Appendix F Landscape and visual assessment report

Visual Impact Assessment
Leura Station Upgrade

Transport Access Program

Prepared by:
GREEN BEAN DESIGN
landscape architects

GREEN BEAN DESIGN *landscape architects*
PO Box 3178 Austral NSW 2179
Principal: Andy Homewood BSc (Dual Hons), DipLM, DipHort, Registered Landscape Architect, AILA
(ABN: 14 329 465 660)

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Author:	**Andrew Homewood**, Registered Landscape Architect, AILA *Graduate Diploma Landscape Management, Bachelor Science (Dual Honours) Landscape and Archaeology, National Diploma Horticulture*
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Green Bean Design – Capability Statement

Green Bean Design (GBD) was established as a landscape architectural consultancy in 1999 and has specialised in landscape and visual impact assessment over the past 15 years. As an independent consultancy, GBD provide professional advice to a wide range of commercial and government clients involved in large infrastructure project development.

GBD owner, and principal landscape architect Andrew Homewood, is a registered landscape architect and member of the Australian Institute of Landscape Architects and the Environmental Institute of Australia and New Zealand. Andrew has over 21 years continuous employment in landscape consultancy and has completed numerous landscape and visual impact assessments for a variety of large scale and state significant infrastructure, including transport projects, mines, transmission lines/substations, wind farms and solar power developments.

Contents

Figures

Tables

Glossary

This Visual Impact Assessment has adopted and the following definitions from *Guidelines for Landscape and Visual Impact Assessment*[1] (2013) and the Roads and Maritime Services (RMS) *Environmental Impact Assessment Practice Note Guideline for Landscape Character and Visual Impact Assessment EIA-N04*[2] (2013).

Table 1 Glossary

Cumulative effects[1]	The summation of effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.
Element (urban landscape)[1]	Individual parts of the developed landscape which make up the urban environment (e.g. buildings, roads, bridges and parks).
Indirect Impacts[1]	Impacts on the environment, which are not a direct result of the development but are often produced away from it or as a result of a complex pathway.
Magnitude[2]	The measurement of scale, form and character of a development proposal when compared to the existing condition. In the case of visual assessment this relates to how far the proposal is from the viewer. Combined with sensitivity, magnitude provides a measurement of impact.
Mitigation[1]	Measures, including any processes, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development project.
Photomontage (Visualisation) [1]	Computer simulation or other technique to illustrate the appearance of a development.
Sensitivity[2]	The sensitivity of a landscape character zone or view and its capacity to absorb change. In the case of visual impact this also relates to the type of viewer and number of viewers. Combined with magnitude, sensitivity provides a measure of impact.
Visibility[2]	The state or fact of being visible or seen
Visual Absorption Capacity[1]	The degree to which a particular landscape character type or area is able to accommodate change without unacceptable adverse effects on its character.

Cumulative effects[1]	The summation of effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.
Visual amenity[1]	The value of a particular area or view in terms of what is seen.
Visual envelope[1]	Extent of potential visibility to or from a specific area or feature.
Visual impact[2]	The impacts on the views from residences, workplaces and public places.
Visual Impact Assessment[1]	A process of applied professional and methodical techniques to assess and determine the extent and nature of change to the composition of existing views that may result from a development.
View location[1]	A place or situation from which a proposed development may be visible.
Visual receiver[1]	Individual and/or defined groups of people who have the potential to be affected by a development.

Section 1. Introduction

1.1 Introduction

Green Bean Design Pty Ltd (GBD) was commissioned by GHD Pty Ltd on behalf of Transport for NSW (TfNSW) to prepare a Visual Impact Assessment (VIA) for proposed works to upgrade and introduce new infrastructure at Leura Station (the Proposal) as part of the Transport Access Program (TAP).

The VIA has been undertaken as part of the Review of Environmental Factors (REF) that is being prepared in accordance with the provisions of Part 5 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). This VIA provides an assessment of the potential effects of the Proposal on the existing urban landscape and visual environment surrounding the station precinct and site of the proposed works. This VIA has been prepared in accordance with consideration of Clause 228 of the NSW *Environmental and Planning and Assessment Regulation 2000*.

