

Transport for NSW Transport Access Program Glenbrook Station Upgrade

Landscape Character & Visual Impact Assessment



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Prepared by:	RPS MANIDIS ROBERTS PTY LTD Level 13, 255 Pitt Street Sydney, NSW 2000 Australia	Prepared for:	TRANSPORT FOR NSW Level 5, Tower A, Zenith Centre Chatswood NSW 2067 Australia
T:	+61 2 9248 9800	T:	02 9422 0670
E:	@rpsgroup.com.au	E:	Shani.Archer@transport.nsw.gov.au
		W:	
Author:	Ben Ewins and Tim Connor		
Reviewed:	Natalie Green and Amanda White		
Approved:	Natalie Green		
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1 Terms and acronyms

Table 1 Terms

Term	Description
Blue Mountains City Council	Local Government Area (LGA) for the Proposal area.
Inbound	West-bound trains and stops (heading to the Blue Mountains)
Landscape Character	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.
Landscape Character Zone	An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately adjacent.
Magnitude	A term that combines the judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration.
Outbound	East-bound trains and stops (heading away from the Blue Mountains)
Proposal	Construction and operation of the Glenbrook Station Upgrade
Proposal area	The extent to which the station upgrade would occur, including works to the platform, stairs, the station building and other ancillary items
Road reserve	Public roads that are controlled by a local authority / government or other State authority.
RPS	The author of this Landscape Character, and Visual Impact Assessment report.
Scenic amenity	The overall pleasantness of the views people enjoys of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.
Sensitivity	A term applied to visual receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor.
Viewpoint	Positions looking towards a proposal and considers views from a cluster of receptors.
Visual amenity	The overall pleasantness of the views people take-in of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.
Visual catchment	Extent of potential visibility to or from a specific area, feature or project.
Visual prominence	Is determined by the size, height and colour of proposed infrastructure elements and the degree to which the landscape within which they sit can assist in reducing their visual prominence (e.g. screening vegetation, land-form, etc.).
Visual receptor	Individuals and/or defined groups of people who have the potential to be affected by a proposal. These are sensitive visual receptors such as houses, roads and other infrastructure that is used frequently.

Table 2 Acronyms

Abbreviation	Title
AHD	Australian Height Datum
DCP	Development Control Plan
DDA	Commonwealth <i>Disability Discrimination Act 1992</i>
DSAPT	<i>Disability Standards for Accessible Public Transport</i>
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
FAT	Family Accessible Toilet
LCZ	Landscape Character Zone
LEP	Local Environment Plan
LGA	Local Government Area
REF	Review of Environmental Factors
TfNSW	Transport for NSW

2 Introduction

2.1 Purpose

RPS has been commissioned by Transport for NSW (TfNSW) to undertake a Landscape Character and Visual Impact Assessment for proposed modifications to the Glenbrook Station located on Burfitt Parade, Glenbrook NSW.

The Proposal is part of the Transport Access Program (TAP) which is a NSW Government initiative to ensure that stations meet legislative requirements stipulated within the Commonwealth *Disability Discrimination Act 1992* and the *Disability Standards for Accessible Public Transport 2002* (DSAPT).

This Landscape Character and Visual Amenity Impact Assessment delivers an objective assessment of the probable impacts on the visual environment resulting from the construction of the Proposal. This report outlines results from site assessment and describes the present landscape character. It documents the assessment of visual impact resulting from the Proposal and provides recommendations for suitable mitigation measures.

This Landscape Character and Visual Amenity Impact Assessment supports a Review of Environmental Factors (REF), which has been developed concurrently with this report.

2.2 Study limitations

This assessment is intended to be an objective report based on professional analysis of the concept design. It seeks to establish the anticipated visual impacts of the Proposal on a wide range of viewers. The assessment has been undertaken based on conceptual level information and therefore is generally broad in its approach.

Landscape character and visual impact assessment requires qualitative (subjective) judgements to be made. The assessment process aims to be objective and describe any changes factually. Potential changes as a result of the Proposal have been defined, however the significance of these changes requires qualitative (subjective) judgements to be made. The conclusions of this assessment therefore combine objective measurement and subjective professional interpretation.

The opinions, conclusions and any recommendations in this report are based on assumptions made by RPS described in this report.

2.3 Methodology

This report adopts the industry standard in its approach to visual impact assessment that is process-driven, consistent and based on professional, value judgement of commonly accepted and adopted criteria in the industry.

The methodology adopted for this report is guided by policy and guidelines outlined in '*Beyond the Pavement*' (NSW Roads and Maritime Services') and the '*Environmental Impact Assessment Practice Note Guideline for Landscape character and visual impact assessment 2013*' (NSW Roads and Maritime Service, 2013).

The methodology for this visual impact assessment involves the following activities:

- desktop study using aerial photography to identify the potential visual catchments and possible visual receptors
- groundtruthing of assumptions reached through initial desktop studies
- visiting the Proposal area and reviewing the surrounding vantage points from publicly accessible areas.

- describing and evaluating the existing landscape character and visual environment to establish a baseline for the visual assessment
- mapping the visual envelope based on field studies and data while identifying sensitive visual receptors. Sensitive visual receptors are people who would might experience a visual impact
- undertaking a visual impact assessment using the grading matrix, considering visual sensitivity (of the visual amenity or viewpoints) and the magnitude of the visual change, to arrive at an overall level of effect or impact
- views from habitable room windows, outdoor areas of the home yard dwelling are treated as sensitive receptors. Views from residual land beyond the home yard area (such driveways, cropping lands, easements) are treated as less sensitive receptors
- this assessment adopts the standard methodology of sensitivity relating to proximity - the greater the distance between the visual receptor and the Proposal, the lesser the visual sensitivity of that visual receptor.

Key information reviewed as part of this report included:

- Transport for NSW, 2018, Glenbrook Station Upgrade Preliminary Environmental Assessment Transport Access Program 3 Ref-5981639
- Design Inc, 2018, Glenbrook Station, NSW, Architectural General Arrangement (DRAFT)
- Design Inc, 2018, Glenbrook Station 3D Revit Model (P18-040-AR-Downer TAP Glenbrook_CENTRAL_R18).

3 Proposal outline

3.1 Site description

Glenbrook Station was constructed in the early 1900s (refer Figure 1) and is positioned along the Blue Mountains Line in Glenbrook NSW, approximately 65 kilometres west of the Sydney Central Business District, and 6.5 kilometres west of Penrith, as shown in Figure 2.

Glenbrook has a population of approximately 5,051 people (Australian Bureau of Statistics, 2016) and lies within the Blue Mountains local government area.

As shown in Figure 3, the layout of Glenbrook is representative of a 'planned city' in urban form and has been laid out in a distinctive north-south grid alignment, reflecting the federation-style architectural and urban design trends during this period. Halfway between Glenbrook Station and the Great Western Highway is the civic precinct, which includes the Glenbrook Shops Precinct, Glenbrook Park, Glenbrook Visitor Information Centre, and other community infrastructure.

Topographically, the suburb of Glenbrook contains a high degree of variable terrain, as depicted in Figure 4. The localised topography has dictated the layout and location of Glenbrook's urban form, with much of the existing urban development positioned atop a distinctive plateau to the north of the Proposal area, which is the highest and flattest part of the suburb, for increased development potential.

The Proposal area has been based on the extent to which the station accessibility upgrade would occur, including works to the platform, stairs, the station building and several other ancillary items.

The Proposal area has been heavily excavated to allow for the construction of the station and railway line at the required engineered specifications. This has resulted in the rail infrastructure being somewhat 'sunken' in its position relative to its surrounding urban and natural landscape, so the surrounding development tends to have a position of prospect over the rail corridor, increasing visibility and exposure to the rail corridor.

