

MOOREBANK JR (NTS2)

VISUAL ASSESSMENT REPORT

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JULY 2020



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01

INTRODUCTION AND METHODOLOGY

INTRODUCTION

PURPOSE OF THIS REPORT

RobertsDay has been engaged by Woolworths Limited to carry out Visual Impact Assessment (VIA) for development of JR (NTS2) warehouse in Moorebank Precinct.

The VA investigates on the possible visual impacts that proposed building may have on the surrounding and adjacent publicly accessible areas, and provides detailed assessment of the sensitivity and magnitude of the changes from different vantage points in comparison to the existing.

PROPOSAL OVERVIEW

The site will be developed to create a state-of-the-art, automated distribution centre. The facility will combine technologies used in the traditional logistics industry and those in manufacturing and parcel delivery systems, including multi-storey racking systems, robotics and high-speed conveyor and sorting systems, to sort and distribute stock more accurately and efficiently than traditional warehouse technology.

This development incorporates the construction of an Ambient Distribution Facility with a GFA footprint of 34,637sqm in Moorebank, NSW. This facility will operate 24hours of the day, seven days a week. It will be the next evolution of the Woolworths regional distribution facility servicing the ambient and confectionery distribution needs of NSW.

DEVELOPMENT PROPOSAL

Concept

The design concept for this project focuses on the provision of a high-quality, functional and technological building solution, which responds to the site and locality; creating a desired identity and aesthetic for Woolworths within this industrial precinct and surrounding environs. The design concept is a contemporary proposal that utilises colour and form to break up the solid components of the building. The proposal considers the possible future requirements of Woolworths and the flexibility of the working environment, which is appropriate for building users and visitors, and is relevant to the current nature of industrial practices.

The site layout addresses both the functionality of the warehousing and logistics operations and the high-quality presentation to the overall industrial estate. The office form and linking airbridges are a striking presence, which are immediately visible from the main vehicular entry to the site.

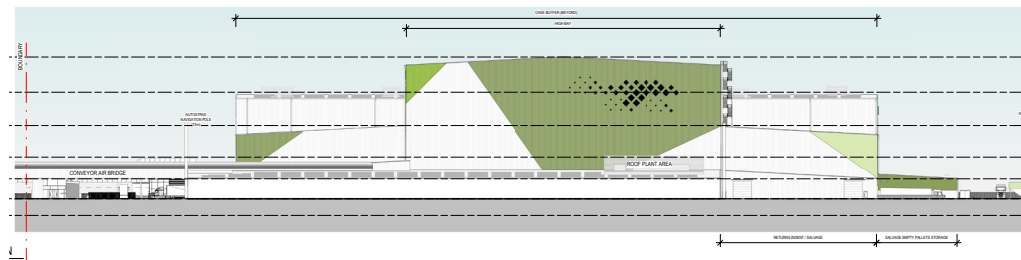
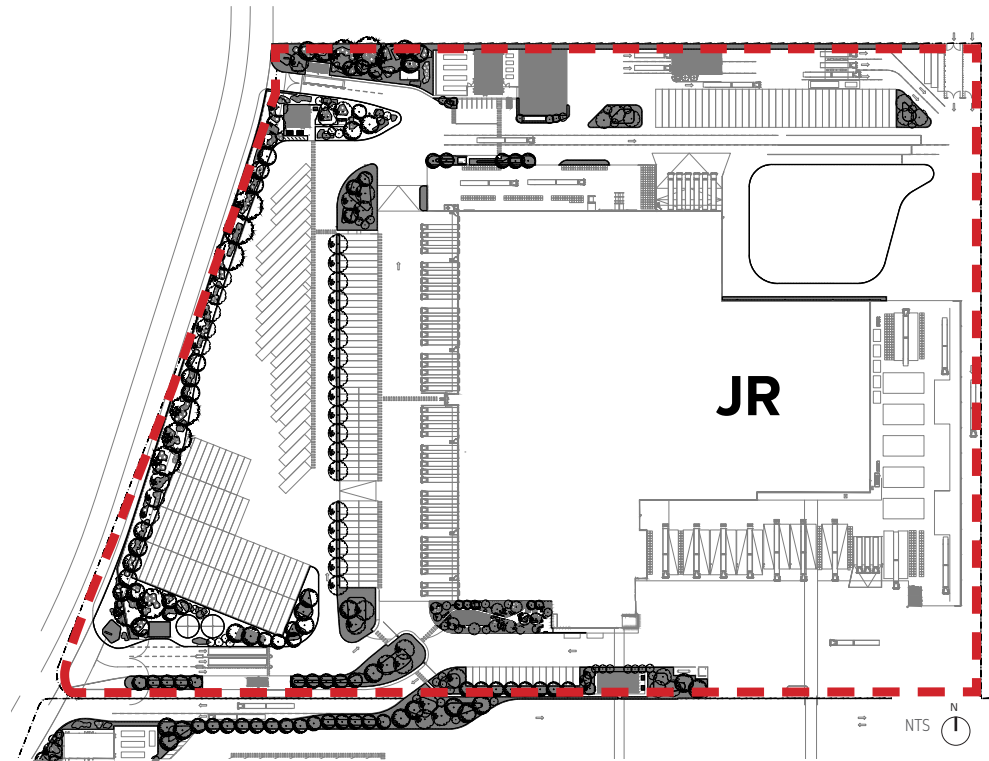
The overall site layout is configured to provide rational and safe access to and from the facilities, as it is acknowledged that familiarity with the site will vary between staff and visitors. A continuous path for heavy vehicle circulation within the site is proposed for safe and efficient movements. Whilst the pedestrian movement paths, via the

elevated air bridges, are separated from the heavy vehicle roadways to limit interactions between people and trucks for safety.

The functionality of building type is articulated through a language of contrast, where the warehouse forms are wrapped in a homogeneous cladding that is detailed with coloured panels and angular detail lines, and the office building is modelled with a finer grain palette of materials to generate interest and create moments of permeability.

The landscaping along the Western Ring Road frontage is detailed to provide screen planting and visual integration with the existing, surrounding vegetation.

The design philosophy strives to integrate all elements of function and space, to achieve an efficient and comfortable working environment, capable of adapting to the future requirements of Woolworths.



Design

The striking form of the office building and transport office connected by the overhead pedestrian walkway presents as the focal point of the estate. The office building accommodates the facility's administrative functions and is the unmistakeable point of arrival, with its sleek, panelised skin. The perforated panels allow light and views from within the building, whilst providing a shading function to the glazed panels, which are set back from the edge of the building form. Its position also affords views from within the building across the site towards the vegetated, conservation area surrounding the Georges River.

The office design is responsive to the site environmental conditions through the application of complementary volumetric shapes and materials conducive to transparency of function and response to sustainable building practices. The office is connected to a green space dedicated to worker amenity, with an emphasis on personal health and wellbeing through the creation of various spaces supporting outdoor activity, engagement with fellow workers and opportunities for relaxation.

The travel paths of staff and visitors around the site is an important aspect to the successful operation of the site. The office building is the arrival point for staff and visitors to the site, from which point they may progress directly

through to the warehouse. The office building is connected to the Woolworths car park via a pedestrian air bridge, which ensures the separation of the movements of people and heavy vehicle movements. The façade treatment of the pedestrian air bridge is consistent with the office building allowing for views towards the East and West of the site.

The warehouse building is expressed in simple volumetric forms, which displays the functional aspect of the site operations, and allows for flexibility for future expansion. The hardstand zone surrounds the warehouse building on four sides, which is a function of the operation of the building.

The warehouse cladding is a prefinished, profiled, metal sheet, and the colour panels are applied as a painted finish. The green tones of the building are selected to enhance the site's landscaping.

A generous 200m long canopy defines the Western elevation (facing the Western Ring Road), and similarly another canopy is located along the southern elevation. Both offering protection from the weather for the unloading and loading processes. Notwithstanding the functionality of these low pitched canopies, they offer additional articulation to the bulk form of the warehouse and visually reduce the overall height of the building.

The high bay component of this development is located on the Eastern side of the warehouse, and it therefore has the greatest set back from the Western Ring Road boundary. The roof ridge height of the high bay is 42.6m above the floor level of the warehouse, and the gutter line of the high bay is 40.1m above the floor level.

The articulation of the warehouse façades is created by using colour, texture, the variety of volumetric forms and the shadows cast by the projecting eaves and canopies, all of which work to visually balance the overall height of the building.

Levels

- Warehouse – FFL 17.00 AHD (+/- 500mm)
- Warehouse High Bay – FFL 59.6 AHD (+/- 500mm)

Site Access & Parking

Access for all heavy vehicles to the site is via the driveway at the South-Western corner of the site. Heavy vehicles will attend the Gate House to receive directions and be weighed, as required. Some heavy vehicles will be directed to attend the outbound docks, and those delivering goods to site will be directed to attend the chevron parking area to await further direction.

Both staff and visitors arriving by cars, on bicycles, or on foot will first attend the security office at the Woolworths car park, which is accessed via a separate driveway and footpath off the Western Ring Road. At the security office all staff and visitors will sign into the site.

