

6 Conclusion

The topography in the sub-regional setting, where most sensitive viewpoints are located, and the regional setting of the Project is generally flat to slightly undulating and provides a high degree of absorptive capability once combined with the approximately 10 to 15 m high vegetation scattered throughout the landscape as well as the presence of built form.

The landscape character of the setting east of Ropes Creek is heavily modified and is defined by a cleared landscape and large form industrial buildings. Additionally, four high voltage transmission lines and the six lane M4 Western Motorway traverse the setting. The presence of such elements creates an already modified landscape character which is consistent with the form of proposed development.

West of the Project, the urban character is normal density residential and most views to the industrial landscape from Colyton, Minchinbury and Erskine Park are screened by vegetation and residential built form.

The relatively flat topography of the broader setting reduces opportunities for overlooking from surrounding viewpoints. Due to the presence of vegetation throughout residential areas and along Ropes Creek, as well as high density residential development, the Project, which is typically beyond 1 km of any sensitive viewpoint, will not be highly visible.

From most locations, the lower parts of the Project will be totally obscured from view. Where views are possible, these will generally be of the upper parts of the buildings and the slender vent stack protruding above the tree canopy or building line. The resulting visual impact will be negligible for most locations and generally low to moderate where views are possible from sensitive viewpoints.

Viewpoints 2, 4, 5 and 9 have a low to non-apparent visual impact due to the screening effect of foreground built form and vegetation. Any viewpoints further away from the Project are likely to have a similar level of impact due to the same screening elements being present within the landscape and the topographic form which, as demonstrated in the TZVI, indicates that there are a number of areas where the topography alone blocks views to the Project.

Views from the carriageways of the M4 Western Motorway north west of the Project are visually screened from views of the Project by a combination of vegetation and rising topography. A berm approximately 15 m in height, which incorporates the existing landfill operations, is located along the edge of the Project boundary. The simulation in VP1, Roper Road Overpass, indicates that even from an elevated location, views are significantly screened. Therefore, from less elevated locations there will be no, if any, views.

The TZVI analysis indicates that views of the Project from along the Rooty Hill Visual Corridor north east of the Project will generally not be possible as topography screens views. Taking into account the screening effects of vegetation and built form, as indicated in the simulations for VP4 and 5, views to the Project will generally not be possible.

With regards to views from the Rooty Hill within the sub-regional setting, the Project will be viewed as a distant element in the context of adjacent large scale, industrial built form and it will be visually compatible within this context. The visual impact of the Project will therefore be low.

From the slightly elevated location of the M4 Western Motorway / M7 Westlink Tollway Interchange, within the sub-regional setting, foreground views will be primarily of large scale industrial built form. The simulation for VP7 – Old Wallgrove Road, is indicative of the context of the development with adjacent existing large scale built form. The resulting visual impact of the Project will be low.

The highest sensitivity viewpoints with higher visual impacts are generally located within the near sub regional setting. The highest impact locations are:

- M4 Western Motorway – for a short section within close proximity to the Project (local setting). However, given the modification to the landscape setting created by the M4 itself, and the heavily modified landscapes that it traverses, impacts to views from the M4 are not considered to be significant;

- Shared Path / Recreation Areas- Peppertree Park and Ropes Creek path; and
- Residences – Erskine Park, Colyton and Minchinbury (sub regional setting);

Where open views are afforded to the project, they are from low sensitivity industrial areas in the vicinity of Wallgrove Road to the south east.

7 References

Brush, R.O. and Shafer, E.L. (1975) Application of a Landscape-Preference Model to Land Management. In Landscape Assessment: Values, Perceptions and Resources, (eds. Zube, E.H., Brush, R.O. and Fabos, J.G.), p168-181, Halstead Press.

Leonard, M., Hammond, R., (1984). Landscape Character Types of Victoria.

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United States Department of Agriculture Forest Service (1974) National Forest Landscape Management, Volume 2, Chapter 1, The Visual Management System. Agricultural Handbook No. 462.

United States Department of Agriculture Forest Service (1995) Landscape Aesthetics – A Handbook for Scenery Management. Agricultural Handbook No. 701.

Zube, E.H., Anderson, T.W. and MacConnell, W.P. (1976) Predicting Scenic Resource Values. In: Studies in Landscape Perception. Edited by Ervin H.

8 Glossary of Terms

Amelioration – The ability to reduce the visual impact of a development through siting, design, colour or screening.

Sensitivity – The degree to which various user groups will respond to change based on their expectation of a particular experience in a given setting, i.e., the expectation of a high level of visual amenity in a national park.

Modification Level – The degree to which a development contrasts or blends with its setting.

Visual Impact – The result of assessing the sensitivity level of a viewer and the modification level of a development.

Viewshed – The area visible from a particular viewing location.

Theoretical Zone of Visual Influence (TZVI) – The area over which an object can be seen within the landscape. Typically modelled using line of sight within a GIS application.

Visual Amenity – The qualities of a landscape setting that are appreciated and valued by a viewer.

Viewer Perception – The way in which people respond to what they are seeing as influenced by things other than purely visual, – i.e., noise and economic benefits.

Photosimulation - A digital photo illustration produced in 3D modelling software and Photoshop rendering software showing a proposed development in its contextual setting.

Appendix A

Visibility Rationale

VISIBILITY – RELATIONSHIP WITH VIEWSHEDS

The report defines a number of viewsheds based on distance from the development for the purposes of assessment. The methodology is based on the reduction of impact with an increase in distance between a given viewpoint and the development. These viewsheds or settings are:

- **Local Setting** – up to 1 km from the development.
- **Sub-regional Setting** – between 1 km and 5 km from the development.
- **Regional Setting** – beyond 5 km of the development.

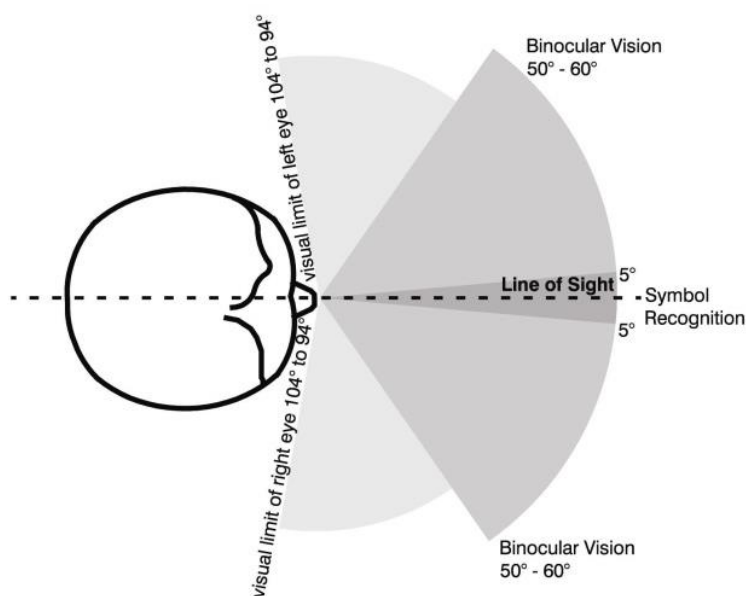
These distances have been established based on previous studies undertaken by URBIS. They are based on the reduction of visibility of objects in the distance as the field of view reduces.