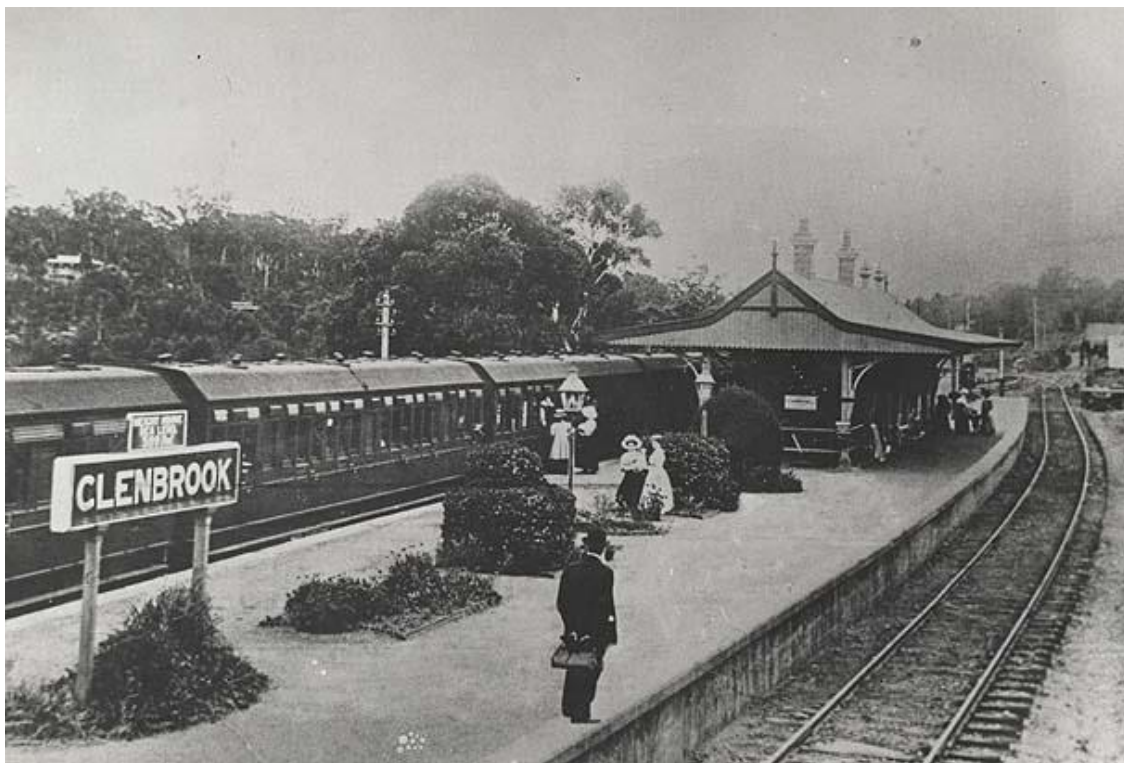


Figure 1 Glenbrook Station, 31 December 1900 (State Records & Archives, 2018)

Table 3 Proposal area particulars

Aspect	Details
Station name	Glenbrook Station
Address	Burfitt Parade, Glenbrook NSW
LGA	Blue Mountains
Coordinates (approx.)	33°46'8.45"S, 150°37'14.43"E
Site total area (approx.)	400 m ²
Lot and Plan	100//DP1188033
Land zoning (site)	SP2 Infrastructure
Adjacent land zoning	RE1 Public Recreation, E2 Environmental Conservation, E4 Environmental Living

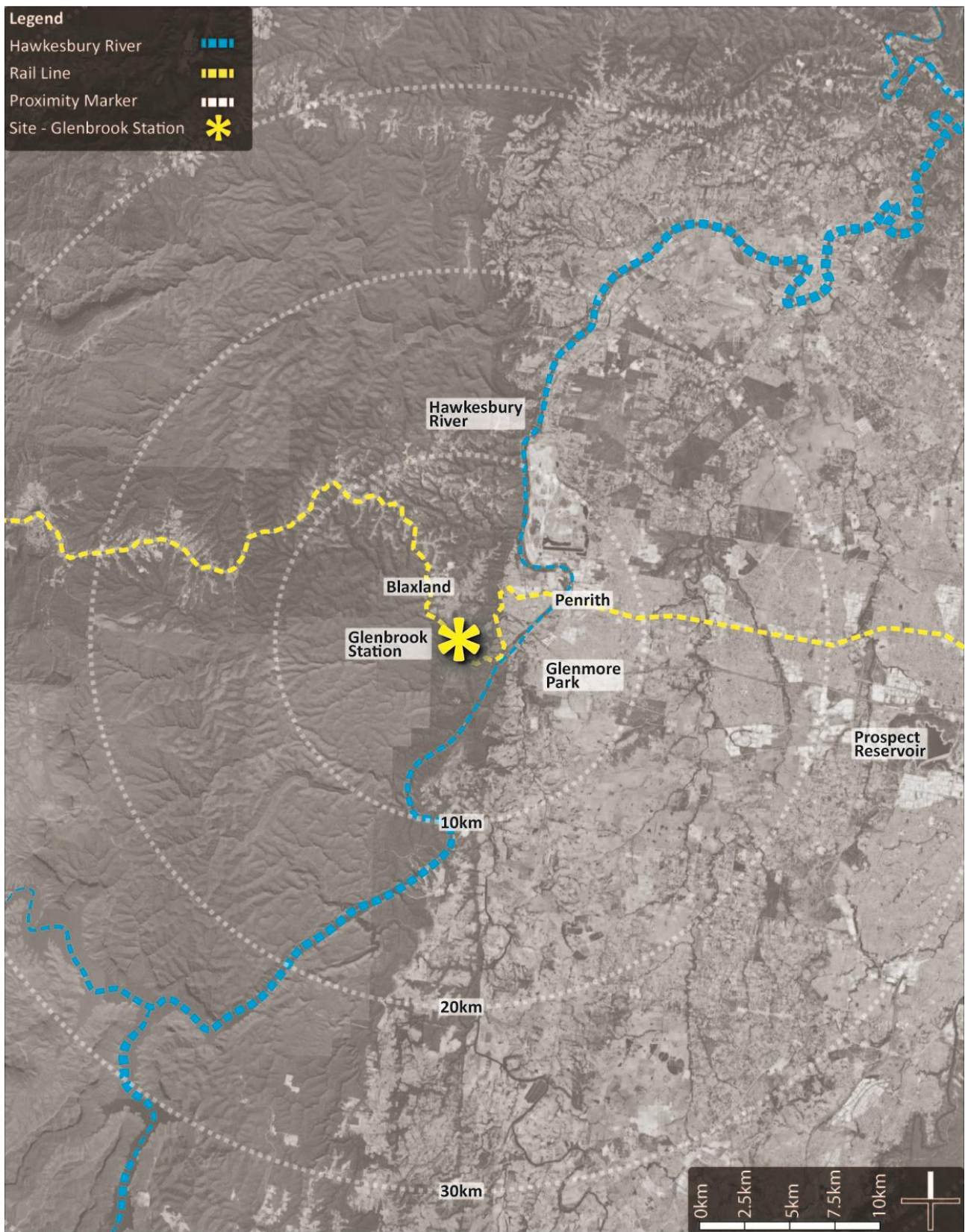


Figure 2 Glenbrook Station: Regional context



Figure 3 Glenbrook Station: Local context



Figure 4 Glenbrook topography

3.2 Proposal overview

Upgrades under the Transport Access Program are designed to ensure that stations are fully accessible to a wider range of customers, to deliver improved travel to and between modes, encourage greater public transport use and better integrate interchanges with the role and function of town centres.

It is noted that the description of the Proposal is based on the preliminary concept design options and is subject to further design refinement. The key features of the Proposal are summarised in Table 4 and are based on design drawings, titled Glenbrook TAP3 Architectural General Arrangement.

Table 4 Proposal overview and construction activities

Stage	Activities
Site establishment and enabling works	<ul style="list-style-type: none"> establishment of site compound (erect fencing, tree protection zones, site offices, amenities and plant/material storage areas etc) removal of vegetation to allow for construction of new accessible path and stairs removal of minor landscaping, where required, on the platform to enable lift installation service/utility relocation/upgrade where required installation of safety barriers and hoarding around the nominated work zones on the platform
Access ramp, lift and stairs construction	<ul style="list-style-type: none"> demolition of existing structures such as the ramp and stairs construction of lift well and installation of lift construction/installation of accessible path and stairs including upgrade of hand rails, treads and fencing installation of fixtures, lighting and CCTV cameras in the areas of the upgrade such as the lift
Platform and station building works	<ul style="list-style-type: none"> platform resurfacing and raising/regrading installation of TGSIs construction of Family Accessible Toilet and associated canopy (mechanical/electrical fit out and drainage works) removal of minor landscaping, where required, on the platform adjacent to the station building removal, relocation and installation of seating adjacent to the lift area installation of lighting, hearing loop and CCTV
Interchange works	<ul style="list-style-type: none"> creation of the formal kiss and ride bin storage area relocation replanting/landscaping, fencing adjustments and bollards at the station entrance and where appropriate on the platform
Electrical upgrades	<ul style="list-style-type: none"> electrical and power supply upgrade works – such as the installation of transformer on a concrete base (approximately two metres west of the new stairs)
Signage	<ul style="list-style-type: none"> installation of wayfinding signage
Testing and commissioning	<ul style="list-style-type: none"> testing of all new systems and the lift removal of all construction hoarding removal of the site compound defect resolution

