VISUAL IMPACT ASSESSMENT

22, Redan Street, Mosman, NSW

May, 2022

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Development Application, No.22, Redan Street, Mosman. Additional Visual Impact Assessment Report. May, 2022.

CONTENTS

1. INTRODUCTION

1.1 Scope and Purpose of Report.

This Visual Impact Report has been prepared by Urbaine Architectural as supporting documentation for a Development Application for a residential flat building, containing 6 units, with basement parking, landscaping, drainage and related works, at No.22, Redan Street, Mosman, NSW 2088. The subject land is identified as Lot 1 in DP 203987, see figure 1 for overall site location.

This report has been prepared for Dedico Property Development, acting on behalf of the Applicant, 22 Redan St Pty Ltd., and 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.

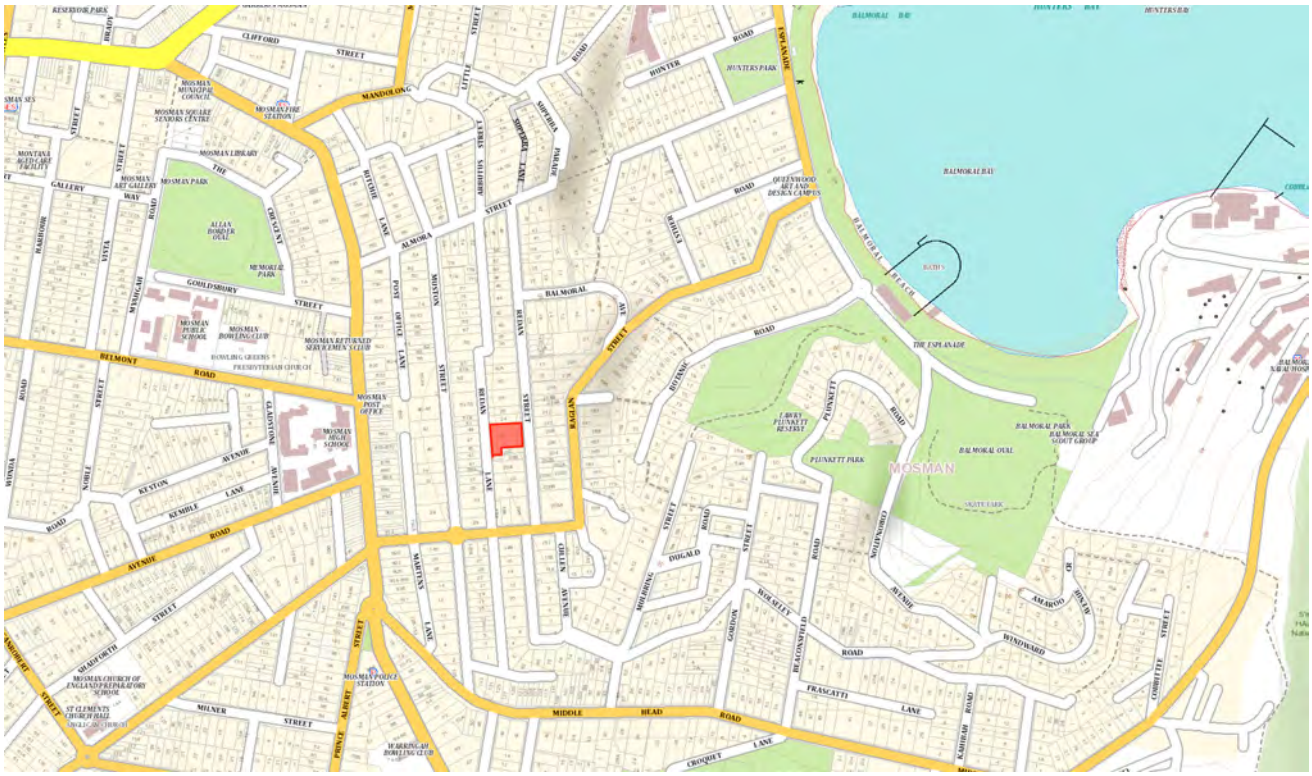


Figure 1 – site location shown in red.

1.2 The Proposed Development

1.2.1 Project Overview.

The application proposes the
- Demolition of the existing dwelling, swimming pool, tennis court, and garage;
- Construction of a residential flat building containing 6 units;
- Basement parking comprising 12 residential spaces, 2 visitor spaces and basement storage space for the residents; and
- Landscaping and other associated works.

The new development is permissible with consent and is largely compliant, with the Mosman Local Environmental Plan 2012 (MLEP). Small variations are outlined in the Statement of Environmental Effects, which accompanies the Development Application documentation.

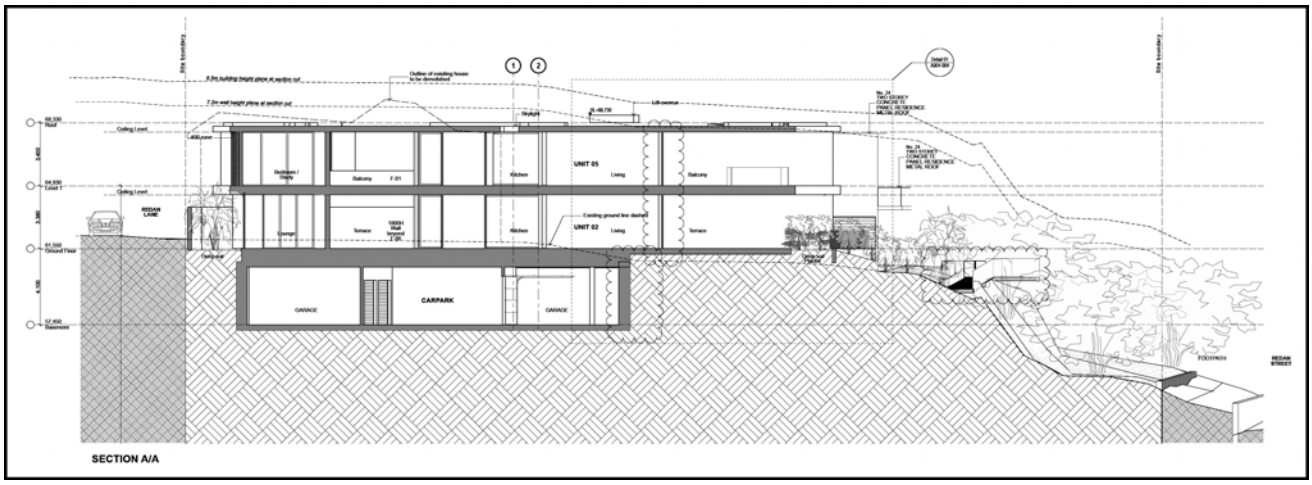


Figure 2 – East-west section through proposed design – from Fox Johnston Architects

1.2.2 The Site

The site, known as Lot 1 in DP 203987 at No.22, Redan Street, Mosman. The site has an area of 2,220m².
The site has two frontages, one to Redan Street of approximately 38.1m and another to Redan Lane of approximately 50.6m.
The site slopes from west (RL62m AHD on the pathway in Redan Lane) to east (approximately RL52m AHD on the pathway in Redan Street) with a total fall of approximately 10m (see Figure 2, for general east-west site section, from Fox Johnston Architects, showing new proposal).

Figure 3 – Aerial photo showing site location in red.

The existing building on the site is a part single storey and part 2 storey dwelling, with a maximum roof ridge height of RL69.64m AHD.
The dwelling is located on the western part of the site, adjacent to Redan Lane and has a separate garage in the site's south western corner, accessed off Redan Lane (see Figure 3 for aerial site location).
A swimming pool is located on the eastern side of the dwelling and a tennis court occupies the central part of the site. To the south and east of the tennis court, there are stairs and a pathway leading to the lower garden area which contains lawns, garden beds and trees.
Along the eastern boundary of the site is a sandstone wall with a brushwood fence located above and setback a metre or so from the boundary. There are several trees, generally all around the periphery of the site. There is large fig tree located in the south eastern corner of the rear garden which is to be retained.
A vehicular driveway provides access from Redan Lane to the double garage as well as a car parking area adjacent to the entrance to the house. There is no vehicular or pedestrian access from Redan Street, (Redan Street is a public road with an elevated footpath above a steep landscaped bank on its western side and a divided, carriageway all related to the significant fall from west to east within the road reserve).
The western side of Redan Street a large number of prestige houses and duplexes are located.
To the north of the site is No. 24 Redan Street, a 2 storey house with a double garage fronting Redan Lane and a garden (including a swimming pool) located at the rear and on the eastern side of the house. The dwelling is located close to the common boundary with No. 22 and separated from it by the tennis court fencing. Further to the north are more large dwellings, all oriented west-east to the water view and North Head and Manly beyond.
Immediately to the south of the subject site is a two storey attached duplex (No's 20B and 20C Redan Street) with driveway access from Redan Lane. The duplex is setback approximately 28m from Redan Lane and is generally located to the south of the tennis court on the subject site.
Opposite the site (i.e. to the east on the lower side of Redan Street) is No. 206 Redan Street, a 2 storey dwelling, No. 208 Redan Street, a large (part 2 and part 3 storey) dwelling, and No. 210 Redan Street, another large (2 storey) dwelling. All of these dwellings have vehicular access from the lower level of Redan Street.
To the west of the site on the high side of Redan Lane, are 1 and 2 storey dwellings when observed from the lane. The dwelling directly opposite the site is Redan Lane (No. 47 Muston Street) is 2 storey and is set back approximately 22.38m from the lane frontage.
Redan Lane is approximately 6m wide. It has a footpath along most of its eastern side.

