



## **Visual Impact Assessment**

Proposed Minor Modification to  
Holcim Regional Distribution Centre (RDC)  
Rooty Hill, NSW

**FINAL**



# Visual Impact Assessment

## Proposed Minor Modification to Holcim Regional Distribution Centre (RDC) Rooty Hill, NSW

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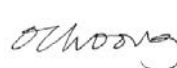
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Issue C

REVISION REGISTER				AUTHORISED	
ISSUE	ISSUED FOR:	DATE	REV NO.	NAME / POSITION	SIGNATURE
A	Draft Issue for Review	25/06/2010	0	Uyen Bui / Associate	
B	Final Draft	04/08/2010	1	Uyen Bui / Associate	
C	Final	01/09/2010	2	Oi Choong / Director	

# Executive Summary

## Report Aim and Background

Holcim (Australia) Pty Ltd is seeking approval for proposed modifications to the 2006 Project Approval to construct and operate a Regional Distribution Centre (RDC) at Kellogg Road, Rooty Hill NSW. Since the granting of approval for the RDC in 2006, Holcim has identified a range of operational and environmental benefits in modifying the RDC proposal, which is yet to be constructed.

A visual impact assessment of the proposal has been undertaken by CONTEXT as a component of the Environmental Assessment being prepared by Umwelt on behalf of Holcim. This visual impact report analyses and compares the anticipated visual impacts of both the existing approved RDC and the proposed modified RDC to establish how the proposed modifications will affect the visual outcomes of the development. The visual impact assessment of the proposed modified RDC has included the same key viewpoints locations from the approved RDC assessment to ensure consistency and accuracy of comparative analysis between the proposed and modified proposals.

## Site Description

The proposed RDC site is located in a valley surrounded by low undulating hills extensively modified by urban development, including industrial, residential, commercial and recreational zones. The RDC site forms part of an industrial corridor bordered on two sides by open space and public reserve. Section 4 includes a detailed landscape visual analysis of the proposed modified RDC.

## Methodology

View catchment analysis through field and desktop investigations allowed the identification of critical viewpoints in the areas surrounding the site. A visual impact assessment of the proposed modified RDC development was conducted at each of these identified key viewpoints as discussed in Section 5. Visual impact ratings have been given to each viewpoint that state the anticipated visual impacts under both the approved and modified RDC proposals. These visual impact outcomes are compared in Table 5.3.1.

## Visual Assessment Outcomes

A small degree of visual impact occurs in Nurragingy Reserve, Blacktown Olympic Centre, Rooty Hill Reserve, Rooty Hill Town Centre and from North Parade, the M7 Motorway, the Main Western Railway Line and Eastern Creek Rd. Lesser visual impacts occur from limited locations in surrounding residential areas. At all of the key viewpoint locations assessed in the study, the proposed modified RDC will have the same or less visual impacts than the current approved RDC project.

Recommended mitigation measures to ameliorate the identified visual impacts include the preservation of existing vegetation to maximise the screening of built form where appropriate, the provision of additional screen planting around the boundary of the RDC site, applying colours to the proposed industrial buildings and plant that are recessive and sympathetic to the surrounding native vegetation, and limiting the spill of night time lighting from the site.

The Landscape Master Plan addresses these recommendations by increasing the density of plantings around the boundaries of the site, both inside and potentially outside the site. The design also addresses the visual amenity within the site, including provision for tree and shrub planting and turfed areas.

# Table of Contents

<b>1</b>	<b>Introduction</b>	page
1.1	Report Aim and Project Background	8
<b>2</b>	<b>Proposal</b>	
2.1	Proposed Modifications to Holcim RDC	10
<b>3</b>	<b>Methodology</b>	
3.1	Visual Analysis and Impact Assessment Method	12
3.2	Definition of Visual Impact Assessment Criteria	15
3.3	Assumptions	17
<b>4</b>	<b>Visual Analysis Of Site And Study Area</b>	
4.1	Land Use and Character of Surrounding Area	18
4.2	Existing Landscape Character of Site	19
4.3	Existing Visual Intrusions	19
4.4	View Catchment Analysis	21
4.5	Potential Areas of High Visual Sensitivity	22
<b>5</b>	<b>Landscape Visual Impact Assessment</b>	
5.1	Visual Impact Assessment Overview	23
5.2	Visual Impact Assessment from Key Viewpoints	24
5.3	Summary of Visual Assessment from Key Viewpoints	36
<b>6</b>	<b>Conclusions to Visual Impact Assessment</b>	
6.1	Mitigation of Adverse Visual Effects	37
6.2	Summary of Report Findings	38
<b>7</b>	<b>Landscape Master Plan</b>	
7.1	Landscape Master Plan	39
7.2	Indicative Plant Species Lists for Proposed Mitigation and Rehabilitation Works	40
<b>8</b>	<b>References</b>	43

## List of Tables and Figures

Refer to Tables in this report in A4 format:

### Proposal

Table 2.1 - Proposed Modifications to RDC

### Methodology and Analysis

Table 3.1 - Landscape Sensitivity Criteria

Table 3.2 - Landscape Magnitude of Change Criteria

Table 3.3 - Visual Impact Matrix

Table 5.3 - Summary of Key Viewpoint Assessment

Table 7.1 - Ornamental Plant Species List

Table 7.2 - River-Flat Eucalypt Forest (RFEF) Species List

Table 7.3 - Cumberland Plain Woodland (CPW) Species List

Refer to Figures in the accompanying Appendices in A3 landscape format:

### APPENDIX A:

#### Site and Study Area Analysis

Figure 2.1 - Proposed Site Layout Plan

Figure 4.1 - RDC Site Context Plan

Figure 4.2 - Existing Site Character Plan

Figure 4.3 - Existing Vegetation Communities Plan

Figure 4.4 - View Catchment Analysis Plan

#### Visual Impact Assessment

Figure 5.1 - Viewpoint Location Map

Figure 5.2.1 - Viewpoint 1 Photomontage - From Nurragingy Reserve (North)

Figure 5.2.2 - Viewpoint 2 Photomontage - From Nurragingy Reserve (South)

Figure 5.2.3 - Viewpoint 3 Photomontage - From Railway Corridor (Facing SW)

Figure 5.2.4 - Viewpoint 4 Photomontage - From Railway Corridor (Facing NE)

Figure 5.2.5 - Viewpoint 5 Photomontage - From Railway Corridor (Rooty Hill Station Platform)

Figure 5.2.6 - Viewpoint 6 Photomontage - From Blacktown Olympic Centre

Figure 5.2.7 - Viewpoint 7 Photomontage - From Rooty Hill Reserve

Figure 5.2.8 - Viewpoint 8 Photomontage - From M7 Motorway Overpass

Figure 5.2.9 - Viewpoint 9 Photomontage - From Rooty Hill Town Centre

Figure 5.2.10 - Viewpoint 10 Photomontage - From Wolseley Street, Rooty Hill

Figure 5.2.11 - Viewpoint 11 Photomontage - From Aquilinia Drive, Plumpton

Figure 5.2.12 - Viewpoint 12 Photomontage - From Sulman Place, Doonside

#### Landscape Master Plan

Figure 7.1 - Landscape Principles Plan

Figure 7.2 - Landscape Master Plan

Figure 7.3 - Landscape Master Plan (Insets 1 to 3)

## **APPENDIX B:**

### **Visual Impact Assessment of the (2006) Approved RDC for Comparison**

Approved RDC project VIA Figures in A3 format as listed below:

Figure 3.1 - Site Context

Figure 3.2 - Existing Site Character

Figure 4.1 - Proposed Site Layout

Figure 4.2 - Existing Vegetation Communities

Figure 5.1 - View Catchment Analysis

Figure 5.2 - Photo Documentation

Figure 4.1 - Proposed Site Layout

Figure 6.1 - Existing View from Nurragingy Reserve (North)

Figure 6.2 - Photomontage 1 - Proposed View from Nurragingy Reserve

Figure 6.3 - Existing View from proposed location for North Parade

Figure 6.4 - Photomontage 2 - Proposed View from North Parade

Figure 6.5 - Existing View from Blacktown Olympic Centre

Figure 6.6 - Photomontage 3 - Proposed View from Blacktown Olympic Centre

Figure 6.7 - Existing View from Rooty Hill Reserve

Figure 6.8 - Photomontage 4 - Proposed View from Rooty Hill Reserve

Figure 6.9 - Existing View from Rooty Hill Station Platform

Figure 6.10 - Photomontage 5 - Proposed View from Rooty Hill Station Platform

Figure 6.11 - Existing View from the M7

Figure 6.12 - Photomontage 6 - Proposed View from the M7

Figure 6.13 - Existing View from Rooty Hill Town Centre

Figure 6.14 - Photomontage 7 - Proposed View from Rooty Hill Town Centre

Figure 7.1 - Landscape Principles

Drawing LSK-001 - Landscape Master Plan

Drawing LSK-002 - Landscape Master Plan (Insets 1 to 3)

## Section 1 Introduction

### 1.1 Report Aim and Project Background

Holcim (Australia) Pty Ltd (Holcim) obtained Project Approval under Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act) in April 2006 (Approval No. 05\_0051) to construct and operate a Regional Distribution Centre (RDC) for quarry materials located at Rooty Hill, NSW.

The RDC site is located off Kellogg Road, Rooty Hill within the Blacktown Local Government Area (LGA). The Main Western Railway Line separates the RDC site from the Blacktown Olympic Centre to the south, Nurragingy Reserve is located to the east and an industrial corridor that includes the adjacent OneSteel Mini Mill site is located to the west and to the north of the RDC site.

The approved RDC will allow Holcim to receive, store and distribute quarry materials to meet customer requirements in the Sydney region. The RDC is approved to handle up to 4 million tonnes per annum (Mtpa) of quarry product. Construction materials such as sand and aggregate will be transported by rail to the RDC from quarries outside of the Sydney Basin. These materials will be blended by equipment at the RDC as required and distributed by road to the Sydney market. Construction of the RDC is planned to begin in 2011 and the RDC is expected to commence operations in 2013.

Since the 2006 approval for the RDC, Holcim has undertaken further detailed design studies and has identified operational, capital and environmental benefits in modifying the approved layout of the RDC. Accordingly, Holcim is seeking a modification to the 2006 Project Approval to provide for these proposed minor modifications to the approved RDC. The modified proposal is referred to in this report as the proposed modified RDC.

The proposed modified RDC would initially commence handling of 2 to 2.5 Mtpa of quarry product, increasing up to the approved projected capacity of 4 Mtpa as dictated by the construction materials market.

A summary of the proposed minor changes include:

- Changing from elevated steel storage bins to on-ground concrete storage bays, which will reduce the height of the storage facility by approximately 10 metres;
- Changing the configuration and location of the rail unloader and rail sidings for the initial phase of the development;
- Reducing the payload capacity of trains for the initial phase of the development;
- The removal of the ground storage bins that were originally sited west of the steel storage bins;
- North parade will no longer be relocated as Blacktown City Council is proposing to close the road;
- An increased ground storage area at the radial stacker; and
- Changes to the locations of the office, workshop and other internal facilities are proposed to improve operating efficiency and in response to the layout changes outlined above.



## Section 1

### Introduction

The proposed minor changes to the RDC will not result in changes to overall RDC components or to the approved RDC capacity of 4 Mtpa. The RDC will operate in much the same way as is currently approved.