Key elements of the Proposal

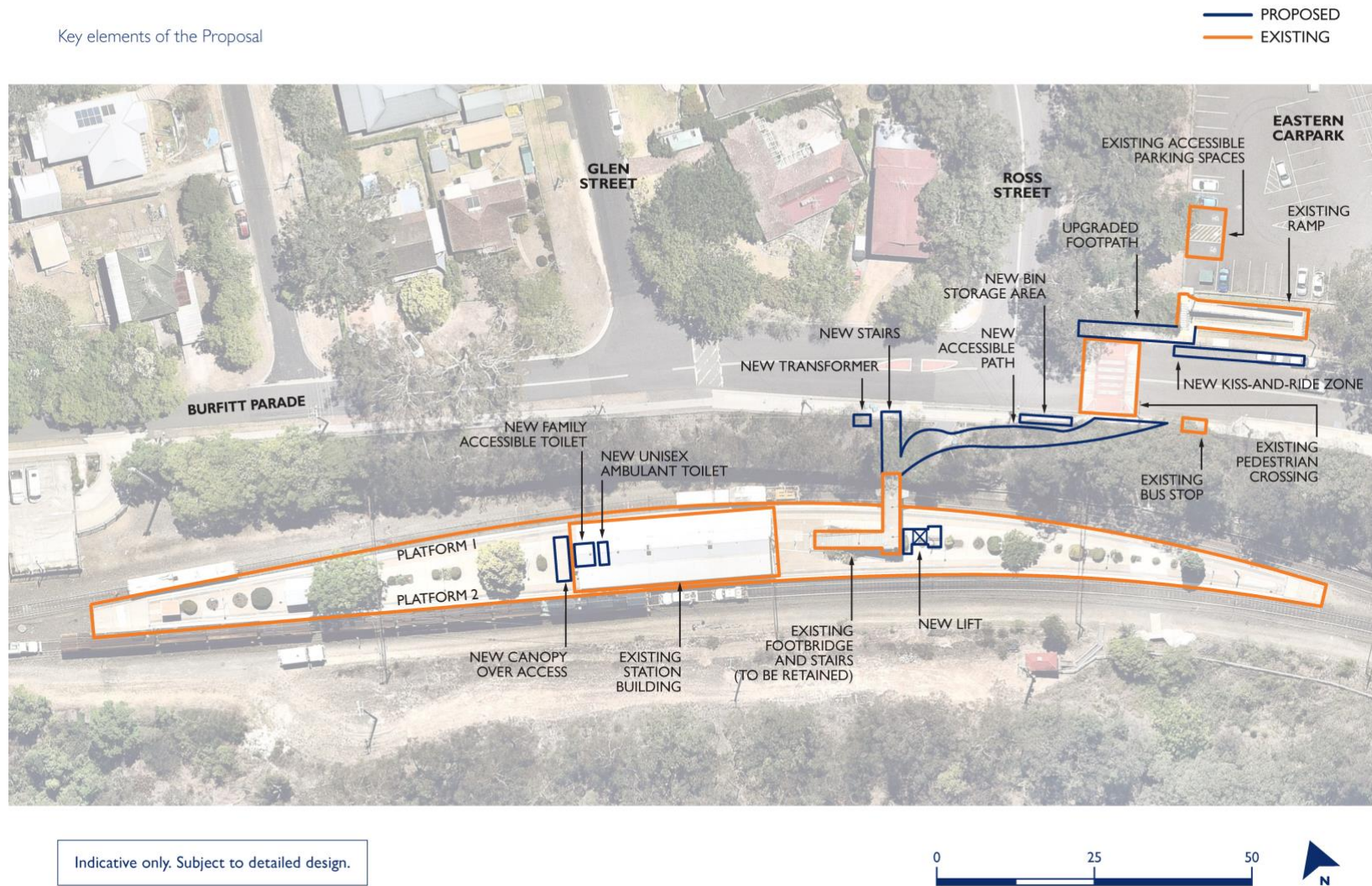


Figure 5 Key elements of the Proposal

3.3 TfNSW guidelines

The Proposal is subject to the provisions of the *State Environmental Planning Policy (Infrastructure) 2007* and Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and is permissible without consent under the ISEPP. However, the design outcomes for the Proposal will be largely guided by the respective TfNSW Urban Design Guidelines, which include the following documents:

- *TfNSW Creativity Guidelines for transport systems* (Interim Issue)
- *TfNSW Managing Heritage issues in rail projects* (Interim Issue)
- *TfNSW Around the Tracks - urban design for heavy and light rail* (Interim Issue)
- *TfNSW Commuter Car Parks urban design guidelines* (Interim Issue).

3.4 Planning context

Where possible, the design and/or systems associated with any development should have some regard for local government policies, and to establish a high level of aesthetic synergy with the wider LGA. A proposal should also be considerate of the broader objectives and strategies within the local government 's Development Control Plan (DCP), in addition to more specific design parameters such as those relating to development within publicly accessible / public domain areas.

Relevant Blue Mountains City Council policy includes:

- *Blue Mountains City Council Heritage Strategy 2014 – 2017*
- *Blue Mountains Local Environmental Plan 2015*
- *Blue Mountains City Council Development Control Plan 2015.*

The Blue Mountains City Council Development Control Plan 2015 aims to govern urban development within specific townships within the LGA. Relevant within the document to Glenbrook includes Part D: Heritage Management and Part G3: Glenbrook, which outlines the desired design requirements and limitations for development within the Glenbrook suburb. An extract from the LEP has been provided below in Figure 6.

The *Blue Mountains Local Environmental Plan 2015* maps out allowable development within a specified zone, as highlighted in Figure 7.

All facets of the Proposal are to be located within the Glenbrook Station land parcel, which has been zoned and legislated as 'Zone SP2 - Infrastructure' - any land zoned SP2 is dedicated for infrastructural activities or related uses.

7.4 Glenbrook Precinct

The objectives for development on land identified as “Glenbrook Precinct B1-GB01” on the Built Character Map are as follows:

- (a) to maintain a diverse range of small-scale business activities that service the local community and visitors to the Blue Mountains,
- (b) to maintain the modest scale and predominantly single storey appearance on Park and Ross Streets, the varied pattern of individual shop fronts and converted cottages with garden courtyards,
- (c) to ensure that the height of future development preserves existing public vistas from Glenbrook Park and Park Street towards scenic National Park landscapes,
- (d) to encourage modest increases in business floor space, consistent with the desired appearance of the business village, the capacity of the surrounding road network and available centre parking,
- (e) to employ simple architectural forms and details that are either consistent or compatible with early 20th century weatherboard cottages or post-WWII strip shopping developments,
- (f) to provide for the coordinated design of business signage and shop fronts in accordance with a village theme,
- (g) to ensure that on-site car parking does not dominate streetscapes or restrict the potential to provide additional shop frontages.