The waste collection areas are situated to limit the impact to the site operations, and they are wholly located within the site so there is no impact to the public roadways. The warehouse waste collection area is located on the northern side of the warehouse and is accessible from the hardstand. The office waste collection area is located adjacent to the office and is accessible from the hardstand.

Perimeter access for the NSW Fire Brigade is accommodated within the site.

Setbacks

The buildings are to be setback by:

- 5m landscape setback from the Western Ring Road;
- 3m landscape setback from the Northern Boundary.

The building setbacks along the street frontages and side and rear boundaries allow for fire brigade access around the buildings as per the BCA requirements for large isolated buildings.

The landscape setback/buffer zones are consistent with the objectives of the approved precinct scheme.

Lighting

Lighting is to be provided with a combination of light poles and building mounted light fixtures around the site for on-site security and safety. The lighting is to be positioned and directed such that light is not cast in unintended directions, to minimise the light spill onto neighbouring properties.

The layout of the buildings, internal roadways and loading areas are designed to minimise light spill onto neighbouring properties.

Signage

There will be a combination of pylon signage at the entry to the estate and directional signage within the site to provide placemaking and wayfinding for the purposes of safety and positive user experience, particularly during non-daylight hours. The signage type shall be consistent with the Woolworths signage design brief and the precinct masterplan guidelines.

Signage is proposed as follows:

- Street entry signs
- Tenant identification signs

- Tenant directional sign
- Digital screens

The proposed signage is not for general advertising and does not contain moving or flashing signs. Building signage is not illuminated (backlit, light box or via a direct secondary lighting source). Directional and wayfinding signage is not internally illuminated (backlit, light box) and will be illuminated via light spill from the adjacent functional external lighting or where required via direct secondary lighting specifically designed to highlight only the sign in question.

Digital screen locations (2 off) will be designed to factor in sight lines from western residences and will be either angled downwards and/or contain shrouds to remove any direct line of sight to the screen face from neighbouring residences. Digital screen content will be selected (size, colour, background) to minimise visual impact to the neighbouring properties (refer to BESTEC Lighting Strategy Report for more details).

The Woolworths branding signage will be located at high level on the high bay buffer on the Western elevation, such that it is visible from the Western Ring Road approach.

ASSESSMENT METHODOLOGY

CONTEXTUAL ANALYSIS

RobertsDay carried out site inspections on the 12th November 2019 at 9.30am and 27th November 2019 at 9am to better understand the results of desktop studies and the existing visual character of the area. The team inspected a number of locations to evaluate the scenic qualities and visual prominence of the site and cross referenced these locations with aerial photographs, land topography and panoramic photographs to identify potential vantage viewpoints.

DETAILED ASSESSMENT METHODOLOGY

A qualitative assessment of the visual impacts and changes to landscape has been undertaken based on the following guidelines:

- RMS Environmental Impact Assessment Guidance Note: Guidelines for landscape character and visual impact assessment (2013)
- The Guidance for Landscape and Visual Impact Assessment (GLVIA), Third Edition (2013) prepared by the Landscape Institute and Institute of Environmental Management and Assessment; and Visual Representation of Development Proposals, Technical Guidance Note 02 (2017)
- The guidelines describe the assessment as a way to define the changes to the physical landscape and day to day visual effects of a project on people's views. The determination of the impacts is based on the following criteria:

Sensitivity is defined as “The sensitivity of a landscape character zone or view and its capacity to absorb change” (EIA No4 Guidelines, 2013, RMS).

The visual sensitivity of a view is defined by the nature of the view and its duration. A higher visual sensitivity is given to views which would be seen for longer, by a higher numbers of potential viewers and where visual amenity is important to viewers. The context of the view and the distance from the views are also used to determine the visual sensitivity level of the landscape.

Magnitude is defined as “The measurement of the scale, form and character of a development proposal when compared to the existing condition” (EIA No4 Guidelines, 2013, RMS).

It reflects the degree of visual contrast between the proposal and the existing landscape setting. In the case of visual assessment this also relates to how far the proposal is from the viewer.

For the purposes of this assessment the criteria listed in the following tables have been specifically defined for sensitivity and magnitude of change for both the assessment of landscape character and the visual impact to viewpoints. The combined assessment of sensitivity and magnitude provides an overall rating of the visual impact, as shown in the Impact Level table.

PHOTOGRAPHIC RECORDING

Photographs were taken from the selected viewpoints using Nikon D7500 DSLR camera and a 18-140mm lens. Photographs were stitched together using an automated software process,

however, no perspective fixing was used. The location of viewpoints was recorded using GPS tracking software.

VISUALISATION OF THE DEVELOPMENT AND PROPOSED SCENARIOS

Finalisation of the design and supporting technical documentation enabled the selected vantage points to be realistically documented.

The accuracy of the existing and proposed images is based on the following process and information:

- Creating a 3D model of the terrain
- 3D massing model of the proposed built forms & future surrounding railhead gantry Cranes provided by the project architect
- 3D massing model of the existing context
- Digitally linking the coordinate data into Google Earth (GE)
- Positioning camera in 3D software to prepare proposed scenarios from vantage points based on existing coordination and reference points
- Photo matching and rendering to reflect landscaping, intended materials and lighting

Photomontages are intended to be printed at A3 and to be viewed at a distance of 300mm. That is the distance between the eye and the image and will enable the viewer to experience an approximation of what the proposed view would look like in the real world.

All the viewpoint photomontages included within the Visual Assessment Report are survey verified.

| | | MAGNITUDE | | | | | |
|-------------|-----------|-----------------|----------------|-----------------|-----------------|------------------|------------|
| | | Very High | High | Moderate | Low | Very Low | Negligible |
| SENSITIVITY | Very High | Substantial | High | High/ Moderate | Moderate | Moderate/ Low | None |
| | High | High | High/ Moderate | Moderate | Moderate/ Low | Low | None |
| | Moderate | High / Moderate | Moderate | Moderate/ Low | Low | Low/ Negligible | None |
| | Low | Moderate | Moderate/ Low | Low | Low/ Negligible | Negligible | None |
| | Very Low | Moderate/ Low | Low | Low/ Negligible | Negligible | Negligible/ None | None |

Table 1. Impact Level (Matrix of Sensitivity & Magnitude)

| Sensitivity | Criteria |
|------------------|--|
| Very High | Nationally designated landscape with high conservation or heritage value and absence of landscape detractors. Protected views identified in planning policy designation, State designated publicly accessible landscape or heritage assets. |
| High | Locally designated valued landscape with many distinctive characteristics and very few landscape detractors. Public views with a high visual prominence and a high number of users in close proximity, private views in close proximity, passive recreational receptors where the landscape has a high visual value. |
| Moderate | Landscape with some distinctive characteristics and few landscape detractors. Public views with a moderate visual value and a moderate number of users in close proximity, active recreational receptors where the landscape has little visual value. |
| Low | Landscape with few distinctive characteristics and presence of landscape detractors. Public views with a little visual value and a low number of users, where receptors are mostly road users in motor vehicles or passers-by, people at their work place or views from commercial buildings where the landscape has some visual value. |
| Very Low | Landscape with no distinctive characteristics and presence of many landscape detractors. Public views with none visual value and a limited number of users not in close proximity, people at their work place or views from commercial buildings where the landscape has little or no visual value. |

Table 2. Sensitivity Ranking Criteria

| Magnitude | Criteria |
|-------------------|---|
| Very High | Total loss or major change to key characteristics of the existing landscape. The proposal forms a significant and immediately apparent part of the scene. It significantly contrasts in scale and character (either existing or planned). It is severely detrimental to the quality of the scene. |
| High | Notable loss or change to key characteristics of the existing landscape. The proposal forms a dominant feature of the scene to which other elements become subordinate. It contrasts in scale and character (either existing or planned). It is reducing the quality of the scene. |
| Moderate | Partial loss or change to key characteristics of the existing landscape. The proposal forms a visible new element within the overall scene, yet one that is relatively compatible with the surrounding character (either existing or planned) and view's composition. It is possibly reducing the quality of the scene. |
| Low | Minor loss or change to key characteristics of the existing landscape. The proposal constitutes only a minor component of the wider view, that is compatible with the surrounding character (either existing or planned) and view's composition. |
| Very Low | Limited or no loss or change to key characteristics of the existing landscape. The proposal constitutes only a minor component of the wider view, which might be missed by the casual observer or receptor. Awareness of the proposal would not have an effect on the overall quality of the scene. |
| Negligible | No change in the landscape or view. |

Table 3. Magnitude Ranking Criteria

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SITE ANALYSIS

REGIONAL ANALYSIS

REGIONAL CONTEXT

The proposed site is located in the suburb of Moorebank, located 27 km south-west of Sydney CBD and is part of the local government area of the City of Liverpool. Moorebank features a combination of residential and industrial uses with accessible amenities including several parks and reserves.

Moorebank has a strategic location being close to the Southern Sydney Freight Line, motorways and in an area of rapid population and economic growth. The Australian Government is facilitating the delivery of a major intermodal facility in the area to provide a rail 'port shuttle' between Port Botany and the Moorebank Precinct, a separate terminal for interstate freight and warehousing.

