

Proposed Data Centre, Lane Cove West, NSW 2066 - SSD 9741

LANDSCAPE AND VISUAL IMPACT ASSESSMENT REPORT

Report Ref: LVIA01

Prepared for

GREENBOX

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1.0 INTRODUCTION

1.1 Project Background

This Landscape and Visual Impact Assessment (LVIA) relates to the proposed development at 1 Sirius Road, Lane Cove West. This comprises of a data centre, including two data halls, tech office, generator hall, substation, internal road and associated earthworks and landscaping.

A request for Secretary's Environmental Assessment Requirements (SEARs) was submitted to the Department of Planning and Environment (DoPE) in Nov 2018. This report aims to provide information regarding the following:

Urban Design and Visual :

- a visual impact assessment (including photomontages and perspectives) of the development layout and design (buildings and storage areas), including height, colour, scale, building materials and finishes, signage and lighting, having regard to surrounding residential receivers, particularly in terms of potential impacts on:

- nearby public and private receivers
- significant vantage points in the broader public domain

1.2 This Report and Author

Geoscapes Pty Ltd, has been commissioned by A W Edwards on behalf of Greenbox, to produce a Landscape and Visual Impact Assessment (LVIA) for the above mentioned development. This LVIA has been written by Ben Gluszkowski (Director and Registered Landscape Architect) who has over 15 years' experience in the field of Landscape Architecture. He has previously been involved in high profile LVIA's on developments within the UK, including the M1 & M62 motorway road widening, several wind farms and energy from waste facilities (EFW).

Within Australia, Ben has completed LVIA's for Logos Property Group. These were submitted as part of an Environmental Impact Assessment (EIA) for State Significant Development (SSD) to the Department of Planning and Environment. He has also recently written an LVIA for Snackbrands Australia, Jaycar and Kemps Creek.

Geoscapes have also prepared landscape design drawings. These documents detail landscape treatments to the site exterior, and should be read in conjunction with this report.

2.0 METHODOLOGY OF ASSESSMENT

2.1 Guidelines

LVIA does not follow prescribed methods or criteria. This assessment is based on the principles established and broad approaches recommended in the following documents:

- Guidelines for Landscape and Visual Impact Assessment (GLVIA) – Third Edition (LI/IEMA 2013)
- The Landscape Institute Advice Note 01 (2011) Photography and Photomontage in Landscape and Visual assessment.

In accordance with GLVIA3 the assessment methodology is tailored to the specific requirements of the Proposed Development, its specific landscape context and its likely significant effects. The methodology used for this assessment reflects the principal ways in which the Proposed Development is considered likely to interact with existing landscape and visual conditions as a result of:

- The permanent introduction of a data centre into the existing landscape/townscape and visual context.

Landscape assessment is concerned with changes to the physical landscape in terms of features/elements that may give rise to changes in character. Visual appraisal is concerned with the changes that arise in the composition of available views as a result of changes to the landscape, people's responses to the changes and to the overall effects on visual amenity. Changes may result in adverse (negative) or beneficial (positive) effects.

The nature of landscape and visual assessment requires both objective analysis and subjective professional judgement. Accordingly, the following assessment is based on the best practice guidance listed above, information and data analysis techniques, uses subjective professional judgement and quantifiable factors wherever possible, and is based on clearly defined terms (refer to glossary).

As stated in paragraph 1.20 of the GLVIA:

“The guidance concentrates on principles while also seeking to steer specific approaches where there is a general consensus on methods and techniques. It is not intended to be prescriptive, in that it does not follow a detailed 'recipe' that can be followed in every situation. It is always the primary responsibility of any landscape professional carrying out an assessment to ensure that the approach and methodology adopted are appropriate to the particular circumstances.”

This LVIA written by Geoscapes is considered to use a methodology and approach that is appropriate to this type of development.

2.2 Computer Generated Visualisations - Photomontages

It is possible that any receptor with a view toward the development, could potentially receive visual impacts with a resulting high, moderate or low impact. However, it is not feasible or practical to prepare a photomontage for each and every residential dwelling within the project viewshed.

Photography for the photomontages was undertaken by Geoscapes using a Canon 60D (DSLR) camera. A 50 mm focal length prime lens was attached to the Canon. For Viewpoint 2 a drone with a 26mm focal lens was used, due to inaccessibility of that location.

Photomontages have been prepared to create “simulated” views of the proposed development. Although these do not claim to exactly replicate what would be seen by the human eye, they provide a useful “tool” in analysing potential visual impacts from receptor locations.

Those viewpoints selected for photomontages, have been presented in this report as before and after images on the same sheet for ease of comparison. The computer-generated images include a representation of landscape mitigation both immediately following installation (which have been described as year 0) and at a mature age of 15 years. It is important to note, that the year 15 images are simulations of how proposed landscaping may appear at a selected viewpoint. The final appearance of landscape mitigation will be based on many factors, including growth rates, maintenance and environmental conditions.

The assessment undertaken at year 15 assumes that such mitigation has had the opportunity to establish, mature and become effective. For the purposes of most LVIA's, year 15 effects are also taken to be the 'residual effects' of the development. Residual effects are those which are likely to remain on completion of the development and are to be given the greatest weight in planning terms. Any visual impacts determined from viewpoint locations (which have been assessed in section 8.0 of this report), are based on the year 15 residual effects. In certain photomontages there may be little or no difference between Year 0 or Year 15 images, this may be due to the development being partially obscured, that there is no proposed landscaping on a particular side of a development or that landscaping would be behind existing landscaping in the foreground.

The horizontal field of view within the photomontages exceeds the parameters of normal human vision. However, in reality the eyes, head and body can all move and, under normal conditions, the human brain would 'see' a broad area of landscape within a panoramic view. Each of the photomontage panoramas within this report (with the exception of Viewpoint 2 which is wider) has a horizontal viewing angle of 67°, a single

photographic image from a 50mm lens has a horizontal viewing angle of 39.6°.

Whilst a photomontage can provide an image that illustrates a photo realistic representation of a development, in relation to its proposed location and scale relative to the surrounding landscape, it must be acknowledged that large scale objects in the landscape can appear smaller in photomontage than in real life. This is partly due to the fact that a flat image does not allow the viewer to perceive any information relating to depth or distance.

An extract taken from the Photography and Photomontage in Landscape and Visual Impact Assessment, Landscape Institute Advice Note 01/11 states that:

‘it is also important to recognise that two-dimensional photographic images and photomontages alone cannot capture or reflect the complexity underlying the visual experience and should therefore be considered an approximate of the three-dimensional visual experiences that an observer would receive in the field’.

2.3 Sensitivity of the Landscape Resource

A number of factors influence professional judgement when assessing the degree to which a particular landscape receptor can accommodate change arising from a particular development. Sensitivity is made up of judgements about the value attached to the receptor determined at baseline stage and the susceptibility of the receptor to the type of change arising from the development proposal.

The table below provides an indication of the criteria by which the sensitivity of any landscape receptor is determined by combining judgements of the value of the receptor and its susceptibility to the type of change or development proposed. A degree of professional judgement applies in arriving at the sensitivity for receptors. Wherever sensitivity is judged, the specific combinations of factors that have influenced that judgement are described. The table has been adapted from the GVLIA with terms used as more appropriate for assessment of Australian landscape.

Table: Landscape Receptor Sensitivity Criteria

Category	Landscape Receptor Criteria
Very High	Nationally designated/valued landscape and landscape features; strong/distinctive landscape characteristics: absence of landscape detractors. Rare receptor in excellent condition. A landscape receptor extremely sensitive to disturbance or change in character due to the development proposals. No potential or very limited potential for substitution or replacement.
High	Locally designated valued landscape and features: many distinctive landscape characteristics: very few landscape detractors. Uncommon receptor in good condition. A landscape receptor sensitive to disturbance or change in character due to the development proposals. Limited potential for substitution or replacement.
Medium	Undesignated landscape and features: some distinctive landscape characteristics: few landscape detractors. A relatively common receptor in fair condition. A landscape receptor with a moderate level of sensitivity to disturbance or change in character due to the development proposals. Some potential for substitution or replacement.
Low	Undesignated landscape and features: few distinctive landscape characteristics: presence of landscape detractors. A common receptor in poor condition. A landscape receptor with limited sensitivity to disturbance or change in character due to the development proposals. Clear potential for substitution or replacement.

Very Low	Undesignated landscape and features: absence of distinctive landscape characteristics: presence of many landscape detractors. A common receptor in very poor condition. A landscape receptor with very limited sensitivity to disturbance or change in character due to the development proposals. Good potential for substitution or replacement.
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The magnitude of change is determined through a range of considerations particular to each receptor and effect. In line with the GLVIA, the three main attributes considered are:

1. Scale of Change
2. Geographical Extent
3. Duration and reversibility

The table on the right provides an indication of the criteria by which the magnitude of change as a result of the development proposed upon a landscape receptor is judged within this assessment. These criteria provide a framework for assessment, and final conclusions are reached through clear and transparent use of reasoned professional judgement, taking into account a range of factors as described above.

Table: Landscape Receptor of Change Criteria

Category	Definition
Very High	Total loss of or major alteration to key elements/features/characteristics of the baseline condition. Addition of elements which strongly conflict with the key characteristics of the existing landscape. Large scale effects influencing several landscape types or character areas.
High	Notable loss or alteration to on or more key elements/features/characteristics of the baseline condition. Addition of elements that are prominent and may conflict with the key characteristics of the of the existing landscape. Effects at the scale of the landscape type or character areas within which the proposal lies.
Medium	Partial loss or alteration to one or more key elements/features/characteristics of the baseline condition. Addition of elements that may be evident but do not necessarily conflict with the key characteristics of the of the existing landscape. Effects within the immediate landscape setting of the site.
Low	Minor loss or alteration to one or more key elements/features/characteristics of the baseline condition. Addition of elements that may not be uncharacteristic within the existing landscape. Effects at the site level (within the development itself)
Very Low	Very Low Barely discernible loss or alteration to one or more key elements/features/characteristics of the baseline condition. Addition of elements not uncharacteristic within the existing landscape. Effects only experienced on parts of the site at a very localised level.

2.4 Visual Receptor Sensitivity

People’s (visual receptors) overall visual sensitivity has been assessed by combining consideration of their visual susceptibility with the value or importance that they are likely to attribute (or not) to their available views.

