LANDSCAPE AND VISUAL IMPACT ASSESSMENT 228-230 BLANDS LANE, WEST WYALONG

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FINAL
PREPARED FOR LIGHTSOURCE DEVELOPMENT SERVICES AUSTRALIA PTY LTD

URBIS

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Peter Haack
Associate Director	Rachel Smithers
Senior Consultant	Frida Kalantarian
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GLOSSARY OF ABBREVIATIONS/TECHNICAL TERMS

TERM	DEFINITION	ABBREVIATION
Australian height datum		**AHD**
Amelioration	The ability to reduce the visual impact of a development through siting design colour or screening.	
Background	Parts of a setting that appear most distant typically greater than 1.5 kilometres; also referred to as the regional setting.	
Canopy tree	A tree with a minimum height of approximately 10 metres with an average crown spread of at least 8 metres to 10 metres in width.	
Environmental Impact Statement		**EIS**
Foreground	The area that immediately surrounds the proposal up to a distance of 0.5 kilometres; also referred to as the local setting.	
Kilometres		**km**
Landscape and visual impact assessment	The assessment of the impacts of the proposal on landscape and visual values.	**LVIA**
Landscape character assessment	The process of mapping, describing and evaluating landscapes on the basis of the presence and arrangement of various landscape features.	**LCA**
Local planning policy framework	Local planning policies are tools used to implement the objectives and strategies of the Municipal Strategic Statement.	**LPPF**
Metres		**m**
Middleground	An intermediate area that is a 0.5 kilometres to 1.5 kilometres distance from the proposal. Also referred to as the sub-regional setting.	
Modification level	The degree to which a development contrasts or blends with its setting.	
Receptor	A location or type of user for which views of the proposal may be possible.	
Significant landscape	The landscape is of national importance.	
Viewer perception	The way in which people respond to what they are seeing as influenced by things other than purely visual, for example noise and economic benefits.	
Viewpoint	Moderate or high sensitivity location from which views to the construction process or components of the proposal may be possible.	
Viewshed	The surface area visible from a particular viewing location.	

TERM	DEFINITION	ABBREVIATION
Visual amenity	The qualities of a landscape setting that are appreciated and valued by a viewer.	
Visual catchment	The area over which an object can be seen within the landscape based on line of sight.	
Visual impact	The result of assessing the sensitivity level of a viewer and the modification level of a development.	
Visual sensitivity	The degree to which various user groups would respond to change based on their expectation of a particular experience in a given setting; for example, the expectation of a high level of visual amenity in a national park.	

1. INTRODUCTION

1.1. OVERVIEW

Urbis Pty Ltd was commissioned by Lightsource Development Services Australia Pty Ltd to undertake a landscape and visual appraisal of the land at 228-230 Blands Lane, West Wyalong (the Site), to assess the suitability of the land for a solar farm (the Project).

1.2. THE PROPOSAL

It is planned to develop the Site for a solar farm and associated infrastructure.

1.3. PURPOSE AND SCOPE OF THIS REPORT

This report outlines the findings of the Landscape and Visual Impact Assessment (LVIA) of the Project.

The objectives of this landscape and visual appraisal are to assess the landscape characteristics of the land at Blands Lane and its surroundings, and to consider the visual quality of the Site, its function in the landscape, and its relative qualities within the wider landscape. The work undertaken included an assessment of the existing landscape features of the Site, together with a visual appraisal of the Site and its context. The next step was to identify any landscape mitigation for the proposed development.

The process that Urbis used to undertake this landscape and visual impact assessment included desk-top research and field survey, identification of the landscape and visual values and the analysis and documentation of the findings.

1.3.1. Evaluation objective

The evaluation objective for landscape and visual amenity is to minimise adverse impacts on the built and natural environment (including public open space) and capitalise on opportunities to improve visual amenity.

1.3.2. Structure of this report

The structure of the report is outlined below.

- Section 1 – introduces the report;
- Section 2 – describes the methodology for the assessment;
- Section 3 – describes the context and landscape of the Site;
- Section 4 – describes the components of the Project;
- Section 5 – identifies relevant landscape and visual policy and legislation pertinent to the Project;
- Section 6 – assesses the potential visual impacts of the Project;
- Section 7 – describes the mitigation actions; and
- Section 8 – summarises the assessment findings.

2. METHODOLOGY

While there are no specific legislative requirements for the methodology of an assessment such as this in New South Wales, the industry typically refers to the guidance offered by:

- Guidance note EIA-N04 Guidelines for Landscape Character and Visual Impact Assessment, NSW State Government, Roads and Maritime Services (2013).
- The Guidance for Landscape and Visual Impact Assessment (GLVIA), Third Edition, Landscape Institute and Institute of Environmental Management & Assessment (2013).

The methodology used for this Project is described below and conforms generally to the direction offered by these guidelines.

This report assesses the visual impact assessment of the Project, that is the day to day visual effects on people's views. Assessment methodology is further outlined in Section 4 of the Guidance note EIA-N04 (RMS 2013). A landscape character assessment was not undertaken.

The method to measure visual impacts is based on the combination of the sensitivity of viewers to the proposed change and the magnitude of the Project on that visual setting or view.

2.1. STUDY AREA

The study area for the purposes of this assessment includes the Site and a viewshed analysis of 1.5 kilometre radius from the Site boundary. A viewshed is defined as the surface area visible from a particular viewing location. As the distance increases from any proposed development, the field of view decreases causing the visibility of components to diminish. Views at or greater than 1.5 kilometres would visually be insignificant or the degree that it intrudes on the view would be minimal. Appendix A defines the visual prominence rationale.

The extent of the Site's potentially visible surface area from a particular viewing location was identified during a desktop study using topographical data. The potential viewpoints were then validated during a field visit to account for potential screening and filtering effect on views from topography, existing vegetation and built form.

2.2. IMPACT ASSESSMENT

The approach for the LVIA is based on an assessment of the change to the landscape setting, including the ability of the landscape to absorb the change, and the sensitivity of the receptor viewing the landscape. The outcome has been considered as a 'visual impact' experienced by the viewer. Figure 1 - LVIA methodology diagram illustrates the key steps for the impact assessment.

The LVIA methodology was predominately drawn from the United Kingdom Guidelines for Landscape and Visual Impact Assessment[1]. The determination of viewer sensitivity was based on the United States Department of Agriculture Forest Service, Visual Management System[2].

The following section outlines the methodology for undertaking the impact assessment for the operation phase.

The impact assessment entailed the following interrelated tasks:

- Existing conditions assessment of the study area - the existing conditions assessment was used to establish the study area and provided a baseline assessment of visual impacts;
- Detailed viewpoint assessment - detailed assessment of every viewpoint in the vicinity of the proposal is not practicable. Therefore, it is accepted practice to undertake a detailed assessment at selected viewpoints that are representative of high sensitivity areas in the vicinity of the proposal. These results can be inferred for other proximate viewpoints with similar views and levels of sensitivity.

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1 The Landscape Institute and Institute for Environmental Management and Assessment LIIEMA, (2013), *Guidelines for Landscape and Visual Impact Assessment*, Routledge 3rd Edition

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

As such, eight viewpoints were identified from publicly accessible locations. These were selected from the baseline and the field visit; and

2.2.1.1. Visual sensitivity

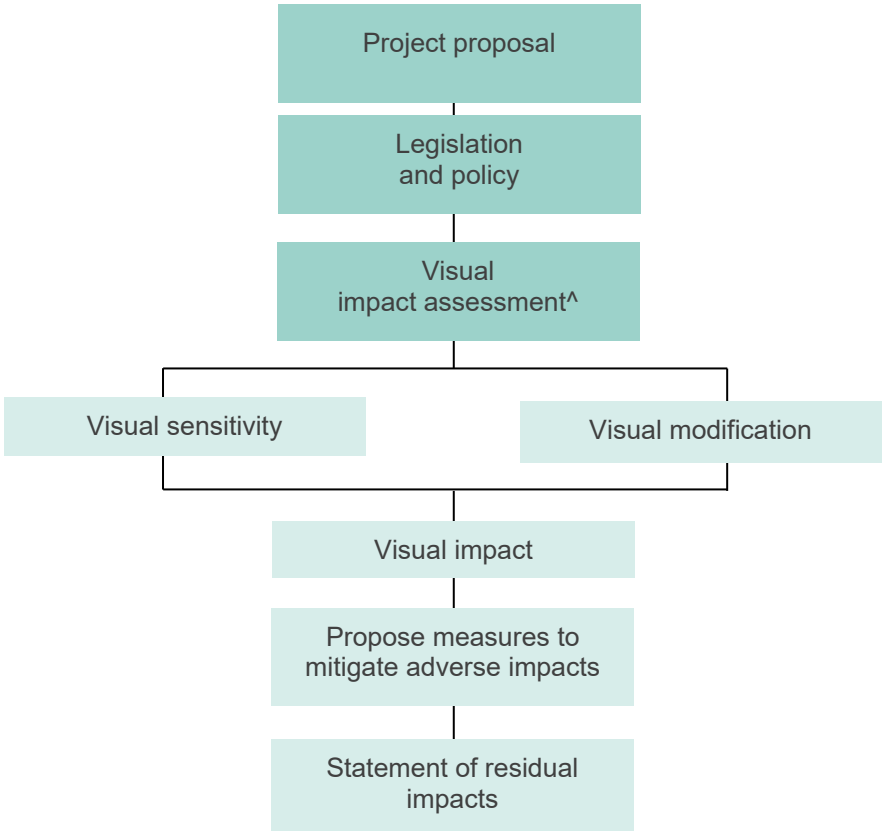
Visual sensitivity is a measure of how critically a change to the existing landscape would be regarded based on the use of the area from where it is viewed (Brush and Shafer, 1975). Different activities undertaken within the landscape setting have different sensitivity levels. For example, tourists who are using the surrounding landscape as a part of a holiday experience would generally view built form interventions within the landscape setting more critically than workers in an industrial setting. Similarly, individuals would view changes to the visual setting of their residence more critically than changes to the visual setting of the broader setting in which they travel or work.

Determining the visual sensitivity depends on a range of characteristics. The primary characteristics used in this study are:

- Land use at the view point (incorporating consideration of the expectation of a viewer of a particular visual experience); and
- Distance to the closest component of the proposal within the viewing angle of the viewpoint.

Typical levels of viewer sensitivity for the assessed viewpoints or adjacent areas are based on land use because this largely defines a viewer's expectation of what they would typically expect within a particular setting. This approach is consistent with the visual management system (United States Department of Agriculture Forest Service, 1995). The typical viewer sensitivity levels relating to land use within the proposal area are outlined in Table 1.

Figure 1 - LVIA methodology diagram



^ Visual assessment methodology approach to the determination of visual sensitivity is consistent with the visual management system (United States Department of Agriculture Forest Service, 1995), *Landscape Aesthetics – A Handbook for Scenery Management*, Agricultural Handbook No. 701.

The next critical component to rating the visual sensitivity is the distance of the proposal from the identified land use area. As illustrated in Table 1, there are three viewing distances to consider:

- Foreground (0 – 500 metres)

- Middleground (501 – 1500 metres)
- Background (> 1500 metres).

As outlined in Appendix A, as the distance increases from the land use area the field of view decreases causing the visibility of the proposal components to diminish or be absorbed in the setting. Consequently, as distance from the viewer to the proposal increases, the level of sensitivity reduces.

Although the number of viewers within a land use area is not considered in determining visual sensitivity levels, it is considered in understanding how frequent the space is utilised by the viewers which assists in placing the overall assigned impact level in context. It is also used to determine the level of risk to the proposal.

2.2.1.2. Visual Modification

The level of visual modification due to a proposed development is a combination of the degree of change and the ability of the landscape setting to absorb the change. The prominence and level of intrusion of the development within the landscape setting is a key determinant of the level of visual modification. The level of visual modification generally decreases as the distance from the proposal to various viewpoint locations increases and views are typically obstructed by vegetation, topography or built form. The assessment of visual modification also assesses the level of visual compatibility of the proposal with the existing landscape setting and therefore the ability of the setting to absorb the changes.

Table 1 – Visual sensitivity determination matrix

LAND USE	VISUAL SETTING				
	FOREGROUND		MIDDLEGROUND		BACKGROUND
	0 – 200 m	201 – 500 m	501 – 1000 m	1001 – 1500 m	> 1500 m
Residential	H	H	H	M	L
Parks, reserves and State Forest	H	H	H	M	L
Townships and settlements	H	H	M	M	L
Rural roads (sealed)	M	M	L	L	VL
Local tracks (unsealed)	L	L	L	VL	VL
Agricultural areas	L	VL	VL	VL	VL
Legend - H = High, M = Moderate, L = Low, VL = Very Low					

A visual modification level has been assigned for each viewpoint taking into account:

- The prominence and level of intrusion of the visual change due to the proposal within the landscape setting; and
- The ability for the landscape setting to absorb the change.

Visual modification is not easily predicted objectively, and interpretation and professional judgment is applied. A clear picture of the modification is determined from a combination of the degree of change to the view due to the proposal including the extent of the area over which changes would be visible, the period of exposure to the view and reversibility.

The assessment of visual modification was based on the proposal concept master plan. It includes consideration of the proposed landscape master plan and considers that the level of amelioration would improve over time as vegetation matures.

Table 2 outlines the five categories of modification used for determining the degree of visual modification potentially resulting from the proposal.

The key considerations in determining the level of visual modification as outlined in Table 2 include:

- Size and scale
  - The scale of the change in the view with respect to the loss or addition of features in the view, and changes to the composition including the proportion of the view occupied by the proposal components;
  - The degree of contrast or integration of the proposal components in the landscape setting with the existing or remaining elements including form, mass, line, height, colour, texture and materiality; and
  - The nature of the view towards the proposal components in terms of duration of the view.
- Geographical extent
  - The angle of the view in relation to sensitive land use.
  - The distance of the viewpoint from the proposal component(s).
  - The extent of the area over which the changes would be visible.

Table 2 – Criteria for determining the visual modification level

MODIFICATION LEVEL	DESCRIPTION
High	The proposal is highly visible and intrusive in regard to the size, scale and geographical extent, and would disrupt views currently experienced from sensitive land use areas and/or strongly contrasts with the existing landscape setting which has limited capacity for change.
Moderate	The proposal partially intrudes in regard to the size, scale and geographical extent or somewhat obstructs current views from sensitive land use areas and/or a noticeable compositional change to the existing landscape setting in which there is moderate capacity for change.
Low	The proposal is barely perceptible resulting in minor deterioration to the view currently experienced from sensitive land use areas; and/or results in a small change to the existing landscape setting in which change is possible without harm.
Very low	There is minimal compositional contrast and a high level of integration of form, line, shape, pattern, colour or texture values between the proposal and the environment in which it sits. In this situation, the proposal may be noticeable, but does not markedly contrast with the existing landscape setting.
Not apparent	There are no views of the proposal components and as such, there is no impact.

2.2.2. Assigning a level of impact

The visual impact therefore is a result of combining the visual sensitivity level with the degree of visual modification using the visual impact determination matrix illustrated in Table 3.

The consequence of the application of the matrix is that (except where the proposal cannot be seen) the proposal would have some adverse impact, whether low, moderate or high, depending on the level of visual modification and viewer sensitivity from the location at which the proposal can be viewed.

Table 3 – Landscape and visual impact determination matrix

Visual sensitivity

Degree of modification	H	M	L	VL
H	H	H	M	L
M	H	M	L	VL
L	M	L	L	VL
VL	L	VL	VL	VL

VL = Very low
L = Low
M = Moderate
H = High
Level of landscape or visual impact

2.2.3. Analysis and documentation of findings

- Identify systematically the likely landscape and visual changes from the proposed development;
- Assessment of the impact of the proposed development on the landscape character and features;
- Assessment of the impact of the proposed development on views experienced from the local road network, parks and reserves and shared use paths within the 1.5 kilometre study area;
- Assessment of private residential realm within 150 metres from public accessible vantages points such as driveway crossovers; and
- Identify suitable mitigation measures for the management of the interface areas between the Site and visually important areas such as high sensitive receptors and any important landscape features to avoid, reduce, remedy or compensate for these changes.

2.2.4. Mitigation measures

Once the landscape and visual impacts have been determined, mitigation actions are recommended for viewpoints and locations of highest visual sensitivity.

Generally residual impacts would be reduced by at least on level where landscape measures have been proposed and matured due to filtering or inhibiting views to the proposal.

2.2.4.1. Residual impact

The residual impact assessment level has considered the existing view in comparison to the view five years after proposal opening. Maturation of the landscape plantings that have been included in the design would filter or inhibit views at some locations, potentially reducing the visual impact of the proposal over time.

Photosimulations have been prepared to illustrate the visual modification of the development in two locations that have been determined to be highly sensitive locations, residential land uses, based on photography taken during the site visit. Refer to Appendix B for the technical outline details.

2.3. LIMITATIONS OF THE ASSESSMENT

There are the following limitations associated with this assessment:

- There is no guidance on the assessment of landscape and visual impacts specific to Australia. Additionally, as mentioned above, there are no specific legislative requirements for the methodology of an assessment such as this in New South Wales. Therefore, the Guidance note EIA-N04 Guidelines for Landscape Character and Visual Impact Assessment prepared by Roads and Maritime Services (2013) and the Guidance for Landscape and Visual Impact Assessment (GLVIA), Third Edition prepared by Landscape Institute and Institute of Environmental Management & Assessment (2013) has been used as a basis for the methodology for this assessment;
- The LVIA process aims to be objective and, as such, seeks to describe any changes factually. Potential changes resulting from the Project have been defined. However, the significance of these changes requires qualitative (subjective) judgements to be made. Therefore, the conclusions to this assessment combine both objective measurement and subjective professional interpretation. This assessment has attempted to be objective, however it is recognised that visual assessment can be highly subjective and individuals are likely to associate different visual experiences to the study area;

- This LVIA is based on the landscape concept design report prepared by Site Image Landscape Architects Pty Ltd, January 2019 (refer to Appendix C);
- The impact assessment is focused on the current land uses and zoning;
- Access to rural residential properties was not available. The viewpoints selected are indicative of the closest view from the highest sensitivity location such as a driveway entry;
- Methodology, program and timing of the construction works are currently indicative and dependent upon planning approvals. Consequently, construction impacts have not been assessed in this report. However, it would be acceptable to predict that there would be impacts during construction and would be similar degree of visual impact to the operational phase assessment findings; and
- A glint and glare analysis for this proposed development has not been undertaken. This report refers to The *Glare and Glint Analysis, Murra Warra Solar Farm*, AECOM, 25 January 2017 which assessed the potential glare and glint impact of a similar solar panel configuration (single axis tracking) which concluded that for the single axis tracking system there was no predicted glare. This report adopts these findings.

3. SITE CONTEXT AND APPRAISAL

3.1. SITE CONTEXT

The Site is located off Blands Lane approximately 17 kilometres north-east of West Wyalong, as shown in Figure 2 - Aerial photograph. The Site is situated on a rural parcel of land and is connected to West Wyalong via Clear Ridge Road.

The Site is located within the Bland Shire Council and is located approximately 467 kilometres west of Sydney.