Moorebank Intermodal Precinct also known as Moorebank Logistics Park (MLP) is a nationally significant infrastructure project that will help Sydney manage the expected growth in freight moving through the city. The Precinct extends from the M5 South Western Motorway in the north, to the east Hills Rail Line in the south and covers an area of approximately 240 hectares.

GROWTH OF HIGH BAY WAREHOUSING

Warehouse buildings were a feature of the urban landscape from the industrial revolution through to the latter part of the 20th century. However, the growing scarcity and rising value of urban property gradually pushed the development of new warehouse structures into lower-cost regional centres and city-fringe industrial estates.

With the dwindling supply of large development lands near transport hubs, many innovative nations recognised and explored the advantages of expanding warehouse designs vertically, rather than horizontally.

Currently Australian distributors are trending towards high bay warehousing with many recent proposals/ developments such as:

- IKEA Distribution centre (34.7m)
- Swire Cold Storage Warehouse and Distribution Facility, Marsden Park (34.8 m)
- Snack Brands (SSD 9429) (36 m)
- 46 Eastern Creek Drive, Eastern Creek (26.3 m)

The new trend has significantly changed the previously relentless and homogeneous character of the industrial areas.



Blue Mountains
National Park

Kanangra-Boyd
National Park

Marsden Park
Business Park

Penrith

St Marys

Mount Druitt

Blacktown

Macquarie Park

Horsley
Park

Western Sydney
Parklands

Parramatta

Wetherill
Park

North Sydney

Sydney
CBD

Liverpool

Bankstown

Sydney
Airport

Port
Botany

Moorebank

Leppington

Glenfield

Heathcote
National Park

Royal National
Park

Campbelltown

LOCAL ANALYSIS

LOCAL CONTEXT

The surrounding area is comprised of a number of different land-uses. To the north is a 200 ha industrial precinct, which supports a range of uses including freight and logistics, heavy and light manufacturing, office and business park developments.

The Proposal site is bounded by the George River to the west, proposed intermodal terminal to the east and industrial lands to the north and south. The whole area is going through transformation as part of Moorebank Logistics Park (MLP) infrastructure project which involves the construction and operation of an intermodal terminal facility and associated warehousing. The majority of proposed warehousing area is currently under ancillary works.

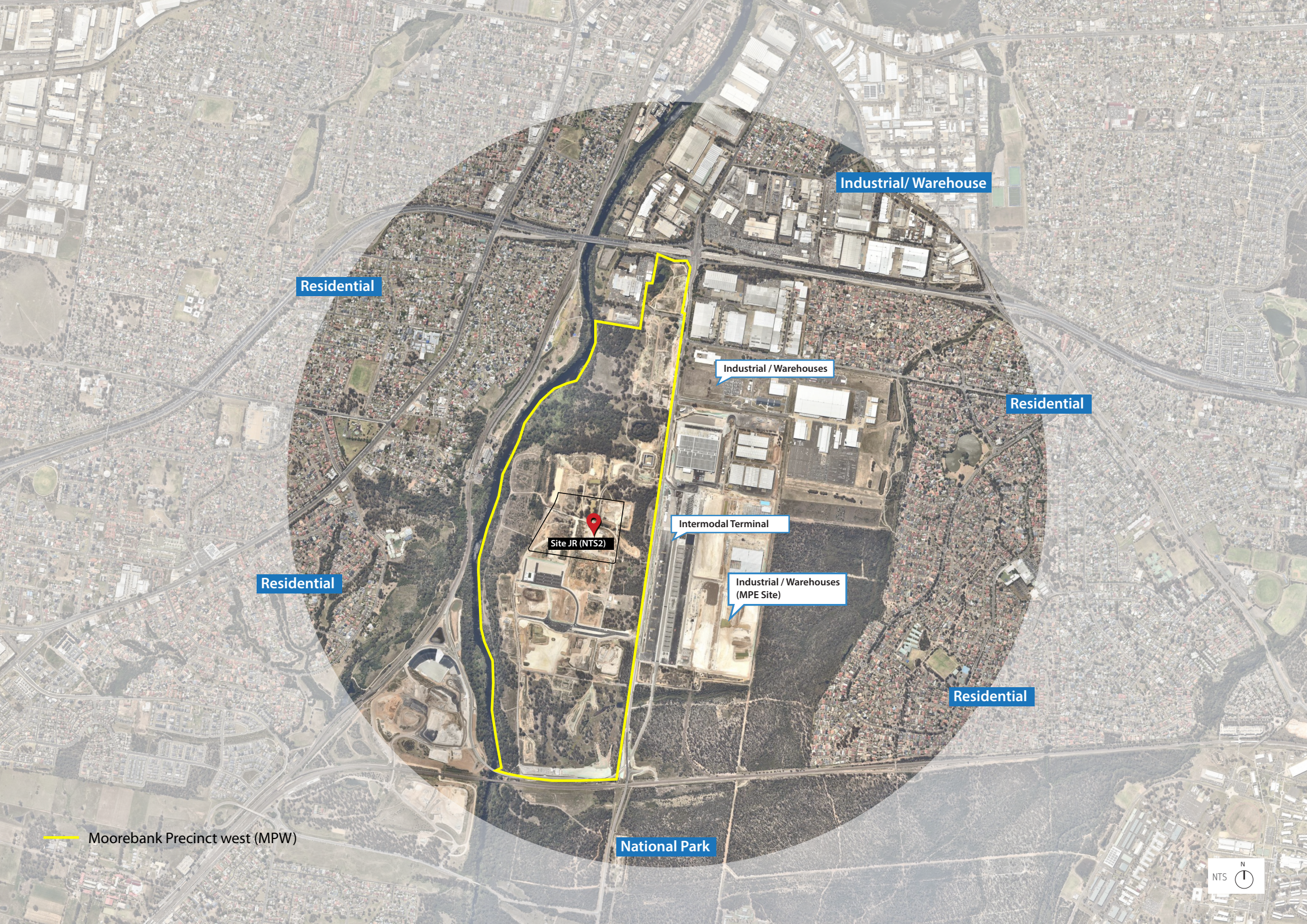
LANDSCAPE CHARACTER

In general the land has relatively flat topography within the area, with the western edge sloping down towards the Georges River which forms the western boundary to the MLP. The Georges River riparian area is a conservation land containing substantial corridor of native vegetation which provides a wildlife corridor and a buffer to protect the river and aquatic habitats.

The landscape character of the local area is primarily industrial built forms surrounded by national reserves and low density residential.

There are extensive views and vistas to the east from the higher elevations which creates an elevated spatial experience. However, the views are enclosed by the existing landform and vegetations from lower elevations.





Industrial/ Warehouse

Residential

Industrial / Warehouses

Residential

Site JR (NTS2)

Intermodal Terminal

Industrial / Warehouses
(MPE Site)

Residential

Residential

National Park

Moorebank Precinct west (MPW)



PLANNING ENVIRONMENT

PLANNING CONTEXT

The main statutory planning framework relevant to the proposed development includes:

- Environmental Planning and Assessment Act 1979
- Environmental Planning and Assessment Regulation 2000
- Liverpool Local Environmental Plan 2008
- Liverpool Development Control Plan 2008
- SEPP (State and Regional Development) 2011
- SEPP (Infrastructure) 2007

The proposed site is located within Liverpool Local Government Area and is zoned as general industrial (IN1).

EXISTING MASTERPLANS

The Concept Plan approval (SSD 5066) for development of Moorebank Precinct West project (the MPW site) was granted in 2016 under the Environmental Planning and Assessment Act 1979 (EP&A Act). The MPW project is to be developed in different phases including :

- Stage 1 Early works
- Development of the intermodal terminal (IMT) facility
- Development of warehousing

Proposed Modifications to SSD 5066

- Amendment to the Concept Plan originally approved, via means of adjustment to the internal Moorebank Precinct West (MPW)

boundaries

- Amendment to the maximum building height established across selected portions of the Subject Site from approximately 21m up to and including 45m.

Following the initial approval, SIMTA, as Qube Holdings Limited received approval for the development of Stage 2 of the approved MPW concept plan known as the MPW Stage 2 Proposal (SSD 7709). The proposal comprises:

- Earthworks
- Intermodal terminal (IMT) facility
- Container storage area
- Rail connection and internal road infrastructure
- 215,000 sqm GFA of intermodal warehousing
- 800 sqm GFA freight village
- Stormwater management
- Upgrade of Moorebank Avenue and Anzac Road intersection
- Ancillary works

Proposed Modifications to SSD 7709

- Amendment to the MPW Stage 2 internal operational boundaries, with respect to indicative built form proposed under SSD 7709, via means of reconfiguration of the MPW Stage 2 internal operational boundaries. Noting, this is consistent with the post-approvals provision for updated Development Layout Drawings to the NSW DPIE in relation to Condition B2 of SSD 7709

- Amendment to the maximum building height established across selected portions of the Subject Site from approximately 21m up to and including 45m with respect to future built form under MPW Stage 2
- Construction and operation of two (2) Warehouse and Distribution Facilities (High Bay Warehouses) across the Subject Site, including:
 - Ancillary hardstand
 - Amenities
 - Ancillary offices
 - Associated car parking
 - Landscaping

Each of the above elements is consistent with the development consent (SSD 7709) and post-approval documentation as approved.