Factors which influence professional judgement when assessing the degree to which a particular view can accommodate change arising from a particular development, without detrimental effects would typically include:

- Judgements of value attached to views take into account recognition of the value attached to particular views e.g. heritage assets or through planning designations; and

- Judgements of susceptibility of visual receptors to change is mainly a function of the occupation or activity of people experiencing the view at particular locations; and the extent to which their attention or interest may therefore be focused on the views and the visual amenity they experience at particular locations.

Assessment of the sensitivity of visual receptors may be modified (either up or down) by consideration of whether any particular value or importance is likely to be attributed by people to their available views. For example, travellers on a highway may be considered likely to be more sensitive due to its scenic context or residents of a particular property may be considered likely to be less sensitive due to its degraded visual setting.

Typically, sensitivity of visual receptors may be judged to be very high, high, medium, low or very low. Definitions of these indicative categories as appropriate to this assessment are set out in the table opposite.

Table: Visual Receptor Sensitivity

Category	Definition
Very High	Designed view to or from a heritage / protected asset. Key protected viewpoint e.g. interpretive signs. References in literature and art/or guidebooks and tourist maps. Protected view recognised in planning policy designation [LEP, DCP, DoPE]. Views from the main living space of residential properties, state public rights of way e.g. bush trails and state designated landscape feature with public access. Visitors to heritage assets of state importance.
High	View of clear value but may not be formally recognised e.g. framed view of high scenic value from an individual private dwelling or garden. It may also be inferred that the view is likely to have value e.g. to local residents. Views from the secondary living space of residential properties and recreational receptors where there is some appreciation of the landscape e.g. golf and fishing. Local public rights of way and access land. Road and rail routes promoted in tourist guides for their scenic value.
Medium	View is not promoted or recorded in any published sources and may be typical of the views experienced from a given receptor. People engaged in outdoor sport where an appreciation of the landscape has little or no importance e.g. football and soccer. Road users on main routes (Motorway/Freeway/Highway) and passengers on trains.
Low	View of clearly lesser value than similar views experienced from nearby visual receptors that may be more accessible. Road users on minor roads. People at their place of work or views from commercial buildings where views of the surrounding landscape may have some importance.
Very Low	View affected by many landscape detractors and unlikely to be valued. People at their place of work or other locations where the views of the wider landscape have little or no importance.

For the visual receptors identified, the factors above are examined and the findings judged in accordance with the indicative categories below in the table to determine the magnitude of change.

Table: Visual Receptor Magnitude of Change Criteria

Category	Definition
Very High	There would be a substantial change to the baseline, with the proposed development creating a new focus and having a defining influence on the view. Direct views at close range with changes over a wide horizontal and vertical extent.
High	The proposed development will be clearly noticeable and the view would be fundamentally altered by its presence. Direct or oblique views at close range with changes over a noticeable horizontal and or/vertical extent.
Medium	The proposed development will form a new and recognisable element within the view which is likely to be recognised by the receptor. Direct or oblique views at medium range with a moderate horizontal and/or vertical extent of the view affected.
Low	The proposed development will form a minor constituent of the view being partially visible or at sufficient distance to be a small component. Oblique views at medium or long range with a small horizontal/vertical extent of the view affected.
Very Low	The proposed development will form a barely noticeable component of the view, and the view whilst slightly altered would be similar to the baseline situation. Long range views with a negligible part of the view affected.

In some cases, there may be no magnitude of change and the baseline view will be unaffected by the development (e.g development would be fully screened existing woodland). In this case a category of 'no change' will be used.

2.5 Significance of the Impact

For each receptor type, the sensitivity of the location is combined with the predicted magnitude of change to determine the level of effect on any particular receptor. Having taken such a wide range of factors into account when assessing sensitivity and magnitude at each receptor, the level of effect can be derived by combining the sensitivity and magnitude in accordance with the matrix in the table below:

Receptor for Sensitivity	Magnitude of Change					
		Very High	High	Medium	Low	Very Low
	Very High	Substantial	Major	Major/Moderate	Moderate	Moderate/Minor
	High	Major	Major/Moderate	Moderate	Moderate/Minor	Minor
	Medium	Major/Moderate	Moderate	Moderate/Minor	Minor	Minor Negligible
	Low	Moderate	Moderate/Minor	Minor	Minor Negligible	Negligible
	Very Low	Moderate/Minor	Minor	Minor Negligible	Negligible	Negligible/None

In all cases, where overall effects are predicted to be moderate or higher (shaded grey), this will result in a prediction of a significant effect in impact terms. All other effects will be not significant. If a view from a receptor is judged to be 'no change' in the category of Magnitude of Change, then the significance of impact will automatically be none.

In certain cases, where additional factors may arise, a further degree of professional judgement may be applied when determining whether the overall change in the view or effect upon landscape receptor will be significant or not and, where this occurs, it is explained in the assessment.

Visual effects are more subjective as people's perception of development varies through the spectrum of negative, neutral and positive attitudes. In

the assessment of visual effects, Geoscapes will exercise objective professional judgement in assessing the significance of effects and will assume, unless otherwise stated, that all effects are adverse, thus representing the worst-case scenario. The significance of visual impacts are assessed against the proposed development in isolation only.

2.6 Site Visit and Analysis of Zone of Visibility

A site visit was conducted on the 21st November at 1.30pm, by Geoscapes. The consultant team carried out a site inspection to verify the results of a desktop study and to evaluate the existing visual character of the area. Analysis from inside the site boundary and at vantage points from the surrounding landscape was undertaken to approximate the Zone of Visibility. Figures 3 to 9 show panoramic photographs taken at eye level by Geoscapes from three locations within the site looking north, south, east and west. The eye level photographs allow a partial judgement on which residential properties, commercial properties, public open spaces and public rights of way in the immediate vicinity will see the development from ground level to the tops of buildings. However, this is limiting due to the presence of existing commercial development and surrounding vegetation, it is not possible to gain a complete understanding of visibility without the additional use of drone photography. It is also important to note that it is simply unfeasible to photograph every single possible view corridor to and from the site.

A drone was used to take panoramic photographs looking north, south, east and west, at two separate locations within the site boundary. A height was flown by the drone to generally represent the approximate maximum elevation of equipment on the top of the data halls. In this case 40m AHD and thus representing a worst case scenario and the maximum Zone of Visual Influence (refer to figures 10 to 17). The flight was performed on the 21st November 2018 by Pixel Media Productions. Weather conditions at the time were overcast but with good visibility. These photographs allowed a judgement to be made on which receptors in the wider context, will be able to see the upper parts of the development if not the all of the development. Not all residential/commercial properties or public open spaces that potentially have a view of the development are highlighted on figures 10 to 17. However, the locations that have been shown, will provide an indication of receptors within the surrounding context, that the development will be most visible to. In some cases it is reasonable to assume for example, that a number of properties close to a selected receptor would experience a very similar type of view. I.e. adjacent properties with similar aspect or those one or two streets away.

In some cases, it was not possible to visit an identified receptor to take photographs looking back at the site (e.g. within private property, private gardens or windows where access was denied). In these cases, views have been taken from other properties where access was granted, or from publicly accessible areas that are judged to be similarly representative. A judgement has then been made on the likely visual impacts from a selection of the receptors identified in figures 27 to 37 (refer to section 8.0).

As with any LVIA, due to the number of receptors that may have views of the development, it is not possible to provide viewpoints for every single possible visual receiver (refer to section 2.7 and 4.5 for details on viewpoint selection).

2.7 Viewpoint Selection and Photographic Recording

From desktop study, site visits and photography, several locations were identified that would potentially be subject to visual impacts from the proposal. These viewpoints were selected in consultation with the project team. Some viewpoints have been intentionally chosen to demonstrate and provide evidence that from those receptors there are no or negligible visual impacts.

Photographs were taken by Geoscapes Landscape Architects from the selected viewpoints looking towards the development site using a Canon 60D DSLR Camera and a 50mm lens (apart from viewpoint 2 which was taken by a drone). These are intended to represent what a person of average height (1.75m) would see standing at the same location. Photographs were stitched and blended together using an automated software process, however, no perspective correction was used. GPS recordings were taken and locations marked using digital mapping data. This information was later used to create the photomontages.

As with the eye-level viewpoint photographs, drone photography has also been stitched together to increase the field of view (see figures 10 to 21). As the Drone uses a wide-angle lens, in some cases there may be some distortion present where two images join, particularly in the foreground. However, as these images are used only for analysis and identifying potential visual receptors, this does not affect the validity of their use within this report.

2.8 Visualisation of the Development

Morphmedia were engaged to develop a digital three-dimensional model using Autodesk 3Ds Max. The model included all aspects of the proposed development combined with the landscape design and mitigation proposed by Geoscapes.

Views were generated from the model that matched the camera positions of photographs taken from selected viewpoints. These were then combined with the photographs to create simulated views of the proposal.

Photomontage figures are intended to be printed at A3 and to be held at a comfortable distance by the viewer, this is generally accepted by current guidelines to be anywhere from 300mm to 500mm away from the eyes and held in a flat projection.

2.9 Assessment of Visual Impact

The visual impact from receptors has been assessed based on the criteria described in Section 2.4. The following list of visual receptors are judged to potentially have the highest sensitivity to the development:

- Lane Cove Bush Walk, Lane Cove West (VP1)
- Arise Meriton, Lane Cove West (VP2)
- Lane Cove Valley Walk, Lane Cove North (VP3)
- Great North Walk Position 1, East Ryde (VP10)
- Great North Walk Position 2, East Ryde (VP11)

Receptors which are regarded to have less sensitivity but have also been assessed are:

- Magdala Park, North Ryde (VP4)
- Honeywell Office, North Ryde (VP5)
- Ryde Gardens, North Ryde (VP6)
- 44 Cox Road, East Ryde (VP7)
- 282 Pittwater Road, East Ryde (VP8)
- 102 Melba Drive, East Ryde (VP9)

In total 11 viewpoint locations have been selected for photomontage.

It is noted that immediately adjacent to the east of the proposed development are several commercial and industrial buildings at higher topographical elevations than the site. Any views from the east behind Lane Cove Business Park towards the site, would be prevented by this existing development. Significant vegetation along either side of Lane Cove River to the north, west and south is also present which provides screening for many potential visual receivers. This is evident from site photography, however there are also locations at higher vantage points within the immediate vicinity, that would either experience partial or clear views of the development.

