a visual perimeter of the subject site.

The assessment of view loss experienced across a large number of public viewing locations vary between Nil and Severe. Generally, the highest value components of the views are retained above and behind existing trees and low-level landscape.

Since the proposal is largely compliant, it satisfies the Council's guildelines for view-sharing and visual impact from relevant public viewing locations.

Based on our 3D analysis, photography, and site visit it would be my recommendation that the Development Application be approved on the grounds of an acceptable amount of visual impact and view loss, when assessed against the permissible building envelope for the site.

John Aspinall, Director,

urbaine design group pty ltd

5. APPENDICES

APPENDIX A: Assessment Images - panoramic (additional PDF)

APPENDIX B: Aspinall CV

- *LEC Guidelines for Photomontages*
- *Visual Impact Assessment Methodology*

APPENDIX C: Survey and camera positions

APPENDIX D: Wireframe/alignment images

5.1. APPENDIX B: Methodology, CV and LEC Guidelines

JOHN ASPINALL. director: urbaine design group

UK Qualifed Architect RIBA BA(Hons) BArch(Hons) Liverpool University, UK.

24 years' architectural experience in London and Sydney.
Halpin Stow Partnership, London, SW1
John Andrews International, Sydney
Cox and Partners, Sydney
Seidler and associates
NBRS Architects, Milsons Point
Urbaine Pty Ltd (current)

Design Competitions:

UK 1990 – Final 6. RIBA 'housing in a hostile environment'. Exhibited at the Royal Academy, London
UK Design Council – innovation development scheme finalist – various products, 1990.
Winner: International Design Competition: Sydney Town Hall, 2000
Finalist: Boy Charlton Swimming pool Competition, Sydney, 2001
Finalist: Coney Island Redevelopment Competition, NY 2003

Design Tutor: UTS, Sydney, 1997 – 2002

This role involved tutoring students within years 1 to 3 of the BA Architecture course. Specifically, I developed programs and tasks to break down the conventional problem-solving thinking, instilled through the secondary education system. Weekly briefs would seek to challenge their preconceived ideas and encourage a return to design thinking, based on First Principles.

Design Tutor: UNSW, Sydney 2002 – 2005

This role involved tutoring students within years 4 to 6 of the BArch course. Major design projects would be undertaken during this time, lasting between 6 and 8 weeks. I was focused on encouraging rationality of design decision-making, rather than post-rationalisation, which is an ongoing difficulty in design justification.

Current Position: URBAINE GROUP Pty Ltd

Currently, Principal Architect of Urbaine - architectural design development and visualisation consultancy: 24 staff, with offices in: Sydney, Shanghai, Doha and Sarajevo.

Urbaine specialises in design development via interactive 3d modelling.

Urbaine's scale of work varies from city master planning to furniture and product design, while our client base consists of architects, Government bodies, developers, interior designers, planners, advertising agencies and video producers.

URBAINE encourages all clients to bring the 3D visualisaton facility into the design process sufficiently early to allow far more effective design development in a short time frame. This process is utilised extensively by many local and international companies, including Lend Lease, Multiplex, Hassell, PTW, Foster and Partners, City of Sydney, Landcom and several other Governmental bodies. URBAINE involves all members of the design team in assessing the impact of design decisions from the earliest stages of concept design. Because much of URBAINE's work is International, the 3D CAD model projects are rotated between the various offices, effectively allowing a 24hr cycle of operation during the design development process, for clients in any location.

An ever-increasing proportion of URBAINE"S work is related to public consultation visualisations and assessments. As a result, there has also been an increase in the Land And Environment Court representations. Extensive experience in creating and validating photomontaged views of building and environmental proposals. Experience with 3D photmonages began in 1990 and has included work for many of the world's leading architectural practices and legal firms.

Co-Founder Quicksmart Homes Pty Ltd. , 2007 - 2009

Responsible for the design and construction of 360 student accommodation building at ANU Canberra, utilising standard shipping containers as the base modules.

Design Principal and co-owner of Excalibur Modular Systems Pty Ltd: 2009 to present.

High specification prefabricated building solutions, designed in Sydney and being produced in China.

Excalibur has developed a number of modular designs for instant delivery and deployment around the world. Currently working with the Cameroon Government providing social infrastructure for this rapidly developing country.

The modular accommodation represents a very low carbon footprint solution

Expert Legal Witness, 2005 to present

In Australia and the UK, for the Land and Environment Court. Expert witness for visual impact studies of new developments.

Currently consulting with many NSW Councils and large developers and planners, including City of Sydney, Lend Lease, Mirvac, Foster + Partners, Linklaters.

Author of several articles in ‘Planning Australia’ and ‘Architecture Australia’ relating to design development and to the assessment of visual impacts, specifically related to the accuracy of photomontaging.