CONTEXT Landscape Design has prepared this Visual Impact Assessment (VIA) of the proposed modified RDC on behalf of Holcim (Australia) Pty Limited as a component of the Environmental Assessment being prepared by Umwelt (Australia) Pty Limited.

This visual impact assessment aims to establish two clear points:

- 1) The potential visual impacts of the proposed modified RDC scheme in comparison to the present existing pre-development site conditions; and
- 2) The potential visual impacts of the proposed modified RDC in comparison to the approved RDC scheme.

The report also recommends mitigating measures to ameliorate the visual impacts identified and presents an amended Landscape Master Plan for the site which incorporates all proposed modifications and mitigating measures, as discussed in Section 7 of this document.

## Section 2

### Proposed RDC Modifications

#### 2.1 Rooty Hill Regional Distribution Centre

(Refer to Figure 2.1 - Proposed Modified RDC Layout Plan)

##### 2.1.1 Approved RDC Development

The approved RDC development includes the following facilities:

- 1) Regional office building which incorporates a quarry materials and concrete testing laboratory;
- 2) Rail siding and rail unloading facility;
- 3) Conveyor system linking the unloading station to the storage and truck load-out facilities;
- 4) Storage bin area and load-out facilities (up to 33.5m high);
- 5) Ground storage and reclaim facilities;
- 6) Concrete Batching plant (including silos up to 23.5m high);
- 7) Blending Plant/Pug Mill;
- 8) Workshop, stores and amenities facilities, truck wash-down facilities, truck refuelling, weighbridges, truck and car parking;
- 9) Bridges at two locations over Angus Creek; and
- 10) Realignment of North Parade.

##### 2.1.2 Proposed Modifications to the RDC Development

At present there are no buildings in the RDC site and approximately one third is covered in native vegetation. Most of the facilities will occupy the large cleared area in the northern portion of the RDC site, as shown in Appendix A: Figure 2.1 - Proposed Modified RDC Layout Plan. The layout has been designed to retain and protect the majority of the existing vegetation, with particular regard to vegetation identified as of high conservation value, as indicated in Appendix A: Figure 4.3 - Existing Vegetation Communities Plan.

The portion of the Site occupied by Humes is already extensively covered in industrial buildings, plant and storage areas. The area of the Humes site in which new facilities are proposed is currently occupied primarily by car parking. Proposed facilities in this area include the regional office building, laboratories and associated multi-storey car parking.

Proposed modifications to the approved RDC are summarised below:

**Table 2.1 - Proposed Modifications to RDC**

Project Component	Proposed Modifications
Rail Siding (initial phase only)	<ul style="list-style-type: none"><li>▪ Reduced length of rail siding, during initial phase rail siding will not extend to Rooty Hill Station</li><li>▪ Reduced number of siding (from 4 to 3)</li><li>▪ Minor change to layout</li><li>▪ Reduction in train payload capacity</li><li>▪ Eliminate noise walls at Rooty Hill Station, during initial phase of RDC modifications</li></ul>

## Section 2

### Proposed RDC Modifications

Project Component	Proposed Modifications
Rail Unloader (initial phase only)	<ul style="list-style-type: none"> <li>Change configuration of loading bins</li> <li>Reduced depth and extent of excavation</li> <li>Changed in location - move adjacent to the Nurragingy Reserve boundary</li> </ul>
Conveyors and Transfer Points	<ul style="list-style-type: none"> <li>Adjusted to suit new plant layout</li> </ul>
Materials Storage and Reclaim	<ul style="list-style-type: none"> <li>Change from elevated steel bins to on-ground concrete storage bins (height reduced from 33.5m to 23m and a reduced length from 126m to 73m)</li> <li>Replace above ground reclaim conveyor system with below ground system</li> <li>Eliminate ground storage bins originally located west of the bins</li> </ul>
Truck Load-out	<ul style="list-style-type: none"> <li>Minor change in location</li> </ul>
Concrete Batching Plant	<ul style="list-style-type: none"> <li>No change</li> </ul>
Pug mill	<ul style="list-style-type: none"> <li>Changed location</li> <li>Additional ground bin</li> </ul>
Weighbridge Workshop Offices Re-fuelling Truck wash bay	<ul style="list-style-type: none"> <li>Changed location</li> <li>Reduced size for most facilities</li> </ul>
Road and Rail Bridges	<ul style="list-style-type: none"> <li>No change</li> </ul>
North Parade	<ul style="list-style-type: none"> <li>No longer to be relocated as Blacktown City Council is proposing to close the road</li> </ul>

#### 2.1.3 Activities During Operation

Activity on site during the operation of the proposed Modified RDC will be the same as the approved RDC. The site will operate 24 hours per day, 7 days per week with a maximum of 400 heavy vehicle movements from the RDC facility per day, once the approved capacity of 4 Mtpa has been reached.

## **Section 3**

### Methodology

## **3.1 Visual Analysis and Impact Assessment Method**

### **3.1.1 Methodology**

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

#### **1. Analysis of Existing Visual Environment**

- Appraisal of the existing visual environment (e.g. landscape context and character, vegetation communities, existing visual intrusions.)
- Desktop analysis of the Proposal and Study Areas
- Definition of visual impact criteria - sensitivity, magnitude of potential change
- Define the visual impacts of the approved RDC development
- Identification of proposed RDC modifications

#### **2. View Catchment Analysis**

- Identification of the proposed RDC's Visual Catchment and Study Area
- Identification of potential key receptors and viewpoints
- Site visit for visual assessment and photography
- 3D Computer modelling and analysis of proposed development
- Production of photomontages to illustrate potential visual impacts

#### **3. Visual Impact Assessment**

- Review assessment sites against visual impact criteria
- Evaluate and define potential visual impacts of the proposed modified RDC
- Compare to impacts of approved RDC development

#### **4. Mitigation Measures**

- Identify opportunities for mitigation of potential adverse visual impacts
- Summarise report findings and make recommendations
- Landscape Master Plan illustrating development outcomes and mitigation opportunities

### **3.1.2 Identification of the Visual Catchment of the RDC Site**

(Refer to Appendix A: Figure 4.4 - View Catchment Analysis Plan)

The View Catchment Analysis defines the areas of the surrounding landscape or urban framework that may potentially be visually affected by the proposed development. An analysis plan was produced to spatially illustrate these areas in relation to the RDC site and help determine the location of potential key receptors and viewpoints to be visited during the on-site visual assessment.

## Section 3 Methodology

### 3.1.3 Identification of Key Receptors and Viewpoints

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 Study Area and in consultation with Holcim and Umwelt (refer to Appendix A: Figure 4.4 - View Catchment Analysis Plan and Figure 5.1 - Viewpoint Location Plan).

From this, a list of potential key receptors and viewpoints were then identified for further on-site assessment as follows:

- Nurragingy Reserve
- Main Western Railway Line and North Parade
- M7 Motorway
- Blacktown Olympic Centre
- Rooty Hill Reserve
- Rooty Hill Railway Station
- Rooty Hill Town Centre
- Rooty Hill Residential Area
- Plumpton Residential Area
- Doonside Residential Area

### 3.1.4 Visual Analysis Techniques

Field assessment was undertaken during June 2010 to allow on-site study of:

- Local landscape characteristics
- Site visibility and important viewing locations (key viewpoints/receptors)
- Significant visual site features and characteristics
- Current uses of the RDC site and surrounding land

Desktop investigation was also conducted to:

- Determine land ownership and accessibility
- Determine view catchments
- Correlate field observations with digital and hard copy landscape information (maps, aerial photographs etc.)
- A series of photomontages were generated to aid in the assessment of the potential visual impacts from key viewing locations

### 3.1.5 Production of Photomontages to Illustrate Potential Visual Impacts

(Refer to Appendix A: Figures 5.2.1 to 5.2.12).

A 3D computer model of the proposed modified RDC development was created for analysis using 3D modelling software. The model is based on the information outlined in Section 2.1 and project drawings of the proposed modified RDC supplied by Holcim. Photographs taken from each key viewpoint have been overlaid with a 3D simulated view of the proposed modified RDC derived from the 3D computer model.

## **Section 3**

### Methodology

The photomontage analysis from the approved RDC visual impact assessment have been included in this report as Appendix B: Figures 6.1 to 6.14 to allow comparison of the potential visual impacts of the approved RDC and proposed modified RDC schemes.

#### **3.1.6 Review Assessment Sites Against Visual Impact Criteria**

As part of the assessment process, each proposed photomontage view has been compared with its original unedited viewpoint photo to visually gauge the potential visual impact of the proposed modified RDC from each location. Each photomontage view was then assessed against the visual impact criteria discussed in Section 3.2 and defined in Tables 3.1 and 3.2.

Photomontage analysis, field notes, desktop analysis maps and other site data have been used to determine the factors of sensitivity and potential magnitude of change experienced at each viewpoint location. A definitive sensitivity and magnitude rating was then applied as shown in Section 5.2.

#### **3.1.7 Assess and Define Potential Visual Impacts**

Following the establishment of sensitivity and magnitude criteria a final 'visual impact rating' has been obtained for each key viewpoint using the matrix in Table 3.3 as shown in Section 5.2 of this report. This is accompanied by a description of any potential visual impacts of the proposed modified RDC. Individual viewpoint visual impact ratings are compared in Section 5.3 of this report and summarised in Table 5.3.1.

#### **3.1.8 Compare Visual Impacts of Modified RDC with Approved RDC**

A comparison between visual impact outcomes of the approved and proposed modified RDC schemes is also made for each viewpoint in Section 5.2. Any differences in outcome (whether positive or negative) between the approved and modified proposals identified by this comparison are then summarised in Section 6.2.

#### **3.1.9 Identify Opportunities for Mitigation of Adverse Visual Impacts**

Following completion of the visual impact assessment process, a list of factors contributing to negative visual impact have been identified. Possible mitigating or remediating measures have then been identified as discussed in Section 6.1 to assess the potential for offsetting visual impacts from the development. These measures are incorporated into the Landscape Master Plan as illustrated in Appendix A: Figures 7.1, 7.2 and 7.3.

#### **3.1.10 Conclusion - Summary of Report Findings**

The visual impact assessment is concluded in Section 6.2 with a final statement of conclusions that describe the overall anticipated outcomes and visual impacts of the proposed modified RDC in comparison to the approved RDC project.

## Section 3 Methodology

### 3.2 Definition of Visual Impact Criteria

This methodology is based on two types of visual assessment:

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

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. These two concepts are co-dependent; a viewer generally has a greater sensitivity to change in a landscape of high scenic quality, which in turn also has a high sensitivity to 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, 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 effect

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, or a combination of these
- 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

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.

### Section 3 Methodology

**Table 3.1 Landscape Sensitivity Criteria**

Sensitivity	Descriptive Criteria
Low	<p>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.</p> <p>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.</p>
Moderate	<p>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.</p> <p>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.</p>
High	<p>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.</p> <p>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.</p>

**Table 3.2 Landscape Magnitude of Change Criteria**

Magnitude	Descriptive 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 landscape character.
Medium	Development occupies a significant portion of the view and/or is not similar to the main elements of the view. Minor changes in landscape character 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 character over an extensive area ranging to very intensive change over a more limited area.



## Section 3 Methodology

### Significance of Visual Impact

An indication of visual impact significance was gained by relating the sensitivity and magnitude ratings from Tables 3.1 and 3.2 within Table 3.3 Visual Impact Matrix below.