A view of the development may be possible from residential towers as far away as Chatswood, However, this is approximately 3.3 km from the development site. The visual impact from this location is judged to be **negligible/none**.

Refer to section 8.0 for a detailed visual impact assessment from the receptors.



Legend

- Site Boundary
- ① Drone Position 1 (40m RL)
GPS -
33° 48' 28.57" S
151° 8' 41.57" E
- ② Drone Position 2 (40m RL)
GPS -
33° 48' 30.45" S
151° 8' 39.37" E
- ③ Drone Position 3 (120m AGL)
GPS -
33° 48' 28.04" S
151° 8' 40.72" E
- 1 Ground
Eye Level
Position 1
- 2 Ground
Eye Level
Position 2

Figure 1: Ground Level & Drone Panoramic Photograph Positions

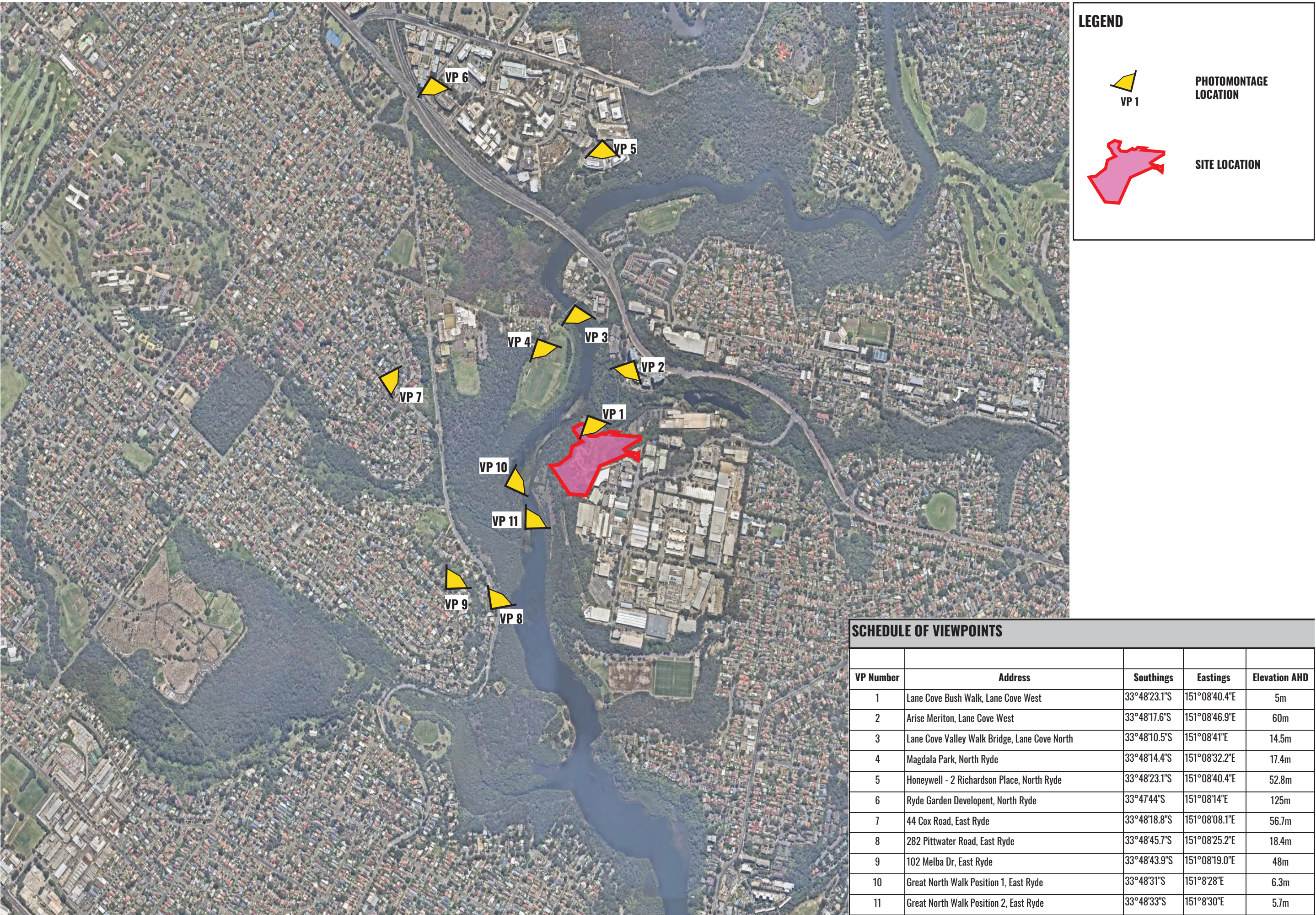


Figure 2: Viewpoint Locations



Figure 3: On Site at Eye-Level Position 1 - Looking North



Figure 4: On Site at Eye Level Position 1 - Looking West



Figure 5: On Site at Eye-Level Position 1 - Looking South



Figure 6: On Site at Eye-Level Position 2 - Looking North

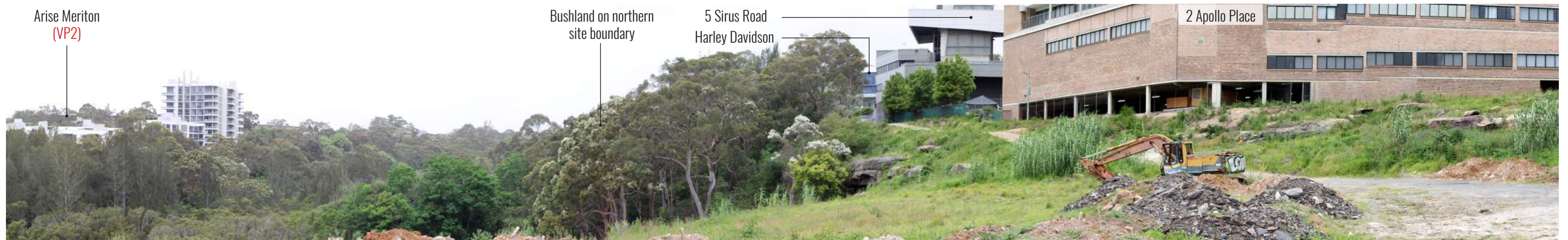


Figure 7: On Site at Eye Level Position 2 - Looking East



Figure 8: On Site at Eye-Level Position 2 - Looking South



Figure 9: On Site at Eye Level Position 2 - Looking West



Figure 10: Drone at 40m RL Position 1 - Looking North



Figure 11: Drone at 40m RL Position 1 - Looking East



Figure 12: Drone at 40m RL Position 1 - Looking South



Figure 13: Drone at 40m RL Position 1 - Looking West



Figure 14: Drone at 40m RL Position 2 Looking - North



Figure 15: Drone at 40m RL Position 2 Looking - East



Figure 16: Drone at 40m RL Position 2 looking South



Figure 17: Drone at 40m RL Position 2 looking West

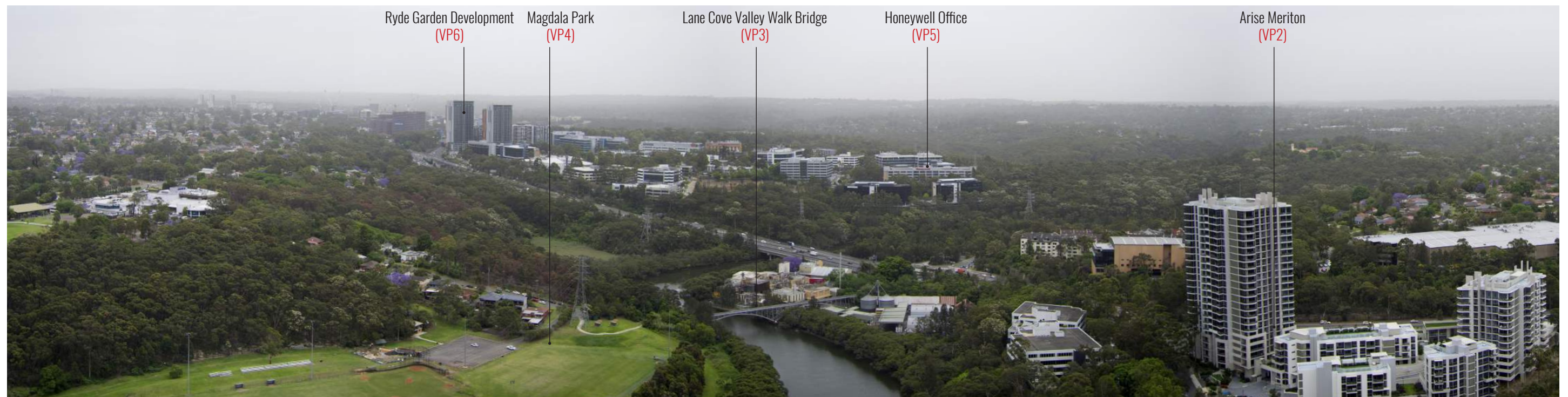


Figure 18: Drone at 120m AGL - Looking North



Figure 19: Drone at 120m AGL - Looking East



Figure 20: Drone at 120m AGL - Looking South

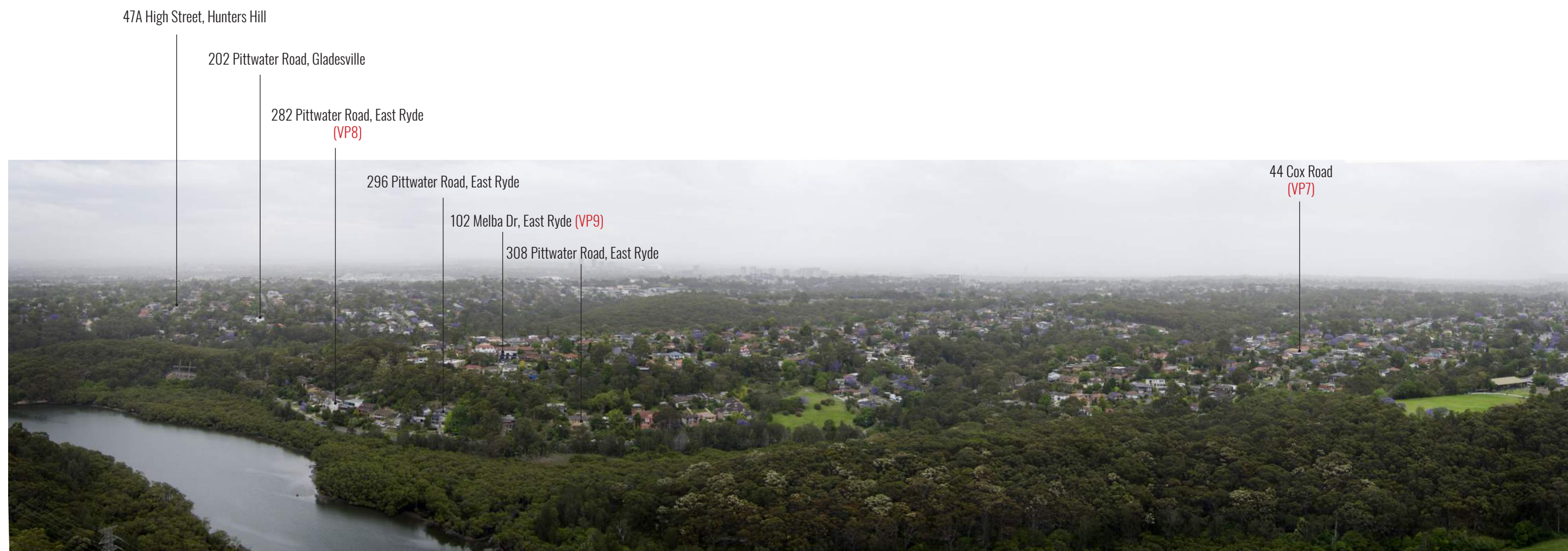


Figure 21: Drone at 120m AGL - Looking West

3.0 THE SITE AND ENVIRONS

3.1 Location

The site is located at 1 Sirius Road, Lane Cove West. It has an area of approximately 4 hectares and is located within the Lane Cove Council Local Government Area. Figure 23 provides the site's location. Figure 24 provides the site's context.

3.2 Site Description

The site description is summarised in the Figure below.

Figure 22 – Site Description

Component	Description
Address	1 Sirius Road, Lane Cove West, NSW 2066
Legal description	Lot 1 in DP1151370
Site area	39,453sqm (3.94ha)
Current use	Within Lane Cove Business Park, zoned IN2 Light Industrial, currently vacant land

3.3 Context