Figure 6 Blue Mountains Local Environmental Plan 2015

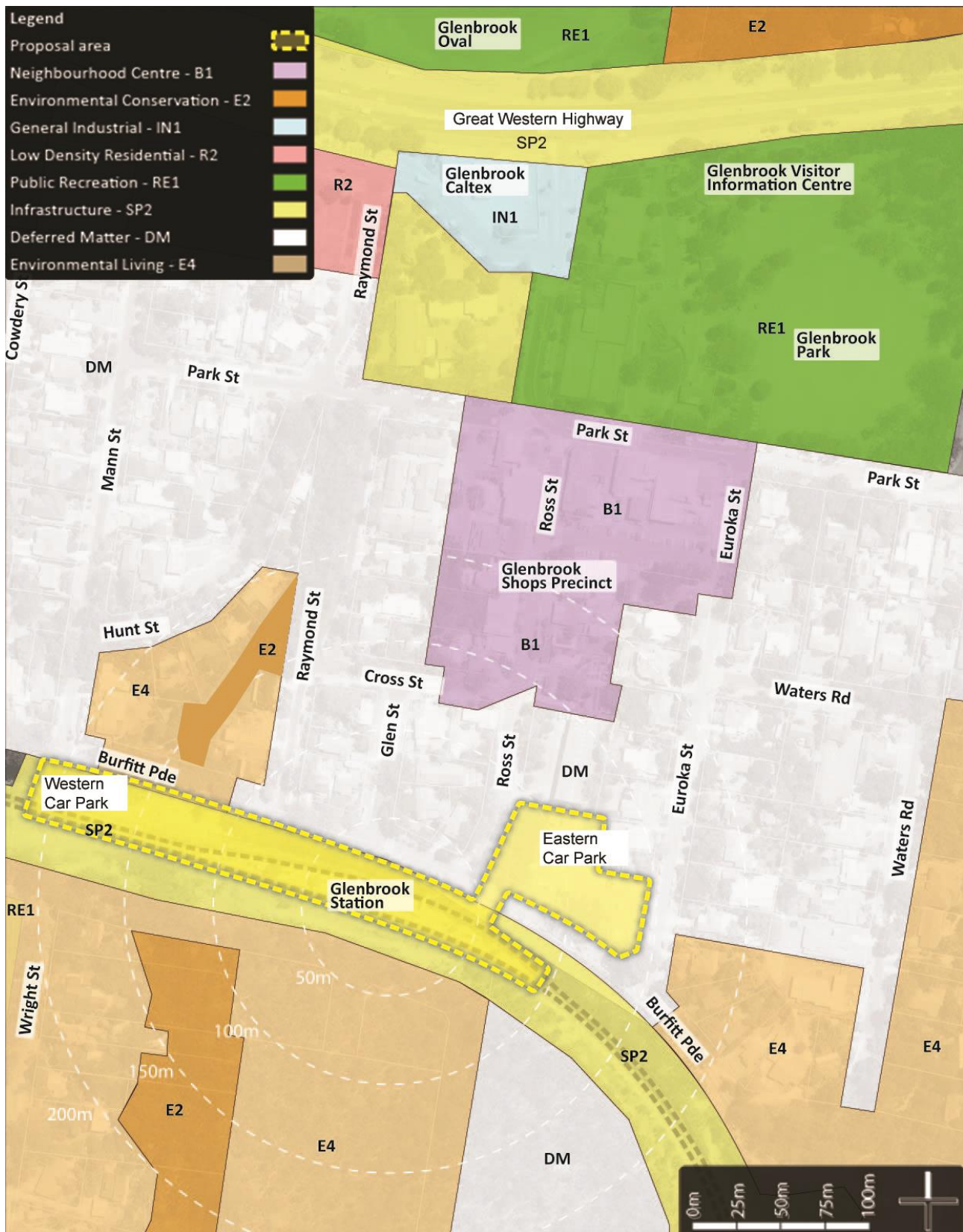


Figure 7 Glenbrook BM LEP 2015 land zoning

4 Landscape Character Assessment

4.1 Methodology

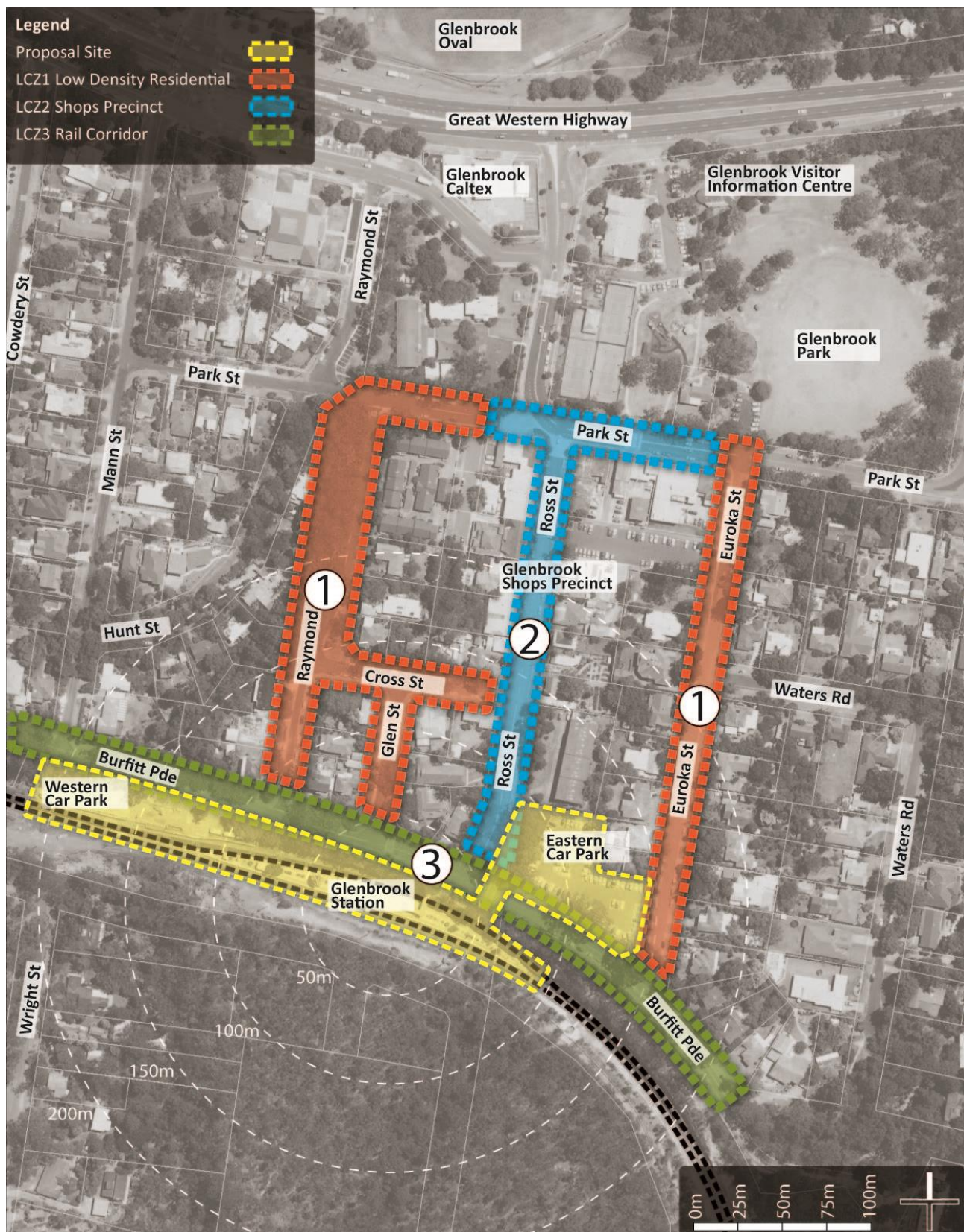
This chapter outlines the urban landscape character within a localised context to obtain an appreciation of the existing visual environment of the area in which the Proposal is located, and to subsequently to develop a visual baseline. This visual baseline will be used as a measurement to gauge the level of influence the Proposal has on its surrounding area.

The methodology inherited for the landscape character used herein is based on an objective assessment of the landscape attributes of a place. The Proposal area is viewed as a whole site within a broader context for the specific purpose of evaluation, and to assist with developing guidelines to manage and plan for the landscape character type and its relationship with the site and Proposal.

4.2 Landscape Character Zones

A Landscape Character Zone (LCZ) is defined as the collective qualities including the built form, natural elements, and the cultural and social facets that combine to provide a locale with a unique sense of place. An appreciation of the visual character of the present landscape assists in the development of a baseline and means for evaluation in visual impact assessment, and subsequently how the Proposal will influence: the present visual environment; aesthetic and perceptual aspects of the landscape, and; its unique character.

A LCZ takes place when there are apparent patterns of elements occurring consistently in a specific type of landscape. The landscape character zones and prominent landscape features identified and described below collectively define the overall character for the part of the local area. Three LCZs have been identified within a 100 metre radius from the Proposal and Figure 8 presents the location of these zones. The following sections provides a description of each LCZ to convey the urban style of the locale, for means of assessment against the influence of the Proposal.



4.2.1 LCZ 1 – Residential

LCZ1 encompasses Raymond, Glen Street and Euroka Street, commencing at Park Street and terminating at Burfitt Parade. The character of the LCZ1 has been represented in Figure 9.

This zone is defined by a generally homogenous style of residential urban development on either side of the road. Dwellings are typically one to two storeys in height with a generous eight metre setback off the road, which provides a wide and spacious streetscape. The streets are lined with native and exotic street trees, and the high level of vegetation within the dwelling yard has resulted in a highly vegetated neighbourhood aesthetic, which separates the residential LCZ from others.

The individual dwellings are a variable mix architectural styles including federation and modern architecture. Many of the homes present in the original 'Federation carpenter vernacular cottage' architectural style (NSW Office of Environment and Heritage 2015) where dwellings typically face onto the street through the inclusion of a veranda. Construction materials are commonplace in this architectural style, white/cream coloured weatherboarding is used for the exterior and the roof is typically corrugated iron finished in heritage colourways. Glenbrook features several heritages listed residential properties, including 6 Park Street, which is typical of this architectural style.



Figure 9 Landscape Character Zone 1 - residential

4.2.2 LCZ 2 – Glenbrook Shops Precinct

LCZ2 is focussed on the Glenbrook Shops Precinct, positioned along Ross and Park Street, which intersect at the southwestern corner of Glenbrook Park. This LCZ is concerned with the various commercial activities of the Glenbrook CBD, centred around hospitality and retail trade.

There are two differing streetscape styles within this landscape character zone. Park Street is more ‘high street’ in style with narrower sidewalks and shopfront awnings extending to the road line. Ross Street is more akin to the streetscape character identified within LCZ1, however the various cottages have been converted into shop frontage, featuring boutique retail outlets and small eateries and cafés, as represented in Figure 10. This landscape character zone encompasses a degree of federation heritage vernacular, brickwork, corrugated iron and federation style decoration has been retained and highlighted to provide the commercial zone with a greater sense of historic value.

Outside of the commercial qualities of LCZ2, the two intersecting roads are composed of the typical urban streetscape effects, including electrical light poles, signage and native street trees. These urban effects provide the area with an archetypal urban business centre style however, the heritage aspects contribute to a stronger sense of place.



Figure 10 Landscape Character Zone 2 – Glenbrook Shops Precinct

4.2.3 LCZ 3 – Railway Infrastructure

LCZ3 demarcates a section of road along Burfitt Parade extending from Mann Street and east to Eureka Road. This LCZ is positioned between the Proposal area and the other LCZs and provides high a degree of separation between Glenbrook Station and the balance of the Glenbrook area.

Burfitt Parade generally runs at 90 degrees to the slope on which its positioned, following the natural contours of the localised topography, and resulting from the excavation of the rail line, the road has a perched southern aspect with broken views down into the rail corridor and through to the adjoining national parkland to the south. Land usage to the south of the road is typically concerned with rail infrastructure, including a recently constructed commuter car park, storage areas and other ancillary items. To the north of the road is a range of urban development, including low density residential dwellings and a second commuter car park on the other side of the road from the station, all of which are lined with mature Eucalyptus trees.

The roads prospect and its adjoining land usage result in a LCZ with a distinctive bushland style, as represented in Figure 11. This contributes greatly to the landscape character of the station and the greater suburb. Moreover, the heritage qualities of the Proposal area, along with this bushland environment, result in an urban landscape that is both unique and aesthetically valuable.



Figure 11 Landscape Character Zone 3 – Railway Infrastructure

4.3 Urban and landscape design objectives and principles

The following urban design objectives and principles have been developed to provide initial design safeguards. These are focussed towards maintaining the existing landscape character where possible, through strategic and practical measures.