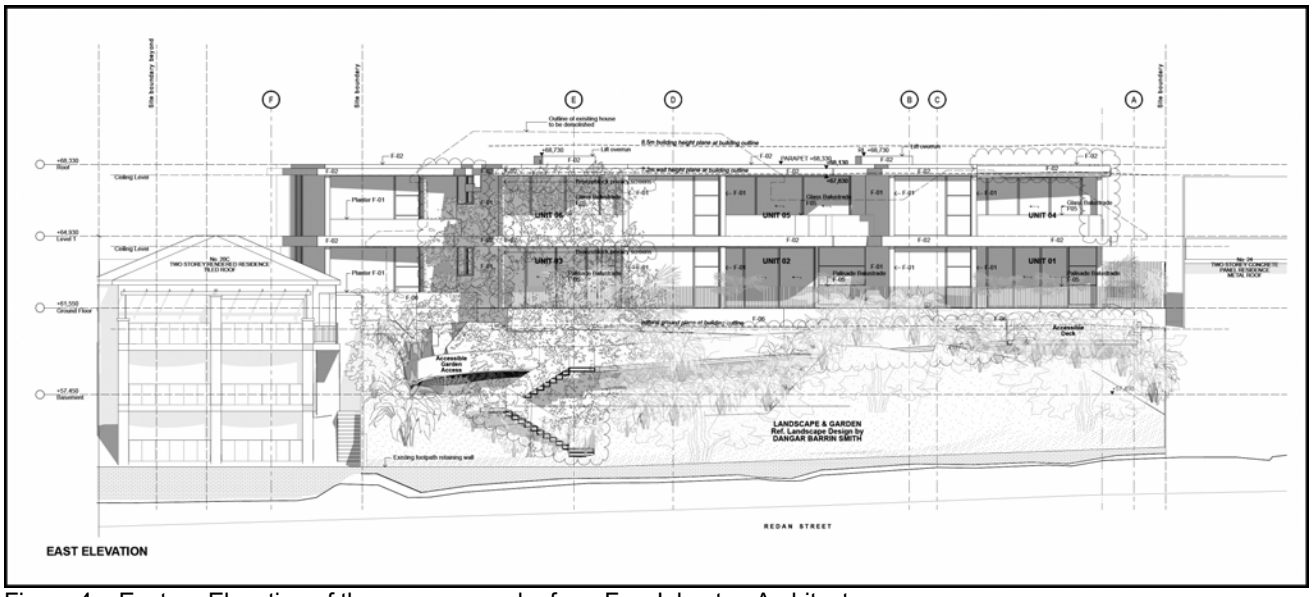


Figure 4 – Eastern Elevation of the new proposal – from Fox Johnston Architects

1.2.3 Proposed Land Use and Built Form

The Mosman Local Environmental Plan 2012 (the LEP) is the main planning instrument for the Mosman Council area and for the subject site. It includes objectives and development standards relating to subdivision, the height of buildings, wall height, floor space ratios (FSR) and foreshore building lines. It also includes discretionary standards for the number of storeys of a building to which an 8.5m maximum building height applies, and landscaped areas in the R2 and R3 Residential zones. The proposed development is compliant with the designated building envelope, see figure 4.

The Mosman Residential Development Control Plan (the RDCP) is a policy document which provides the detailed objectives and planning and design guidelines to guide the design of development in the residential areas of the Mosman Municipality.
The following State Environmental Planning Policies and Sydney Regional Environmental Plans are applicable to the site and the proposal:
• State Environmental Planning Policy No. 55 - Remediation of Land;
• State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004;
• State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017;
• Deemed SEPP Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (the Harbour REP).

Deemed SEPP Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (the Harbour REP)
The aim of this plan is to provide a clear and consistent planning framework to protect and enhance the unique attributes of the Harbour. The Harbour REP consolidates and replaces Sydney Regional Environmental Plan No. 22 – Parramatta River (SREP 22) and Sydney Regional Environmental Plan No. 23 – Sydney and Middle Hrbours (SREP 23) and State Environmental Planning Policy No. 56 - Sydney Harbour Foreshores and Tributaries (SEPP 56).
The Harbour REP aims to establish a balance between promoting a prosperous working harbour, maintaining a healthy and sustainable waterway environment and promoting recreational access to the foreshore and waterways. The whole of the Mosman Municipality is within the Sydney Harbour Catchment. The site is located in the Foreshores and Waterways area.
In accordance with Clause 3(1) of the Harbour REP the land is within the Sydney Harbour Catchment.

Clause 25 Foreshore and waterways scenic quality:
The matters to be taken into consideration in relation to the maintenance, protection and enhancement of the scenic quality of foreshores and waterways are as follows:
(a) the scale, form, design and siting of any building should be based on an analysis of:
(i) the land on which it is to be erected, and
(ii) the adjoining land, and
(iii) the likely future character of the locality,
(b) development should maintain, protect and enhance the unique visual qualities of Sydney Harbour and its islands, foreshores and tributaries,
(c) the cumulative impact of water-based development should not detract from the character of the waterways and adjoining foreshores.
The existing house is visible from the Harbour and distant foreshores to the east.
The new development will have a similar height and presence, but will extend across a greater proportion of the site and have a reduced presence in terms of the roof – being flat, as opposed to the existing pitched roof.

Figure 5 – Preliminary design block photomontage view of the proposal from Middle Harbour in the context of the surrounding development around the subject site.

Clause 26 Maintenance, protection and enhancement of views:
The matters to be taken into consideration in relation to the maintenance, protection and enhancement of views are as follows:
(a) development should maintain, protect and enhance views (including night views) to and from Sydney Harbour,
(b) development should minimise any adverse impacts on views and vistas to and from public places, landmarks and heritage items,
(c) the cumulative impact of development on views should be minimised.
The proposal is not likely to have an adverse impact on views from neighbouring properties or the properties on the opposite, high side of Redan Lane. The rear alignment of the new development is similar to the existing house. The varying harbour and headland views over the site and the existing house will be maintained because the height of the new house will be similar in overall height compared with the existing house.
There are no significant public views over the subject site, from Redan Land, or Muston Street, or the existing house. Council can be satisfied that the proposal will be consistent with the matters for consideration in Clause 26 of the Harbour REP.

1.3 Visual Impact Assessment Methodology

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 C. A combination of the methods described were utilised in the preparation of the photomontaged views used in this visual impact assessment report. This same methodology is currently under review by the Land and Environment Court as a basis for future VIA guidelines to supercede the current instructions.

1.3.1Process

Initially, a fully contoured 3d model was created of the site and surrounding buildings to the extent of the designated viewpoints, with detailed modelling matching the building envelope of the latest Fox Johnston Architects design of the proposed new residence
Virtual cameras were placed into the model to match various selected viewpoints, in both height and position. From these cameras, rendered views have been generated and photomontaged into the existing photos, using the ground plane for alignment (allowing 2 set camera heights for standing and sitting positions being at 1600mm and 1100mm respectively). Several site location poles were placed into the 3d model to allow accurate alignment with the original photo. These poles align with known elements of the building and surroundings, such as top of ridge and eaves location on the dwelling, together with existing trees and site boundary intersections.
The rendered views create an accurate interpretation of the visual impact and provide a basis for minimising any view loss by the incorporation of amended building heights and landscape, where appropriate.
The final selection of images shows these stages, concluding with an outline, indicating the potential visual impact. In addition, Appendix A contains larger format versions of these photomontaged assessment views. It is from these that a better understanding can be gained, regarding the visual impact in the overall urban context, although for the purposes of statutory requirements, the images within the report are of a standard 50mm lens format, as required by Land and Environment Court guidelines (included in Appendix B).

1.3.2 Assessment Methodology

There are no set guidelines within Australia regarding the methodology for visual impact assessment.
Where a proposal is likely to adversely affect views from either private or public land, Mosman Council will give consideration to the Land and Environment Court's Planning Principle for view sharing established in Tenacity Consulting v Warringah Council [2004] NSWLEC 140. This Planning Principle establishes a four-step assessment to assist in deciding whether or not view sharing is reasonable:

Step 1: assessment of views to be affected.
Step 2: consider from what part of the property the views are obtained.
Step 3: assess the extent of the impact.
Step 4: assess the reasonableness of the proposal that is causing the impact.

