TECHNICAL REPORT NO 8

VISUAL IMPACT ASSESSMENT AND MASTERPLAN

CONTEXT

context

Visual Impact Assessment and Landscape Master Plan

Integrated Recycling Park
Camellia NSW

REMONDIS Pty Ltd

10519 | Issue E | 16 May 2011

Visual Impact Assessment and Landscape Master Plan

Integrated Recycling Park
Camellia NSW

REMONDIS Pty Ltd

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REVISION REGISTER				AUTHORISED	
ISSUE	ISSUED FOR:	DATE	REV NO.	NAME / POSITION	SIGNATURE
A	Draft Issue for Comment	23/07/2010	0	Oi Choong / Director	
B	Revised Draft	25/10/2010	1	James Rea / LA	
C	Final Draft	20/01/2011	2	James Rea / LA	
D	Final Issue	27/01/2011	3	Oi Choong / Director	
E	Master Plan updated	16/05/2011	4	Oi Choong / Director	

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Executive Summary

Introduction

REMONDIS Pty Ltd propose to establish a Waste Treatment Facility to be known as the Integrated Recycling Park, at Camellia, NSW. A visual impact assessment of the proposal has been undertaken by CONTEXT as a component of the Environmental Assessment (EA) being prepared by NECS Pty Ltd on behalf of REMONDIS.

This visual impact assessment report analyses and describes the potential visual impacts on the surrounding landscape and community that may occur as a result of the proposed development.

The Site

The proposed development is located approximately 1.2km east of the Parramatta CBD on the former James Hardie site immediately adjacent to the Parramatta River. The Site soil is highly contaminated with asbestos, which is contained under an existing hard capping and subject to a range of legislative and planning instruments. Until recently the Site has been used for the storage and auction of shipping containers and heavy transport vehicles.

The land on and immediately surrounding the Site has a long history of industrial development, however there is presently a range of infrastructure and land use types within visual range of the Site. These include Rosehill Racecourse to the south, open space and commercial/residential areas to the west, and University of Western Sydney Rydalmere Campus to the northwest.

Proposal

The proposed waste treatment facility would be comprised of several structures including two large main buildings for receival, processing and storage of organic and non-organic waste materials. The operation of the plant will also involve heavy vehicle movements to and from the Site.

The overall plant has been designed to sit upon an earth platform of imported fill up to 1.7m above the existing levels to reduce the breaching of the existing concrete capping.

Methodology and Analysis

View catchment analysis conducted through both field and desktop survey identified nine critical viewpoints surrounding the Site. Visual analysis including photographic survey was conducted at each of these locations to establish their visual sensitivity and the anticipated magnitude of visual change likely to result from the proposal as discussed in Section 5.

Visual Impact Assessment Outcomes

A visual impact rating has been given to each viewpoint photo that states the anticipated visual impact of the proposal from each location. These visual impact outcomes are summarised and compared in Section 5: Table 5.3.1.

This assessment determines that a minor to moderate magnitude of visual change would occur at several key receptors surrounding the Site. These receptors are anticipated to generally experience only a negligible to minor negative visual impact through construction and in the short term, due to the limited nature of these views and the high level of existing industrial development and heavy vehicle activity in the area.

The existing visual quality of the Site is poor and the proposed development is expected to have a negligible or minor positive visual impact from several viewing locations in the long term. Views from along the Parramatta River

corridor will become significantly less visually affected in the long term as proposed screen planting on-site becomes established.

Landscape Master Plan - Mitigation and Remediation Measures

The visual assessment takes into account all proposed remediation, mitigation and management to be implemented for the Site as described by the Development Proposal and as illustrated in Section 7: Figures 7.1 - Landscape Master Plan and 7.2 - Landscape Sections.

The Landscape Master Plan addresses recommended mitigation measures by preserving significant existing trees, increasing the density of planting along the Site boundaries as well as proposing extensive screen and feature planting and shade trees around proposed structures where appropriate.

There is an existing 30m wide Environmental Protection Zone (EPZ) setback along the northern site boundary adjacent to the river corridor. At present this zone is comprised of a solid concrete containment capping. There will be proposed landscape screen in movable concrete containers to provide filtered screen from Parramatta River and also to enhance the aesthetic value of the site.

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Section 1
Introduction

1.1 Report Aim and Project Background

REMONDIS Pty Ltd is seeking approval for the construction and operation of an integrated Alternative Waste Treatment (AWT) Facility to be known as the Integrated Recycling Park on the Site of 1 Grand Avenue, Camellia NSW. A landscape character analysis and visual impact assessment of the proposed AWT facility was undertaken by Context Landscape Design for National Environmental Consulting Services (NECS) on behalf of the client REMONDIS.

The aim of this report is to determine the degree or significance of the anticipated visual change in the landscape or urban character, as well as the visual amenity of all users of the surrounding area that could be potentially affected by the proposed development. Those potentially affected include people using buildings, roads, pathways, waterways, public transport and private or public open space within the surrounding view catchments.

This report also takes into account all proposed remediation, mitigation and management under the Development Proposal to be implemented for the Site as outlined in Section 2 - Proposal and as illustrated in Section 7: Figure 7.1 - Landscape Master Plan.

1.2 Relevant Statutory Instruments

The Proposed Development is subject to a range of legislative and planning instruments as outlined in the Preliminary Environmental Assessment. These include the following:

- *EP&A Act Section 75A, Part 3A*
- *SEPP (Major Development) 2005*
- *SEPP (Infrastructure) 2007*
- *SEPP No 33 Hazardous and Offensive Development*
- *SREP No 28*
- *SREP Sydney Harbour Catchment*
- *Parramatta LEP and DCP*

This report and the supporting documentation have been produced in reference to and in general accordance with all of the above relevant statutory requirements.

1.3 List of Tables and Figures

This report includes the following Tables and Figures:

Section 2
Proposal

2.1 Proposed Integrated Recycling Park - Camellia

2.1.1 Purpose of Proposed Development

(Refer to Section 4: Figure 4.1.3 - Site Analysis Plan)
The proposed REMONDIS Integrated Recycling Park at Camellia consists of two Alternative Waste Treatment Plants for:

a) Commercial and Industrial Resource Recovery Facility (CIRRF)

b) Source Separated Organic Resource Recovery Facility (SSORRF)

Both plants are designed to maximise recovery of resources for market and minimise disposal to landfill:

- The CIRRF facility is capable of receiving and processing up to 100,000 tonnes of recyclable and putrescible waste per annum
- The SSORRF facility is capable of receiving and processing up to 50,000 tonnes of source separated organic wastes per annum

The waste streams will be sourced within the greater Sydney Metropolitan Area and delivered by collection contractors.

2.1.2 Infrastructure Components

The proposed development has 9 main components making up the plant. These include:

1) The weighbridge and gate house building
2) SSORRF
3) Tunnels associated with the SSORRF building
4) CIRRF
5) Tunnels associated with the CIRRF building
6) Bio-filters associated with the tunnels
7) The office, amenities
8) The control room/lunchroom and amenities

The overall plant has been designed to sit upon an earth platform up to 1.7m above the existing levels to reduce the breaching of the existing concrete capping. To achieve this, imported fill will be brought onto the site, layered over the existing capping to form a building platform, and then compacted ready for the building to be constructed upon it.

The earth platform will be graded away from the building which in turn will be covered with concrete paving. The time period for the importation and compaction of the fill is anticipated at up to 3 months, after which time earth moving equipment will be used to carry out the excavation of the footings for the building structure.

Main Building Complex

The main building complex includes the entire green waste delivery and pre treatment facilities complete with all equipment, compost tunnels & hallway. The entire facility is fully enclosed and air ventilated.

The building will be of steel portal-framed construction, fully enclosed and complete with ‘Colorbond’ roof sheeting.

Precast concrete wall panels (push/non-push walls) will form the perimeter cladding of the main building. The floor to the entire building will be heavy-duty, reinforced concrete of 40 MPa concrete strength.

Tunnels

The composting tunnels are reinforced and tight sealed concrete structures of a special concrete mix to resist the high temperature range, corrosive atmosphere and aggressive leachate. Each tunnel will be approximately 5 m high, 8m wide and 26m long.

Biofilter

Each facility will include a biofilter, one for the CIRRF and one for the SSORRF. The deodorisation stage comprises a biofilter fan, humidifier and biofilter. The biofilters will be of concrete structure for the filter basement with either a perforated concrete or hardwood grate on support frame over the basement over the biofilter area. The concrete basement will fall towards the connected humidifier chamber via an air distribution inlet channel. The humidifier and connection will be of reinforced concrete with manhole access.

A pitched colour bond roof without insulation will be provided over the biofilter area. The structural support will provide for the installation of the filter sprinkler system. The roof will be fitted with a 1.5m diameter vertical discharge stack to a height of 9m above ground level. The stacks will be fitted with an exhaust fan to provide initial momentum.

Access Road

The access road will provide trucks with direct access to the proposed development from Grand Avenue. This will be a ring road which encompasses the plant and ancillary buildings on site. Delivery and collection trucks will follow a clockwise direction on this ring road.

2.1.3 Ancilliary Facilities

The development will include a weighbridge on the access road to enable recording of container and truck volumes and numbers.

A total area of 800m2 is allocated for an administration and staff amenities building which will be located to the southwest corner of the main SSORRF building. Car parking areas will be sealed with a two coat bitumen seal and will provide parking for 44 vehicles with a total of 34 staff car parking spaces and 10 visitor car parking spaces.

2.1.4 Other Infrastructure and Civil Works

Civil works include the following:
Trenching works relating to taking services from the connection points as shown on plans to the required location of the building and plant:

- Sewer
- Water/Fire service
- Electricity
- Stormwater

Trenching associated with the leachate drains and pits:

- Process Water Tanks
- First Flush System, tanks

Other civil works required for new buildings and structures as shown on the attached drawings:

- Flexible pavements for secondary access roads, and light traffic areas.
- Heavy-duty pavements will be reinforced concrete pavements for all truck-manoeuvring areas and within the building.
- A concrete apron in front of the main buildings will be provided to control dust. An all weather ring road from the new plant to join the existing Grand Avenue after the weight bridge.
- External lighting for security purposes with floodlights will be mounted on the building.
- Security fencing will be provided around the new development as specified in the contract (1.8m chain wire fence).

Utilities Connection to Site

Telecommunication and power lines will be provided from the Site boundary to the plant at the lease boundary.

The extension of the power supply from the main gate entry to a substation adjacent to the site office.

Extension of the sewer, main water supply & telecommunication cables to a location adjacent to the proposed weighbridge.

The water main will be extended from the main site entry by way of a 150 diameter pipe, laid in-ground (Service Corridor) by others.

Incoming Testa cables will be terminated at the proposed weighbridge by others (Service Corridor). Cables will be placed underground to the Site office.

2.1.5 Colour Schedule

Main plant

Walls	Off form concrete up to 4.0m with white Colorbond metal wall sheeting over
Gutters	Royal blue
DPs	Royal blue
Barge boards (Gable ends)	Royal blue
RSDs	White as per wall sheeting
Eds	White as per wall sheeting
Roof	Off white (non reflective)

Tunnels

Roof	Off form concrete
Walls	Off form concrete
Gutters & DPs	Royal blue
Tunnel awning	Exposed steel & Roof Royal Blue

Bio-Filter

Roof	Off white (non reflective)
Walls	Off form Hebal concrete panels up to 1500 with white Colorbond wall sheeting over
Gutters	Royal Blue
DPs	Royal Blue
Exposed steel	Galvanised steel not painted

Office

Walls	Off white
Windows	Royal Blue frames
Glass	Gray tint
Roof	Off white
Sunshades	Aluminium
ED	Royal Blue
Feature panel	Selected alum. panels (Royal Blue)
Entry awning	Royal Blue

Miscellaneous

Exhaust stack to Bio-Filter	Off white
Bollards	Royal Blue
Feature boxing around RSDs	Royal Blue
Above ground tanks	Green
Fencing other than existing	Black
Roadway	Off form concrete
Gate House	White and Royal Blue

2.1.6 Hours of Operation, Access and Vehicle Movements

During Construction

Construction hours will be restricted to 7am to 6pm Monday to Friday, 8am to 1pm Saturdays with no construction work on Sundays.

During the first stage of works (constructing the platform) tip trucks will enter the Site daily for approximately 4 weeks until the required amount of fill has been imported to raise the site to the required levels. Excavators, bulldozers and rollers will be used during this period to spread and compact the fill material.

The main building construction will involve a variety of vehicles and construction equipment including employee, subcontractor and delivery vehicles, cars, utes, 4 wheel drives, semi-trailers and vans entering the site daily during the whole of the construction period.
During the early stage of building construction there will be:

- Excavators, tip trucks, backhoes, reinforcement delivery trucks, concrete trucks, concrete pumps
- Steel and precast concrete delivery vehicles (semi-trailers) and cranes associated with the erection of these items
- Formwork and reinforcement delivery trucks (semi-trailers) concrete trucks and concrete pumps associated with the concrete tilt panel walls and tunnel topping slab
- Roof delivery vehicle (semi-trailer) and crane

Later in the project there will be:

- delivery vehicles associated with the roller shutter doors, the tunnel doors, the hoists, the bio-filter walls and flooring
- associated cranes and construction equipment to install the items e.g. hoists cranes, mobile hoists and work platforms

Other equipment that will be used on site will be small hand tools, compressors and mobile cranes.

During Operation

All vehicles and personnel will access the Site via the existing access point off Grand Ave, located at the southwest corner of the site.

2.1.7 Staffing Requirements

The high degree of automation enables REMONDIS to minimise staffing requirements for the operation. There would be three shifts per day with 40 staff working on the morning shift (6am to 2pm), 20 staff working on the 2nd shift (2pm to 10pm) and 5 staff working on the night shift (10pm to 6am).

Additional casual staff will be required for manual contamination removal depending on the level of contamination and will fluctuate accordingly.

Section 2
Proposal

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Section 3
Methodology

3.1 Visual Analysis and Impact Assessment Method

The methodology of this report is based on two types of assessment:

- Qualitative assessment; considers subjective qualities such as perceived value of landscape and built elements, scenic quality and visual amenity values.
- Quantitative assessment; based on objective, measurable data and quantifiable analysis such as the number of potential viewers, type and visibility of proposal elements and the spatial parameters of the Site and Study Area.

The methodology for this visual analysis and assessment involves the following steps:

1) Desktop analysis of the Baseline Data, Proposal, Site and Regional Context
2) Definition of Study Area and Zone of Visual Impact (ZVI) (area potentially visually affected by the proposal)
3) Identification of potential key receptors and viewpoints
4) Definition of visual impact criteria - receptor/landscape sensitivity and magnitude of potential change
5) Site visit and photographic study for landscape character analysis and visual impact assessment
6) Review key receptors and viewpoints against visual impact criteria
7) Assess and define potential visual impacts of proposal on key receptors
8) Review preliminary assessment outcomes with relevant parties
9) Identify options for mitigation against visual impacts
10) Conclusion - summarise visual outcomes and proposed mitigation measures

3.1.1 Desktop Analysis and Review of Baseline Data

A desk based analysis of the regional context of the Site was carried out using baseline data that includes planning documents, internet searches, analysing GIS map data, aerial photographs, topography mapping, tourist and traffic maps and all data related to the proposed development as supplied by the Client.

The aim of this analysis was to gain familiarity with the Development Proposal, Site and Study Area, and to establish the urban form, character, pattern and key elements such as transport and circulation links. This desk based review informed the approach taken to the on-site analysis and provided data for the subsequent visual assessment mapping.

3.1.2 Identifying the Project Study Area and Zone of Visual Impact (ZVI)

(Refer to Section 4: Figure 4.1.2 and Section 5: Figure 5.1.1)
The visual analysis aims to determine from which points the Site can be seen in the surrounding landscape primarily up to 500m away, but potentially extending up to 1km away or more.