Currently preparing a set of revised recommendations for the Land and Environment Court relating to the preparation and verification of photomontaged views for the purposes of assessing visual impact

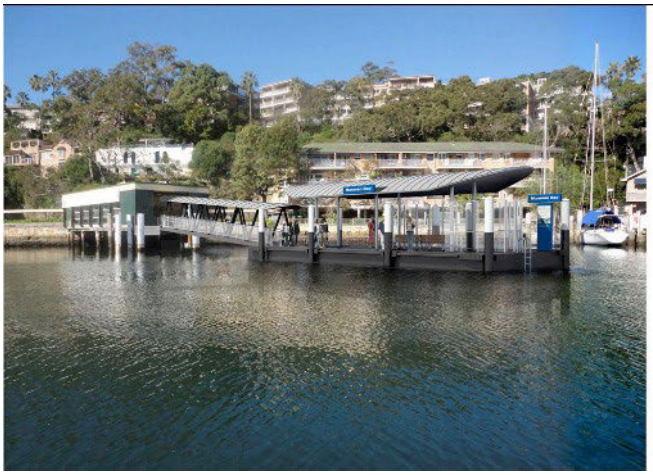
VISUAL IMPACT ASSESSMENTS: A REALITY CHECK.
BY JOHN ASPINALL.

Photomontaged views of new apartment building at Pyrmont: Urbaine

Australia's rapid construction growth over the past 10 years has coincided with significant advances in the technology behind the delivery of built projects. In particular, BIM (Building Information Modelling). Virtual Reality and ever-faster methods of preparing CAD construction documentation.

Alongside these advances, sits a number of potential problems that need to be considered by all of those involved in the process of building procurement. Specifically, the ease with which CAD software creates the appearance of very credible drawn information, often without the thoroughness and deliberation afforded by architects, and others, in years past.

Nowhere is this more apparent than in the area of visual impact assessments, where a very accurate representation of a building project in context is the starting point for discussion on a project's suitability for a site. The consequences of any inaccuracies in this imagery are significant and far- reaching, with little opportunity to redress any errors once a development is approved.



Photomontaged views of new Sydney Harbour wharves: Urbaine

Urbaine Architecture has been involved in the preparation of visual impact studies over a 20 year period, in Australia and Internationally. Urbaine's Director, John Aspinall, has been at the forefront of developing methods of verifying the accuracy of visualisations, particularly in his role as an expert witness in Land and Environment Court cases.

In Urbaine's experience, a significant majority of visualisation material presented to court is inaccurate to the point of being invalid for any legal planning decisions. Equally concerning is the amount of time spent, by other consultants, analysing and responding to this base material, which again can be redundant in light of the frequent inaccuracies. The cost of planning consultant reports and legal advice far exceeds that of generating the imagery around which all the decisions are being made.

Over the last 10 years, advances in 3d modelling and digital photography have allowed many practitioners to claim levels of expertise that are based more on the performance of software than on a rigorous understanding of geometry, architecture and visual perspective. From a traditional architect'straining, prior to the introduction of CAD and 3d modelling, a good understanding of the principles of perspective, light, shadow and building articulation, were taught

throughout the training of architects.

Statutory Authorities, and in particular the Land and Environment Court, have attempted to introduce a degree of compliance, but, as yet, this is more quantitative, than qualitative and is resulting in an outward appearance of accuracy verification, without any actual explanation being requested behind the creation of the work.

Currently, the Land and Environment Court specifies that any photomontages, relied on as part of expert evidence in Class 1 appeals, must show the existing surveyed elements, corresponding with the same elements in the photograph. Often, any surveyed elements can form such a small portion of a photograph that, even by overlaying the surveyed elements as a 3d model, any degree of accuracy is almost impossible to verify. For sites where there are no existing structures, which is frequent, this presents a far more challenging exercise. Below is one such example, highlighted in the Sydney Morning Herald, as an example of extreme inaccuracy of a visual impact assessment. Urbaine was engaged to assess the degree to which the images were incorrect – determined to be by a factor of almost 75%.

Domain

The Sydney Morning Herald

Inaccurate images anger residents

February 21

Kelsey Munro

Picture imperfect ... the original interpretation of how the Lewisham Estates development will look.

CAN residents affected by big development proposals rely on developers' photo montages?

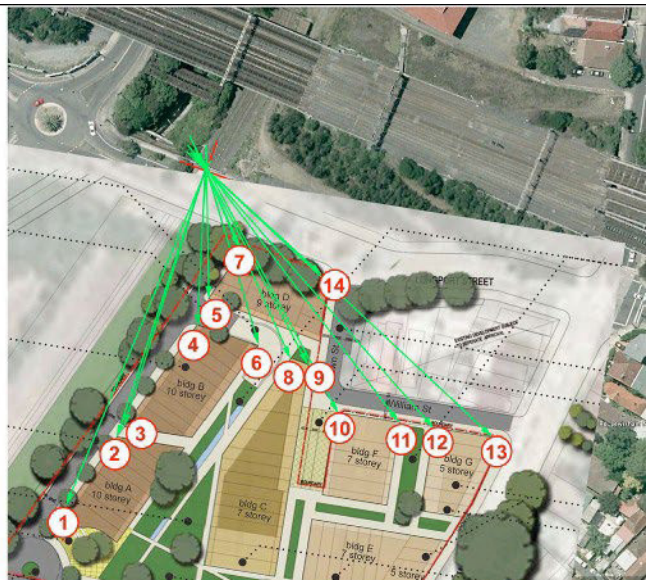
One inner west group thinks not, after inaccuracies were found in a series of digital photo montages which made the proposed Lewisham Estates development appear much smaller than it would if built.

The developer was sent back to the drawing board by the Department of Planning to redo the images that were publicly exhibited for the project after questions were raised over their accuracy.

The corrected interpretation of how the Lewisham Estates development will look.