HORIZONTAL LINE OF SIGHT

It is generally accepted that the central field of vision for the human eye covers a horizontal angle of approximately 50 degrees to 60 degrees. Given both eyes see simultaneously and that there is a degree of overlap, a central field of view results in a person looking straight ahead (**Figure A.1**).

HORIZONTAL LINE OF SIGHT

FIGURE A.1



In the production of visual simulations, a 50 mm lens on a 35 mm film format is most widely used as it captures a field of view of approximately 46 degrees, similar to that of the view from one eye. Two photos taken with a 50 mm lens produced as a panorama, with a degree of central overlap, capture the central field of view in a similar way to that of the human binocular view (binocular field).

Within the central field of vision, the viewed image is sharp, colours are separately defined and depth perception occurs.

VISUAL IMPACT/VISUAL PROMINENCE

The potential visual impact of a development will, to a large extent, depend on how much of the central field of vision that it occupies. In relation to the assessment of mining sites that often extend across the landscape, the calculation of horizontal view angle is not the only factor to be considered.

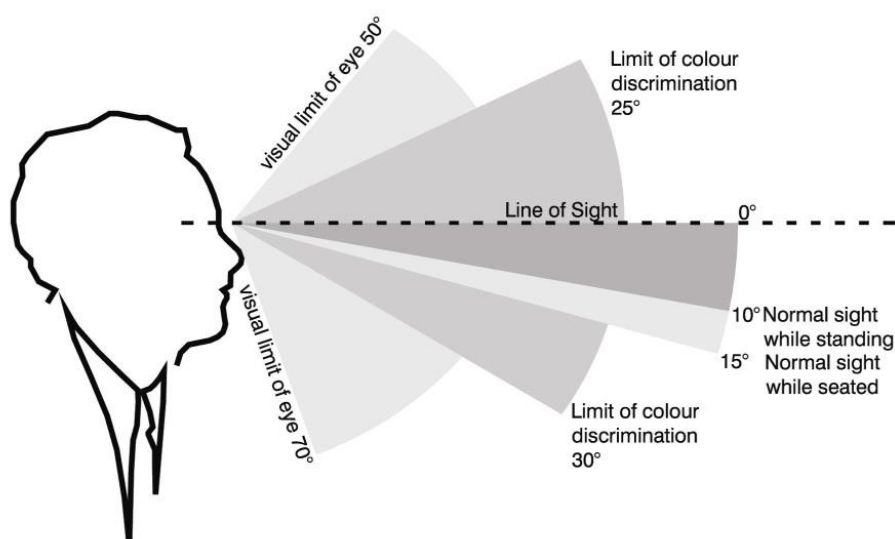
DEGREES OF FIELD OF VIEW OCCUPIED	POTENTIAL VISUAL PROMINENCE – HORIZONTAL FIELD OF VIEW
Less than 5°	Insignificant The development will not be highly visible in the view, unless it contrasts strongly with the background.
5° – 30°	Potentially Noticeable The development may be noticeable. The degree that it intrudes on the view will be dependent on how well it integrates with the landscape setting.
Greater than 30°	Potentially Dominant The development will be highly noticeable.

VERTICAL LINE OF SIGHT

As for the horizontal line of sight, there is also a vertical central field of view. If we assume that the horizon is 0° then the eye clearly defines colour, field of view and has image sharpness for an angle of approximately 25° upwards and 30° downwards. However, in reality, the typical line of sight for a standing person at ground level is approximately 10° below the horizon line (**Figure A.2**).

VERTICAL LINE OF SIGHT

FIGURE A.2



VISUAL IMPACT / VISUAL PROMINENCE

Objects that occupy a small proportion of the vertical field of view are visible but not dominant, particularly when they occur within landscapes that have been modified by human activity.

DEGREES OF FIELD OF VIEW OCCUPIED	POTENTIAL VISUAL PROMINENCE – VERTICAL FIELD OF VIEW
Less than 0.5°	Insignificant A small thin line in the landscape.
0.5° – 2.5°	Potentially Noticeable The development may be noticeable. The degree that it intrudes on the view will be dependent on how well it integrates with the landscape setting.
Greater than 2.5°	Potentially Dominant The development will be highly noticeable, although the degree of visual intrusion will depend on the landscape setting and the width / thickness of the object.

VISUAL PROMINENCE IN RELATION TO DISTANCE AND VIEWSHED SETTINGS

The following distances relating to visual prominence are based on the previous field of view exercises. The distances also relate to the distances for the setting types in the visual assessment methodology.

DEGREES OF FIELD OF VIEW OCCUPIED	POTENTIAL VISUAL PROMINENCE – HORIZONTAL FIELD OF VIEW
5000 metres	Insignificant Visually insignificant.
1000 – 5000 metres	Potentially Noticeable The development may be noticeable. The degree that it intrudes on the view will increase as distance reduces.
Less than 1000 metres	Potentially Dominant The development will be highly noticeable.

Appendix B

Guidance Notes for the Reduction of Obtrusive Light

GUIDELINES PREPARED BY THE INSTITUTION OF LIGHTING
ENGINEERS, UK.