The Study Area has been approximately defined as an area within a radius of 1km encompassing the Site. This distance has been determined to include all relevant areas and structures within line of sight and discernable visual range of the Site, and that may potentially be visually affected by the proposed development. Collectively these areas are referred to as the Zone of Visual

Impact. Figure 5.1.1 spatially illustrates these areas in relation to the Site to determine the location of strategic receptors and viewpoints to be visited during the on-site assessment.

3.1.3 Identification of Key Receptors and Viewpoints

The visual impact outcomes discussed in this report are based on visual information obtained from key locations within the visual catchment of the proposed development. These key locations relate to buildings, open space, roads, walking trails, waterways and other infrastructure, existing features or spaces referred to in this report as receptors. These key receptors have been identified as having some sensitivity or exposure to the outcomes of the proposed alternative waste treatment facility.

Potential receptors were identified based on desktop and ZVI analysis, and in consultation with NECS and the client REMONDIS. From this, a list of 10 potential key receptors and potential viewpoints were then identified for further on-site assessment as follows:

- University of Western Sydney - Rydalmere Campus
- Parramatta River Corridor
- James Ruse Drive
- Residential Dwelling - Grand Avenue
- Aldi Supermarket, Offices and Carpark - Grand Avenue
- Explore and Develop Child Care Centre - Level 4, 1C Grand Avenue
- Camellia Railway Station
- Pedestrian and Vehicle Overbridge - Grand Avenue
- Rosehill Racecourse
- Rosehill Residential Area

3.1.4 Definition of Visual Impact Criteria - Sensitivity and Magnitude

Two key criteria; “sensitivity to change” and “magnitude of change” have been used to assess the level of potential visual impact.

Sensitivity includes both that of the receptor or viewer, and of the landscape in which the viewer experiences a change. To determine the sensitivity of a receptor to the proposed development and the magnitude and nature of potential effects experienced by a receptor, a range of quantitative and qualitative factors were identified. The factors determining sensitivity include:

- Number of potential viewers (a receptor may represent a population base or an individual)
- Type of receptor – e.g. private dwelling, commercial building, road, waterway, public facility, conservation area, tourist route etc.
- Quality of view from receptor – i.e. obstructions, existing landscape character and quality
- Current and future landscape trends
- Ability of landscape to absorb the effects of the proposed development

The magnitude of visual impact on the landscape can change over time as mitigating effects such as planting and habitat restoration proposals mature, and as landscapes external to the development change over time. Factors determining the magnitude of the potential change imposed by the proposed development on each of the key receptors include:

- Nature of change - e.g. road, structure, removal of vegetation, combination
- Scale of change (height and spread of visible development in the landscape)
- Duration or degree of permanence of effect
- Proximity of receptor to proposed effect

The following Tables 3.1 and 3.2 illustrate how the related descriptive criteria have been used to define receptor sensitivity and magnitude of effect as discrete categories.

Table 3.1 Landscape Sensitivity Criteria

Sensitivity	Criteria
Low	A landscape or urban setting of generally low valued characteristics not worthy of conservation, industrial land or extensive open previously developed areas awaiting development. Evidence of degradation or disturbance and many unattractive, intrusive features or litter. A receptor with few potential viewers, viewers with low expectation of view quality, poor quality views and/or quick transitory or vehicle based views. Viewers and/or land considered potentially tolerant of substantial change. Generally receptors such as industrial or storage premises.
Moderate	A landscape or urban setting of moderately valued characteristics and/or some distinguishing features. A mix of attractive and intrusive elements and buildings with varying quality. A receptor with several viewers, reasonable quality views and/or pedestrian based transient views of moderate duration. Viewers and/or land considered potentially tolerant of some change. Generally receptors such as retail, offices and sports facilities.
High	Landscape or urban setting of recognised distinctive character, with some features worthy of conservation and considered attractive by most people. Buildings and streetscapes in good condition and well maintained with some high quality development. A receptor with many viewers, clear views and/or having a static viewpoint. Viewers and/or land considered susceptible to relatively small changes. Generally receptors such as residential, public open space, historical or cultural sites.

Viewer Perception and Community Consultation

Sensitivity can also be determined by the personal opinion and perception of the viewer with regard to landscape values. The proposed development and any particular associated visual impact could be considered as either negative or positive by an individual or community.

The rating of specific visual impacts in this report are not specifically based on viewer perception studies, which are typically qualitative in nature, however this report does consider whether the visual qualities of the landscape surrounding the Site are such that the majority of viewers would be negatively affected by the development.

There are no residential developments or community gathering places within the immediate visual catchment of the proposal. Therefore this methodology does not include a broad community consultation survey of public landscape character values and opinions.

Table 3.2 Landscape Magnitude of Change Criteria

Magnitude	Criteria
Nil	No visible change.
Negligible	No relevant or potentially noticeable visible change in any area or landscape characteristics.
Low	Development occupies a small portion of the view and/or is similar to existing landscape or urban elements. No readily noticeable change in any area or landscape characteristics.
Moderate	Development occupies a significant portion of the view and/or is not similar to the main elements of the view. Minor changes in landscape characteristics over a wide area ranging to significant changes in a more limited area.
High	Development dominates or even obstructs a portion of the view and/or is particularly different to the main elements of the view. Notable change in landscape or built characteristics over an extensive area ranging to very intensive change over a more limited area.

Significance of Visual Impact

The anticipated level of visual impact was determined by directly cross-referencing sensitivity and magnitude criteria as shown below within the matrix in Table 3.3 Visual Impact Matrix.

- Major Impact: where the Proposed Development could be expected to have a very significant impact (either positive or negative) on the existing landscape and visual resource.
- Moderate Impact: where the Proposed Development could be expected to have a noticeable impact (either positive or negative) on the existing landscape and visual resource.
- Minor Impact: where the Proposed Development could be expected to have a small, barely noticeable impact (either positive or negative) on the existing landscape and visual resource.
- Negligible: visible change may be present however no relevant or meaningful impact is expected to occur as a result of the Proposed Development.

Table 3.3 Visual Impact Matrix

		Magnitude				
		Nil	**Negligible**	**Low**	**Mod**	**High**
Sensitivity	**Low**	No change	Negligible	Minor	Minor to Moderate	Moderate
	Mod	No change	Negligible	Minor to Moderate	Moderate	Moderate to Major
	High	No change	Negligible to Minor	Moderate	Moderate to Major	Major

Given that the low/moderate/high criteria represent discrete levels on a scale of continuous gradation, professional judgement and an awareness of the dynamic relationship between sensitivity and magnitude is also required to accurately determine an appropriate Visual Impact rating.

3.1.5 On-Site Visual Assessment and Photography

(Refer to Section 5).
An initial visit to the Site was conducted on 9 March 2010 accompanied by the Client and other project consultants. Site and project familiarisation was conducted and key landscape features such as boundaries, vegetation, sightlines and proposed building locations were identified.

On-site assessment was carried out on 24 March, 2010 by two qualified CONTEXT landscape architects. Relevant areas within the Study Area and Site were accessed on foot, except for views recorded from the Parramatta River Ferry. The assessment was conducted in a mixture of clear, partially cloudy and cloudy weather, with warm and light conditions for the duration. An additional on-site assessment for Viewpoint 8 was undertaken on 11 October 2010 in dry, cloudy conditions.

Each assessment point involved the completion of a Site Assessment Form (Refer to Section 5.2) and a photographic record of the view. Additional photographs were also taken of the receptors themselves and the surrounding area, to be used as reference whilst compiling the assessment report.

Public use of roads, pathways and open space was observed during the course of the on-site Visual Assessment to assess its value as a human resource and this information has been taken into account in the evaluation process.

Where access to key receptors was not possible, the viewpoint was recorded from the nearest point of public access. In addition, where possible, a reverse perspective assessment of the sensitivity of these receptors and the magnitude of change to their views was made from within the Site to determine the potential visual impact of the proposed development from those locations.

3.1.6 Review Assessment Sites Against Visual Impact Criteria

Following the ZVI analysis, each of the key viewpoints was assessed against the sensitivity and magnitude criteria defined in Tables 3.1 and 3.2. Data obtained from the on-site assessment such as field notes and photographs have been compared with desktop analysis maps and site background information to determine the factors of sensitivity and potential magnitude of change experienced at each location. These factors were given a definitive sensitivity and magnitude rating as shown in Section 5.2 - Tables 5.2.1 to 5.2.9.

Viewpoint Methodology

Photographs taken from key viewpoints during the on-site assessment are

displayed in Section 5.2: Figures 5.2.1 to 5.2.9. Photographs were taken using a digital camera at a 50mm focal length. The photographs were then combined using photo-stitching software to create panorama images that indicate the extent of visible landscape that may be affected by the proposed development.

3.1.7 Assess and Define Potential Visual Impacts

Following the definition of sensitivity and magnitude factors, a final Visual Impact Rating has been obtained for each key viewpoint using the matrix in Table 3.3 in conjunction with photomontage analysis and notes taken on-site. These individual ratings are compared in Section 5 and summarised in Table 5.3.1 of this report.

3.1.8 Identify Options for Mitigation Against Defined Visual Impacts

Following completion of the visual impact assessment process, factors contributing to negative visual impact were identified. Possible mitigating or remediating measures were then identified to assess the potential for off-setting visual impacts from the development (refer to Section 6.1). Where possible, these mitigating factors were incorporated into the Landscape Master Plan as illustrated in Section 7: Figure 7.1.

3.1.9 Conclusion - Summary of Report Findings

The report is concluded in Sections 6.2 with a summary of assessment outcomes that conclusively states the anticipated outcomes, including short and long term visual impacts of the proposed Camellia Integrated Recycling Park on the Site and surrounding region.

3.2 Assumptions

Some assumptions have been made with respect to the establishment and management of the proposed development. These include:

- The predominant continuation of industrial land use throughout the Study Area.
- The retention of significant existing vegetation where possible to help maintain existing screening, shade and sightlines within the Study Area.
- Due to the extensive existing industrial development surrounding the Site, this report assumes viewers/receptors located within sight of such features will have an expectation of development of a similar nature and therefore a lower sensitivity to the industrial nature of the proposed development.

Section 4
Landscape VIsual Analysis

4.1 Site Overview

4.1.1 Site Location and Access

(Refer to the following Figures 4.1.1 to 4.1.3)
The Site of the proposed alternative waste treatment facility is located approximately 18km west of the Sydney CBD at 1 Grand Avenue, Camellia in the Parramatta City Local Government Area (LGA). The Site is approximately 200m east of James Ruse Drive and 100m north of Rosehill Racecourse as illustrated in Section 5: Figure 5.1.1 - Key Viewpoint and Receptor Plan.

Parramatta is a major business and commercial centre located to the west of the Site. Parramatta has a range of economic development including many commercial and residential developments and several significant industrial areas. of which Camellia is included.

Camellia is now an industrial suburb (formerly residential) approximately 1.2km east of Parramatta city centre, on the south bank of the Parramatta River. The suburb is defined by Clay Cliff Creek to the west, Duck River to the east, and Grand Avenue to the south.

The major roads dissecting the suburb are Grand Avenue (east-west) and James Ruse Drive (north-south). Another major feature is the rail link between Rydalmere and Clyde and the spur line from it to Camellia railway station which were important transport links, as are the roads that opened the suburb for industrial use.

The Site boundaries are defined to the west by the Clyde-Carlingford railway line and vacant land beyond, the goods rail line to the south with a mixture of offices, retail and industrial premises beyond accessed off Grand Avenue, industrial premises to the east and the Parramatta River to the north.

Access to the Site is through a major signalled intersection on James Ruse Drive and across an overbridge with heavy vehicle and pedestrian access which crosses the Clyde-Carlingford railway line. The entrance is located to the southwest corner of the Site between the Clyde-Carlingford railway line and a spur goods rail line to the south. The Site entrance is accessed by a road linking with Grand Avenue at the eastern end of the overbridge.

4.1.2 Site Description

The Site consists of an area of approximately 4.5 hectares zoned Regional Enterprise under the *Sydney Regional Environmental Plan (SREP) No. 28 - Parramatta* and zoned as General Industrial under the *Parramatta Local Environmental Plan (LEP)*.

The Site is generally level with only small variations in grade and level. Approximately 95% of the area covered with a ‘hardstand’ capping of concrete and bitumen containing asbestos contaminated fill beneath. This capping is generally of poor visual appearance with significant weed growth established in cracks and holes throughout the Site.

Section 4
Landscape VIsual Analysis

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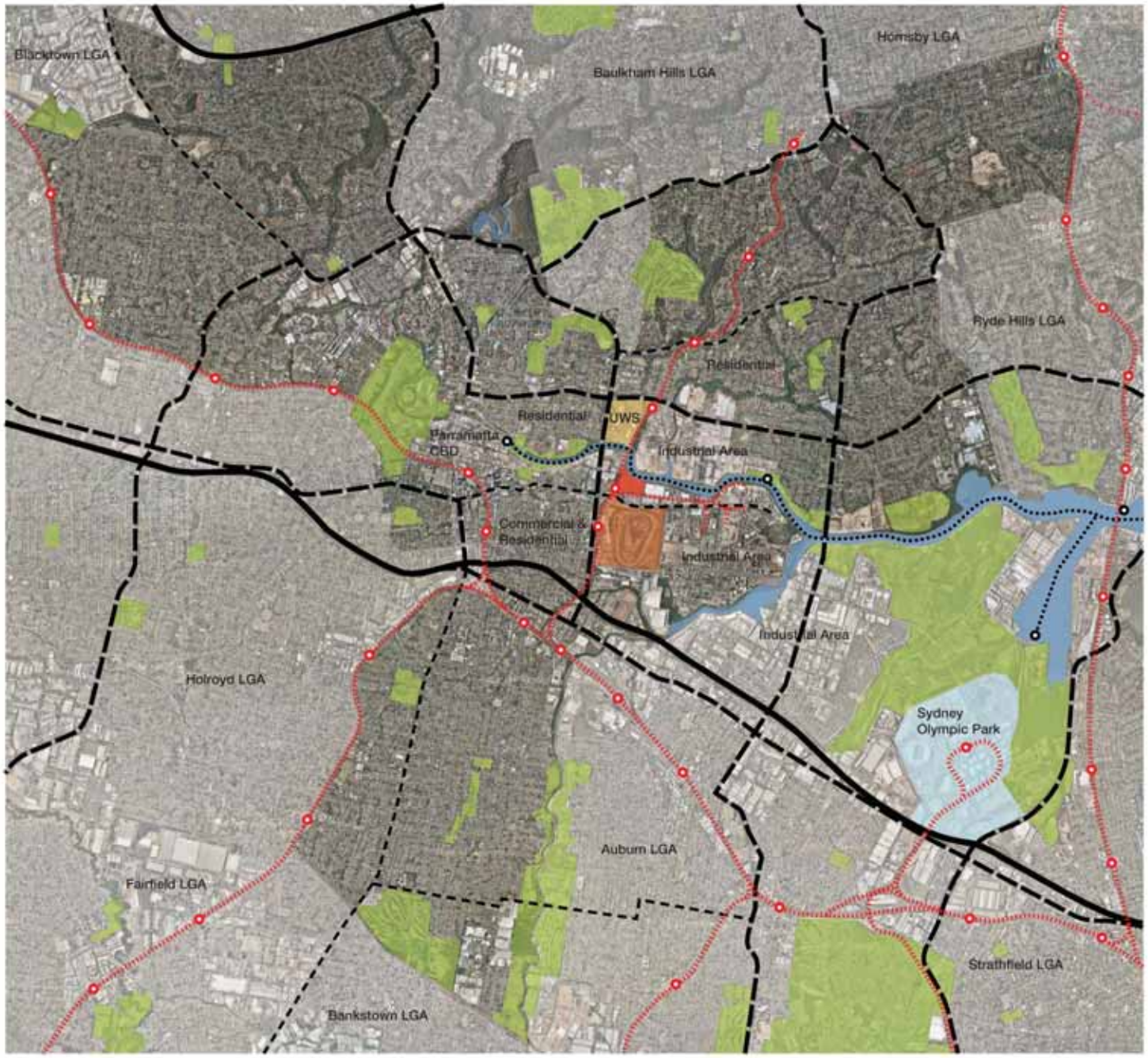

