

## **285, Finns Road, Menangle:**

Photomontages prepared for Visual Impact Assessment Report.  
Methodology and Source Information from Urbaine Architectural

August 2021.

## **PART 1:**

Photmontaged Views from original Visual Impact Assessment





Aerial site photo - indicating location of camera viewpoints





viewpoint no.5: existing photo



viewpoint no.5: 3d cad model overlaid using surveyed reference points. The CAD model has been placed in its actual location in 3D space, which is actually beyond the visible treeline on the site boundary. The terrain indicated is located behind the small ridgeline in the foreground, as the land falls away. This is shown in the subsequent masked images. The purpose of this image is to demonstrate the elements within the foreground landscape that have been used for alignment.





viewpoint no.5: photomontage of proposed development - no additional landscaping



viewpoint no.5: extent of visual impact shown in red overlay





viewpoint no.5: photomontage of proposed development - including additional landscaping





viewpoint no.10: existing photo



viewpoint no.10: 3d cad model overlaid using surveyed reference points





viewpoint no.10: photomontage of proposed development - no additional landscaping



viewpoint no.10: extent of visual impact shown in red overlay





viewpoint no.5: photomontage of proposed development - including additional landscaping





viewpoint no.20: existing photo



viewpoint no.20: 3d cad model overlaid using surveyed reference points





viewpoint no.20: photomontage of proposed development - no additional landscaping



viewpoint no.20: extent of visual impact shown in red overlay





viewpoint no.20: photomontage of proposed development - including additional landscaping





viewpoint no.20 close: existing photo



viewpoint no.20 close: 3d cad model overlaid using surveyed reference points





viewpoint no.20 close: photomontage of proposed development - no additional landscaping



viewpoint no.20 close: extent of visual impact shown in red overlay





viewpoint no.20 close: photomontage of proposed development - including additional landscaping



## **PART 2:**

Photomontaged Views from original Visual Impact Assessment  
Single Frame Images





viewpoint no.5: photomontage of proposed development - including additional landscaping



viewpoint no.5: photomontage of proposed development - including additional landscaping - using single frame photographic plate





viewpoint no.10: photomontage of propsoed development - including additonal landscaping



viewpoint no.10: photomontage of propsoed development - including additonal landscaping - using single frame photographic plate





viewpoint no.20: photomontage of proposed development - including additional landscaping



viewpoint no.20: photomontage of proposed development - including additional landscaping - using single frame photographic plate



## **PART 3:**

Supplementary Description of methodology in relation to survey information and  
Land and Environment Court Requirements.



# urbaine architectural

## **Visual Impact Assessment Report – Supplementary Statement: No.285, Finns Road, Menangle. August, 2021.**

Wednesday, 11<sup>th</sup> August, 2021.

I, John Aspinall, am a Principal of Urbaine Architectural and prepared the photomontaged images, used in the Visual Impact Assessment Report submitted with the Development Application for Muscat Developments at 285, Finns Road, Menangle, NSW 2568.

I can confirm that, as per the LEC guidelines for the creation of photomontages, accurate 2d and 3d survey data was used to position the virtual cameras within the 3D CAD model and, subsequently, to prepare the photomontages used for the visual impact assessment:

- 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.

Our methods of establishing accurate placement of buildings into photomontaged views are regularly presented at the Land and Environment Court. In this instance, the survey supplied by Martens and Associates Pty Ltd was used to create a fully accurate 1:1 topographical CAD model of the existing land form and buildings. The new design terrain was also modelled from the Road and Drainage design drawings, from Martens and Associates, Dwg No. P1806774. This resulted in an accurate 3D CAD model of the existing terrain and buildings and also of the new proposal.

For the camera locations, this survey model was inserted into a wider 3D land model, scanned on-site by Urbaine, using a Mavic surveying drone, together with a Trimble X7 laser scanner, to capture a 3D point cloud of the land to the extents of the camera positions, with an accuracy of +/- 2.5mm across 80m, with scans taken at every 80m.



John Aspinall.

Principal, URBANE ARCHITECTURAL.



(A) EASEMENT FOR TRANSMISSION LINE 30.48 WIDE (VIDE F174253) (DP718840)





## **PART 4:**

Photomontage Methodology Statement



# urbaine architectural

Date: 21.1.2021

## **Visual Impact Assessment. 285, Finns Road, Menangle**

Reference: Montage Creation PDF (Appendix A).