1.2 TAP Objectives

TfNSW initiated the TAP to improve and provide more accessible, modern and secure infrastructure. TAP has a number of objectives including to provide:

- stations that are accessible to those with a disability, ageing and parents/carers with prams
- modern interchanges that support an integrated network and allow seamless transfers between all modes for all customers
- modern buildings and facilities for all modes that meet the needs for a growing population
- safety improvements including extra lighting, help points, fences and security measures for car parks and interchanges, including stations, bus stops and wharves
- signage improvements so customers can more easily use public transport and transfer between modes at interchanges
- other improvements and maintenance such as painting, new fencing and roof replacements.

Section 2. VIA objectives and methodology

2.1 VIA objectives

A key objective of this VIA is to determine the likely visual significance of the Proposal on people living and working in, or travelling through the urban landscape within and surrounding the station precinct. This VIA has also been undertaken to:

- assess the existing visual character of the station precinct as well as the surrounding urban landscape
- determine the extent and nature of the potential visual significance of the Proposal on surrounding receivers
- identify measures to mitigate and minimise any potential visual impacts.

2.2 VIA Guidance

This VIA has been prepared with regard to industry standards including:

- *Environmental Impact Assessment Practice Note – Guideline for Landscape Character and Visual Impact Assessment EIA–N04* (RMS March 2013)
- *Guidelines for Landscape and Visual Impact Assessment* (Landscape Institute and Institute of Environmental Management & Assessment 2013).

2.3 VIA methodology

This VIA methodology included the following activities:

- desktop study addressing visual character and identification of view locations within the surrounding area
- fieldwork and photography
- assessment and determination of the Proposals visual impact
- identification of recommended mitigation measures for the Proposal.

2.3.1 Desktop study

A desktop study was carried out to identify an indicative viewshed for the Proposal. This was carried out by reference to topographic maps as well as aerial photographs of the station location and surrounding landscape.

Topographic maps and aerial photographs were also used to identify the locations and categories of potential view locations that could be verified during the fieldwork component of the assessment. The desktop study also outlined the visual character of the surrounding landscape including features such as landform, elevation, landuse and the distribution of residential dwellings.

2.3.2 Fieldwork and photography

The fieldwork involved:

- a site inspection in March 2016 to determine and confirm the potential extent of visibility of the Proposal
- determination and confirmation of the various view location categories and receiver locations from which the Proposal could potentially be visible.

2.3.3 Assessment of visual impact

The level of visual impact that may result from the construction and operation of the Proposal has been determined by combining the assessment and determination of surrounding receiver sensitivity and the magnitude of the Proposal works when compared to the existing visual environment. The assessment and determination of visual impact has been determined in accordance with the *Environmental Impact Assessment Practice Note – Guideline for Landscape Character and Visual Impact Assessment EIA–N04*, Roads and Maritime Services 2013 (RMS practice note) .

The determination of visual impact is also subject to other factors which are considered in more detail in this VIA.

2.3.4 Mitigation measures

A number of mitigation measures have been recommended to assist in the reduction and, where possible, minimisation of any major adverse effects on surrounding receiver locations.

Section 3. Leura Station location and description

3.1 Station location

The Proposal is located in the town of Leura in the Blue Mountains local government area (LGA), about 110 kilometres west of Sydney. Leura Station is located beneath and to the west of the Leura Mall overbridge, about 140 metres south of the Great Western Highway. The main shopping area (Leura town centre) is located immediately south of the station entrance along both sides of Leura Mall. The Blue Mountains National Park is located about 1.5 kilometres south of the Proposal site. The station is serviced by the Blue Mountains line. The station location is illustrated in Figure 1.

3.2 Existing station description

The existing station precinct exhibits a range of visual elements which include:

- north and south bound rail lines, electrical conductors and steel gantries
- two platforms located on a single island
- overbridge and step access with railings
- station building, ticket office and passenger shelters/amenities
- utility poles and wires
- taxi rank (south of rail line)
- various security and safety fencing
- directional and informative signage.