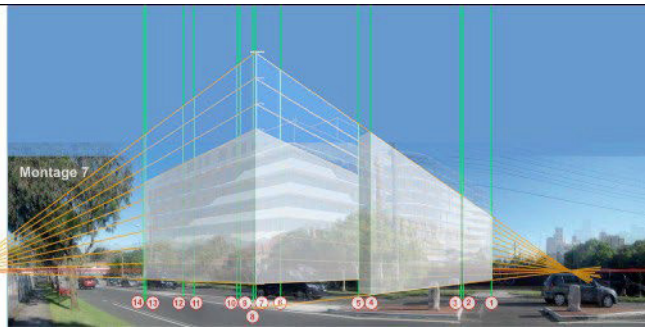
The No Lewisham Towers residents' action group claims the original images were so misleading that the corrected ones should go on public exhibition before the Planning Assessment Commission makes its determination next week.

SMH article re inaccurate visualisations



Key visual location points on site: Urbaine

Photomontage submitted by developer



Assessment of inaccuracy by Urbaine

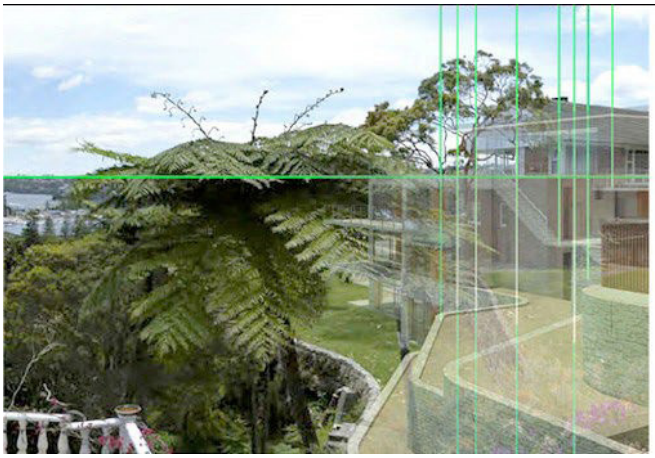
Urbaine has developed a number of methods for adding verification data to the 3d model of proposed buildings and hence to the final photomontages. These include the use of physical site poles, located at known positions and heights around a site, together with drones for accurate height and location verification and the use of landscaped elements within the 3d model to further add known points of references. Elements observed in a photograph can be used to align with the corresponding elements of the new building in plan. If 4 or more known positions can be aligned, as a minimum, there is a good opportunity to create a verifiable alignment.

Every site presents different opportunities for verification and, often, Urbaine is required to assess montages from photographs taken by a third party. In these cases, a combination of assessing aerial photography, alongside a survey will allow reference points to be placed into the relevant 3d model prior to overlaying onto the photos for checking.

The following example clearly demonstrates this – a house montaged into a view, by others, using very few points of reference for verification. By analysing the existing photo alongside the survey, the existing site was able to be recreated with a series of reference elements built into the model. A fully rendered version of all the elements was then placed over the photo and the final model applied to this. As can be seen, the original montage and the final verified version are dramatically different and, in this case, to the disadvantage of the complainant.

Photomontage submitted by developer

Key visual location points on site: Urbaine



Key points and 3d model overlaid onto existing photo

Final accurate photomontage: Urbaine

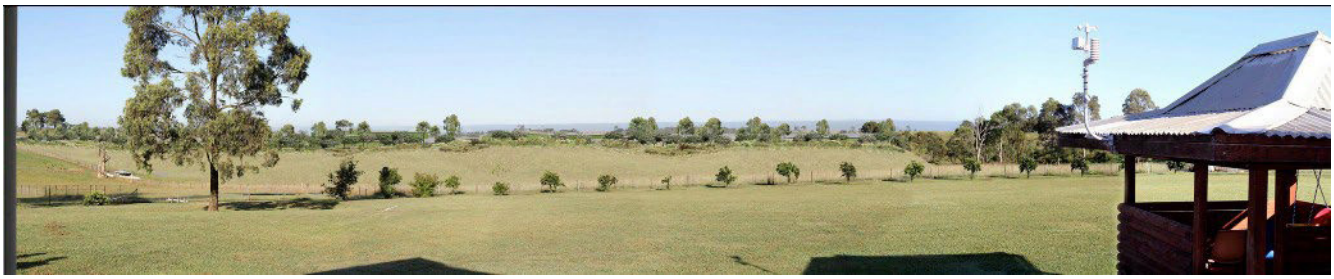
Often, Urbaine's work is on very open sites, where contentious proposals for development will be relying on minimising the visual impact through mounding and landscaping. In these cases, accuracy is critical, particularly in relation to the heights above existing ground levels. In the following example, a business park was proposed on very large open site, adjoining several residential properties, with views through to the Blue Mountains, to the West of Sydney. Urbaine spent a day preparing the site, by placing a number of site poles, all of 3m in height. These were located on junctions of the various land lots, as observed in the survey information. These 3d poles were then replicated in the 3d CAD model in the same height and position as on the actual site. This permitted the buildings and the landscaping to be very accurately positioned into the photographs and, subsequently, for accurate sections to be taken through the 3d model to assess the actual percentage view loss of close and distant views.