As shown in Figure 3 – Zoning, the surrounds are generally characterised by rural landholdings with the land zoned RU1 Primary Production in the *Bland Local Environmental Plan 2011* (BLEP 2011). Located to the north-west and south-east of the Site are land parcels zones RU3 Forestry, Clear Ridge and Wyrra State Forests respectively.

The topography surrounding the Site is gently undulating with rising elevations westerly up to 330 metres (m) Australian Height Datum (AHD) (refer to Figure 4 - Topography and elevation). Ridgelines are present to the south-east area of the Site associated with Wyrra State Forest (Refer to Picture 3) and northward.

Sandy Creek lies to the north of the Site meandering through Clear Ridge State Forest to Lake Cowal Game Reserve which is located to the north-east of the Site.

Vegetation typically lines the rural road network (refer to Picture 4) and encircles rural residential homesteads that are sparsely scattered across the landscape (refer to Picture 5).

The flying field associated with the New South Wales Free Flight Society Inc. (NSWFFS) immediately borders the south-western boundary of the Site. The club house is located approximately 1.3 kilometres from the Site boundary.

Numerous rural roads (sealed) and local tracks (unsealed) traverse the surrounding landscape such as Clear Ridge Road to the west, Gordons Lane to the north, Bodells Lane to the east and Myers Lane to the south. Myers Lane, located off Wyrra Lane, is only accessible for 0.9 kilometres before dense vegetation inhibits further access (refer to Picture 6).

There are no sites of heritage significance found at the Site or in the immediate surrounding area.

3.2. THE SITE

The Site is approximately 280 hectares (ha) and is a rectangular shaped parcel of land. The land has been largely cleared of vegetation apart from a central grouping of vegetation in the southern half of the Site and perimeter boundary planting. The Site currently is inaccessible with potential access off a driveway from Blands Lane that terminates at a couple of farm sheds with patches of canopy trees encircling them (refer to Picture 1). Five dams in a linear north-east to south-west arrangement are located to the south of the farm sheds.

Gordons and Myers lanes traverse the eastern and southern site boundaries respectively. However, no access is available to the Site from either lane due to the presence of existing vegetation. As such, the lanes terminate 1.4 and 2.7 kilometres respectively from the Site.

The Site itself lies at an elevation of between 220 to 240 m AHD gently rising in a westerly direction, (refer to Picture 2).

The Site is zoned RU1 Primary Production as shown in Figure 3.

Picture 1 – Existing driveway from Blands Lane towards farm sheds.

Picture 2 – The topography of the Site rises to a gentle, low-lying central ridge.

Picture 3 – The rising topography surrounding Wyrra State Forest is a dominate landscape feature in the landscape.

Picture 4 – Road side vegetation typically lines the rural road network filtering views to the surrounding landscape.

Picture 5 – Vegetation typically surrounds rural residential homesteads.

Picture 6 – View from Myers Lane looking north east (approximately 2.7 km from the Site).

3.3. LANDSCAPE CHARACTER

Landscape character is the relationship between geology, topography, vegetation, waterbodies and other natural features, combined with the effects of land use and built development. Assessing the landscape character of an area provides the basis for understanding the features and views that are important, and how different types of development sit within the landscape.

Landscape character is assessed at different scales from national and regional down to local and site specific. The assessment of landscape character is an important part of the landscape appraisal process and helps to ensure that key issues are addressed including:

- The understanding of how and why landscapes are important;
- The promotion and appreciation of landscape issues and a thorough understanding of the local landscape context;
- The successful accommodation of new development within the landscape including the capabilities of the landscape to absorb change; and
- The establishment of landscape enhancements and management principles aimed at reinforcing landscape character.

It is therefore essential to identify highly valued and important landscapes, understand their scenic value and implement measures to manage and protect them, particularly in the context of vulnerability to development pressure.

3.4. LANDSCAPE CHARACTER OF THE SITE

The landscape character of the area has been assessed through a process of desktop studies and fieldwork. The area surrounding the Site comprises a number of distinct land use types and landscape units of varying levels of landscape quality. These have been defined in Table 4 below.

Table 4 – Landscape types

Landscape type	Description
Agricultural Land	Extensive agricultural clearings. Dominant land use of agricultural activities such as grazing and crop areas. Flat to slightly undulating landform. Scattered trees with little diversity, arranged along property boundaries and with occasional areas of grouping.
State Forest Area	Distinct ridgelines rising to elevations of up to 330 metres AHD are dominate features in the landscape. Wooded state forests of higher elevation than the local setting which includes Clear Ridge State Forest, Wyrra State Forest and Hiawatha State Forest which are located approximately 4.5 kilometres to the north, 1.7 km to the east and 7.5 kilometres to the south-west of the Site respectively.
Settlement Area	Small residential blocks influenced by the main street shopping strip in West Wyalong which lies approximately 15 kilometres to the south-west of the Site. Land cleared of any remnant vegetation with residential and recreational amenity plantings present on the edges of property boundaries and open space reserves.
Waterforms	Numerous water courses cross the landscape around the Site.

	Sandy Creek lies to the north of the Site meandering through Clear Ridge State Forest to Lake Cowal Game Reserve which is located to the north-east of the Site.

3.5. ABSORPTIVE CAPABILITY

The definition of landscape absorptive quality is closely related to that of visual modification levels. It is generally applied at a broader scale than visual modification and is an assessment of how well a landscape setting is able to accommodate change or a development.

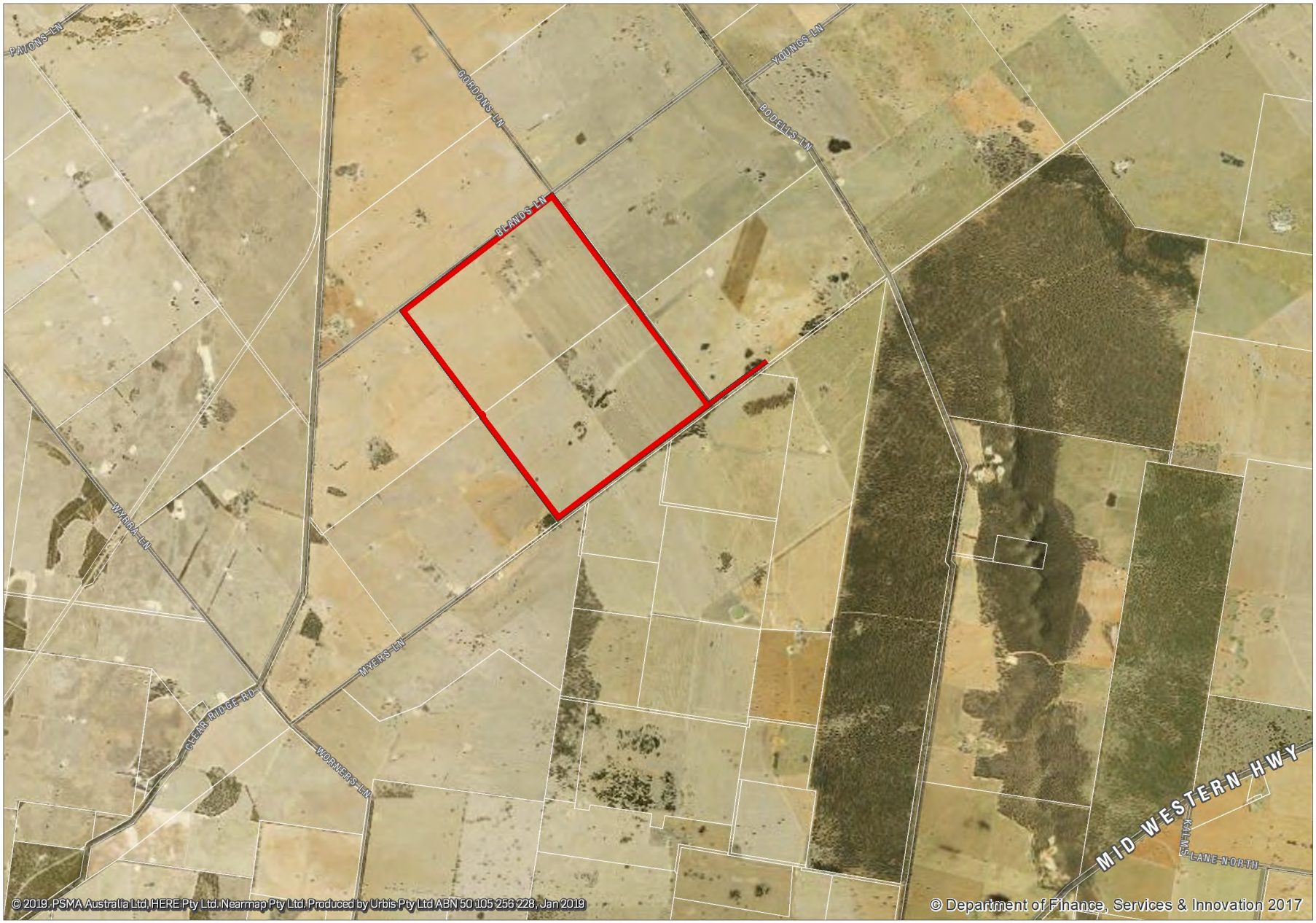
The key factors considered in determining absorptive capability are topography and vegetation. In areas of flatter topography, overlooking is not possible and a low and thin band of vegetation is able to screen views to a development from a given viewpoint. In areas of undulating or elevated topography, overlooking can occur and vegetation needs to be higher and denser to achieve effective screening. Intervening undulating topography also has the potential to block views in certain landscapes.

The ability of the landscape to absorb change has been assessed and is outlined in Table 5 below.

Table 5 – Landscape absorptive capability

Landscape type	**Ability to absorb change**	
Agricultural Land	Topography	High landscape absorptive capability due to flat topography and no potential for overlooking.
	Vegetation	Low landscape absorptive capability for cleared agricultural areas. Moderate to high landscape absorptive capability where vegetation exists.
State Forest Area	Topography	Low landscape absorptive capability due to the elevated topography with the potential for overlooking.
	Vegetation	High landscape absorptive capability where dense vegetation exists which inhibit views to the Project.
Settlement Area	Topography	High landscape absorptive capability due to flat topography and no potential for overlooking.
	Vegetation	Low landscape absorptive capability for cleared urban areas. Moderate to high landscape absorptive capability where vegetation exists.
Waterforms	Topography	High landscape absorptive capability due to flat topography and no potential for overlooking.
	Vegetation	Low landscape absorptive capability for cleared watercourses. Moderate to high landscape absorptive capability where vegetation exists.

Overall, the landscape setting of the Site is generally flat with vegetation confined to a rectilinear pattern reflecting property boundaries and roads and more extensive natural patterns of vegetation following water courses. The highpoints of the surrounding State Forests are not readily accessible by the public and opportunities for overlooking are limited. Furthermore, the settlement area of West Wyalong and the watercourses are of such long distances form the Project that no views would be evident. Locally, within this predominate flat landscape, overlooking is not possible and even relatively low vegetation (up to eye-height) is effective at screening or filtering views. Most of these landscape character types are relatively isolated and it is unlikely that they would be frequently viewed from the surrounding landscape.



LEGEND

- SITE BOUNDARY

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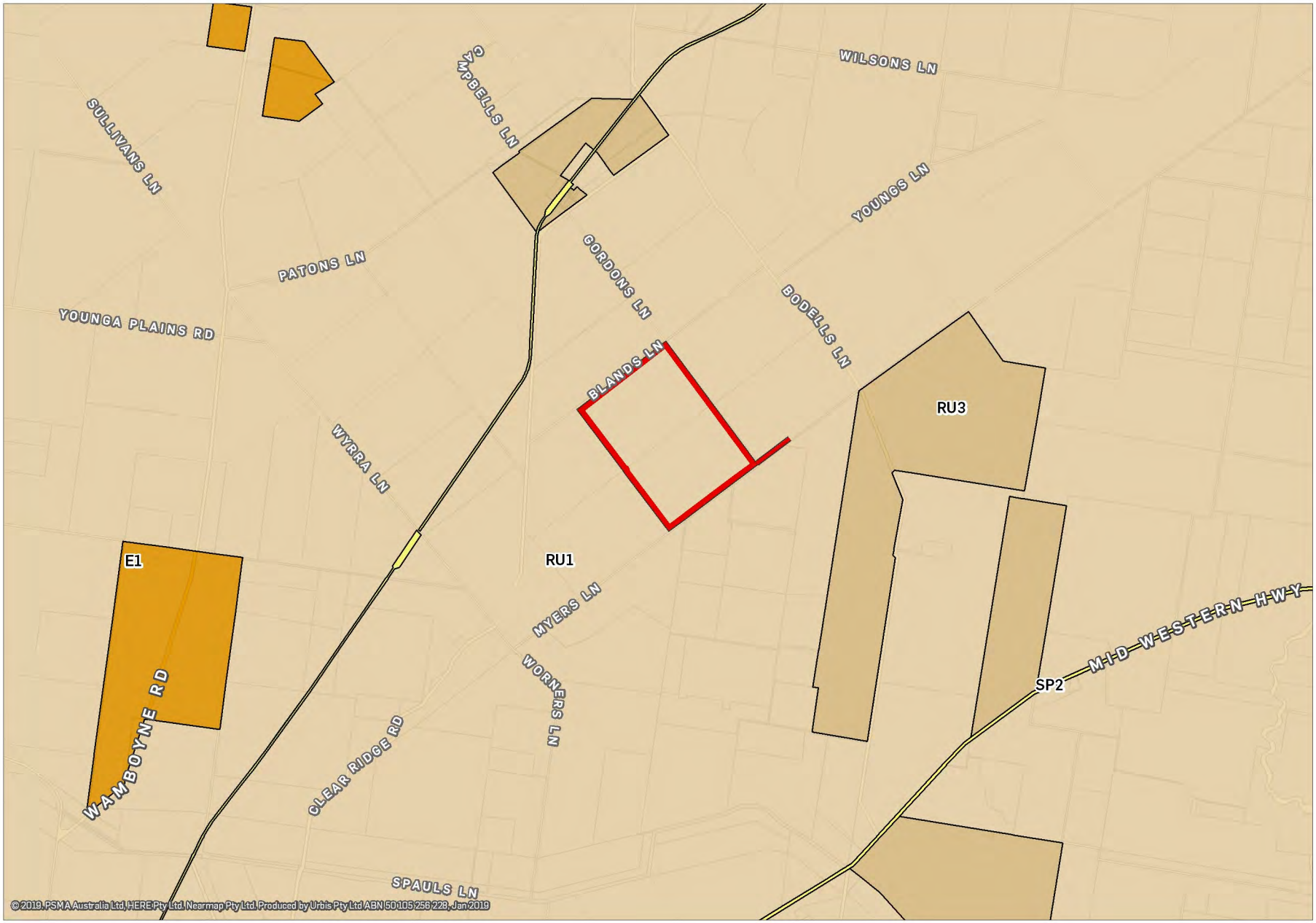
WEST WYALONG SOLAR FARM

FIGURE 2 – AERIAL PHOTOGRAPH

1:57,915 @ A4

0 | 1 | 2 | 3 | 4 | 5 Kilometers

DATE: 21.01.2019
JOB NO: P0004623
DWG NO: 002-001



LEGEND

- SITE BOUNDARY

Zoning

- E1 National Parks and Nature Reserves
- RU1 Primary Production
- RU3 Forestry
- SP2

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WEST WYALONG SOLAR FARM

FIGURE 3 – ZONING

1:100,000 @ A4

0 1 2 3 4 5 Kilometers

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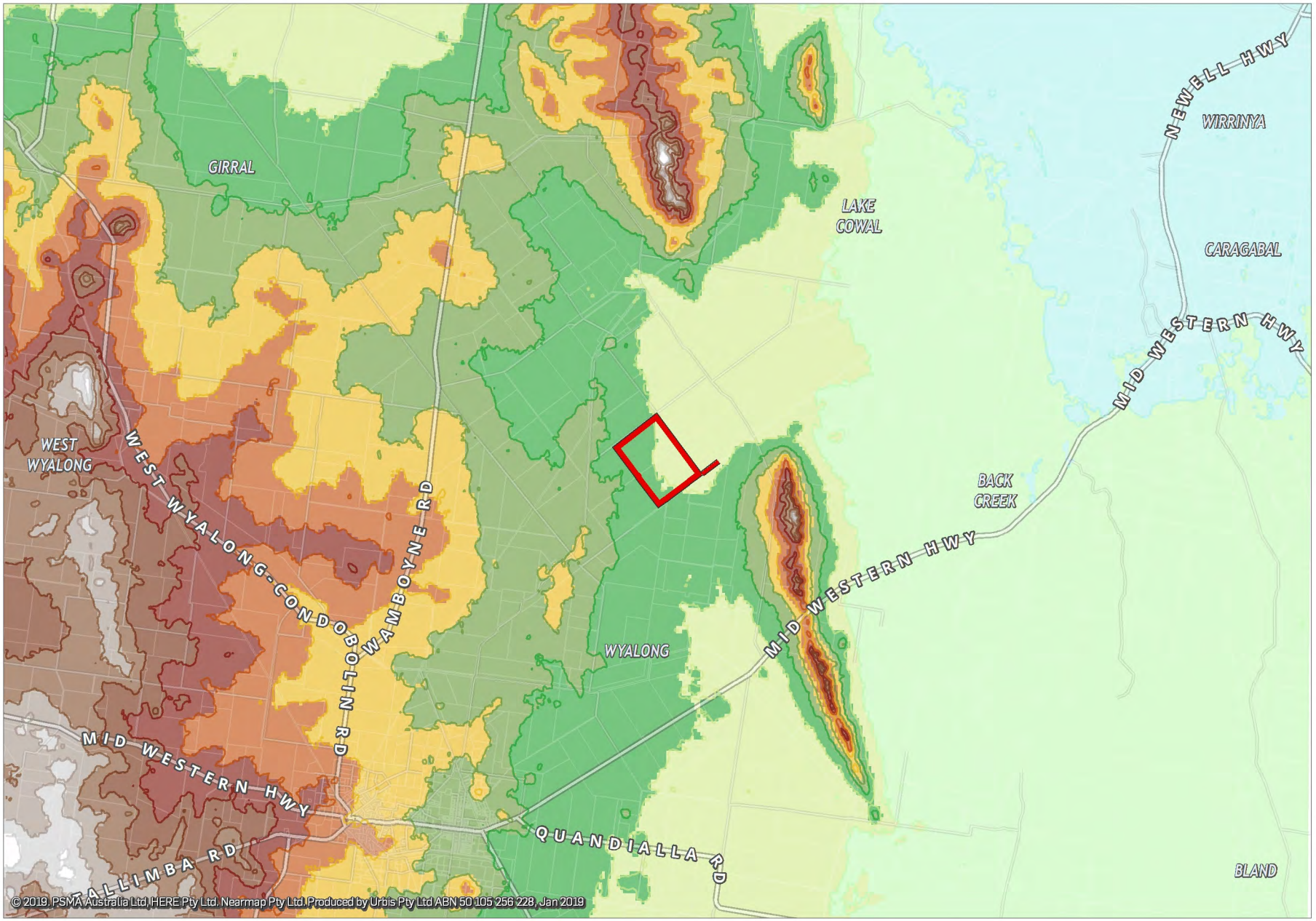
JOB NO: P0004623
DWG NO: 003-001



LEGEND

- SITE BOUNDARY
- Less than 210m AHD
- 210 - 220m AHD
- 220 - 230m AHD
- 230 - 240m AHD
- 240 - 250m AHD
- 250 - 260m AHD
- 260 - 270m AHD
- 270 - 280m AHD
- 280 - 290m AHD
- 290 - 300m AHD
- 300 - 310m AHD
- 310 - 320m AHD
- 320 - 330m AHD

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WEST WYALONG SOLAR FARM

FIGURE 4 – TOPOGRAPHY AND ELEVATION PLAN

1:200,000@ A4

0 1 2 3 4 5 Kilometers

DATE: 21.01.2019
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DWG NO: 004-001

LEGEND

- SITE BOUNDARY
- PARKS & OPEN SPACE

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WEST WYALONG SOLAR FARM

FIGURE 5 – ENVIRONMENTAL

1:100,000 @ A4

0 1 2 3 4 5 Kilometers

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4. COMPONENTS OF THE PROJECT

4.1. KEY FEATURES

The proposed development will facilitate a 90 MW AC solar farm and supporting infrastructure over the Site. Refer to Figure 6 for the layout plan and Appendix D for further details on the supporting infrastructure.