Legend

Transport

- Roads - Major Motorway
- Roads - Main Thoroughfare
- Roads - Main Link Roads
- Railway Tracks and Stations
- Passenger Ferry Route and Terminals

Key Landscape Elements

- Parramatta Local Government Area
- Proposed Development - Site Area
- Sydney Olympic Park
- Rosehill Racecourse
- UWS University of Western Sydney - Rydalmere Campus
- Significant Open Space Areas
- Lower Parramatta River and Homebush Bay

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Figure 4.1.1 - Regional Context
VIA - Integrated Recycling Park, Camellia

Date 16/05/11
context.net.au

Project no. 10519 | Scale 1:50,000 @ A3
Dwg no. Fig 4.1.1
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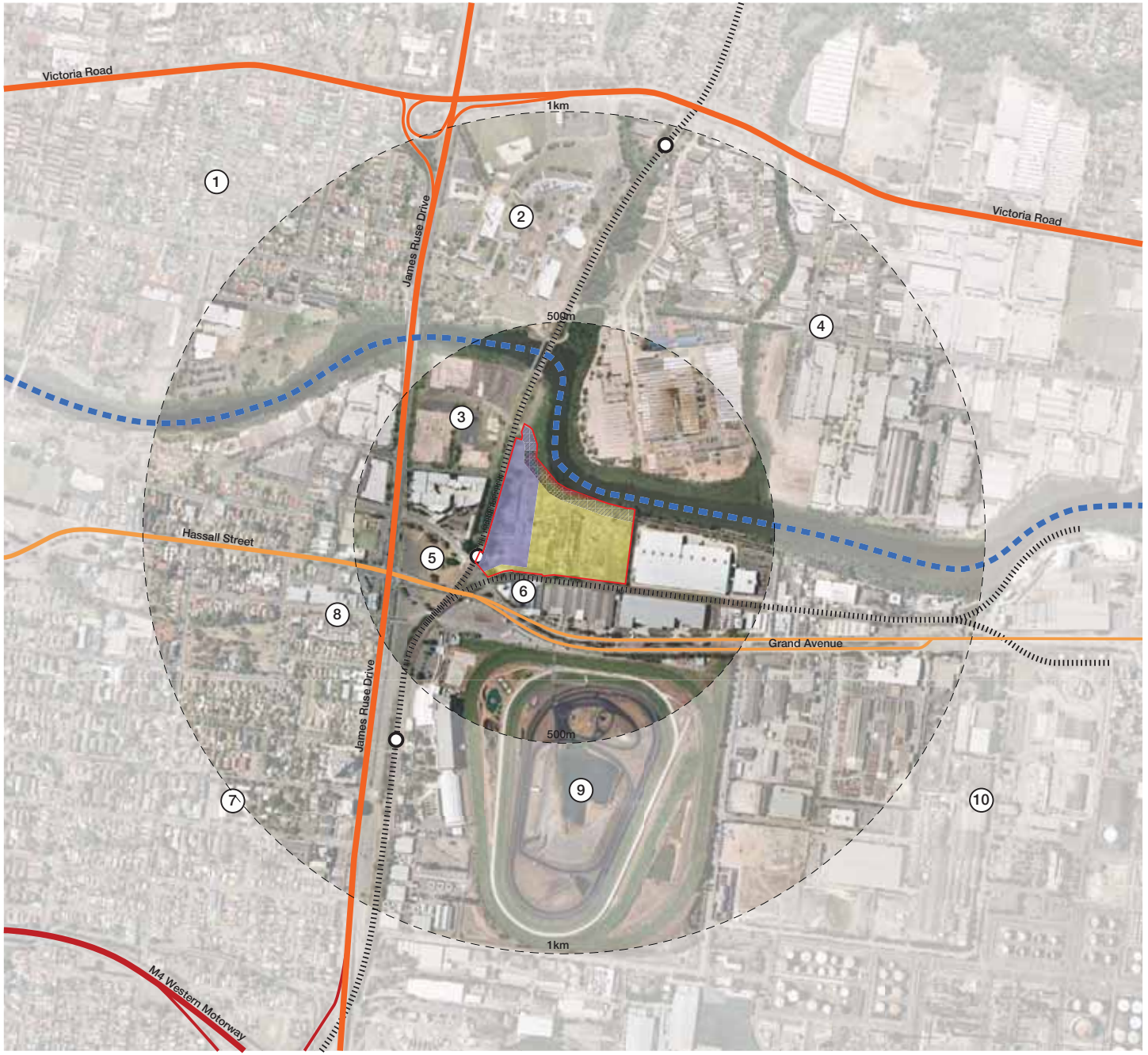

Legend

Transport

- Roads - Major Motorway
- Roads - Main Road - Thoroughfare
- Roads - Main Road - Access Road
- Railway Tracks and Stations
- Passenger Ferry Route - Parramatta to Circular Quay
- Existing Site Boundary
- Project Leased Area
- Non-Leased Area
- 30m wide Environmental Protection Zone (EPZ)

Key Features

1. Parramatta Residential Area
2. University of Western Sydney - Rydalmere Campus
3. Old Camellia Township Site
4. Rydalmere Industrial Area
5. Urban Parkland and Residential Dwelling
6. Aldi Stores Offices and Supermarket
7. Rosehill Public School and Residential Area
8. Commercial Area - Food and Retail
9. Rosehill Racecourse
10. Industrial Area - Shell Oil Ltd

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Figure 4.1.2 - Study Area
VIA - Integrated Recycling Park, Camellia

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Dwg no. Fig 4.1.2
Issue E

Scale 1:10,000 @ A3

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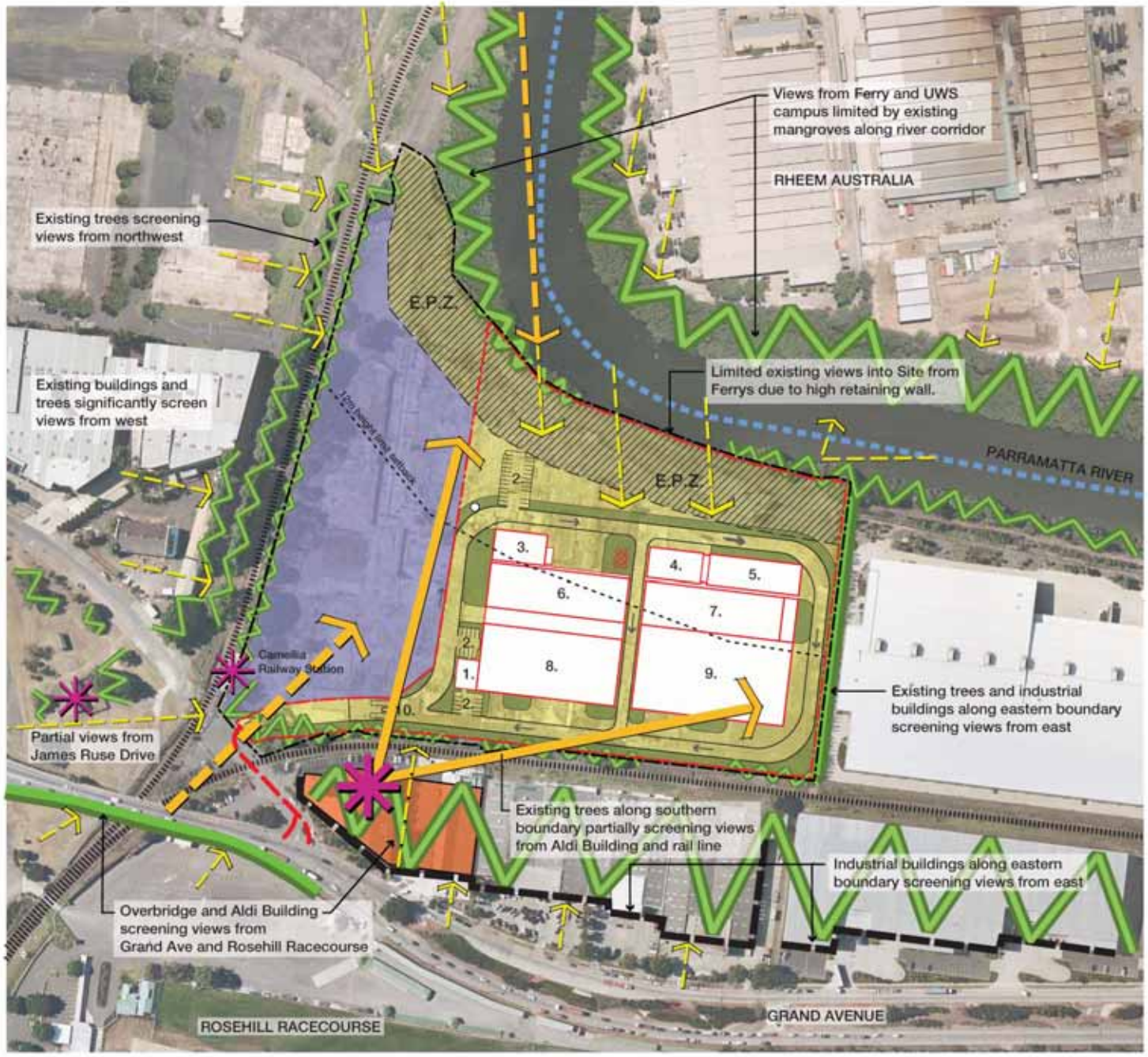

Legend

Existing Features

- External Views partially screened by existing features
- Existing Sightlines to Proposed Development
- Screening provided by existing features
- Locations/receptors with potentially high visual sensitivity
- Railway Tracks
- Passenger Ferry Route - Parramatta to Circular Quay
- Project Boundary - Leased Area
- Existing Site Boundary
- Existing and Proposed Shared Site Accessway
- Aldi Building - Child Care Centre Level 4

Proposed Features

- Proposed Buildings
- Proposed Circulation Road
- Proposed Hard Surface Areas
- Proposed Landscape Areas
- Non-Leased Area
- E.P.Z. Environmental Protection Zone

1. Admin/Office Building
2. Car Parking
3. SSORRF Biofilter
4. CIRRF Biofilter
5. Compost Refinement
6. Organic Waste Composting
7. CIRRF Waste Stabilisation
8. SSORRF Treatment and Sorting
9. CIRRF Treatment and Sorting
10. Weighbridge and Gate House

○ Rainwater Storage Tank

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Figure 4.1.3 - Site Analysis Plan
VIA - Integrated Recycling Park, Camellia

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Project no. 10519 Scale 1:2500 @ A3
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4.2 Historical and Cultural Context

4.2.1 Indigenous Context

Prior to European settlement, the area now known as Parramatta had been home to the Burramattagal clan for many generations, being a highly valued as a food resource. The Parramatta River in particular was a vital source of food and access to and from the region.

4.2.2 European Context

The Parramatta of today was founded in 1788, the same year as Sydney. Parramatta became a key centre for grain and wool production early in colonial settlement, being the first area to achieve agricultural production.

While there are many layers of historical colonial development lingering and still visible throughout the Study Area many of the significant landscape remnants of early settlement in the Camellia area are no longer visibly evident, having been lost during subsequent industrial development during the 20th century.

4.3 Land Use

4.3.1 Previous Land Use of Site and Surrounding Area

During the early years of the 20th century the Camellia area began to experience increasing industrial development, initially established to service the extensive pastoral industry and later including ironworks, refineries, tanneries, automobile, tyre and paint manufacturing facilities among others.

The Site is part of a larger area of land on which James Hardie Australia Pty Ltd (formerly James Hardie Asbestos) established an asbestos-cement manufacturing facility in 1916. During the 1960s James Hardie acquired more land for expansion and gradually the local houses were removed. Most of the former James Hardie sites are now bare hardstand and gravel areas, particularly the former manufacturing plant where the proposed Integrated Recycling Park is to be located.

4.3.2 Site Rehabilitation

The Site was acquired by Sydney Water in 1996 and contains large quantities of fill, some of which is contaminated with asbestos cement waste and friable asbestos.

During 2001 and 2002, the Site was capped with concrete by Sydney Water as part of a Containment Management Plan (CMP) produced in 2000 under a Voluntary Remediation Agreement (VRA) with the NSW Environmental Protection Authority (EPA). On 14 May 2003, following the completion of capping and groundwater monitoring works the Site was certified as no longer presenting a significant risk to human health or the environment.

A Site Management Plan (SMP) was then developed by the EPA in 2004 to manage containment issues, monitoring and mitigation of further contamination. In addition the EPA registered a public positive covenant on the titles requiring the land owner to maintain remediation of the James Hardie sites in accordance with the SMP. Further remediation of the proposed Integrated Recycling Park Site is intended under the proposal as outlined in Section 1 of this report.

4.3.3 Existing Land Use of Site and Surrounding Area

Recently the Site has been used for the storage and auction of industrial parts and scrap, shipping containers and freight vehicles. The presence of extensive weed growth and self sown trees throughout the Site indicate a low level of present maintenance.

Zoning

Analysing the zoning of the surrounding area provides a more defined image of development in the region as well as an indication of likely future development trends or uses for vacant sites in the Study Area.

This is useful when considering the potential visual impacts from a qualitative point of view, where viewer sensitivity is likely to be a key assessment factor. Zoning may also have a major influence on the viewer demographic that will experience the proposed development and the expectations of all viewers.

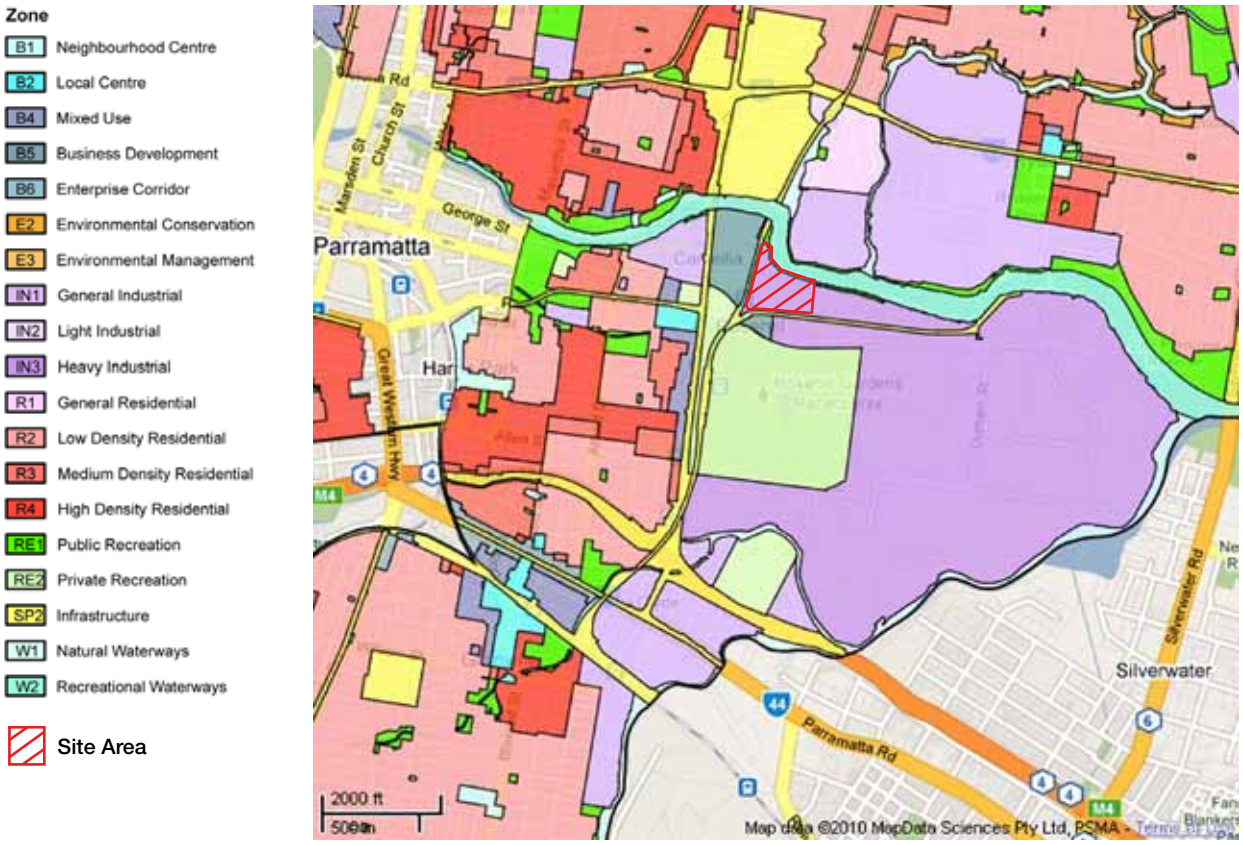

Figure 4.3.1:

Zoning Map - Camellia and surrounds. Source: Parramatta Draft LEP

While land use in the wider area includes commercial, residential, industrial and educational facilities, almost all of the land east of James Ruse Drive is zoned as industrial, with the major exception being Rosehill Racecourse to the south of the Site. This contrasts sharply with the predominantly residential areas to the west. The Site itself is zoned as General Industrial under the Parramatta Draft LEP as illustrated above in Figure 4.3.1.