However, there is no peer review system for determining the accuracy of the base material used for visual impact assessments. As a result, Urbaine Architectural provides a detailed description of its methodologies and the resultant accuracy verifiability – this is contained within Appendix C.
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 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. Locations that feature a prominent, direct and mostly unobstructed line of sight to the subject site 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.

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 sites most likely to be affected by the Proposal
- Important vistas and viewsheds
- Other major influences on local character and amenity

The site map, see figure 6, indicates 12 chosen locations for site photography. predominantly from Muston Street to the west of the subject site.

Figure 6: Selected neighbouring property viewpoint locations, looking towards No.22 Redan St, for visual impact assessments.

Contextual Analysis:
An analysis was undertaken of the visual and statutory planning contexts relevant to the assessment of visual impacts in a Development Application.
Visual Impact Analysis:
The visual impact of the proposed development was analysed in relation to the visual context and assessed for their likely impact upon the local area.
Statutory Planning Assessment:
The results of the local view impact assessment are included in Section 3 of this report, with large format images included in Appendix

1.4 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 Fox Johnston Architects., dated May, 2021.
■ Creating Places for People - An Urban Design Protocol for Australian Cities: www.urbandesign.gov.au/downloads/index.as
■ State Environmental Planning Policy No.55 - Remediation of Land;
■ State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004;
■ State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017;
■ Australia and New Zealand Urban Design Protocol:
www.mfe.govt.nz/publications/urban/design-protocol-mar05/urban-design-protocol-colour.pdf
■ The Value of Urban Design:
www.designcouncil.org.uk/Documents/Documents/Publications/CABE/the-value-of-urban-design.pdf
■ Fifteen Qualities of Good Urban Places:
www.goldcoast.qld.gov.au/planning-and-building/fifteen-qualities-of- good-urban-places-3774.html
■ The Image of the City (1960), Kevin Lynch
■ The Environmental Planning and Assessment Act 1979 as amended ("the Act");
■ Mosman Residential DCP, 2012
■ Mosman LEP,2012

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 general topographical area map, Figure 7. This shows the steep fall of land from the houses on Redan Street to the east and the streets below, being Raglan Street and Balmoral Avenue

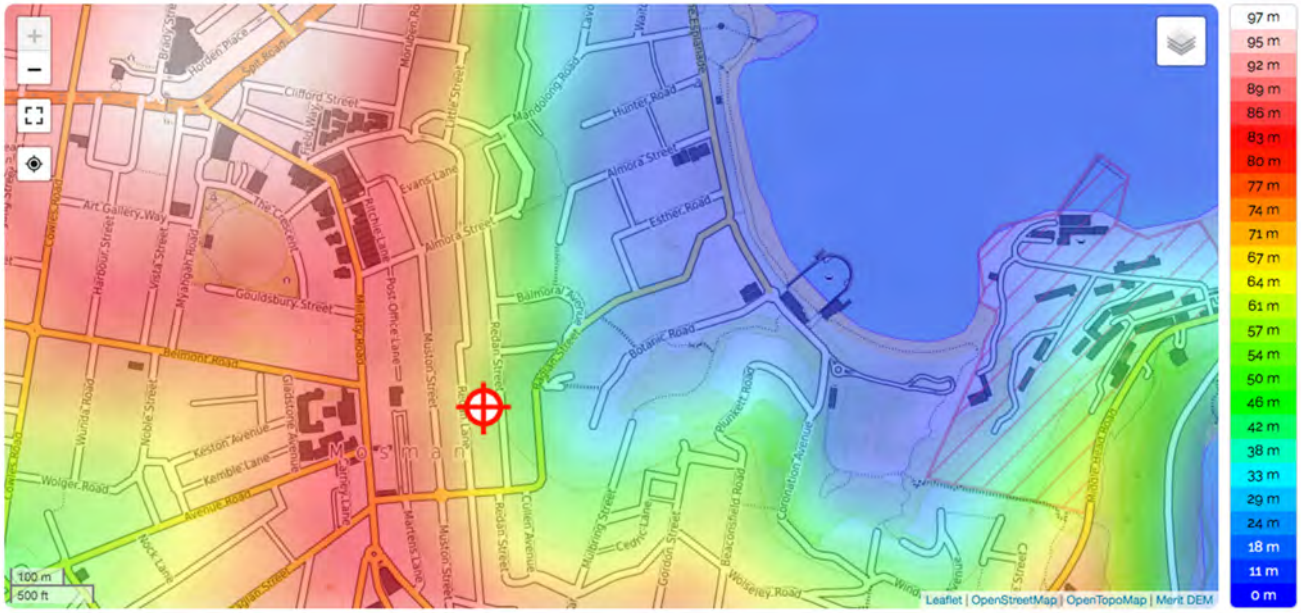


Figure 7: Subject Site topographical map, with site location indicated.

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. This is particularly relevant in this instance, where the scale and form of the proposed development is viewed in context. Within the scope of this report the public realm is 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.

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.

2.1 The Visual Context:

Within the street context, development is predominantly 2,3 and 4 storey individual dwelling houses and small apartment buildings, orientated to maximise ocean views. The subject property is not heritage listed.
Within the urban context, there is a diverse fabric consisting of predominantly low density residential, with wide streets, large plot sizes and mature, established landscaping.
The iconic views from Redan Street are to the east, the harbour, Manly and North Head, considered to be an iconic view.

2.2 Streetscapes

Within the local and surrounding areas, the streetscapes are typical of a well-established suburban area, that being focused on public amenity. The residential lots are medium to large and, as a result of the topography, have the option of enabling view sharing throughout the neighbourhood

2.3 The selected view locations for the local view analysis:

As a result of the site’s topography, the visual impact is primarily relevant from the residential properties surrounding the subject site and also from the gaps between houses, observed from the street. The houses on the western side of Redan Lane have the greatest potential for negative visual impact
A large number of site photos were taken and a smaller number of local views selected from these, relevant for the private viewing locations, as described above. These are a mixture of static viewpoints, namely, fixed locations, as opposed to locations where viewing from a vehicle may be more likely – dynamic.
The selected photos are intended to allow consideration of the visual and urban impact of the new development at both an individual and local level. They incorporate private viewing locations from the

boundaries of several properties on Muston St where the subject site falls within direct line of sight and impacts on the neighbouring views and light access. Additionally, views have been assessed from the south-facing windows of the neighbouring property at No.24, Redan Street in the previous VIA.

2.4 Period of View:

The view is either
(a) Intermittent, or Dynamic if it will be viewed from a car travelling along a road; or
(b) Stationary, or Static if the proposal can be viewed from a fixed location or for an extended period of time. In this instance, most views will be considered as stationary, since the impact is most significant on views from adjoining gardens.

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

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, with reference to the requirements of the Land and Environment Court.
When undertaking the assessment of visual impacts, the guidelines stipulated by the Land and Environment Court, NSW, are used as a starting point for compliance.

3.2 Visual Impact Assessments from 12 local viewpoint locations – static, private locations:

3.2.1 Method of Assessment:
In order to allow a quantitative assessment of the visual impact, photos were selected that represented relevant public and private viewing locations from locations on Redan Lane.
A Canon EOS Full Frame Digital Camera with fixed focal length 35mm lens was used to take all viewpoint photos, at an eye level of 1600mm, representing standing positions and 1100mm representing sitting positions, when requested.
For the visual impact assessment from the properties on Muston St, photos were taken from primary and secondary living spaces and a drone photogrammetric survey was conducted across the immediate area.
A full 3d point cloud survey was prepared by TSS Total Surveying Solutions and the latest 3D CAD model was integrated into this to allow accurate positioning of the new proposal relative to the camera positions. Additionally, the original survey from True North Surveys was utilised for confirmation of existing RLs.
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 3.2.2 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 6 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 8.
The % visual content is then assessed, together with a visual assessment of the new development's ability to blend into the existing surroundings.

Scale	*Value*	*Visual quality*	*Visual impact*
0	**Negligible**	N/A	No negative impact on the pre-existing visual quality of the view.
1 2 3 4 5	**Low**	Predominant presence of low quality manmade features. Minimal views of natural formations (e.g. cliffs, mountains, coastlines, waterways, ridges etc). Uniformity of land form.	A minor negative impact on the pre-existing visual quality of the view. Examples: – Minor impacts on natural landscapes. – No impact on iconic views – Impacts on a small number of receivers. – Significant distance between the development and receiver.
6 7 8 9 10	**Medium**	Presence of some natural features mixed with manmade features. Some views of distinct natural formations (e.g. cliffs, mountains, coastlines, waterways, ridges etc).	A medium negative impact on the pre-existing visual quality of the view: Examples: – Moderate impacts on iconic views or natural landscapes. – Impacts on a moderate number of receivers. – Located nearby the receiver.
11 12 13 14 15	**High**	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 or landmark features.	A high negative impact on the pre-existing visual quality of a view: Examples: – Loss of iconic views. – Impacts on a significant number of receivers. – Overshadowing effect. – Directly adjacent the receiver.