The development site is situated close to the edge of Lane Cove River and is within Lane Cove Business Park. It is located approximately 12 kilometres' northwest of Sydney's CBD and is close to the M2 Motorway. The precinct already contains several commercial and industrial type buildings. It is adjacent to Lane Cove Bushland and is within a bushfire zone.

The site is surrounded by the following specific land uses:

- Directly north of the site is Epping Road, Ingredion ANZ Pty Ltd, Lane Cove River and Lane Cove Valley Walk. Further north is the M2 and North Ryde Business Park. To the northeast is Meriton Apartments and the suburb of Lane Cove North.
- Directly south of the site is Lane Cove River and associated bushland. Further to the southwest is the suburb of Hunters Hill.
- Directly to the east is Lane Cove Business Park, including No. 2 Apollo Place, Harley Davidson and several other commercial and industrial type buildings.
- Directly west of the site is Lane Cove River, Lane Cove National Park and the residential suburbs of East Ryde and North Ryde.

3.4 Aerial Photography

During the Drone photography that was carried out within the site boundary on the 21st November 2018, (refer to section 2.6) aerial shots were also taken at an AGL of 120m. These prove useful in the following ways:

- Demonstrating the site context in which the development sits;
- Highlighting key features of the surrounding landscape;
- Analysing the existing landscape character;
- Help in identifying locations of potential individual receptors that are difficult to identify from ground level or 40m AHD drone shots alone.

See figures 18-21 for 120m AGL Drone photography.

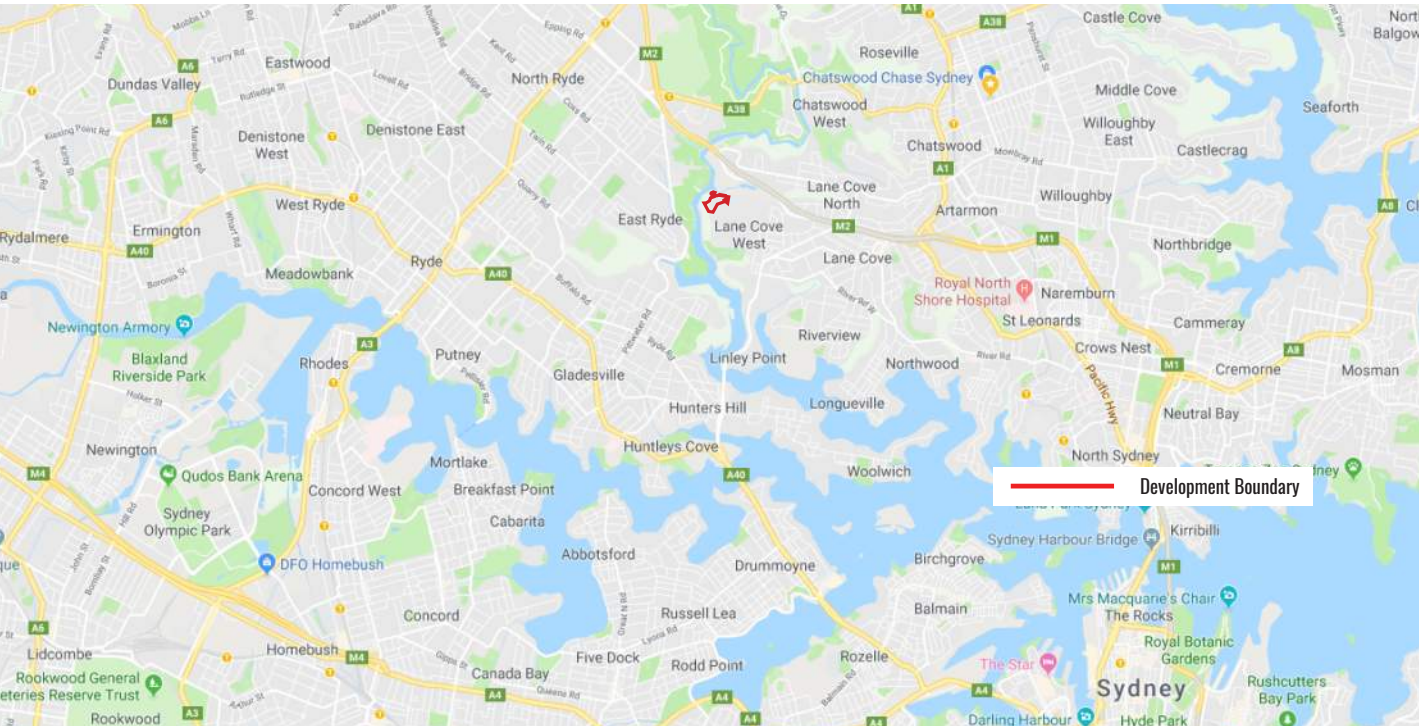


Figure 23 Site Location (Source: Google Maps)



Figure 24: Site Context (Source: Nearmap 2018)

4.0 BASELINE DESCRIPTION

4.1 Planning Context

The following current and draft state and local planning controls and have been considered in the preparation of this report:

- Lane Cove LEP 2009
- Lane Cove DCP 2010
- Sydney Harbour Catchment Regional Environmental Plan 2005 (REP)
- Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005 (DCP)
- Environmental Planning and Assessment Act 1979
- Biodiversity Conservation Act 2016
- National Parks and Wildlife Act 1994
- State Environmental Planning Policy No 19 – Bushland in Urban Areas (SEPP 19)
- State Environmental Planning Policy (Coastal Management) 2018 (Coastal Management SEPP)

The site is currently zoned for light industrial within the Lane Cove LEP 2009. See figure 25 below.

4.2 Proposed Data Centre SSD Masterplan

Situated in the figure below is the current SSD Masterplan. This plan is used for the purpose of assessment within this LVIA report. For detailed information regarding the built forms, refer to section 5.0.