Moorebank Logistic Park- Concept Masterplan
Source: Reid Campbell



03

VISUAL ANALYSIS

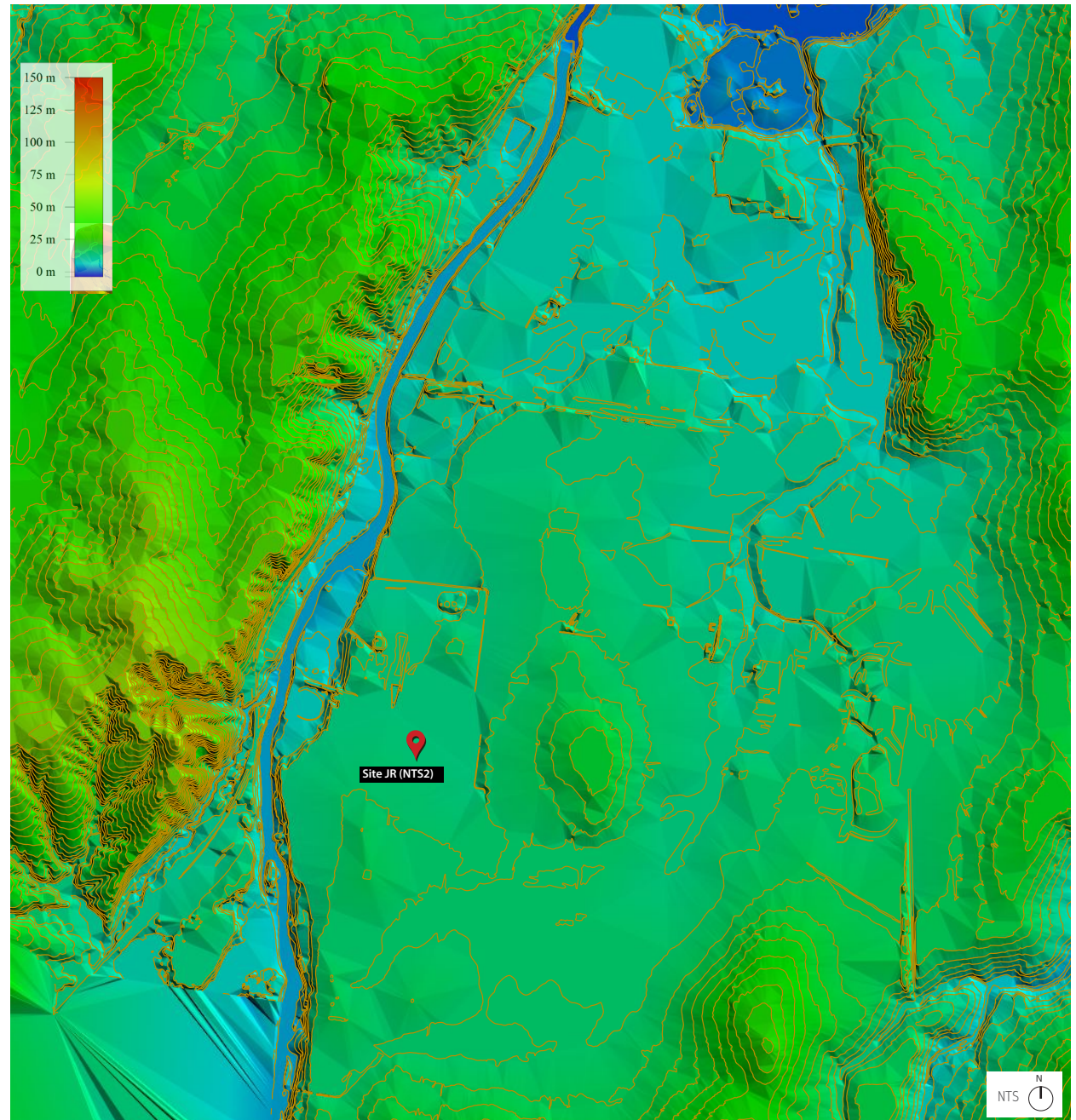
SITE VISIBILITY

PHYSICAL ABSORPTION CAPACITY

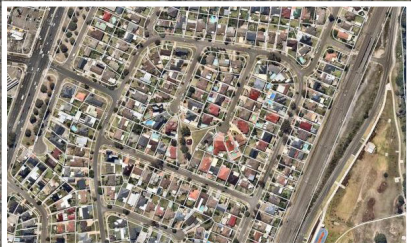
Physical Absorption Capacity means the extent to which the existing visual environment can reduce or eliminate the perception of the visibility of the proposed development or its effects, such as view blocking. It includes the ability of the existing and future elements of the landscape setting to physically hide, screen or disguise the proposed development.

Physical Absorption Capacity also includes the extent to which the material and finishes of the proposal blend with others of the same or closely similar kinds, to the extent that they cannot be easily perceived as new elements of the environment. The following factors provide some physical absorption capacity for the proposal and reduces the visibility of the site:

- Presence of surrounding industrial lands and potential future warehouses
- Dense vegetation with mature trees along Georges River corridor
- Compact configuration of residential areas with limited open views and publicly accessible areas facing the proposed site
- Landform west of the proposed site with a significant ridgeline which restricts the visual exposure of the proposal to views toward west



Land Elevation Study



Compact built form configuration



Riverbank in lower elevation with mature trees



Dense vegetation along Weaving Gardens Path



Industrial warehouses



Dense vegetation along residential buildings



DRONE PHOTOGRAPHY

To better understand the visibility of the site and identify the potential vantage points, a drone was used to take panoramic photographs at height of above 40m from ground level which represents the future high-bay. The flight was performed on the 15th November 2019 by Sydney Drone Operations (DLR Photo). The following photographs provide an indication of receptors within the surrounding context and identifies existing context and visual barriers.



East Panorama



North Panorama



South Panorama



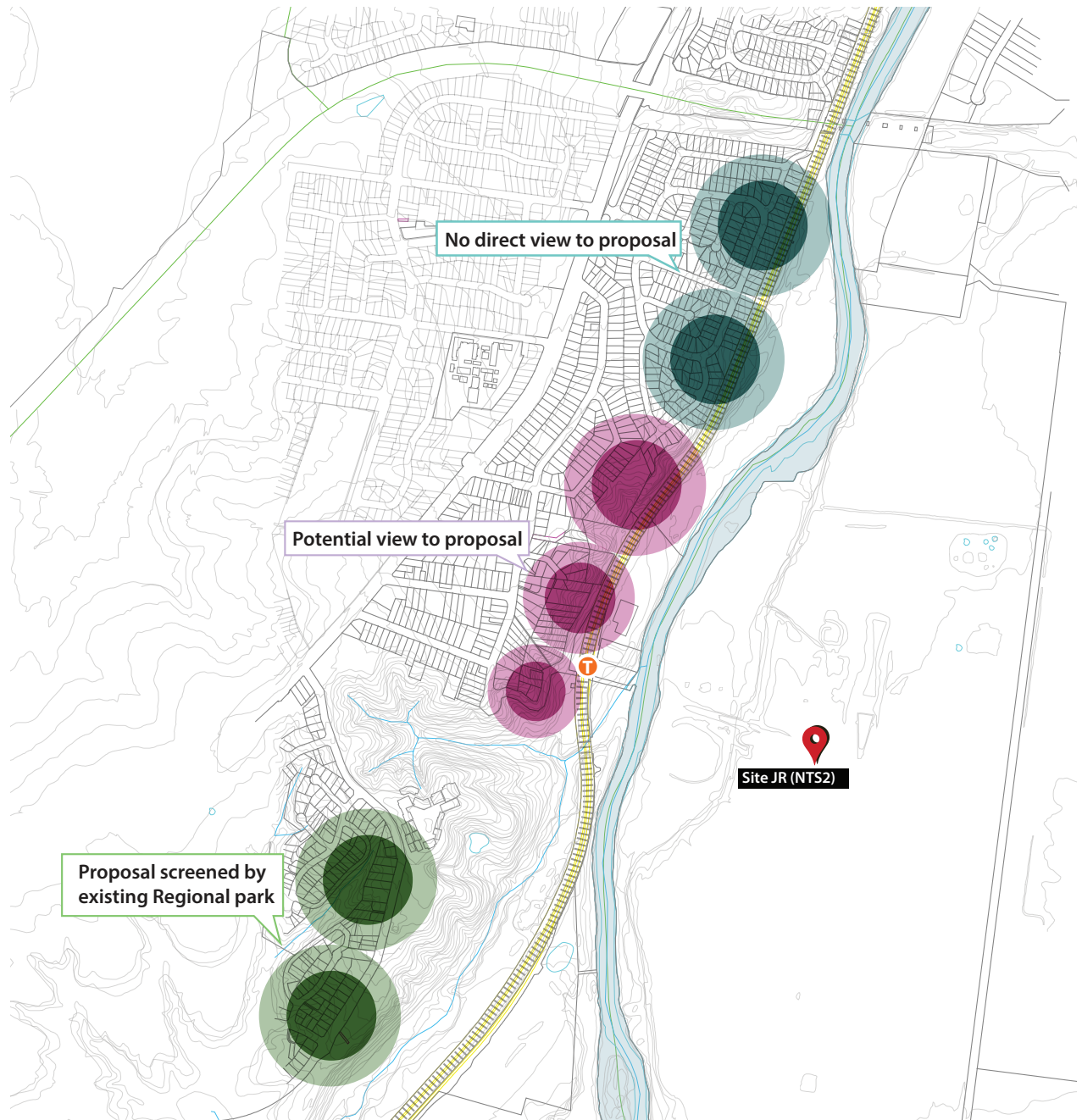
West Panorama

WESTERN BOUNDARY

The closest residential properties to the site are located in Casula to the west. In general, the lands west of the MPW site are more likely to be visually impacted by the future developments within the precinct.