Figure 8 – Urbaine Architectural Visual Assessment Scale.

3.2.2 Visual Impact Assessment at selected viewpoints

Viewpoint no.20: From upper level balcony, off main living room, of 49, Muston Street – looking E/S/E towards subject site. From a standing position.

RL +72.398m. From northern end of balcony at eastern balustrade.
Distance to site boundary: 26.2m. Distance to central point of proposed buildings: 51.1m.

Viewpoint no.20: Block Photomontage of new proposal

Viewpoint no.20:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay
Visual impact – portion of building visible in view – 41%
Visual impact ratio of view loss to sky view loss in visible portion. 100%: 0% View increase as a factor relative to view loss – 11%

Visual Quality Assessment: Scale no.8 Visual Impact Assessment: Scale no.5

This is a static, private viewpoint, from the eastern edge of the balcony adjoining the living spaces on the upper level at No.49 Muston Street, Mosman.
This viewpoint location allows the observer to look across Redan Lane to the existing house on the subject site and to the view beyond the subject site. This view is, predominantly, of existing mature landscape and trees on surrounding blocks and large residential houses in the middle distance. The ridgeline beyond follows the line of Middle Head Road, running from west to east.
There are no existing water views from this location.

The new proposal increases the overall visual impact of the subject site, although the view loss is considered moderate, relative to that of the existing house. There is a small amount of view gain that would be experienced as a result of the flat roofs, when compared to the existing pitched roof. This view gain allows an increase in the middle-distant view.

The visual impact can be considered low.

Viewpoint No.21: From mid-level balcony, off bedrooms, of 49, Muston Street – standing height, looking E/S/E towards subject site. From a standing position.

RL +68.892m. From eastern balcony balustrade, at northern end of balcony.
Distance to site boundary: 21.2m. Distance to closest point on proposed buildings: 45.1m

Viewpoint no.21: Block photomontage of new proposal.

Viewpoint no.21:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay
Visual impact – portion of building visible in full view – 54%
Visual impact ratio of view loss to sky view loss in visible portion: 96%: 4%. S View increase as a factor relative to view loss – 27%

Visual Quality Assessment: Scale no.5 Visual Impact Assessment: Scale no.7

This is a static, private viewpoint, from the eastern edge of the balcony adjoining the bedroom spaces on the lower level at No.49 Muston Street, Mosman.
This viewpoint location allows the observer to look across Redan Lane to the existing house on the subject site and to the view beyond the subject site. This view is, predominantly, of existing mature landscape and trees on surrounding blocks and large residential houses in the middle distance. The ridgeline beyond follows the line of Middle Head Road, running from west to east.
There is no existing water view from this location.

The new proposal increases the overall visual impact of the subject site, although the view loss is considered moderate, relative to that of the existing house. There is a moderate amount of view gain that would be experienced as a result of the flat roofs of the new proposal, when compared to the existing pitched roof. This view gain allows an increase in the middle-distant view and, more importantly, to the sky and the continuation of the ridgeline in the distance.

The overall visual impact would be considered as low-to-medium.

Viewpoint no.28: Upper balcony off main living room of 51, Muston Street, looking E/S/E towards subject site. From a standing position.

RL +71.075m. From eastern balustrade of balcony at mid-point of balustrade.
Distance to site boundary: 22.7m. Distance to closest point on proposed buildings: 50.15m.

Viewpoint no.28: Block photomontage of new proposal.

Viewpoint no.28:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay
Visual impact – portion of building visible in view – 28%
Visual impact ratio of view loss to sky view loss in visible portion. 100%: 0% View increase as a factor relative to view loss – 0%

Visual Quality Assessment: Scale no.12 Visual Impact Assessment: Scale no.6

This is a static, private viewpoint, from the eastern edge of the balcony adjoining the living spaces on the upper level at No.51 Muston Street, Mosman.
This viewpoint location allows the observer to look across Redan Lane to the existing house on the subject site, to the southeast and to the view beyond the subject site. This view includes North Head, Sydney Harbour, The Sound, to the foreshore of the Sydney Harbour National Park in the east and Dobroyd Head to the northeast. The Balmoral Naval hospital and its surrounds are visible behind the property at No.24, Redan Street. To the south of this is existing mature landscape and trees on surrounding blocks and large residential houses in the middle distance.
The ridgeline beyond follows the line of Middle Head Road, running from west to east.

The new proposal increases the overall visual impact of the subject site, although the view loss is considered low-to medium, relative to that of the existing house. This view loss is experienced across the northern end of the subject site and is limited to middle distance landscape views. The potential for a small amount of view gain is blocked by an existing mature treeline.
There is no loss of water views from this location.

The visual impact can be considered as low.

Viewpoint no.29: Existing site photo.
Balcony level from middle floor of 51, Muston Street, looking E/S/E towards subject site.
From a standing position.

RL +67.693m. From eastern balustrade of balcony.
Distance to site boundary: 22.4m. Distance to closest point on proposed buildings: 50.8m.

Viewpoint no.29: Block photomontage of new proposal.

Viewpoint no.29:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay
Visual impact – portion of building visible in view – 26%
Visual impact ratio of view loss to sky view loss in visible portion. 89%: 11% View increase as a factor relative to view loss – 0%

Visual Quality Assessment: Scale no.5 Visual Impact Assessment: Scale no.5

This is a static, private viewpoint, from the eastern edge of the balcony adjoining the main bedroom on the mid-level of No.51 Muston Street, Mosman.
This viewpoint location allows the observer to look across Redan Lane to the existing house on the subject site, to the southeast and to a small amount of view beyond the subject site. This view includes the ridgeline following the line of Middle Head Road, running from west to east. Across the roof of No.24, Redan St, a small portion of the upper portions of the Sydney Harbour National Park is visible as it approached North Head.

The new proposal increases the overall visual impact of the subject site, although the view loss is considered moderate, relative to that of the existing house. This view loss is experienced across the northern end of the subject site. The potential for a small amount of view gain is blocked by an existing mature treeline.

There are no water views from this location and the overall visual impact can be considered as low.

Viewpoint no.30: Existing site photo.
Main bedroom of 47, Muston Street, looking East towards subject site. From a standing position.

RL +71.138m. From 1m within the glazing line, looking over the bedroom balcony.
Distance to site boundary: 25.4m. Distance to closest point on proposed buildings: 47.1m.

Viewpoint no.30: Block photomontage of new proposal.

Viewpoint no.30:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay
Visual impact – portion of building visible in view – 39%
Visual impact ratio of view loss to sky view loss in visible portion. 100%: 0% View increase as a factor relative to view loss – 15%

Visual Quality Assessment: Scale no.12 Visual Impact Assessment: Scale no.9

This is a static, private viewpoint from the main bedroom at No.45, Muston Street, Mosman, looking across the bedroom balcony.
This viewpoint location allows the observer to look across Redan Lane to the existing house on the subject site and to the water view beyond the subject site. This view includes, from northeast to southeast: Dobroyd Head, Manly, Manly Cove, Spring Cove and the harbour foreshore around to Little Manly Point, Cannae Point, to Quarantine Headland the associated quarantine buildings. Beyond this, the top of North Head can also be observed in the distance, with the slopes of land around the Balmoral Naval Hospital in the middle distance.
The new proposal increases the overall visual impact of the subject site, although the view loss is considered low-to-medium, relative to that of the existing house. There is a small amount of view loss to the western edge of Balmoral Bay and Hunters Bay. This view loss is experienced across the northern end of the subject site and the impact of the new proposal is reduced by the setdown of the slab and balcony roof on the northeastern corner of the building. There is also an amount of view gain that includes an additional amount of water view of The Sounds and, more importantly, the entirety of North Head, which was previously blocked.

The overall visual impact can be considered medium.

Viewpoint no.31: Existing site photo.
From the bedroom balcony of 47, Muston Street, looking East towards subject site. From a sitting position.

RL +70.96m. From eastern balustrade of balcony.
Distance to site boundary: 20.7m. Distance to closest point on proposed buildings: 44.1m.

Viewpoint no.31: Block photomontage of new proposal.