**Table 3.3 Visual Impact Matrix**

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

This matrix provides a guide to the anticipated visual impact arising from the assessment of both magnitude and sensitivity. Given that the low/medium/high ratings represent discrete levels on a scale of continuous gradation, professional judgement and an awareness of the dynamic relationship between sensitivity and magnitude is required for the assessment. Therefore, the visual impact rating applied to each viewpoint is a factor of the matrix value above as well as variable factors unique to each receptor or location.

### 3.3 Assumptions

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

- The predominant continuation of existing industrial and recreational land use throughout the immediate surrounding area; and
- The retention of significant existing vegetation where possible to help maintain the existing landscape character, habitat and key viewsheds.

## Section 4

### Visual Analysis of Site and Study Area

#### 4.1 Land Use and Character of Surrounding Area

(Refer to Appendix A: Figure 4.1 - RDC site Context Plan)

The RDC site is located in a broad valley surrounded by low undulating hills extensively modified by urban development. The valley is aligned approximately north-south and is principally comprised of natural vegetation and open space areas within the Eastern Creek floodplain, with a still developing corridor of heavy industry on the western edge of the valley.

The adjacent slopes to the east and west have gentle grades and are characterised by low density residential development, predominantly in the form of detached housing. The principle landscape character types surrounding the RDC site have been identified in Appendix A: Figure 4.2 - Existing Landscape Character Plan.

Close to the RDC site, the valley is crossed by one major road and the Main Western Railway Line. The M7 Motorway traces the western edge of the industrial corridor and separates it from the residential areas immediately to its west.

Nurragingy Reserve abuts the eastern boundary of the RDC site and contains dense stands of River Flat Eucalypt Forest (RFEF) and Cumberland Plain Woodland (CPW), which periodically open out to informal grassed areas and picnic bays. The Reserve is traversed by Eastern Creek and is joined by Angus Creek which enters the Reserve halfway along the eastern boundary of the RDC site.

To the south, the Main Western Railway Line separates the RDC site from Blacktown Olympic Centre, which comprises a number of athletic and sports fields in a predominantly open grassed setting, with a few clusters of trees and some buildings.

The OneSteel Mini Mill, comprised of large bulky sheds and a 45m tall stack is located on the neighbouring property, immediately to the west of the RDC site, and by virtue of their height and bulk, constitute a landmark within the visual catchments in which it is contained (Refer to Appendix A: Figure 5.2.7: Viewpoint 7 - View from Rooty Hill Reserve).

The northern boundary of the RDC site faces the industrial corridor extending to the north. Several sites within this corridor are currently undergoing development or have been cleared of vegetation in preparation for development, including a large cleared area to the north of the Humes facility which adjoins the RDC site to the north.

## Section 4

### Visual Analysis of Site and Study Area

#### 4.2 Existing Landscape Character of the RDC site

The RDC site includes the proposed Holcim RDC site and a railway siding area adjacent to the existing Main Western Railway Line and North Parade. Five distinct character precincts can be identified within the RDC site as listed below and illustrated in Appendix A: Figure 4.2 - Existing Landscape Character Plan.

- 1) Precinct 1 - Existing industrial buildings, facilities and plant in the northern part of the RDC site currently occupied by Humes
- 2) Precinct 2 - Predominantly open cleared area, dominated by weed infested stockpiles, in the central part of the RDC site
- 3) Precinct 3 - Tall native vegetation following the line of Angus Creek. The vegetation consists of River Flat Eucalypt Forest (RFEF) and Cumberland Plain Woodland (CPW) of moderate and poor quality. (Refer to the Flora and Fauna Assessment for further information on the existing vegetation and Appendix A: Figure 4.3 - Existing Vegetation Communities Plan)
- 4) Precinct 4 - Predominantly open grassed area adjacent to the railway tracks and North Parade east of the M7 Motorway
- 5) Precinct 5 - Unkempt grassed area and drainage swale with woody weeds adjacent to the railway tracks west of the M7 Motorway

#### 4.3 Existing Visual Intrusions

A visual intrusion is defined here as an element that significantly contrasts or conflicts with the broader landscape context in which it is located. The intrusive nature may be in terms of colour, texture, form, scale, use or a combination of these. There are several existing built elements within the landscape surrounding the RDC site that can be considered to create a visual intrusion from various locations within the Study Area.

Elements that create a significant visual intrusion within the immediate area surrounding the RDC site include the OneSteel Mini Mill structures, the M7 Motorway and the Main Western Railway Line corridor (refer to Figures 4.3.1 to 4.3.6 below).

##### 4.3.1 Industrial Corridor



Figure 4.3.1 - View of One Steel Mini Mill site, looking south from Kellogg Road

## Section 4

### Visual Analysis of Site and Study Area



**Figure 4.3.2** - View of One Steel Mini Mill site, looking north-east from Rooty Hill Reserve



**Figure 4.3.3** - View of Humes site, looking south from Woodstock Avenue entrance to Nurragingy Reserve

#### 4.3.2 Main Western Railway Corridor



**Figure 4.3.4** - View of North Parade, looking west towards M7 Motorway

## Section 4

### Visual Analysis of Site and Study Area



Figure 4.3.5 - View of Rail Corridor, looking east towards M7 Motorway

#### 4.3.3 M7 Motorway



Figure 4.3.6 - View of M7 Motorway, looking south-east towards Eastern Road

#### 4.4 View Catchment Analysis

The primary view catchment for the RDC site, as based upon theoretical line of sight mapping, is largely defined by the low ridges of the valley surrounding the RDC site. These occur in the residential areas to the east and west of the Site and in Rooty Hill Reserve to the south.

However the majority of potential views to the RDC site within these view catchments are obscured by vegetation or built form and the screening provided by these features is enhanced by the gently undulating nature of the topography. Several significant visual obstructions surrounding the RDC site block the majority of views from the west, north-west and south-west. These include the embankments and overpass structures that comprise the M7 Motorway, existing woodland vegetation along the Angus Creek corridor and industrial plant

## Section 4

### Visual Analysis of Site and Study Area

immediately to the west and north-west of the Site.

Similarly, vegetation within Nurragingy Reserve obstructs views to the Site from roads and suburbs further east and north-east. The ridgeline, vegetation and existing industrial buildings located to the north of the Site screen most views to the RDC site from the north.

Appendix A: Figure 4.4 - View Catchment Analysis Plan and Figure 5.1 - Viewpoint Location Plan illustrate the key locations from which the RDC site would be viewed and the nature of these views. These key viewpoints are described and assessed in detail in Section 5.

#### 4.5 Potential Areas of High Visual Sensitivity

The areas listed below were identified as potentially having high sensitivity to the proposed development due to their elevated location, and predominant use for residential and leisure based activity. Viewers at these locations are likely be stationary or on foot, increasing their exposure to possible views of the development. Refer to Appendix A: Figure 4.1 - RDC Site Context Plan:

- Nurragingy Reserve
- Blacktown Olympic Centre
- Plumpton Residential Area
- Doonside Residential Area
- Rooty Hill Residential Area
- Rooty Hill Town Centre
- Rooty Hill Reserve

All of the areas listed above were included in the analysis of the approved RDC visual impact assessment. The proposed modified RDC will not affect any new or additional areas of high visual sensitivity other than those assessed for the approved RDC development.

## Section 5

### Landscape Visual Impact Assessment

#### 5.1 Visual Impact Assessment Overview

##### 5.1.1 Proposed Regional Distribution Centre - Modification Project

Appendix A: Figure 5.1 - Viewpoint Location Plan indicates the position and orientation of the 12 key receptors and viewpoints relevant to the visual assessment in relation to the RDC site.

Following the methodology set out in Section 3, photographs were taken from these 12 key locations surrounding the RDC site. Using these photos in addition to field notes and desktop analysis, a sensitivity rating has been applied to each viewpoint location using the methodology set out in Table 3.1.

These viewpoint photos were then overlaid with geographically matched views of the proposed modified RDC development taken from the 3D computer model. This photomontage overlay illustrates the extent of proposed built form that would be potentially visible from these locations.

Using the photomontage image in addition to field notes and desktop analysis, a magnitude rating has been applied to each viewpoint using the methodology set out in Table 3.2. Each photomontage gives an impression of the potential magnitude of visual change that each key view is likely to experience.

The photomontage includes mitigation and screening effects from landscape measures illustrated in Appendix A: Figures 7.1 - Landscape Principles and Figures 7.2 and 7.3 - Landscape Master Plan. Proposed vegetation has been illustrated at maturity or the same stage of development as existing vegetation within the RDC site at the time of site assessment.

A final Visual Impact Rating for each of the key viewpoints potentially affected by the proposed modified RDC is shown in Section 5.2. These ratings are compared with the anticipated visual impacts for each viewpoint under the approved RDC scheme to establish any potential change in visual impact between the approved and modified RDC proposals.

Visual Impact Ratings for the proposed RDC are summarised in Section 5.3- Table 5.3.1 Summary of Key Viewpoint Visual Impact Assessment.

## Section 5

### Landscape Visual Impact Assessment

#### 5.2 Visual Impact Assessment from Key Viewpoints

Viewpoint 1: Nurragingy Reserve (North)		
<b>Figure Reference</b>	5.2.1	
<b>Location Coordinates</b>	S 33° 45' 48.4", E 150° 51' 21.5"	
<b>Distance from Site</b>	Approx. 150m north-east of Site	
<b>Description of Setting</b>		
Open grass parkland enclosed by native woodland with scattered picnic shelters and copses of trees.		
<b>Description of Existing View</b>		
<p>The existing view from this location is dominated by remnant native trees scattered throughout the grassed clearing with visible built structure limited to a few picnic shelters and some overhead wires. A number of locations along the western and southern boundary of Nurragingy Reserve have filtered views into the Site (refer to Appendix A: Figure 4.4).</p> <p>Existing vegetation along the Reserve's western boundary as well as vegetation within the RDC site screen the majority of views into the Site, however, in certain areas the density and width of the vegetation is insufficient to completely prevent visual penetration. These views generally extend a short distance and include the following:</p> <ul style="list-style-type: none"> <li>▪ Grass, weeds and disturbed ground of the open area in the northern half of the Site</li> <li>▪ Industrial plant near the eastern boundary of the Humes site</li> <li>▪ RFEF &amp; CPW along the line of Angus Creek</li> <li>▪ The grassed area beside the existing railway tracks</li> </ul>		
<b>Description of Approved RDC View</b>		
<p>Filtered views of the bulk storage bins would occur with a portion of the bin structures clearly visible above the tree line from several locations within Nurragingy Reserve, most notably the open grassed area near the north-eastern boundary of the RDC site (refer to Appendix B: Figure 5.2 - Photo Documentation and Figure 6.2 - Photomontage 1).</p> <p>Proposed native tree and shrub plantings within the RDC site to supplement the existing boundary plantings within the Reserve would reduce the visual impact of the Approved RDC at these locations (refer Appendix B: Figures 7.1, LSK-001 and LSK-002).</p>		
<b>Description of Proposed Modified RDC View</b>		
<p>Filtered views of the on-ground concrete storage bins will occur from some locations along the western boundary of Nurragingy Reserve, most notably the open grassed area near the north-eastern boundary of the RDC site (refer to Appendix A: Figures 5.1 and 5.2.1). The bulk of the proposed structure will remain below the existing tree line however glimpses from several locations within the Reserve may be possible.</p> <p>Proposed native tree and shrub plantings within the RDC site and along the boundary with the Reserve to reinforce the existing boundary vegetation will reduce the chance of views of the proposed Modified RDC from this part of the Reserve (refer to Section 7 and Appendix A: Figures 7.1 and 7.2).</p>		
<b>Comparative Analysis</b>		
<p>Short term visual impacts will be minor, and less than the Approved RDC project due to reduced heights and bulk of the proposed bin structures. Long term visual impacts will likely become negligible over time as proposed screening vegetation matures.</p>		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
High	Negligible to Low	Negligible to Minor