Built Form

The built form of the surrounding area provides a useful indication of likely view catchments and potential viewer populations throughout the Study Area.

This is useful when considering the potential visual impacts from a quantitative point of view as viewer numbers and/or magnitude of change to key receptors is likely to be a key assessment factor.

All buildable land east of James Ruse Drive is designated as having a maximum built height of 12m. The Site itself has two height restrictions of 9m and 12m under the Parramatta Draft LEP as illustrated below in Figure 4.3.2.

Figure 4.3.2:
Building Heights Map - Camellia and surrounds. Source: Parramatta Draft LEP

4.4 Landscape Character

4.4.1 Scale and Topography

There are few vantage points outside the Site and within visible range to provide vistas or extended views of the proposed development. This is mainly due to the bulky built form and relatively flat topography of the area. Most significant high-rise development is located far away and of a scale that most views are screened by existing trees or adjacent buildings.

The Site and immediate suroundings are flat however there is approximately 4-5m change in elevation to mean river level. Areas to the south and west of the Site rise gently towards the Western Motorway to the south.

4.4.2 Visual Survey

The following Figures 4.4.1 to 4.4.6 illustrate the landscape form and character of the Study Area).

Figure 4.4.1:

Parramatta River Corridor - Looking upstream, west from James Ruse Drive. Vegetation along the river margins is largely continuous and dense west of the Site with industrial development giving way to residential and public open space.

Figure 4.4.2:

Shell Refinery, southeast of Site - Looking southwest from Parramatta River Ferry. Large scale industrial development is clearly visible from within the river corridor east of the Site.

Figure 4.4.4:

James Ruse Drive, west of Site - Looking south from Parramatta River Bridge. This view highlights the traffic density as well as the extent of the gently undulating topography and raised carriageways to the south of the Site.

Figure 4.4.5:

View over grassed open space and rail corridor - Looking north to Site from Grand Avenue overbridge. The open space provides overflow parking for Racecourse events. Weed growth and litter within the rail corridor contrasts with the adjacent maintained grass area.

Figure 4.4.6:

View over Rosehill Racecourse - Looking east along Grand Avenue to Shell Oil Refinery site from overbridge with clear views of exhaust stacks.

4.5 Vegetation

4.5.1 Existing Vegetation

The Site is located within the eastern portion of the Cumberland Plain, an area defined by typically gentle topography and more fertile soils than those further east. While once extensively vegetated, this now highly modified region comprises 12 endangered but distinct ecological communities, of which Cumberland Plain Woodland was predominant around the Site and Study Area prior to European settlement.

Despite the extensive industrial development throughout the Study Area, areas of significant vegetation are still located around the Site within recreational areas and reserves such as along the Parramatta River corridor.

There are a significant number of established trees and shrubs located within and immediately surrounding the proposed development, as well as extensive weed growth throughout the capped area of the Site and along the rail corridors. This vegetation contains many key native species including Eucalypts, Acacias, Paperbarks, Figs and Casuarina. Sensitive mangrove habitat along the Parramatta River and its tributaries is of key importance to the visual character and ecology of the area.

Much of the existing vegetation provides effective screening of the Site and should be preserved and protected where appropriate to minimise potential visual impacts of the development.

a)

b)

c)

d)

Figures 4.5.1 (a) to d) above:

Nearby extensively vegetated areas - (a) Looking southwest from UWS campus;
(b) Looking west from James Ruse Drive towards CBD;
(c) Mangroves along river on northern boundary of Site - Looking south from Ferry;
(d) Native Casuarina trees self seeding on capping - Northeast boundary of Site.

a)

b)

c)

d)

e)

f)

g)

Figures 4.5.2 (a) to (g) above:

a) Native Fig tree located on northeast corner of Site.

b) Native Paperbark tree located on northwest boundary of Site.

c) Existing trees including native Paperbark provide screening along southern boundary of Site.

d) Tall Poplar trees providing some screening along rail corridor

e) Native Casuarina and Eucalyptus trees provide screening along eastern boundary of Site.

f) Significant existing trees provide screening around entrance in southwest corner of Site.

g) View from Grand Ave overbridge showing existing trees screening views into Site. Weeds and tall grasses along rail corridor visible from Grand Ave and Camellia Station.

4.5.2 Proposed Vegetation

The proposed development includes significant areas of planting, particularly along the southern boundary of the Site, northern side of the proposed loop roadway near the 30m wide Environmental Protection Zone and the Environmental Protection Zone where planting occurs in movable concrete containers that prevent breaching of the capping by tree roots.

Planting around the proposed buildings will serve to partially screen these structures while providing shade for parking areas and offices and reduce hard surface area.

All proposed planting would be low water use, ecologically appropriate to the area and aim to enhance and reinforce the plant communities found throughout the surrounding area as outlined in Section 7: Figure 7.1 - Landscape Master Plan.

4.6 Existing Visual Intrusions and Infrastructure

4.6.1 Rail Infrastructure

Visual intrusions are defined as objects that divide or obstruct views and built objects that contrast sharply with their surroundings. Visual intrusions may be considered to have positive or negative effects on a receptor. The Study Area contains a significant amount of transport and industrial infrastructure as well as built elements that create visual intrusion from various positions accessible to the public.

The Study Area is bisected from north to south by the Clyde-Carlingford Rail Line which runs adjacent to the Site, and the goods spur line that runs east to west and connects to industrial areas to the east of the Site. This rail spur is used by Shell Oil, with a rail terminal in the adjoining suburb of Rosehill to the south.

The rail corridors are generally void of significant vegetation and often lined by vertical elements, creating a visual cut through the surrounding urban framework. Furthermore the rail corridor contains elements such as poles, suspended wires, mesh fencing and weed growth that can visually detract from more highly maintained areas nearby.

Structures such as the train and water pipeline bridges across the Parramatta River create a significant visual intrusion as viewed from the ferry and the UWS campus site as shown in Figures 4.6.3 and 4.6.4.

Figure 4.6.1:
Train arriving at Camellia Station - Looking north towards Site entrance from Grand Ave overbridge

Figure 4.6.2:

Camellia Station platform and accessway - Facing north, Site entrance to right of picture

Figure 4.6.3:

Rail bridge over Parramatta River - Looking northwest from ferry towards UWS campus

Figure 4.6.4:

Rail and water bridges over Parramatta River - Looking southeast to Site from UWS campus

4.6.2 Road Infrastructure

Industries in the Study Area rely heavily on road transport to and from their sites. The Grand Avenue overbridge that crosses the Clyde-Carlingford rail line creates a visual intrusion that significantly obstructs views around the Site, particularly northwards from Rosehill Racecourse (refer to Figure 4.1.3 and Figure 4.6.5).

Traffic flows along James Ruse Drive and Grand Avenue are very heavy, with a significant amount of heavy vehicle movements along these routes and throughout the industrial areas surrounding the Site. A significant visual intrusion is therefore already presented by traffic throughout the Study Area, particularly in the areas to the south and west of the proposed development.

Figure 4.6.5:

Traffic on James Ruse Drive, west of Site - Looking south from Parramatta River Bridge

4.6.3 Water Transport

The Parramatta River provides an important passenger transport and tourism link between Sydney City and the Parramatta CBD. While this waterway was historically used for industry, today there is no industrial water transport to the original Camellia industries. The ferry service runs directly past the Site with two ferries per hour passing along the river corridor. The elevated position of the Site and the existing high retaining wall restrict views into the Site from the ferry's passenger decks.

Land based receptors within the Study Area most visually affected by the ferries are those located to the south of the UWS campus and people using the riverside pathway.

4.6.4 Industrial Elements and Built Form

The retaining wall that forms the northern boundary of the Site and is a product of its James Hardie history, is of particularly poor visual quality and contrasts strongly with the extensive mangroves lining adjacent and opposite banks of the river corridor. Erosion of the river margin is evident along the length of the wall, with some remnant mangroves partially obscuring the wall at intervals (Figure 4.6.6).
Many vistas and long range views throughout the Study Area are limited or

completely obscured by industrial development. These elements are typically large and imposing structures that would be widely considered to be of poor visual quality.

Such features visually intrude into natural vistas, particularly those reserves and open space along the Parramatta River corridor and contrast strongly with the habitats and vegetation structures found there (refer to Figures 4.6.7 and 4.6.8).

Figure 4.6.6:
Retaining wall along northern boundary of Site - Looking south from Ferry

Figure 4.6.7:
Industrial buildings along Parramatta River, east of Site - Looking southeast from Ferry near Rydalmere Wharf

Figure 4.6.8:

Shipping containers along Parramatta River, east of Site - Looking southeast from Parramatta River Ferry

4.7 Key Receptors

(Refer to Section 5: Figure 5.1.1 - Key Viewpoint and Receptor Plan)
Buildings, open space, roads, walking trails, waterways and other infrastructure from which the proposal may be viewed are referred to as 'receptors'.

Potential receptors were identified based on desktop analysis of the ZVI, and in consultation with the client REMONDIS and NECS. From this, 10 potential key receptors and potential viewpoints were then identified for further on-site assessment as follows:

- University of Western Sydney - Rydalmere Campus
- James Ruse Drive
- Residential Dwelling and Parkland - Grand Avenue
- Clyde-Carlingford Railway Line
- Camellia Train Station
- Pedestrian/Vehicle Overbridge - Grand Ave
- Aldi Stores Building, Supermarket and Carpark
- Rosehill Racecourse and Grandstand
- Parramatta River Ferry
- On-site - Alternative Future Use Area

Figure 4.7.1:

University of Western Sydney, Rydalmere Campus, Library Building (right) and Outdoor Cafe Area - Looking north from pathway along Parramatta River

Figure 4.7.2:

University of Western Sydney, Rydalmere Campus, Library Building (foreground) and Outdoor Cafe Area - Looking northwest from south-eastern carpark adjacent to rail line

Figure 4.7.3:

Riverside Pathway connecting to UWS Rydalmere Campus - Looking southwest from drainage corridor east of rail line.

Figure 4.7.4:

Residential Dwelling surrounded by open parkland and informal overflow carparking space, located off Grand Avenue to west of Site - Looking northwest from top of Grand Avenue overbridge

Figure 4.7.5:

Aldi Stores Building with supermarket and car parking on Ground Floor, administration office space and Level 4 Child Care Centre with open terrace. Looking southwest from Site

Figure 4.7.6:

Rosehill Racecourse Grandstand located south of Site, access off Grand Avenue Looking south from east end of Grand Avenue Overbridge

Figure 4.7.7:

Site access road - Looking west on Grand Avenue, from east end of Grand Avenue overbridge

Figure 4.7.8:

View across parkland to Site entrance - Looking northeast from intersection of James Ruse Drive and Grand Avenue

Figure 4.7.9:
Parramatta River Ferry - Looking west towards James Ruse Drive from UWS Campus

Figure 4.7.10:
Parramatta River Ferry passing Site - Looking south from UWS Campus

5.1 Zone of Visual Impact (ZVI) Overview

5.1.1 Zone of Visual Impact - Proposed Integrated Recycling Park

Figure 5.1.1 - Key Viewpoint and Receptor Plan defines the areas of the surrounding landscape or urban framework that may be visually affected by the proposed development. The map displays circular bands, each 100m apart and approximately centred on the Site. These bands provide a reference as to the approximate distance from the proposed development. As illustrated, the proposed waste treatment facility is approximately contained within a 200m radius of its centre.

The Zone of Visual Impact is indicated on the map by the hatched area and includes all areas outside the site that may be potentially visually affected by the proposed development. The ZVI displays a 'worst case' impact based on the condition of the Site at the time of the on-site assessment and does not include elements or planting in the proposal which may provide screening to mitigate potential visual impacts.

The map shows the ZVI is significantly limited by buildings and vegetation despite the predominantly flat or gently undulating topography of the Site and immediate surrounding area.

As a result, several potential key receptors including James Ruse Drive, Rosehill Racecourse and most of Grand Avenue are shown to be outside the ZVI area. Due to the elevated position of the Site above the river and screening provided by the existing vegetation, some parts of the Parramatta River corridor that are close to the Site are outside the ZVI of the proposed development.

However, several key receptors will experience a level of visual impact from the development. A detailed Site Assessment was carried out at all indicated locations to determine a Visual Impact Rating as outlined in Section 5.2 and illustrated in Figure 5.1.2 - Visual Impact Rating Map.