Viewpoint no.31:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay
Visual impact – portion of building visible in view – 74%
Visual impact ratio of view loss to sky view loss in visible portion. 100%: 0% View increase as a factor relative to view loss – 14%

Visual Quality Assessment: Scale no.13 Visual Impact Assessment: Scale no.9

This is a static, private viewpoint from a seated position at the eastern edge of the balcony off the main bedroom, second level, at No.45, Muston Street, Mosman.
This viewpoint location allows the observer to look across Redan Lane to the existing house on the subject site and to the water view beyond the subject site. This view includes, from northeast to southeast: The residential streets of Clontarf and Balgowlah Heights, Grotto Point, Crater Cove, Dobroyd Head, Manly, Manly Cove, Spring Cove and the harbour foreshore around to Little Manly Point, Cannae Point, to Quarantine Headland the associated quarantine buildings. Beyond this, the top of North Head can also be observed in the distance, with the slopes of land around the Balmoral Naval Hospital in the middle distance.
The new proposal increases the overall visual impact of the subject site, although the view loss is considered low-to-medium, relative to that of the existing house. There is a small amount of view loss to Balmoral Bay and Hunters Bay. This view loss is experienced across the northern end of the subject site. There is also an amount of view gain that includes an additional amount of water view of The Sound, the foreshore at Quarantine Head and, more importantly, the entirety of North Head, which was partially blocked.

Since the high value elements of the view are experienced across a side boundary, the overall visual impact can be considered medium.

Viewpoint no.32: Existing site photo.
From bedroom balcony level of 47, Muston Street, looking East towards subject site. From a standing position.

RL +71.246m. From eastern balustrade of bedroom balcony.
Distance to site boundary: 20.7m. Distance to closest point on proposed buildings: 44.1m.

Viewpoint no.32: Block photomontage of new proposal.

Viewpoint no.32:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay
Visual impact – portion of building visible in view – 74%
Visual impact ratio of view loss to sky view loss in visible portion. 100%: 0% View increase as a factor relative to view loss – 11%

Visual Quality Assessment: Scale no.13 Visual Impact Assessment: Scale no.10

This is a static, private viewpoint from a standing position at the eastern edge of the balcony off the main bedroom, second level, at No.45, Muston Street, Mosman.
This viewpoint location allows the observer to look across Redan Lane to the existing house on the subject site and to the water view beyond the subject site. This view includes, from northeast to southeast: The residential streets of Clontarfe and Balgowlah Heights, Grotto Point, Crater Cove, Dobroyd Head, Manly, Manly Cove, Spring Cove and the harbour foreshore around to Little Manly Point, Cannae Point, to Quarantine Headland the associated quarantine buildings. Beyond this, the top of North Head can also be observed in the distance, with the slopes of land around the Balmoral Naval Hospital in the middle distance.
The new proposal increases the overall visual impact of the subject site, although the view loss is considered low-to-medium, relative to that of the existing house. There is a small amount of view loss to Balmoral Bay and Hunters Bay. This view loss is experienced across the northern end of the subject site. There is also an amount of view gain that includes an additional amount of water view of The Sound, the foreshore at Quarantine Head and, more importantly, the entirety of North Head, which was partially blocked.

Since the high value elements of the view are experienced across a side boundary, the overall visual impact can be considered medium-to-high.

Viewpoint no.35: Existing site photo.
From balcony off main living room at No. 45, Muston Street, looking E/N/E towards subject site. From a standing position.

RL +67.813m. From eastern balcony balustrade at mid-point.
Distance to site boundary: 14.4m. Distance to closest point on proposed buildings: 37.2m.

Viewpoint no.35: Block photomontage of new proposal.

Viewpoint no.35:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay
Visual impact – portion of building visible in view – 35%
Visual impact ratio of view loss to sky view loss in visible portion. 54%: 46% View increase as a factor relative to view loss – 42%

Visual Quality Assessment: Scale no.5 Visual Impact Assessment: Scale no.5

This is a static, private viewpoint from a standing position at the eastern edge of the balcony off the main living room, first floor, at No.45, Muston Street, Mosman.
This viewpoint location allows the observer to look across Redan Lane to the existing house on the subject site and to the limited views beyond the subject site. These include the ridgeline of Dobroyd Head to the northeast and middle-distant landscape views to the east – see Appendix F.
View loss includes the portion of Dobroyd Head and parts of the middle distant landscape to the east.
There is a moderate amount of view gain, as a result of the lowered roofline. This gives a greater skyview and associated light to the balcony, particularly in the winter months, when the sun is lower.

There is limited view loss, experienced across a side boundary and, hence, the visual impact can be considered low.

Viewpoint no.47: Existing site photo.
From main living room at No.47, Muston Street, looking east towards subject site. From a standing position.

RL +71.91m. From 1m within the main glazing line.
Distance to site boundary: 27.9m. Distance to closest point on proposed buildings: 50.3m.

Viewpoint no.47: Block photomontage of new proposal.

Viewpoint no.47:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay
Visual impact – portion of building visible in view – 63%
Visual impact ratio of view loss to sky view loss in visible portion. 100%: 0% View increase as a factor relative to view loss – 7%

Visual Quality Assessment: Scale no.12 Visual Impact Assessment: Scale no.9

This is a static, private viewpoint, from the main living / dining area of No.47, Muston Street, Mosman. This view is taken from 1 metre within the glazing line of the living room space.
The observer looks across Redan Lane and the view beyond the subject site to the southeast is, predominantly, of existing mature landscape and trees on surrounding blocks and large residential houses in the middle distance, towards the ridge defined by Middle Head Road. Directly to the east, views include the water of Hunters Bay and Sydney Harbour, Grotto Point and in the further distance, Manly, Quarantine Head and the cliff faces of the Sydney Harbour National Park towards North Head, which is visible beyond the profile of Middle Head.
This iconic view remains uninterrupted by the new development when viewed from this location.

The new proposal increases the overall visual impact of the subject site, relative to that of the existing house. There is a small amount of view gain that would be experienced, to the south-east, as a result of the flat roofs of the new development, when compared to the existing pitched roof. The view loss is considered moderate-to-significant, being of the eastern reaches of Balmoral Bay and its associated boat moorings. However, careful consideration has been given to the retention of the view of the jetty wharf at Cobblers Bay. This view has been retained through the setting down of the slab and the balcony roof in the northeastern corner of the proposed development.

The visual impact can be considered medium.

Viewpoint no.55: Existing site photo.
From main dining room at No.47, Muston Street, looking east towards subject site. From a standing position.

RL +72.023m. From 1m within glazing line of main dining room area.
Distance to site boundary: 32.1m. Distance to closest point on proposed buildings: 53.8m.

Viewpoint no.55: Block photomontage of new proposal.

Viewpoint no.55:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay. From a standing position.
Visual impact – portion of building visible in view – 24%
Visual impact ratio of view loss to sky view loss in visible portion. 67%: 33% View increase as a factor relative to view loss – 11%

Visual Quality Assessment: Scale no.13 Visual Impact Assessment: Scale no.9

This is a static, private viewpoint, from the main dining area of No.47, Muston Street, Mosman. This view is taken from 1 metre within the glazing line of the dining room space from a standing position. The observer looks across Redan Lane and the view beyond the subject site to the southeast is, predominantly, of existing mature landscape and trees on surrounding blocks and large residential houses in the middle distance, towards the ridge defined by Middle Head Road. Directly to the east, views include the water of Hunters Bay and Sydney Harbour, Grotto Point and in the further distance, Manly, Quarantine Head and the cliff faces of the Sydney Harbour National Park towards North Head, which is visible beyond the profile of Middle Head.
This iconic view remains uninterrupted by the new development when viewed from this location.

The new proposal increases the overall visual impact of the subject site, relative to that of the existing house. There is a small amount of view gain that would be experienced, to the south-east, as a result of the flat roofs of the new development, when compared to the existing pitched roof. The view loss is considered moderate-to-significant, being of the eastern reaches of Balmoral Bay and its associated boat moorings. However, careful consideration has been given to the retention of the view of the jetty wharf at Cobblers Bay. This view has been retained through the setting down of the slab and the balcony roof in the northeastern corner of the proposed development.

The visual impact can be considered as medium.

Viewpoint no56: Existing site photo.
From main dining room at No.47, Muston Street, looking east towards subject site. From a sitting position.

RL +71.624m. From 1m within glazing line of main dining room area.
Distance to site boundary: 32.1m. Distance to closest point on proposed buildings: 53.8m.

Viewpoint no56: Block photomontage of new proposal.

Viewpoint no.56:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay
Visual impact – portion of building visible in view – 38%
Visual impact ratio of view loss to sky view loss in visible portion.68%: 32% View increase as a factor relative to view loss – 8%

Visual Quality Assessment: Scale no.13 Visual Impact Assessment: Scale no.9

This is a static, private viewpoint, from the main dining area of No.47, Muston Street, Mosman. This view is taken from 1 metre within the glazing line of the dining room space from a sitting position. The observer looks across Redan Lane and the view beyond the subject site to the southeast is, predominantly, of existing mature landscape and trees on surrounding blocks and large residential houses in the middle distance, towards the ridge defined by Middle Head Road. Directly to the east, views include the water of Hunters Bay and Sydney Harbour, Grotto Point and in the further distance, Manly, Quarantine Head and the cliff faces of the Sydney Harbour National Park towards North Head, which is visible beyond the profile of Middle Head.
This iconic view remains uninterrupted by the new development when viewed from this location.