4.3.1 Urban design objectives

- Integrated infrastructure / landscape design response that permit the landscape to take precedence over the new built form where possible, to retain the heritage and bushland character of Glenbrook.
- Strengthen the vegetated character of the Proposal area and express the urban heritage and bushland nature of landscaping where possible.
- Preserve screening to residential properties within the affected zone to protect prominent and sensitive receptors, particularly considerate of any elevated low-density dwellings.
- Any urban design features should reflect, and be sympathetic to, the existing historic, cultural and natural character of the area. This can be achieved through the implementation of design and the use of materials which assist with blending the Proposal into the existing environment.
- Design lighting so not to negatively impact adjacent land uses, for instance, no light spill into adjacent residential properties containing dwellings.
- If possible, ensure the location of the Proposal infrastructure does not impact on existing view lines and view corridors, for example significant corridors from residential dwellings, and views along the rail corridor.

4.3.2 Landscape design principles

- Re-vegetation undertaken to all areas influenced by construction work. This includes the removal of trees, garden areas and other landscape-related infrastructure.
- The re-vegetation should be advanced indigenous species to ensure alignment with local government policy, within the context of overarching state legislation.
- Use of locally grown endemic plant material wherever possible to assist with landscape blending.
- Maximise the retention of existing visual screening opportunities.
- Where mature bushland vegetation must be removed, consider replacing with vegetation / landscaping in keeping with the local area.
- The material and colour palette should reflect the existing heritage qualities of the Proposal area.
- Where landscaping is specified to visually soften or block Proposal infrastructure, ensure the specification of shrubs and trees which are consistent with the existing landscape character of the area.
- Specify shrub and tree species that will not inhibit existing view corridors through to the rail corridor. Moreover, strengthen existing view corridors through the placement and specification of landscaping.

5 Visual Impact Assessment

5.1 Methodology

The methodology adopted in this assessment has been adapted from the Roads and Maritime Services *Environmental Impact Assessment Guidance Note (2013): Guidelines for landscape character and visual impact assessment*. This methodology therein has been used as a guide to align with the features and requirements of this Proposal.

Due to the unfeasible nature of completing an assessment for each individual visual receptor within a four kilometre radius, this report considers groups or clusters of visual receptors which are used to highlight the influence of the Proposal on a broader context.

There are two primary measurements used to determine impacts to the landscape character:

1. Sensitivity of the character
2. Magnitude of the Proposal.

5.1.1 Sensitivity

Visual sensitivity refers to the character of a setting, the quality of the view, and how sensitive it is to the proposed change (Roads and Maritime Services, 2013). Combined with magnitude, sensitivity provides a measure of impact. Visual sensitivity relates to the direction of view and the composition of the view.

Table 5 has been extracted from the Landscape Institute and Institute of Environmental Management and Assessment. These terms and definitions are generally accepted within the industry to identify visual receptor sensitivity.

Table 5 Sensitivity terms and definitions

Rating	Definition
High	Private residents at home with prolonged viewing opportunities, heritage properties and landscapes
Moderate	Commercial properties, travellers on road, rail or other transport routes with an interest in their environment
Low	Low transient type spaces and people at their place of work whose attention is on their work
Negligible	Bushland, rural area and other properties with little to no viewing potential

The higher the visual quality of the landscape, the greater the significance of introducing new development and therefore the higher the sensitivity. For example, road widening would be ranked lower than changes to national parkland. A place with a more consistent character would be more visually sensitive to new development than a place with less consistency.

5.1.2 Magnitude

The magnitude of a visual effect is the degree of change the visual landscape undergoes because of the proposed development. It is the measurement of the overall scale, form and character of a proposed development when compared to the existing condition (Roads and Maritime Services, 2013).

Magnitude also takes into consideration the distance between the viewer(s) and the proposed development. Judging the magnitude of visual effects takes account of:

- the scale of the change within the view with respect to the addition (or loss) of elements taken up by the proposed development
- the degree of change and/or integration of any new features or changes in the landscape in terms of form, scale and mass, line height, colour and texture
- the nature of the view of the proposed development and whether the views are permanent, full, partial or glimpses (Landscape Institute and Institute for Environmental Management and Assessment, 2013)
- the magnitude of proposed development in a landscape character depends on the scope of the Proposal
- the location of the proposed development in relation to the region in question also influences magnitude. Six categories are used in ranking the magnitude of a Proposal, ranging from negligible to high.

Impact on the Landscape Character is determined using the matrix shown in Figure 12. Rankings for sensitivity and magnitude are combined to generate the impact in the body of the table.

		Magnitude			
		High	Moderate	Low	Negligible
Sensitivity	High	High Impact	High-Moderate	Moderate	Negligible
	Moderate	High-Moderate	Moderate	Moderate-Low	Negligible
	Low	Moderate	Moderate-Low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Figure 12 Roads and Maritime impact grading matrix

5.1.3 Viewpoints Vs Receptors

The visual impact assessment focuses on Viewpoints and Receptors as the fundamental subject of assessment. Viewpoints are general positions looking towards the Proposal and considers views from a cluster of Receptors. Receptors are sensitive visual receptors such as houses, roads and other infrastructure that are used frequently. Figure 13 outlines the position and direction of the viewpoints for the Proposal.

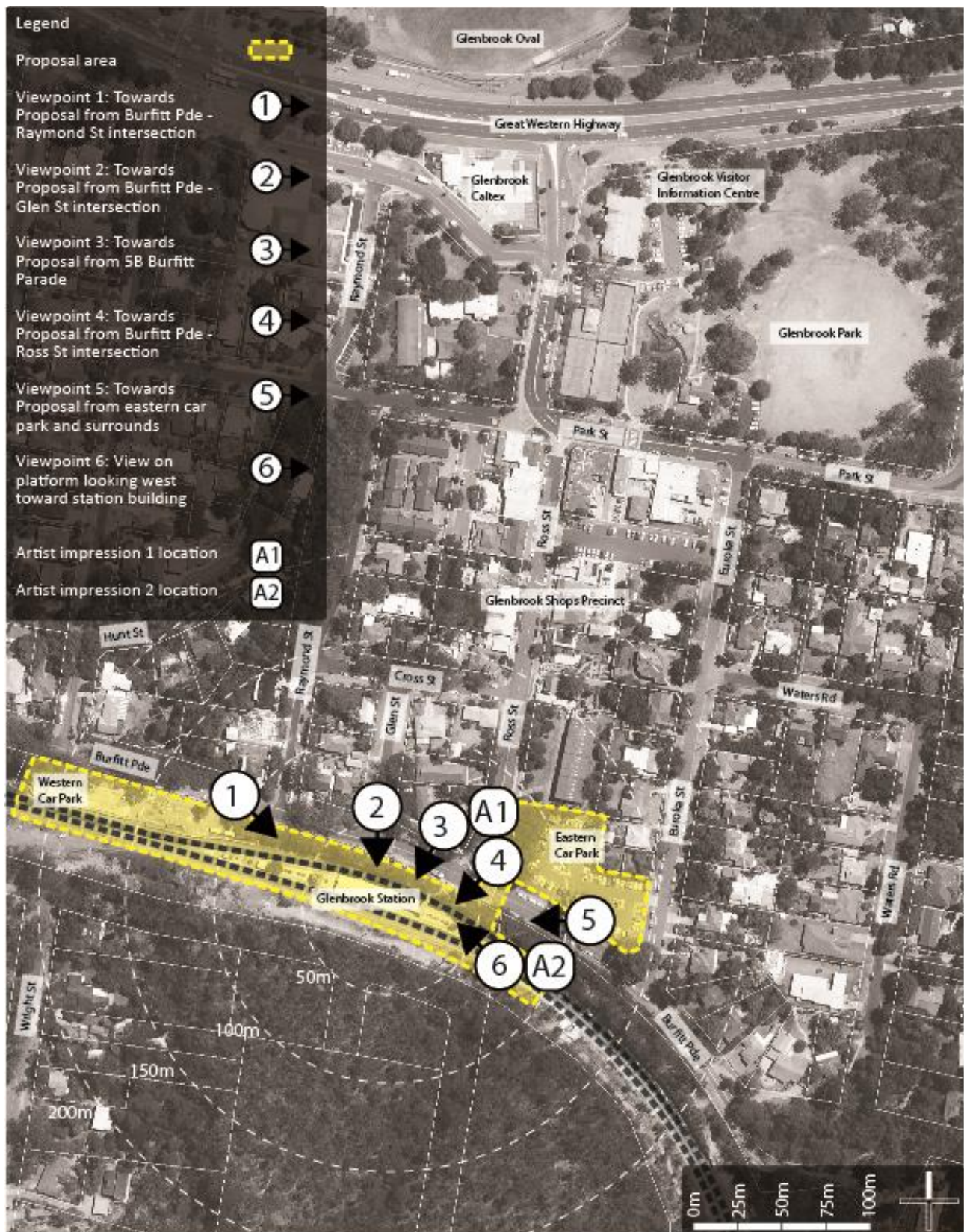


Figure 13 Viewpoint locations

5.1.4 Artist impressions

Artist impressions provide an indication of what a proposal may look like from key representative viewpoints once complete and help to demonstrate the bulk and scale. Artist impressions for the Proposal have been prepared from two viewpoints (VP4 and VP6) and are shown against the existing environment noting that materials and finishes are indicative and would be further investigated during detailed design. Refer to Figure 14, Figure 15, Figure 16 and Figure 17.