## Section 5

### Landscape Visual Impact Assessment

Viewpoint 2: Nurragingy Reserve (South)		
<b>Figure Reference</b>	5.2.2	
<b>Location Coordinates</b>	S 33° 45' 56.8", E 150° 51' 20.5"	
<b>Distance from Site</b>	Approx. 90m east of Site	
<b>Description of Setting</b>		
Open parkland surrounded by patches of native woodland with scattered picnic shelters adjacent to sealed access road and informal gravel carparks.		
<b>Description of Existing View</b>		
The view is facing west from picnic shelters adjacent to the main access road and parking area. The view is dominated by woodland trees and scrub along Angus Creek and the eastern boundary of the Site. A number of locations along the western and southern boundary of Nurragingy Reserve have filtered views into the Site (refer to Appendix A: Figure 4.4).		
Existing vegetation along the Reserve's western boundary as well as vegetation within the RDC site screen the majority of views into the Site, however, in certain areas the density and width of the vegetation is insufficient to completely prevent visual penetration. These views generally extend a short distance and include the following:		
<ul style="list-style-type: none"> <li>▪ Grass, weeds and disturbed ground of the open area in the northern half of the Site</li> <li>▪ Industrial plant near the eastern boundary of the Humes site</li> <li>▪ RFEF &amp; CPW along the line of Angus Creek</li> <li>▪ The grassed area beside the existing railway tracks</li> </ul>		
<b>Description of Approved RDC View</b>		
A photomontage assessment of the Approved RDC was not taken from Viewpoint 2, however on-site analysis and comparison of the approved and modified RDC layouts indicates filtered views of the approved bulk storage bins would occur, with a portion of the bins and conveyor structures clearly visible through the trees from this location.		
Proposed native tree and shrub plantings within the RDC site along Angus Creek and along the Reserves western boundary to supplement the existing vegetation would reduce the visual impact of the Approved RDC at these locations.		
<b>Description of Proposed Modified RDC View</b>		
Filtered views of the on-ground concrete storage bins will occur from some locations along the western boundary. The existing vegetation along the Angus Creek corridor will screen the majority of the Modified RDC development from the picnic shelters surrounding Viewpoint 2 (refer to Appendix A: Figures 5.1 and 5.2.2).		
Proposed native tree and shrub plantings to supplement the existing boundary plantings within the RDC site and within the Reserve will further reduce the visual impact of the Modified RDC at this location (refer to Section 7 and Appendix A: Figures 7.1 and 7.2).		
<b>Comparative Analysis</b>		
Short term visual impacts will be minor and less than the Approved RDC project due to reduced heights and bulk of the proposed bin structures. Visual impacts will potentially reduce over time as proposed screening vegetation matures.		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
High	Low	Minor

## Section 5

### Landscape Visual Impact Assessment

Viewpoint 3: North Parade - Main Western Railway Corridor (Facing SW)		
<b>Figure Reference</b>	5.2.3	
<b>Location Coordinates</b>	S 33° 46' 4.55", E 150° 51' 15.18"	
<b>Distance from Site</b>	South-eastern corner of Site	
<b>Description of Setting</b>		
Facing south-west in open grassland along southern boundary of Site adjacent to railway with surrounding scattered native woodland.		
<b>Description of Existing View</b>		
The area is currently grassed, bounded by native vegetation on the northern edge. The RFEF vegetation adjacent to Angus Creek obstructs any views to the northern part of the RDC site from this location.		
North Parade is a single lane asphalt accessway that runs adjacent to the Main Western Railway Line and has extended views of the existing rail corridor and associated infrastructure, from the M7 Motorway in the west to the eastern side of Nurragingy Reserve (refer to Appendix A: Figure 4.4 - View Catchment Analysis Plan). High voltage electricity lines and poles are located above along the length of the rail corridor. There are limited views from North Parade over the rail lines into the Blacktown Olympic Centre site to the south.		
<b>Description of Approved RDC View</b>		
North Parade will be relocated a small distance to the north. The southern area of Nurragingy Reserve would have filtered views into the RDC site, primarily of the relocated North Parade, the proposed noise wall and the existing and proposed native tree and shrub plantings (refer to Appendix B: Figure 5.2 - Photo Documentation and Figure 6.4 - Photomontage 2).		
Views to the south of the railway sidings and main rail corridor would be obstructed by the proposed noise wall and landscaping. Rail passengers and crews will have passing views of the proposed rail sidings and aggregate unloading facility and operational activities.		
<b>Description of Proposed Modified RDC View</b>		
East of the proposed dump station, views into the RDC site from Nurragingy Reserve would be blocked by the proposed 3m high noise wall along the Reserves southern boundary and associated native ornamental shrub planting (refer to Appendix A: Figures 2.1, 5.2.3 and 7.2).		
Blacktown Council plan to close North Parade. Therefore viewers at this location will mostly consist of Holcim workers, rail maintenance crew and Council workers. Passengers on the Main Western Rail Line will have passing views of the proposed rail sidings, conveyor and rail unloading facility. Viewers will also receive sporadic views of operational activities, predominantly train unloading and heavy vehicular movements.		
Visual impacts will be moderate to major for viewers within the rail corridor, however the sensitivity of these viewers will be low due to the closing of North Parade and the amount of existing rail and electricity infrastructure. Visual impacts will be negligible to minor for viewers within the southern and eastern areas of Nurragingy Reserve.		
<b>Comparative Analysis</b>		
The overall visual impact of the Modified RDC from the Main Western Rail Corridor will be less than the Approved RDC project due to the closure of North Parade and the relocation of the proposed noise wall. Visual impacts will potentially reduce over time as proposed screening vegetation matures.		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
Low	High	Moderate to Major

## Section 5

### Landscape Visual Impact Assessment

Viewpoint 4: North Parade - Main Western Railway Corridor (Facing NE)		
<b>Figure Reference</b>	5.2.4	
<b>Location Coordinates</b>	S 33° 46' 7.45", E 150° 51' 9.75"	
<b>Distance from Site</b>	South-western corner of Site	
<b>Description of Setting</b>		
Facing northeast in open grassland along southern boundary of Site adjacent to railway with surrounding scattered native woodland.		
<b>Description of Existing View</b>		
North Parade is a single lane asphalt accessway that runs adjacent the railway line and has immediate views of the existing tracks and associated infrastructure (refer to Appendix A: Figures 5.1 and 5.2.4 - Viewpoint 4).		
The area is currently grassed, bounded by native vegetation on the northern edge. The River Flat Eucalypt Forest vegetation adjacent Angus Creek obstructs any views to the northern part of the Site from this location.		
<b>Description of Approved RDC View</b>		
East of the rail unloading facility views from the relocated North Parade will be obstructed by the proposed 5 metre high noise wall and associated native ornamental shrub planting (refer to Appendix B: Figure 6.4 - Photomontage 2). To the west, close range views of the tracks will be maintained.		
The conveyor belt, rail unloading facilities and associated plant will also be evident from North Parade, although native ornamental tree and shrub planting will lessen the impact of these elements. Viewers will also receive sporadic views of operational activities, predominantly train unloading and vehicular movements.		
Viewers at this location will largely consist of Holcim workers, rail maintenance crew and Council workers, as North Parade is closed to vehicle access.		
East of the M7 overpass, travellers on the Main Western Line would receive close range views of the proposed railway siding, noise wall, aggregate unloading facilities and associated plant. Proposed tree, shrub and groundcover plantings will lessen the impacts of these views (refer to Appendix B: Figure 7.1)		
<b>Description of Proposed Modified RDC View</b>		
Blacktown Council plan to close North Parade. Therefore viewers at this location will mostly consist of Holcim workers, rail maintenance crew and Council workers. Passengers on the Main Western Rail Line will have passing views of the proposed rail sidings, conveyor and rail unloading facility. Viewers will also receive sporadic views of operational activities, predominantly train unloading and heavy vehicular movements. Native tree and shrub planting will lessen the impact of these elements.		
Visual impacts will be moderate to major for viewers at this location, however the sensitivity of these viewers will be low due to the closing of North Parade and the amount of existing rail and electricity infrastructure.		
<b>Comparative Analysis</b>		
The overall visual impact of the proposed Modified RDC from this location will be less than the Approved RDC project due to the closure of North Parade. Visual impacts will potentially reduce over time as proposed screening vegetation matures.		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
Moderate	High	Moderate to Major

## Section 5

### Landscape Visual Impact Assessment

Viewpoint 5: Main Western Railway Corridor (Rooty Hill Station Platform)		
<b>Figure Reference</b>	5.2.5	
<b>Location Coordinates</b>	S 33° 46' 16.4", E 150° 50' 45.8"	
<b>Distance from Site</b>	Approx 500m west of Site	
<b>Description of Setting</b>		
Facing east on open platform, adjacent to open car parking area to north.		
<b>Description of Existing View</b>		
The tracks and platforms of Rooty Hill Station have immediate views of an unkempt grassed area and drainage swale with woody weeds. (Refer to Appendix A: Figure 5.1 and Figure 5.2.5 - Viewpoint 5). Long distance views east along the rail corridor are interrupted by overhead structures and wires, with views to the south restricted by tall screen planting.		
<b>Description of Approved RDC View</b>		
West of the M7 overpass, the tracks and platforms of Rooty Hill Station would view the proposed railway siding and noise wall (refer Appendix B: Figure 6.10 - Photomontage 5). An existing unkempt grassed area and drainage swale with woody weeds located northerly adjacent to the tracks would be screened by the proposed noise wall. Views of the carpark adjacent to the Station would also be obstructed by the noise wall and planting.		
<b>Description of Proposed Modified RDC View</b>		
The siding shown in the Approved RDC project has been altered under the Modified RDC proposal to terminate east of the M7 overpass during the initial phase of the development. Therefore, in the short term the tracks and platforms west of the M7 will have limited long distance views of the additional siding works as the existing tracks and rail activity dominate the existing view and the RDC site is largely screened by the M7 overpass.		
The proposed works within the RDC site for the initial phase will have negligible impact on views from Rooty Hill Station.		
<b>Comparative Analysis</b>		
Any future extension of the rail siding as part of subsequent development phases will be the same as under the Approved RDC project.		
The overall visual impact of the proposed Modified RDC from this location will be less than the Approved RDC project in the short term, and will have no greater visual impact from this location in the long term than the Approved RDC project.		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
Low	Negligible to Low	Negligible to Minor