The new proposal increases the overall visual impact of the subject site, relative to that of the existing house. There is a small amount of view gain that would be experienced, to the south-east, as a result of the flat roofs of the new development, when compared to the existing pitched roof. The view loss is considered moderate-to-significant, being of the eastern reaches of Balmoral Bay and its associated boat moorings. However, careful consideration has been given to the retention of the view of the jetty wharf at Cobblers Bay. This view has been retained through the setting down of the slab and the balcony roof in the northeastern corner of the proposed development.
The view loss is considered moderate-to-significant and the view loss of the water and lower reaches of North Head and Dobroyd Point, would require the design's visual impact to be reviewed according to the Land and Environment Court's Planning Principle for view sharing established in Tenacity Consulting v Warringah Council [2004] NSWLEC 140.

The visual impact can be considered as medium.

Viewpoint no.57: Existing site photo.
From balcony off main living room at No.47, Muston Street, looking east towards subject site.
From a standing position.

RL +71.919m. From midpoint of eastern balustrade
Distance to site boundary: 26. Distance to closest point on proposed buildings: 48.

Viewpoint no.57: Block photomontage of new proposal.

Viewpoint no.57:
View loss indicated in cyan overlay, with red outline. View gain indicated in yellow overlay
Visual impact – portion of building visible in view – 68%
Visual impact ratio of view loss to sky view loss in visible portion. 100%: 0% View increase as a factor relative to view loss – 8%

Visual Quality Assessment: Scale no.12 Visual Impact Assessment: Scale no.9

This is a static, private viewpoint, from the living room balcony of No.47, Muston Street, Mosman. This view is taken from the eastern edge balustrade of the balcony.
The observer looks across Redan Lane and the view beyond the subject site to the southeast is, predominantly, of existing mature landscape and trees on surrounding blocks and large residential houses in the middle distance, towards the ridge defined by Middle Head Road. Directly to the east, views include the water of Hunters Bay and Sydney Harbour, Grotto Point and in the further distance, Manly, Quarantine Head and the cliff faces of the Sydney Harbour National Park towards North Head, which is visible beyond the profile of Middle Head.
This iconic view remains uninterrupted by the new development when viewed from this location.

The new proposal increases the overall visual impact of the subject site, relative to that of the existing house. There is a small amount of view gain that would be experienced, to the south-east, as a result of the flat roofs of the new development, when compared to the existing pitched roof. The view loss is considered moderate-to-significant, being of the eastern reaches of Balmoral Bay and its associated boat moorings. However, careful consideration has been given to the retention of the view of the jetty wharf at Cobblers Bay. This view has been retained through the setting down of the slab and the balcony roof in the northeastern corner of the proposed development.

The visual impact can be considered medium.

4. CONCLUSIONS + PLANNING SCHEME PROVISIONS RELATING TO VISUAL IMPACTS

The proposed development seeks the demolition of an existing house and the construction of a residential flat building containing 6 units.

The new proposal is largely compliant with the requirements of the Mosman LEP and RDCP, particularly in relation to FSR, overall building envelope and height limits for the site.

It can be observed from the Visual Impact Assessment images, also contained in the attached Appendix A, that the increase in visual impact can be reviewed in the context of the Tenacity ruling as a fair and equitable solution to view sharing within the context of permissible use and scale. In all instances, the highest value elements of the views have been preserved and the design accommodates specific requirements for view retention, as requested by Council.

The most significant impact is from Nos. 45 and 47, Muston St, which have views to the east of Middle Harbour, North Head, Grotto point and Middle Head. From this location, the design, in certain situations, presents a reduction in the overall water view. However, the views to the distant foreshore and the water/land interface around Grotto Point and Dobroyd Head have been maintained and, in some cases, improved.

From the adjoining property at No.24, Redan Street, the impact is far less significant, since all the water and iconic views are directly to the east. The only issues to be considered would relate to visual privacy at the eastern end of the new development and the adjoining balcony of No.24.

I would recommend that this application be approved on the grounds stated in this report, those being the fair and equitable view sharing component of the design, when considered alongside the permitted amenity available to The Applicant on the site.

5. APPENDICES

- 5.1 APPENDIX A: Full Panoramic Photomontages of the Proposed Development from local viewpoints + verification diagrams.
- 5.2 APPENDIX B: Land and Environment Court: Guidelines for Photomontages.
- 5.3 APPENDIX C: Aspinall CV and Expert Witness experience. Methodology article – Planning Australia, by Urbaine Architectural.
- 5.3 APPENDIX D: No.22 Redan St. Site survey.

APPENDIX B:

Land and Environment Court: Guidelines for Photomontages

LAND AND ENVIRONMENT COURT
Use of photomontages

The following requirements for photomontages proposed to be relied on as or as part of expert evidence in Class 1 appeals will apply for proceedings commenced on or after 1 October 2013. The following directions will apply to photomontages from that date:

Requirements for photomontages

1. Any photomontage proposed to be relied on in an expert report or as demonstrating an expert opinion as an accurate depiction of some intended future change to the present physical position concerning an identified location is to be accompanied by:

   Existing Photograph.
   a) A photograph showing the current, unchanged view of the location depicted in the photomontage from the same viewing point as that of the photomontage (the existing photograph);
   b) A copy of the existing photograph with the wire frame lines depicted so as to demonstrate the data from which the photomontage has been constructed. The wire frame overlay represents the existing surveyed elements which correspond with the same elements in the existing photograph; and
   c) A 2D plan showing the location of the camera and target point that corresponds to the same location the existing photograph was taken.

   Survey data.
   d) Confirmation that accurate 2D/3D survey data has been used to prepare the Photomontages. This is to include confirmation that survey data was used:
      i. for depiction of existing buildings or existing elements as shown in the wire frame; and
      ii. to establish an accurate camera location and RL of the camera.

2. Any expert statement or other document demonstrating an expert opinion that proposes to rely on a photomontage is to include details of:
   a) The name and qualifications of the surveyor who prepared the survey information from which the underlying data for the wire frame from which the photomontage was derived was obtained; and
   b) The camera type and field of view of the lens used for the purpose of the photograph in (1)(a) from which the photomontage has been derived.

APPENDIX C

Aspinall CV and Expert Witness experience.
Methodology article – Planning Australia, by Urbaine Architecture.

CURRICULUM VITAE:

JOHN ASPINALL. Expert Witness – Land and Environment Court.

dob 8.2.63

Registered Architect RIBA BA(Hons) BArch(Hons) Liverpool University, UK.
Qualified 1987, London 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 Architectural (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 programmes 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 Architectural. 2005 to present.
Currently, Principal Architect of Urbaine Architectural - architectural design development and visualisation consultancy: 24 staff, with offices in: Sydney, Shanghai, Doha and Sarajevo.
Specialist in design development via interactive 3d modelling.

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, 1998 to present.
In Australia and the UK, for the Land and Environment Court. Expert witness for visual impact studies and view loss assessments 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 many articles relating to the accuracy of Visual Impact Assessments. An article contained in Australian Planner Magazine, 2018, is attached as Appendix A.

The experience, in architectural design and 3D visualisation, over 30 years, as outlined above, gives John Aspinall a foundation of skills and experience to deliver highly competent visual information as the basis for very accurate visual impact assessment reports, both in Australia and internationally.

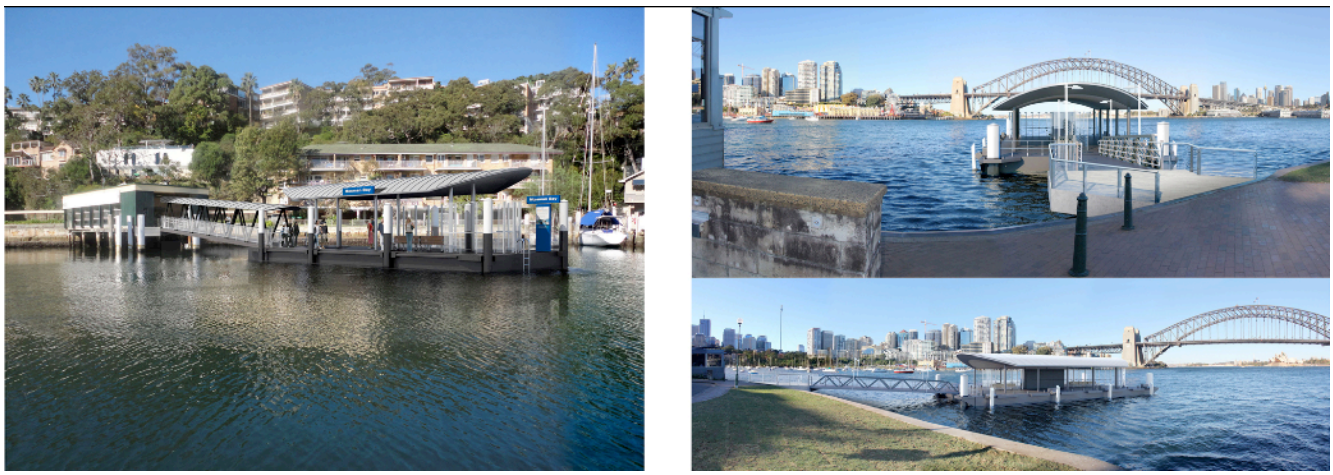
VISUAL IMPACT ASSESSMENTS: A REALITY CHECK. BY JOHN ASPINALL.