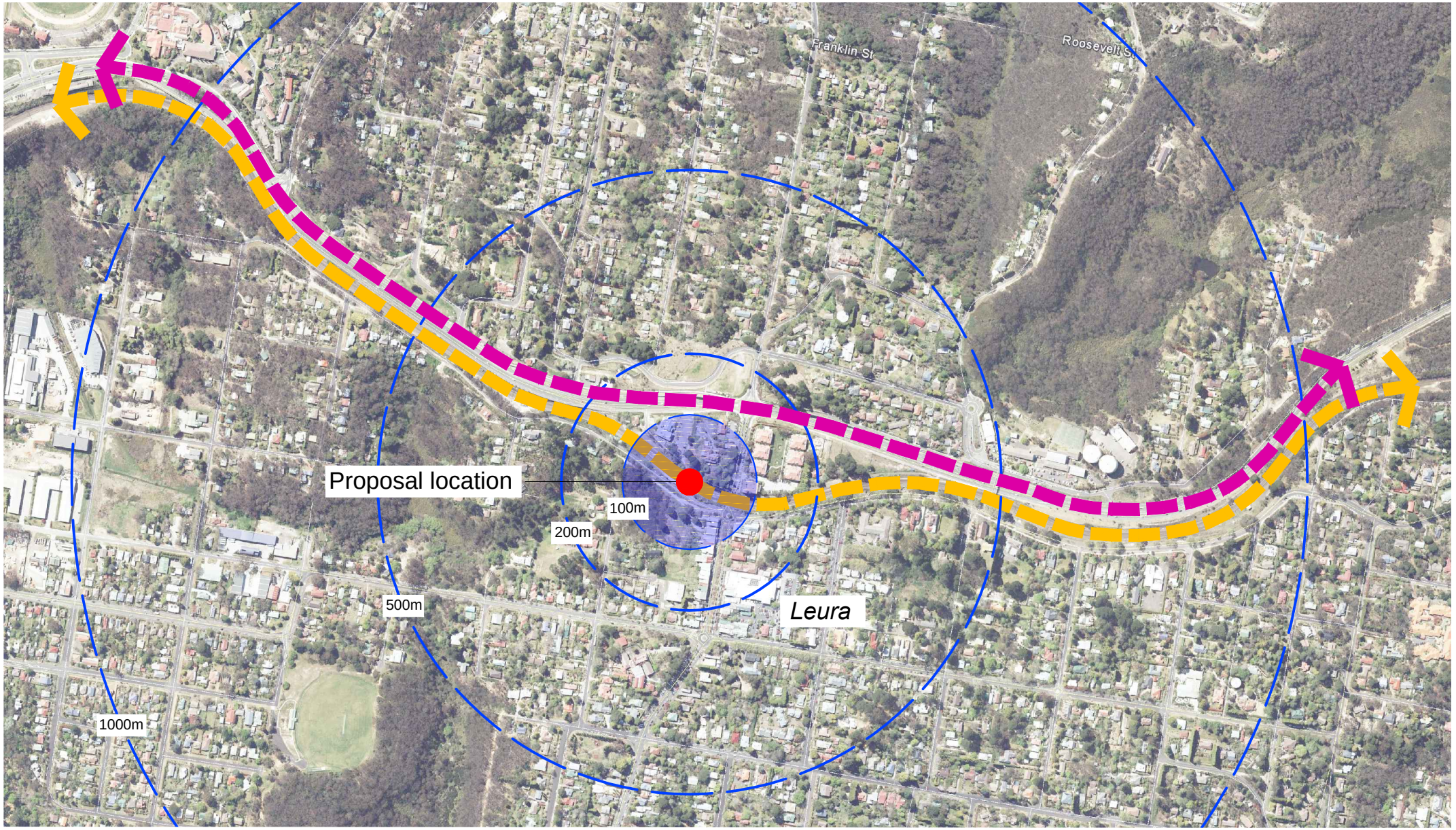
Leura Station consists of a single island platform configuration with two platforms serviced by the Blue Mountains Line. Platform 1 services trains travelling east to Sydney and platform 2 services trains travelling west from Leura.

The Proposal site consists of the station platform and associated buildings, intermodal interchange facilities, and the immediate surrounding road and footpath network that would be impacted by the Proposal.

All existing passenger amenities, services and facilities are located on the station platform in and around the station building. These include food and drink vending machines, public telephones, emergency help point, signage, and male and female toilets. Seating is provided in the waiting room and on the platform. Passengers only have access to the waiting room and toilet facilities when the station is staffed.