Physical 3000mm site poles placed at lot corners

3d poles located in the 3d model and positioned on photo

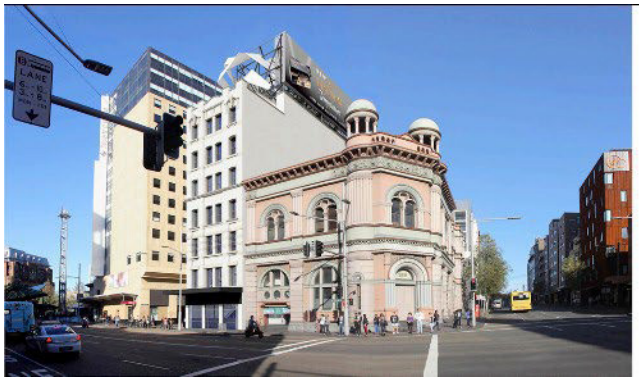
Proposed buildings and landscape mounding applied

Proposed landscape applied – shown as semi-mature

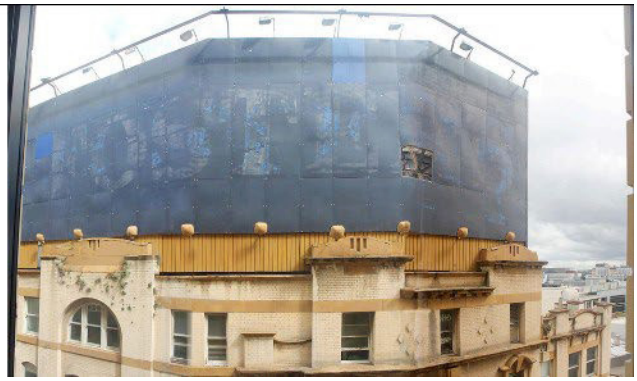


Final verified photomontage by Urbaine

Further examples, below, show similar methods being used to give an actual percentage figure to view loss, shown in red, in these images. This was for a digital advertising hoarding, adjoining a hotel. As can be seen, the view loss is far outweighed by the view gain, in addition to being based around a far more visually engaging sculpture. In terms of being used as a factual tool for legal representation and negotiation, these images are proving to be very useful and are accompanied by a series of diagrams explaining the methodology of their compilation and, hence verifying their accuracy.

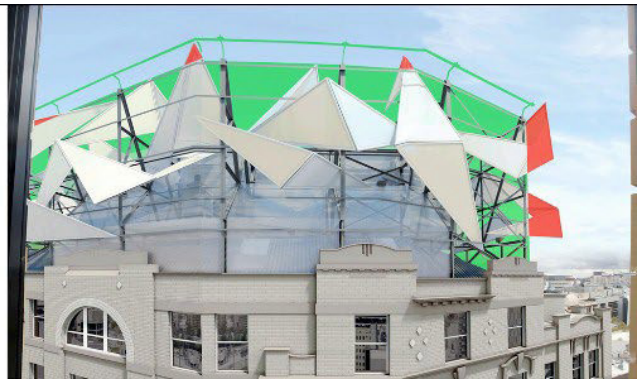


Photomontage of proposed building for digital billboard



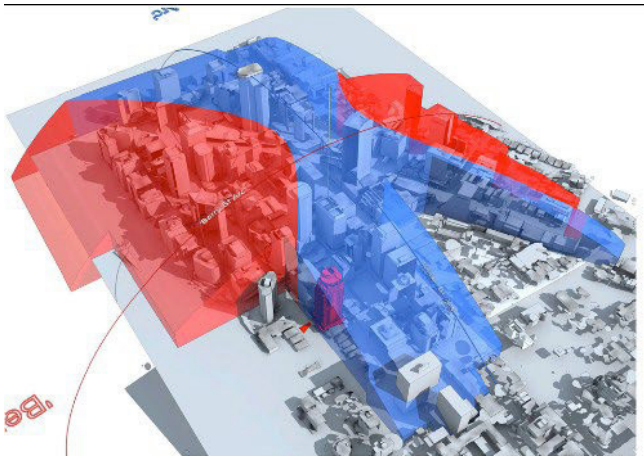
Existing situation – view from adjoining hot

Photomontage of view from hotel

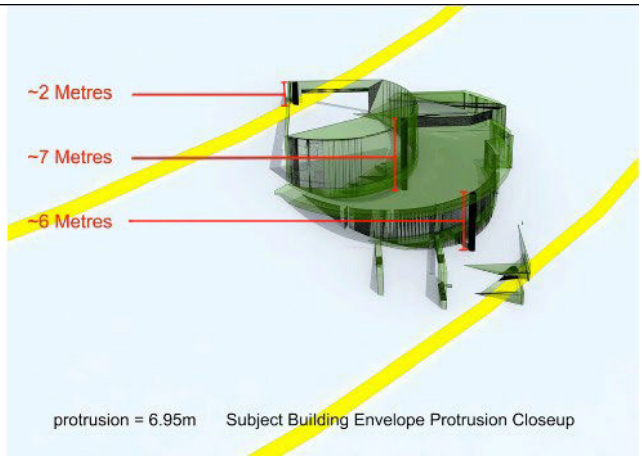


View loss – green = view gain / red = view loss

There are also several areas of assessment that can be used to resolve potential planning approval issues in the early stages of design. In the case below, the permissible building envelope in North Sydney CBD was modelled in 3d to determine if a building proposal would exceed the permitted height limit. Information relating to the amount of encroachment beyond the envelope allowed the architect to re-design the plant room profiles accordingly to avoid any breach.