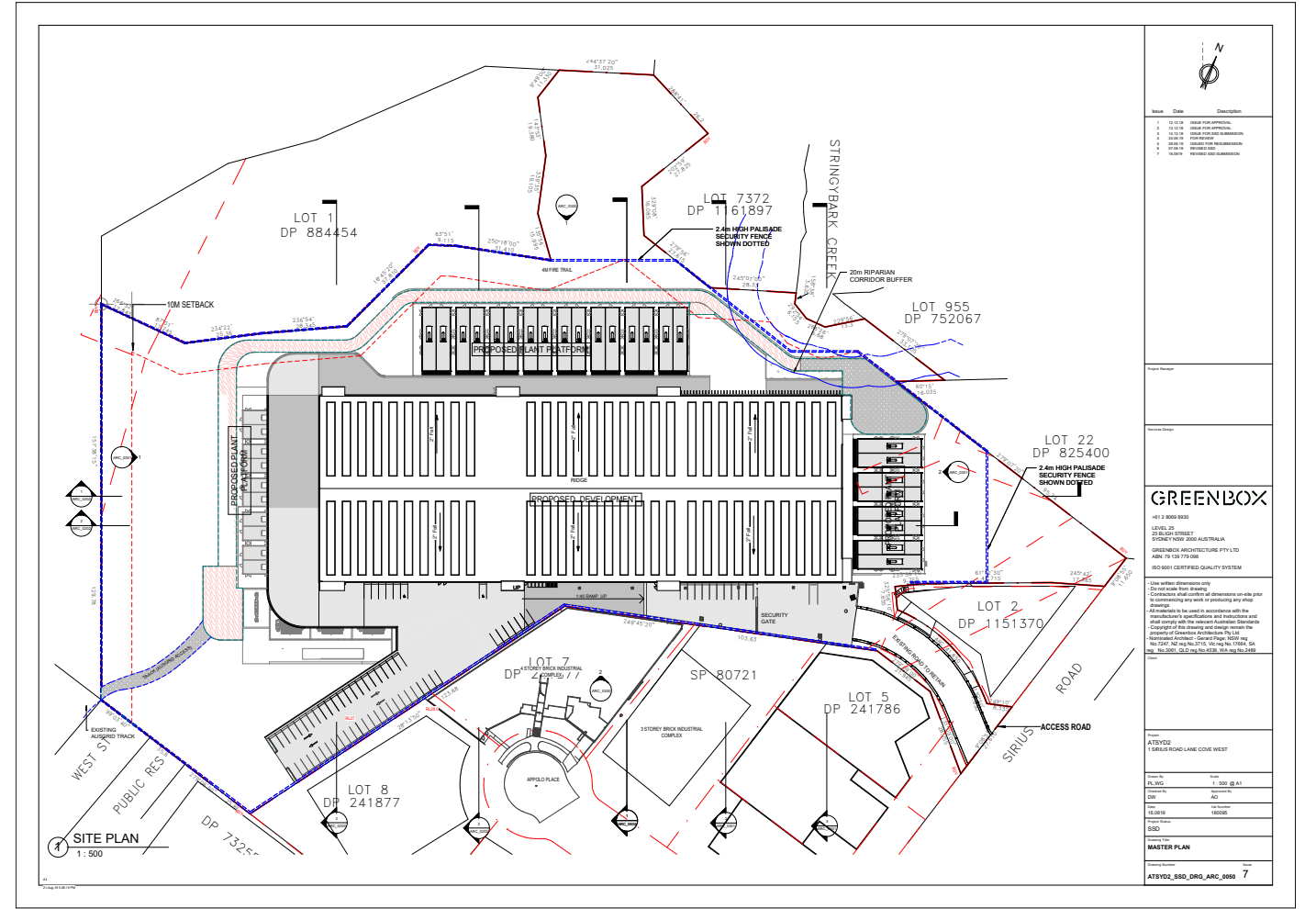


Figure 26: Proposed Data Centre SSD Masterplan (Source: GreenBox)

4.3 Landscape Character

The development site is currently undeveloped, predominately cleared of vegetation and in a relatively poor condition. Several tracks created by vehicles and earth piles exist. Some vegetation groups remain on site to the east and west.

Surrounding the site to the north, west and south is significant natural bushland associated with the Lane Cove river corridor. To the east of the development is Lane Cove Business Park which contains several commercial and industrial buildings. A bushland walk along the west side of Lane Cove river crosses the bottom of site immediately to the northern boundary.

Natural bushland is described within 'Part H - Bushland Protection' of the Lane Cove DCP as being an essential part of the character of Lane Cove. 'Part E - Industrial Development' has objectives that identify that industrial development should be compatible with the environmentally

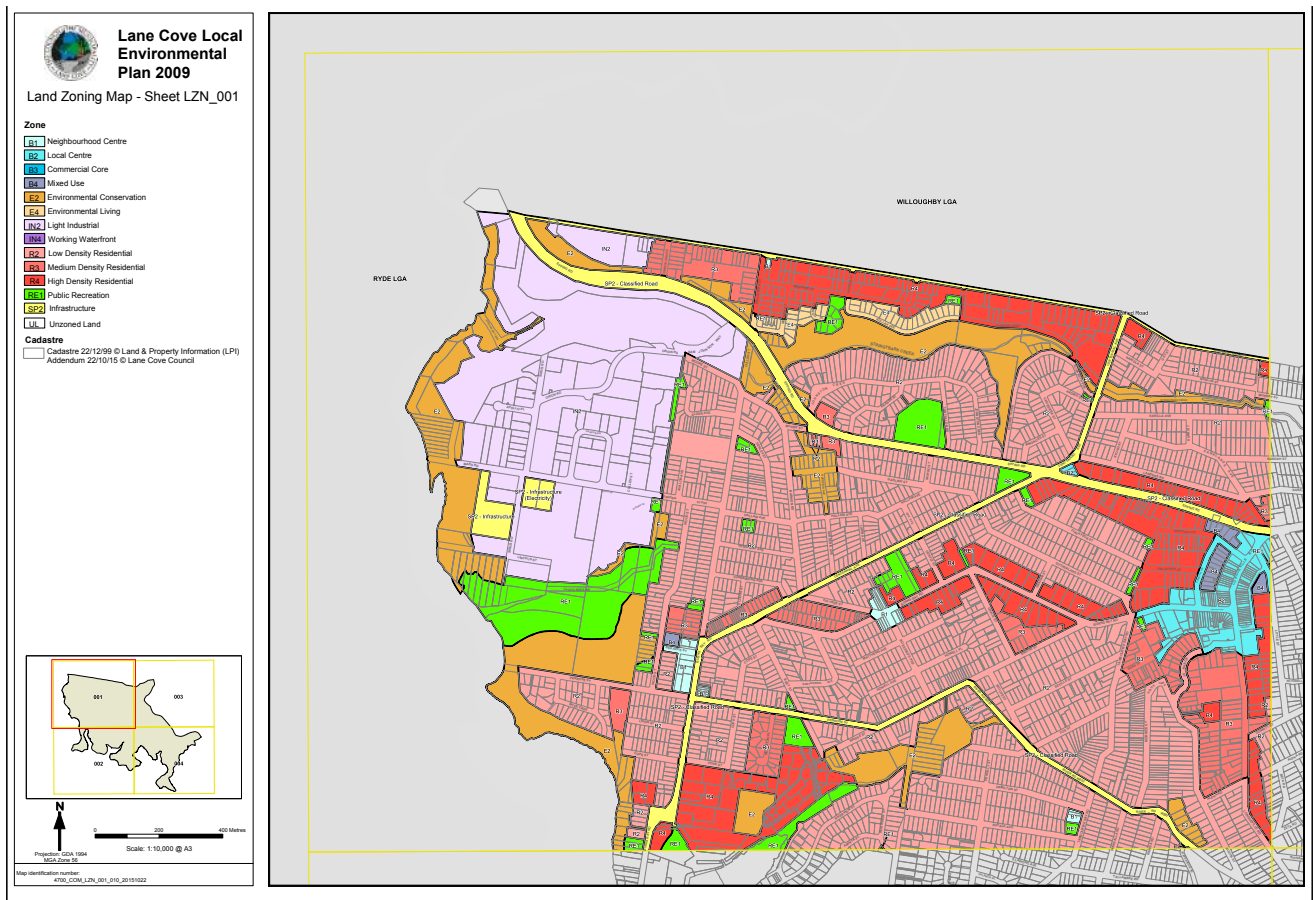


Figure 25: Land Zoning Map (Source: Lane Cove LEP 2009)

sensitive nature of the area. The landscape character of the area can be described as being within a naturally vegetated river corridor and native ingenious bushland.

4.4 Sensitivity of the Landscape

The site is currently zoned IN2 for light industrial use. The land is currently vacant and has former uses therefore, the original landscape has already been modified by man made intervention.

The surrounding area does have sensitivity and this is mentioned in 'Part E - Industrial Development of the Lane Cove DCP'. The protection of bushland and riparian vegetation associated with Stringy Bark Creek.

In its current condition, the site itself is unlikely to hold any local values in terms of its visual appearance. There are several visual receptors that have been identified within this report that have direct and close range views of the development site.

Native endemic tall canopy trees, shrubs and grasses will be planted within designated landscape areas and following the requirements of the Vegetation Management Plan (VMP). All planting within the development is proposed to be native with a very high proportion of endemic species. Bushfire requirements condition that the site can only accommodate a total 15% tree canopy cover and 10% shrubs. A contaminated lands area also exists where the VMP stipulates that trees cannot be planted. Therefore, it is not possible to create dense screening vegetation or an extension of the natural bushland. Refer to Geoscapes landscape plans for detailed proposals.

The conclusion drawn from the assessment of landscaper character (see section 4.3) and the analysis above, would suggest that the sensitivity of the landscape to be **medium**, this is based on a consideration of the close proximity of the surrounding sensitivity rather than the site itself.

4.5 Selected Viewpoints – Receptor Locations

The symbols and numbering in Figure 2, indicates the viewpoints and photomontages that have been selected for a Visual Impact Assessment (VIA). Viewpoints have been taken from publicly accessible areas and also from private individual properties.

A sample of receptors which are closest in proximity to the proposed development, those with vantage points at higher elevations and those with views at further distances have been selected. It would be impractical to provide a VIA for every single possible visual receiver of the development, therefore a sample has been selected. For visual receptors not selected for an individual viewpoint assessment (i.e. from inside a private dwelling), a representative view for that location has been assessed in terms of a likely significance of visual impact. Refer to Section 8.0.

From viewpoint locations, photomontages have been generated to represent as closely as possible views of the proposed development following construction at year 0 and at year 15. Year 15 photomontages are used to simulate proposed landscape mitigation at maturity.

Refer to the visual impact assessment at Section 8.0 of this report and the corresponding viewpoints 1 to 9.

5.0 DEVELOPMENT PROPOSALS

The following information is based on an assessment of drawings provided by GreenBox Architecture.

5.1 Overall Design Proposals

The design proposes a Data Centre with two main data halls, main office, substation, loading docks, plant equipment, car parking and road access. The total site area is 39,453m² of which 26,130m² is used by the built form. The landscape area remaining is 13,094m² which represents 33.2% of the site area. The main buildings facades are orientated in a northwesterly direction facing the river.

5.2 Height / Scale

The development has six data halls A to F. These have a max roof height of 37.6m AHD, however, some plant and equipment on the roof extends up to a max height of 41.4m AHD. The data halls combined create a footprint of approximately 175m x 62m.

The development has been designed to work with the natural topography of the site. By setting the development down into the site, this will ensure that the roof level does not protrude higher than the adjacent existing building of No. 1 Apollo Place. No 1. Apollo place has a roof height of 39m AHD and other similar types of building further to the south east are taller.

By not building above the height of existing development, the proposed Data Centre should not create a large magnitude of change over a vertical extent within view corridors for individuals looking views towards the site.

5.3 Colour / Materials & Finishes

The colours, materials and finishes have been selected to consider the surrounding bushland in which the development will be situated. Building facades contain four colours of painted concrete, which are intended to be distributed randomly. These colour tones contain a mixtures of grays and greens to visually break up the long facade and match with colors of the surrounding bush. This should help to recess the build forms into the landscape.

5.4 Signage & Lighting

Signage will not form a large or dominate component of the development. Any signs will be subtle, will not be visually obtrusive and will most likely represent the style of other signage in the area.

Lighting will be restricted to allow access at night, this is likely to be general lighting to the carpark areas and entry point to the building. This should not adversely increase light spill or affect nearby visual receivers.