The key features of the proposal include the following:

- Installation of 296,000 solar panels on a mounting structure with tracking capabilities. Each panel will be approximately 1.95 metres x 0.992 metres with a depth of 50 millimetres. Total height of the panels will be 4.01 metres. They will be dark blue in colour with an aluminium frame and will be coated with an anti-reflective coating in order to maximise daylight absorption;
- Inverter-transformers up to 2.6 metres high with cabinets up to 2.3 metres high painted in white;
- Batteries in containers measuring 2.59 metres high painted in Pale Eucalypt;
- Storage containers up to 2.591 metres high painted in Pale Eucalypt;
- Control-customer room building up to 4.638 metres high painted in Pale Eucalypt;
- Monitoring house up to 6.626 metres high painted in Pale Eucalypt;
- Substation up to a maximum height of eight metres in height with the exception of an 18 metre high lightning rod;
- Internal access roads and access points;
- Perimeter security fencing up to two metres high; and
- CCTV poles up to 2.5 metres high located along the perimeter of the Site.

4.2. CONSTRUCTION STAGING

As mentioned, methodology, program and timing of the construction works are currently indicative and dependent upon planning approvals. Consequently, construction impacts have not been assessed in this report.

4.3. OPERATION

During the operational phase of the development, the solar farm would generate little daily traffic, with vehicle trips restricted to occasional maintenance requirements.

Wyalong_Proposed_Layout_Rev15_v2

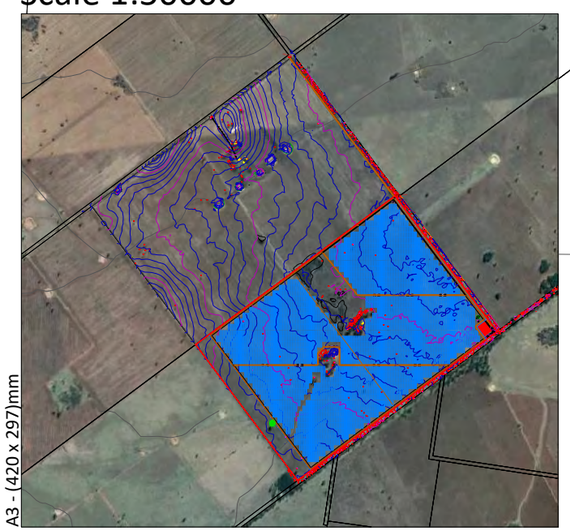
Area 2,808,956 m2 (694.10 acres)

N

Site Access	
Site Boundary	
Security Fence	
Single Axis Tracker 45 x 2	
Inverter Transformer TwinSkid	
Batteries	
Area for Substation	
Customer Substation	
Monitoring House	
Storage	
Access Road	
Access Gates	
CCTV	
45,000L Water Tank	
15m Fire Break	
WWSF Bee Tree Buffer	

Substation infrastructure maximum height 8m, with the exception of a 18m lightening rod

Scale 1:50000



A3 - (420 x 297)mm

GM			18.05.18
DRAWN	CHECKED	APPROVED	DATE

PROJECT NAME & ADDRESS:

Australia

NOTES:

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Paper Size:	Scale:	Sheet:
A3	1:15000	1

CAPACITY: 90 MW AC

DRAWING TITLE: Wyalong_Proposed_Layout_Rev15_v2

DRAWING NUMBER:	STATUS:
WLG_01	Preliminary

lightsource bp

Lightsource Development Services Australia Pty Limited,
Level 9, 401 Collins Street
Melbourne, 3000
General: +61 3 9071 0326
Web: www.lightsourcebp.com
info@lightsourcebp.com

5. PLANNING CONSIDERATIONS FOR THE FUTURE DEVELOPMENT

5.1. BLAND LOCAL ENVIRONMENTAL PLAN 2011

The Site is subject to the provisions of the *Bland Local Environmental Plan* 2011 (BLEP 2011). The following section summaries the key planning policies and controls which are of relevance to this LVIA.

5.1.1. Zoning

The site is zoned RU1 Primary Production as shown in Figure 3. Table 4 details the zone objectives

Table 6 – Zone objectives

Zone objectives	• *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.* • *To encourage diversity in primary industry enterprises and systems appropriate for the area.* • *To minimise the fragmentation and alienation of resource lands.* • *To minimise conflict between land uses within this zone and land uses within adjoining zones.* • *To ensure that development on land within this zone does not unreasonably increase the demand for public services or public facilities.*

6. VISUAL APPRAISAL

6.1. VISIBILITY OF THE PROPOSAL

A visual appraisal was undertaken from the area surrounding the Site to determine the approximate extent of the area from which the Site is visible from the eye of a person standing on the ground. The approximate visual envelope of the Site was based on consideration of factors such as topography and existing vegetation, from a desk-top study then confirmed in the field from publicly accessible viewpoints within the surrounding landscape such as from roads, footpaths and public open spaces.

This appraisal indicated that the Site is only visible from a limited number of local viewpoints and from a limited area at a greater distance to the Site due to the screening provided by intervening vegetation and topography that curtail views towards the Site. Access to rural residential properties was not available. The viewpoints selected are indicative of the closest view from the highest sensitivity location such as a driveway entry.

Potential viewpoints towards the Site include:

Residential

- House near the intersection of Clear Ridge Road and Blands Lane; and
- House off Bodells Lane.

Recreational facilities

- Clear Ridge State Forest.
- Wyrra State Forest.
- NSWFFS.

Local roads

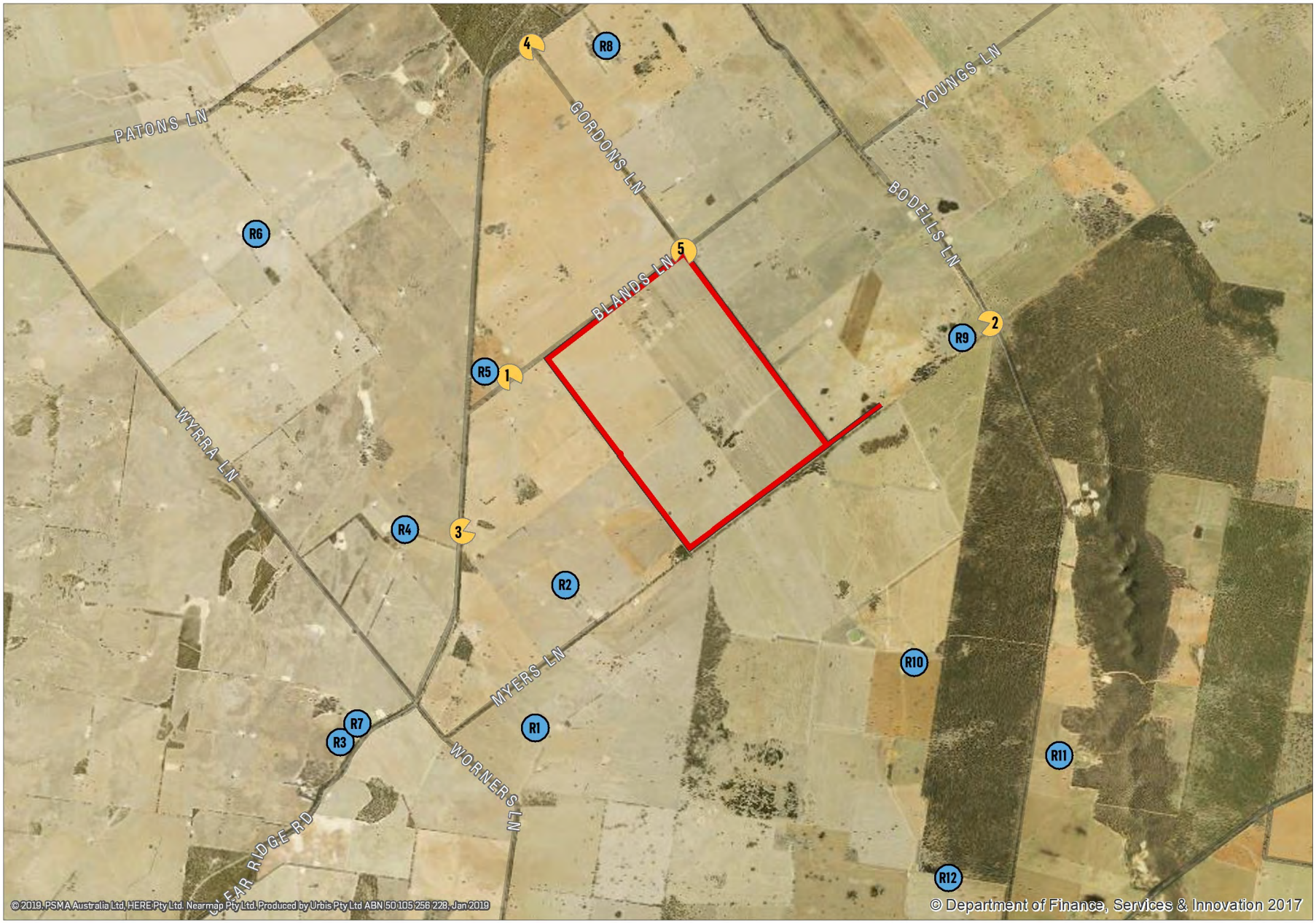
- Clear Ridge Road.

Rural roads

- Blands Lane;
- Gordons Lane,
- Myers Lane; and
- Bodells Lane.

6.2. VISUAL IMPACT

This section includes a detailed assessment of the Project from highest sensitivity viewpoints selected from the above locations. Refer to Figure 7 – Viewpoint location plan for viewpoint (VP) locations. A rating was given for the level of visual modification and sensitivity, which when combined, result in a determination of the degree of overall visual impact for each viewing location.



LEGEND

- SITE BOUNDARY
- VIEW POINT LOCATION
- RESIDENTIAL PROPERTIES

URBIS

WEST WYALONG SOLAR FARM

FIGURE 7 – VIEWPOINT LOCATION

1:63,058 @ A4

0 0.5 1 1.5 2 Kilometers

DATE: 21.01.2019
JOB NO: P0004623
DWG NO: 008-001

VIEWPOINT 1

Viewing location	Residential homestead off Blands Lane (R5). Photo from resident driveway, looking south-east.
Viewing context	Duration of view stationary.

VISUAL SENSITIVITY

Land use	Residential
Viewing distance	Background (1.7 km from closest project component).
Visual sensitivity level	**Low.**

VISUAL MODIFICATION

Visual modification level	**Low.**
Viewpoint discussion	Elements of the proposal that would be visible by the residential homestead include the perimeter security fencing up to two metres high, CCTV poles up to 2.5 metres high, maintenance access track, fire break and rows of 4.01-metre-high solar panels. It is acknowledged that the viewing experience is filtered by existing vegetation in the surrounding landscape and across a local track through agricultural related activities. Additionally, the frequency of viewers would be low. Refer to Picture 7. The distance to the Project components from the viewpoint and the proportional extent of the view occupied by the project elements, the change is considered to be low. Refer to Picture 8. Overall the project components viewed from this vantage point would be barely perceptible resulting in a minor deterioration to the view currently experienced from the residential homestead.
Operational visual impact	**Low.** Consequently, the low level of visual sensitivity combined with the low degree of modification, would result in a low adverse visual impact at operation for the residential homestead.
Residual visual impact	**Very low.** A three-metre-wide buffer planting is proposed along the northern boundary of the Site either side of the existing vegetation. Refer to Picture 9 and 10. Once mature, the effect would reduce to a very low residual impact for the residential homestead.

Picture 7 – VP1: Existing view towards the Site from resident driveway off Blands Lane looking south-east.

Picture 8 - VP1: Photosimulation: At completion, no vegetation.

Picture 9 - VP1 Photosimulation: Year 5 vegetation. Refer to Appendix E for larger plans.

Picture 10 - VP1 Photosimulation with wireframe: Year 5 vegetation. Refer to Appendix E for larger plans.

VIEWPOINT 2

Viewing location	Residential homestead off Bodells Lane (R9). Photo from existing resident driveway, looking south-west.
Viewing context	Duration of view stationary.

VISUAL SENSITIVITY

Land use	Residential.
Viewing distance	Background (2.3 km from closest project component).
Visual sensitivity level	**Low**.

VISUAL MODIFICATION

Visual modification level	**Very low to not apparent.**
Viewpoint discussion	Elements of the proposal that would be visible by the residential homestead include the perimeter security fencing up to two metres high, CCTV poles up to 2.5 metres high, maintenance access track, fire break, rows of 4.01-metre-high solar panels, the 18-metre high lightening rod and substation compound. It is acknowledged that the viewing experience is filtered or inhibited by existing vegetation in the surrounding landscape and across agricultural related activities. Additionally, the frequency of viewers would be low. Refer to Picture 11. Due to the distance to the project components from the viewpoint and the proportional extent of the view occupied by the project elements in conjunction with the presence of existing intervening vegetation across the rural setting and around the residential homestead, it is unlikely that the Project would result in a prominent change for the residential homestead. Refer to Picture 12. The change is therefore considered to be not apparent or very low as the worst-case scenario. Overall the project components viewed from this vantage point would be either be barely noticeable or no views experienced of the proposal components from the residential homestead.
Operational visual impact	**Very low to not apparent**. Consequently, the very low level of visual sensitivity combined with the very low degree of modification, would result in a very low adverse visual impact at operation from the residential homestead.
Residual visual impact	**Not apparent**. Infill buffer planting is proposed along the north-eastern boundary of the Site. As such, the residual impact on views from the residential homestead would become not apparent.

Picture 11 – VP2: Existing view from resident driveway off Bodells Lane looking west towards the Site.

Picture 12 – VP2: Photosimulation with wireframe: Year 5 vegetation. Refer to Appendix E for larger plans.

VIEWPOINT 3

Viewing location	NSWFFS (R2). From driveway entry off Clear Ridge Road, looking north-east.
Viewing context	Duration of view stationary.

VISUAL SENSITIVITY

Land use	Parks, reserves and State Forest.
Viewing distance	Background (2.3 km from closest project component).
Visual sensitivity level	**Low**.

VISUAL MODIFICATION

Visual modification level	**Low.**
Viewpoint discussion	Elements of the proposal that would be visible by users of the NSWFFS include the perimeter security fencing up to two metres high, CCTV poles up to 2.5 metres high, maintenance access track, fire break, 100 metre flight clearance zone and rows of 4.01-metre-high solar panels. It is acknowledged that the viewing experience is filtered by existing vegetation in the surrounding landscape and the rising topography. Additionally, the frequency of viewers would be low. Refer to Picture 13. Although the proposed vertical structures would completely change the agricultural setting, the distance to the Project components from the viewpoint and the proportional extent of the view occupied by the project elements, and the rising topography, the change is considered to be low. Refer to Picture 14. Overall the project components viewed from this vantage point would be barely perceptible resulting in minor deterioration to the view currently experienced for the users of the NSWFFS.
Operational visual impact	**Low**. Consequently, the low level of visual sensitivity combined with the low degree of modification, would result in a low adverse visual impact at operation for the users of the NSWFFS.
Residual visual impact	**Very low.** Due to the distance to the Project and the low frequency of viewers no buffer planting is proposed along the south-western boundary of the Site. The residual impact for the users of the NSWFFS would be a very low adverse residual impact. Refer to Pictures 15 and 16.

Picture 13 – VP3: Existing view from driveway to NSWFFS, off Clear Ridge Road, looking north-east.

Picture 14 – VP3: Photosimulation: At completion, no vegetation. Refer to Appendix E for larger plans.

Picture 15 – VP3 Photosimulation: Year 5 vegetation. Refer to Appendix E for larger plans.

Picture 16 – VP3 Photosimulation with wireframe: Year 5 vegetation. Refer to Appendix E for larger plans.

VIEWPOINT 4

Viewing location	From intersection of Clear Ridge Road and Gordons Lane, looking south.
Viewing context	Duration of view transitory.

VISUAL SENSITIVITY

Land use	Rural road.
Viewing distance	Background (4.4 km from closest project component).
Visual sensitivity level	**Very low**.

VISUAL MODIFICATION

Visual modification level	**Not apparent.**
Viewpoint discussion	The undulating topography, intervening vegetation and distance from the viewpoint would inhibit views towards the Project. Refer to Picture 17.
Operational visual impact	**Not apparent**. Consequently, there would be no views experienced by the users of the rural road.
Residual visual impact	**Not apparent.**

Picture 17 – VP4: Existing view from intersection of Clear Ridge Road and Gordons Lane, looking south.

VIEWPOINT 5

Viewing location	From intersection of Blands and Gordons lanes, looking south.
Viewing context	Duration of view transitory.

VISUAL SENSITIVITY

Land use	Local track through agricultural related activities.
Viewing distance	Middleground (1.45 km from closest project component).
Visual sensitivity level	**Very low**.

VISUAL MODIFICATION

Visual modification level	**Low.**
Viewpoint discussion	Elements of the proposal that would be visible by users of the local track include the entrance gate, perimeter security fencing up to two metres high, maintenance access track, fire break and rows of 4.01 metre high solar panels. It is acknowledged that there is existing boundary and road side planting that would assist in filtering views. Furthermore, the viewing experience is transitory from a local track through agricultural related activities. Refer to Picture 18. Additionally, the frequency of viewers would be low. The distance to the Project components from the viewpoint and the proportional extent of the view occupied by the project elements, the change is considered to be low. Overall the project components viewed from this vantage point would be barely perceptible resulting in a minor deterioration to the view currently experienced from the users of the local track.
Operational visual impact	**Very low**. Consequently, the very low level of visual sensitivity combined with the low degree of modification, would result in a very low adverse visual impact at operation for the users of the local track at the intersection of Gordons and Blands lanes.
Residual visual impact	**Not apparent.** Supplementary planting to three metres in width is proposed along the northern perimeter of the Site to comprise trees and small shrubs that have a minimum trunk clearance of 0.3 metres from the ground. As such the residual visual impact for the users of the local track would be not apparent.

Picture 18 – VP5 - View from the intersection of Blands and Gordons lanes looking south.