The visibility of the proposal to the adjacent residential properties factors the following:

- Orientation and proximity of residential blocks
- Land elevation
- Existing dense vegetation/ trees including Regional Park
- Future surrounding industrial warehouses



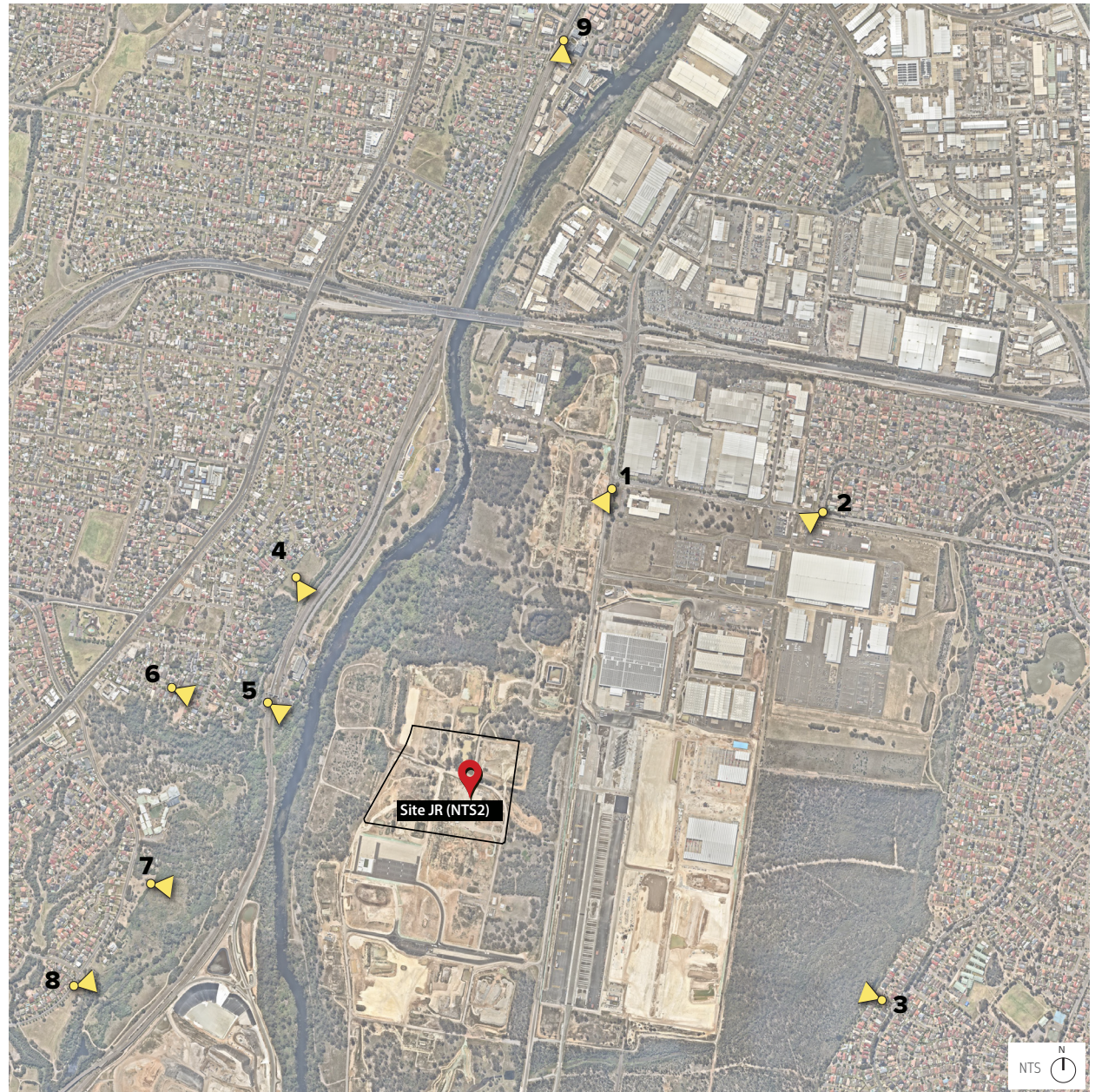
VANTAGE POINTS

SELECTION OF VANTAGE POINTS

The key vantage points for the purpose of visual impact assessment have been determined through identification of physical absorption capacity and visibility of the site as well as focus on the areas that are more likely to be affected by the proposal. Some viewpoints have been intentionally chosen to demonstrate and provide evidence that there will be no visual impacts at all.

The key vantage points analysed include:

- Public views from Anzac Rd (view 1 & 2)
- Public views from Wattle Grove residential areas (view 3)
- Public views from Casula residential areas (view 4, 5 & 6)
- Public views from Leacock Regional Park (view 7 & 8)
- Private view from existing residential tower located in Liverpool Town Centre (view 9)



VISUAL IMPACT ASSESSMENT

VIEW POINT 1



Google Earth Coordinate: 33°56'39.5"S 150°55'27.4"E
Viewing Distance from Site Boundary: 874 m

| | | MAGNITUDE | | | | | |
|-------------|-----------|-----------------|----------------|-----------------|-----------------|------------------|------------|
| SENSITIVITY | | Very High | High | Moderate | Low | Very Low | Negligible |
| | Very High | Substantial | High | High/ Moderate | Moderate | Moderate/ Low | None |
| | High | High | High/ Moderate | Moderate | Moderate/ Low | Low | None |
| | Moderate | High / Moderate | Moderate | Moderate/ Low | Low | Low/ Negligible | None |
| | Low | Moderate | Moderate/ Low | Low | Low/ Negligible | Negligible | None |
| | Very Low | Moderate/ Low | Low | Low/ Negligible | Negligible | Negligible/ None | None |

Impact Level (Matrix of Sensitivity & Magnitude)

Viewpoint 1

The aim of assessing the view is:

- To understand the visual impact of proposed built forms viewed from north east and Anzac Road
- To assess to what degree the existing and future landscaping along Moorebank Avenue screens or disguise the future development
- To test the extent to which the change of built elements may alter the existing character of the view

Sensitivity

The view from Anzac Road is considered to have LOW sensitivity due to:

- Receptors are mostly motorists that are passing through, therefore have short term views and are less likely to notice, appreciate or be concentrating on views
- The area is transforming to an intermodal terminal facility surrounded by industrial uses and warehouses
- Public view has limited visual value
- Proposal is not in close proximity

Magnitude

The magnitude of the proposal in this view is considered NEGLIGIBLE, due to:

- Proposal is in the distance and completely screened by the existing and future landscaping
- No change in the view

The visual impact for this view is assessed as NONE, which is the combination of the sensitivity and magnitude of impact.



Existing

Note: View southwest down Moorebank Avenue



Proposed

Future Intermodal Terminal in the distance

VIEW POINT 2



Google Earth Coordinate: 33°56'41.2"S 150°55'55.3"E
Viewing Distance from Site Boundary: 1,290m

| | | MAGNITUDE | | | | | |
|-------------|-----------|-----------------|----------------|-----------------|-----------------|------------------|------------|
| SENSITIVITY | | Very High | High | Moderate | Low | Very Low | Negligible |
| | Very High | Substantial | High | High/ Moderate | Moderate | Moderate/ Low | None |
| | High | High | High/ Moderate | Moderate | Moderate/ Low | Low | None |
| | Moderate | High / Moderate | Moderate | Moderate/ Low | Low | Low/ Negligible | None |
| | Low | Moderate | Moderate/ Low | Low | Low/ Negligible | Negligible | None |
| | Very Low | Moderate/ Low | Low | Low/ Negligible | Negligible | Negligible/ None | None |

Impact Level (Matrix of Sensitivity & Magnitude)

Viewpoint 2

The aim of assessing the view is:

- To understand the visual impact of proposed built forms viewed from the residential properties along Anzac Road
- To assess to what degree the existing structure and industrial buildings screen or disguise the future development
- To test the extent to which the change of built elements may alter the existing character of the view

Sensitivity

The sensitivity of view from Anzac Road factors:

- Occupiers of the residential buildings will view changes to the visual setting of their residence more critically
- Visual amenity is important to receptors
- Receptors have prolonged views of the landscape

However, existing industrial character, landscape detractors and distance from the proposal reduce the sensitivity of the view. Therefore, the sensitivity of the viewpoint is considered LOW.