Figure 14 Ross Street – existing view

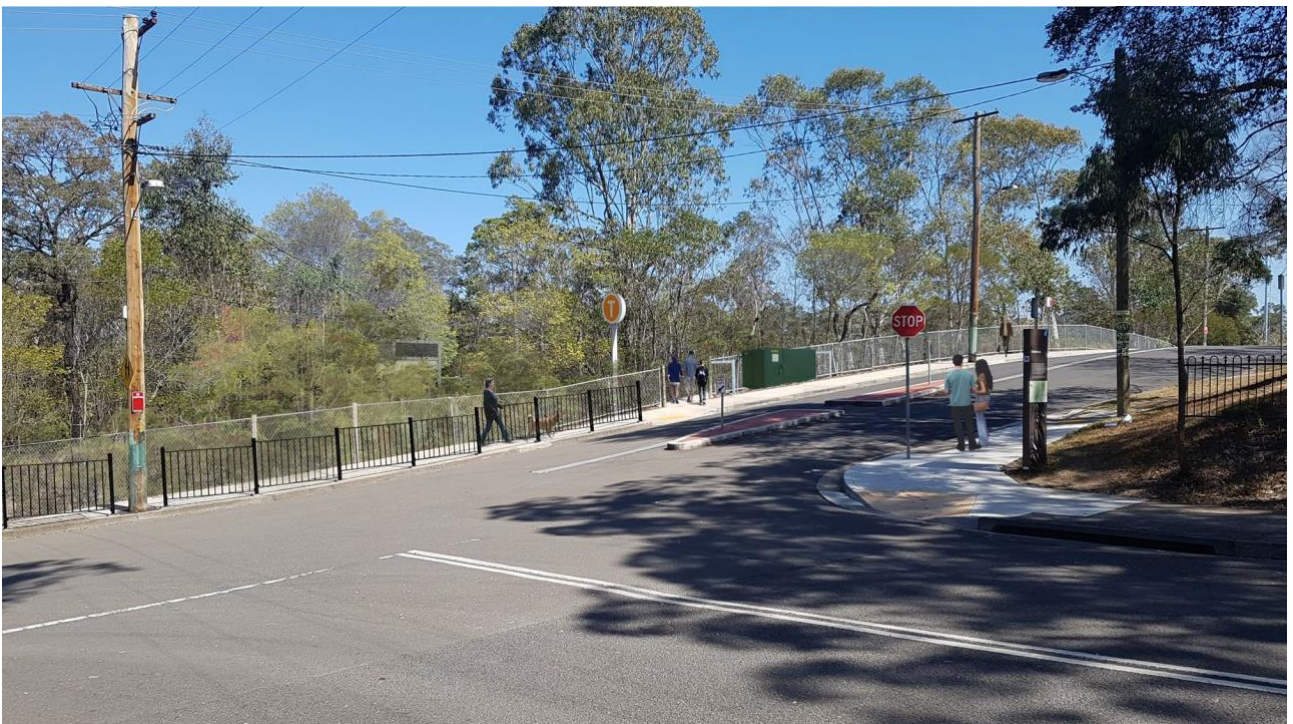


Figure 15 Ross Street – artist impression



Figure 16 Platform – existing view



Figure 17 Platform – artist impression

5.2 Viewpoint assessment

5.2.1 Viewpoint 1: Views from Burfitt Parade – Raymond Street intersection

5.2.1.1 Viewpoint description

Views towards the Proposal area from Viewpoint 1 are dominated by the principle land use within the immediate locality. From this location, on the south side of Burfitt Parade the rail infrastructure can be identified, including the platform and associated structures such as the main station building and overhead wiring. This is represented in Figure 18. This location is exposed to views of the western car park, with all aspects of the infrastructure visible from the road. There is a vegetation buffer impeding views to the rail corridor east of this location.

The northern side of Burfitt Parade consists of sunken residential dwellings which are visually buffered from the rail corridor by tall and mature native and exotic vegetation, comprising of Jacaranda and Eucalyptus trees. Along Burfitt Parade is road reserve infrastructure typical for the area, including barrier railing, light poles and street signage.



Figure 18 Viewpoint 1 - Views from Burfitt Parade - Raymond Street intersection

5.2.1.2 Viewpoint impacts

- Negligible: existing vegetation and topography mitigates views of the Proposal.

Table 6 Viewpoint 1: Visual Impact Assessment

Sensitivity (High)	Magnitude (Negligible)	Overall impact
1-2 storey residential properties, on the northern side of Burfitt Parade	New station infrastructure not a significant visual departure from the existing visual conditions	Negligible
Glenbrook Station and associated infrastructure on the southern side of Burfitt Parade	Moderate distance between the Proposal and residential dwellings	
Bushland landscape character, including mature Eucalyptus trees and native shrubs	Mature vegetation in places visually mitigates views to Proposal	
Burfitt Parade: variable width two lane road is urban in character with urban infrastructure	Motorists and pedestrians with direct views to the Proposal area Proposal unlikely to impact on existing viewpoint	

5.2.2 Viewpoint 2: Views from Burfitt Parade – Glen Street intersection

5.2.2.1 Viewpoint description

Viewpoint 2 is positioned at the intersection of Burfitt Parade - Glen Street, an open and elevated locale directly opposite the main station building.

Views in this area are dominated by mature vegetation within the Proposal area, which is comprised of mostly native and some exotic trees positioned along the boundary line, as represented in Figure 19. Although the existing vegetation is mature, coverage is minimal to moderate, resulting in broken views through and into the Proposal area; rail corridor infrastructure can be clearly identified, including the main station building, walkway, rail line tracks and rail infrastructure signage.

To the north of Burfitt Parade are one to two storey low-density residential properties which are elevated and located further up the gradient. The dwellings generally face out towards the rail corridor, however the existing vegetation in the locality inhibit direct views to the Proposal area. From this viewpoint a greater number of rail infrastructure elements can be identified along Burfitt Parade, including the Glenbrook Station signage, car park, crossings and the existing walkway within the Proposal area.



Figure 19 Viewpoint 2 - Views from Burfitt Parade – Glen Street intersection

5.2.2.2 Viewpoint impacts

- Demolition of existing ramp and construction of new access path and stairs to connect to the footbridge from Burfitt Parade.
- Installation of a new transformer on concrete platform, approximately two metres west of the new stairs.
- Removal of approximately 31 trees to facilitate the infrastructure listed above.
- Landscaping adjacent to the new access path.

Table 7 Viewpoint 2: Visual Impact Assessment

Sensitivity (High)	Magnitude (Negligible)	Overall impact
1-2 storey residential properties, on the northern side of Burfitt Parade	New station infrastructure not a significant visual departure from the existing visual conditions	Negligible
Glenbrook Station and associated infrastructure on the southern side of Burfitt Parade	Moderate 50 metre distance between the Proposal and residential dwellings	
Bushland landscape character, including mature Eucalyptus trees and native shrubs	Motorists and pedestrians with direct views to the Proposal	
Heritage value of Glenbrook Station	Mature native vegetation within Proposal area visually mitigates views to Proposal	
Burfitt Parade: variable width two lane road is urban in character with urban infrastructure	Mature vegetation within residential lots visually mitigates views to Proposal	
Rail infrastructure along Burfitt Parade, including signage, walkway, fencing	Proposal unlikely to impact on existing viewpoint	
Eastern car park (distant views)		

5.2.3 Viewpoint 3: Views from No.5B Burfitt Parade

5.2.3.1 Viewpoint description

Viewpoint 3 is located slightly west of the Burfitt Parade – Ross Street intersection. The No.5B Burfitt Parade dwelling is situated in an elevated position and directly adjacent the main Glenbrook Station / Proposal area entry and access ramp area. Views from this position are highlighted in Figure 20.

Due to the open character of this locale and its position along Burfitt Parade much of the surrounding urban infrastructure is visible. Views in this area are largely characterised by the Glenbrook Station infrastructure; the platform, signage, fencing and other urban elements are visible along with those elements associated with the interface between Burfitt Parade and the station. Adjoining the intersection is the eastern car park, which is positioned along Burfitt Parade, between Ross Street and Eureka Street. The car park is a large paved structure featuring an accessible ramp, bike locker and associated urban elements.

There is a significant amount of mature vegetation within this locality. Comprised of mostly native Eucalyptus tree and Acacia species lining Burfitt Parade, this vegetation provides a high level of visual amenity and obstruction, greatly reducing the visual dominance of the Glenbrook Station.