6.2.1. Summary of visual impact

The visual appraisal demonstrates that viewpoints that are representative of high sensitivity areas in the vicinity of the proposal are limited. The visual appraisal also demonstrates that there are no sections of open views towards the Project from publicly accessible foreground vantage points. Although Myers Lane borders the southern boundary of the Site, it is not accessible due to the presence of existing dense vegetation.

The predominate land use from where the Project is viewed is from local tracks which have a low to very low level of viewer sensitivity dependent upon viewing distance. Views towards the Project along the local tracks are transitory and broken. The existing native vegetation along the tracks form a visual tunnel, focusing the view down the road. There are a few gaps and breaks in the existing native vegetation in the surrounding landscape that afford views towards parts of the Project, but these are fleeting and from vehicles travelling at 80-100 kilometres per hour. Furthermore, the viewing angle is generally oblique or perpendicular and transitory.

The viewing experience from the two residential homesteads (VP1 and VP2) are filtered or inhibited by existing vegetation immediately around the homesteads, in the surrounding landscape or across agricultural related activities. The distance to the project components from the residential homesteads and the proportional extent of the view occupied by the project elements in conjunction with the presence of existing intervening vegetation across the rural setting, it is unlikely that the Project would result in a prominent change for these residents.

It is considered that there would be no unreasonable visual impacts to or from Clear Ridge or Wyrra State Forests. The distance from these states forests to the Project is over 1.5 kilometres. As the distance increases from the land use area the field of view decreases causing the visibility of the proposal components to diminish or be absorbed in the setting. Consequently, as the distance from the viewer to the proposal increases, the level of sensitivity reduces. Given the relatively low elevation of the components of the proposal above ground level, with the exception of the 18-metre-high lightening rod structure, the visual catchment is highly constrained by the distance as well as the effect of intervening vegetation and the elevation. In these views, the proposed facility will not be a dominant element in the landscape but viewed as a small component (if seen at all) within a wider setting.

7. AMELIORATION STRATEGIES

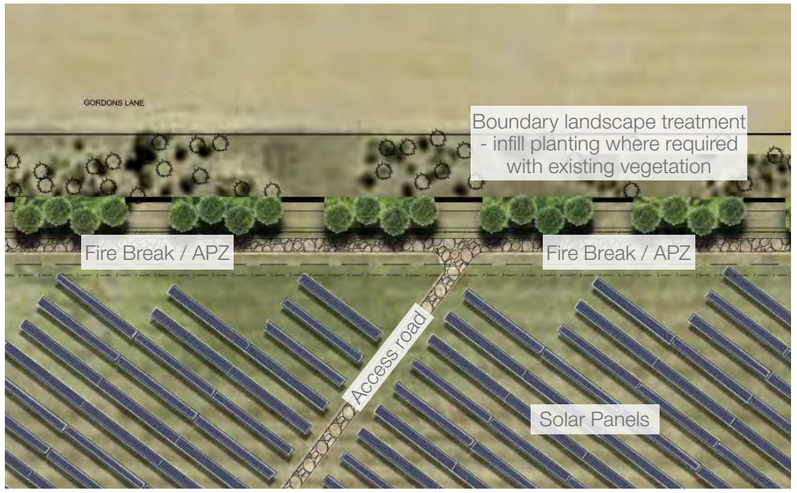
A Landscape Concept Design Report has been prepared for the Site by *Site Image Landscape Architects Pty Ltd*, January 2019 as indicated in the following page (refer to Appendix C for full landscape package). The key elements of the Landscape Concept Master Plan include:

- retention of existing groups of trees that centrally traverses the northern half of the Site;
- retention of existing central vegetation within the western half of the Site;
- a 100-metre flight clearance buffer adjoining the NSWFFS land in the south-western corner (approximately 1.4 kilometres in length);
- a minimum 15 metre perimeter fire buffer zone around the entire Site clear of any vegetation;
- proposed three-metre-wide screen planting along the northern boundary either side of the existing vegetation to be protected and enhanced;
- infill screen planting maintaining a three-metre width along the north-eastern and southern boundaries and centrally along the northern boundary;
- screen planting to comprise medium to large trees and shrubs that have a minimum trunk clearance of 0.3 metres from the ground; and
- provision for vehicle access around the perimeter of the Site and key locations internally.

In summary, the retention and enhancement of existing perimeter vegetation where practicable, and inclusion of new buffer planting along parts of the northern boundary of the Site would provide supplementary visual screening and would assist in “settling” the Project within the landscape.

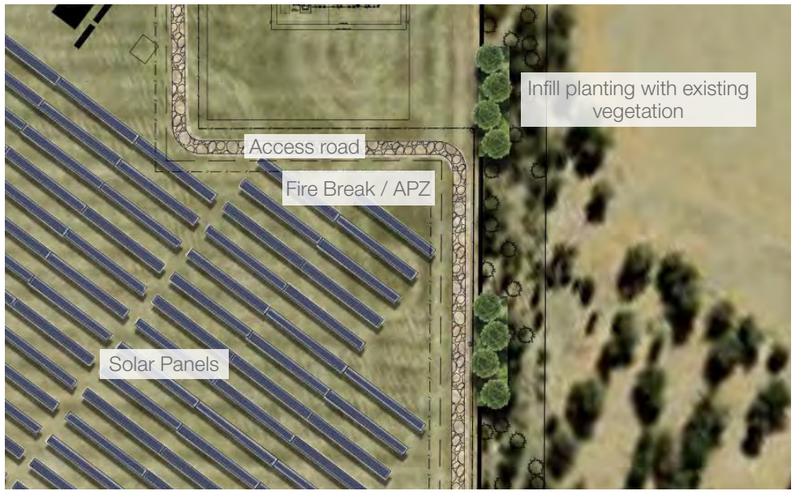
Landscape Masterplan - Summary of Landscape Proposals

This plan and annotated notes provides a summary of landscape proposals formulated with the project team to provide a suitable landscape setting to the solar farm elements, achieve required vegetation protection and enhancement, and provide suitable landscape buffers as identified in the visual impact assessment report.



Typical landscape boundary treatment with infill planting where required with existing vegetation

Scale: 0 25 50



Typical landscape infill planting where required with existing vegetation

Scale: 0 25 50

Scale: 0 25 50 125 250

West Wyalong Solar Farm | Landscape Masterplan

Client	Lightsource Development Services Australia	Drawing Number	6
Planner:	Urbis	Issue	1
Site Image Job Number	SS18-3924	Date	21.01.2019

Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Surry Hills NSW 2010 Australia | T +61 2 8332 5600

8. CONCLUSIONS

The Site is located within the Bland Shire Council and is located approximately 467 kilometres west of Sydney.

The Site is located at Blands Lane approximately 17 kilometres north-east of West Wyalong. The surrounds are generally characterised by rural landholdings with the land used for agricultural activities. The Site is zoned RU1 Primary Production.

The Site is approximately 280 ha and is a rectangular shaped parcel of land. The land has been largely cleared of vegetation apart from a central grouping of vegetation in the centre of the Site and perimeter road side planting.

The Site itself lies at an elevation of between 220 to 240 m AHD gently rising in a westerly direction.

The visual appraisal of the Site demonstrates that there are limited views within 1.5 kilometres from highly sensitive land uses. Error! Reference source not found. summarises the visual impacts from the r epresentative viewpoints.

Table 7 – Summary of visual impacts

VIEWPOINT	POTENTIAL VISUAL IMPACT AT OPERATION	RESIDUAL IMPACT
Viewpoint 1 – Residential homestead off Blands Lane. Photo from resident driveway, looking south-east.	Low	Very low
Viewpoint 2 - Residential homestead off Bodells Lane. Photo from existing resident driveway, looking south-west.	Very low to not apparent	Not apparent
Viewpoint 3 – NSWFFS. From driveway entry off Clear Ridge Road, looking north-east.	Low	Very low
Viewpoint 4 – From intersection of Clear Ridge Road and Gordons Lane, looking south.	Not apparent	Not apparent
Viewpoint 5 – From intersection of Blands and Gordons lanes, looking south.	Very low	Not apparent

8.1. SUMMARY

The Site has a limited degree of visual exposure and overall, has a low visual sensitivity. With the implementation of the landscape measures, the Project is able to be integrated into the Site and would result in limited reduction to the landscape and visual amenity of the surrounding area. The proposal would not displace any landscape features or resources of value and would be able to be absorbed into the landscape. The Project is therefore, in landscape and visual terms, acceptable for the proposed development.

Accordingly, it is concluded that developing the Site:

- can be accommodated into the landscape without significant adverse impacts on the landscape quality of zone RU1 Primary Production;
- a suitable ‘environmental fit’ can be achieved and the setting is capable of absorbing the proposal in conjunction with the landscape measures; and
- would not detract from the existing landscape character of the area.

DISCLAIMER

This report is dated 21 January 2019 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (**Urbis**) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Lightsource Development Services Australia Pty Ltd (**Instructing Party**) for the purpose of LVIA (**Purpose**) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A VISUAL PROMINENCE 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 0.5 km from the development.

Sub-regional setting – between 0.5 km and 2 km from the development.

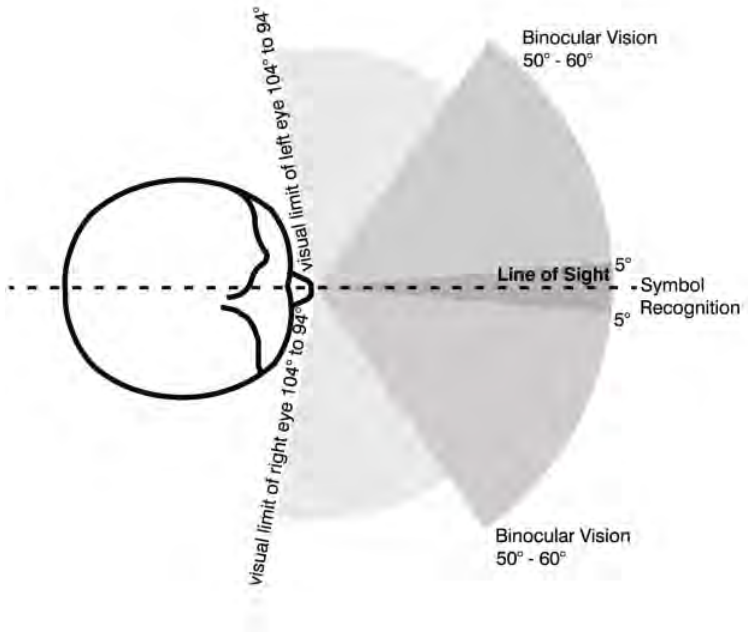
Regional setting – beyond 2 km of the development.

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

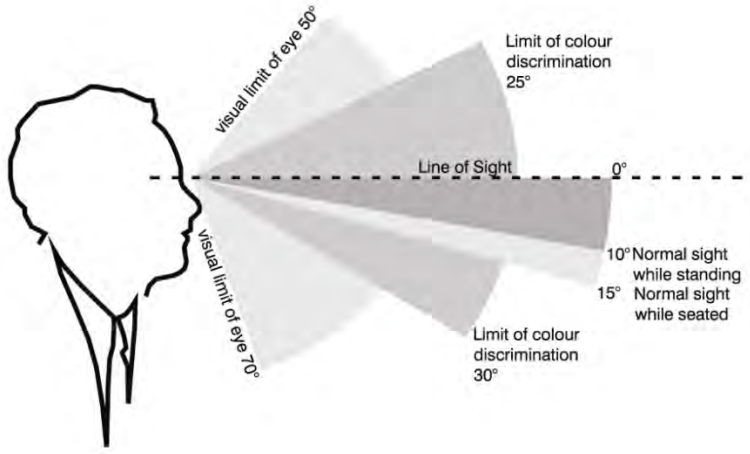
The potential visual impact of a development would, to a large extent, depend on how much of the central field of vision that it occupies. In relation to the assessment of sites that often extend across the landscape, the calculation of horizontal view angle is not the only factor to be considered.

DEGREES OF FIELD OF VIEW OCCUPIED	POTENTIAL VISUAL PROMINENCE – HORIZONTAL FIELD OF VIEW
Less than 5º	**Insignificant** The development would not be highly visible in the view, unless it contrasts strongly with the background.
5º – 30º	**Potentially Noticeable** The development may be noticeable. The degree that it intrudes on the view would be dependent on how well it integrates with the landscape setting.
Greater than 30º	**Potentially Dominant** The development would 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 0º then the eye clearly defines colour, field of view and has image sharpness for an angle of approximately 25º upwards and 30º downwards. However, in reality, the typical line of sight for a standing person at ground level is approximately 10º 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 – HORIZONTAL FIELD OF VIEW
Less than 0.5º	**Insignificant** A small thin line in the landscape.
0.5º – 2.5º	**Potentially Noticeable** The development may be noticeable. The degree that it intrudes on the view would be dependent on how well it integrates with the landscape setting.
Greater than 2.5º	**Potentially Dominant** The development would be highly noticeable, although the degree of visual intrusion would 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 would increase as distance reduces.
Less than 1000 metres	**Potentially Dominant** The development would be highly noticeable.

APPENDIX B PHOTOSIMULATIONS TECHNICAL OUTLINE

Urbis - Visualisation Services

Technical Outline for Photosimulations :

228-230 Blands Lane, West Wyalong

Statement of methodology used for the preparation of images for the proposed development at 228-230 Blands Lane, West Wyalong, NSW 2671.

Photosimulations prepared by Urbis, Level 12, 120 Collins Street, MELBOURNE 3000.

Date Prepared : Tuesday 20th December 2018

Architectural Visualisation Artist :
Ashley Poon, Urbis – Lead Visual Technologies Consultant
Bachelor of Planning and Design (Architecture) with over 15 years' experience in 3D visualisation

Visualisation Supervisor :
Peter Haack, Urbis - Director, Urban Design and Landscape Architecture
Bachelor of Landscape Architecture, RMIT 1990.
Diploma of Applied Science (Amenity Horticulture), University of Melbourne, 1981.
Registered Landscape Architect – # 000619 – Current.
Fellow of the Australian Institute of Landscape Architects (AILA).
Member AILA National Education Committee (2005 – 2018).
Member Parks and Leisure Australia - Current.

Location Photographer : Rachel Smithers, Urbis – Associate Director, Landscape Architecture.

Software Used :
- 3DSMax 2019 with V-Ray Advanced 3.4 (3D Modelling and Render Engine)
- AutoCAD 2015 (2D CAD Editing)
- Globalmapper 16 (GIS Data Mapping / Processing)
- Photoshop CC 2018 (Photo Editing)

Data :
- Digital 2D CAD drawings and associated plans of the proposed development received from Lightsource Development Services Development Services Australia Pty Ltd.
- Digital site survey levels received from Lightsource Development Services Australia Pty Ltd
- Additional supporting digital GIS data (terrain contours and cadastre) from data obtained from PSMA Australia Ltd, Navigate Pty Ltd. Australian Bureau of Statistics.
- Aerial photography – Bing Maps

Camera :
Canon 6D – 20 Megapixel Digital SLR Camera (full frame sensor)

Camera Lens and type :
Canon EF 24-105mm f/4 L IS USM variable zoom lens

Photosimulation Methodology :

View Location VP1 : View from Blands Lane, looking east towards subject site

Image VP1_A – ***Existing Site Conditions / Original photo as shot.***

Modifications/Additions to image :

- Original photo as shot – no modifications
- Photo shot using Canon 6D with 24-105mm @ 47mm
- Exposure – F10.0 1/250 ISO100
- Photo taken at 12:22pm on 12-11-2018 (Australian Eastern Daylight Savings Time)
- Photo taken handheld at 1.60m above ground level in landscape orientation
- View Location on GDA94 MGA Zone 55 : Easting 527430m
  Northing 6259561m

Image VP1_B – Photosimulation of proposed development – without vegetation.

Modifications/Additions to image :

- 3D Model based upon supplied digital 2D CAD plans and elevations
- 3D Model camera-matched into Image VP1_A using a geo-referenced digital terrain model.
- Rendered 3D image composited into Image VP1_A, using Adobe Photoshop.

Image VP1_C – Photosimulation of proposed development – with vegetation at five years.

Modifications/Additions to image :

- Rendered 3D image composited into Image VP1_A, using Adobe Photoshop.

Image VP1_D – Photosimulation of proposed development – with vegetation at five years, with reference outline.

Modifications/Additions to image :

- Rendered 3D image composited into Image VP1_A, using Adobe Photoshop.
- White outline applied to 3D model component to highlight extent of project.

View Location VP2 : View from Bodells Lane, looking WSW towards subject site

Image VP2_A – ***Existing Site Conditions / Original photo as shot.***

Modifications/Additions to image :

- Original photo as shot – no modifications
- Photo shot using Canon 6D with 24-105mm @ 47mm
- Exposure – F10.0 1/250 ISO100
- Photo taken at 13:13pm on 12-11-2018 (Australian Eastern Daylight Savings Time)
- Photo taken handheld at 1.60m above ground level in landscape orientation
- View Location on GDA94 MGA Zone 55 : Easting 533093m
  Northing 6260309m

Image VP2_B – Photosimulation of proposed development – with vegetation at five years, with reference outline.

Modifications/Additions to image :

- 3D Model based upon supplied digital 2D CAD plans and elevations.
- 3D Model camera-matched into Image VP2_A using a geo-referenced digital terrain model.
- Rendered 3D image composited into Image VP2_A, using Adobe Photoshop.
- White outline applied to 3D model component to highlight extent of project.

View Location VP3 : View from Clear Ridge Road, looking ENE towards subject site

Image VP3_A – ***Existing Site Conditions / Original photo as shot.***

Modifications/Additions to image :

- Original photo as shot – no modifications
- Photo shot using Canon 6D with 24-105mm @ 47mm
- Exposure – F10.0 1/250 ISO100
- Photo taken at 13:34pm on 12-11-2018 (Australian Eastern Daylight Savings Time)
- Photo taken handheld at 1.60m above ground level in landscape orientation
- View Location on GDA94 MGA Zone 55 : Easting 527028m
  Northing 6257758m

Image VP3_B – Photosimulation of proposed development – without vegetation.

Modifications/Additions to image :

- 3D Model based upon supplied digital 2D CAD plans and elevations.
- 3D Model camera-matched into Image VP3_A using a geo-referenced digital terrain model.
- Rendered 3D image composited into Image VP3_A, using Adobe Photoshop.

Image VP3_C – Photosimulation of proposed development – with vegetation at five years.

Modifications/Additions to image :

- Rendered 3D image composited into Image VP3_A, using Adobe Photoshop.

Image VP3_D – Photosimulation of proposed development – with vegetation at five years, with reference outline.

Modifications/Additions to image :

- Rendered 3D image composited into Image VP3_A, using Adobe Photoshop.
- White outline applied to 3D model component to highlight extent of project.