Section 5
Landscape Visual Impact Assessment

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Legend

Key Receptors

- Main Roads - James Ruse Drive / Grand Avenue
- Bridge / Overpass
- Railway Tracks
- Passenger Ferry Route - Parramatta to Circular Quay
- Pedestrian/Cycleway
- Project Boundary - Leased Area
- Existing and Proposed Shared Site Access
- Proposed Buildings
- Hardworks and Softsworks Areas
- Non-Leased Area
- 30m wide Environmental Protection Zone (EPZ)
- Potential Zone of Visual Impact (ZVI)
- University of Western Sydney - Rydalmere Campus
- Aldi Building - Child Care Centre Level 4
- Residential Dwelling / Camellia Railway Station
- Rosehill Racecourse

Key Viewpoints

- V4 Visual Assessment Viewpoint Locations

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Figure 5.1.1 - Key Viewpoint & Receptor Plan
VIA - Integrated Recycling Park, Camellia

Date 16/05/11
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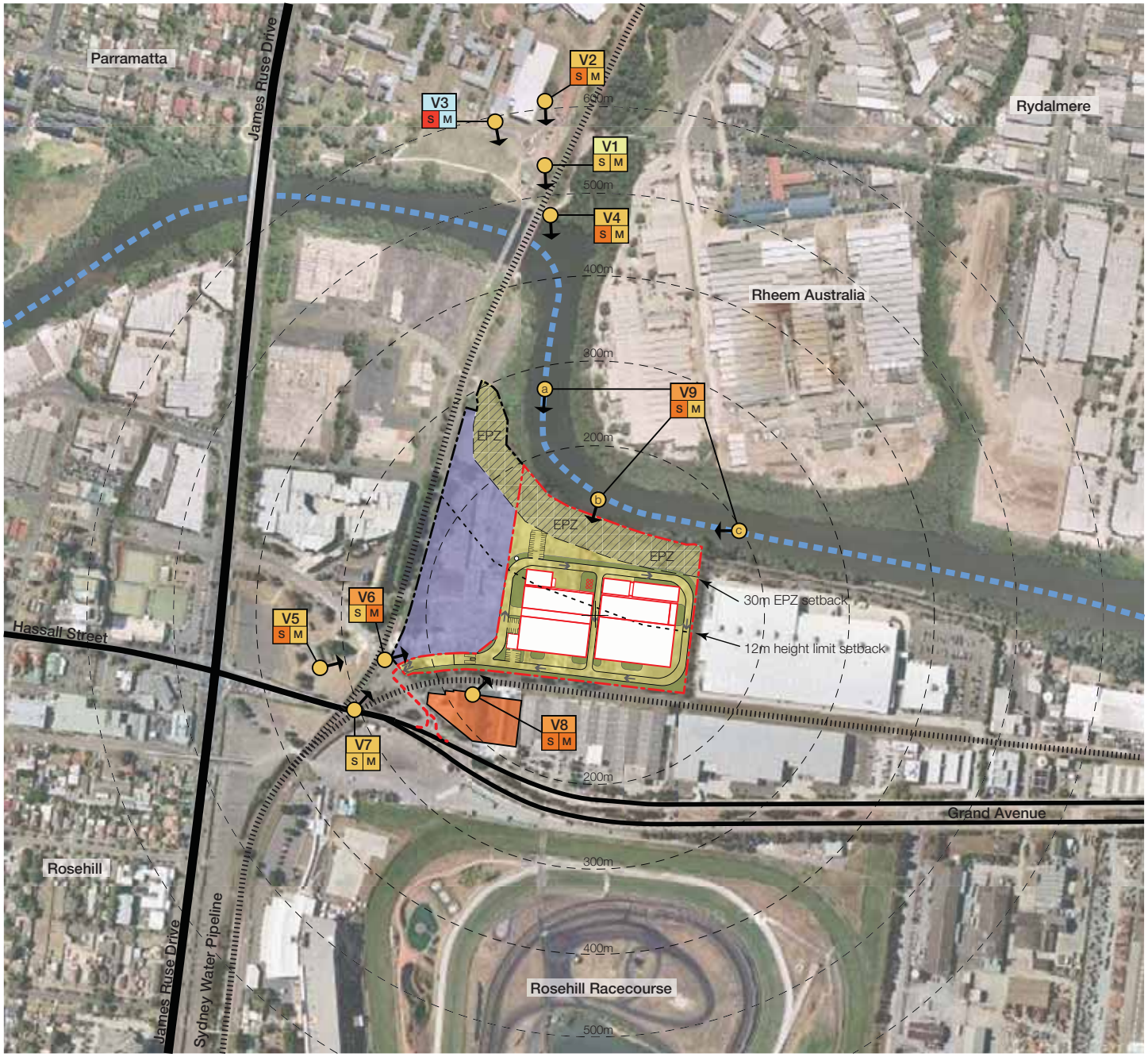


Legend

Existing Features

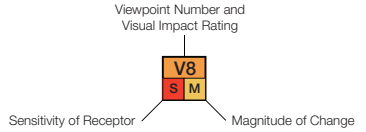
- James Ruse Drive - Main Road Thoroughfare
- Grand Avenue - Main Access Road
- Railway Tracks
- Passenger Ferry Route - Parramatta to Circular Quay
- Existing and Proposed Shared Site Access
- Site Boundary
- EPZ — 30m wide Environmental Protection Zone (EPZ)

Proposed Features

- Project Lease Boundary
- Proposed Buildings
- Proposed Site Works Area
- Non-Leased Area

Viewpoints

- Key Visual Impact Viewpoint Locations



Sensitivity/Magnitude	Visual Impact
Negligible	No Visible Change
Low	Negligible
Moderate	Negligible to Minor
High	Minor
	Minor to Moderate
	Moderate
	Major

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Figure 5.1.2 - Visual Impact Rating
VIA - Integrated Recycling Park, Camellia

Date 16/05/11
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Project no. 10519
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5.2 Visual Impact Assessment from Key Viewpoints

Table 5.2.1 - Viewpoint 1

V1: University of Western Sydney Campus - Southeast Carpark		
Figure Ref.	Figure 5.2.1 - Viewpoint 1	
Coordinates	S33° 48' 50.2" E151° 01' 34.2"	
Date and Time	24/03/2010 11:43am	
Distance from Site	380m	
Description of setting Viewpoint located directly over pipeline below the south-eastern corner of UWS campus carpark, between rail lines and library building. Significant existing infrastructure nearby. Pedestrian paths along riverbank to south and east through sprawling campus lawns linking with areas east beyond drainage line and rail corridor. Water mostly obscured by structures.		
Description of existing view Views to east restricted by rail bench and tall dense vegetation beyond. View along river to Site restricted by train bridge and suspended wires. Weedy growth in foreground along rail corridor.		
Description of potential change in view The industrial buildings presently visible beyond the Site would potentially be completely obscured by the proposed new buildings and screening vegetation within the Site. Some limited views of proposed buildings and vehicle movements are likely however these will be similar in nature to existing built and landscape elements. Views to Site may potentially be screened once existing Casuarinas in the foreground along the riverbank and proposed Site planting becomes established.		
Sensitivity	**Magnitude**	**Impact**
Low	Low	Negligible to Minor

Visual Outcomes

This view is dominated by the built structure of the existing bridges in the foreground, which contrast strongly with the extensive vegetation of the river corridor and the drainage line to the east.

This receptor has a low sensitivity due to its primary use for parking, immediate proximity to passing trains and the visual intrusion created by the bridges and overhead wires.

As the proposed development would make up a small proportion of the view area from this location, the magnitude of change would be initially low and then potentially negligible once the existing Casuarinas along the riverbank and existing carpark planting in the foreground becomes established.

A minor negative visual impact may occur in the short term and during construction however the visual impact would likely reduce to be negligible in the long term.

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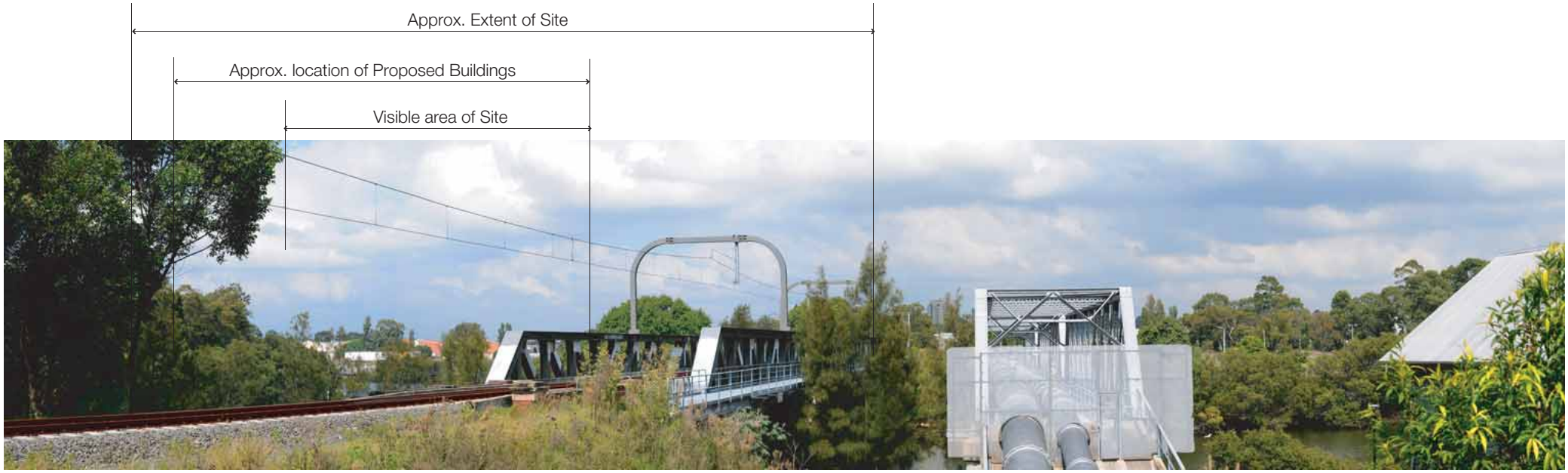

Viewpoint 1 - View from University of Western Sydney Rydalmere Campus - Southeast Carpark (facing southeast)
Photo taken 24/03/2010 - 11:43am

Table 5.2.2 - Viewpoint 2

V2: University of Western Sydney Campus - Level 1 Library Building	
Figure Ref.	Figure 5.2.2 - Viewpoint 2
Coordinates	S33° 48' 47.9" E151° 01' 34.0"
Date and Time	24/03/2010 11:54am
Distance from Site	460m
Description of Setting Elevated position at top of external stair on First Floor Level on east side of Library Building overlooking carpark, rail bridge and river to southeast. Water mostly obscured by structures.	
Description of existing view Elevated southeast views over bridges and rail lines along river corridor to site. Access road with turnaround in foreground with carpark beyond. Tall dense tree vegetation screening views to east and mangroves framing view down river. Extensive new planting in foreground. Light poles, overhead wires and vegetation partially obstructing views to Site and industrial buildings surrounding surrounding the Site.	
Description of potential change in view Proposed structures and vehicle movements will be partially visible beyond the river corridor and obscure existing industrial buildings. View to Site would potentially be screened once existing foreground trees and proposed Site planting becomes established.	

Sensitivity	**Magnitude**	**Impact**
Moderate	Low	Minor

Visual Outcomes

This view is dominated by the cars and built elements in the foreground which contrast strongly with the extensive surrounding vegetation. The vertical light poles dissect the view beyond to the Site and would significantly reduce the impact of any visible change resulting from the proposed development.

This receptor has a moderate sensitivity due to the relatively high number of potential viewers, however they would be viewing through a window and their attention would be unlikely to be focussed towards the proposed development site.

The elevated position of the view increases the visual range however the visual intrusion created by the bridges, lighting poles, overhead wires and existing vegetation which partially obscure the view to the Site, in combination with the 400m+ distance further reduce any potential change in visual character.

The magnitude of change would therefore initially be low and potentially become negligible in the long term. Proposed vegetation on the Site will provide partial screening of the proposed development from this location.

Viewers at this location would experience only a minor negative visual impact from the proposed development that is likely to reduce over time.

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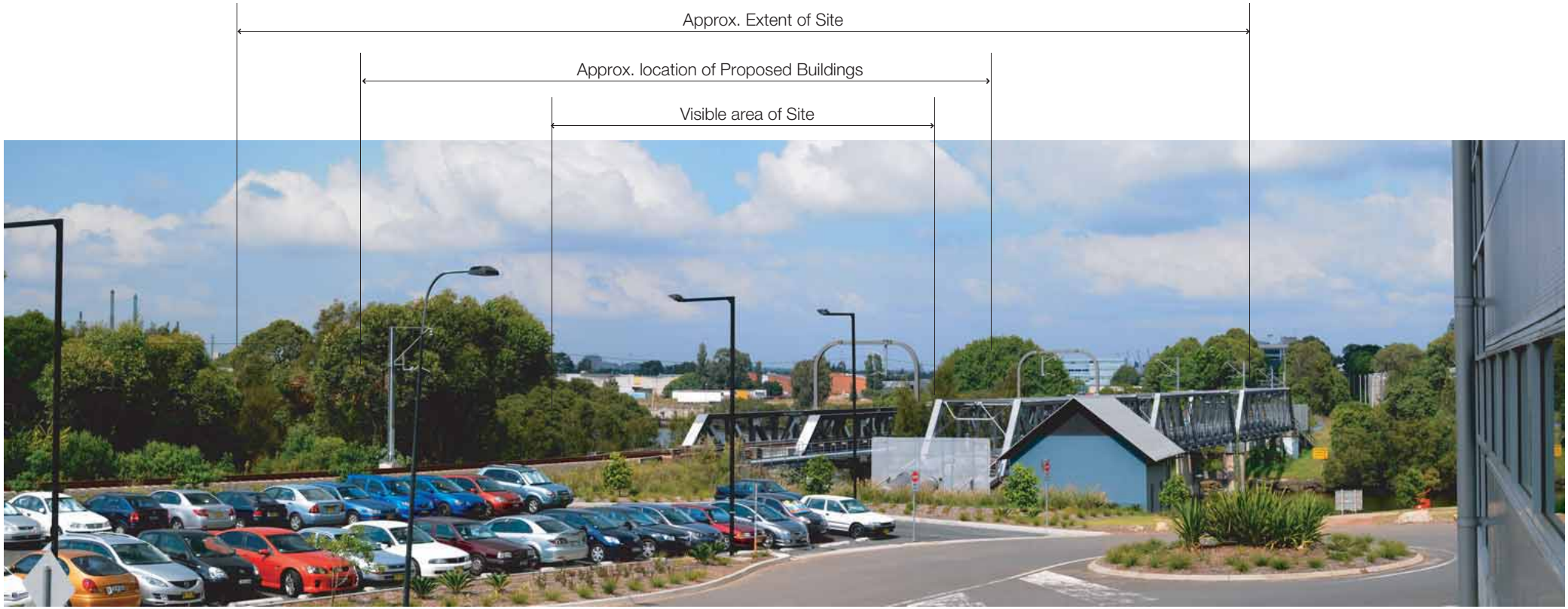

Viewpoint 2 - View from University of Western Sydney Rydalmere Campus - Level 1 of Library Building (facing southeast)
Photo taken 24/03/2010 - 11:54am

Table 5.2.3 - Viewpoint 3

V3: University of Western Sydney Campus - Cafe Outdoor Seating Area		
Figure Ref.	Figure 5.2.3 - Viewpoint 3	
Coordinates	S33° 48' 48.5" E151° 01' 32.2"	
Date and Time	24/03/2010 12:01pm	
Distance from Site	435m	
Description of Setting South facing outdoor seating area at top of wide lawn sloping towards pedestrian walkway along river. Water obscured by trees except under rail bridge. Regular ferry movements visible along river.		
Description of existing view Immediate outlook over extensive lawn area sloping down to river edge. View to Site largely screened by train bridge and service building in centre of view. Glimpses of high rise buildings visible to south over vegetation along river. Industrial stacks and buildings visible to southeast over existing trees.		
Description of potential change in view Changes to view are potentially negligible however some very limited glimpses of the proposed buildings and vehicle movements may be possible. Existing foreground trees would completely screen Site from this location as they become established.		
Sensitivity	**Magnitude**	**Impact**
High	Negligible	Negligible

Visual Outcomes

This view is dominated by the bridges in the middle distance which contrast strongly with the extensive surrounding vegetation and maintained lawns. Glimpses of industrial structures and high rise buildings in the far distance further reduce visual sensitivity to the proposed development.

This receptor has a high sensitivity due to the relatively high number of potential viewers and outward visual perspective.

The elevated position of the view increases the visual range however the visual intrusion created by the bridges, lighting poles, overhead wires and existing vegetation which partially obscure the view to the Site, in combination with the 400m+ distance further reduce any potential change in visual character.

The magnitude of change from the proposed development would therefore be negligible, or potentially fully mitigated once the existing planting in the foreground becomes established.

Viewers at this location would potentially be visually unaffected by the proposed development.