Magnitude

The magnitude of the proposal in this view is considered NEGLIGIBLE, due to:

- Proposal is in the distance and completely screened by the existing warehouses
- No change in the view

The visual impact for this view is assessed as NONE, which is the combination of the sensitivity and magnitude of impact.

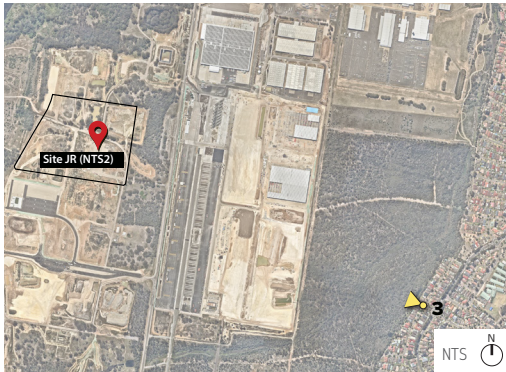


Existing



Proposed

VIEW POINT 3



Google Earth Coordinate: 33°57'33"S 150°56'4"E
Viewing Distance from Site Boundary: 1,413 m

| | | MAGNITUDE | | | | | |
|-------------|-----------|-----------------|----------------|-----------------|-----------------|------------------|------------|
| SENSITIVITY | | Very High | High | Moderate | Low | Very Low | Negligible |
| | Very High | Substantial | High | High/ Moderate | Moderate | Moderate/ Low | None |
| | High | High | High/ Moderate | Moderate | Moderate/ Low | Low | None |
| | Moderate | High / Moderate | Moderate | Moderate/ Low | Low | Low/ Negligible | None |
| | Low | Moderate | Moderate/ Low | Low | Low/ Negligible | Negligible | None |
| | Very Low | Moderate/ Low | Low | Low/ Negligible | Negligible | Negligible/ None | None |

Impact Level (Matrix of Sensitivity & Magnitude)

Viewpoint 3

The aim of assessing the view is:

- To understand the visual impact of proposed built forms viewed from the residential properties in wattle Grove
- To assess to what degree the existing dense vegetation/ national park screen or disguise the future development
- To test the extent to which the change of built elements may alter the existing green character along residential properties

Sensitivity

The sensitivity of view from Wattle Grove factors:

- Occupiers of the residential buildings will view changes to the visual setting of their residence more critically
- Visual amenity is important to receptors
- Receptors have prolonged views of the landscape

However, the proposal is not in close proximity. Therefore, the sensitivity of the viewpoint is considered MODERATE.

Magnitude

The magnitude of the proposal in this view is considered NEGLIGIBLE, due to:

- Proposal is in the distance and completely screened by the existing dense vegetation in the national park
- No change in the view

The visual impact for this view is assessed as NONE, which is the combination of the sensitivity and magnitude of impact.



Existing



Proposed

VIEW POINT 4



Google Earth Coordinate: 33°56'46.6"S 150°54'43.9"E
Viewing Distance from Site Boundary: 713 m

| | | MAGNITUDE | | | | | |
|-------------|-----------|-----------------|----------------|-----------------|-----------------|------------------|------------|
| SENSITIVITY | | Very High | High | Moderate | Low | Very Low | Negligible |
| | Very High | Substantial | High | High/ Moderate | Moderate | Moderate/ Low | None |
| | High | High | High/ Moderate | Moderate | Moderate/ Low | Low | None |
| | Moderate | High / Moderate | Moderate | Moderate/ Low | Low | Low/ Negligible | None |
| | Low | Moderate | Moderate/ Low | Low | Low/ Negligible | Negligible | None |
| | Very Low | Moderate/ Low | Low | Low/ Negligible | Negligible | Negligible/ None | None |

Impact Level (Matrix of Sensitivity & Magnitude)

Viewpoint 4

The aim of assessing the view from Carroll Park is:

- To understand the visual impact of proposed built forms viewed from the green open space and residential properties in Casula overlooking the proposal
- To assess to what degree the existing topography/ vegetation screen or disguise the future development
- To test the extent to which the change of built elements may alter the existing character of the view

Sensitivity

The view from Carroll park next to the existing residential buildings is considered to have HIGH sensitivity due to:

- Public view is elevated and has visual value for locals
- It, to an extent, represents the view from surrounding residential buildings and occupiers of the residential buildings will view changes to the visual setting of their residence more critically
- There are few landscape detractors including utility poles and housing

Magnitude

The magnitude of the proposal in this view is assessed as MODERATE, considering the future context including surrounding warehouses in the precinct:

- Proposal is in the distance and consistent with the surrounding industrial character
- Proposal is partly covered by the future development
- There already exists a presence of landscape detractors including future railhead gantry cranes above 21m height limit
- Surrounding residential buildings have a wider view field meaning that the proposal will not constitute a major component of their view

The visual impact is assessed as MODERATE.



Existing



Proposed

VIEW POINT 5



Google Earth Coordinate: 33°57'01.9"S 150°54'41.2"E

Viewing Distance from Site Boundary: 483 m

Viewpoint 5

The aim of assessing the view from train station is:

- To understand the visual impact of proposed built forms viewed from the train station
- To assess to what degree the existing structures and vegetation screen or disguise the future development
- To test the extent to which the change of built elements may alter the existing character of the view

| | | MAGNITUDE | | | | | |
|-------------|-----------|-----------------|----------------|-----------------|-----------------|------------------|------------|
| SENSITIVITY | | Very High | High | Moderate | Low | Very Low | Negligible |
| | Very High | Substantial | High | High/ Moderate | Moderate | Moderate/ Low | None |
| | High | High | High/ Moderate | Moderate | Moderate/ Low | Low | None |
| | Moderate | High / Moderate | Moderate | Moderate/ Low | Low | Low/ Negligible | None |
| | Low | Moderate | Moderate/ Low | Low | Low/ Negligible | Negligible | None |
| | Very Low | Moderate/ Low | Low | Low/ Negligible | Negligible | Negligible/ None | None |

Impact Level (Matrix of Sensitivity & Magnitude)

Sensitivity

The view from the train station is considered to have LOW sensitivity due to:

- Receptors are mostly passengers with short term views and are less likely to notice, appreciate or be concentrating on views
- There are landscape detractors including utility poles and structures
- Public view has limited visual value

Magnitude

The magnitude of the proposal in this view is considered VERY LOW due to:

- Proposal is largely screened by existing vegetation
- Proposal constitutes only a minor component of the view which might be missed by the casual receptor
- No effect on the overall quality of the scene

The visual impact for this view is assessed as NEGLIGIBLE.

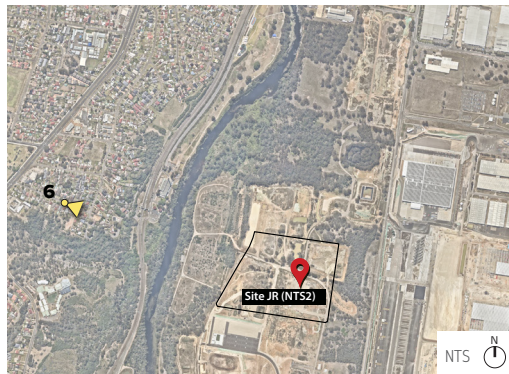


Existing



Proposed

VIEW POINT 6



Google Earth Coordinate: 33°57'01.1"S 150°54'33.2"E
Viewing Distance from Site Boundary: 687 m

| | | MAGNITUDE | | | | | |
|-------------|-----------|-----------------|----------------|-----------------|-----------------|------------------|------------|
| SENSITIVITY | | Very High | High | Moderate | Low | Very Low | Negligible |
| | Very High | Substantial | High | High/ Moderate | Moderate | Moderate/ Low | None |
| | High | High | High/ Moderate | Moderate | Moderate/ Low | Low | None |
| | Moderate | High / Moderate | Moderate | Moderate/ Low | Low | Low/ Negligible | None |
| | Low | Moderate | Moderate/ Low | Low | Low/ Negligible | Negligible | None |
| | Very Low | Moderate/ Low | Low | Low/ Negligible | Negligible | Negligible/ None | None |

Impact Level (Matrix of Sensitivity & Magnitude)

Viewpoint 6

The aim of assessing the view from Casula Rd is:

- To understand the visual impact of proposed built forms viewed from the public road facing the proposal
- To assess to what degree the existing housing and vegetation screen or disguise the future development
- To test the extent to which the change of built elements may alter the existing character of the view

Sensitivity

The view from Casula Rd is considered to have LOW sensitivity due to:

- Receptors are mostly motorists that are passing through, therefore have short term views and are less likely to notice, appreciate or be concentrating on views
- Public view has limited visual value
- Proposal is not in close proximity

Magnitude

The magnitude of the proposal in this view is considered NEGLIGIBLE, due to:

- Proposal is in the distance and completely screened by the existing vegetation/ structure
- No change in the view

The visual impact for this view is assessed as NONE, which is the combination of the sensitivity and magnitude of impact.