5.5 Noise Screening

As per the recommendations of the Operational Noise Assessment.

5.6 Summary

Overall it is judged that the architectural design of the buildings for the proposed data centre, considers the surrounding context and landscape in which it is located. By terracing the building heights down towards Lane Cove River and using natural tones and colours, visual impacts

have been considered by the design team and mitigation proposed. Existing bushland and vegetation associated with Lane Cove River will help to screen the building for the majority of view corridors and a large percentage of deep soil area has been provided in which to plant new landscaping.

6.0 LANDSCAPE STRATEGY, DESIGN AND MITIGATION

6.1 Bushfire Requirements

The following information has been provided by the Bushfire Consultants - Travers Bushfire and Ecology:

The site boundary is to be treated as an Inner Protection Area (IPA) and fuel loads within the IPA are to be maintained so it does not exceed 4t/ha.

Trees are to be maintained to ensure;

- Canopy cover does not exceed 15%
- Trees (at maturity) do not touch or overhang the building
- Tree canopies (at maturity) should be well spread out and not form a continuous canopy
- Lower limbs should be removed up to a height of 2m above ground
- Preference should be given to smooth barked and evergreen trees.

Shrubs are to be maintained to ensure;

- Large discontinuities or gaps in vegetation
- Shrubs should not be located under trees
- Shrubs should not form more than 10% of ground cover
- Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of vegetation.

Grass is to be maintained to ensure:

- A height of 10cm or less
- Leaves and debris is removed.

A 4m wide fire access track has also been included within the design. This will be a grassed track with reinforcement under in the form of a plastic support grid. This will provide the necessary sub grade support for a firetruck while still allowing grass to grow through.

6.2 Vegetation Management Plan (VMP)

A vegetation management plan has been produced by Traver Bushfire and Ecology. Landscape planting design will follow requirements of the VMP. Refer to report REF: 18AWE02V.

6.3 Strategy and Mitigation

To help mitigate views from particularly the north and west, native endemic planting has been introduced to help provide screening of the development. This will allow for large endemic canopy tree planting (in uncontaminated areas) and this would be expected to reach a mature height of between 15m to 25m. This will help to filter views of the development from potential visual receivers. An area identified

as contaminated land within the VMP, cannot contain new tree planting, only shrubs and groundcovers. Refer to Travers VMP report REF: 18AWE02V.

6.4 Detailed Landscape Proposals

Please refer to landscape design documentation LDA-00 to LDA-07 prepared by Geoscapes, for detailed landscape proposals.

7.0 LANDSCAPE IMPACT ASSESSMENT

7.1 Significance of Impact

The sensitivity of the landscape has been assessed within the baseline to be **medium** (see section 4.0). From understanding the development proposals, mitigation and the existing industrial / commercial character of adjacent developments to the east, the magnitude of change is judged to be **medium**. The introduction of the development is not uncharacteristic of the surrounding industrial context in which it will sit. Through the use of complementary natural colour tones and materials, the development should blend into the natural bushland background. The significance of landscape impact therefore, is judged to be **moderate/minor**.

8.0 VISUAL IMPACT ASSESSMENT

8.1 Viewpoint 1

Viewing Location	Lane Cove Bush Walk, Lane Cove West - Looking Southeast
GPS	33°48'23.1" S 151°08'40.4" E
Elevation (Eye-level)	5m AHD
Date and Time	27th Nov 2018 - 12.04pm
Baseline Photo and Photomontage Figure	Figure 27, 27a (27a is a separate figure additional to this report that shows a wider angle of view)

Visual Description

Approx. Viewing Distance from Site Boundary	16m
View description & prominence of the development	This visual receptor is located along Lane Cove Bush Walk at a close distance to the northern site boundary. The bush walk extends from Blackman Park Playground, along the west side of Lane Cove River to the Junction of Epping and Mowbray Road. The walk opens up to a grassed area immediately to the north of the development boundary. The site is clearly seen in the immediate foreground of the image, to the right and left of the image bushland is seen along Lane Cove River. In the background of the image, No 2. Apollo Place can clearly be seen, along with the stack of 5 Sirius Road.

Visual Receptor Sensitivity

At the viewpoint location as shown in the baseline image, the walk emerges from the bush into an open grassland area, this has open views towards the site. However, in its present condition the site can be considered visually poor with piles of dirt and rubble scattered throughout the site. There exists a large horizontal extent of existing commercial and industrial development within the view corridor.

Lane Cove Bushwalk is a state public right of way and is referenced in on-line media, state and council DCP's and literature, tourist maps and walking maps. It passes through bushland close to the waters edge of Lane Cover River Foreshore and crosses close to the bottom of the development site at approximately a distance of 16m. It is regarded as environmentally and visually highly sensitive within state and local planning controls and policies, however, at this particular location, the existing baseline view is one that is currently affected by other development. There are other much more attractive views and vistas along other parts of the bush walk and this location represents just one small part of the walk. On this basis, it is judged that the sensitivity for this receptor to the development would be **medium**.

Magnitude of Change

Proposed landscaping will help to reduce the impact of the development within the view. Due to bushfire and contaminated lands restrictions, proposed landscaping is required to be scattered with gaps between tree canopies and shrubs, therefore, the development cannot be screened completely. The development will be clearly noticeable with a large horizontal and vertical extent of the view affected and views are at very close range. There will be a new focus to the view, with a substantial change to the baseline. Therefore, the magnitude of change for this visual receptor is judged to be **very high**.

Significance of Visual Impact

The significance of the visual impact at this location is judged to be **major/moderate**.



Baseline Photo



Photomontage - Year 0



Photomontage - Year 15

Figure 27: Viewpoint 1 - Lane Cove Bush Walk, Lane Cove West - Looking Southeast (Photomontage)

Approx Panoramic Angle of View - 67°

8.2 Viewpoint 2

Viewing Location	Arise Meriton, Lane Cove West - Looking Southwest
GPS	33°48'17.6" S, 151°08'46.9"E
Elevation (Eye-level)	60m AHD
Date and Time	21st Nov 2018 -2.54pm
Baseline Photo & Photomontage Figure	Figure 28
Visual Description	
Approx. Viewing Distance from Site Boundary	300m
View description & prominence of the development	This view was taken alongside the Meriton building. This was achieved by flying an aerial drone to approximately half the height of the building, in order to represent what views would be experienced by residential tenants of apartments facing south towards the site. It is important to note that not all residents facing south will have views of the development, some apartments on lower levels will have views obscured by existing vegetation. The site is prominent in the foreground of the view corridor of the baseline image opposite. To the right Lane Cove River and Magdala Park can be seen surrounded by bushland. The the left of the image are commercial and industrial buildings within Lane Cove Business Park. In the background the suburbs of Lane Cove, East Ryde and Hunters Hill are visible.
Visual Receptor Sensitivity	
	There are several detractors within the view, including buildings within Lane Cove Business Park. However, due to the close proximity of this receptor and the potential for direct views from primary or secondary living spaces, it is judged that the sensitivity for this receptor to the development would be high .
Magnitude of Change	
	The development will create a noticeable change in the view mostly in horizontal extent that would be recognisable to the visual receptor. However, views of the Lane Cover River corridor would be unaffected. It can be argued that the northern part of the development site would be improved visually by the introduction of proposed landscaping. Colours used on the building facade, help it to sit more comfortably against the tones of existing bushland. Therefore, the magnitude of change for this visual receptor is judged to be medium .
Significance of Visual Impact	
	The significance of the visual impact at this location is judged to be moderate .



Baseline Photo



Photomontage - Year 0



Photomontage - Year 15

Figure 28: Viewpoint 2 - Arise Meriton, Lane Cove West - Looking Southwest (Photomontage)

Approx Panoramic Angle of View - 67°

8.3 Viewpoint 3

Viewing Location	Lane Cove Valley Walk Bridge, Lane Cove North - Looking South
GPS	33°48'10.5" S, 151°08'41" E
Elevation (Eye-level)	14.5m
Date and Time	27th Nov 2018 - 10.44am
Baseline Photo & Photomontage Figure	Figure 29
Visual Description	
Approx. Viewing Distance from Site Boundary	410m
View description & prominence of the development	Lane Cove Valley Walk connects a network of bushwalks within the immediate area and provides access across the Lane Cove River via a pedestrian bridge. The baseline view is also representational of the type of views that would be experienced by users on marine craft such as boats and kayaks. The site is seen clearly in the centre of the baseline image opposite, with the building at No 2. Apollo place in the background. To the left and right is dense bushland associated with the River. The stack at 5 Sirius Road can be seen above the tree line.
Visual Receptor Sensitivity	
	Lane Cove Valley Bush Walk is a state public right of way and is referenced in on-line media, state and council DCP's and literature, tourist maps and walking maps. The baseline view contains protected bushland either side of Lane Cove River and views of the water itself. However, industrial development associated with Lane Cove business park can be seen centrally in the view surrounding the development site, this has somewhat influenced the natural appearance and quality of view. Nevertheless, it is judged that the sensitivity for this receptor to the development would be high .
Magnitude of Change	
	Although at a close range of 400m to this viewpoint, it can be argued that the proposed development does not appear to substantially change the baseline view. It does form a new and clearly recognisable element within the center of the view corridor. At present 2 Apollo Place creates a focus for the baseline view which is not dissimilar to the photomontage image, however, the new development is larger in scale. Therefore, the residual magnitude of change is expected to be medium .
Significance of Visual Impact	
	The significance of the visual impact at this location is judged to be moderate .



Figure 29: Viewpoint 3 - Lane Cove Valley Walk, Lane Cove North - Looking South (Photomontage)

Approx Panoramic Angle of View - 67°

8.4 Viewpoint 4

Viewing Location	Magdala Park, North Ryde - Looking Southeast
GPS	33°48'14.4" S, 151°08'32.2" E
Elevation (Eye-level)	17.4m
Date and Time	27th Nov 2018 - 10.23am
Baseline Photo & Photomontage Figure	Figure 30

Visual Description

Approx. Viewing Distance from Site Boundary	350m
View description & prominence of the development	Magdala Park is located on the eastern side of the development site and Lane Cove River. It is predominantly used for recreation and there are several pitches for sports related activities. The site is open and does experience direct views of the development site. In the center of the background of the baseline image, the development site is seen along with 2 Apollo Place, 5 Sirius Road and other commercial buildings. Bushland at the edge of the western shoreline is situated within the foreground, which provides some visual screening of the development site.