3d model of planning height zones



Extent of protrusion of proposed design prior to re- design

Urbaine's experience in this field has place the company in a strong position to advise on the verification of imagery and also to assist in developing more robust methods of analysis of such imagery. As a minimum, Urbaine would suggest that anyone engaging the services of

visualisation companies should request the following information, as a minimum requirement:

1. Height and plan location of camera to be verified and clearly shown on an aerial photo, along with the sun position at time of photography.
2. A minimum of 4 surveyed points identified in plan, at ground level relating to elements on the photograph and hence to the location of the superimposed building.
3. A minimum of 4 surveyed height points to locate the imposed building in the vertical plane.
4. A series of images to be prepared to explain each photomontaged view, in line with the above stages.

This is an absolute minimum from which a client can determine the verifiability of a photomontaged image. From this point the images can be assessed by other consultants and used to prepare a legal case for planning approval.

Land and Environment Court
of New South Wales

Policy: Use of Photomontages and Visualisation Tools

Commencement

1. This policy commences on 17 May 2024 and replaces the policy published 21 August 2013.

Purpose of the policy

2. This policy is to guide the preparation of photomontages, still images, video images, and other visualisation tools to depict the development in an appeal under the *Environmental Planning and Assessment Act 1979*, to ensure that the data they present is represented and interpreted accurately, and that their use would assist the Court in determining the appeal.

Application

3. The policy applies to appeals under the EPA Act, where photomontages or other visual tools are to be submitted as part of expert evidence.

Definitions

4. In this Policy:

   Appeal means an appeal to the Court under the EPA Act.

   CGI means Computer Generated Image.

   Commissioner means a Commissioner or Acting Commissioner of the Court.

   Court means the Land and Environment Court of New South Wales.

   Development means the development for which consent is sought in the development application that is the subject of the appeal.

   EPA Act means the *Environmental Planning and Assessment Act 1979*.

Existing Image means an unchanged or unaltered image of the location, viewing angle and approximate conditions on which the proposed development will be overlaid, to convey the issues in dispute.

Judge means a Judge of the Court.

Photomontages means, for the purpose of this policy, any visual tool or aid, whether still image, video, computer generated image, two dimensional (2D) or three dimensional (3D) or other visual means to depict development plans.

Registrar means a Registrar of the Court.

RL Reduced Level or Relative Level as defined in Australian Standard® AS1100 Technical Drawings.

General principles

5. A photomontage submitted in an appeal should provide to the Judge, Commissioner or Registrar the most accurate visual images of the development in its real-world location, so as to specifically convey the issues in dispute.

6. A photomontage must include:

   6.1 the existing image;

   6.2 a 2D plan and/or elevation showing the location of the camera, target point/viewing angle, and lighting source that corresponds to the location from where the existing image was taken; and

   6.3 the proposed built envelope and key features of the development overlaid on the existing image in the form of a wire frame and/or ‘block massing’ model to demonstrate the development.

7. Where a photorealistic CGI of the development is used:

   7.1 the metadata from the existing image to create an identical 3D computer generated camera should be provided;

   7.2 the environmental conditions of the CGI should be set to the same parameters as the existing image;

   7.3 colour matching in the CGI is to correspond with the existing image; and

7.4 the details of the software used in creating the CGI should be stated as part of the submission of the photomontage.

8. A detailed summary of the methodology used to create the photomontage should be provided, including:

8.1 survey data that is used to create the photomontages, including the name and qualifications of the surveyor who prepared the survey information from which the underlying data for the wire frame was obtained;

8.2 site specific topographical data used to create the photomontages, including the source and references utilised for the topographical data (for example paper, or survey inputs from file types such as from 'DWG' or 'DXF');

8.3 the camera type, lens, focal length or field of view, and sensor used for the purpose of the photograph from which the existing image has been derived;

8.4 accurate location, alignment and direction of the camera (whether fixed on tripod or drone) and RL of the camera for the existing image;

8.5 data that was used to prepare the photomontages, such as:

8.5.1 use of relevant plans and data for the depiction of existing buildings or existing elements as shown in the wire frame, block massing model or photorealistic CGI;

8.5.2 the means by which terrain has been generated (such as surveyed spot levels and/or contours or by some form of point cloud, or Ground Control Point survey method);

8.5.3 any variables applied to the images such as, time of day, lighting and weather conditions;

8.5.4 consistency in application of scale and interpretation of the relevant data;

8.5.5 rationale for selecting a particular view, use of camera lens or conditions in creating the image. For example, in circumstances where a development is best depicted with an expanded field of view or panoramic view, the type of panorama head and equipment must be stated, in addition to the data above.

8.6 where a photomontage has used more than one baseline image to represent the existing context (that is where multiple images are 'stitched together'), this must be stated, and the requirements above should be adapted to convey the key data required to verify its accuracy; and

8.7 whether any editing software or other visual manipulation has been used in the preparation of the final image, for example an adjustment in contrast, saturation, tilt shift or the like.

Visualisation Tools

9. As technology emerges, the principles outlined above are to be applied. What is important is that the Court has an unaltered and real life baseline, summary of metadata so the veracity of imagery presented can be verified, and application of relevant overlays of the proposed development that assists in the Court's consideration of the real issues in dispute.