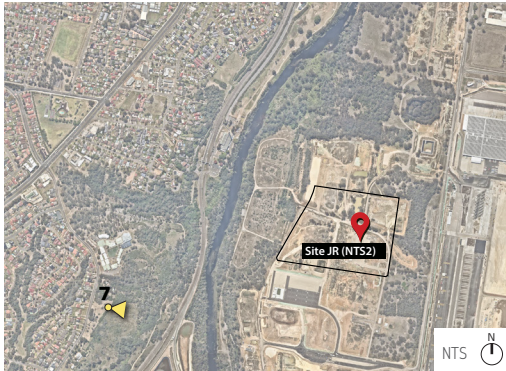


Existing



Proposed

VIEW POINT 7



Google Earth Coordinate: 33°57'20.8"S 150°54'27.2"E
Viewing Distance from Site Boundary: 645 m

| | | MAGNITUDE | | | | | |
|-------------|-----------|-----------------|----------------|-----------------|-----------------|------------------|------------|
| SENSITIVITY | | Very High | High | Moderate | Low | Very Low | Negligible |
| | Very High | Substantial | High | High/ Moderate | Moderate | Moderate/ Low | None |
| | High | High | High/ Moderate | Moderate | Moderate/ Low | Low | None |
| | Moderate | High / Moderate | Moderate | Moderate/ Low | Low | Low/ Negligible | None |
| | Low | Moderate | Moderate/ Low | Low | Low/ Negligible | Negligible | None |
| | Very Low | Moderate/ Low | Low | Low/ Negligible | Negligible | Negligible/ None | None |

Impact Level (Matrix of Sensitivity & Magnitude)

Viewpoint 7

The aim of assessing the view from Leacock Regional Park is:

- To understand the visual impact of proposed built forms viewed from the Regional Park and residential properties along the Park
- To assess to what degree the existing vegetation screen or disguise the future development
- To test the extent to which the change of built elements may alter the existing character of the view

Sensitivity

The sensitivity of view from Leacock Regional Park factors:

- Passive recreational activities generally do not require as much concentration as more active recreational activities, and tend to be more focused on the enjoyment of scenery
- Visual amenity is important to receptors
- Receptors have prolonged views of the landscape

However, existing landscape detractors and distance from the proposal reduce the sensitivity of the view. Therefore, the sensitivity of the viewpoint is considered MODERATE.

Magnitude

The magnitude of the proposal in this view is considered VERY LOW, due to:

- Partial view to the proposal
- Proposal is in the distance and largely completely screened by the existing vegetation
- Limited change in the view

The visual impact for this view is assessed as LOW/ NEGLIGIBLE, which is the combination of the sensitivity and magnitude of impact.



Existing



Proposed

The proposal is screened by existing vegetation

MPE stage 2

VIEW POINT 8



Google Earth Coordinate: 33°57'32.0"S 150°54'16.7"E
Viewing Distance from Site Boundary: 1,020 m

| | | MAGNITUDE | | | | | |
|-------------|-----------|-----------------|----------------|-----------------|-----------------|------------------|------------|
| SENSITIVITY | | Very High | High | Moderate | Low | Very Low | Negligible |
| | Very High | Substantial | High | High/ Moderate | Moderate | Moderate/ Low | None |
| | High | High | High/ Moderate | Moderate | Moderate/ Low | Low | None |
| | Moderate | High / Moderate | Moderate | Moderate/ Low | Low | Low/ Negligible | None |
| | Low | Moderate | Moderate/ Low | Low | Low/ Negligible | Negligible | None |
| | Very Low | Moderate/ Low | Low | Low/ Negligible | Negligible | Negligible/ None | None |

Impact Level (Matrix of Sensitivity & Magnitude)

Viewpoint 8

The aim of assessing the view from Leacock Regional Park is:

- To understand the visual impact of proposed built forms viewed from the Regional Park and residential properties along the Park
- To assess to what degree the existing vegetation screen or disguise the future development
- To test the extent to which the change of built elements may alter the existing character of the view

Sensitivity

The sensitivity of view from Leacock Regional Park factors:

- Passive recreational activities generally do not require as much concentration as more active recreational activities, and tend to be more focused on the enjoyment of scenery
- Visual amenity is important to receptors
- Receptors have prolonged views of the landscape

However, existing landscape detractors and distance from the proposal reduce the sensitivity of the view. Therefore, the sensitivity of the viewpoint is considered MODERATE.

Magnitude

The magnitude of the proposal in this view is considered NEGLIGIBLE, due to:

- Partial view to the proposal
- Proposal is in the distance and completely screened by the existing vegetation and land topography
- No change in the view

The visual impact for this view is assessed as NONE, which is the combination of the sensitivity and magnitude of impact.



Existing



Proposed

VIEW POINT 9



Google Earth Coordinate: 33°55'59.4"S 150°55'22.4"E
Viewing Distance from Site Boundary: 2,070 m

| | | MAGNITUDE | | | | | |
|-------------|-----------|-----------------|----------------|-----------------|-----------------|------------------|------------|
| SENSITIVITY | | Very High | High | Moderate | Low | Very Low | Negligible |
| | Very High | Substantial | High | High/ Moderate | Moderate | Moderate/ Low | None |
| | High | High | High/ Moderate | Moderate | Moderate/ Low | Low | None |
| | Moderate | High / Moderate | Moderate | Moderate/ Low | Low | Low/ Negligible | None |
| | Low | Moderate | Moderate/ Low | Low | Low/ Negligible | Negligible | None |
| | Very Low | Moderate/ Low | Low | Low/ Negligible | Negligible | Negligible/ None | None |

Impact Level (Matrix of Sensitivity & Magnitude)

Viewpoint 9

The aim of assessing the view from Liverpool Town Centre tower is:

- To understand the visual impact of proposed built forms viewed from the residential towers in Liverpool TC
- To test the extent to which the change of built elements may alter the existing character of the view

Sensitivity

The view from Carroll park next to the existing residential building is considered to have HIGH sensitivity due to:

- Occupiers of the residential buildings will view changes to the visual setting of their residence more critically
- Public view is elevated and has visual value for locals
- There are limited landscape detractors in the view

Magnitude

The magnitude of the proposal in this view is considered LOW, due to:

- Proposal is in the distance and constitutes only a minor component of the wider view
- Proposal has no effect on the quality of the scene

The visual impact for this view is assessed as MODERATE/ LOW which is the combination of the sensitivity and magnitude of impact.



Existing (prepared in Google Earth and 3d software)



Proposed (prepared in Google Earth and 3d software)

LANDSCAPE IMPACT ASSESSMENT

Sensitivity of the Landscape

The landscape character has been previously described in Local Analysis (page 14).

There is no landscape or environmental value to the site and the desired future character for the site is identified as general industrial area.

Due to highly industrial nature of the surrounding areas and the future character of the precinct, the sensitivity of the landscape is considered to be LOW.

Magnitude

The proposal will not change the key characteristics of the existing landscape and is consistent with the existing and future character of the precinct. The landscape buffering and introduction of native endemic planting has significantly reduced the impact of the built forms on surrounding landscape. The magnitude of landscape impact therefore, is considered to be LOW.

The landscape impact is assessed as LOW/ NEGLIGIBLE, which is the combination of the sensitivity and magnitude of impact.



SUMMARY OF VISUAL IMPACTS

| Viewpoints | Visual Sensitivity | Magnitude of Visual Change | Impact Level |
|--|--------------------|----------------------------|-----------------|
| Viewpoint 1 Moorbank Avenue | Low | Negligible | None |
| Viewpoint 2 Delfin Drive to Anzac Road | Low | Negligible | None |
| Viewpoint 3 Corryton Court | Moderate | Negligible | None |
| Viewpoint 4 Carroll Park at Marsh Parade | High | Moderate | Moderate |
| Viewpoint 5 2B Casula Road | Low | Very Low | Negligible |
| Viewpoint 6 Casula Road to Canberra Avenue | Low | Negligible | None |
| Viewpoint 7 Leacock Regional Park | Moderate | Very Low | Low/ Negligible |
| Viewpoint 8 Leacocks Lane | Moderate | Negligible | None |
| Viewpoint 9 Shepherd St | High | Low | Moderate/ Low |

Summary of Visual Impact to Key Viewpoints

CONCLUSION

SUMMARY OF FINDINGS

This Visual Impact Assessment report has reviewed and assessed the sensitivity and magnitude of the proposed changes on the landscape and from various key locations.

It has been concluded that the significance of impact on the landscape is **low/ negligible**. This is mostly due to highly industrial nature of the surrounding areas, future character of the precinct as an intermodal terminal facility with associated warehousing and introduction of native trees/ landscape buffers compatible with the existing planting.

Overall, the visual impacts assessed from multiple viewpoints surrounding the site result in impacts considered to be in the **none/ negligible to moderate** ranges.

From the analysis of the aerial photographs taken by the drone operator and landscape physical absorption capacity, it is evident that the proposed built forms will be visible from:

- Carroll Park

- Residential properties in Casula along the train line where:

- Located around Carroll Park
- Overlooking Casula Station

- Residential towers at Liverpool Town Centre

In general, Casula neighbourhood has a compact configuration with limited open views toward the site. The proposal will be screened by Leacock Regional Park in southern areas. Similarly, residential properties in Wattle Grove will not be affected by the proposal.