APPENDIX C LANDSCAPE CONCEPT PLAN

PREPARED BY *SITE IMAGE LANDSCAPE ARCHITECTS PTY LTD*

West Wyalong Solar Farm

228-230 Blands Lane, Wyalong, NSW
Landscape Concept Design Report

Prepared by: Site Image Landscape Architects
In conjunction with: Urbis (Planning)

For: Lightsource Development Services Australia
21st January 2019

Site Image (NSW) Pty Ltd ABN 44 801 262 380 as agent for Site Image NSW Partnership
Level 1, 3-5 Baptist Street Redfern NSW 2016 Australia | T +61 2 8332 5600

Introduction & Site Context

This report has been prepared to address the landscape design aspects for the proposed construction of a solar farm on the site of 228-230 Blands Lane, West Wyalong. This Landscape concept design report and allied plans has been prepared by Site Image Landscape Architects in close cooperation with Urbis Planners and associated project team members for Lightsource Development Services Australia Pty Ltd.

The site is approximately 694 acres and lies north east of West Wyalong, located within the Bland Shire Council. The site as per the DA includes Lots 17 and 18, where Lot 18 will contain the proposed solar farm. Surrounding landscape is generally that of rural landholdings and remnant vegetation. Existing vegetation on site is found largely along the rural road network, with most of the land having been cleared. There is a central grouping of remnant vegetation in the southern half of the site and as perimeter roadside planting.

The proposed solar farm will include the installation of solar panels, with a total height of each panel being 4.01m, giving the project capacity of 90 MW AC. The substation and battery located on site is to be 8m in height with an additional 18m lightning rod. The land under and around the solar panels will remain as pastural grass land, accommodating grazing. Access to the solar farm in Lot 18 will be via Lot 17.

This report and allied Landscape Plan describes and illustrates proposals including landscape protection, enhancement, new planting and treatments, and landscape maintenance and management strategies to achieve a long-term sustainable outcome suitable to the site and it's context.

In formulating the landscape proposals, Site Image has considered the detailed site investigation and assessments of consultants reviewing the broad range of landscape related features and factors including physical and landscape features, land-uses and ongoing management activities. This report has been prepared to be read in conjunction with project team documents that provide detailed documentation and analysis and visual impact assessment conclusions that have guided aspects of the proposed perimeter landscape treatments.

Site Context - Sixmaps


Typical view along Blands Lane


Typical view along Southwestern boundary


Typical view along Myers Lane


Typical view along Northeastern boundary

Landscape Design Considerations

Comprehensive site analysis of the ecology, hydrology and existing site features and vegetation was completed by the project team members including landform and drainage; archeological significance review; structures and farm elements; roads and fences; trees and vegetation associations; fauna and ecological corridors; and services and farm infrastructure. Bushfire assessment included review of context and bushfire threat, and consideration of minimising threat, suitable asset protection fire fighting setbacks and access provision, as well as ongoing vegetation and site management.

The context has been considered in these studies, including adjoining land holdings and relationship to the site; shared boundary to the south-west and north-east; provisions for irrigation and relevant to this project is the proximity to the HV network to the east of the site. Context considerations also included review of flight paths of light aircraft from the nearby airstrip and more general aviation patterns. Visual analysis was also a key aspect of review of the site and its context and relationship to neighbours and potential views to the site. Synthesis of the solar farm layout and arrangement was completed on the basis of integrated analysis of the team findings relating to these elements. Remnant significant vegetation were key considerations, with proposed solar panel and access arrangements allowing retention and protection of these elements.

Consideration and analysis of these factors was undertaken in response to achieving the outcomes of the client design brief, which has been developed to achieve required energy generation and distribution to the network, and achieve a suitable response to the factors noted above that have been addressed on previous similar project in the western NSW region. This includes incorporating landscape buffer treatments commonly undertaken to the site elements and interface with protected landscape areas, and perimeter landscape protection and additional planting to achieve visual buffer treatments as identified in the visual assessment study.

Site Boundary

Lot Boundary

Vegetation to be retained and protected

Client	Lightsource Development Services Australia	Drawing Number	3
Planner:	Urbis	Issue	6
Site Image Job Number	SS18-3924	Date	21.01.2019

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Landscape Strategy - Planting Proposals

In response to the site factors identified and the landscape buffer treatments suggested in the visual impact assessment study, the landscape proposals are described below and in accompanying landscape drawings.

Within the site boundary, there is to be a perimeter fire buffer zone at a minimum of 15 metres, that is clear of any vegetation. Outside of this fire buffer zone is to be landscaped with buffer planting, coordinating with the requirements of the ecologist report and the visual impact assessment. In the south western corner of the site, there is a 150 metre wide flight clearance buffer adjoining the NSW Free Flight Society land which is approximately 1.4 kilometres in length.

A 3 metre wide screen planting is proposed for 100 metres along the north eastern boundary corner .

Infill Planting to be installed maintaining a 3 metre wide boundary screening along the remaining site edges, except along the flight society flight clearance buffer. Infill planting to match surrounding retained vegetation.

Planting species selected must have minimum trunk clearance of 300mm from the ground, and not overshadow solar panels. Proposed planting species will be largely comprised of dominant species already found on site, and supplementary planting from a selection of endemic species. As per PBP and Standards for Asset Protection Zones, Trees must have clear trunk to height of 2 metres, and tall - medium shrubs be maintained to be clear of the tree canopy to ensure vertical stratification. Landscape to be planted in clumps and not provide continuous vegetation or canopy.

All environmental weeds found on site to be removed prior to landscape install, particularly those listed under the NSW Biosecurity Act 2016.

Solar panels are to have pastural grass surrounding and growing underneath, and be maintained through slashing or grazing.

Pastural grass mix is to be based upon Department of Primary Industries nominated mixes for the West Wyalong District, and determined by specific soil type found on site.

There is currently an existing seasonal tributary water course crossing through the northern portion of the site, as well as existing vegetation found in the southern half of the site. Both the seasonal tributary water course and existing vegetation are to be retained.

Existing vegetation along the perimeter of the site is to be retained where possible and be supplemented with infill planting.

Plant failure is expected and acceptable rates are as follows:

Tube stock - Per area: <10%

Concentration of failure: <15%

Trees - Per area: nil

Concentration of failure: nil

Refer to the Ecologist Consultants report for detailed information regarding fauna and flora VMP proposals, establishment and ongoing landscape maintenance and management.

Site Boundary

Proposed landscape buffer planting - Large shrubs & trees (3m wide)

Vegetation to be retained and protected

Existing vegetation retained, protected and enhanced with infill planting, where required (3m wide)

Client	Lightsource Development Services Australia	Drawing Number	4
Planner:	Urbis	Issue	6
Site Image Job Number	SS18-3924	Date	21.01.2019

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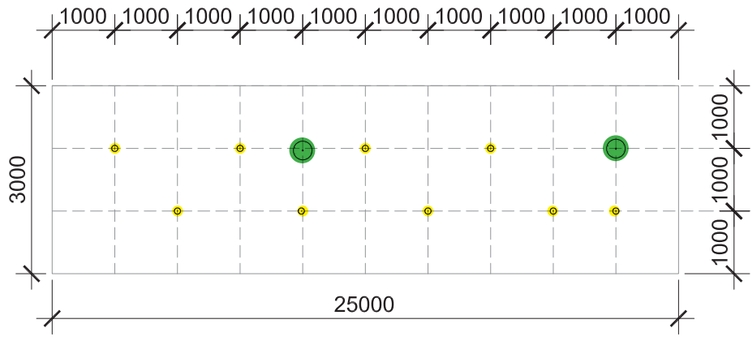
Landscape Strategy - Indicative Plant Species

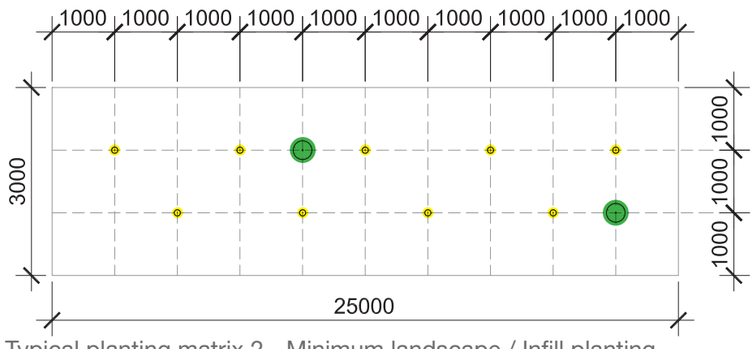
RECOMMENDED PLANT SPECIES

Tree Species	**Mature Height x Width**
Eucalyptus behriana (Bull Mallee)	10m x 5m
Callitris glaucophylla (White Cypress)	14m x 5m
Casuarina cristata (Belah)	10m x 3m
Eucalyptus sideroxylon (Mugga Ironbark)	15m x 7m

Shrub Species	
Acacia oswaldii (Umbrella Wattle)	2m x 2m
Acacia pendula (Weeping Myall or Boree)	5m x 3m
Acacia salicina (Sally Wattle)	4m x 3m
Acacia trineura (Three-nerve Wattle)	2m x 3m
Dodonaea viscosa (Sticky Hop-bush)	2m x 2m
Eremophila mitchelli (False Sandalwood)	6m x 4m
Geijera parviflora (Wilga)	4m x 4m
Melaleuca lanceolata (Black Teatree)	3m x 4m



Typical planting matrix 1 - Perimeter landscape zone



Typical planting matrix 2 - Minimum landscape / Infill planting

TREES

Eucalyptus behriana (Bull Mallee)

Callitris glaucophylla (White Cypress)

Casuarina cristata (Belah)

Eucalyptus sideroxylon (Mugga Ironbark)

LARGE SHRUBS

Acaia oswaldi (Umbrella Wattle)

Acacia pendula (Weeping Myall)

Acacia salicina (Sally Wattle)

Acaia trineura (Three Nerve wattle)

Dodonea viscosa (Hopbush)

Eremophila mitchellii (False Sandalwood)

Geijera parviflora (Wilga)

Melaleuca lanceolata (Black Teatree)

Perimeter landscape to be 3m in width and typically follow planting matrix 1. Matrix to be repeated twice, followed by a gap to create clumping landscape.

Minimum landscaped zones to be 3m in width, generally where infill planting is required among existing vegetation. Typically follow planting matrix 2, however must be adjusted to suit site conditions and existing vegetation, and species chosen are to match surrounding retained vegetation.

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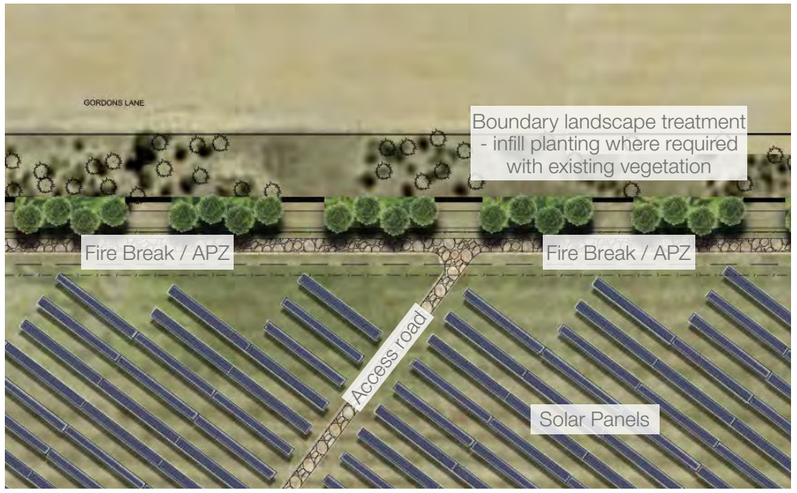
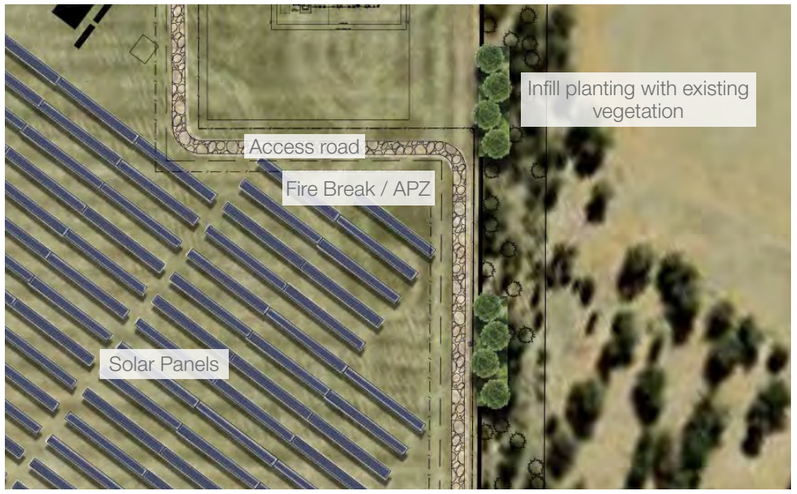
Landscape Masterplan - Summary of Landscape Proposals

This plan and annotated notes provides a summary of landscape proposals formulated with the project team to provide a suitable landscape setting to the solar farm elements, achieve required vegetation protection and enhancement, and provide suitable landscape buffers as identified in the visual impact assessment report.



Typical landscape boundary treatment with infill planting where required with existing vegetation

Scale: 0 25 50



Typical landscape infill planting where required with existing vegetation

Scale: 0 25 50

Scale: 0 25 50 125 250

West Wyalong Solar Farm | Landscape Masterplan

Client	Lightsource Development Services Australia	Drawing Number	6
Planner:	Urbis	Issue	1
Site Image Job Number	SS18-3924	Date	21.01.2019

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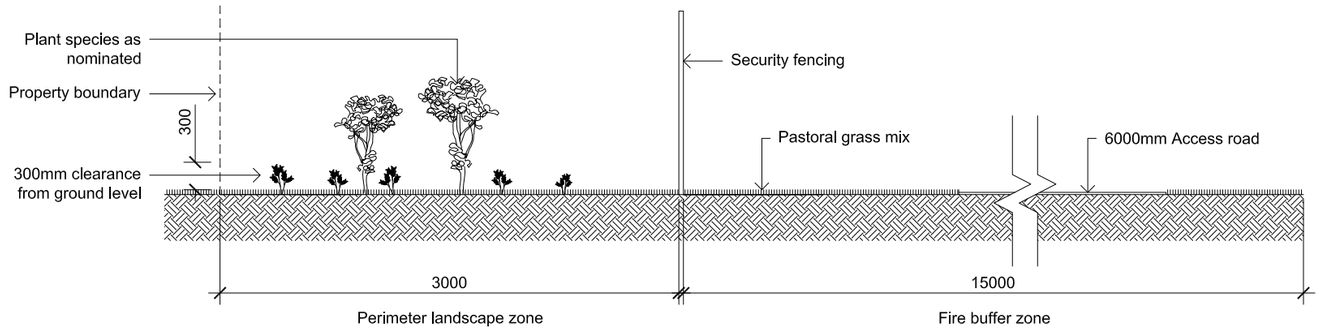
Planting Design

In response to the site factors identified and the landscape buffer treatments suggested in the visual impact assessment study, the landscape proposals are described in the adjacent sections and elevations, and in accompanying landscape masterplan drawings.

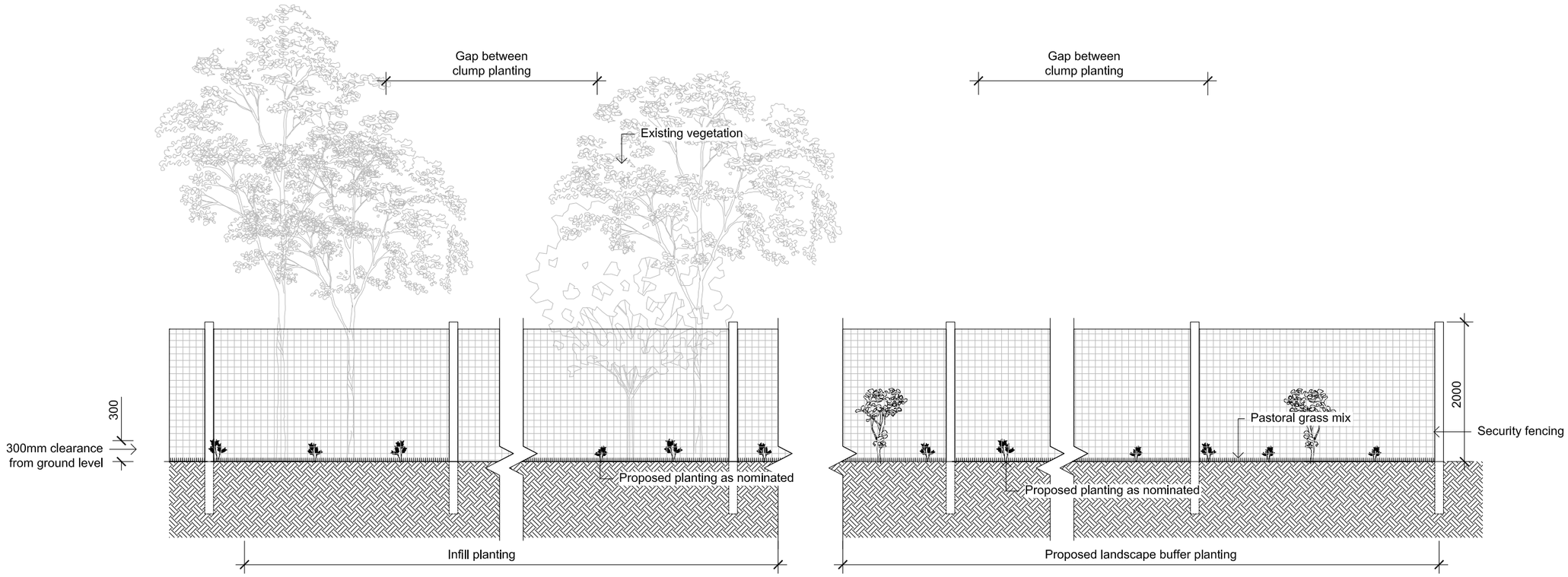
The sections demonstrate the key circumstances and treatments, relating to:

Section 1: Day 1 Typical boundary setback and buffer planting, secure fencing, and fire buffer break. Shrub planting is installed at a higher density to allow for 10% failure rate.

Elevation 1: Day 1 Typical landscape buffer planting showing new planting supplementing existing vegetation, and after the break-line showing typical buffer planting. Trees and surrounding shrubs installed in clump style planting where buffer planting is proposed, and as required when installed as infill planting.



Section 1: Day 1 typical boundary setback and buffer planting, secure fencing, and fire buffer zone



Elevation 1: Typical landscape buffer planting showing new planting supplementing existing vegetation, and typical buffer planting.