The methods used specifically for the visual impact assessment at 285, Finns Road, Menangle follow the guidelines of the Land and Environment Court for the preparation of photomontages (Appendix B).

In addition to individual compliant camera frames, it is the common practice for Urbaine to submit verified panoramic photos to Court for review. These are created from a series of individual frames and the views of the computer model are similarly placed to match the photos in a compliant manner. See Figures 1 and 2.

This allows a great sense of context to be appreciated by those reviewing the proposal, in addition to being able to view any individual section of the panorama and review this in line with LEC stipulations, as seen in Figure 5.

Urbaine is currently assisting the Land and Environment Court with updating the guidelines for the preparation of photomontages, since the current instructions are somewhat limited in their scope and requirements.

A Canon EOS Full Frame Digital Camera, with fixed focal length of 35mm lens was used to take all the viewpoint photos, at heights of 1600mm, to represent eye level.

If any further explanation is required, the author can be contacted on – 0411 239 796.

Regards,  
John Aspinall.

A handwritten signature in black ink, appearing to read 'J. Aspinall', with a stylized, cursive script.

Principal, Urbaine Architectural.



## **APPENDIX A:**

Method of Photmontage Creation





① individual single frame photos - LEC compliant

② rendered views of existing and proposed buildings to match the same angle as individual photos



③ individual frames conjoined to form a non-distorted, true wide angle panorama.



④ model overlaid onto panoramic views.



conjoining with 2/3 overlap to ensure no distortion

⑤ individual frames can be cropped from the full panorama for LEC compliant individual images





## **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.



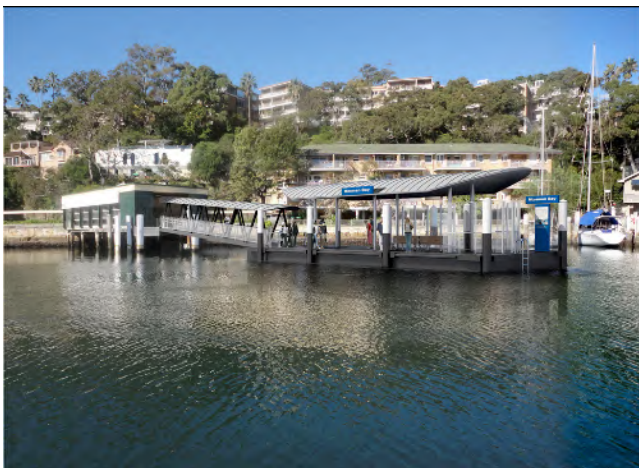


**Photomontaged views of new apartment building at Pyrmont: Urbaine**

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



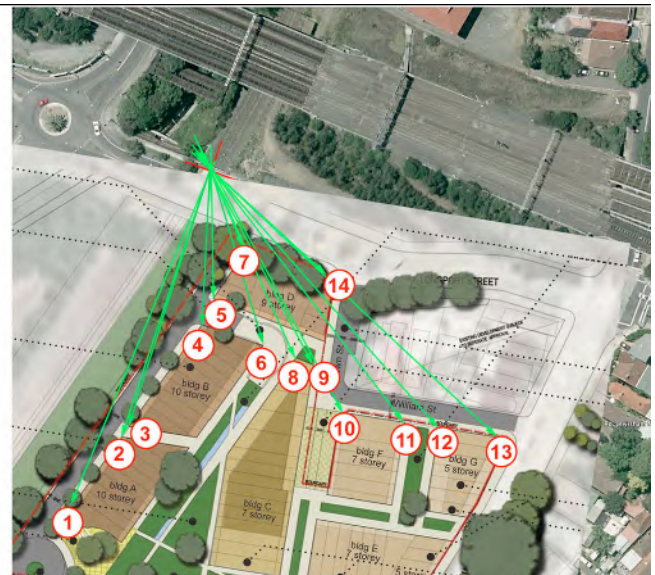
training, prior to the introduction of CAD and 3d modelling, a good understanding of the principles of perspective, light, shadow and building articulation, were taught throughout the training of architects.

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%.