The Institution of Lighting Engineers

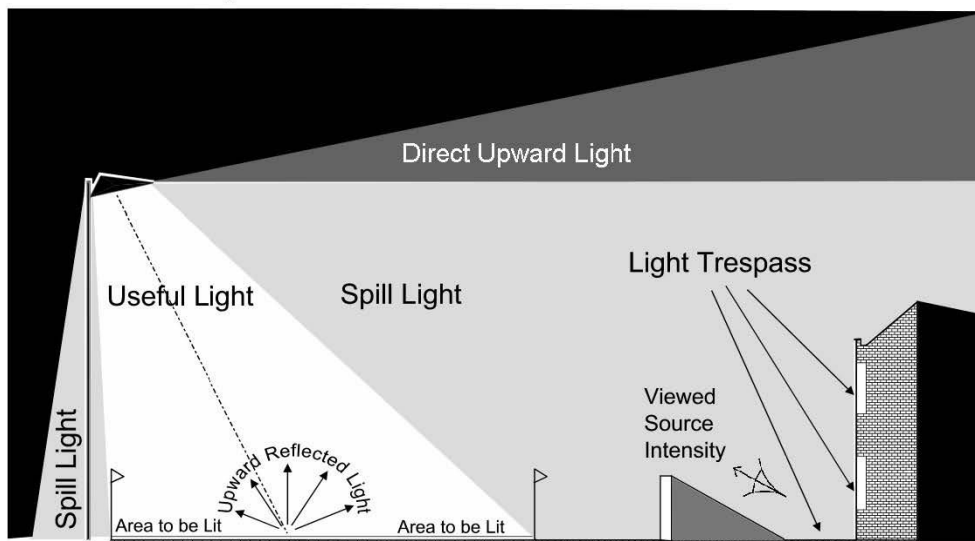
E-mail ile@ile.org.uk Website www.ile.org.uk

GUIDANCE NOTES FOR THE REDUCTION OF OBTRUSIVE LIGHT

ALL LIVING THINGS adjust their behaviour according to natural light. Man's invention of artificial light has done much to enhance our night-time environment but, if not properly controlled, obtrusive light (commonly referred to as light pollution) can present serious physiological and ecological problems.

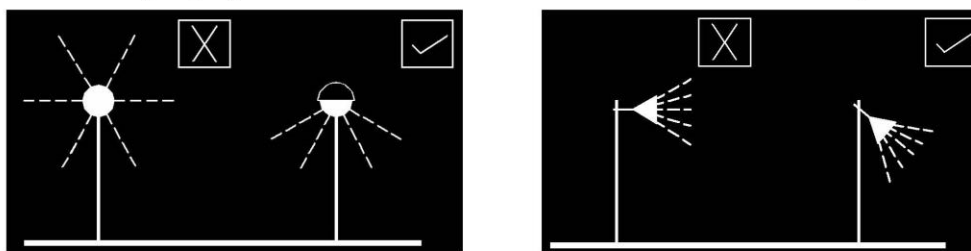
Obtrusive Light, whether it keeps you awake through a bedroom window or impedes your view of the night sky, is a form of pollution and can be substantially reduced without detriment to the lighting task.

Sky glow, the brightening of the night sky above our towns, cities and countryside, Glare the uncomfortable brightness of a light source when viewed against a dark background, and Light Trespass, the spilling of light beyond the boundary of the property or area being lit, are all forms of obtrusive light which may cause nuisance to others, waste money and electricity and result in the unnecessary emissions of greenhouse gases. Think before you light. Is it necessary? What effect will it have on others? Will it cause a nuisance? How can I minimise the problem?



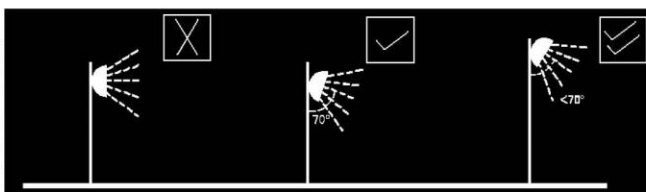
Do not "over" light. This is a major cause of obtrusive light and is a waste of energy. There are published standards for most lighting tasks, adherence to which will help minimise upward reflected light. Organisations from which full details of these standards can be obtained are given on the last page of this leaflet.

Dim or switch off lights when the task is finished. Generally a lower level of lighting will suffice to enhance the night time scene than that required for safety and security.



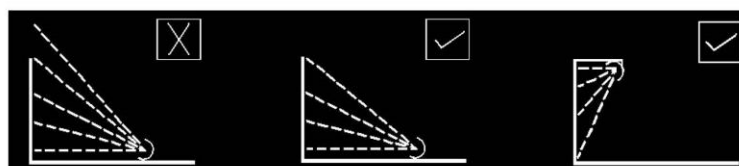
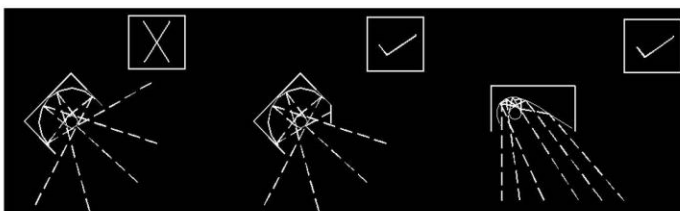
Use specifically designed lighting equipment that minimises the upward spread of light near to and above the horizontal. Care should be taken when selecting luminaires to ensure that appropriate units are chosen and that their location will reduce spill light and glare to a minimum. Remember that lamp light output in LUMENS is not the same as lamp wattage and that it is the former that is important in combating the problems of obtrusive light

Keep glare to a minimum by ensuring that the main beam angle of all lights directed towards any potential observer is not more than 70° . Higher mounting heights allow lower main beam angles, which can assist in reducing glare. In areas with low ambient lighting levels, glare can be very obtrusive and extra care should be taken when positioning and aiming lighting equipment. With regard to domestic security lighting the ILE produces an information leaflet GN02 that is freely available from its web site.



The UK Government will be providing an annex to PPS23 Planning and Pollution Control, specifically on obtrusive light. However many Local Planning Authorities (LPA's) have already produced, or are producing, policies that within the new planning system will become part of the local development framework. For new developments there is an opportunity for LPA's to impose planning conditions related to external lighting, including curfew hours.

For sports lighting installations (see also design standards listed on Page 4) the use of luminaires with double-asymmetric beams designed so that the front glazing is kept at or near parallel to the surface being lit should, if correctly aimed, ensure minimum obtrusive light. In most cases it will also be beneficial to use as high a mounting height as possible, giving due regard to the daytime appearance of the installation. The requirements to control glare for the safety of road users are given in Table 2.



When lighting vertical structures such as advertising signs direct light downwards, wherever possible. If there is no alternative to up-lighting, as with much decorative

lighting of buildings, then the use of shields, baffles and louvres will help reduce spill light around and over the structure to a minimum.

For road and amenity lighting installations, (see also design standards listed on Page 4) light near to and above the horizontal should normally be minimised to reduce glare and sky glow (Note ULRs in Table 1). In sensitive rural areas the use of full horizontal cut off luminaires installed at 0° uplift will, in addition to reducing sky glow, also help to minimise visual intrusion within the open landscape. However in many urban locations, luminaires fitted with a more decorative bowl and good optical control of light should be acceptable and may be more appropriate.

ENVIRONMENTAL ZONES:

It is recommended that Local Planning Authorities specify the following environmental zones for exterior lighting control within their Development Plans.