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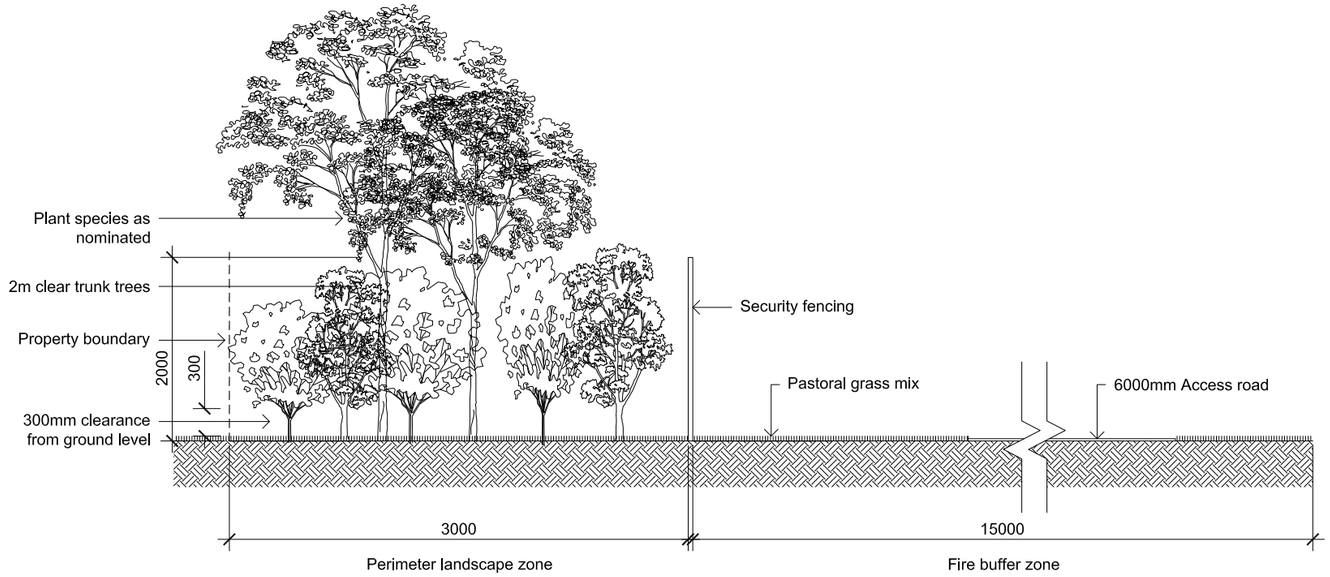
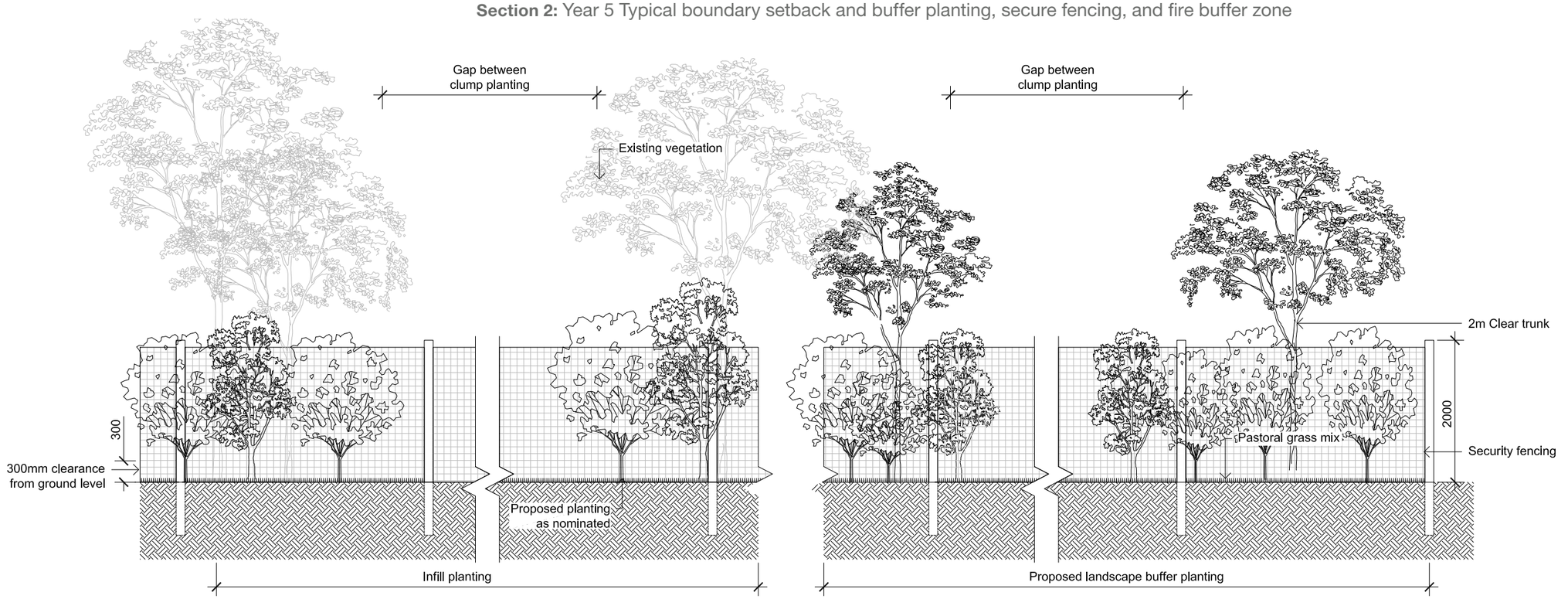
Section 2: Year 5 Typical boundary setback and buffer planting, secure fencing, and fire buffer break. Shrubs shown to have naturally progressed spacing in their clump planting.

Elevation 2: Year 5 Typical landscape buffer planting showing new planting supplementing existing vegetation, and typical buffer planting. Trees shown to have 2m clear trunks and shrubs below the tree canopy line.

Trees are projected to grow to between 4-6m in this initial 5 year period, however mature growth and habit is only a general indication. The expected growth of trees and shrubs will vary between species selected, maintenance, individual natural variation and microclimate.



Section 2: Year 5 Typical boundary setback and buffer planting, secure fencing, and fire buffer zone



Elevation 2: Year 5 typical landscape buffer planting showing new planting supplementing existing vegetation, and typical buffer planting.

Client	Lightsource Development Services Australia	Drawing Number	8
Planner:	Urbis	Issue	6
Site Image Job Number	SS18-3924	Date	21.01.2019

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LANDSCAPE MAINTENANCE

Workmanship and Materials

The whole of the landscape works shall be carried out by a competent, trained and qualified landscape contractor who is experienced in horticultural practices, landscape construction and planting techniques. The landscape contractor shall hold a current Building Contractors License and/or be a financial member of LNA Landscape Association NSW & ACT or equivalent organisations in other states.

EXISTING TREES AND SHRUBS

Trees and Shrubs to be Retained and Protected

Identify and mark trees and shrubs to be retained using a suitable non-injurious, easily visible and removable means of identification. Protect from damage the trees and shrubs to be retained, including those beyond the site area, both above and below the ground. If a tree becomes damaged during the works or it is proposed to perform work on a tree, give written notice immediately and obtain instructions.

Work Near Trees and Shrubs

Keep the area of the drip-line free from construction material and debris. Do not place bulk materials and harmful materials under foliage canopies or near trees. Do not place spoil from excavations against tree trunks. Prevent wind-blown building materials, such as cement, from covering trees and other plants. Do not remove topsoil from, or add topsoil to, the area within the drip-line of trees.

SOFTWORKS

Site Soil Testing

Where site soil is to be retrieved from site and stored on site for reuse, undertake at least two (2) soil tests in locations as advised by the Project Manager or as shown on the plans. Provide results and recommendations regarding soil additives for the benefit of healthy plant growth and to adjust the soil components to achieve an appropriate planting medium for successful plant development.

Topsoil

Import topsoil for the landscape areas, unless the topsoil can be provided from material recovered from the site, as recommended in the soil testing results. Spread the topsoil on the prepared subsoil and grade evenly, compact lightly and uniformly in 150mm layers. Avoid differential subsidence and excess compaction and produce a finished topsoil surface which has the following characteristics:

- Finished to design levels, allowing for mulch which is to finish flush with adjoining hard surfaces such as paths and edges;
- Smooth and free from inorganic matter, stones or clods of soil;
- Graded to drain freely, without ponding, to catchment and/or sub-soil drains;
- Graded evenly to adjoining surfaces; and
- Ready for planting.

Fertiliser

Provide proprietary fertilisers, delivered to the site in sealed containers marked to show manufacturer or vendor, weight, fertiliser type, N:P:K ratio, recommended uses, application rates and safety procedures. Apply appropriate fertiliser suited to the provenance of plants (indigenous or exotic) included in the design.

Plants

Supply plants in accordance with the landscape design drawings and schedules, which have the following characteristics:

- Large healthy root systems, with no evidence of root curl, restriction or damage;
- Vigorous, well established, free from disease and pests, of good form consistent with the species/variety;
- Hardened off, not soft or forced, and suitable for planting in the natural climatic conditions prevailing at the site in full sun, partial shade or full shade conditions;
- Grown in final containers for not less than twelve weeks;
- Trees, unless required to be multi-stemmed, shall have a single leading shoot; and
- Containers shall be free from weeds and of appropriate size in relation to the specified plant size.

Plant Installation

Following excavation of the planting hole, place and spread 15gms of wetting agent pre-mixed with one (1) litre of water. Place the plant correctly orientated to north or for best presentation. Backfill the planting holes with specified topsoil mixture. Lightly tamp and water to eliminate air pockets. Ensure that the backfill soil is not placed over the top of the root ball and that the root ball is not higher than the soil in which it is planted. Apply fertiliser, as specified around the plants in the soil at the time of planting.

Landscape can be installed at anytime during the year. Optimal landscape installation period would be between end of winter through to spring when plants are actively growing.

Mulch

Unless noted otherwise, mulch shall be approved proprietary recycled wood fibre or pine bark material. Place mulch in all landscaped areas to a depth of 75mm after all specified plants are installed. Keep mulch clear of all plant stems and rake to an even plane, flush with the surrounding surfaces and evenly graded between design surface levels. Over fill to allow mulch to settle to the specified depth.

Stakes and Ties

Stakes shall be durable hardwood, straight, free of knots and twists, pointed at one end, in the following quantities and sizes for each of the various plant pot sizes:

- Plants >25 lt: 1 off 38 x 38 x 1200mm;

IRRIGATION

Landscape will primarily be passively irrigated, and plant species selected will have low water requirements. During install and establishment period, landscape will be irrigated via water truck.

LANDSCAPE MAINTENANCE

The Landscape Contractor shall rectify defects during installation and that become apparent in the works under normal use for the duration of the contract Defects Liability Period. Unless contracted otherwise, the Landscape Contractor shall maintain the contract areas by the implementation of industry accepted horticultural practices for 52 weeks from Practical Completion of the works. The landscape maintenance works shall include, but not be limited to:

- Replacing failed plants;
- Insect and pest control;
- Maintaining and removing stakes and ties;
- Irrigation and watering;
- Weeding and rubbish removal.

Maintenance Log Book

Implement and keep a maintenance log book recording when and what maintenance work has been undertaken and what materials, actions and decisions have been used, implemented and concluded to keep the landscape always looking its best. Enter data daily and review information every 2 weeks. Observe trends and develop a maintenance regime around seasonal and observed event occurrences.

Maintenance Activities

During the defects maintenance period schedule the following activities to occur on a timely basis.

- Plant replacement - Replace plants that have failed to mature, die or are damaged. Replacement plants shall be in a similar size and quality and identical species or variety to the plant that has failed. Replacement of plants shall be at the cost of the landscape contractor unless advised otherwise. If the cause of the failure is due to a controllable situation then correct the situation prior to replacing plants. Observe and replace failed plants within 2 weeks of observation.
- Pruning – Prune dead wood, broken limbs, dead or infected foliage and as needed to develop strong, healthy plants to achieve the shape and form expected of the plant type. Observe daily and prune plants on a needs basis.
- Insect, disease and pest control - Avoid spraying:
  - o if ever possible;
  - o in wet weather or if wet weather is imminent;
  - o if target plants are still wet after rain;
  - o in windy weather; and
  - o if non-target species are too close.

Immediately report to the Project Manager any evidence of intensive weed infestation, insect attack or disease amongst plant material. Submit all proposals to apply chemicals and obtain approval before starting this work. When approved, spray with herbicide, insecticide, fungicide as appropriate in accordance with the manufacturers' recommendations. Observe daily and act as necessary to control any infestation or disease. Record in the logbook all relevant details of spraying activities including:

- o Product brand / manufacturer's name,
- o Chemical / product name,
- o Chemical contents,
- o Application quantity and rate,
- o Date of application and location,
- o Results of application, and
- o Use approval authority.

- Stakes and ties - Adjust and replace as required to ensure plants remain correctly staked. Remove those not required at the end of the planting establishment period (Defects Liability Period). Inspect and act at least every 2 weeks.

north

Client	Lightsource Development Services Australia	Drawing Number	9
Planner:	Urbis	Issue	6
Site Image Job Number	SS18-3924	Date	21.01.2019

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END

Client Lightsource Development Services Australia
Planner: Urbis
Site Image Job Number SS18-3924
Drawing Number 10
Issue 6
Date 21.01.2019

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Appendix A - Landscape Masterplan

The Landscape Masterplan is included in this report for illustrative purposes, and accompanies this report as a A1 drawing at scale 1: 5,000. This plan demonstrates the proposed Solar Farm elements, retained and enhanced landscape features of the site, and proposed landscape treatments. The detail of proposed landscape treatments is to be expanded in the detailed design and documentation project stages to reflect the concept proposals as described. The developed plans will be at a suitable scale on a series of plans to cover typical treatments as well as enlarged precinct areas for specific detailed areas as is appropriate.

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Landscape Masterplan

Client	Lightsource Development Services Australia	Drawing Number	12
Planner:	Urbis	Issue	1
Site Image Job Number	SS18-3924	Date	21.01.2019

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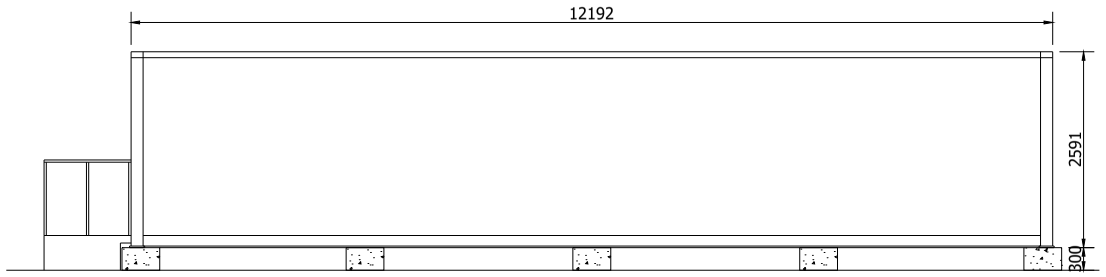
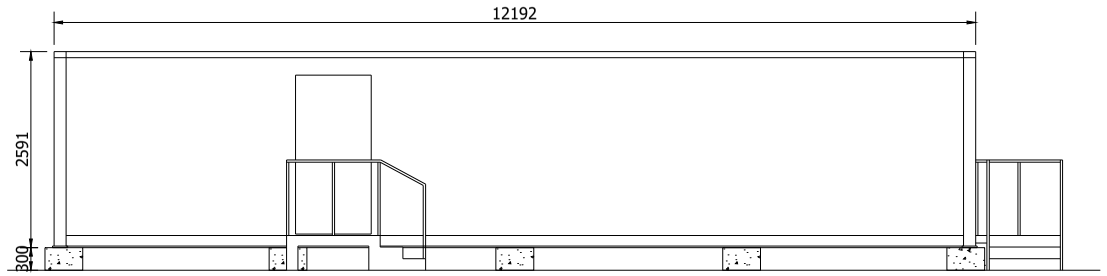
APPENDIX D PROPOSED DEVELOPMENT PLANS

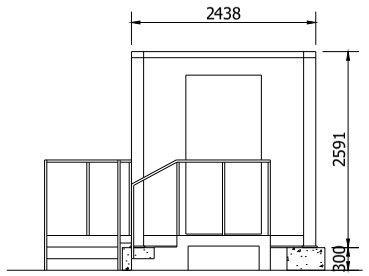
Batteries 40' Container Details



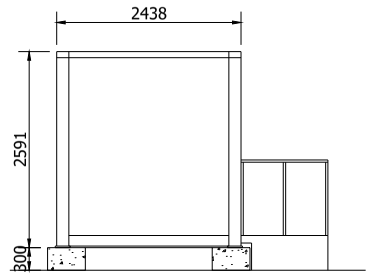
BACK ELEVATION



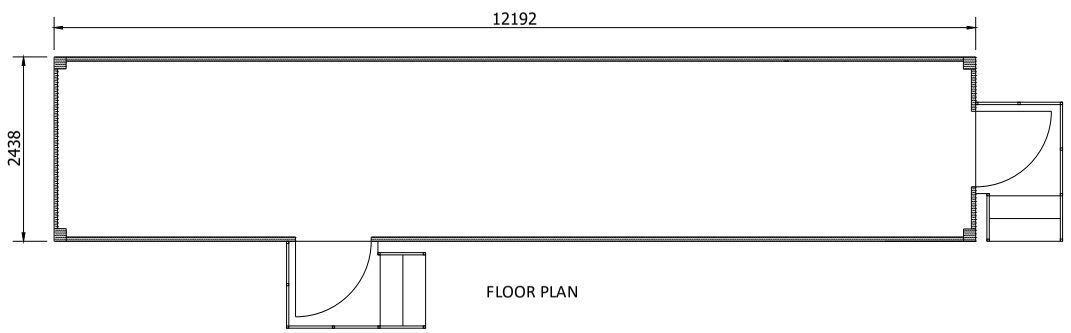
FRONT ELEVATION



SIDE ELEVATION



SIDE ELEVATION



FLOOR PLAN

Building must be painted

RAL 6005 Moss Green

Batteries 40' Container Details			
DA			03.10.18
DRAWN	CHECKED	APPROVED	DATE
Paper Size: A3	Scale: 1:100@A3	Sheet: 1	
DRAWING NUMBER: STC_01	STATUS: Preliminary		

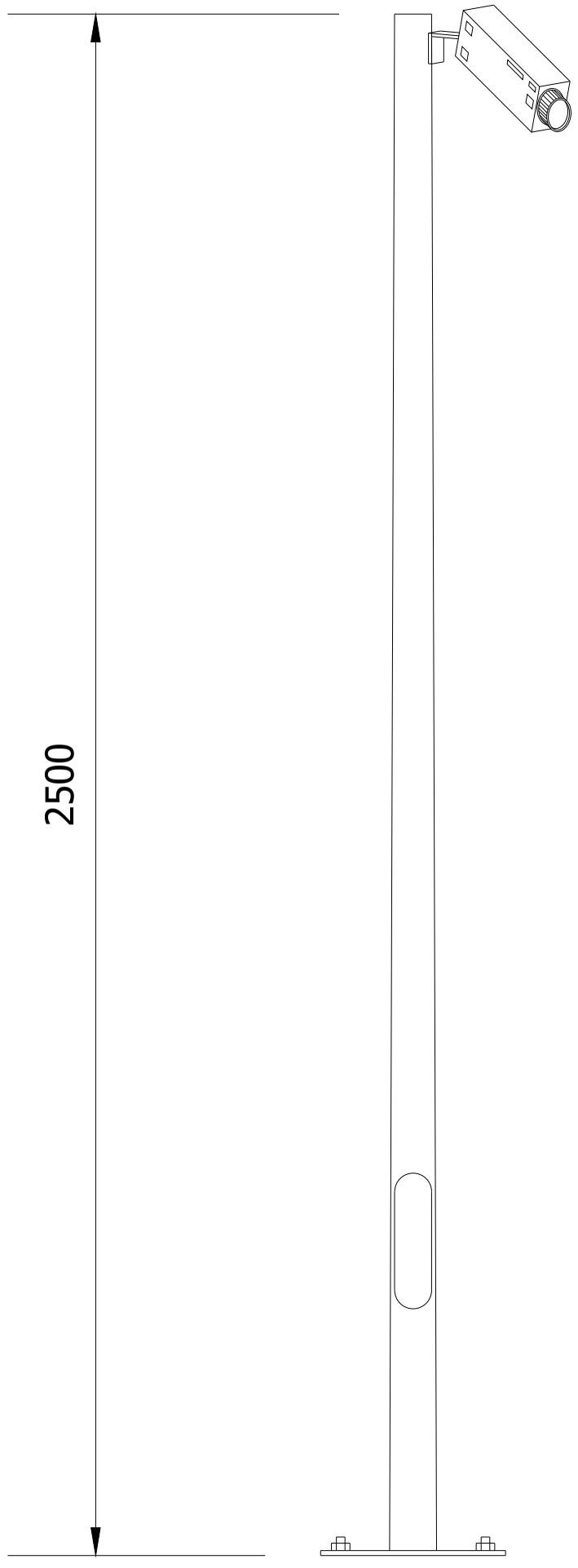
METERS

0 5 10 15

Lightsource Development Services Australia Pty Ltd
Level 9 401 Collins Street, Melbourne, 3000
General: +61 (3) 9071 0326
Web: www.lightsourcebp.com
info@lightsourcebp.com