10. All effort is to be made and the 'best practices' are to be applied when utilising technology for the purposes of visualisation of the development to ensure accuracy and avoid bias of information interpretation.

Paperless Hearings

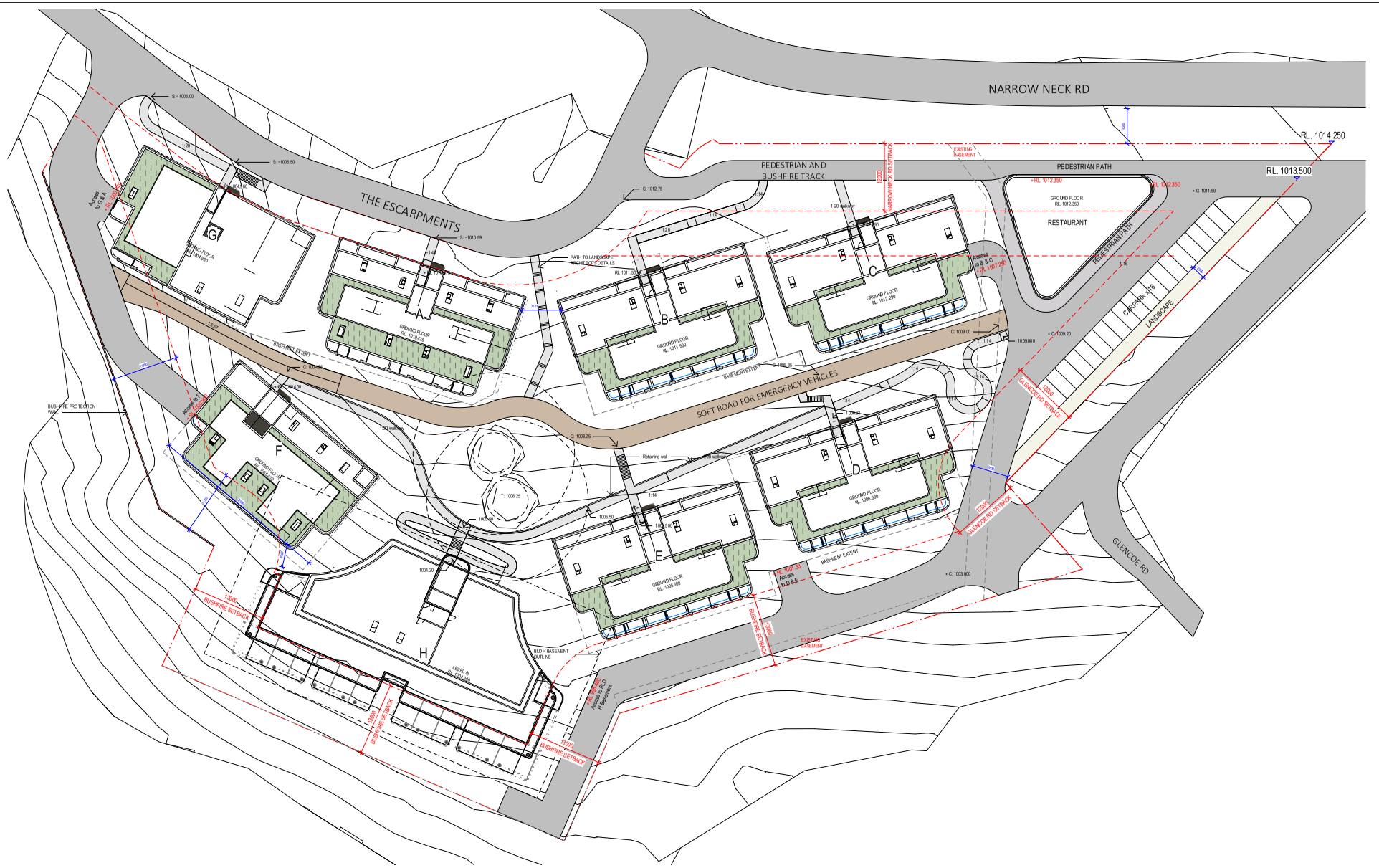
11. Parties should be prepared to display the photomontage electronically if it is to be relied upon, or be the subject of an examination of an expert witness.

12. It will be the responsibility of the party whose expert is being examined, to provide a device compatible with courtroom technology which can display the photomontage electronically. This will allow the presiding officer, the experts, lawyers and all other people to be able to see in real time and on a common image, the subject of the examination.

Issued by:

The Honourable Justice Brian J Preston
Chief Judge – Land and Environment Court of NSW
Date: 17 May 2024

5.2. APPENDIX C: Survey and camera positions



NOT FOR CONSTRUCTION

NOTES:

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- All dimensions in millimeters unless otherwise shown.
- Use figured dimensions only.
- Do not scale from drawings.
- Check all dimensions on site prior to construction.
- To be read in conjunction with all other documents.
- Report any discrepancies to Antoniades Architects Pty Ltd.
- All boundary dimensions and bearings to be verified by licensed surveyor prior to proceeding with work.