Visual Receptor Sensitivity

People using the park will generally be involved in outdoor sports and other recreational activities. The appreciation of the landscape for these users groups, may have little or no importance. The view has already been affected by industrial and commercial development, with buildings situated along Sirius road clearly seen. It is judged that the sensitivity for this receptor to the development would be **medium**.

Magnitude of Change

From the photomontage opposite, it is apparent that the new development will sit vertically lower in the view than No.5 Sirius Road. In the context of other existing developments within the baseline image, the proposed development will form a new and recognisable element, which would be likely recognised by the receptor. However, large parts of the building will be screened by existing vegetation and the addition of landscaping at year 15, will help to filter and break up views of the built form. Therefore, the residual magnitude of change is expected to be **medium**.

Significance of Visual Impact

The significance of the visual impact at this location is judged to be **moderate/minor**.



Photomontage - Year 15

Figure 30: Viewpoint 4 - Magdala Park, North Ryde - Looking Southeast (Photomontage)

Approx Panoramic Angle of View - 67°

8.5 Viewpoint 5

Viewing Location	Honeywell Office - 2 Richardson Place, North Ryde - Looking Southeast
GPS	33°48'23.1"S, 151°08'40.4"E
Elevation (Eye-level)	52.8m AHD
Date and Time	4th Dec 2018 - 3.54pm
Baseline Photo & Photomontage Figure	Figure 31
Visual Description	
Approx. Viewing Distance from Site Boundary	970m
View description & prominence of the development	This visual receptor, was selected to be representational of views that might be experienced from the south side of commercial buildings located within North Ryde. These buildings can clearly be seen in the drone photography and include commercial properties such as Honeywell, BOC and 3M (see figures 10 and 14). The baseline image opposite was taken from the 3rd floor communal balcony of the Honeywell Office, and the development site can be seen in the center of the photo. Lane Cove River and Magdala Park are seen to the right of the image. To the left is the residential tower of Arise Meriton and commercial buildings associated with Lane Cove Business Park. Residential properties are also seen to the east. In the foreground is another commercial building within North Ryde Business Park.
Visual Receptor Sensitivity	
	Office windows and communal spaces facing south at higher levels, would experience a view as shown in the baseline image. As this receptor is representative of people at their place of work, the view may hold some importance to them. However, the baseline view does contain many built forms, including the residential Meriton tower and parts of Lane Cove Business Park. It can be judged that the sensitivity for this receptor to the development would be low .
Magnitude of Change	
	As shown in the photomontage opposite, the proposed development would form a minor constituent of the view, being partially visible. Therefore, the magnitude of change is judged to be low .
Significance of Visual Impact	
	The significance of the visual impact at this location is judged to be minor negligible .



Photomontage - Year 15

Figure 31: Viewpoint 5 - Honeywell Office, North Ryde - Looking Southeast (Photomontage)

Approx Panoramic Angle of View - 67°

8.6 Viewpoint 6

Viewing Location	Ryde Gardens, North Ryde - Looking Southeast
GPS	33°47'44"S, 151°08'14"E
Elevation (Eye-level)	125m
Date and Time	27th Nov 2018 - 1.57pm
Baseline Photo & Photomontage Figure	Figure 32

Visual Description

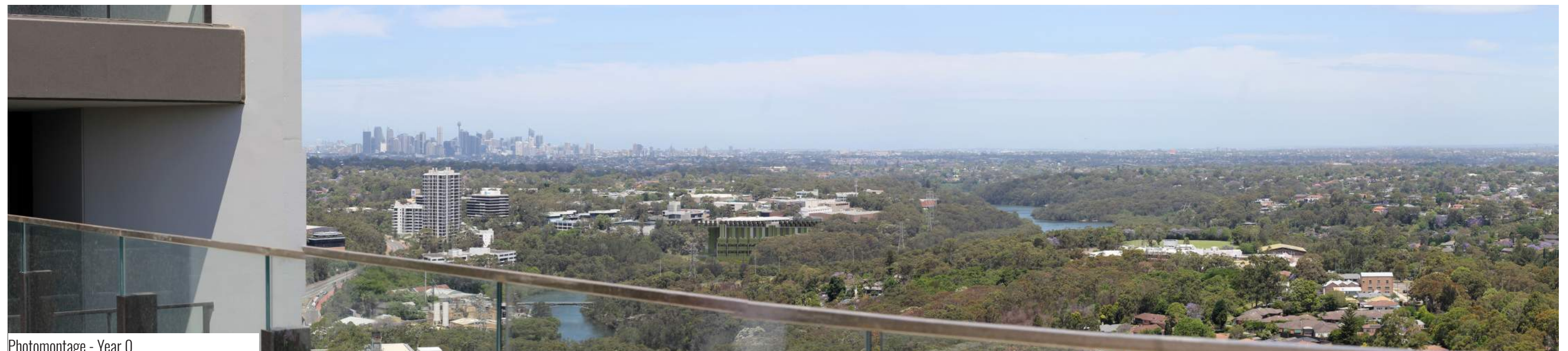
Approx. Viewing Distance from Site Boundary	1.35km
View description & prominence of the development	Ryde Gardens is a new residential development containing several towers located immediately behind North Ryde Train Station. Residential apartments and public communal spaces facing south will experience views of the development, however these are at a distance of 1.3km away. The baseline photo was taken from the rooftop communal space of Tower A on floor 24. Extensive views over the surrounding landscape are possible from this location with Sydney CBD seen in the distant background. Commercial development within Lane Cove Business Park is seen behind the development site, which is centrally located within the baseline photo.

Visual Receptor Sensitivity	At higher elevations within the tower and at the rooftop communal spaces, extensive long range view exist over greater Sydney. The baseline view therefore, is a mix of cityscape, residential, and industrial. Views of the development are likely from private primary or secondary spaces. The view is at a distance of 1.35km from the site and therefore, it is judged that the sensitivity for this receptor to the development would be medium .
Magnitude of Change	The proposed development will form a barely noticeable component of the view, and the view whilst slightly altered would be similar to the baseline situation. Therefore, the magnitude of change is judged to be very low .
Significance of Visual Impact	The significance of the visual impact at this location is judged to be minor negligible .

Extent of AirTrunk Development



Baseline Photo



Photomontage - Year 0



Photomontage - Year 15

Figure 32: Viewpoint 6 - Ryde Gardens, North Ryde - Looking Southeast (Photomontage)

Approx Panoramic Angle of View - 67°

8.7 Viewpoint 7

Viewing Location	44 Cox Road, East Ryde - Looking East
GPS	33°48'18.8" S, 151°08'08.1" E
Elevation (Eye-level)	56.7m
Date and Time	27th Nov 2018 - 10.00am
Baseline Photo & Photomontage Figure	Figure 33

Visual Description

Approx. Viewing Distance from Site Boundary	800m
View description & prominence of the development	44 Cox Road, is a new residential dwelling that is still currently under construction. It was identified through Drone photography analysis. The baseline photograph shown opposite was taken from a proposed balcony on the eastern corner of the property. In the foreground, significant vegetation is present and bushland associated with Lane Cove River can be seen. Sydney CBD is visible to the right of the image in the far distance and the Meriton tower is seen in the far left. Lane Cove Business Park and the development site are centrally located within the view, with the top portion of No. 2 Apollo Place visible. The presence of existing vegetation does currently screen lower parts of the site.

Visual Receptor Sensitivity

There is a significant amount of vegetation in the foreground of the view, this is the bushland to the west of Lane Cove River. At a medium distance in the baseline photo, Lane Cove Business park can clearly be seen, therefore the view is already influenced by industrial development. The view is likely to be from secondary living spaces and therefore, it is judged that the sensitivity for this receptor to the development would be **low**.

Magnitude of Change

From the evidence within the photomontage opposite, only the very top of the plant equipment of the development would be seen. This would form a barely noticeable component of the view, and the view would be very similar to the existing baseline situation. Therefore, the magnitude of change is judged to be **very low**.

Significance of Visual Impact

The significance of the visual impact at this location is judged to be **negligible**.

Extent of AirTrunk Development



Baseline Photo



Photomontage - Year 0



Photomontage - Year 15

Figure 33: Viewpoint 7 - 44 Cox Road, East Ryde - Looking East (Photomontage)

Approx Panoramic Angle of View - 67°

8.8 Viewpoint 8

Viewing Location	282 Pittwater Road, East Ryde - Looking Northeast
GPS	33°48'45.7" S, 151°08'25.2" E
Elevation (Eye-level)	18.4m
Date and Time	27th Nov 2018 - 9.01am
Baseline Photo & Photomontage Figure	Figure 34
Visual Description	
Approx. Viewing Distance from Site Boundary	500m
View description & prominence of the development	This viewpoint is taken from a second floor balcony of a residential property along Pittwater Road within East Ryde. The view is representational of several properties along this section of Pittwater Road, who would experience similar views. These are shown within the Drone photography image figures 12-13 and 16-17. The property is situated in an elevated position on the south eastern side of Lane Cove River and behind Bushland, which makes up a large proportion of what is seen within the view corridor. The Meriton residential tower is clearly seen to the left of the image. The development site is located to the left of the baseline photo and partially screened by existing vegetation. There are several electric pylons which cross the view.
Visual Sensitivity	
	Within the baseline view, there is a significant amount of bushland which is associated with the Lane Cove River corridor. This combined with views of the river itself, provide a pleasant outlook and one that holds a value to residents close to this location with elevated views. However, there are several landscape detractors in the view, including the AusGrid power grid at 29 Sirius Road to the right of the view and a number of electric pylons which traverse the eastern side of the river corridor. It is therefore, judged that the sensitivity of this visual receptor is medium .
Magnitude of Change	
	The proposed development will form a new and recognisable element within the view that will likely be recognised by the receptor. There would be a slight vertical extent of the view affected, with existing and proposed landscape planting screening the bottom sections of the development. Therefore, the magnitude of change is judged to be medium .
Significance of Visual Impact	
	The significance of the visual impact at this location is judged to be moderate/minor .