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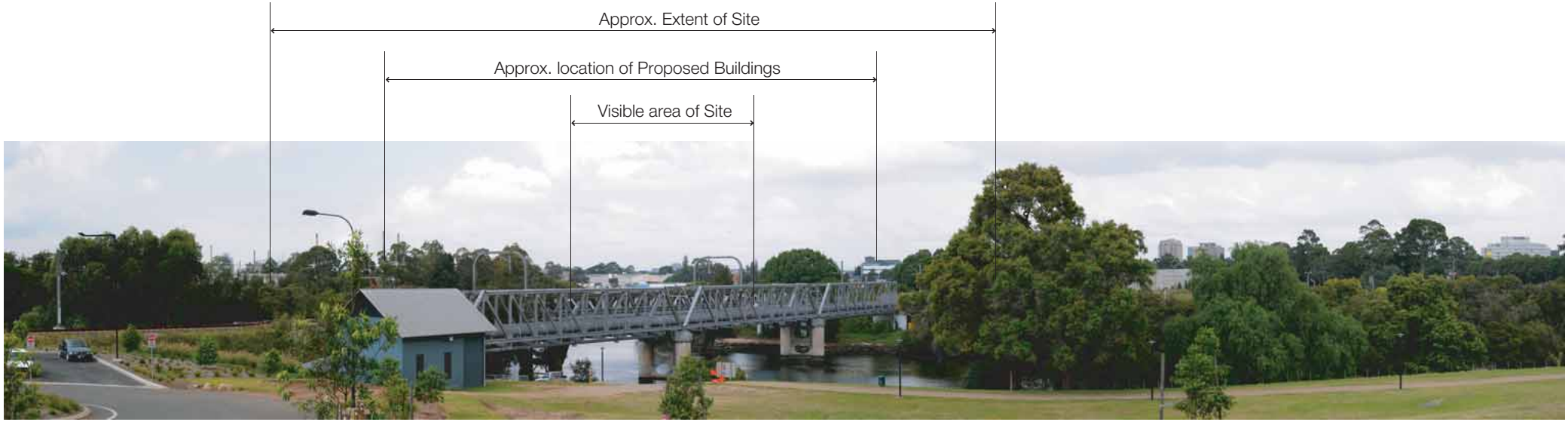

Viewpoint 3 - View from University of Western Sydney Rydalmere Campus - Cafe Outdoor Seating Area (facing southeast)
Photo taken 24/03/2010 - 12:01pm

Table 5.2.4 - Viewpoint 4

V4: University of Western Sydney Campus - Riverbank Pathway	
Figure Ref.	Figure 5.2.4 - Viewpoint 4
Coordinates	S33° 48' 51.9" E151° 01' 34.4"
Date and Time	24/03/2010 12:06pm
Distance from Site	325m
Description of Setting Asphalt pedestrian path on river bank with rail bridge overhead. Enclosed by surrounding mangrove vegetation and suspended bridge structures. Open water to south and weedy embankment and chain mesh fencing along pathway and vegetated drainage line to north and east. Several students scattered along the river bank using the space for its relative privacy and quiet to study.	
Description of existing view Unobstructed views southwards down river corridor to Site and framed by mangrove vegetation along banks. Regular ferry movements through the immediate foreground along river. Existing industrial buildings and trees partially visible in distance beyond Site. Existing Site retaining wall mostly hidden by mangroves. West views under bridge across lawn to campus building.	
Description of potential change in view View to Site would potentially be partially screened once existing Casuarinas along riverbank becomes established. Partial views of proposed buildings and vehicle movements would be possible.	

Sensitivity	Magnitude	Impact
Moderate	Low	Minor

Visual Outcomes

This view is focussed down the river corridor towards the proposed development. A sense of semi enclosure and privacy is created by the vegetation lining the bank and heightened by the adjacent rail bridge and tall vegetation behind.

This viewpoint has a moderate sensitivity due to the frequency of passers by utilising the pathway and evidence of stationary viewers at the time of assessment. This sensitivity rating also considers the viewers proximity to the rail bridge and passing ferries.

The magnitude of change would be low due to the low elevation of the viewer relative to the Site and the screening provided by existing vegetation along the river corridor and the relatively small visible area of the Site. The proposed buildings and vegetation will obscure existing industrial buildings presently visible in the background. The form and visible bulk of the structures will be reduced by proposed vegetation once it matures.

Viewers at this location would experience a minor visual impact from the proposed development that would potentially reduce over time.

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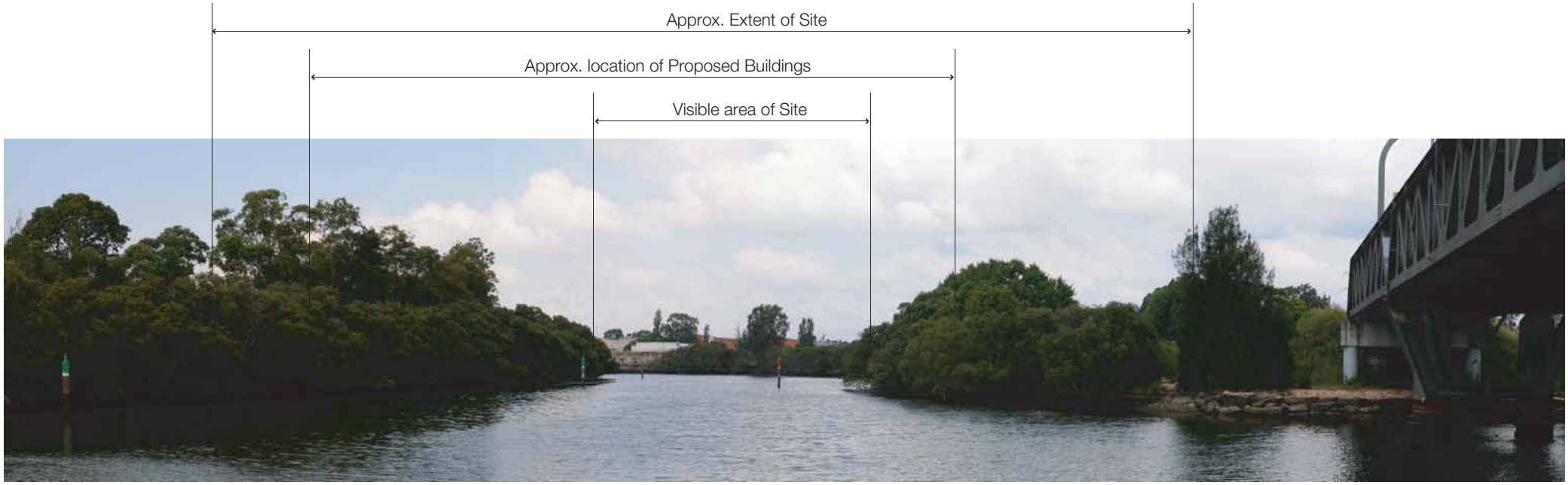

Viewpoint 4 - View from University of Western Sydney Rydalmere Campus - Riverbank Walkway (facing south)
Photo taken 24/03/2010 - 12:06pm

Table 5.2.5 - Viewpoint 5

V5: Residential Dwelling - Grand Ave	
Figure Ref.	Figure 5.2.5 - Viewpoint 5
Coordinates	S33° 49' 09.4" E151° 01' 23.6"
Date and Time	24/03/2010 12:35pm
Distance from Site	85m

Description of Setting

Open grassed area surrounding single dwelling to southwest of site adjacent to Grand Ave overbridge. 6' high solid fence enclosing dwelling on northeast side. Area used for overflow parking for Rosehill Racecourse.

Description of existing view

No direct views of Site or Site access road from inside dwelling. View from position adjacent to dwelling across open grassed area is restricted by overbridge to southeast, Aldi Building to east and Camellia Railway Station and mesh fencing along rail corridor in foreground.

Views into Site limited greatly restricted by existing trees along Site boundary. Significant heavy vehicle movements are presently visible from this location along Grand Avenue and connecting with James Ruse Drive as well as trains regularly stopping at Camellia Station and intermittent overflow car parking throughout the surrounding open space.

This view is dominated by the overbridge, Aldi building and large established trees in the middle distance. The power poles also create strong vertical elements that draw attention from the Site entrance and area beyond.

Description of potential change in view

Heavy vehicle movements associated with the proposal would be partially visible at the Site entrance beyond the rail corridor. Large existing trees at the Site entrance will be removed, potentially allowing partial views of the proposed structures within the Site.

Sensitivity	Magnitude	Impact
Moderate	Low	Minor

Visual Outcomes

Due to the considerable existing vehicle movements surrounding the viewpoint in addition to the current use of the Site as a storage and auction facility for trucks, the sensitivity of this receptor to vehicle movements associated with the proposed development is reduced. Therefore this receptor has a moderate sensitivity due to its residential nature.

The Site entrance is partially obscured by weed growth and the mesh fence along the rail corridor. Proposed screening vegetation along the southern boundary and the large existing trees to be retained along the west boundary would significantly restrict views into the Site from this location. As views to the Site and access road are not possible from inside the dwelling due to the fence around the property the magnitude of change would be low.

Viewers at this location would experience a minor visual impact from the proposed development, primarily related to an increase in heavy vehicle movements through the Site entrance.

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Viewpoint 5 - View from Dwelling - Overflow car park area adjacent to Grand Avenue (facing northeast)
Photo taken 24/03/2010 - 12:35pm

Table 5.2.6 - Viewpoint 6

V6: Camellia Railway Station		
Figure Ref.	Figure 5.2.6 - Viewpoint 6	
Coordinates	S33° 49' 09.0" E151° 01' 26.7"	
Date and Time	24/03/2010 12:40pm	
Distance from Site	0m	
Description of Setting Open concrete platform station located on southwest corner of Site adjacent to access gate. Station access ramp with white steel picket fencing opening on to existing carpark enclosing Site access. Site boundary enclosed with tall chain mesh fencing.		
Description of existing view Established tall canopy trees along inside of Site boundary provide shade and cover to Station area. Partial views of open concrete shipping container storage area under canopy into Site from rail corridor. Extensive car parking in the immediate foreground. Significant litter, weed growth and steel mesh fencing further degrade the landscape character of the immediate surroundings.		
Description of potential change in view Heavy vehicle movements associated with the proposal would be clearly visible to rail passengers and potentially affect movement of pedestrians east of the station. Proposed additional planting within Site would partially screen views of buildings and activity within Site from Camellia Station platform and approaching trains.		
Sensitivity	**Magnitude**	**Impact**
Low	Moderate	Minor to Moderate

Visual Outcomes

This viewpoint is predominantly focussed around the accessway, platform and building of Camellia Station. The Aldi building and Grand Avenue overbridge restrict views to the east and south.

Significant heavy vehicle movements are already visible from this location along Grand Avenue as well as trains regularly stopping at Camellia Station. The present industrial use of the Site as a container storage and auction facility for trucks and the surrounding car parking further reduces the sensitivity of this receptor to vehicle movements associated with the proposed development. Therefore this receptor has a low sensitivity rating.

The proposed development would be partially obscured by fencing and large trees around the Site. Additional proposed planting would potentially provide further screening of on-site activities.

Viewers at this location would experience a minor to moderate negative visual impact from the proposed development, primarily due to their close proximity to increased vehicle movements through the Site entrance.

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Viewpoint 6 - View from Entrance to Camellia Train Station (facing northeast)
Photo taken 24/03/2010 - 12:40pm

Table 5.2.7 - Viewpoint 7

V7: Top of Overbridge - Grand Avenue	
Figure Ref.	Figure 5.2.7 - Viewpoint 7
Coordinates	S33° 49' 10.8" E151° 01' 25.3"
Date and Time	24/03/2010 1:22pm
Distance from Site	70m
Description of Setting Pedestrian walkway on vehicle overbridge on Grand Avenue, with significant heavy vehicle traffic connecting to James Ruse Drive. Rail corridor directly below.	
Description of existing view Panoramic views across Parramatta to west and Rosehill Racecource to southeast. Large refinery stacks visible in distance to southeast. High rise development to distant west and southwest. Views northeast to Site largely screened by existing trees along boundary. Glimpses north to UWS campus. Foreground dominated by Camellia Train Station and rail corridor.	
Description of potential change in view Existing trees at the Site entrance will be removed during construction allowing long distance views over the Site to the northeast. The proposed structures would be visible however partially screened by extensive proposed vegetation throughout the entrance area and around the proposed structures. Heavy vehicle movements in the foreground will significantly increase during hours of operation and construction.	

Sensitivity	Magnitude	Impact
Low	Low	Minor

Visual Outcomes

This elevated position of this receptor allows panoramic views of the surrounding areas. The adjacent Aldi building and Grandstand at Rosehill Racecourse restrict some views to the east and south, however there are distant views to the southeast, west and northwest. Stacks of the Shell Refinery site are clearly visible to the southeast.

Significant heavy vehicle movements visually dominate this location and pedestrians also view trains regularly passing below to stop at Camellia Station. Therefore this receptor has a low sensitivity rating due to the visual dominance of existing heavy traffic and industrial character of the area.

Remaining trees and proposed shrubs along the southern boundary would screen much of the proposed development on Site. The development is similar in scale and form to existing surrounding landscape elements, therefore this would not facilitate a significant change in the wider landscape character.

Viewers at this location would experience a minor visual impact from the proposed development, due to their close proximity to increased heavy vehicle movements to and from the Site.

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Viewpoint 7 - View from top of Grand Avenue Overbridge (facing northeast)
Photo taken 24/03/2010 - 1:22pm

Table 5.2.8 - Viewpoint 8

V8: Explore and Develop Child Care Centre - Level 4, 1C Grand Avenue	
Figure Ref.	Figure 5.2.8 - Viewpoint 8
Coordinates	n/a
Date and Time	11/10/2010 11:55am
Distance from Site	20m

Description of Setting

Open air elevated 4th storey playground terrace facing north overlooking the Site with panoramic views. Open soft fall play area semi-enclosed by solid balcony with glazed screening above.

Description of existing view

The outdoor terrace is enclosed by a steel frame structure and semi-transparent vertical panels. Immediate foreground views are dominated by the adjacent rail corridor and existing trees located along site boundaries.

Panoramic views from northwest to east over Site and Parramatta River to Rydalmere beyond with clear views of the Parramatta River corridor and mangrove vegetation. Partial views of existing industrial buildings and features in middle to long distance.

Existing trees within Site along rail corridor boundary partially screen Site from view. Extensive view of exposed capping slab over the Site with wide open areas of concrete and gravel with extensive weed growth.

Description of potential change in view

Existing views into Site would be further obscured by proposed screening vegetation in foreground along southern boundary of Site.

The proposed buildings and vegetation would partially obscure views of the river corridor from this location however long distance views would predominantly be retained. Views of open water along the river in the centre of the view would potentially be retained.

The amount of visible exposed slab would be significantly reduced and dense and continuous proposed planting along the boundary in the foreground and scattered around the proposed main structures will reduce their visible built form and mass.

Sensitivity	Magnitude	Impact
Moderate	Moderate	Minor to Moderate

Visual Outcomes

The visual sensitivity of this receptor is moderate as the terrace is primarily an inward 'play' focussed space.

The proposed development will potentially have a moderate negative visual impact on views from the Level 4 terrace during the short term construction phase. During operation these moderate negative visual impacts would potentially become minor in the mid to long term once proposed vegetation becomes established. The proposed development would potentially have a minor positive visual impact in the long term and provide some improvement to the existing landscape character as proposed vegetation matures.