Figure 20 Viewpoint 3 – Views from No.5B Burfitt Parade

5.2.3.2 Viewpoint impacts

- Demolition of existing ramp and construction of new access path and stairs to connect to the footbridge from Burfitt Parade.
- Installation of a new transformer on concrete platform, approximately two metres west of the new stairs.
- Removal of approximately 31 trees to facilitate the infrastructure listed above.
- Landscaping adjacent to the new access path

Table 8 Viewpoint 3: Visual Impact Assessment

Sensitivity (High)	Magnitude (Moderate)	Overall impact
1-2 storey residential properties, on the northern side of Burfitt Parade Glenbrook Station and associated infrastructure on the southern side of Burfitt Parade Bushland landscape character, including mature Eucalyptus trees and native shrubs Burfitt Parade: variable width two lane road is urban in character with urban infrastructure Rail infrastructure along Burfitt Parade, including signage, walkway, fencing Eastern car park (close views)	New station platform infrastructure (such as the lift) would not be a significant visual departure from the existing visual conditions, however the new transformer would be a departure from the existing visual environment Close distance between the Proposal and residential dwellings Motorists and pedestrians with direct views to the Proposal Mature native vegetation within Proposal area visually mitigates views to Proposal but the removal of 31 trees may expose receptors to new and existing station infrastructure Proposal likely to result in a High-Moderate impact on the existing viewpoint due to the close distance to sensitive receivers and the removal of the proposed trees/vegetation	High – Moderate

5.2.4 Viewpoint 4: Views from Burfitt Parade - Ross Street intersection

5.2.4.1 Viewpoint description

Viewpoint 4 is located at the Burfitt Parade - Ross Street intersection. This viewpoint is primarily representative of views experienced by pedestrians and motorists travelling in and around the intersection and is focussed on the viewing potential from those travelling down Ross Street due to the elevated and exposed nature of this locality, depicted in Figure 21. This viewpoint also takes into consideration visual receptors surrounding the eastern car park and its patrons. A range of visual receptors are present in this elevated position including pedestrians and motorists moving through the public transport infrastructure.

Due to the open character of the intersection much of the urban infrastructure is visible. Views in this area are largely characterised by the Glenbrook Station infrastructure; the platform, signage, fencing and other urban elements are visible, along with those elements associated with the interface between Burfitt Parade and the station. Adjoining the intersection is the eastern car park, which is a large paved structure featuring an accessible ramp, bike locker and associated urban elements.

There is a significant amount of mature vegetation within this locality. Comprised of mostly Eucalyptus tree species lining Burfitt Parade, this vegetation provides a high level of visual amenity, greatly reducing visual dominance of the Glenbrook Station. Some vegetation within the Proposal area has been cleared allowing views through the rail corridor towards National Park lands.



Figure 21 Viewpoint 4 - Views from Burfitt Parade – Ross Street intersection

5.2.4.2 Viewpoint impacts

- Demolition of existing ramp and construction of new access path and stairs to connect to the footbridge from Burfitt Parade.
- Installation of new 17 person lift with aluminium louvres for ventilation.
- Installation of a new transformer on concrete platform, approximately two metres west of the new stairs.
- Removal of approximately 31 trees to facilitate the infrastructure listed above.
- Landscaping adjacent to the new access path.

Also refer to Figure 15 for the artist impression of what the Proposal may look like from this viewpoint.

Table 9 Viewpoint 4: Visual Impact Assessment

Sensitivity (Moderate)	Magnitude (Moderate)	Overall impact
1-2 storey residential properties, on the northern side of Burfitt Parade Glenbrook Station and associated infrastructure on the southern side of Burfitt Parade Bushland landscape character, including mature Eucalyptus trees and native shrubs Burfitt Parade: variable width two lane road is urban in character with urban infrastructure Rail infrastructure along Burfitt Parade, including signage, walkway, fencing Eastern car park (close views)	New station platform infrastructure (such as the lift) would not be a significant visual departure from the existing visual conditions, however the new transformer would be a departure from the existing visual environment Close distance between the Proposal and residential dwellings although primary receptors are the motorists and pedestrians with direct views to the Proposal Mature native vegetation within Proposal area visually mitigates views to Proposal, but the removal of 31 trees may expose receptors to new and existing station infrastructure Proposal likely to result in a Moderate impact on the existing viewpoint due to the primary receptor at this location being temporary (pedestrians, motorists) and the removal of the proposed trees/vegetation	Moderate

5.2.5 Viewpoint 5: Views from eastern car park and surrounds

5.2.5.1 Viewpoint description

As per Figure 22, Viewpoint 5 takes into consideration visual receptors surrounding the eastern car park and its patrons. A range of visual receptors are present in this elevated position, including pedestrians and motorists moving through the public transport infrastructure. There are several residential dwellings with viewing potential to the Proposal area, however these dwellings tend face out towards the east and west, away from the Proposal area.

Due to the elevated, open character of both adjoining intersections much of the urban infrastructure within this location is exposed and visible. Burfitt Parade is the dominant visual element, along with associated streetscape items including the bus stop which has a painted mural and the associated mosaics which are installed in the pavement (refer to Figure 23 and Figure 25), along with light poles, street signage and pedestrian crossing. Pedestrian control barriers lining Burfitt Parade extend from the pedestrian crossing to the station entry, along with the Glenbrook Station bus stop, these urban elements contribute to an urbanised visual character.

Mature vegetation within this locality is dominant. Comprised of mostly Eucalyptus tree species lining Burfitt Parade, this vegetation provides a high level of visual amenity, greatly reducing visual dominance of the Glenbrook Station. Positioned on the rail corridor boundary line is a mature native vegetation buffer which inhibit views to the Proposal from this viewpoint.



Figure 22 Viewpoint 5 - Views from eastern car park



Figure 23 Example of mosaic outside station entrance



Figure 24 Bus stop and mural

5.2.5.2 Viewpoint impacts

- Demolition of existing ramp and construction of new access path and stairs to connect to the footbridge from Burfitt Parade.
- Installation of new lift with aluminium louvres for ventilation.
- Installation of a new transformer on concrete platform, approximately two metres west of the new stairs.
- Removal of approximately 31 trees to facilitate the infrastructure listed above.
- Landscaping adjacent to the new access path.

Table 10 Viewpoint 5: Visual Impact Assessment

Sensitivity (High)	Magnitude (Negligible)	Overall impact
<p>1-3 storey residential properties, on the northern side of Burfitt Parade</p> <p>Glenbrook Station and associated infrastructure on the southern side of Burfitt Parade</p> <p>Bushland landscape character, including mature Eucalyptus trees and native shrubs</p> <p>Burfitt Parade: variable width two lane road is urban in character with urban infrastructure</p> <p>Rail infrastructure along Burfitt Parade, including signage, walkway, fencing</p> <p>Eastern car park</p>	<p>New station infrastructure (like the lift) would not be a significant visual departure from the existing visual conditions and would be obscured by existing vegetation</p> <p>Moderate distance between the Proposal and residential dwellings who have restricted views</p> <p>Primary receptors are motorists and pedestrians with direct views to the Proposal</p> <p>Mature native vegetation within Proposal area visually mitigates views to Proposal</p> <p>Unlikely that construction works would impact existing bus stop or pavement mosaics but appropriate protection measures should be in place</p> <p>The Proposal is likely to result in a Negligible impact. As although the Sensitivity of the adjacent visual receivers is considered High, the existing vegetation mitigates views to the Proposal (negligible Magnitude).</p>	Negligible

5.2.6 Viewpoint 6: Views from the west-bound platform approach

5.2.6.1 Viewpoint description

Viewpoint 6 is located along the Glenbrook Station inbound approach and considers the impact that the Proposal may have two types of receptors; train passengers in motion approaching the station and those disembarking the train and moving along the platform. The position of this viewpoint is highlighted in Figure 25.

This location is largely characterised by rail corridor infrastructure, including the rail line / train tracks, the platform, the various heritage buildings and structures, and overhead rail wiring. Aesthetically, the primary features of this viewshed is the Station Building, a heritage listed federation style building, and the other heritage items including the brick platform and the footbridge.

In addition to the rail infrastructure, the Proposal area features a range of naturalistic elements which further support its visual character. Located on the platform are several garden beds, and to the north of the platform is a tall vertical sandstone escarpment. The elevated nature of the sandstone wall contrasts with the balance of the station which is low and linear in character. Atop the rock shelf and to the south of the rail line are numerous mature native trees.

The heritage qualities of the station, in combination with the dominant naturalistic elements within the locality provide the Proposal area with a unique historic and bushland setting.



Figure 25 Viewpoint 6 – Views from the west-bound platform approach

5.2.6.2 Viewpoint impacts

- Installation of new lift with aluminium louvres for ventilation.
- Removal of garden areas on platform to make way for the lift and Family Accessible Toilet entrance.
- Removal of approximately 31 trees to facilitate the infrastructure listed above.

Also refer to Figure 17 for the artist impression of what the Proposal may look like from this viewpoint.