A3 - (420 x 297)mm

CCTV Pole Details



METERS

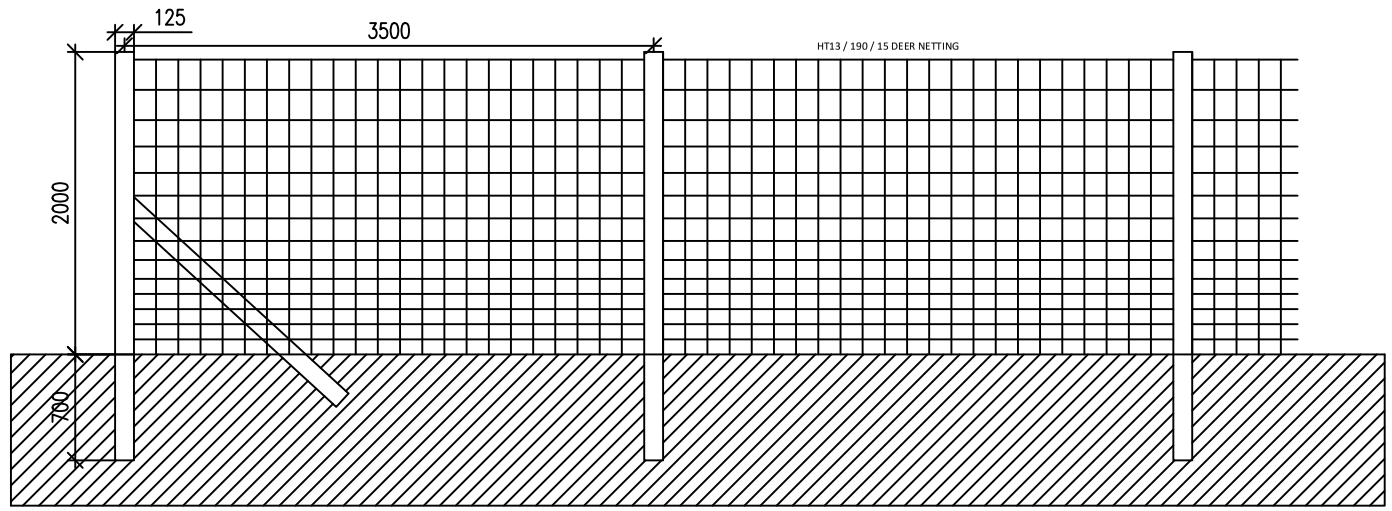
0 1 2 3

A3 - (420 x 297)mm

CCTV Pole Details			
DA			03.10.18
DRAWN	CHECKED	APPROVED	DATE
Paper Size: A3	Scale: 1:10@A3	Sheet: 1	
DRAWING NUMBER: CCTV_01	STATUS: Preliminary		

Lightsource Development Services Australia Pty Ltd
Level 9 401 Collins Street, Melbourne, 3000
General: +61 (3) 9071 0326
Web: www.lightsourcebp.com
info@lightsourcebp.com

Deer Fence Details



METERS
0 1 2 3 4 5

A3 - (420 x 297)mm

Deer Fence Details			
DA			03.10.18
DRAWN	CHECKED	APPROVED	DATE
Paper Size: A3	Scale: 1:50@A3	Sheet: 1	
DRAWING NUMBER: DRF_01	STATUS: Preliminary		

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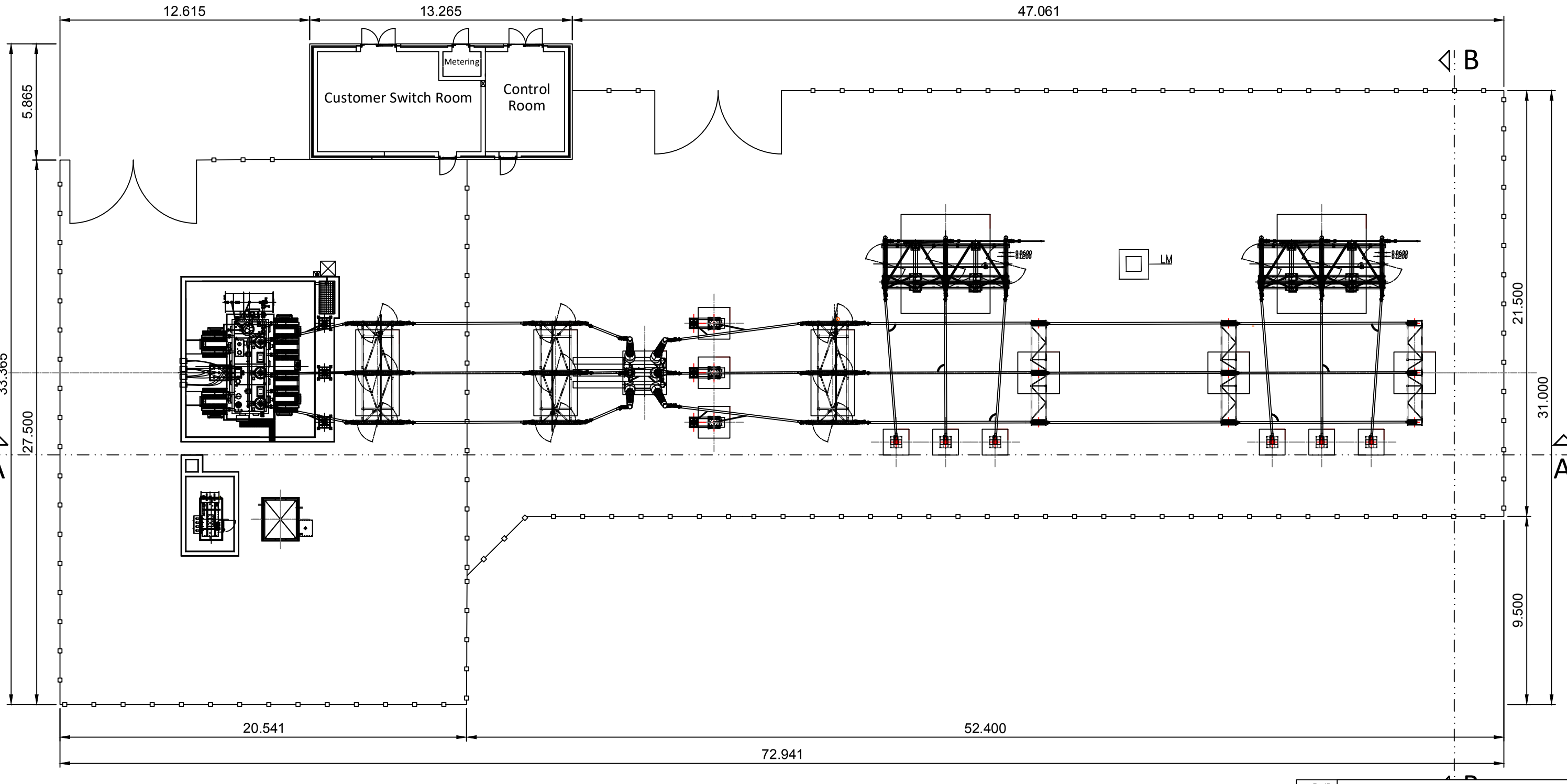
Level 9 401 Collins Street, Melbourne, 3000
General: +61 (3) 9071 0326
Web: www.lightsourcebp.com
info@lightsourcebp.com

Indicative Substation



FLOOR PLAN

METERS

0 5 10 15 20 25

A3 - (420 x 297)mm

Indicative Substation

GM			26.11.18
DRAWN	CHECKED	APPROVED	DATE

Paper Size:	Scale:	Sheet:
A3	1:200@A3	1

DRAWING NUMBER:	STATUS:
SUB_01	Preliminary

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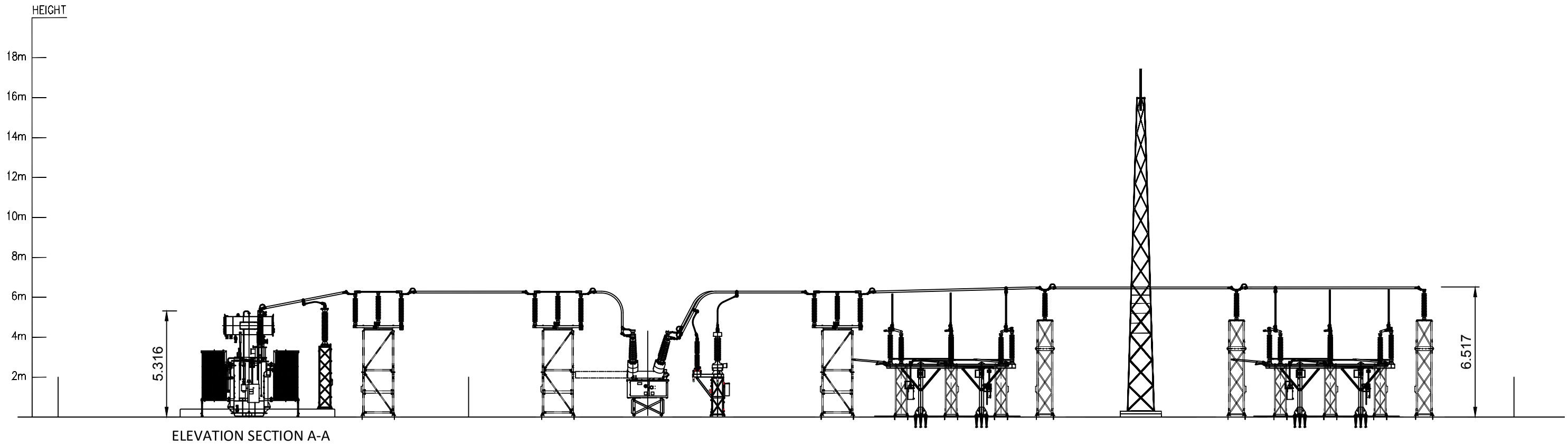
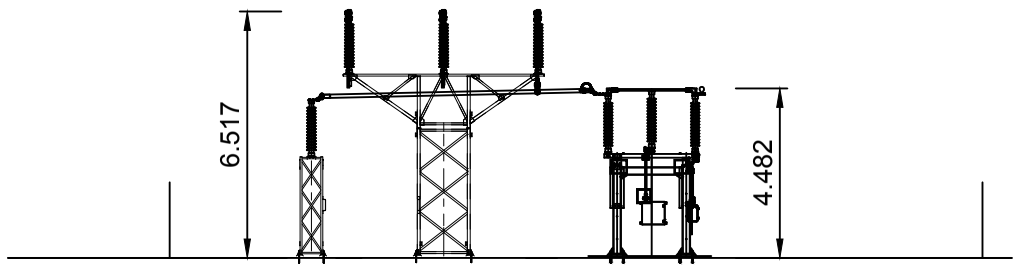
Level 9 401 Collins Street, Melbourne, 3000
General: +61 (3) 9071 0326
Web: www.lightsourcebp.com
info@lightsourcebp.com

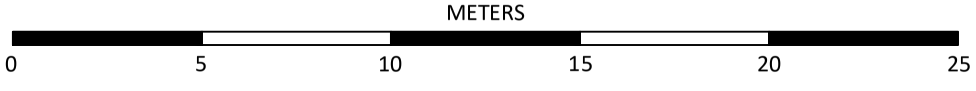
Indicative Substation



ELEVATION SECTION A-A



ELEVATION SECTION B-B



A3 - (420 x 297)mm

Indicative Substation			
GM			26.11.18
DRAWN	CHECKED	APPROVED	DATE
Paper Size: A3	Scale: 1:200@A3		Sheet: 1
DRAWING NUMBER: SUB_02		STATUS: Preliminary	

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General: +61 (3) 9071 0326
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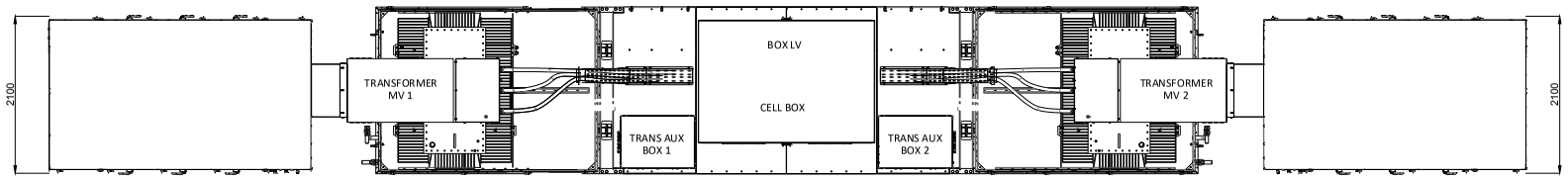
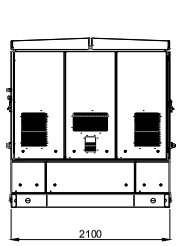
info@lightsourcebp.com

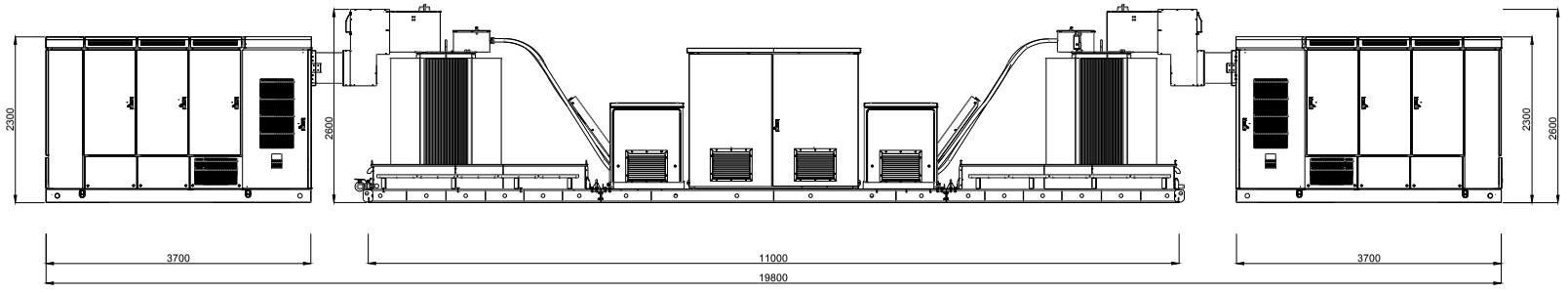
Inverter-Transformer TwinSkid Details



TOP VIEW



SIDE VIEW



FRONT VIEW

A3 - (420 x 297)mm

METERS

0 5 10 15

Building must be painted

RAL 6005 Moss Green

Inverter-Transformer TwinSkid Details

DA			03.10.18
DRAWN	CHECKED	APPROVED	DATE

Paper Size:	Scale:	Sheet:
A3	1:100@A3	1

DRAWING NUMBER:	STATUS:
TWS_01	Preliminary

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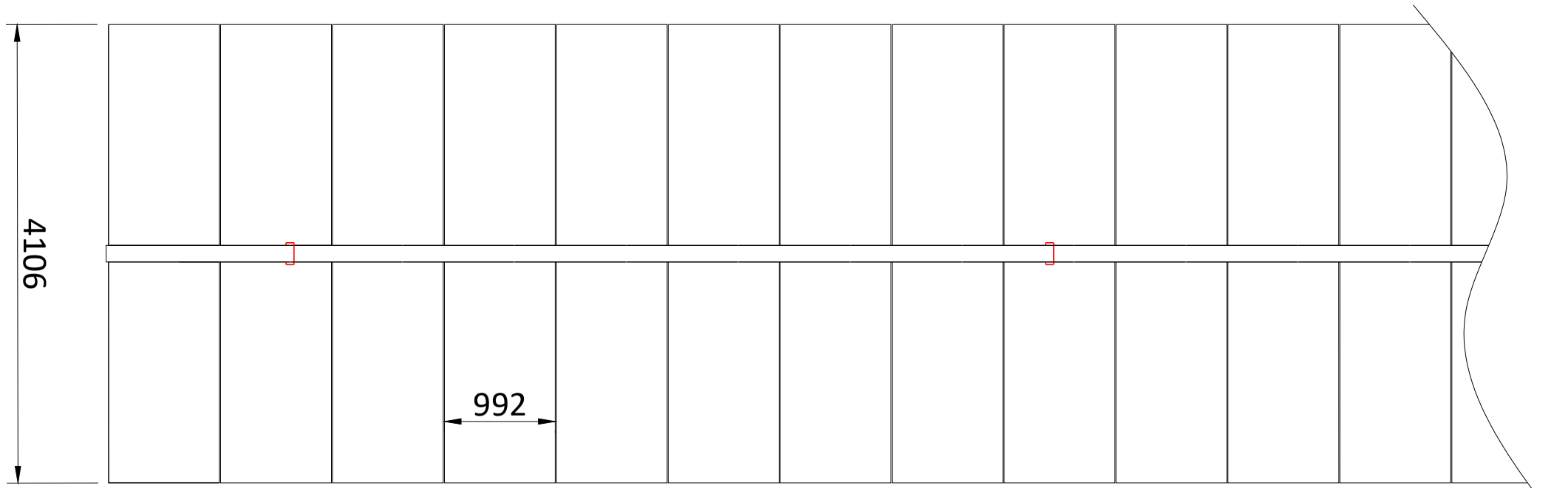
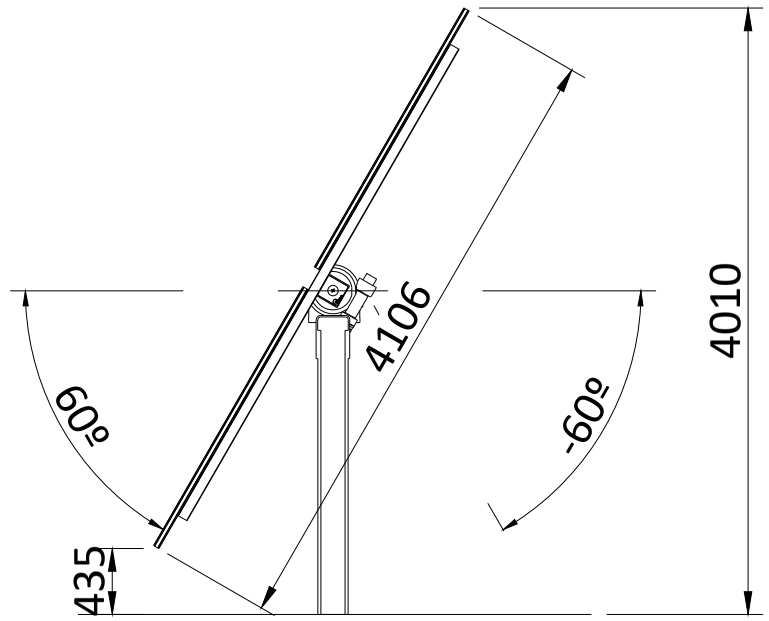
General: +61 (3) 9071 0326
Web: www.lightsourcebp.com
info@lightsourcebp.com