Category	Examples
E1: Intrinsically dark landscapes	National Parks, Areas of Outstanding Natural Beauty, etc
E2: Low district brightness areas	Rural, small village, or relatively dark urban locations
E3: Medium district brightness areas	Small town centres or urban locations
E4: High district brightness areas	Town/city centres with high levels of night-time activity

Where an area to be lit lies on the boundary of two zones the obtrusive light limitation values used should be those applicable to the most rigorous zone.

DESIGN GUIDANCE

The following limitations may be supplemented or replaced by a LPA's own planning guidance for exterior lighting installations. As lighting design is not as simple as it may seem, you are advised to consult and/or work with a professional lighting designer before installing any exterior lighting.

Table 1 – Obtrusive Light Limitations for Exterior Lighting Installations						
Environmental Zone	Sky Glow ULR [Max %] ⁽¹⁾	Light Trespass (into Windows) Ev [Lux] ⁽²⁾		Source Intensity I [kcd] ⁽³⁾		Building Luminance Pre-curfew ⁽⁴⁾
		Pre- curfew	Post- curfew	Pre- curfew	Post- curfew	Average, L [cd/m ²]
E1	0	2	1*	2.5	0	0
E2	2.5	5	1	7.5	0.5	5
E3	5.0	10	2	10	1.0	10
E4	15.0	25	5	25	2.5	25

ULR = Upward Light Ratio of the Installation is the maximum permitted percentage of luminaire flux for the total installation that goes directly into the sky.

Ev = Vertical Illuminance in Lux and is measured flat on the glazing at the centre of the window

I = Light Intensity in Cd

L = Luminance in Cd/m²

Curfew = The time after which stricter requirements (for the control of obtrusive light) will apply; often a condition of use of lighting applied by the local planning authority. If not otherwise stated – 23.00hrs is suggested.

* = From Public road lighting installations only

- (1) Upward Light Ratio – Some lighting schemes will require the deliberate and careful use of upward light – e.g. ground recessed luminaires, ground mounted floodlights, festive lighting – to which these limits cannot apply. However, care should always be taken to minimise any upward waste light by the proper application of suitably directional luminaires and light controlling attachments.
- (2) Light Trespass (into Windows) – These values are suggested maxima and need to take account of existing light trespass at the point of measurement. In the case of road lighting on public highways where building facades are adjacent to the lit highway, these levels may not be obtainable. In such cases where a specific complaint has been received, the Highway Authority should endeavour to reduce the light trespass into the window down to the after curfew value by fitting a shield, replacing the luminaire, or by varying the lighting level.
- (3) Source Intensity – This applies to each source in the potentially obtrusive direction, outside of the area being lit. The figures given are for general guidance only and for some sports lighting applications with limited mounting heights, may be difficult to achieve.
- (4) Building Luminance – This should be limited to avoid over lighting, and related to the general district brightness. In this reference building luminance is applicable to buildings directly illuminated as a night-time feature as against the illumination of a building caused by spill light from adjacent luminaires or luminaires fixed to the building but used to light an adjacent area.

Table 2 – Maximum Values of Threshold Increment from Non-Road Lighting Installations				
Light Technical Parameter TI	Road Classification ⁽⁵⁾			
	No road lighting	ME5	ME4/ ME3	ME2 / ME1
	15% based on adaptation luminance of 0.1cd/m ²	15% based on adaptation luminance of 1cd/m ²	15% based on adaptation luminance of 2 cd/m ²	15% based on adaptation luminance of 5 cd/m ²

TI = Threshold Increment is a measure of the loss of visibility caused by the disability glare from the obtrusive light installation

- (5) Road Classifications as given in BS EN 13201 – 2: 2003 Road lighting Performance requirements
Limits apply where users of transport systems are subject to a reduction in the ability to see essential information. Values given are for relevant positions and for viewing directions in path of travel. See CIE Publication 150:2003, Section 5.4 for methods of determination. For a more detailed description and methods for calculating and measuring the above parameters see CIE Publication 150:2003.

RELEVANT PUBLICATIONS AND STANDARDS:

British Standards: www.bsi.org.uk	BS 5489-1: 2003 Code of practice for the design of road lighting – Part 1: Lighting of roads and public amenity areas
	BS EN 13201-2:2003 Road lighting – Part 2: Performance requirements
	BS EN 13201-3:2003 Road lighting – Part 3: Calculation of performance
	BS EN 13201-4:2003 Road lighting – Part 4: Methods of measuring lighting performance.
	BS EN 12193: 2003 Light and lighting – Sports lighting
Countryside Commission/DOE www.odpm.gov.uk	Lighting in the Countryside: Towards good practice (1997) <i>(Out of Print)</i>
CIBSE/SLL Publications: www.cibse.org	CoL Code for Lighting (2002)
	LG1 The Industrial Environment (1989)
	LG4 Sports (1990+Addendum 2000)
	LG6 The Exterior Environment (1992)
	FF7 Environmental Considerations for Exterior Lighting (2003)
CIE Publications: www.cie.co.at	01 Guide lines for minimizing Urban Sky Glow near Astronomical Observatories (1980)
	83 Guide for the lighting of sports events for colour television and film systems (1989)
	92 Guide for floodlighting (1992)
	115 Recommendations for the lighting of roads for motor and pedestrian traffic (1995)
	126 Guidelines for minimizing Sky glow (1997)
	129 Guide for lighting exterior work areas (1998)
	136 Guide to the lighting of urban areas (2000)
150 Guide on the limitations of the effect of obtrusive light from outdoor lighting installations (2003)	154 The Maintenance of outdoor lighting systems (2003)
Department of Transport www.defra.gov.uk	Road Lighting and the Environment (1993) (Out of Print)
ILE Publications: www.ile.org	TR 5 Brightness of Illuminated Advertisements (2001)
	TR24 A Practical Guide to the Development of a Public Lighting Policy for Local Authorities (1999)
	GN02 Domestic Security Lighting, Friend or Foe
ILE/CIBSE Joint Publications	Lighting the Environment – A guide to good urban lighting (1995)
ILE/CSS Joint Publications	Seasonal Decorations – Code of Practice (2005)
Campaign for Dark Skies (CfDS) www.dark-skies.org	

NB: These notes are intended as guidance only and the application of the values given in Tables 1 & 2 should be given due consideration along with all other factors in the lighting design. Lighting is a complex subject with both objective and subjective criteria to be considered. The notes are therefore no substitute for professionally assessed and designed lighting, where the various and maybe conflicting visual requirements need to be balanced.