Extent of AirTrunk Development



Photomontage - Year 0



Photomontage - Year 15

Figure 34: Viewpoint 8 - 282 Pittwater Road, East Ryde - Looking Northeast (Photomontage)

Approx Panoramic Angle of View - 67°

8.9 Viewpoint 9

Viewing Location	102 Melba Drive, East Ryde - Looking Northeast
GPS	33°50'23.43" S, 150°46'40.91" E
Elevation (Eye-level)	48m
Date and Time	27th Nov 2018 - 9.46am
Baseline Photo & Photomontage Figure	Figure 35

Visual Description

Approx. Viewing Distance from Site Boundary	600m
View description & prominence of the development	This view is taken from a second floor balcony of an elevated property immediately east of the development site, within the residential suburb of East Ryde. The development site can clearly be seen centrally within the baseline view, with commercial buildings from Lane Cover Business Park to the right of the image. Significant vegetation is present in the foreground, which does partially obscure views of nearby commercial development.

Visual Sensitivity	As a residential visual receptor at a distance of 600m from the site, this viewpoint will receive views of the development from private primary/secondary living spaces. Similar type views would be experienced by other two-story properties along sections of Melba Drive, from balconies or windows that face east. A significant amount of the bushland and mature vegetation can be seen in the foreground and background. However, the view has been modified by development over time, including the construction of the Meriton tower which is prominent in the view and also by parts of the Lane Cove Business Park Estate. It is therefore, judged that the sensitivity of this visual receptor is medium .
Magnitude of Change	From the photomontage opposite, it is clear that the top proportion of the data halls and plant equipment will be seen. The proposed development will form a new and recognisable element within the view which would be recognised by the receptor. It is judged that the magnitude of change would be medium .

Significance of Visual Impact	The significance of the visual impact at this location is judged to be moderate/minor
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Baseline Photo



Photomontage - Year 0



Photomontage - Year 15

Figure 35: Viewpoint 9 - 102 Melba Drive, East Ryde - Looking Northeast (Photomontage)

Approx Panoramic Angle of View - 67°

8.10 Viewpoint 10

Viewing Location	Great North Walk Position 1 - Looking East
GPS	33°48'31"S , 151°8'28"E
Elevation (Eye-level)	6.3m
Date and Time	30th May 2019 - 1.46pm
Baseline Photo & Photomontage Figure	Figure 36
Visual Description	
Approx. Viewing Distance from Site Boundary	200m
View description & prominence of the development	This view is taken from the western side of Lane Cove River within Lane Cove National Park. It is possible to reach this location from the publicly accessible Great North Walk which runs from Magdala Park south. The track down to the river is informal and reaches a rock outcrop where it is possible to view Lane Cove River and the development site. Significant bushland vegetation is visible in the foreground on the eastern side of the river immediately in front of the development. The top of No 2 and No 3 Apollo place can be seen above the tree line and an electricity pylon.
Visual Sensitivity	
As described above the this location is accessible a short distance from Great North Walk for those wishing to reach the embankment of the river corridor. It presents an open view of Lane Cove river in a 180 degree panorama. This landscape is not unaffected by commercial/industrial/infrastructure development and some landscape detractors do exist within the view corridor, including no 2 and 3 Apollo Place, an electricity tower and overhead power lines on the eastern side.	
Great North Walk is a state public right of way and is referenced in on-line media, state and council DCP's and literature, tourist maps and walking maps. It passes through dense bushland and at times close to the waters edge of Lane Cover River Foreshore. It is regarded as environmentally and visually highly sensitive within state and local planning controls and policies. The majority of the walk would either experience filtered views of the development or views would be screened by existing vegetation. There are a couple of locations where getting to the waters edge of Lane Cove river is possible through informal tracks which present open views to the development. it is judged that the sensitivity for this receptor to the development would be high .	
Magnitude of Change	
From the photomontage opposite, it is clear that the top proportion of the data halls and plant equipment will be seen. The proposed development will form a new and recognisable element within the view which would be recognised by the receptor. Mitigation in the form of tree planting will help to filter views to the lower half of the development. It is judged that the magnitude of change would be medium .	
Significance of Visual Impact	
The significance of the visual impact at this location is judged to be moderate .	



Baseline Photo



Photomontage - Year 0



Photomontage - Year 15

Figure 36: Viewpoint 10 - Great North Walk Position 1, East Ryde - Looking Northeast (Photomontage)

Approx Panoramic Angle of View - 67°

8.11 Viewpoint 11

Viewing Location	Great North Walk Position 2 - Looking Northeast
GPS	33°48'33"S, 151°8'30"E
Elevation (Eye-level)	5.7m
Date and Time	30th May 2019 - 2.00pm
Baseline Photo & Photomontage Figure	Figure 37

Visual Description

Approx. Viewing Distance from Site Boundary	220m
View description & prominence of the development	This view is similar to VP10 but is taken 70m further south along the western side of Lane Cove River within Lane Cove National Park. It is possible to reach this location from the publicly accessible Great North Walk which runs from Magdala Park south. The track down to the river is informal and reaches a rock outcrop where it is possible to view Lane Cove River and the development site. Significant bushland vegetation is visible in the foreground on the eastern side of the river immediately in front of the development. The top of No 3 Apollo place can be seen above the tree line and an electricity lines.

Visual Sensitivity	Great North Walk is a state public right of way and is referenced in on-line media, state and council DCP's and literature, tourist maps and walking maps. It passes through dense bushland and at times close to the waters edge of Lane Cover River Foreshore. It is regarded as environmentally and visually highly sensitive within state and local planning controls and policies. The majority of the walk would either experience filtered views of the development or views would be screened by existing vegetation. There are a couple of locations where getting to the waters edge of Lane Cove river is possible through informal tracks which present open views to the development. Similar to VP10, it is judged that the sensitivity for this receptor to the development would be high .
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Magnitude of Change	From the photomontage opposite, it is clear that the top proportion of the data halls and plant equipment will be seen. The proposed development will form a new and recognisable element within the view which would be recognised by the receptor. Mitigation in the form of tree planting will help to filter views to the lower half of the development. It is judged that the magnitude of change would be medium .
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Significance of Visual Impact	The significance of the visual impact at this location is judged to be moderate
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Figure 37: Viewpoint 11 - Great North Walk Position 2, East Ryde - Looking Northeast (Photomontage)

Approx Panoramic Angle of View - 67°

9.0 CONCLUSIONS AND NON-TECHNICAL SUMMARY

The main purpose of this Landscape and Visual Impact Assessment, is to address the relevant Secretary's Environmental Assessment Requirements, that were provided by the Department of Planning, for a Data Centre development at 1 Sirius Road, Lane Cove West. Potential visual impacts have been assessed for a number of locations that are either in close vicinity to the proposed development, or at higher elevations with vantage points overlooking the site.

The landscape value of the development site itself, has been assessed based upon local planning designations, landscape ecological value and the character and context in which it is located. It has been concluded that the significance of the impact upon the landscape at the development site is **medium**. Although the site itself is in poor condition, this has to be considered against the immediate surrounding landscape character and context of a national park and protected the bushland of Lane Cove. Directly to the east of the site is industrially zoned land, this has created a landscape character which has been influenced by industrial and commercial development.

It is concluded that the proposed data centre development, will create visual impacts for several user groups who will experience views of the development. The highest visual impacts are predominately for people or user groups that are located in close proximity to the development.

The conclusions of potential visual impacts have been determined by site visits, desktop study, photographic and photomontage visual analysis.

Through analysis conducted within this report, the following residential locations are judged to receive **major/moderate** visual impacts from the proposed data centre development.

- Lane Cove Bush Walk, Lane Cove West (VP1)

The following locations and are judged to have **moderate** visual impacts:

- Arise Meriton, Lane Cove West (VP2)
- Lane Cove Valley Walk Bridge (VP3)
- Great North Walk - Position 1 (VP10)
- Great North Walk - Position 2 (VP11)

The following locations and are judged to have **moderate/minor** visual impacts:

- 282 Pittwater Road, East Ryde (VP8)
- 102 Melba Drive, East Ryde (VP9)
- Magdala Park, North Ryde (VP4)

The following locations and are judged to have **minor negligible** visual impacts:

- Honeywell Office (VP5)
- Ryde Gardens, North Ryde (VP6)

The following locations and are judged to have **negligible** visual impacts:

- 44 Cox Road, East Ryde (VP7)

One location has been assessed as having **major/moderate** visual impacts and four locations have been assessed as having **moderate** visual impacts from the development. This is largely based on the close proximity of the residential properties or locations to the site, the sensitivity of a particular location and the extent of the view being effected.

The report demonstrates that careful selection of building finishes and colours combined with proposed landscape planting at the development site, can be helpful in filtering and blending the development into its surrounding context. This in turn will help to reduce visual impacts for those people and locations in close proximity to the development. Landscaping will be most effective after a period of 15 years, this is the point that trees and shrubs are expected to begin to reach maturity.

There are a few publicly accessible locations on the western side of Lane Cover River within the national park, that do experience close range open views towards the development. These views are however, are not totally unaffected by existing development. The presence of IN1 zoning to the east of Lane Cove River means that existing development is seen and that any new proposed development on the Sirus Road site will affect the view to some degree.

Significant areas of existing bushland associated with the Lane Cover River corridor immediately surround the site to the north, west and south of the site. This provides effective screening of the development to a number of potential visual receivers. This often results in properties only at higher elevations or those with second floor balconies being able to see the development.

10.0 GLOSSARY OF TERMS

Term	Definition
SEARs	Secretary's Environmental Assessment Requirements
GLVIA	Guidelines for Landscape and Visual Impact Assessment (UK Landscape Institute)
LVIA	Landscape and Visual Impact Assessment
VIA	Visual Impact Assessment
DoPE	Department of Planning and Environment
LEP	Local Environment Plan
DCP	Development Control Plan
Baseline	The existing current condition / character of the landscape or view
Landscape Receptor	The landscape of the development site
Landscape Sensitivity	How sensitive a particular landscape is to change and its ability to accept the development proposals.
Visual Receptor	A group or user experiencing views of the development from a particular location
Visual Sensitivity	The degree to which a particular view can accommodate change arising from a particular development, without detrimental effects.
Panoramic Angle of View or Field of View	Single DSLR 50mm lens photographs are stitched together to form a combined panoramic image. The angle of view is the extent of the image shown on the viewpoint sheet. A full frame single image is 39.6°
Viewing Distance	The distance from the point of projection to the image plane to reproduce correct linear perspective.
Magnitude of Change	The magnitude of the change to a landscape receptor or visual receptor
Significance of Impact	How significant an impact is for a landscape or visual receptor