## Section 5

### Landscape Visual Impact Assessment

Viewpoint 6: Blacktown Olympic Centre		
<b>Figure Reference</b>	5.2.6	
<b>Location Coordinates</b>	S 33° 46' 19.0", E 150° 51' 06.1"	
<b>Distance from Site</b>	Approx 375m south of Site	
<b>Description of Setting</b>		
Large open space with athletics track and surrounded by extensive grassed areas and landscaped carriageways adjacent to M7 motorway.		
<b>Description of Existing View</b>		
Clear views toward the Site occur from a number of locations within the Blacktown Olympic Centre (refer to Appendix A: Figures 4.4 and 5.1). The views are primarily of the existing vegetation along Angus Creek and the grassed southern area of the Site adjacent to the railway line, which is partly obstructed by the raised tracks.		
<b>Description of Approved RDC View</b>		
The tops of the bulk storage bins are the main elements which would be visible from Blacktown Olympic Centre, extending above the tree line (refer to Appendix B: Figure 6.6 - Photomontage 3). Although the bins are situated relatively close to the view, the dominance of the foreground vegetation reduces the visual impact from this location.		
The rail unloading facility will also be visible from certain vantage points within Blacktown Olympic Centre, however the impacts of these will be minimal due to the proposed noise wall.		
<b>Description of Proposed Modified RDC View</b>		
The tops of the on-ground concrete storage bins are the main elements which may be partially visible from Blacktown Olympic Centre, partially extending above the tree line (refer to Appendix A: Figure 5.2.6 - Viewpoint 6). Although the bins are situated relatively close to the view, the dominance of the foreground vegetation reduces the visual impact from this location.		
The rail unloading facilities will also be partially visible from certain vantage points in this area, however the impacts of these will be minimal due to the nature of the athletic activities taking place within the Blacktown Olympic Centre, the raised bench of the main tracks as well as proposed mitigating vegetation along the rail corridor.		
<b>Comparative Analysis</b>		
Short term visual impacts will be minor, and less than the Approved RDC project due to reduced heights and bulk of the proposed bin structures and the relocation of the proposed noise walls. Visual impacts will potentially reduce over time as existing and proposed screening vegetation matures.		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
Moderate	Low	Minor

## Section 5

### Landscape Visual Impact Assessment

Viewpoint 7: Rooty Hill Reserve and Eastern Road		
<b>Figure Reference</b>	5.2.7	
<b>Location Coordinates</b>	S 33° 46' 36.3", E 150° 51' 04.1"	
<b>Distance from Site</b>	Approx 900m south of Site	
<b>Description of Setting</b>		
Elevated location of extensive open space with undulating grassed slopes and copses of woodland vegetation overlooking surrounding residential neighbourhoods and industrial areas.		
<b>Description of Existing View</b>		
<p>Rooty Hill Reserve has 360° views, including surrounding residential areas, the industrial corridor, open space and reserve areas, the recently completed M7 Motorway and the Main Western Railway Line (refer to Appendix A: Figures 5.1 and 5.2.7).</p> <p>The views toward the Site, approximately 1km away, are dominated by the existing vegetation within the RDC site and adjacent Nurragingy Reserve, industrial buildings and plant and in particular those of the Onesteel Mini Mill.</p> <p>The parts of Rooty Hill Reserve which possess views of the RDC site currently do not contain any formal recreational facilities and therefore attract relatively few recreational users.</p> <p>There are currently intermittent views toward the Site along Eastern Road, from adjacent to Rooty Hill Reserve to the eastern boundary of Blacktown Olympic Centre. These views take in the vegetation along Angus Creek and the area beside the Main Western Railway Line.</p>		
<b>Description of Approved RDC View</b>		
<p>The tops of the bulk storage bins and silos would be the main element of the Approved RDC visible from Rooty Hill Reserve, protruding above the vegetation along Angus Creek (refer to Appendix B: Figure 6.8 - Photomontage 4).</p> <p>While these elements would be clearly visible from this vantage point, the presence of other industrial buildings and plant, particularly those in the adjacent OneSteel Mini Mill site, effectively and significantly reduces their potential visual impact. Their impact would be further reduced by the colour of the bins and silos, which will be chosen to be sympathetic to the surrounding native vegetation.</p>		
<b>Description of Proposed Modified RDC View</b>		
<p>The visible extent of the proposed bins from Rooty Hill Reserve would be reduced due to their decrease in height. Intermittent views of the tops of the on-ground concrete storage bins will be possible along Eastern Road, although the existing vegetation planted within the M7 corridor around the RDC site would further limit these views.</p>		
<b>Comparative Analysis</b>		
<p>Visual impact of the Modified RDC proposal will be minor, due to the distance of the views combined with the existing character and prominence of the OneSteel Mini Mill plant and Blacktown Olympic Centre facilities. The overall visual impact of the Modified RDC from this location will be less than the Approved RDC project due to the reduced height of the bin structures.</p>		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
Moderate	Negligible to Low	Minor

## Section 5

### Landscape Visual Impact Assessment

Viewpoint 8: M7 Motorway		
<b>Figure Reference</b>	5.2.8	
<b>Location Coordinates</b>	S 33° 46' 18.8", E 150° 50' 59.9"	
<b>Distance from Site</b>	Approx 375m south of Site	
<b>Description of Setting</b>		
Elevated location on grassed, north-facing embankment planted with native woodland vegetation.		
<b>Description of Existing View</b>		
Between Eastern Rd overbridge and the Main Western Railway Line there are currently extensive views over the Blacktown Olympic Centre and railway corridor to the RDC site, primarily of the grassed area adjacent the existing railway tracks and the vegetation along Angus Creek (refer to Appendix A: Figures 5.1 and 5.2.8).		
<b>Description of Approved RDC View</b>		
Partial views of the tops of the bulk storage bins would occur along the M7 carriageway (refer to Appendix B: Figure 6.12 - Photomontage 6). The distance of these views combined with the existing visual intrusion of the OneSteel Mini Mill plant reduce the visual impact of these views. Views from the M7 are likely to be limited once the proposed vegetation to be planted within the M7 corridor matures.		
<b>Description of Proposed Modified RDC View</b>		
Partial views of the tops of the on-ground concrete storage bins may occur along the M7 carriageway (refer to Appendix A: Figure 5.2.8 - Viewpoint 8). The sensitivity of viewers along the M7 Motorway will be low due to the industrial elements in the surrounding area, low pedestrian or cyclist presence and the introverted focus and high speed nature of the motorway.		
The distance of these views combined with the existing visual intrusion of the OneSteel Mini Mill plant and Blacktown Olympic Centre facilities as well as screening provided by existing vegetation maturing along the M7 corridor will further reduce the visual impact of these views.		
<b>Comparative Analysis</b>		
The overall visual impact of the Modified RDC from this location will be negligible to minor, and less than the Approved RDC project due to the reduced height of the bin structures and the removal of the noise wall previously proposed along the southern side of the Main Western Railway Line.		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
Low	Negligible to Low	Negligible to Minor

## Section 5

### Landscape Visual Impact Assessment

Viewpoint 9: Rooty Hill Town Centre Carpark		
<b>Figure Reference</b>	5.2.9	
<b>Location Coordinates</b>	S 33° 46' 16.2", E 150° 50' 38.8"	
<b>Distance from Site</b>	Approx 500m west of Site	
<b>Description of Setting</b>		
Open car parking area adjacent to main shopping avenue.		
<b>Description of Existing View</b>		
To the west of the M7, the carpark has immediate views of an unkempt grassed area and drainage swale with woody weeds in front of the existing railway tracks and platforms (refer to Figure 5.1 and 5.2.5). Station St, Weston Lane and the car park at the rear of the town centre currently possess views of this space (refer to Appendix A: Figure 5.1 and 5.2.9).		
<b>Description of Approved RDC View</b>		
Under the Approved RDC project, the proposed railway siding from Station St, Weston Lane and the car park adjacent at the rear of the shops would be obstructed by the proposed noise wall and associated screen planting of shrubs and groundcovers (refer Appendix B: Figure 6.14 - Photomontage 7).		
<b>Description of Proposed Modified RDC View</b>		
Under the proposed Modified RDC development, the siding shown in the Approved RDC project has been altered to terminate east of the M7 overpass for the initial phase of the development.		
The proposed works within the RDC site for the initial development phase will have no visual impact on views from Station St, Weston Lane and the car park at the rear of the town centre.		
Any future extension of the rail siding as part of subsequent development phases will be the same as under the Approved RDC project and have only a minor visual impact from this viewpoint.		
<b>Comparative Analysis</b>		
In the short term, the overall visual impact of the proposed Modified RDC will be less than the Approved RDC project from this location and will have no greater visual impact than the Approved RDC project should the rail siding be extended to Rooty Hill Station in the future.		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
Moderate	Negligible to Low	Minor



## Section 5

### Landscape Visual Impact Assessment

<b>Viewpoint 10: Wolseley Street, Rooty Hill Residential Area</b>		
<b>Figure Reference</b>	5.2.10	
<b>Location Coordinates</b>	S 33° 45' 47.54", E 150° 50' 23.56"	
<b>Distance from Site</b>	Approx 1.1km west of Site	
<b>Description of Setting</b>		
Wide residential street sloping gently eastwards towards Site. Significant existing established street tree planting with native canopy trees and overhead wires and poles.		
<b>Description of Existing View</b>		
Views from this area are limited to only partial glimpses of the RDC site, primarily along Wolseley Street and in its vicinity (refer to Figures 5.1 and 5.2.10). Existing houses, fences and vegetation block the majority of potential views. The views which exist are dominated by existing buildings and plant in the industrial corridor.		
<b>Description of Approved RDC View</b>		
Intermittent views of the top of the bulk storage bins would be obtained from this area. The relatively large distance of these views, combined with visual intrusions of the existing industrial buildings and plant near the RDC site and the built form and vegetation in the foreground, will minimise the visual impacts on this area.		
<b>Description of Proposed Modified RDC View</b>		
Views of the tops of the proposed on-ground concrete storage bins may potentially occur in some nearby residential areas. However, despite this area being of high sensitivity to visual change, Viewpoint 10 indicates that the visual impact of the proposed Modified RDC will be negligible from this location, as long distance views are significantly screened by existing built form and street tree planting despite the elevated topography.		
<b>Comparative Analysis</b>		
Overall visual impacts of the Modified RDC proposal on residential areas within Rooty Hill will be less than the Approved RDC project due to reduced heights and bulk of the proposed bin structures. Any visual impacts that do occur will likely reduce further over time as proposed mitigating vegetation and tree planting within the neighbourhood matures.		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
High	Negligible	Negligible