Leura Station is located within a cutting with platform access via a single flight of stairs connecting to the Leura Mall overbridge at the eastern end of the platform. There is limited canopy protection on the platform and none above the stairway. The station building has a platform awning covering a small part of the platform.

A single specimen tree is located in a small raised garden on the platform, between the overbridge and station building. The tree (a mature Strawberry Tree, *Arbutus unedo*) would be retained.



Source: Google Earth Pro 2015 Aerometrex

Legend

- Leura Station
- Rail corridor (Blue Mountains Line)
- Great Western Highway
- Approximate distance from proposal works

Figure 1
Proposal location

0m 100m

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Section 4. Proposal description

4.1 Proposal description

The Proposal would include a range of works to existing infrastructure as well as the construction of new facilities to improve access, convenience, and interchange between transport modes. The Proposal would include:

- installation of a lift and new stairs at the station overbridge to connect to platform
- expanded concourse area on the overbridge surrounding the lift
- new platform covering the lift entrance, station stairs and part of the platform
- works to the existing station buildings to make them accessible, including upgraded toilet facilities
- extension of the platform at the western end
- provision of a kiss and ride facility on the eastern side of Leura Mall next to the existing pedestrian crossing
- provision of an accessible path and ramp as well as stairs between the station and new taxi parking area
- provision of approximately six taxi parking spaces along Railway Parade
- provision of bicycle parking facilities
- ancillary works, including platform resurfacing, wayfinding, anti-throw screens, minor drainage works, adjustments to lighting, modifications to station communication, and security systems with new CCTV cameras.

The removal of a short section of small trees and ornamental shrubs to the south of the station, on the north side of Railway Parade, as well as a small garden bed would be required to accommodate the Proposal works. The location of the Proposal is illustrated in Figure 2

Source: Google Earth Pro 2015 Aerometrex

Legend

- Indicative Proposal extent
- Temporary construction compound
- Existing station building to be retained
- Rail corridor
- Existing tree cover with screening potentail
- Existing tree to be removed

Figure 2
Proposal area

Note: This figure is indicative only and based on a concept design

0m 15m

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Section 5. Site photographs

5.1 Site photographs

Digital photographs were taken during the course of the fieldwork to illustrate existing views in the vicinity of view locations inspected as part of this VIA.

The site photographs presented in this VIA have been annotated to identify existing built elements and roads located within the existing view and surrounding the station. The panoramic photograph locations are illustrated in Figure 3, and the site photographs illustrated in Figure 4 to Figure 8.

Source: Google Earth Pro 2016

Legend

Photo and photomontage location

Indicative Proposal extent

Figure 3
Photo and photomontage locations

0m 50m

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Photo location V1 - View looking south to south west from Leura Mall opposite entry to Flemish Flavours restaurant

Photo location V2 - View looking east to south east from footpath above and adjoining rail corridor cutting

Figure 4 Photo sheet 1

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Photo location V3 - View looking north from Leura Mall (south of Railway Parade) toward the overbridge and station entry

Photo location V4 - View looking north west from the Railway Parade and Leura Mall roundabout

Figure 5 Photo sheet 2

Photo location V5 - View looking south from Leura Mall (north of Leura Station)

Photo location V6 - View looking west from top of station platform stairs along rail corridor cutting toward station building and Katoomba skyline views beyond.

Figure 6 Photo sheet 3

Photo location V7 - View looking west to north west from Railway Parade (east of Leura Mall)

Photo location V8 - View looking east from Railway Parade road corridor (west of Leura Mall)

Figure 7 Photo sheet 4

Photo location V9 - View looking north from Leura Mall (south of Railway Parade)

Proposal works not visible from this location

Photo location V10 - View looking west from Railway Parade (east of Leura Mall)

Figure 8 Photo sheet 5

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Section 6. Urban landscape effects

6.1 Existing landscape and urban character

Land immediately adjoining the rail corridor is administered by Blue Mountains City Council and falls within the Zones R1 General Residential and B2 Local Centre under Council's Local Environmental Plan (2005). Council's objectives for Zone R1 include to:

- provide for the housing needs of the community
- provide for a variety of housing types and densities
- enable other land uses that provide facilities or services to meet the day to day needs of residents
- ensure that building form and design does not unreasonably detract from the amenity of adjacent residents or the existing quality of the environment due to its scale, height, bulk or operation
- enhance the traditional streetscape character and gardens that contribute to the attraction of the area for residents and visitors
- provide opportunities for the development of a variety of tourist-oriented land uses within a predominantly residential area.