REV	DESCRIPTION	BY	DATE
A	Matter plan sketch	KL	14.07.2025
B	Issued for Information	SX	06.08.2025
C	Issued for Information	JF	28.08.2025
D	Issued for Information	JF	09.09.2025
E	Issued for Information	KL	12.09.2025

ANTONIADES ARCHITECTS
www.antoniades.com.au
ACN 129 731 559
Nominated Architect: Andreas Antoniades NSW Registration 7954

PROJECT PHASE: DEVELOPMENT APPLICATION
STATUS: PRELIMINARY

PROJECT NO.: 24012
PROJECT: -
ADDRESS: 142-150 Narrow Neck Road, Katoomba
CLIENT: Management 7BBH

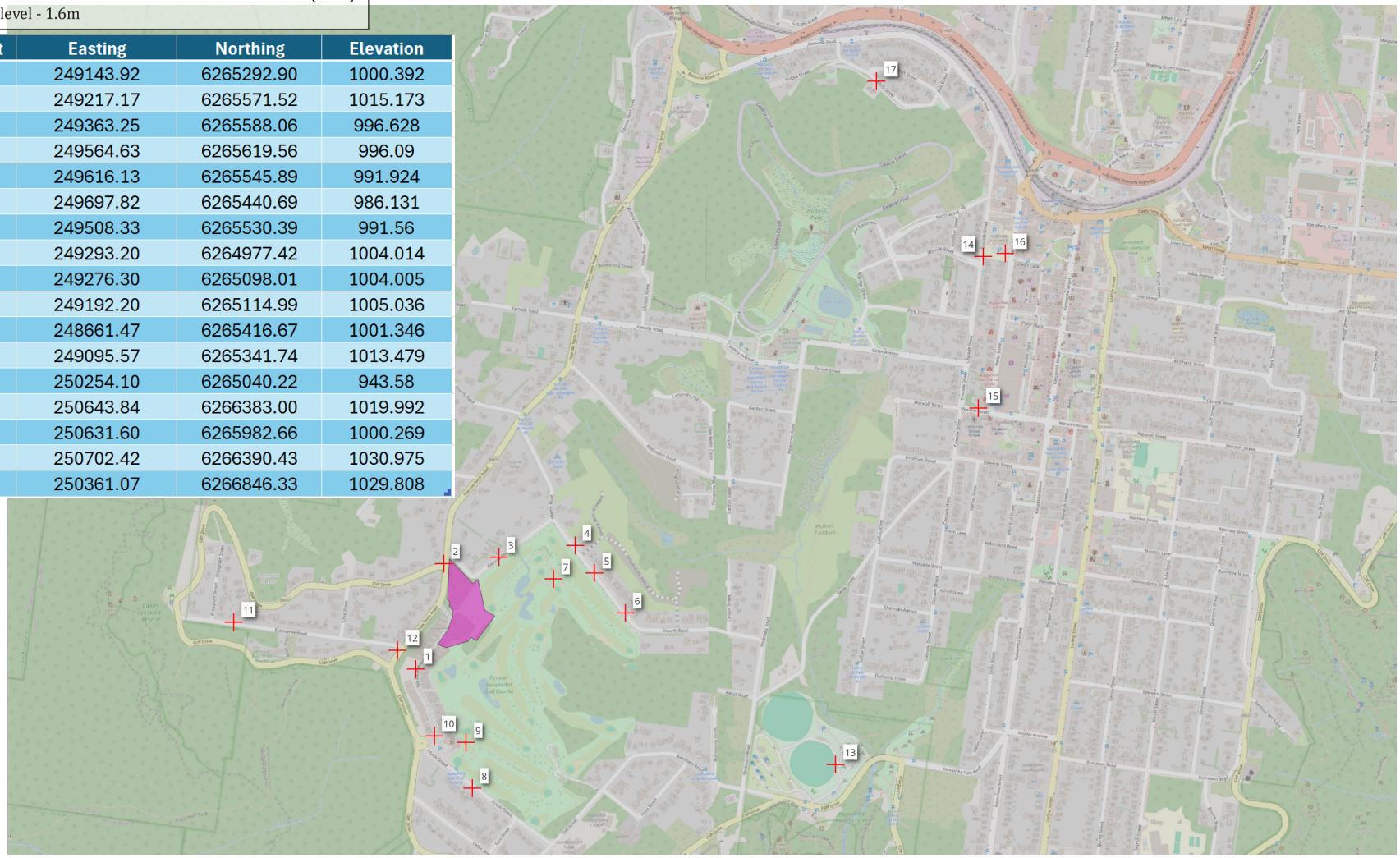
DRAWING SERIES: DA3 Overall Plans
DRAWING TITLE: Master Plan

DRAWING NO.: DA3.01
REVISION: E
SCALE: 1 : 300 @A1
Scale 1:300
DRAWN BY: KL
CHECKED BY: AA
NORTH

urbaine DESIGN GROUP

CAMERA POSITIONS - GDA 2020 AT STANDING HEIGHT (AHD)
For ground level - 1.6m

Viewpoint	Easting	Northing	Elevation
1	249143.92	6265292.90	1000.392
2	249217.17	6265571.52	1015.173
3	249363.25	6265588.06	996.628
4	249564.63	6265619.56	996.09
5	249616.13	6265545.89	991.924
6	249697.82	6265440.69	986.131
7	249508.33	6265530.39	991.56
8	249293.20	6264977.42	1004.014
9	249276.30	6265098.01	1004.005
10	249192.20	6265114.99	1005.036
11	248661.47	6265416.67	1001.346
12	249095.57	6265341.74	1013.479
13	250254.10	6265040.22	943.58
14	250643.84	6266383.00	1019.992
15	250631.60	6265982.66	1000.269
16	250702.42	6266390.43	1030.975
17	250361.07	6266846.33	1029.808