## Section 5

### Landscape Visual Impact Assessment

Viewpoint 11: Plumpton Residential Area		
<b>Figure Reference</b>	5.2.11	
<b>Location Coordinates</b>	S 33° 45' 20.88", E 150° 50' 41.58"	
<b>Distance from Site</b>	Approx 1.1km northwest of Site	
<b>Description of Setting</b>		
<p>Raised Council Reserve with playground and open grassed area with young trees and shrubs. The location has an eastern aspect with some elevation over the area to the east and northeast.</p>		
<b>Description of Existing View</b>		
<p>The majority of views toward the Site from this suburb are obscured by existing houses, fences and vegetation at close range (refer to Appendix A: Figures 5.1 and 5.2.11). Some filtered long-range views exist, particularly on higher ground.</p> <p>These views are currently dominated by the industrial buildings and plant surrounding the RDC site. It is likely that the visual permeability from this locality will be further reduced as the relatively immature vegetation of the suburb becomes more established.</p>		
<b>Description of Approved RDC View</b>		
<p>Intermittent views of the top of the bulk storage bins would be obtained from this area. The relatively large distance of these views, combined with visual intrusions of the existing industrial buildings and plant near the RDC site and the built form and vegetation in the foreground, will minimise the visual impacts on this area.</p>		
<b>Description of Proposed Modified RDC View</b>		
<p>Views of the tops of the proposed on-ground concrete storage bins may potentially occur in some nearby residential areas. However, despite this area being of high sensitivity to visual change, Viewpoint 11 indicates that the visual impact of the proposed Modified RDC will be negligible from this location, as long distance views are dominated and significantly screened by existing built form and tree planting despite the elevated topography.</p>		
<b>Comparative Analysis</b>		
<p>Overall visual impacts of the Modified RDC proposal on residential areas within Plumpton will be less than the Approved RDC project due to reduced heights and bulk of the proposed bin structures. Any visual impacts that do occur will likely reduce further over time as proposed mitigating vegetation and tree planting within the neighbourhood matures.</p>		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
High	Negligible	Negligible

## Section 5

### Landscape Visual Impact Assessment

Viewpoint 12: Doonside Residential Area		
<b>Figure Reference</b>	5.2.12	
<b>Location Coordinates</b>	S 33° 46' 32.73", E 150° 52' 36.82"	
<b>Distance from Site</b>	Approx 2.3km east southeast of Site	
<b>Description of Setting</b>		
Modern residential cul-de-sac running east-west with a slight westerly aspect. Significant trees and palms planted along frontages with moderately dense built form.		
<b>Description of Existing View</b>		
This suburb to the west of the Site has long distance filtered views of the RDC site from over 2kms away (refer to Appendix A: Figure 5.1 and 5.2.12). Existing houses, fences and vegetation block the majority of potential views. The views toward the RDC site are crowned by the Blue Mountains in the background, with extensive tracts of native vegetation in the vicinity of the Site as well as some nearby industrial buildings.		
<b>Description of Approved RDC View</b>		
Intermittent views of the top of the bulk storage bins would be obtained from this area. The relatively large distance of these views, combined with visual intrusions of the existing industrial buildings and plant near the RDC site and the built form and vegetation in the foreground, will minimise the visual impacts on this area.		
<b>Description of Proposed Modified RDC View</b>		
Views of the tops of the proposed on-ground concrete storage bins may potentially occur in some nearby residential areas. However, despite this area being of high sensitivity to visual change, Viewpoint 12 indicates that the visual impact of the proposed Modified RDC will be only negligible to minor from this location due to existing industrial elements, and as long distance views are limited by existing built form and tree planting despite the elevated topography.		
<b>Comparative Analysis</b>		
Overall visual impacts of the Modified RDC proposal on residential areas within Doonside will be less than the Approved RDC project due to reduced heights and bulk of the proposed bin structures. Any visual impacts that do occur will likely reduce further over time as proposed mitigating vegetation and tree planting within the neighbourhood matures.		
<b>Sensitivity</b>	<b>Magnitude</b>	<b>Impact</b>
High	Negligible to Low	Negligible to Minor

## Section 5

### Landscape Visual Impact Assessment

#### 5.3 Summary of Key Viewpoint Assessment

App. Ref.	VP. No.	Visual Impact Rating Approved RDC	Visual Impact Rating Modified RDC	Visual Impact Comparison
5.2.1	1	Minor	Negligible to Minor	Less Impact
5.2.2	2	Minor	Minor	Less Impact
5.2.3	3	Moderate to Major	Moderate to Major	Less Impact
5.2.4	4	Moderate to Major	Moderate to Major	Less Impact
5.2.5	5	Minor	Negligible to Minor	Less or Same
5.2.6	6	Minor	Minor	Less Impact
5.2.7	7	Minor	Minor	Less Impact
5.2.8	8	Negligible to Minor	Negligible to Minor	Less Impact
5.2.9	9	Minor	Minor	Less or Same
5.2.10	10	Negligible	Negligible	Less Impact
5.2.11	11	Negligible	Negligible	Less Impact
5.2.12	12	Negligible to Minor	Negligible to Minor	Less Impact

##### 5.3.1 Overview of Visual Impact Outcomes

Following assessment of the site characteristics and visual criteria discussed in Section 5.2, a range of visual impact ratings have been determined for each key assessment viewpoint based on the proposed modified RDC.

A visual impact rating for each viewpoint in relation to the approved RDC project has also been determined to enable a direct comparison between the approved RDC and the proposed modified RDC.

Table 5.3.1 above illustrates the Visual Impact Ratings of each viewpoint under both the approved and modified RDC proposal. The right hand column shows the anticipated visual outcomes of the proposed modified RDC in comparison to the approved RDC.

While the potential visual impact for a particular viewpoint may actually be reduced under the proposed modified RDC, the visual impact rating for that viewpoint may not change in comparison to the approved RDC rating. This is because the Visual Impact Ratings represent a discrete value, and the actual visual change may not be significant enough to warrant a change in rating.

Table 5.3.1 clearly shows that the proposed modified RDC will have less visual impact from most of the key assessment viewpoints, or in the worst case have the same level of visual impact as the approved RDC.

## Section 6

### Conclusion

#### 6.1 Mitigation of Adverse Visual Effects

The following mitigation measures are recommended for the proposal:

##### 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 RDC site and affected properties where possible should be undertaken to screen parts of the development.
- It is recommended that the density of boundary screen plantings be increased both within the RDC site and potentially in Nurragingy Reserve. Refer to Appendix A: Figure 7.1.
- During construction the extent of clearing should be kept to as low as possible to maximise the screening effect of existing vegetation.

###### Industrial plant colour selection

- The externally visible elements of the on-ground concrete storage bins, the concrete plant silos, concrete batching plant, unloading station and other bulky elements, will be coloured in tones that are sympathetic (i.e. green/brown tones) to the surrounding native vegetation.

###### Lighting design

- The 24/7 day nature of the delivery despatch 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 industrial plant such as the bulk storage bins and silos
  - b) Minimise the spill of light into surrounding sites
  - c) Ensuring that all lighting associated with the modified RDC complies with *Australian Standard AS4282 (INT) 1995 - Control of Obtrusive Effects of Outdoor Lighting*

##### 6.1.2 Construction phase

The construction phase is expected to take approximately 24 months to complete. Measures to reduce visual impacts during this period relate to maintenance of the construction Site in a neat and orderly state.

##### 6.1.3 Operational phase

Measures which can be adopted during the operational phase relate primarily to maintenance of the Site in a clean and orderly state.

## Section 6

### Conclusion

#### 6.2 Summary of Report Findings

The proposed modified Regional Distribution Centre would introduce several industrial buildings, hard surface areas and rail infrastructure into a site bordering significant existing industrial development as well as sensitive public reserve and remnant woodland.

The proposed modified RDC will minimise adverse visual impacts on surrounding visually sensitive areas through mitigative measures such as noise walls, retention of most of the existing vegetation and extensive additional proposed vegetation to obscure the built form.

The land on which the proposal is to be built is predominantly cleared and there would be minimal requirement for additional clearing over most of the RDC site. Some selective clearing will be required within the north-western corner of the RDC site, along the southern and south-eastern areas of the RDC site adjacent to the rail corridor and where the conveyor and accessway crosses Angus Creek. However, the amount of required clearing for the proposed modified RDC will be only slightly more than that required for the approved RDC project.

There would likely be negligible change to the overall vegetation patterns that form the existing landscape character of the RDC site. The overall vegetation structure would be enhanced as plantings proposed in the Landscape Master Plan establish and mature (refer to Appendix A: Figures 7.1 to 7.3).

There is a moderate to high level of existing modification and/or industrial development evident from most of the key receptors identified in this study. This determines a low to moderate sensitivity to the proposed modified RDC at several of the key viewpoint locations.

Areas within or adjacent to the RDC site may experience moderate to major visual impact due to their proximity to the proposed structures, however it is anticipated these receptors/viewers would generally have low sensitivity, being largely restricted to Holcim staff, rail maintenance crews and Council workers.

Rail passengers will experience passing views of the rail sidings and unloading facility, however these views will be of short duration and will not significantly contrast with the character of the wider landscape.

The proposed modified RDC storage bin structures may be partially visible from several locations of moderate to high sensitivity such as surrounding residential neighbourhoods. Due to the relatively large distance of these views and presence of existing industrial development, it is anticipated that the proposed modified RDC will potentially have a negligible to minor visual impact on those residential areas that have long distance views of the RDC site.

In its wider context, the proposed modified RDC development will be generally well absorbed by the existing landscape, particularly from surrounding residential areas and locations frequented by the public as identified in this report.

## Section 7

### Landscape Master Plan

#### 7.1 Landscape Master Plan

The Landscape Master Plan for the RDC site (refer to Appendix A: Figure 7.2) incorporates the principles established in Section 6.1 regarding mitigation of the visual impacts of the Site. Key elements of the landscape design include:

- Ornamental groundcover planting to the Kellogg Rd site entrance
- Small native ornamental tree plantings in the proposed car park area in the Holcim site
- Native ornamental tree and shrub screen planting within the Holcim site along the western site boundary, supplementing existing boundary planting within the OneSteel site.
- Native ornamental shrub and groundcover screen planting to the noise wall adjacent the storage bin facilities.
- Grassed buffer zone with drainage swales between the existing vegetation along Angus Creek and the proposed development.
- Tree and shrub screen planting of Cumberland Plain Woodland/River Flat Eucalypt Forest species within the Holcim site along the eastern site boundary, supplementing existing boundary planting within Nurragingy Reserve where possible.
- Potential additional tree and shrub boundary screen planting of Cumberland Plain Woodland species along the western and southern edge of Nurragingy Reserve (i.e. within the Reserve), supplementing existing boundary planting, where agreed with Council and relevant authorities.
- Tree planting of Cumberland Plain Woodland species within the RDC site between the proposed rail siding and the OneSteel site, reinforcing the edge of the existing vegetation in the OneSteel site.
- Native ornamental shrub and climber screen planting to the noise wall adjacent Rooty Hill Station (not required as part of initial development phase) both within and outside the site boundary.
- Native ornamental tree and shrub planting at frontage of the proposed office building in the Humes site.
- Native ornamental shrub and climber planting along the boundary of the Humes site adjacent the proposed office building and laboratories.
- Potential additional tree and shrub screen planting of Cumberland Plain Woodland species in the road reserve adjacent the northern boundary of the Humes site (i.e. outside the site), supplementing existing boundary plantings, where agreed with Council and the relevant authorities.

## Section 7

### Landscape Master Plan

## 7.2 Indicative Plant Species Lists for Proposed Mitigation and Rehabilitation Works

Appropriate species of trees, shrubs and groundcovers for native ornamental and Cumberland Plain Woodland/River Flat Eucalypt Forest plantings, as identified on the plans are suggested in the following Tables 7.1 to 7.3.