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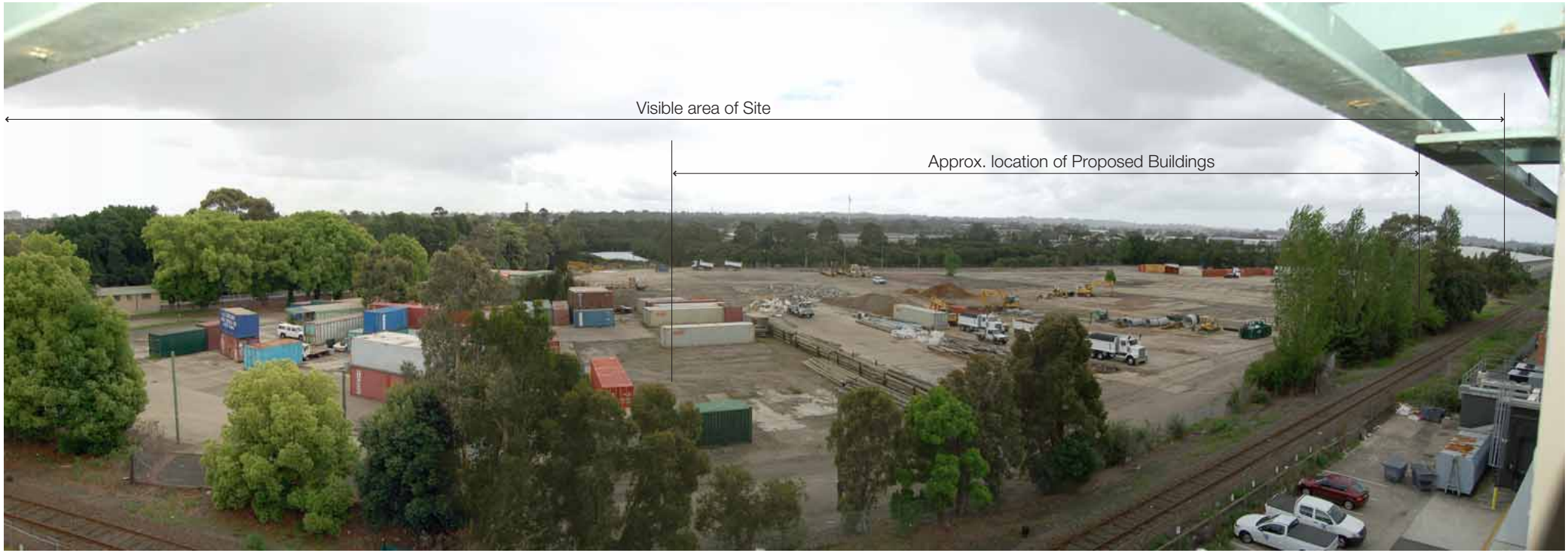

Viewpoint 8 - View from Explore and Develop Child Care Centre - Level 4, 1C Grand Avenue
Photo taken 11/10/2010 - 11:55am

Table 5.2.9 - Viewpoint 9

V9: Parramatta River Ferry	
Figure Ref.	Figure 5.2.9 - Viewpoint 8a, 8b, 8c
Coordinates	n/a
Date and Time	24/03/2010 2:45pm
Distance from Site	varies
Description of Setting Public passenger ferry travelling twice hourly along Parramatta River between Circular Quay and Parramatta CBD Ferry Terminal.	
Description of existing view Linear views along river corridor, largely enclosed by mangroves. Tops of existing industrial buildings and features partially visible on approaches to Site. Views into Site from ferry obstructed by concrete retaining wall and scattered trees along Site boundary. Mangroves partially screen wall and western area of Site from upstream views.	
Description of potential change in view Proposed buildings are to be set back from river and would be partially obscured from ferry by high retaining wall and existing and proposed vegetation on Site and the Environmental Protection Zone. The view from this part of the river is presently dominated by the industrial character of the retaining wall along the northern Site boundary, with glimpses of industrial buildings beyond and adjacent to the Site which contrasts strongly with the surrounding trees and mangroves.	

Sensitivity	**Magnitude**	**Impact**
Moderate	Low	Minor to Moderate

Visual Outcomes

This receptor has a moderate sensitivity due to the high number of tourists present on the ferries however the high visibility of industrial elements and modification throughout the river corridor would reduce the visual expectation of pristine natural character for ferry passengers.

The retaining wall would potentially obscure views of the proposed development from ferries immediately adjacent to the Site, and existing and proposed planting along the northern roadway within the Site and also the proposed trees in movable concrete containers in the Environmental Protection Zone would partially screen the proposed structures and vehicle movements from locations further along the river in both directions. The magnitude of visual change would be low as the form and scale of the proposed structures are similar to the surrounding area and buildings are set back from the river corridor.

The visual impact of the proposed development on viewers from the Parramatta Ferry would only be minor negative once construction is completed. Proposed planting within the Site and Environmental Protection Zone would potentially further reduce visual impacts over the long term as it matures.

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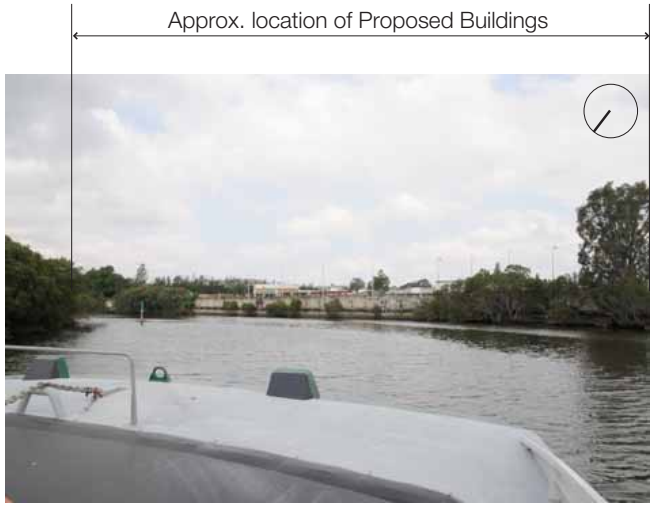
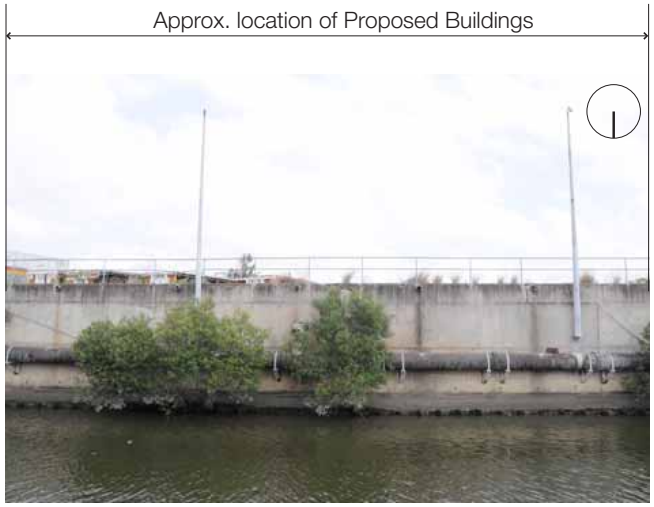
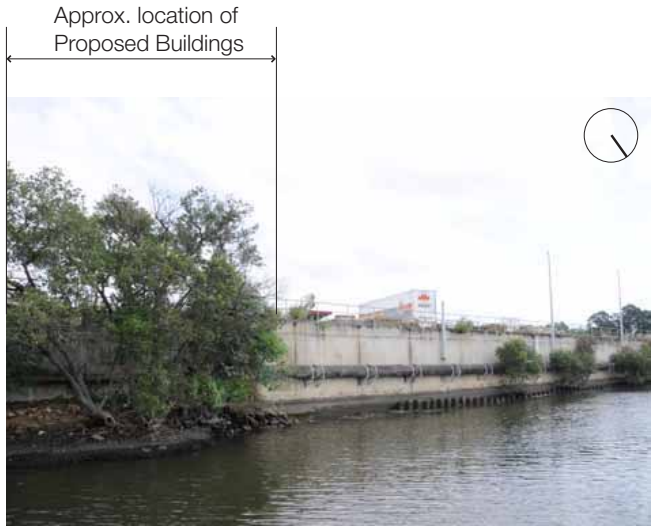


Viewpoint 9a - View from Parramatta River Ferry (facing southeast)
Photo taken 24/03/2010 - 2:43pm



Viewpoint 9b - View from Parramatta River Ferry (facing south)
Photo taken 24/03/2010 - 12:44pm



Viewpoint 9c - View from Parramatta River Ferry (facing southwest)
Photo taken 24/03/2010 - 12:44pm

5.3 Summary of Visual Impact Assessment

Table 5.3.1 - Summary of Visual Impact Assessment

Section Ref.	Viewpoint No.	Visual Impact Rating
Table 5.2.1	**1**	Negligible to Minor
Table 5.2.2	**2**	Minor
Table 5.2.3	**3**	Negligible
Table 5.2.4	**4**	Minor
Table 5.2.5	**5**	Minor
Table 5.2.6	**6**	Minor to Moderate
Table 5.2.7	**7**	Minor
Table 5.2.8	**8**	Minor to Moderate
Table 5.2.9	**9**	Minor to Moderate

5.4 Visual Impact of Ancillary Works and Activity

5.4.1 Preliminary Site Works and Civil Works

The proposed civil works involve raising the level of the site up to approximately 1.7m above the existing capping, along with some trenching and alteration to the capping for services and leachate capture. While the proposed main buildings will extend above the 12m height limit for the site, the existing and proposed surrounding screening vegetation will provide significant screening of the built structures.

5.4.2 Weighbridge and Gate House

The weighbridge is to be located within the Site, adjacent to proposed planting along the southern boundary and behind the Aldi Stores office building. The gate house structure would be small in scale with the surrounding structures and it would be partially obscured from viewers within the Aldi building, nearby carpark and Camellia Railway Station by existing trees and the proposed screen planting along the southern edge of the Site.

5.4.3 Permanent Administration and Amenities Building

The proposed office and amenities area are to be located on the south-western side of the SSORRF facility and the staff and visitor car park. This building would be largely obscured from the north, east and south due to the elevation of the site, proposed planting and the scale of the adjacent SSORFF treatment facility. Views from the Parramatta River would be screened by the existing retaining wall and proposed planting within the EPZ.

5.4.4 Temporary Construction Administration Buildings and Facilities

The site works would potentially include temporary portable structures including Site Office and ablutions. The scale and temporary nature of these structures would have only a negligible to minor visual impact on the identified key receptors.

5.4.5 Staff and Visitor Car Parking

24 parking spaces are to be provided on the northern side of the main building complex, between the SSORRF treatment facility and the EPZ along the northern boundary of the Site. This carpark would be potentially obscured from the Parramatta River ferry by the existing retaining wall. Cars parked in this location would potentially be partially visible from receptors further to the north

and along the Clyde-Carlingford Rail Line. A further 20 parking spaces to be located adjacent to the south-west corner of the SSORRF facility and offices will be significantly screened from key receptors once proposed screen and feature planting has established in the short to mid term.

5.4.6 Summary of Visual Impacts from Ancillary Works

The proposed temporary and permanent ancillary structures related to the development are to be predominantly located close to the main structures. Furthermore the large scale, form and close proximity of surrounding buildings and existing trees will obscure most views of these elements from key receptors.

Therefore the proposed temporary and permanent ancillary works will have a negligible to minor visual impact on key receptors in both the short and long term.

6.1 Mitigation of Potential Visual Impacts

(Refer to Section 4: Figure 4.1.3 - Site Analysis Plan and Section 7: Figure 7.1 - Landscape Master Plan)

6.1.1 Planning and Design Phase

Measures which can be adopted during the planning and design phase include:

Boundary planting design

- Tree planting at strategic locations around the Site and along boundaries adjacent to potentially affected properties where possible should be undertaken to screen the development.
- During construction the extent of clearing should be kept to a minimum to maximise the screening effect of existing vegetation.
- Selection of colours for built elements should be recessive or neutral where possible and overall be sympathetic with the tone of the surrounding landscape character.

Lighting design

- The 24/7 day nature of the operations means that lighting will be required within the Site area of operations throughout the night. It is recommended that the lighting design for the Site aim to:

a) Avoid highlighting prominent built form such as the main buildings.

b) Minimise the spill of light into surrounding sites.

c) Ensuring that all lighting associated with the development complies with *Australian Standard AS4282 (INT) 1995 - Control of Obtrusive Effects of Outdoor Lighting.*

6.1.2 Construction phase

Measures to reduce visual impacts during the construction period relate to maintenance of the construction areas in a neat and orderly state and adhering to approved vehicle movement guidelines.

6.2 Summary of Report Findings

The proposed Alternative Waste Treatment Facility to be known as the Integrated Recycling Park at Camellia will introduce several new industrial buildings and additional regular heavy vehicle movements to the Site and areas along Grand Avenue.

The surrounding region has an extensive history and ongoing development of a wide range of industrial and commercial facilities. The land on which the proposed development is located is a predominantly cleared and asbestos-contaminated site, covered extensively by an existing hardstand capping and weed growth.

There is a moderate to high level of existing modification and industrial development visible from all of the key receptors and viewpoints identified in this study. The area around the Site is bisected by major transport corridors with significant existing heavy vehicle traffic and rail activity. The existing visual character of the Site is poor due to its recent use as an industrial and freight vehicle storage facility.

Most of the key receptors would have a low to moderate sensitivity to the proposed development. Its scale, form and layout will be in keeping with the existing industrial character of the surrounding area.

The key receptors will generally experience a neglible to low magnitude of change from the proposed development and some will experience minor to moderate negative visual impacts in the short term.

The Child Care Centre off Grand Avenue would potentially experience the most visible change due to its close proximity and elevated position. Due to this receptors moderate sensitivity and the existing poor visual condition and use of the Site the overall visual impact is anticipated to be a minor positive effect from this location as proposed vegetation becomes established.

Long distance views to and from the Site are very limited due to enclosure by existing built form, vegetation and relatively flat topography of the immediate area.

Long term minor negative visual impacts would be experienced by some key receptors located to the south and west of the Site. These key receptors include the residential dwelling and grassed area to the southwest of the Site, people accessing Camellia Railway Station on foot or by train and pedestrians crossing the Grand Avenue overbridge. These impacts would be mainly related to regular heavy vehicle movements to and from the Site during normal operation of the facility.

There is opportunity for most anticipated negative visual impacts to be partially mitigated through retention of existing vegetation and proposed screen planting. Extensive proposed native planting will visually enhance the Site from most key viewpoints and provide some additional habitat and foraging value for the area.

7.1 Landscape Principles

Figures 7.1 - Landscape Master Plan and 7.2 - Landscape Sections illustrate the principles outlined in Section 6.1 regarding mitigation of the potential visual impacts of the development. Key principles of the landscape design include:

- Retain and protect significant existing trees where possible along the Site boundaries to ensure sightlines and screening acknowledged in the visual assessment outcomes are maintained.
- Reduce the volume of site runoff by minimising hard surface areas and maximising planted surface area. Raised mounded areas with groves of Cumberland Plain Woodland/Sydney Coastal River Flat Forest tree and shrub species over the existing capping slab.
- Tree and shrub screen planting of Cumberland Plain Woodland/Sydney Coastal River Flat Forest species where appropriate along the Site boundaries to reinforce existing boundary planting as required.
- Extensive planting of native trees, shrubs and groundcovers along the southern boundary extending from the Site access point to the southeastern corner of the Site.
- Native trees in movable concrete containers in the 30m wide Environmental Protection Zone to provide filtered screen from Parramatta River and also to enhance the aesthetic value of the site.
- Native low water-use groundcover and shrub feature planting to the Site entrance and around proposed carpark margins to enhance aesthetic value and a more human scale arrival area for visitors.
- Reduce the hard surface area and heat island effect, balance the visible mass of proposed buildings with surrounding groupings of native tree and shrub planting.
- Provide outdoor amenity for staff and visitors by providing raised informal outdoor decking areas with seating, screening vegetation to provide shade and privacy from Site activities and operations.