Table 11 Viewpoint 6: Visual Impact Assessment

Sensitivity (High)	Magnitude (Low)	Overall impact
Heritage value of Proposal area / Glenbrook Station, including the station building, platform and footbridge Bushland landscape character, including mature Eucalyptus trees and native shrubs to site extents Natural qualities of the site, including the sandstone façade, platform garden areas and vegetation Passenger exposure to the site, including passengers in motion and those passengers disembarking onto platform	The Proposal is a visual departure from the existing visual conditions, however the architectural design and finishes have been developed with consideration for the heritage qualities of the station (i.e. selection of appropriate materials including brick facade for the lower lift shaft which is similar to the brick of the existing Station Building) Although the lift would introduce a modern element into the heritage setting, the location of the lift to the east of the footbridge would provide a physical separation between it and the heritage listed Station Building. The use of glass for the upper lift shaft assists in reducing visual bulk Removal of existing garden areas a modification of the existing heritage character of the platform	Moderate

5.3 Summary of Visual Impact Assessment

Table 12 Summary of Visual Impact Assessment

Viewpoint	Summary	Overall impact
Viewpoint 1: Views from Burfitt Parade - Raymond Street intersection	<p>Within close-proximity to the western car park, clear views to residential properties, rail infrastructure and dense bushland-style vegetation.</p> <p>As the locality consists of residential and other sensitive visual receptors the Sensitivity is considered to be High.</p> <p>As the Proposal works are far away and visually buffered from view the Magnitude is Negligible.</p>	Negligible
Viewpoint 2: Views from Burfitt Parade - Glen Street intersection	<p>Positioned from the road, directly opposite the main station building, this viewpoint consists of elements including residential properties, rail infrastructure and mature bushland-style vegetation.</p> <p>As the locality consists of residential and other sensitive visual receptors the Sensitivity is considered High.</p> <p>As the Proposal works are far away and visually buffered from view the Magnitude is Negligible.</p>	Negligible
Viewpoint 3: Views from No.5B Burfitt Parade	<p>No.5B Burfitt Parade is located adjacent to the station entry. Views here are characterised by Glenbrook Station infrastructure; station platform, signage, fencing and other urban elements. The eastern car park adjoins the intersection. Localised mature vegetation provides a high level of visual amenity.</p> <p>As the localised area consists of sensitive visual receptors the Sensitivity is High.</p> <p>Mature native vegetation within Proposal area visually mitigates views to Proposal but the removal of 31 trees may expose receptors to new and existing station infrastructure. Magnitude is considered to be Moderate due to level of tree removal.</p> <p>A sympathetic mitigation strategy would be investigated.</p>	High - moderate
Viewpoint 4: Views from Burfitt Parade – Ross Street intersection	<p>Positioned at the Burfitt Parade - Ross Street intersection, this viewpoint considers views experienced by pedestrians and motorists. Views within this locality include Glenbrook Station infrastructure; the station platform, signage, fencing and other urban elements. Adjoining the intersection is the eastern car park. Localised mature vegetation provides a high level of visual amenity.</p> <p>Sensitivity is Moderate as the primary receptors are motorists and pedestrians.</p> <p>Mature native vegetation within Proposal area visually mitigates views to Proposal, but the removal of 31 trees may expose receptors to new and existing station infrastructure. Magnitude is considered Moderate.</p>	Moderate
Viewpoint 5: Views from eastern car park and surrounds	<p>This viewpoint considers receptors within and around the eastern car park, including pedestrians and motorists moving through the public transport infrastructure, and several residential dwellings with minor viewing potential to the Proposal area.</p> <p>Views here consist of Burfitt Parade streetscape items (including the bus stop which has a painted mural and the associated mosaics which are installed in the pavement), along with light poles, street signage</p>	Negligible

Viewpoint	Summary	Overall impact
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and the Burfitt Parade pedestrian crossing. Mature vegetation within this locality provides visual amenity.

As the localised area includes sensitive visual receptors the Sensitivity is High.

However, the Magnitude is considered Negligible, due to the moderate distance between the Proposal and residential dwellings who have restricted views, and the high level of vegetation screening.

Viewpoint 6: Views from the west-bound platform approach

This viewpoint is positioned along the Glenbrook Station inbound approach and considers two types of visual receptors; approaching train passengers in motion and those disembarking the train and moving along the platform.

This viewpoint is characterised by rail corridor infrastructure, the primary features being the Glenbrook Station Building, and the other heritage items including such as the footbridge, brick platform, and platform gardens. Located to the north of the platform is a tall vertical sandstone escarpment, and atop the rock shelf and to the south of the rail line are tall mature native trees.

This viewpoint considers passengers and pedestrians with direct views to the heritage listed station; thus, the Sensitivity is High.

The location of the proposed lift to the east of the footbridge would provide a physical separation between the new lift and the heritage listed Station Building. Visual impacts would be further reduced through the selection of appropriate materials including brick facade for the lower lift shaft which is similar to the brick of the existing Station Building. As the Proposal represents a minimal departure from the existing design qualities the Magnitude is considered Low.

Moderate

6 Conclusion and safeguards

6.1 Conclusion

A key consideration in the visual impact assessment of the Proposal will be the sensitivity of residents, passengers and other stakeholders to specific elements, which may result in a variety of responses, both positive and negative. Whilst the degree to which a project the scale of the Proposal is visible from certain vantage points can be quantified, ultimately, the residents and users of the landscape surrounding the site will reflect a range of sensitivities. The degree to which the changes to the landscape are perceived will depend on the values of the actual users / residents.

As stated earlier in the introduction, this report considers views from passengers, motorists, habitable room windows, outdoor areas of the home yard dwelling as the most sensitive receptors. Views from residual land beyond the home yard area (such as recreational land) are treated as less sensitive receptors. This report also adopts the standard methodology of sensitivity relating to proximity, in that the greater the distance between the visual receptor and the Proposal, the lesser the visual sensitivity.

In summary, the Proposal would result in a negligible to moderate impact for most of the selected viewpoints with the exception of Viewpoint 3: Views from No.5B Burfitt Parade (High-moderate), which is due in part to the close proximity of a residential receptor to the new station entry stairs and transformer and where tree removal is required.

The Proposal would change the landscape character of the setting in a very site-specific manner. Beyond this it will have an overall Low impact on the surrounding localised area. As mentioned in the assessment process previously, the landscape character of the setting is significantly urban in aesthetic, and much of the vegetation that lines the properties adjacent to the roads can provide a visual barrier to the locally positioned receptors. The variable nature of the urban form and topography in the area assists greatly in mitigating views to the Proposal due to the lack of prospect from the visual receptors.

The report also proposes guidelines to assist with maintaining existing viewing corridors and the landscape character of the area. The following recommendations are based on these guidelines and the results of the visual impact assessment.

6.2 Safeguards

The visual impact assessment identified various mitigation measures to manage and minimise the potential visual impacts. The following mitigation measures are based on the findings in this report. Mitigation measures are proposed in response to assessment ratings calculated with any impacts falling within the Moderate to High range to help reduce the visual impacts of the Proposal, for the construction and operational stages.

Design recommendations relate to the findings of the urban design issues discussed in this report with the aim of meeting the key urban design objectives as highlighted.

6.2.1 Design safeguards

- A landscape plan highlighting planting and street-scape design should be prepared in alignment with the civil design, with the intent to provide some integration between the new Proposal and the existing / planned landscape character. This might include landscape design for visual mitigation for the Proposal lift shaft and footbridge.
- The landscape plan should support and strengthen the existing heritage values of the Glenbrook Station, and which can reduce the visual influence/impact of the Proposal.
- Further exploration of the potential design outcomes of the Proposal to ensure its sympathetic to the heritage values of Glenbrook Station. Consult the relevant policies, including the *Blue Mountains City*

Council Heritage Strategy 2014 – 2017, TfNSW and Sydney Trains Guidelines and to drive design direction

- New ancillary items including signage and balustrades should reflect the overall heritage aesthetic of the existing station to ensure the heritage qualities of the station are retained. Make reference to the *Sydney Trains Station Components Guide*, where possible

6.2.2 Construction safeguards

- Avoid unnecessary loss or damage to vegetation adjacent the rail corridor by protecting trees prior to construction and/or trimming vegetation to avoid total removal. This includes vegetation that makes a substantial and positive contribution to landscape character such as the mature Eucalyptus trees and vegetation to the station corridor boundary. Restore any areas that are impacted by construction with appropriate landscape treatments.
- Retain the community focused character of the Glenbrook Station locality through the protection and enhancement of the existing mosaics adjacent to the bus stop. Ensure they are adequately protected during construction, or should an impact need to occur, develop a community consultation strategy to relocate or replace the mosaics.
- Minimise light spill from the development areas into adjacent visually sensitive residential properties along Burfitt Parade by directing construction lighting into the construction areas and ensuring the site is not over-lit. This includes the sensitive placement and specification of lighting to minimise any potential increase in light pollution
- Temporary hoardings, barriers, traffic management and signage would be removed immediately when no longer required. This is particularly critical to the Proposal's location which is adjacent low density residential dwellings along Burfitt Parade
- The site to be kept tidy and well maintained, including removal of all rubbish at regular intervals. There should be no storage of materials beyond the construction boundaries. Storage should occur off-site considering the location of sensitive receptors, utilise rail corridor storage space where possible
- Graffiti, posters and other visual nuisance should be removed during construction in accordance with standard requirements, particularly to areas immediately adjacent Glenbrook Station.

6.2.3 Operational safeguards

- Plan for rehabilitation / offset planting as early as possible to replace vegetation that provided screening to adjacent residential properties and sensitive visual receptors
- Undertake regular landscape maintenance works to maximise the health and effectiveness of existing planting to help buffer the removal of any existing landscape items
- Retain any critical views through to the station building and through the rail corridor through regular pruning maintenance.

7 References

7.1 Text references

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