Table 7.1 - Native Ornamental Species		
Botanical Name	Common Name	Mature Height
<b>Trees</b>		
<i>Allocasuarina torulosa</i>	Forest She-Oak	12 - 15m
<i>Casuarina glauca</i>	Swamp Oak	to 15m
<i>Leptospermum juniperinum</i>	Prickly Tea Tree	to 3m
<i>Leptospermum laevigatum</i>	Coastal Tea Tree	to 6m
<b>Shrubs and Groundcovers</b>		
<i>Baeckea densifolia</i>	Weeping Baeckea	to 1m
<i>Baeckea virgata</i>	Twiggy Baeckea	to 4m
<i>Banksia spinulosa</i>	Hair Pink Banksia	to 4m
<i>Callistemon 'Dawson River'</i>	Bottle Brush	to 5m
<i>Callistemon 'Endeavour'</i>	Bottle Brush	to 4m
<i>Callistemon salignus</i>	Willow Bottlebrush	to 8m
<i>Doryanthes excelsa</i>	Gynea Lily	to 3m
<i>Grevillea 'Coconut Ice'</i>	Coconut Ice Grevillea	to 2m
<i>Grevillea 'Honey Gem'</i>	Honey Gem Grevillea	to 4m
<i>Grevillea 'Robyn Gordon'</i>	Robyn Gordon Grevillea	to 1m
<i>Hakea salicifolia</i>	Willow Hakea	to 6m
<i>Kunzea ambigua</i>	Tick Bush	to 3m
<i>Leptospermum 'Cardwell'</i>	Tantoon	to 1m
<i>Leptospermum 'Copper Glow'</i>	Copper Glow	2-3m
<i>Melaleuca linariifolia</i>	Snow in Summer	to 3m
<i>Melaleuca nodosa</i>	n/a	to 3m
<i>Rhagodia nutans</i>	Nodding Salt Bush	0.2m
<b>Grasses</b>		
<i>Dianella caerulea var caerulea</i>	Paroo Lily	to 1m
<i>Dianella revoluta</i>	Spreading Flax Lily	to 1m
<i>Lomandra longifolia</i>	Mat Rush	700mm
<i>Pennisetum 'Nafray'</i>	Nafray	to 0.8m
<b>Climbers</b>		
<i>Cissus antartica</i>	Kangaroo Vine	to 5m
<i>Hardenbergia violacea</i>	False Sarsparilla	to 2m
<i>Pandonea pandorana</i>	Wonga Wonga Vine	to 5m



## Section 7

### Landscape Master Plan

Table 7.2 - River-Flat Eucalypt Forest Species		
Botanical Name	Common Name	Mature Height
<b>Trees</b>		
<i>Angophora floribunda</i>	Rough Barked Apple	18m
<i>Casuarina glauca</i>	Swamp Oak	to 15m
<i>Eucalyptus amplifolia</i>	Cabbage Gum	15m
<i>Eucalyptus moluccana</i>	Grey Box	25m
<i>Eucalyptus tereticornis</i>	Forest Red Gum	45m
<b>Shrubs</b>		
<i>Acacia floribunda</i>	Gossamer Wattle	8m
<i>Acacia parramattensis</i>	Parramatta Wattle	to 15m
<i>Acmena smithii</i>	Lilly Pilly	8m
<i>Backhousia myrtifolia</i>	Grey Myrtle	6m
<i>Bursaria spinosa</i>	Sweet Bursaria	4m
<i>Melaleuca decora</i>	Paperbark	10m
<i>Melaleuca linariifolia</i>	Snow-in-Summer	10m
<i>Melaleuca stypheloides</i>	Prickly Paperbark	10m
<i>Tristaniopsis laurina</i>	Water Gum	10m
<b>Grasses and Groundcovers</b>		
<i>Austrostipa ramosissima</i>	Stout Bamboo Grass	to 2m
<i>Dichelachne micrantha</i>	Shorthair Plume Grass	1.5m
<i>Echinopogon ovatus</i>	Forest Hedgehog grass	1m
<i>Entolasia marginata</i>	Bordered Panic	800mm
<i>Imperata cylindrica</i>	Blady Grass	1m
<i>Lomandra filiformis</i>	Wattle Mat Rush	500mm
<i>Lomandra longifolia</i>	Mat Rush	700mm
<i>Microlaena stipoides v stipoides</i>	Weeping Grass	500mm
<i>Oplismenus aemulus</i>	Basket Grass	300mm
<i>Themeda australis</i>	Kangaroo Grass	500mm

**Section 7**  
Landscape Master Plan

<b>Table 7.3 - Cumberland Plain Woodland Species</b>		
<b>Botanical Name</b>	<b>Common Name</b>	<b>Mature Height</b>
<b>Trees</b>		
<i>Eucalyptus amplifolia</i>	Cabbage Gum	15m
<i>Eucalyptus moluccana</i>	Grey Box	25m
<i>Eucalyptus tereticornis</i>	Forest Red Gum	45m
<b>Shrubs</b>		
<i>Acacia binervia</i>	Two-veined Hickory	10-15m
<i>Acacia falcata</i>	Acacia	4m
<i>Acacia floribunda</i>	Gossamer Wattle	5m
<i>Acacia implexa</i>	Hickory Wattle	12m
<i>Bursaria spinosa</i>	Sweet Bursaria	4m
<i>Melaleuca decora</i>	Paperbark	7m
<i>Melaleuca stypheloides</i>	Prickly Paperbark	10m
<b>Grasses and Groundcovers</b>		
<i>Bossiaea prostrata</i>	Creeping Bossiaea	to 1m
<i>Dianella revoluta</i>	Flax Lily	1m
<i>Echinopogon ovatus</i>	Forest Hedgehog grass	1m
<i>Lomandra longifolia</i>	Mat Rush	700mm
<i>Microlaena stipoides v stipoides</i>	Weeping Grass	500mm
<i>Stipa ramosissima</i>	Bamboo Grass	to 2m
<i>Themeda australis</i>	Kangaroo Grass	500mm

## **Section 8**

### References

NECS (2003) *Environmental Impact Statement Technical Report, Concrete Batching Plant, Kellogg Rd, Rooty Hill NSW*

NECS (2004) *Proposed Regional Distribution Centre Flora and Fauna Assessment*

CONTEXT (2004) *M7 design documentation drawings*

NECS (Oct 2005) *Environmental Assessment Report: Proposed Regional Distribution Centre, Rooty Hill. Vol. 1 - Readymix*

#### **Base Maps and Aerial Data**

Google Maps: [www.google.com/maps](http://www.google.com/maps)



**Visual Impact Assessment**  
Proposed Minor Modification to  
Holcim Regional Distribution Centre (RDC)  
Rooty Hill, NSW

context

# Appendix A:

## Proposed Modified RDC Figures

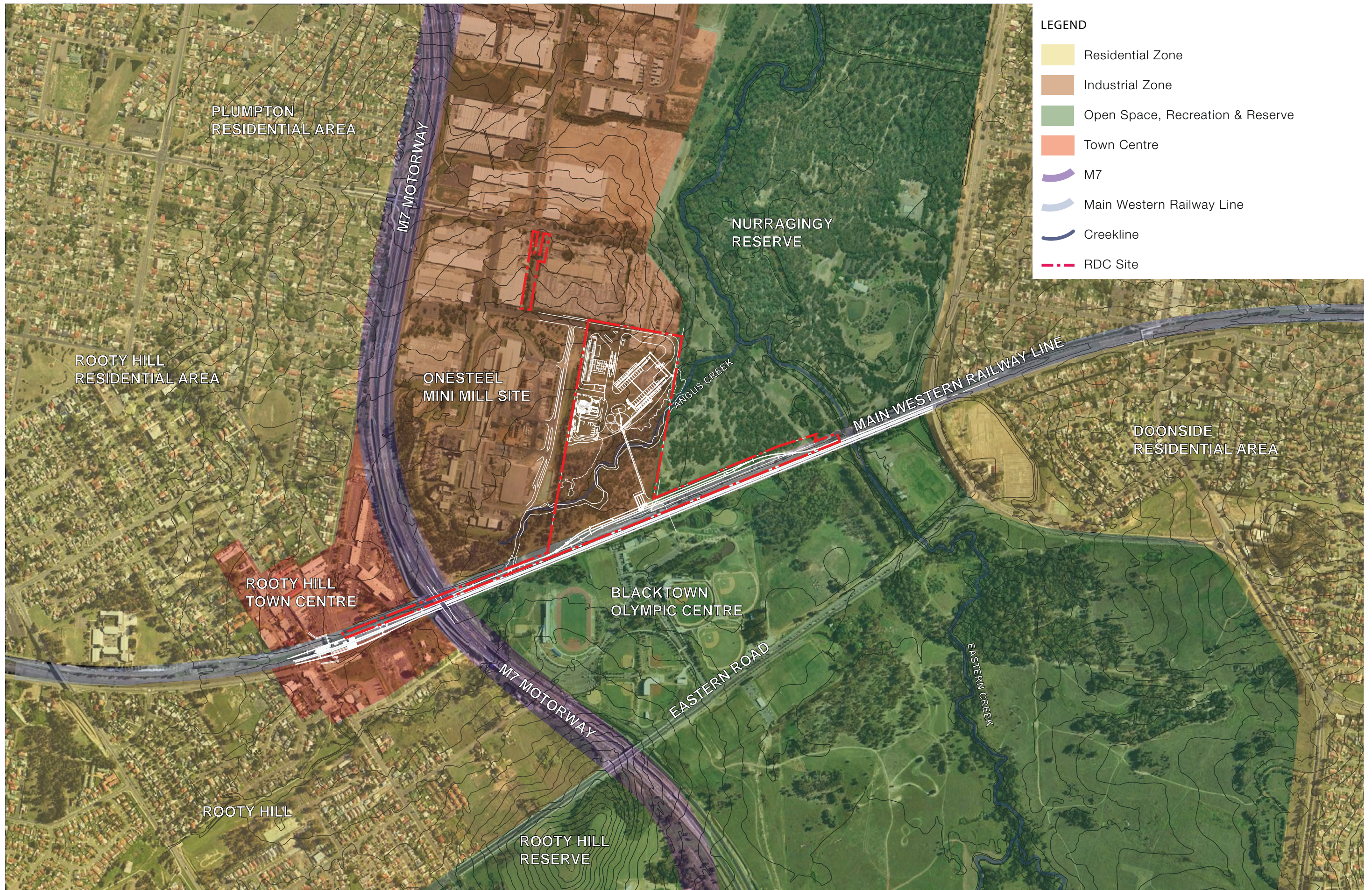
**FINAL**

**Visual Impact Assessment**  
Proposed Minor Modification to  
Holcim Regional Distribution Centre (RDC)  
Rooty Hill, NSW