In contrast to the Residential Zone, the general urban landscape character south of the rail corridor is defined by the Leura local centre (Zone B2 Local Centre) with a range of shops and services extending along Leura Mall. There is a visual diversity of colour, line and form associated with buildings and signage. Council's objectives for Zone B2 include to:

- provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work in and visit the local area
- encourage employment opportunities in accessible locations
- maximise public transport patronage and encourage walking and cycling
- promote the unique character of each of the towns and villages of the Blue Mountains
- promote the economic viability of the towns and villages
- promote high quality urban design of built forms.

6.2 Visual Absorption Capability

Visual Absorption Capability (VAC) is a classification system used to describe the relative ability of the urban landscape to accept modifications and alterations without the loss of character or deterioration of visual amenity. VAC relates to the physical characteristics of the urban landscape that are often inherent and quite static in the long term. In essence the VAC indicates the ability of an urban landscape setting to accommodate new development.

The VAC of an urban landscape is largely determined by inherent physical factors which include:

- the degree of visual penetration (view distance without obstruction) through surrounding buildings and tree cover
- the complexity of the urban landscape through bulk, scale, form and line.

Urban landscapes with a low visual penetration would have higher VAC values. Complex urban landscapes which include a mix of scale, form and line (together with some degree of vegetative screening) would also have high VAC values. The VAC of the urban landscape surrounding the Leura Station and the area of proposed works exhibits a relatively high VAC.

6.3 Urban landscape character impacts

The Proposal and its associated infrastructure would have an overall low impact upon the existing urban landscape character of the station precinct and surrounding built environment. The bulk and scale of constructed elements would be partially visually contained by existing mature tree planting within and beyond the station precinct as well as existing development within the Leura local commercial centre. The Proposal design incorporates various architectural and engineered outcomes that visually minimise bulk and scale of constructed elements through modulation and articulation of structures.

Building form and height also responds to both existing constructed elements within and adjacent to the station precinct including existing station buildings. Mature tree planting within the west portion of the station precinct provides a backdrop to views of the Proposal which would be visible below tree canopies. The Proposal is unlikely to form any significant skyline view from surrounding receiver locations.

The Proposal design results in a smooth integration with the existing station precinct and, as an upgrade to existing transport facilities, retains the existing function and purpose of the station in relation to surrounding land use. The Proposal integrates a high level of urban design and presents a rational approach to pedestrian and vehicular movement within the station precinct and connectivity to adjoining areas.

The Proposal is considered to result in an overall balanced and harmonious visual outcome where contemporary design, modern materials and sympathetic colours applied to the existing station precinct would combine to create a legible amenity asset within the surrounding urban landscape.

Section 7. Viewshed

7.1 Viewshed

For the purpose of this VIA the viewshed is defined as the area of land surrounding and beyond the station which could be potentially affected by the Proposal. In essence, the viewshed defines this VIA study area. The viewshed for the Proposal has been divided into a series of concentric bands (between 50 metres and 100 metres distance offsets) extending across the landscape from Leura Station. The viewshed is illustrated in Figure 9.

The primary viewshed extends in a north south orientation following the main parallel view corridors of both the rail corridor, Railway Parade and Leura Mall. The viewshed extending beyond the station precinct is responsive to, and defined by, both mature tree planting and built development to the east and west of the rail corridor. The location and extent of existing mature tree planting results in a restricted extent of visual penetration and would create a backdrop against views toward the Proposal from a number of surrounding viewpoints.

Receiver locations within the viewshed incorporate a range of categories which include:

- commercial premises
- rail customers
- pedestrians
- motorists.

Legend

- Proposal works primary view shed
- Tree cover with screening potential
- Building line blocking view beyond
- Road corridor view
- Residential interface

Figure 9
Viewshed

0m 25m

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8.3 Key existing viewpoints

In accordance with the RMS practice note, this VIA has developed a schedule of representative viewpoints which are within a reasonable distance of the Proposal and within the view catchment. The representative viewpoints include residential dwellings, commercial properties, road corridors and pedestrian footpaths. The representative viewpoints are illustrated in Figure 10.