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VISUAL AMENITY STATEMENT OF EVIDENCE REPORT

**For: Energy from Waste Facility
Honeycomb Drive, Eastern Creek - NSW 2766**

**Prepared by Christopher Goss (B.Env.Des, B.Arch)
26 September 2017**

To accompany documentation:
"V17074 DRAFT Visual_Amenity_Evidence_a"
(Dated Tuesday, 26 September 2017)

**FOR: DIAL A DUMP INDUSTRIES
INSTRUCTIONS RECEIVED FROM: URBIS**

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1.0 VCAT PRACTICE NOTE 2 - EXPERIENCE AND PRACTICAL EXPERIENCE

1.1 Name and Professional Address of Expert

- 1.1.1 Christopher David Goss
- 1.1.2 Director of Orbit Solutions Pty Ltd
- 1.1.3 186-202 York Street, South Melbourne VIC 3205

1.2 Qualifications

- 1.2.1 Registered Architect
- 1.2.2 Bachelor of Architecture
- 1.2.3 Bachelor of Environmental Design

1.3 Relevant Membership

- 1.3.1 Victorian Planning Environmental Law Association (Fellow)
- 1.3.2 Australian Institute of Architects (A+ Member)

1.4 Experience to Prepare this Report

- 1.4.1 I have presented the concepts of Building Simulation at the Australian Institute of Architects, the Professional Design & Drafting Group, VPELA, UDIA, Melbourne University, Deakin University, Victoria University of Technology, University of Tasmania, the International Alliance for Interoperability and VCAT Professional Development Sessions.
- 1.4.2 I have provided evidence to VCAT and Planning Panels Victoria since 2001 in respect of visual amenity considerations. Visual Amenity Evidence has also been presented in aligned planning jurisdictions in QLD, NSW, ACT, TAS, WA.
- 1.4.3 My level of expertise developed over this period has resulted in ongoing development of the techniques and technology used to produce this type of evidence. Orbit Solutions are widely regarded as a leader in this field of expertise.
- 1.4.4 As a registered and practicing Architect, I am generally familiar with planning schemes and have developed expertise in the preparation of planning proposals for assessment by responsible authorities.
- 1.4.5 My Curriculum Vitae is attached in Appendix 3.

2.0 VISUAL AMENITY EVIDENCE

2.0.1 This Statement of Evidence accompanies the images provided to demonstrate potential visual amenity outcomes of the proposal when measured against images of its existing context.

2.1 Evidence Register

Figure No.	Drawing Title	Equivalent SLR Lens	Date
i	COVER PAGE	n/a	
ii	Camera and Survey Landmark Location	n/a	26/09/2017
1.0	View 1 Original Photograph @ 50mm	50mm	26/09/2017
1.1	View 1 Proposed Built Form	50mm	26/09/2017
1.2	View 1 Proposed Built Form and Landscape	50mm	26/09/2017
1.3	View 1 Proposed built form with Building Outline	50mm	26/09/2017
2.0	View 2 Original Photograph @ 50mm	50mm	26/09/2017
2.1	View 2 Proposed built form with Building Outline	50mm	26/09/2017
3.0	View 3 Original Photograph @ 50mm	50mm	26/09/2017
3.1	View 3 Proposed Built Form	50mm	26/09/2017
3.2	View 3 Proposed Built Form and Landscape	50mm	26/09/2017
3.3	View 3 Proposed built form with Building Outline	50mm	26/09/2017
4.0	View 4 Original Photograph @ 50mm	50mm	26/09/2017
4.1	View 4 Proposed Built Form	50mm	26/09/2017
4.2	View 4 Proposed Built Form and Landscape	50mm	26/09/2017
4.3	View 4 Proposed built form with Building Outline	50mm	26/09/2017
5.0	View 5 Original Photograph @ 50mm	50mm	26/09/2017
5.1	View 5 Proposed built form with Building Outline	50mm	26/09/2017
6.0	View 6 Original Photograph @ 50mm	50mm	26/09/2017
6.1	View 6 Proposed Built Form	50mm	26/09/2017
6.2	View 6 Proposed Built Form and Landscape	50mm	26/09/2017
6.3	View 6 Proposed built form with Building Outline	50mm	26/09/2017
7.0	View 7 Original Photograph @ 50mm	50mm	26/09/2017
7.1	View 7 Proposed Built Form	50mm	26/09/2017
7.2	View 7 Proposed Built Form and Landscape	50mm	26/09/2017
7.3	View 7 Proposed built form with Building Outline	50mm	26/09/2017
8.0	View 8 Original Photograph @ 50mm	50mm	26/09/2017
8.1	View 8 Proposed Built Form	50mm	26/09/2017
8.2	View 8 Proposed Built Form and Landscape	50mm	26/09/2017
8.3	View 8 Proposed built form with Building Outline	50mm	26/09/2017
9.0	View 9 Original Photograph @ 50mm	50mm	26/09/2017
9.1	View 9 Proposed built form	50mm	26/09/2017
9.2	View 9 Proposed Built Form and Landscape	50mm	26/09/2017
9.3	View 9 Proposed built form with Building Outline	50mm	26/09/2017

2.2 Orbit Solutions Team

2.2.1 Director and Expert Witness

Christopher Goss (B. Env. Des., B. Arch) - Architect ARBV, VPELA (Fellow)

2.2.2 Professional 3D Architectural Visualization Artist(s)

George Rolfe (Professional 3D Visualisation Artist)

Juliana Lourenco (Graphic Designer – B. Digital Media)

3.0 INITIAL INFORMATION

3.0.1 This Statement of Evidence accompanies the Visual Amenity Evidence provided to demonstrate potential impacts of the proposal.

3.0.2 Initial instructions were provided by Urbis Pty Ltd.

3.0.3 Onsite assessment of the viewing locations was undertaken by the author Chris Goss.

3.1 Client

Dial A Dump Industries

3.2 Landscape Architect

Site Image

3.3 Architect

Krikis Tayler Architects

3.4 Town Planning

Urbis

3.5 Architectural Information

3.5.1 Orbit Solutions referenced the following information provided by the architect;

Dwg No.	Rev	Drawing Title / File Name	Type	Date
--	-	170907 TNG MODEL STAGE 1 ONLY	Sketch Up	15.09.2017
AR-KTA 1001	6	Proposed Site Masterplan (Stage 1)	PDF	07.09.2017
AR-KTA 1002	4	Vehicle Movement & Traffic Signage	PDF	07.09.2017
AR-KTA 1011	4	Site Dimension Plan	PDF	07.09.2017
AR-KTA 1601	3	West Elevation (Stage 1)	PDF	07.09.2017
AR-KTA 1602	3	East Elevation (Stage 1)	PDF	07.09.2017
AR-KTA 1603	3	South Elevation (Stage 1)	PDF	07.09.2017
AR-KTA 1604	3	North Elevation (Stage 1)	PDF	07.09.2017
AR-KTA 1611	2	Long Section	PDF	07.09.2017