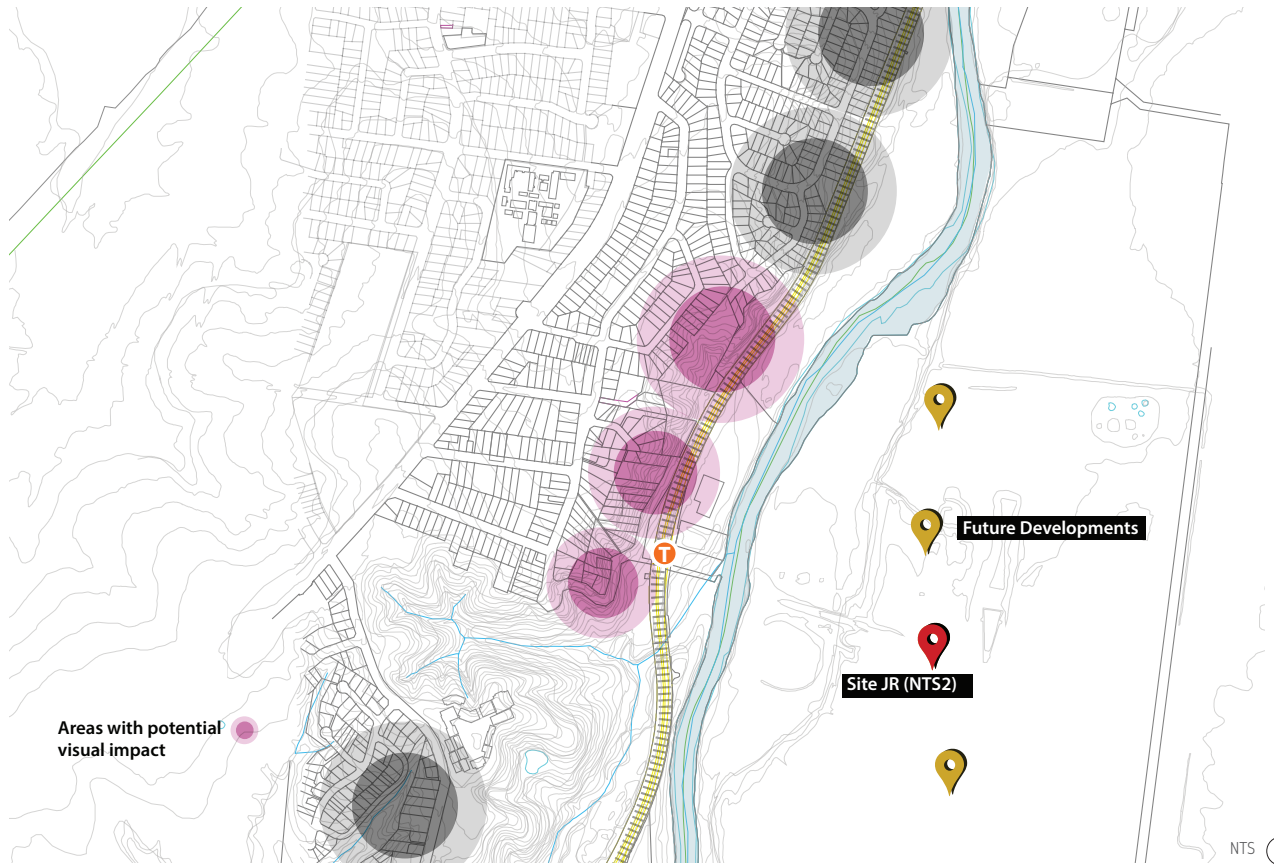
Existing views of residential buildings around Carroll Park will be affected by the future intermodal terminal facility including associated warehousing with height limit of 21m and future railhead gantry cranes. Our study indicates that the proposed high bay component will constitute only a minor additional component to the future terminal facility which is consistent with the surrounding character.

The proposed landscape planting and facade design will effectively reduce the height impact on the surrounding areas.

MITIGATION MEASURES

Our findings revealed that the proposal incorporates a number of key measures designed to mitigate the potential visual impacts:

- Retaining dense vegetation and established trees surrounding the site for screening
- Additional landscaping and well located screen planting to reduce the visual impact in close proximity
- Use of native planting to reinforce the character of the existing vegetation
- Use of facade treatment, articulation and colour selection to blend with the landscape and reduce the height impact.



KEY POINTS

- The proposal will be partly covered by the future developments located in closer proximity to the residential areas that are more likely to be visually affected by the development.
- Future railhead gantry cranes of the Intermodal Terminal will be above 21m approved height limit and visible from identified residential areas.
- Proposed high bay is not the only element above approved height limit of 21m and is consistent with the surrounding visual rhythm and industrial character.
- Proposed high bay is not visible from viewpoints closer to the train line (lower levels).

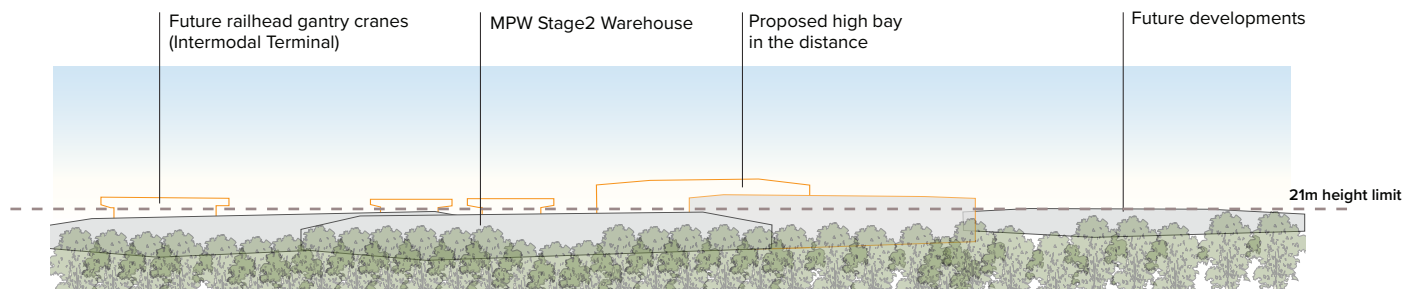


Illustration of future view from residential buildings along Carroll Park/ overlooking Casula station

04

APPENDIX

CUMULATIVE IMPACT

CUMULATIVE IMPACT

The assessment of cumulative visual effects is concerned with the identification and assessment of the additional effects on peoples' views arising from the proposed development when seen together with the other projects as set out in the various cumulative scenarios. These effects would result from changes in the character and content of the views experienced due to the introduction of new elements or removal of or damage to existing ones.

The identification and assessment of the significance of cumulative visual effects focus on the proposed development and how or whether it would add to, or combine with, the other developments being considered to create or increase the magnitude of a significant visual effect.

Viewpoints should be specifically selected to illustrate cumulative effects. In general, the worst-case viewpoints should be studied to illustrate the potential cumulative visual effects arising from the main development being assessed, in combination with the other development and surrounding structures.

VIEWPOINT 4

Viewpoint 4 has been selected as the most critical viewpoint to be studied for the potential cumulative visual impact from the proposal (JR) in combination with the adjacent proposed warehouse (JN) which is studied in a separate document.

The following diagram and photomontage illustrate how the majority of combined built forms sit below the approved 21m height limit. The future railhead gantry cranes, as part of the Intermodal Terminal, will be visible minimising field of view and emphasising on the industrial character of the precinct. It is argued that the high bay elements of proposed warehouses are:

- not the only elements above the approved height limit
- not visible from viewpoints closer to the train line (lower levels)
- consistent with the surrounding visual rhythm mainly created by railhead gantry cranes
- consistent with the surrounding industrial character

As a result, the magnitude and cumulative visual impact is assessed as MODERATE.



Proposed Viewpoint 4 (cumulative impact)

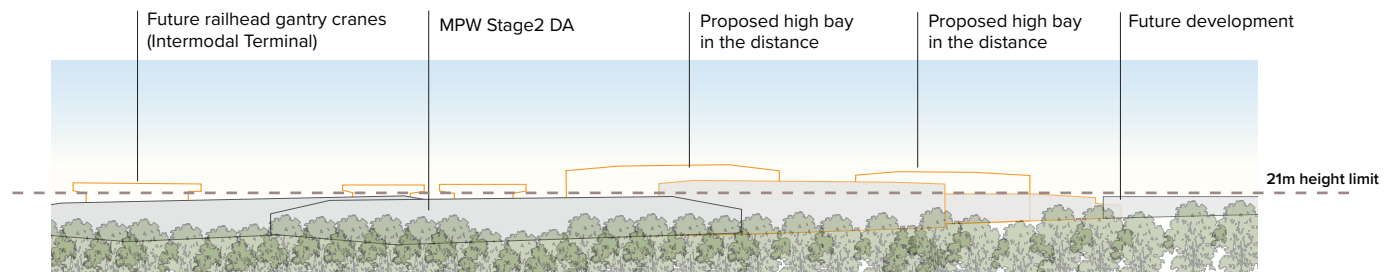


Illustration of future view from residential buildings along Carroll Park/ overlooking Casula station

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