NOTE:

BUILDING POSITIONS ARE INDICATIVE FOR PRESENTATION PURPOSES.
DATA WAS CAPTURED USING GNSSS RTK ROVER

CAMERA POSITIONS ARE FROM GNSS WITH NTRIP CORRECTIONS OBSERVATIONS WITHIN +/- 0.01M.
LEVELS ARE BASED ON AUSTRALIAN HEIGHT DATUM (AHD)

JOB NO: 780 FEL_Katoomba	LGA: Blue Mountains City Council
DATE: 07.10.2025	DATUM: AHD
DRAWN: DK	SCALE: N/A
CHECK: JA	SHEET: 1:1

SKETCH PLAN SHOWING
INDICATIVE CAMERA POSITIONS FOR -
142-150 NARROW NECK ROAD,KATOOMBA

urbaine DESIGN GROUP

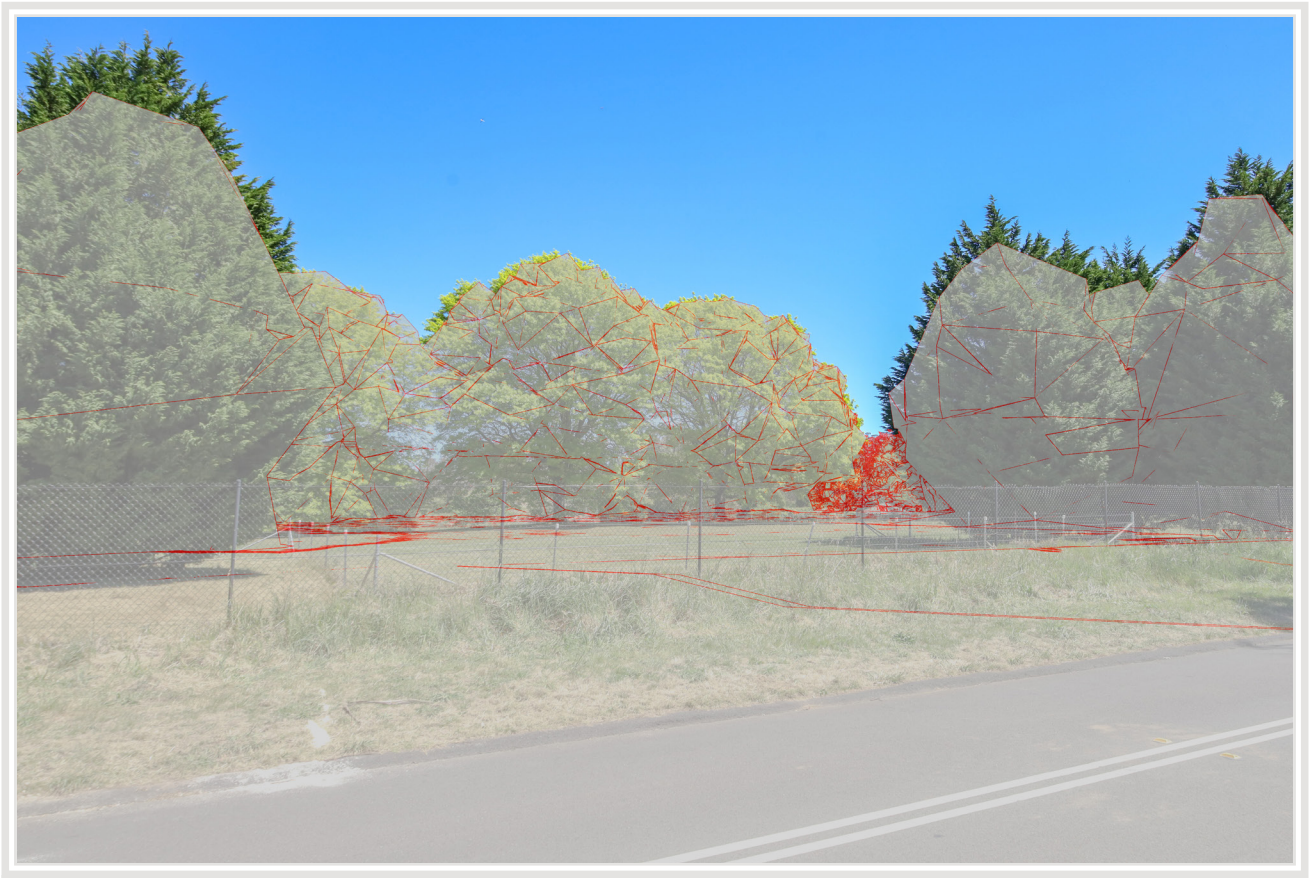
5.3. APPENDIX D: Wireframe images

Viewpoint 01

Viewpoint 02

Viewpoint 03

Viewpoint 04



Viewpoint 05

Viewpoint 06

Viewpoint 07

Viewpoint 08

Viewpoint 09

Viewpoint 10

Viewpoint 11

Viewpoint 12

Viewpoint 13

Viewpoint 14

Viewpoint 15

Viewpoint 16

Viewpoint 17