3.6 Landscape Information

3.6.1 Orbit Solutions referenced the following information provided by the landscape architect;

Dwg No.	Rev	Drawing Title / File Name	Type	Date
--	2	SS14-2961 TNG Power Plant -	PDF	15.09.2017
--	B	SS14-2961 TNG Power Plant_Landscape	PDF	15.09.2017

4.0 PROCESS FOR ALIGN-VIEW PHOTOMONTAGE

- 4.0.1 It is important to understand that the accuracy of the representation in a photomontage is based on the quality of the information that is collected at the time that the initial photograph is taken and that this information is correctly correlated with the spatial data relied upon in the documentation of the proposed development.
- 4.0.2 Orbit have developed a procedure that is replicated each time through a quality assured process. A decision maker's ability to rely on the information that is being presented relies on an unbiased, fair and reasonable representation of the proposal. Orbit Solutions understands that it is our obligation to represent the proposal in the photographic context without manipulating or altering either the original or the simulated views.
- 4.0.3 See Appendix 4 for further discussion on using images as assessment tools.

4.1 Survey Information

- 4.1.1 Site survey information was utilised from CAD material supplied by the Surveyor.
- 4.1.2 Drawings and all levels were entered relevant to AHD. See Appendix 1.
- 4.1.3 Initial survey information was compiled onsite at the time of photography. Survey control points are established at the time that the photographs are taken and these data points are subsequently entered into the software allowing the photographed data points and the CAD located Cartesian points to be interpolated. The camera position locations were also recorded at the time of the survey using Cartesian coordinates allowing a check step when producing the corresponding views from the building simulation.

4.2 Photography

- 4.2.1 Photographs were provided by the client.
- 4.2.2 The intention of the compositions is to provide sufficient contextual information to represent the impact of the proposal in its wider context. The photographs were taken with 50mm equivalent SLR lens. This selection of lens does not create discernible barrel distortion and as such is suitable for representing the view of the proposal and the context in which it sits. Each photograph is taken at standard eye height of 1.5m height.

4.3 Digital Model

4.3.1 The 3D base model was modelled in Sketch Up and rendered in AUTODESK 3DS MAX.

Geometry, Materials and Lighting effects are representative of real world conditions.

4.3.2 Landscape models represent mature heights in accordance with any provided planting schedule and/or additional instructions. Reference has been made to any schedules provided for size and visual representation. Regard is given to the physical constraints of the context for each instance. Landscape assets are generally accessed from a stock library and are consistent with other evidence that has been presented in other matters. Software utilised to depict each landscape digital stock asset: Archmodels - Evermotion, 3D Mentor, Xfrog, Speed Tree, iToo Forest Pack, Exlevel GrowFX.

4.3.3 Geometry, materials and Lighting effects are representative of real world conditions. Orbit Solutions Pty Ltd is a professional architectural and visualization studio with over sixteen years of experience creating accurate and coordinated architectural simulations.

4.4 Align-View Camera Match

4.4.1 The function of creating the camera match utilises the suite of tools contained in the proprietary software package and can therefore be reproduced and as such is scientifically provable. Orbit Solutions' process of quality assurance checks have been developed and refined to ensure that the automatic camera match can be verified, this is one of the methods that sets Orbit's expert evidence above the commonly produced products when being relied upon to assess the visual impact of a proposal.

4.5 3DS MAX 2016 Align-View Technology

4.5.1 An algorithm calculates the position of the view point and correlates this position with that of the camera settings used to take the photograph. Measured data points provided by the surveyor are entered and the software calculates the rendered image and positions it accurately within the surveyed photo context. The position of the camera is determined within the software once the surveyed points of our control staffs are entered. The interpolation of the data point coordinates provides the system with the correlated position (x, y, z coordinates) and the matched lens settings for the camera.

4.6 Photomontage Process

4.6.1 Adobe Photoshop CC was used to composite the 3D rendered image with the original photograph. There is no distortion of the original photographic image or that of the computer rendered image. White / grey hatch may be shown where existing elements are to be removed / demolished and no proposed elements conceal existing elements that would be revealed.

4.7 Photomontage Representation

Photomontages have been prepared at 50mm equivalent focal lengths. The preservation of these on A3 layouts provides a contextual setting with the view cone representing approximately an 40° ARC on the horizontal plane and a 27° ARC on the vertical plane.

5.0 FINAL REPRESENTATION

- 5.0.1 All care and effort has been made to represent the development's scale and mass that would be evident if the proposal were to be built.
- 5.0.2 I am of the opinion that the photomontages so represent the proposal.
- 5.0.3 This visual amenity evidence is consistent with the representation of this type of evidence produced by Orbit Solutions. While continued improvement in technology sees the level of photo-realism continue to improve, the important issues relating to the accuracy of size, scale and position remain dependable.
- 5.0.4 In utilising a photomontage to assess the impact of a proposal in its context it is important that the composition allows the viewer to rely on the accuracy of the information presented.
- 5.0.5 Further comment on evaluating visual amenity evidence is provided in Appendix 4 to this document.

6.0 STATEMENT OF COMPLIANCE

6.0.1 I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance which I regard as relevant have to my knowledge been withheld from the Tribunal.

6.1 Guidelines - as set out in Austcorp Group Ltd Case [2006] VCAT 692

The Tribunal in the Austcorp Group Ltd Case [2006] VCAT 692 identified a list of items required to accompany photomontages or other computer-generated images sought to be relied upon by parties before the Tribunal.

Information to accompany photomontages or other computer-generated images:

- a written statement explaining the methodology used for the preparation of images, including:
 - the identity and qualifications of persons involved in the preparation of the images including data collection;
 - the name and version of the software programme(s) used to prepare the image(s);
 - the methodology used to collect relevant data (for example whether survey data has been obtained from topographical maps or fieldwork);
 - the camera brand and model including whether digital or SLR;
 - camera lens size and type and whether the camera was horizontal or tilted. If tilted the angle should be stated;
 - time of day and date of all relevant data (including when photographs were taken, survey information obtained and the like);
 - the height above ground level from which all images have been taken / would be viewed;
 - details of any existing elements that have been reconstructed or modified (other than the proposal itself) such as modifications to existing vegetation, re-instatement of cross-overs and the like;
 - any assumptions relied upon.
- a plan showing the location from which all images have been prepared / would be viewed and the angle of view;
- a photograph of the existing conditions;
- a photomontage of the proposal based on the same lens type/size and location as the existing conditions photograph (to enable direct comparisons) without the inclusion of any proposed landscaping;
- a second photomontage image showing the proposal with any proposed landscaping, including delineation of the proposed building outline in the background.