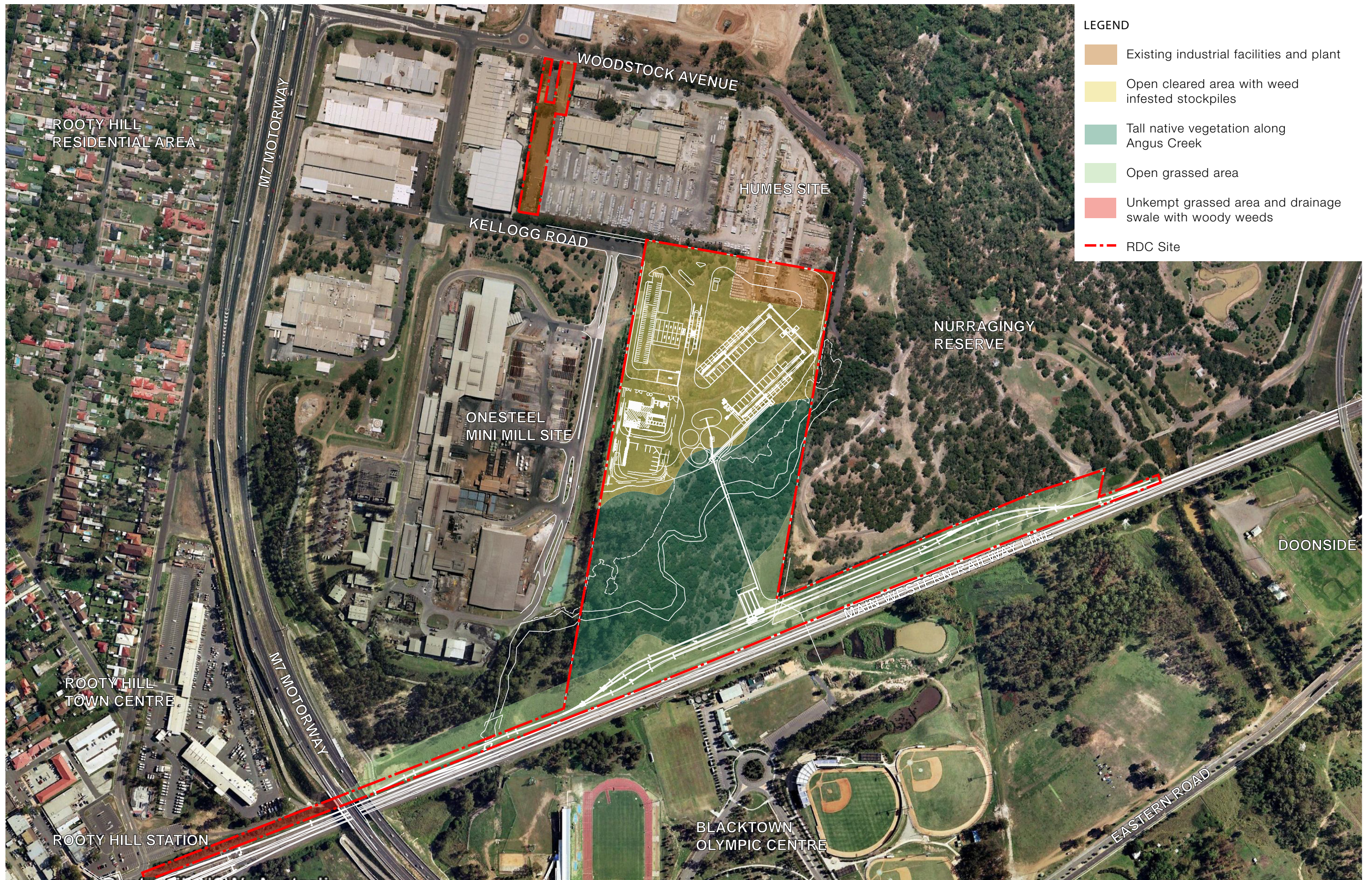
10559 | Issue C | 01 September 2010



**Appendix A: Figure 2.1**  
**Proposed Modified RDC Layout Plan**  
 Proposed Modification to RDC, Rooty Hill

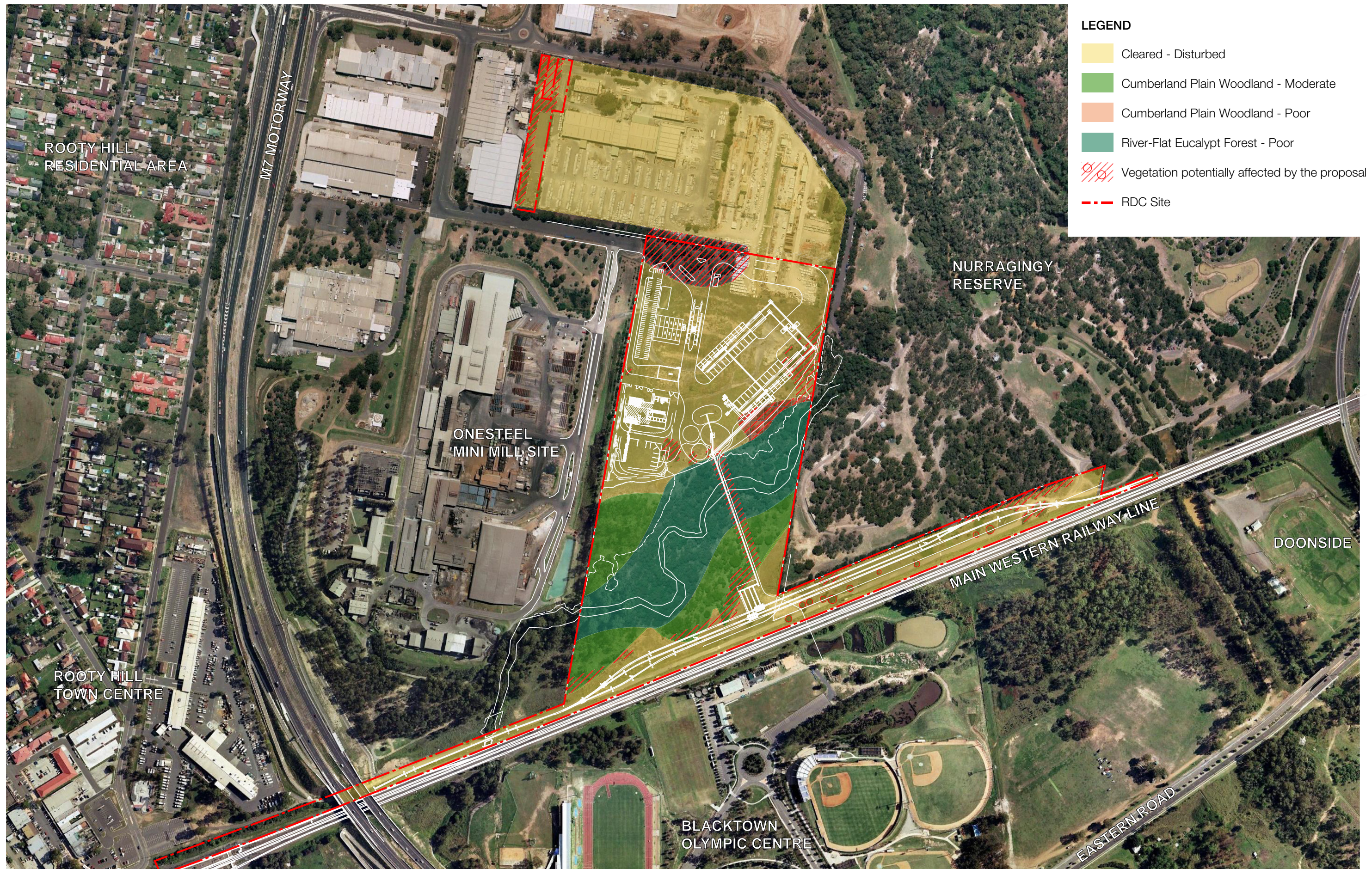


**Appendix A: Figure 4.1**  
**RDC Site Context Plan**  
 Proposed Modification to RDC, Rooty Hill

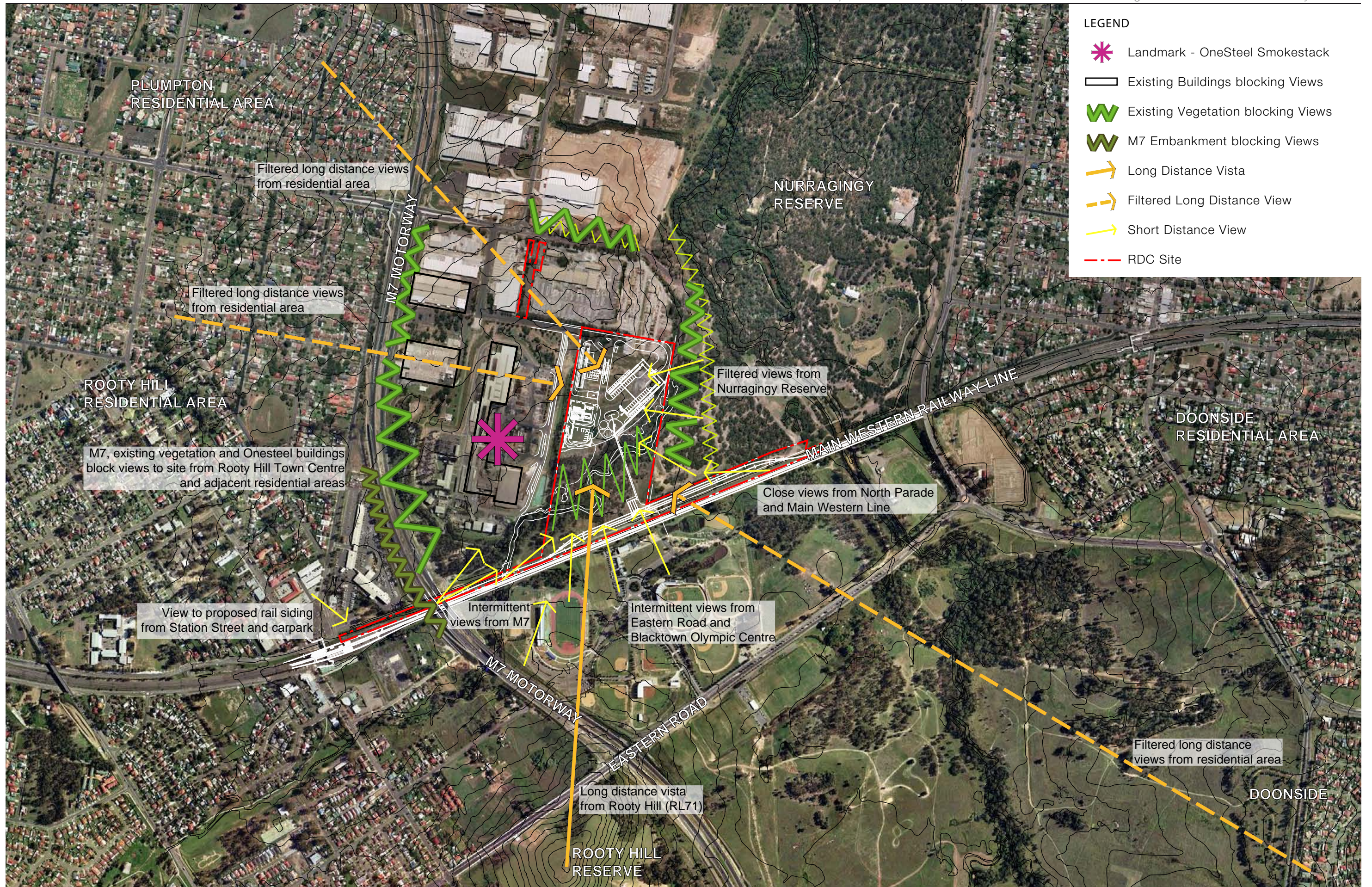


**Appendix A: Figure 4.2**  
**Existing Landscape Character Plan**  
 Proposed Modification to RDC, Rooty Hill





**Appendix A: Figure 4.3**  
**Existing Vegetation Communities Plan**  
 Proposed Modification to RDC, Rooty Hill



Appendix A: Figure 4.4

**View Catchment Analysis Plan**  
Proposed Modification to RDC, Rooty Hill