Section 7
Landscape Principles and Master Plan

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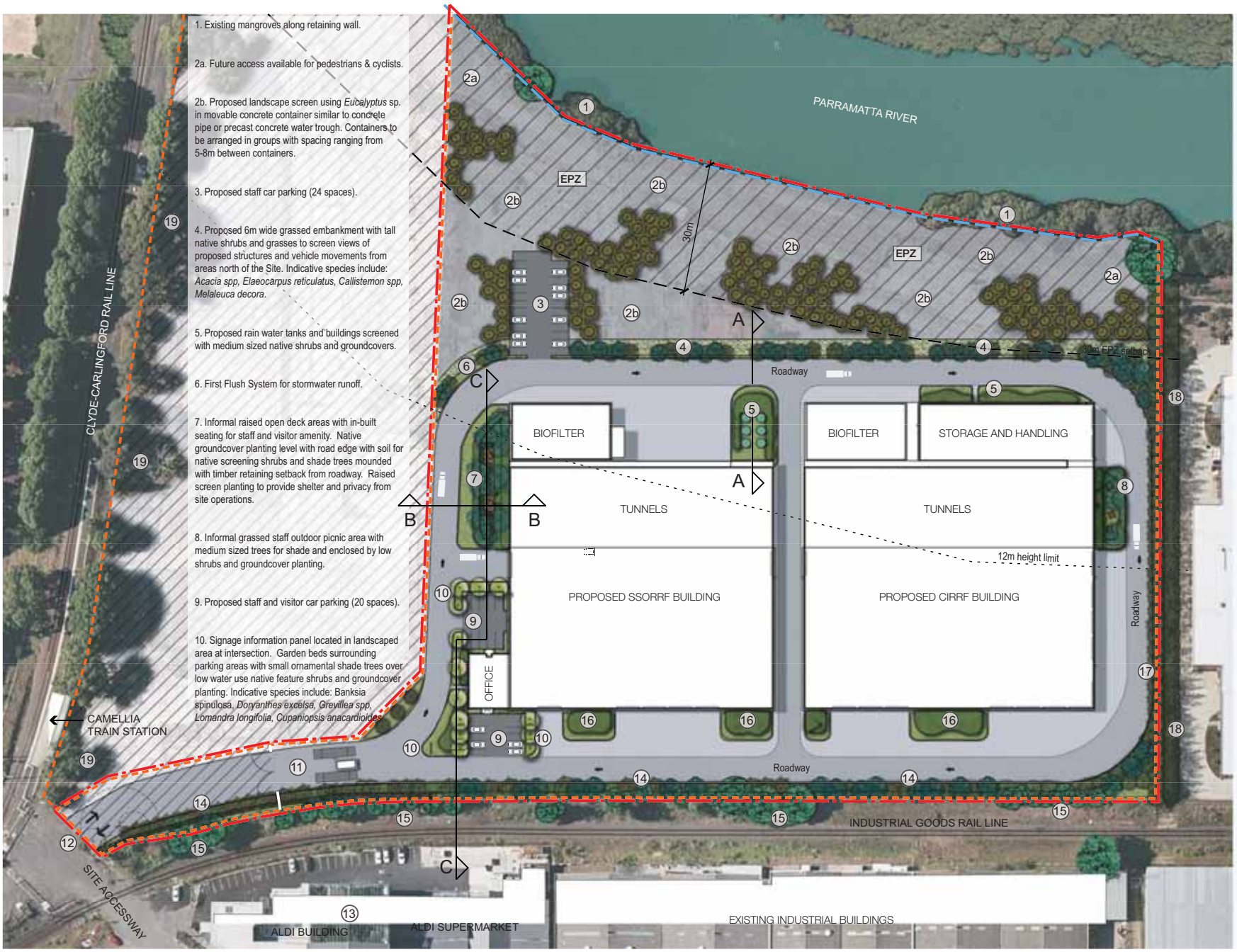

1. Existing mangroves along retaining wall.

2a. Future access available for pedestrians & cyclists.

2b. Proposed landscape screen using *Eucalyptus* sp. in movable concrete container similar to concrete pipe or precast concrete water trough. Containers to be arranged in groups with spacing ranging from 5-8m between containers.

3. Proposed staff car parking (24 spaces).

4. Proposed 6m wide grassed embankment with tall native shrubs and grasses to screen views of proposed structures and vehicle movements from areas north of the Site. Indicative species include: *Acacia spp, Elaeocarpus reticulatus, Callistemon spp, Melaleuca decora.*

5. Proposed rain water tanks and buildings screened with medium sized native shrubs and groundcovers.

6. First Flush System for stormwater runoff.

7. Informal raised open deck areas with in-built seating for staff and visitor amenity. Native groundcover planting level with road edge with soil for native screening shrubs and shade trees mounded with timber retaining setback from roadway. Raised screen planting to provide shelter and privacy from site operations.

8. Informal grassed staff outdoor picnic area with medium sized trees for shade and enclosed by low shrubs and groundcover planting.

9. Proposed staff and visitor car parking (20 spaces).

10. Signage information panel located in landscaped area at intersection. Garden beds surrounding parking areas with small ornamental shade trees over low water use native feature shrubs and groundcover planting. Indicative species include: Banksia spinulosa, *Doryanthes excelsa, Grevillea spp, Lomandra longifolia, Cupaniopsis anacardioides.*

12. Site accessway and entrance gates.

13. Aldi Building - Explore and Develop Child Care Centre Level 4 Terrace

14. Native trees and tall screening shrubs along southern boundary with understorey of low water use native feature planting to buffer views from rail corridor and adjacent buildings. Indicative species include *Acacia parramattensis, Acmena smithii, Elaeocarpus reticulatus, Callistemon spp, Doryanthes excelsa, Melaleuca decora, Lomandra longifolia.*

15. Significant existing trees along site boundary to be retained and protected where appropriate to maintain screening and sightlines to surrounding areas.

16. Low water use native feature shrubs and groundcovers to screen building. Indicative species include Banksia spinulosa, *Callistemon spp, Dianella spp., Doryanthes excelsa, Grevillea spp, Lomandra longifolia, Microlaena stipoides, Themeda australis.*

17. Proposed grassed embankment along eastern boundary from roadway to boundary. Existing tall screening shrubs to be retained or replaced as appropriate to maintain privacy.

18. Existing Casuarina trees on neighbouring property to be protected from works.

19. Existing large trees along western Site boundary to remain to provide screening from rail corridor.

Legend

- Existing Trees retained
- Existing trees removed
- Proposed shade trees
- Proposed ornamental trees
- Proposed native trees in movable concrete container
- Proposed tall screening shrubs
- Proposed feature planting
- Proposed groundcovers
- Proposed grassed embankment
- Environmental Protection Zone EPZ
- Non Lease Area
- Lease Boundary
- Existing Retaining Wall to River
- Steel Mesh Security Fence
- EPZ Setback Boundary
- 12m Height Restriction Boundary

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Figure 7.1 - Landscape Master Plan
VIA - Integrated Recycling Park, Camellia

Date 16/05/11
context.net.au

Project no. 10519 Scale 1:500 @ B1 1:1200 @ A3
Dwg no. Figure 7.1
Issue E

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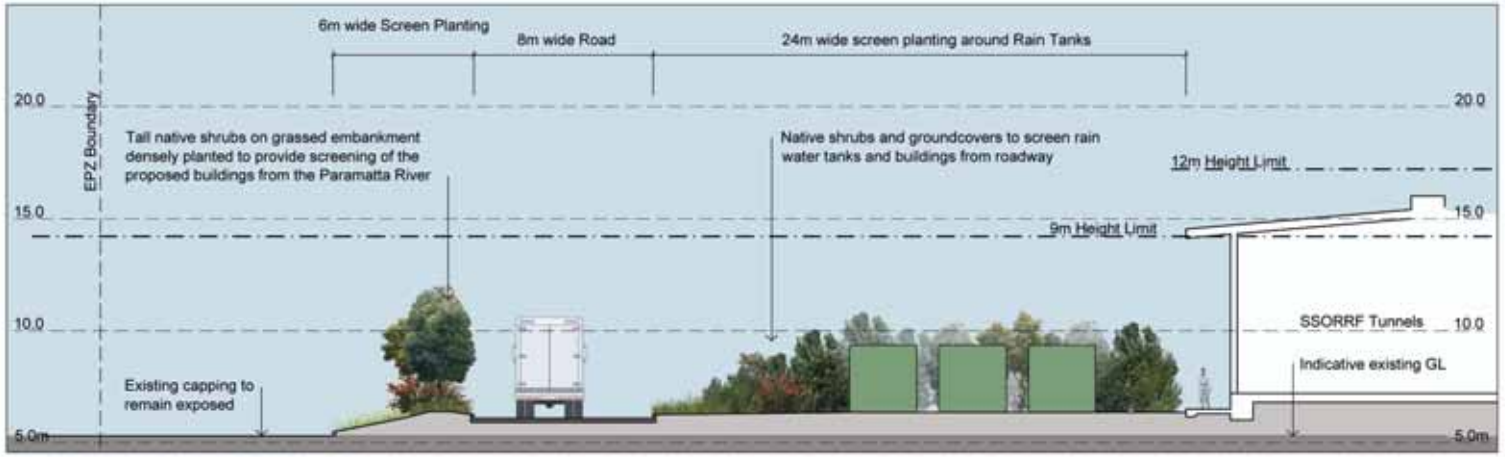
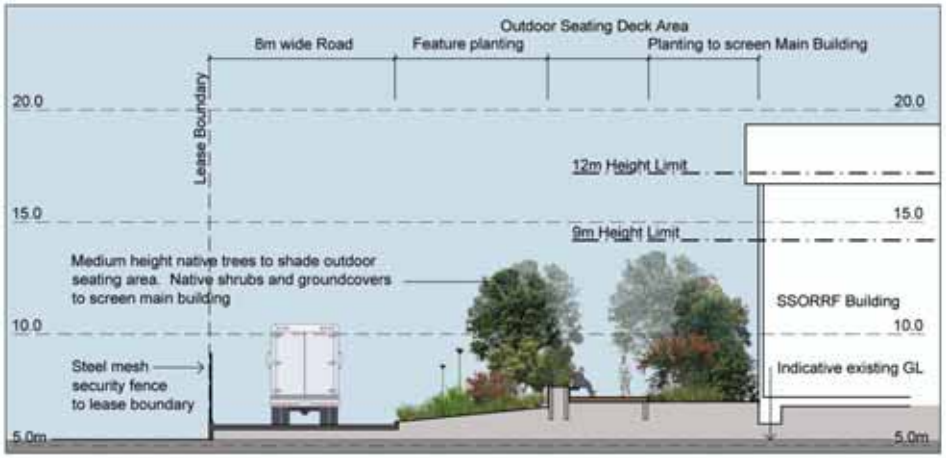


Section A-A - Approx scale 1:250 at A3



Section B-B - Approx scale 1:250 at A3

Section C-C
Approx scale 1:500 at A3

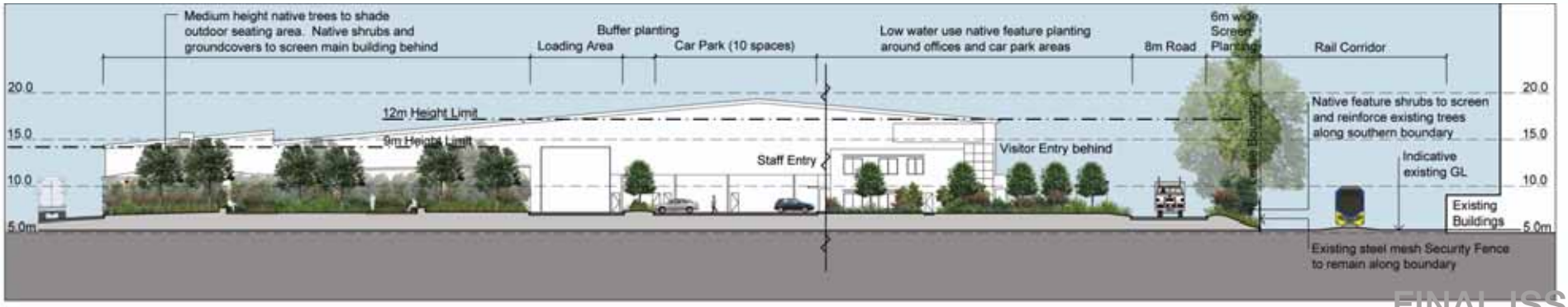


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Figure 7.2 - Landscape Sections
VIA - Integrated Recycling Park, Camellia

Date 16/05/11
context.net.au

Project no. 10519 Scale As Shown @ A3
Dwg no. Figure 7.2
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7.2 Indicative Plant Species Lists for Proposed Mitigation and Landscape Works

An indicative range of appropriate species of trees, shrubs and groundcovers for native ornamental and Cumberland Plain Woodland plantings, as identified on the plans are suggested in the following Tables 7.1 to 7.2.

Table 7.1 - Native Ornamental Species

Botanical Name	Common Name	Mature Height
Trees		
Allocasuarina torulosa	Forest She-Oak	12 - 15m
Casuarina glauca	Swamp Oak	to 15m
Leptospermum juniperinum	Prickly Tea Tree	to 3m
Leptospermum laevigatum	Coastal Tea Tree	to 6m
Shrubs and Groundcovers		
Baeckea densifolia	Weeping Baeckea	to 1m
Baeckea virgata	Twiggy Baeckea	to 4m
Banksia spinulosa	Hair Pink Banksia	to 4m
Callistemon 'Dawson River'	Bottle Brush	to 5m
Callistemon 'Endeavour'	Bottle Brush	to 4m
Callistemon salignus	Willow Bottlebrush	to 8m
Doryanthes excelsa	Gymea Lily	to 3m
Grevillea 'Coconut Ice'	Coconut Ice Grevillea	to 2m
Grevillea 'Honey Gem'	Honey Gem Grevillea	to 4m
Grevillea 'Robyn Gordon'	Robyn Gordon Grevillea	to 1m
Hakea salicifolia	Willow Hakea	to 6m
Kunzea ambigua	Tick Bush	to 3m
Leptospernum 'Cardwell'	Tantoon	to 1m
Leptospermum 'Copper Glow'	Copper Glow	2-3m
Melaleuca linariifolia	Snow in Summer	to 3m
Melaleuca nodosa	n/a	to 3m
Rhagodia nutans	Nodding Salt Bush	0.2m
Grasses		
Dianella caerulea var caerulea	Paroo Lily	to 1m
Dianella revoluta	Spreading Flax Lily	to 1m
Lomandra longifolia	Mat Rush	700mm
Pennisetum 'Nafray'	Nafray	to 0.8m
Climbers		
Cissus antarctica	Kangaroo Vine	to 5m
Hardenbergia violacea	False Sarsparilla	to 2m
Pandonea pandorana	Wonga Wonga Vine	to 5m

Table 7.2 - Cumberland Plain Woodland Species		
Botanical Name	**Common Name**	**Mature Height**
Trees		
Angophora floribunda	Rough-Barked Apple	10-15m
Eucalyptus amplifolia	Cabbage Gum	15m
Eucalyptus moluccana	Grey Box	25m
Eucalyptus sideroxylon	Red Ironbark	10-15m
Eucalyptus tereticornis	Forest Red Gum	45m
Shrubs		
Acacia binervia	Two-veined Hickory	10-15m
Acacia falcata	Acacia	4m
Acacia floribunda	Gossamer Wattle	5m
Acacia implexa	Hickory Wattle	12m
Acacia parramattensis	Parramatta Green Wattle	10-15m
Bursaria spinosa	Sweet Bursaria	4m
Melaleuca decora	Paperbark	7m
Melaleuca stypheloides	Prickly Paperbark	10m
Grasses and Groundcovers		
Bossiaea prostrata	Creeping Bossiaea	to 1m
Dianella revoluta	Flax Lily	1m
Echinopogon ovatus	Forest Hedgehog grass	1m
Lomandra longifolia	Mat Rush	700mm
Microlaena stipoides v stipoides	Weeping Grass	500mm
Stipa ramosissima	Bamboo Grass	to 2m
Themeda australis	Kangaroo Grass	500mm

Section 8
References

8.1 Text References

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6) Recovering bushland on the Cumberland Plain: Best practice guidelines for the management and restoration of bushland. Dept of Environment and Conservation (NSW) (2005)

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8.2 Image References

Base Maps and Aerial Data

Google Maps: *http://www.google.com/maps*

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http://www.parracity.nsw.gov.au/development/Draft_Parramatta_LEP/lep_maps