6.2 Appendix 2 – Photo Data

Align View: Energy from Waste Facility

Exposure Details:

Date: 24-04-2014

Position 1: 1:28pm Eastern Standard Time

Height = 1500mm, 50mm Full Frame Equivalent Lens

Position 2: 2:09pm Eastern Standard Time

Height = 1500mm, 50mm Full Frame Equivalent Lens

Position 3: 2:02pm Eastern Standard Time

Height = 1500mm, 50mm Full Frame Equivalent Lens

Position 4: 12:39pm Eastern Standard Time

Height = 1500mm, 50mm Full Frame Equivalent Lens

Position 5: 12:51pm Eastern Standard Time

Height = 1500mm, 50mm Full Frame Equivalent Lens

Position 6: 2:47pm Eastern Standard Time

Height = 1500mm, 50mm Full Frame Equivalent Lens

Position 7: 11:56am Eastern Standard Time

Height = 1500mm, 50mm Full Frame Equivalent Lens

Position 8: 2:58pm Eastern Standard Time

Height = 1500mm, 50mm Full Frame Equivalent Lens

Position 9: 2:34pm Eastern Standard Time

Height = 1500mm, 50mm Full Frame Equivalent Lens

6.3 Appendix 3 – Curriculum Vitae

CHRISTOPHER DAVID GOSS

BArch, BEnvDes, Registered Architect (Victoria)

Qualifications

Registered Architect (ARBV 16399), Bachelor of Architecture, Bachelor of Environmental Design

Membership

Victorian Planning Environmental Law Association (Fellow),
Australian Institute of Architects (A+ Member), The Congress for the New Urbanism

Experience

Since graduating from the school of Architecture, Department of Architecture and Engineering, University of Tasmania in 1995 my architectural work has been involved in the IT field, design, documentation and visualization. Expert Evidence is regularly provided to VCAT and Planning Panels as well as other Authorities.

1999-2017 Founding Director of Orbit Solutions Pty Ltd.

At Orbit I am the Architectural Design Director and Visualization Creative Director, Expert Witness specializing in Visual Amenity Evidence. Project work includes; Residential, Multi-Unit, Apartments, Commercial, Hospitality and Institutional.

Previous offices and projects were undertaken in New South Wales, Queensland, Vienna and Abu Dhabi. Project work has also been undertaken in other countries including The United Arab Emirates, Malaysia, China, France, New Zealand. Work has also been undertaken in Victoria, Tasmania, New South Wales, Queensland, Western Australia, Northern Territory and the Australian Capital Territory.

Publications and seminars related to Visual Amenity Evidence have been delivered to the Victorian Planning and Environmental Law Association, the Victorian Civil Appeals Tribunal, The Australian Institute of Architects (Victorian Chapter), the Building Design Association of Victoria and the Urban Development Institute of Australia.

Continual travel through North America, South America, Western Europe, Eastern Europe, Asia and the Middle East for study and engagement in forums and associations continues professional development.

1997– 1999 Victorian Manager of Arkitech Building Simulation Systems.

1996 I worked in Berlin Germany with Sebastian Wagner Architects. I also spent time working on building sites and in hospitality and market research.

1995 I Graduated with a Bachelor of Architecture from the Faculty of Architecture and Engineering at the University of Tasmania.

1993 – 1995 I worked part time and during University Break for Glenn Smith Architects Pty Ltd. I also worked as a wilderness guide in the Western Tiers of Tasmania.

1993 I Graduated with a Bachelor of Environmental Design from the Faculty of Architecture and Engineering at the University of Tasmania.

6.4 Appendix 4 – Images as Assessment Tools

7.4.1 Monoscopic images cannot truly represent the human eyes' stereoscopic view as we see in real life. The 'before' and 'after' images are an assessment tool used to address the relevant planning issues through the qualitative and quantitative representation.

7.4.2 The integrity of any comparison between a 'before' and an 'after' image is ensuring that consistency is maintained. The choice of a broad field of view allows the wider context to be represented when viewing the subject site within the composition. When the subject site is within the centre of the lens, where the curvature is at its flattest, there is negligible distortion.

7.4.3 Perceptual Constancies

Familiar objects that allow a viewer to compare the shape, size, colour or location of objects in context regardless of changes in angle of perspective, distance or lighting are known as Perceptual Constancies. These constancies tend to prevail through the dimensions of size, shape, brightness and colour as long as the viewer has the appropriate contextual cues. In the photomontage it is of primary importance that the layering of foreground, middle ground and background elements is accurately represented as the apparent distance of a proposal from the observer impacts on the apparent size and scale.


7.4.4 Choice of Lens Size

While it has been purported that the human eye is best represented by a 50mm SLR lens there is no substantiated reason to limit the assessment of visual amenity evidence to a photographic image captured in this format. Given consideration of the phenomena related to perceptual constancies it follows that the broader the context the better able the observer is to make an assessment of a proposals impact in its context.

7.4.5 It is only at the periphery of an image taken through a lens where curvature is more pronounced that distortion comes into play. People, armed with the experience of having viewed many photographic images over their lives and correlating these with real world experience, have the ability to use a photomontage as a visual assessment tool.

7.4.6 When undertaking an analysis of a vista over large distances the selection of a higher lens setting that provides a flatter image (one less affected by the curvature of the lens) is appropriate. In such cases a range of focal lengths ranging from 60mm to 90mm may be considered appropriate.

7.4.7 Other focal lengths may be considered. All cases should consider the capacity of the photograph of existing conditions to provide adequate context in to which a proposal can be located for visual assessment. Given that more distant elements take up less area of the visual field of view it goes that a higher focal length with a smaller view cone angle will provide adequate context and higher clarity of detail when reproduced.