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's

training, 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?

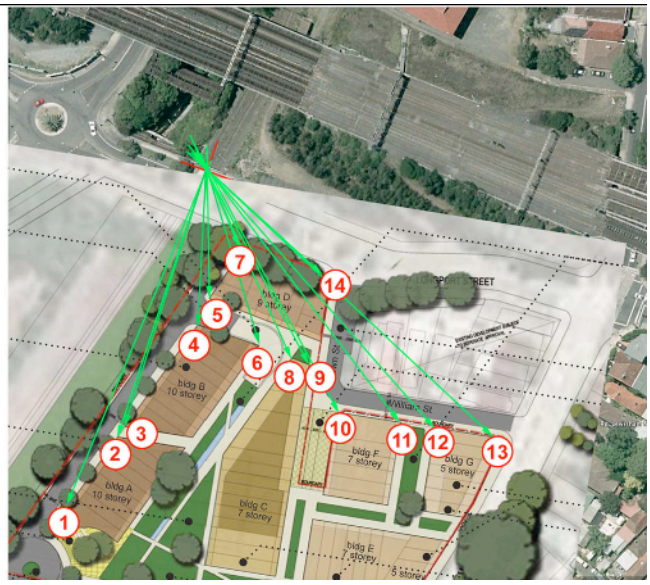
One inner west group thinks not, after inaccuracies were found in a series of digital photo montages which made the proposed Lewisham Estates development appear much smaller than it would if built.

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.

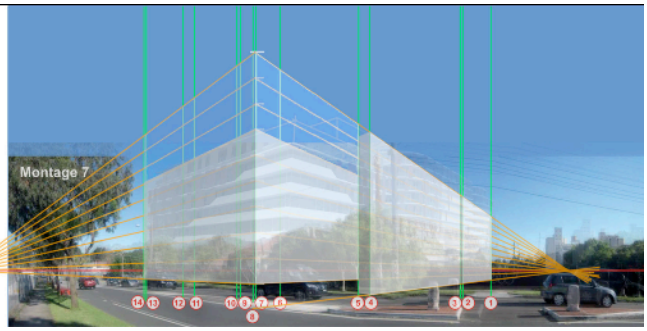
The No Lewisham Towers residents' action group claims the original images were so misleading that the corrected ones should go on public exhibition before the Planning Assessment Commission makes its determination next week.

SMH article re inaccurate visualisations



Key visual location points on site: Urbaine

Photomontage submitted by developer



Assessment of inaccuracy by Urbaine

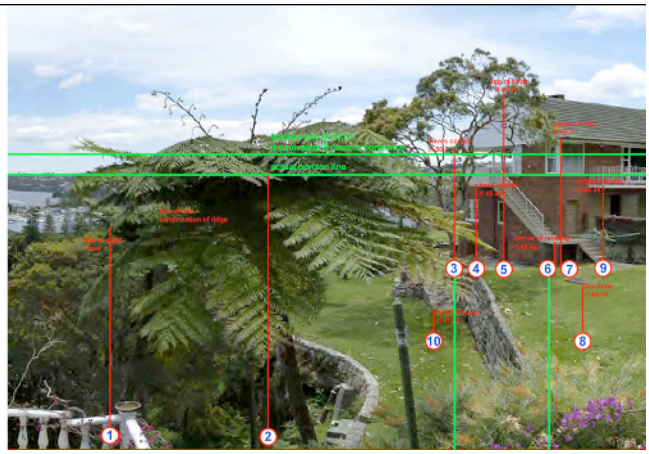
Urbaine has developed a number of methods for adding verification data to the 3d model of new proposals and hence to the final photomontages. These include the use of physical site poles, located at known positions and heights around a site, together with drones for accurate height and location verification 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.

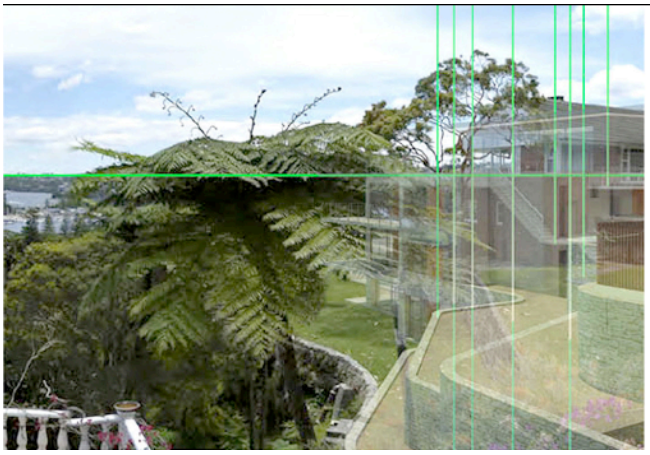
The following example clearly demonstrates this – a house montaged into a view, by others, using very few points of reference for verification. By analysing the existing photo alongside the survey, the existing site was able to be recreated with a series of reference elements built into the model. A 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

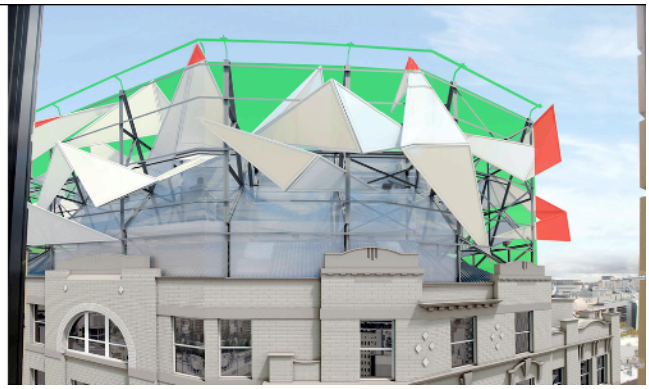
Final verified photomontage by Urbaine

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 new proposal for digital billboard

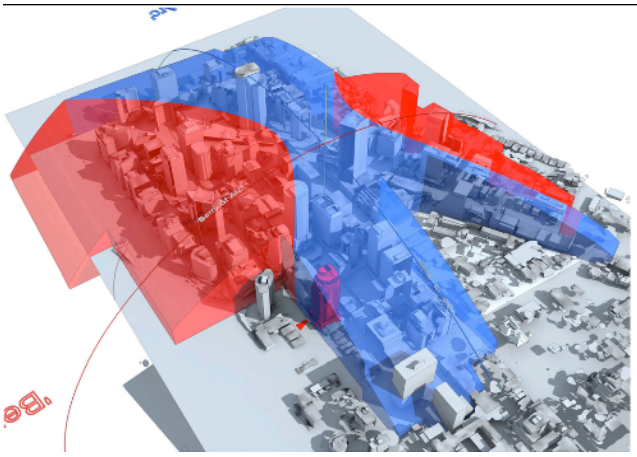
Existing situation – view from adjoining hotel

Photomontage of view from hotel

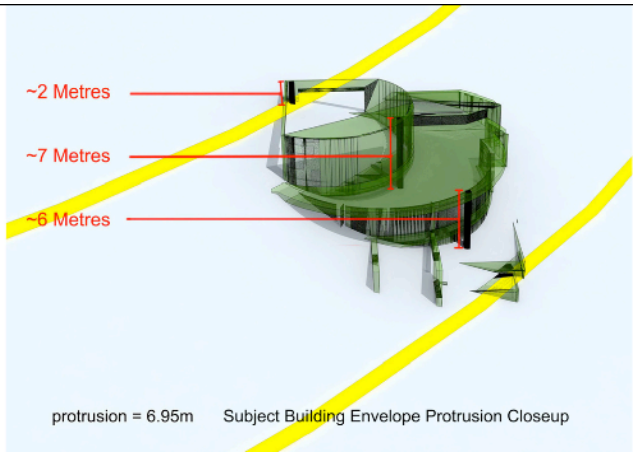


View loss – green = view gain / red = view loss

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:

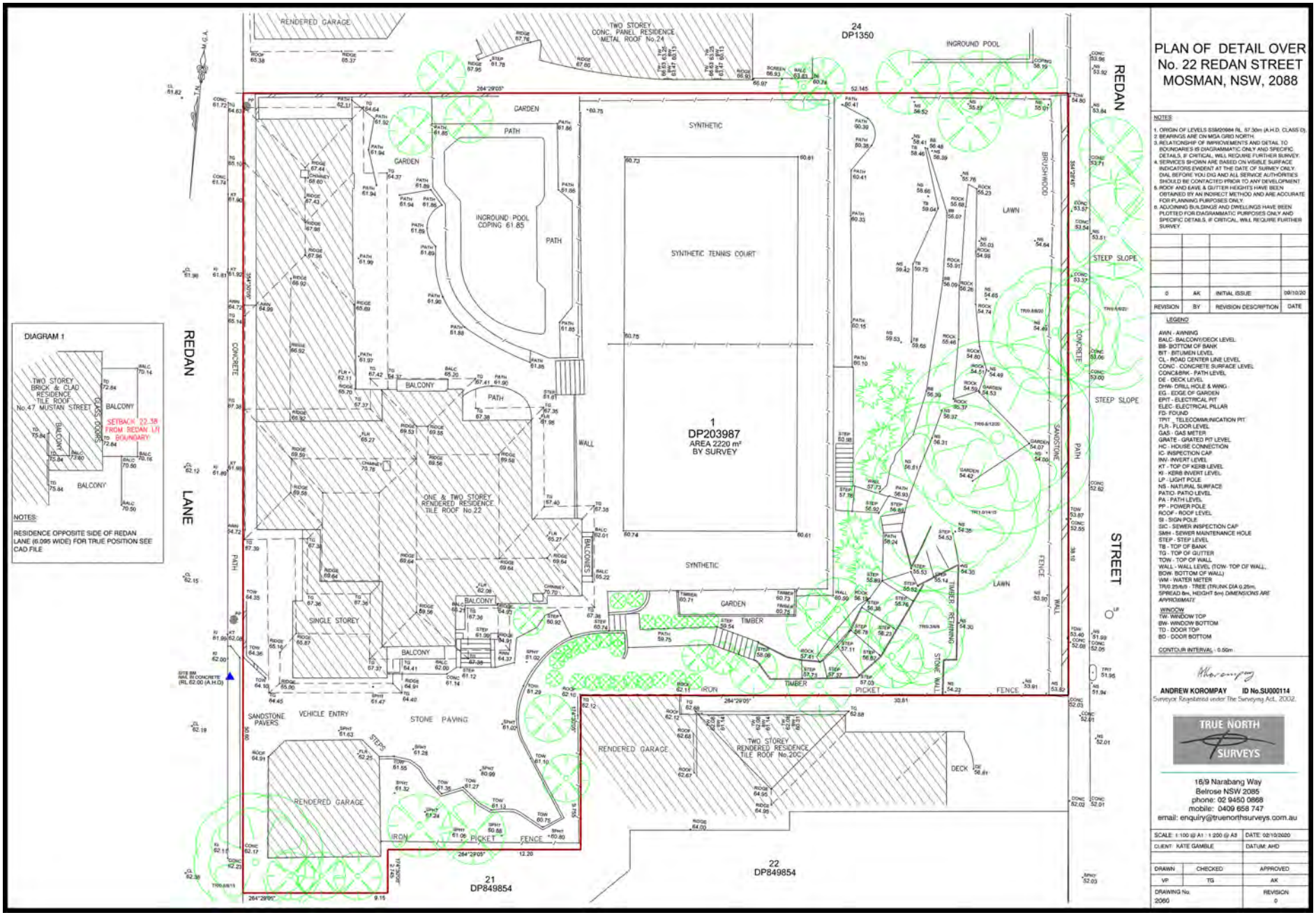
1. Height and plan location of camera to be verified and clearly shown on an aerial photo, along with the sun position at time of photography.
2. A minimum of 4 surveyed points identified in plan, at ground level relating to elements on the photograph and hence to the location of the superimposed building.
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.

Verified photomontage for proposed apartments in Milsons Point by Urbaine.

APPENDIX D

No.22, Redan Street, Site Survey
By True North Surveys, 16/9, Narabang Way, Belrose, NSW 2085


PLAN OF DETAIL OVER
No. 22 REDAN STREET
MOSMAN, NSW, 2088
REDAN LANE
REDAN STREET
RENDERED GARAGE
TWO STOREY CONC. PANEL RESIDENCE METAL ROOF No.24
24 DP1350
INGROUND POOL
GARDEN
PATH
SYNTHETIC
INGROUND POOL COPING 61.85
SYNTHETIC TENNIS COURT
1 DP203987 AREA 2220 m² BY SURVEY
ONE & TWO STOREY RENDERED RESIDENCE TILE ROOF No.22
BALCONY
WALL
BALCONIES
SINGLE STOREY
TIMBER
TIMBER RETAINING WALL
STONE WALL
LAWN
BRUSHWOOD
STEEP SLOPE
CONCRETE
SANDSTONE PATH
FENCE
IRON PICKET FENCE
SANDSTONE PAVERS
VEHICLE ENTRY
STONE PAVING
STEPS
RENDERED GARAGE
TWO STOREY RENDERED RESIDENCE TILE ROOF No.20
DECK
21 DP849854
22 DP849854
264°29'05"
30.61
12.20
9.15
DIAGRAM 1
TWO STOREY BRICK & CLAD RESIDENCE TILE ROOF No.47 MUSTAN STREET
SETBACK 22.38 FROM REDAN LN TO BOUNDARY
RESIDENCE OPPOSITE SIDE OF REDAN LANE (6.095 WIDE) FOR TRUE POSITION SEE CAD FILE
NOTES:
1. ORIGIN OF LEVELS SSM20984 RL 57.30m (A.H.D. CLASS D).
2. BEARINGS ARE ON MGA GRID NORTH.
3. RELATIONSHIP OF IMPROVEMENTS AND DETAIL TO BOUNDARIES IS DIAGRAMMATIC ONLY AND SPECIFIC DETAILS, IF CRITICAL, WILL REQUIRE FURTHER SURVEY.
4. SERVICES SHOWN ARE BASED ON VISIBLE SURFACE INDICATORS EVIDENT AT THE DATE OF SURVEY ONLY. DIAL BEFORE YOU DIG AND ALL SERVICE AUTHORITIES SHOULD BE CONTACTED PRIOR TO ANY DEVELOPMENT
5. ROOF AND EAVE & GUTTER HEIGHTS HAVE BEEN OBTAINED BY AN INDIRECT METHOD AND ARE ACCURATE FOR PLANNING PURPOSES ONLY.
6. ADJOINING BUILDINGS AND DWELLINGS HAVE BEEN PLOTTED FOR DIAGRAMMATIC PURPOSES ONLY AND SPECIFIC DETAILS, IF CRITICAL, WILL REQUIRE FURTHER SURVEY
0 AK INITIAL ISSUE 09/10/20
REVISION BY REVISION DESCRIPTION DATE
LEGEND
AWN - AWNING
BALC - BALCONY/DECK LEVEL
BB - BOTTOM OF BANK
BIT - BITUMEN LEVEL
CL - ROAD CENTER LINE LEVEL
CONC - CONCRETE SURFACE LEVEL
CONC&PAVE - PATH LEVEL
DE - DECK LEVEL
DHW - DRILL HOLE & WING
EG - EDGE OF GARDEN
EPIT - ELECTRICAL PIT
ELEC - ELECTRICAL PILLAR
FD - FOUND
TPIT - TELECOMMUNICATION PIT
FLR - FLOOR LEVEL
GAS - GAS METER
GRATE - GRATED PIT LEVEL
HC - HOUSE CONNECTION
IC - INSPECTION CAP
INV - INVERT LEVEL
KT - TOP OF KERB LEVEL
KI - KERB INVERT LEVEL
LP - LIGHT POLE
NS - NATURAL SURFACE
PATIO - PATIO LEVEL
PA - PATH LEVEL
PP - POWER POLE
ROOF - ROOF LEVEL
SI - SIGN POLE
SIC - SEWER INSPECTION CAP
SMH - SEWER MAINTENANCE HOLE
STEP - STEP LEVEL
TB - TOP OF BANK
TG - TOP OF GUTTER
TOW - TOP OF WALL
WALL - WALL LEVEL (TOW- TOP OF WALL, BOW- BOTTOM OF WALL)
WM - WATER METER
TR/0.25/6/5 - TREE (TRUNK DIA 0.25m, SPREAD 6m, HEIGHT 5m) DIMENSIONS ARE APPROXIMATE
WINDOW
TW- WINDOW TOP
BW- WINDOW BOTTOM
TD - DOOR TOP
BD - DOOR BOTTOM
CONTOUR INTERVAL - 0.50m
ANDREW KOROMPAY ID No.SU000114
Surveyor Registered under The Surveying Act, 2002.
TRUE NORTH SURVEYS
16/9 Narabang Way
Belrose NSW 2085
phone: 02 9450 0868
mobile: 0409 658 747
email: enquiry@truenorthsurveys.com.au
SCALE: 1:100 @ A1 : 1:200 @ A3 DATE: 02/10/2020
CLIENT: KATE GAMBLE DATUM: AHD
DRAWN CHECKED APPROVED
VP TG AK
DRAWING No. 2060 REVISION 0