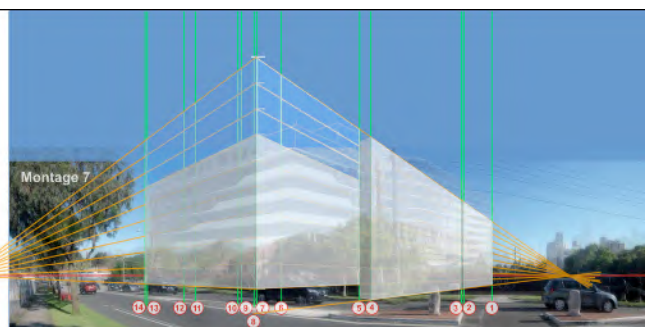
SMH article re inaccurate visualisations



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



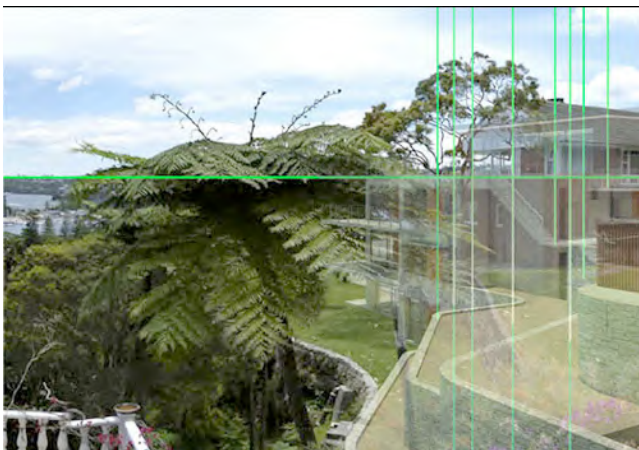
rendered version of all the elements was then placed over the photo and the final model applied to this. As can be seen, the original montage and the final verified version are dramatically different and, in this case, to the disadvantage of the complainant.



**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.



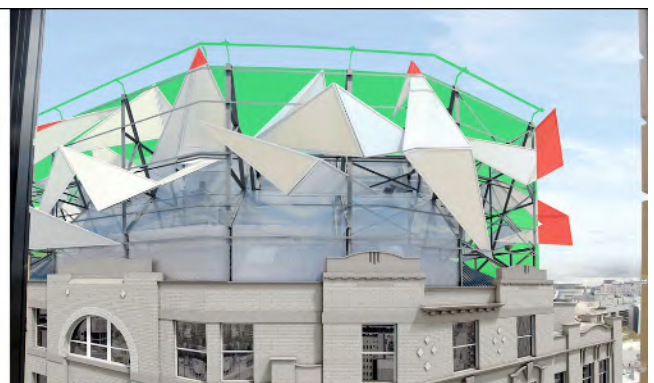
**Photomontage of new proposal for digital billboard**



**Existing situation – view from adjoining hotel**



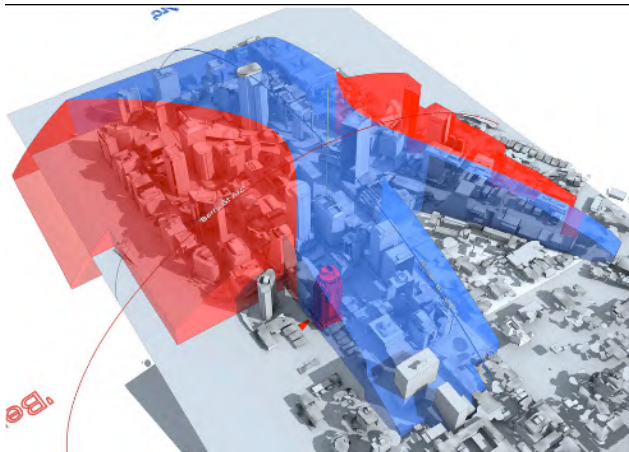
**Photomontage of view from hotel**



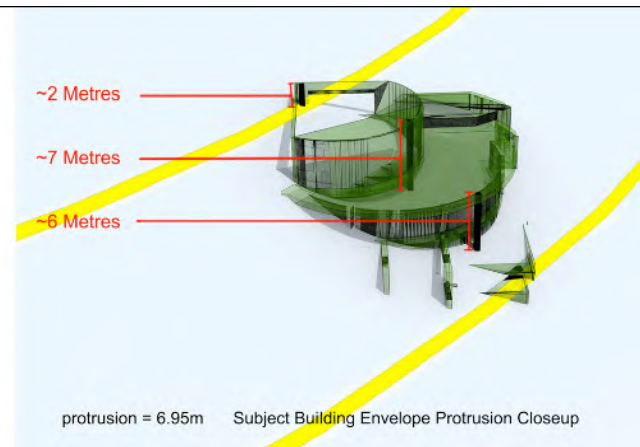
**View loss – green = view gain / red = view loss**



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 placed 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.**