Soltec Bifacial Tracker Elevation



Plan

Typical Elevation North-South



Typical Section

A3 - (420 x 297)mm

METERS

0 1 2 3 4 5

Soltec Bifacial Tracker Elevation			
DA			08.11.18
DRAWN	CHECKED	APPROVED	DATE
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DRAWING NUMBER: TR_BI_SLTC		STATUS: Preliminary	

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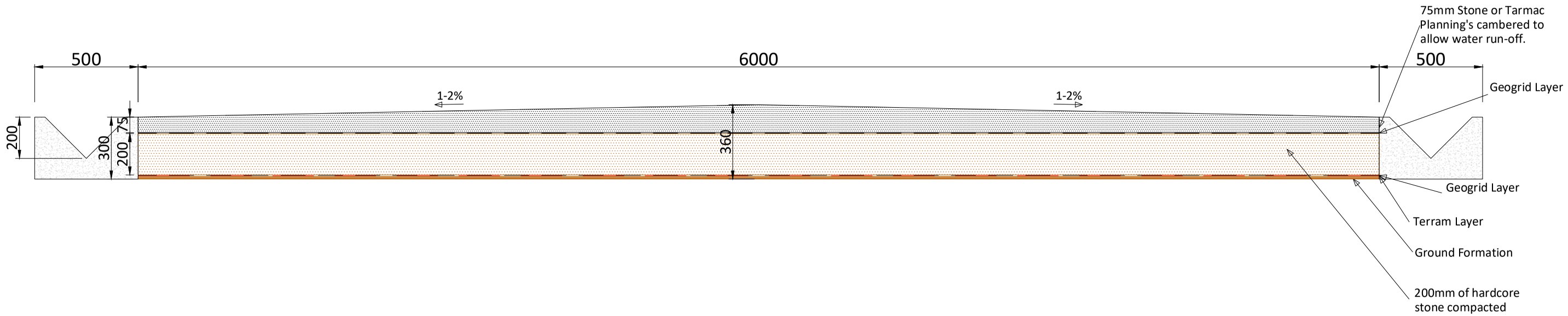
Level 9 401 Collins Street, Melbourne, 3000
General: +61 (3) 9071 0326
Web: www.lightsourcebp.com
info@lightsourcebp.com

Indicative Road Cross Section



NOTE:
ALL MEASUREMENTS IN MILLIMETERS

METERS

0 1 2 3 4 5

A3 - (420 x 297)mm

Indicative Road Cross Section			
DA			11.10.18
DRAWN	CHECKED	APPROVED	DATE
Paper Size: A3	Scale: 1:20@A3	Sheet: 1	
DRAWING NUMBER: RCS_01	STATUS: Preliminary		

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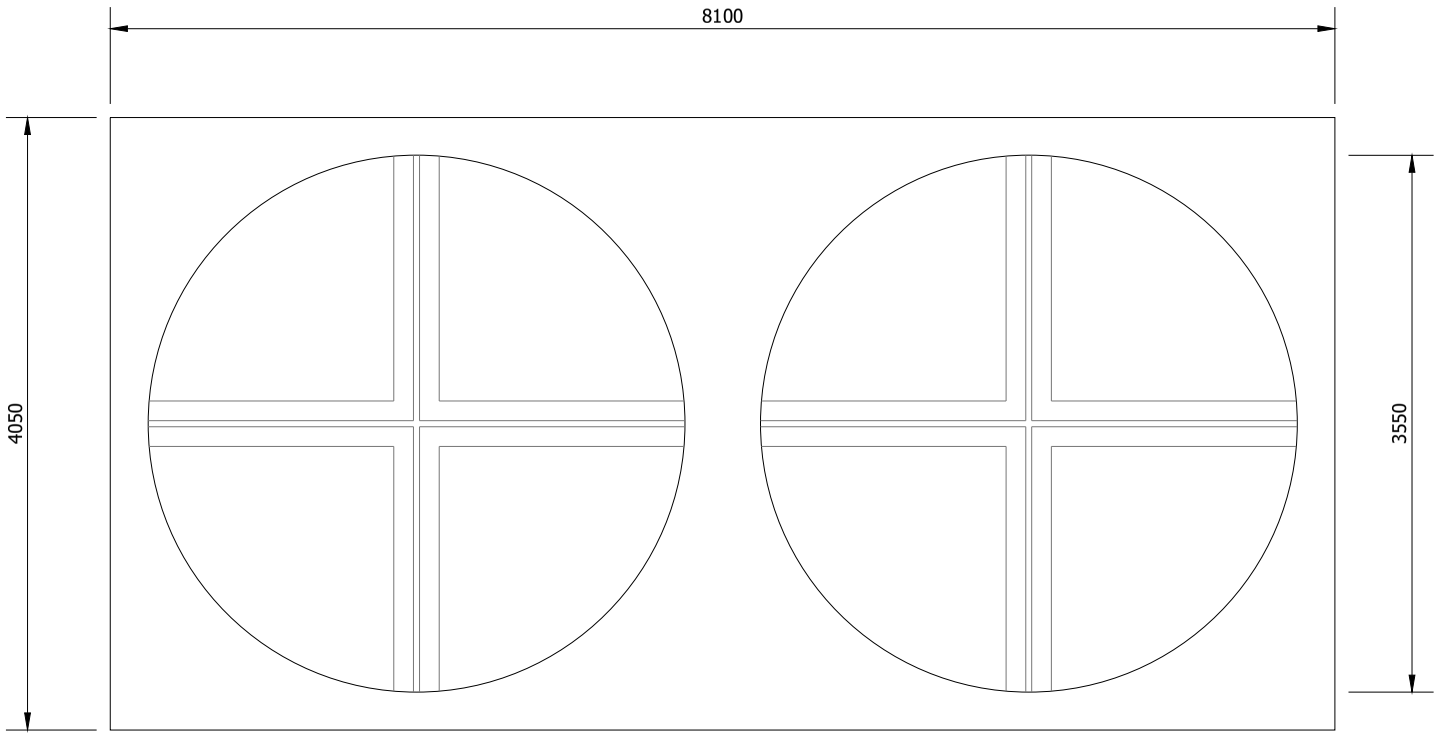
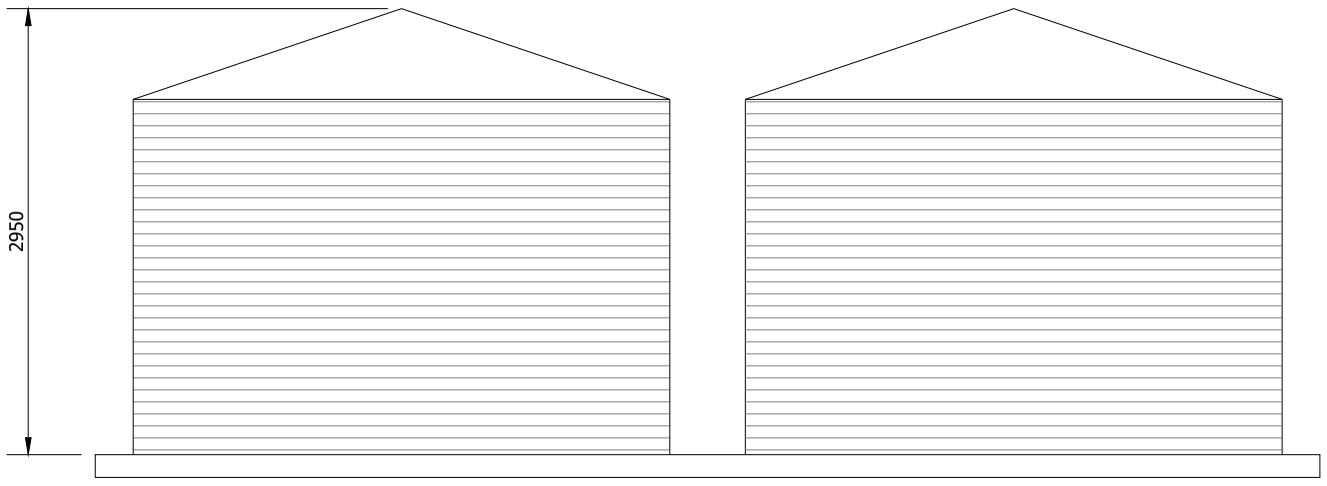
Level 9 401 Collins Street, Melbourne, 3000
General: +61 (3) 9071 0326
Web: www.lightsourcebp.com
info@lightsourcebp.com

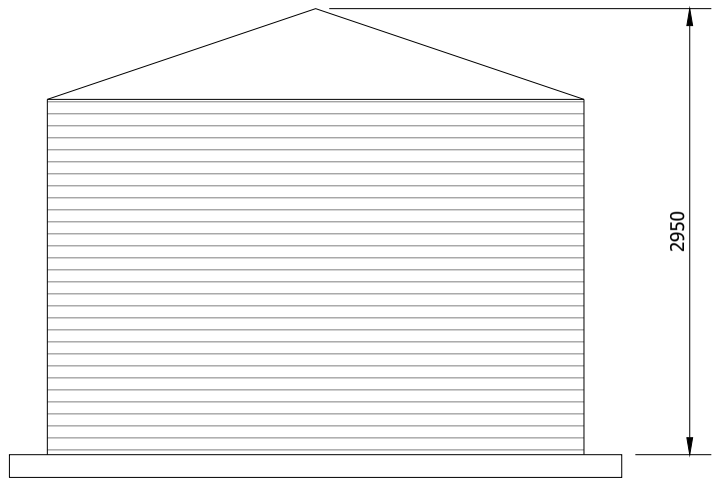
Water Tanks Details



FLOOR PLAN



FRONT ELEVATION



SIDE ELEVATION

Building must be painted

RAL 6005 Moss Green

Water Tanks Details

DA			03.10.18
DRAWN	CHECKED	APPROVED	DATE

Paper Size:	Scale:	Sheet:
A3	1:50@A3	1

DRAWING NUMBER:	STATUS:
WTK_01	Preliminary

Lightsource Development Services Australia Pty Ltd
Level 9 401 Collins Street, Melbourne, 3000
General: +61 (3) 9071 0326
Web: www.lightsourcebp.com
info@lightsourcebp.com

A3 - (420 x 297)mm

METERS
0 1 2 3 4 5

APPENDIX E PHOTOSIMULATIONS @ A3

URBIS

228-230 BLANDS LANE, WEST WYALONG

VIEW LOCATION 1, BLANDS LANE, LOOKING EAST - EXISTING CONDITIONS PHOTO TAKEN 12-11-2018

DATE: 21.01.2019
JOB NO: P0004623
DWG NO: VP1_A
REV: A

URBIS

228-230 BLANDS LANE, WEST WYALONG

VIEW LOCATION 1, BLANDS LANE, LOOKING EAST - PROPOSED DEVELOPMENT WITHOUT VEGETATION

DATE: 21.01.2019
JOB NO: P0004623
DWG NO: VP1_B
REV: A

URBIS

228-230 BLANDS LANE, WEST WYALONG

VIEW LOCATION 1, BLANDS LANE, LOOKING EAST - PROPOSED DEVELOPMENT WITH VEGETATION AT FIVE YEARS

DATE: 21.01.2019
JOB NO: P0004623
DWG NO: VP1_C
REV: A

URBIS

228-230 BLANDS LANE, WEST WYALONG

VIEW LOCATION 1, BLANDS LANE, LOOKING EAST - PROPOSED DEVELOPMENT WITH VEGETATION AT FIVE YEARS, WITH REFERENCE OUTLINE

DATE: 21.01.2019
JOB NO: P0004623
DWG NO: VP1_D
REV: A

URBIS

228-230 BLANDS LANE, WEST WYALONG

VIEW LOCATION 2, BODELLS LANE, LOOKING WSW - EXISTING CONDITIONS PHOTO TAKEN 12-11-2018

DATE: 21.01.2019
JOB NO: P0004623
DWG NO: VP2_A
REV: A

URBIS

228-230 BLANDS LANE, WEST WYALONG

VIEW LOCATION 2, BODELLS LANE, LOOKING WSW - PROPOSED DEVELOPMENT WITH VEGETATION AT FIVE YEARS, WITH REFERENCE OUTLINE

DATE: 21.01.2019
JOB NO: P0004623
DWG NO: VP2_B
REV: A

URBIS

228-230 BLANDS LANE, WEST WYALONG

VIEW LOCATION 3, CLEAR RIDGE ROAD, LOOKING ENE - EXISTING CONDITIONS PHOTO TAKEN 12-11-2018

DATE: 21.01.2019
JOB NO: P0004623
DWG NO: VP3_A
REV: A

URBIS

228-230 BLANDS LANE, WEST WYALONG

VIEW LOCATION 3, CLEAR RIDGE ROAD, LOOKING ENE - PROPOSED DEVELOPMENT WITHOUT VEGETATION

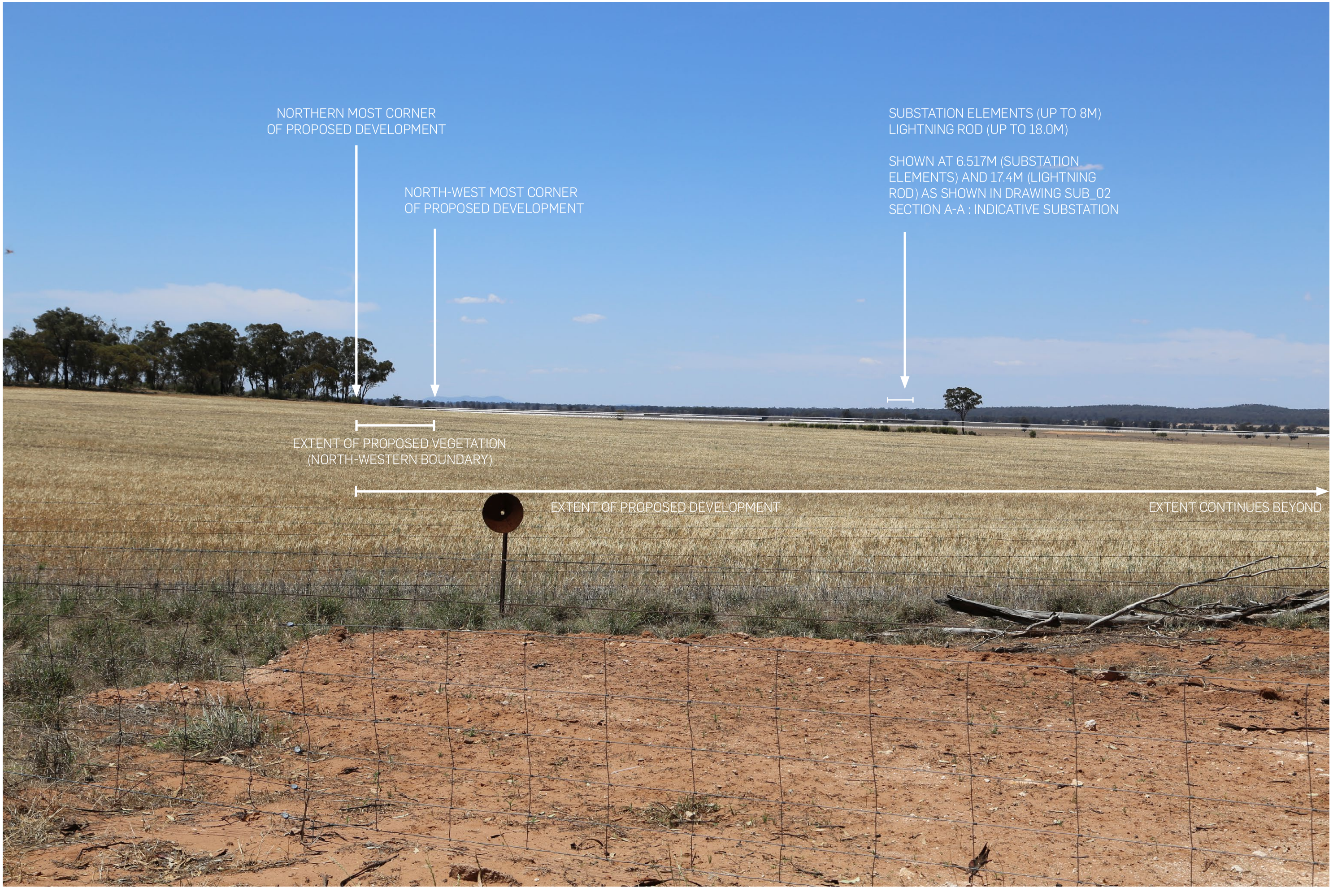
DATE: 21.01.2019
JOB NO: P0004623
DWG NO: VP3_B
REV: A

URBIS

228-230 BLANDS LANE, WEST WYALONG

VIEW LOCATION 3, CLEAR RIDGE ROAD, LOOKING ENE - PROPOSED DEVELOPMENT WITH VEGETATION AT FIVE YEARS

DATE: 21.01.2019
JOB NO: P0004623
DWG NO: VP3_C
REV: A



URBIS

228-230 BLANDS LANE, WEST WYALONG

VIEW LOCATION 3, CLEAR RIDGE ROAD, LOOKING ENE - PROPOSED DEVELOPMENT WITH VEGETATION AT FIVE YEARS, WITH REFERENCE OUTLINE

DATE: 21.01.2019
JOB NO: P0004623
DWG NO: VP3_D
REV: A

BRISBANE
Level 7, 123 Albert Street
Brisbane QLD 4000
Australia
T +61 7 3007 3800

GOLD COAST
45 Nerang Street,
Southport QLD 4215
Australia
T +61 7 5600 4900

MELBOURNE
Level 12, 120 Collins Street
Melbourne VIC 3000
Australia
T +61 3 8663 4888

PERTH
Level 14, The Quadrant
1 William Street
Perth WA 6000
Australia
T +61 8 9346 0500

SYDNEY
Tower 2, Level 23, Darling Park
201 Sussex Street
Sydney NSW 2000
Australia
T +61 2 8233 9900

CISTRI – SINGAPORE
An Urbis Australia company
#12 Marina View
21 Asia Square, Tower 2
Singapore 018961
T +65 6653 3424
W cistri.com

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