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AUTHOR: CHRISTOPHER DAVID GOSS
B.Env.Des, B.Arch, ARBV, Fellow of VPELA

Energy from Waste Facility

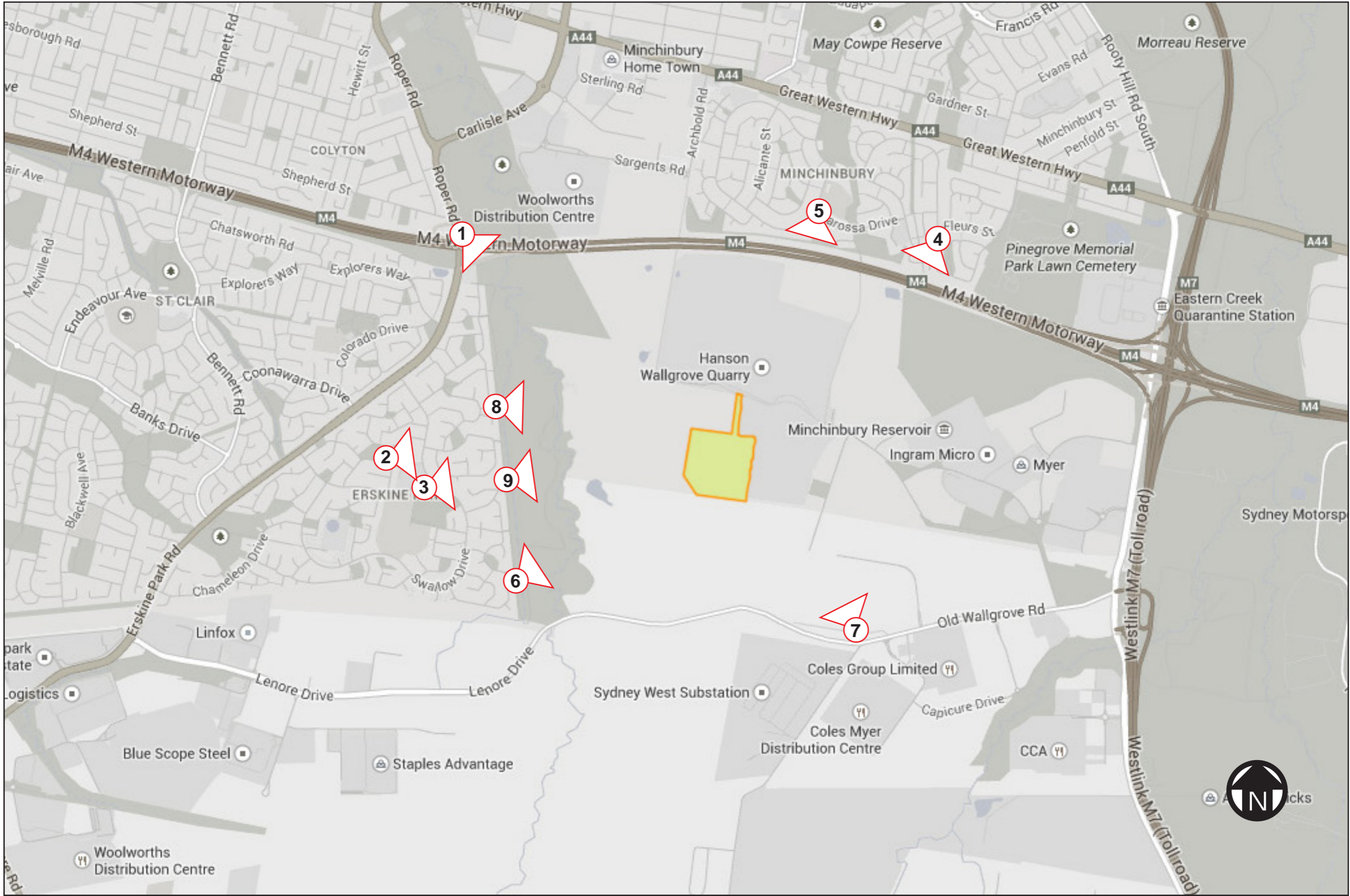
ADDRESS:
HONEYCOMB DR, EASTERN CREEK

EVIDENCE PREPARED FOR:
DIAL A DUMP INDUSTRIES

INSTRUCTIONS RECEIVED FROM:
URBIS

Job: **V17074**

Date: **26/09/2017**





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Camera Locations

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Figure:

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View cones are a representation of camera view only





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View 1 Original Photograph @ 50mm

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Figure:
1.0

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Figure:

1.1


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Figure:

1.2


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Figure:
1.3


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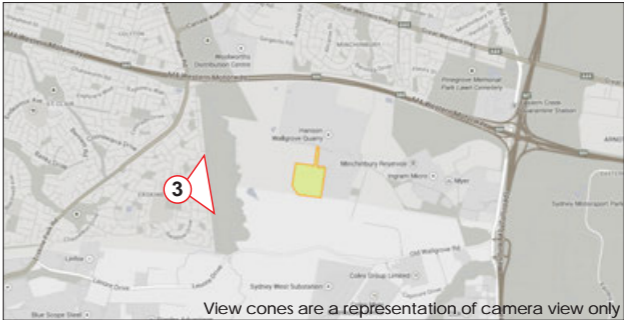


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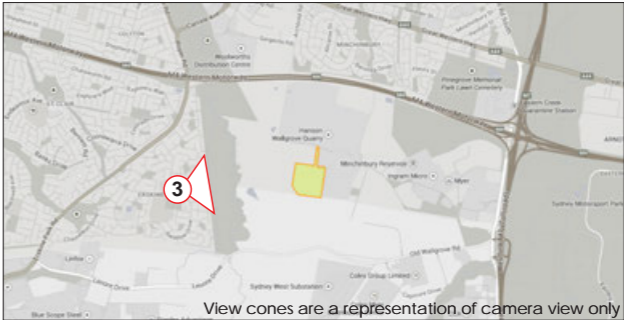


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3.2

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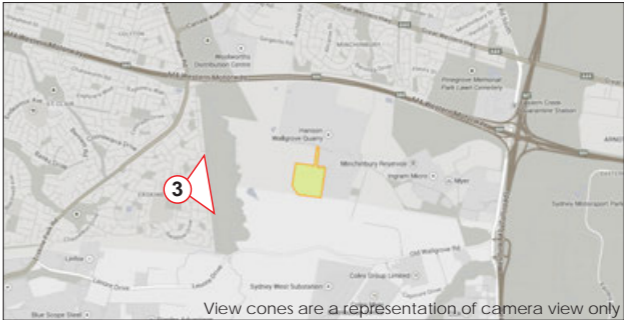


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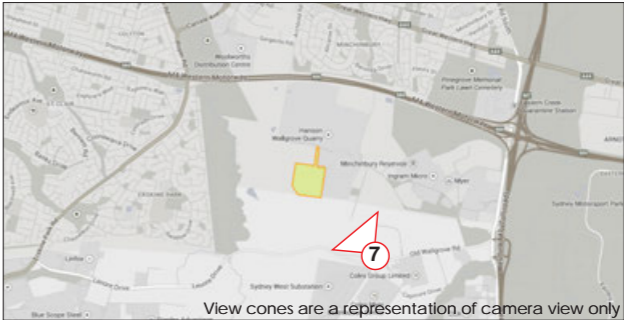


Figure:
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