8.4 Visual sensitivity

Following selection, the receiver viewpoints have been rated as to their sensitivity to change by the Proposal. The RMS practice note states that '*visual sensitivity refers to the quality of the existing view and how sensitive the view is to the proposed change. Visual sensitivity is related to the direction of view and the composition of the view*'.

Table 3 identifies:

- receiver viewpoints (R) and receiver types for the Proposal
- the view direction and approximate distance to the Proposal for each receiver viewpoint
- description of the existing view from each receiver viewpoint
- an assessment of the visual sensitivity and visual magnitude (erring on the side of caution) for each receiver viewpoint.

8.5 Visual magnitude

In accordance with the RMS practice note magnitude is '*the measurement of scale, form and character of a development proposal when compared with the existing condition. In the case of visual assessment this also relates to how far the proposal is from the viewer*'.

Table 3 identifies:

- receiver viewpoints
- the approximate distance from the receiver viewpoint to the Proposal
- a judgement on comparable scale, form and character between existing and proposed conditions
- an assessment of the visual magnitude (erring on the side of caution) for each receiver viewpoint.

Source: Google Earth Pro 2016

Legend

- Indicative Proposal extent
- Tree cover with screening potential
- Trees or shrubs to be removed
- Residential dwelling
- Commercial or workplace
- Road corridor
- Receiver location

Figure 10
Receiver locations

0m 25m

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Table 3 Proposal visual sensitivity and magnitude matrix

Receiver viewpoint (Refer Figure 10)	View direction and distance	Existing view description	Visual sensitivity grading	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R1 Commercial Hotel Alexandria	Looking south east toward the Proposal. The distance between the receiver viewpoint and the Proposal is around 150 metres.	Ground and upper storey views from the receiver viewpoint are screened by existing mature trees alongside the north boundary of the rail corridor.	**Moderate**	The Proposal would not form a visible element from this receiver viewpoint. Views toward the Proposal are blocked by mature trees to the south and south east of the receiver viewpoint.	**Negligible**
R2 Church	Looking south toward the Proposal. The distance between the receiver viewpoint and the Proposal is between 100 metres and 150 metres.	Ground storey views from the receiver viewpoint are screened by tree planting extending south of the Church and alongside the north boundary of the rail corridor.	**Moderate**	The Proposal would not form a visible element from this receiver viewpoint. Views are blocked by mature trees to the south of the receiver location.	**Negligible**
R3 Commercial Antiques and restaurant	Looking south toward the Proposal. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Ground and upper storey views from the receiver viewpoint are screened by mature trees alongside the northern boundary of the rail corridor.	**Moderate**	The Proposal would not form a visible element from this receiver viewpoint. Views are blocked by mature trees to the south of the receiver location.	**Negligible**
R4 Commercial Restaurant	Looking south east toward the Proposal. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Ground and upper storey views from the receiver viewpoint are screened by mature trees alongside the north boundary of the rail corridor.	**Moderate**	The Proposal would not form a visible element from this receiver viewpoint as views are blocked by mature trees to the south of the receiver location.	**Negligible**

Receiver viewpoint (Refer Figure 10)	View direction and distance	Existing view description	Visual sensitivity grading	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R5 Hotel and Serviced Apartments	Looking west toward the Proposal. The distance between the closest receiver at this viewpoint and the Proposal is around 50 metres.	Ground and upper storey views toward the Proposal are largely blocked by tree planting along the property boundary. Indirect views would extend toward and beyond the Proposal from a very small number of upper storey rooms within the south western building block.	**Moderate**	The Proposal would form a minor visible element within the surrounding visual environment; however views toward the Proposal from the majority of rooms and serviced apartments would be partially filtered and/or screened by tree planting along the property boundary and adjoining the Leura Mall road corridor. The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	**Low**
R6 Commercial and restaurant	Looking south west toward the Proposal. The distance between the receiver viewpoint and the Proposal is within 50 metres.	Ground and upper storey views from the receiver viewpoint would extend toward the Proposal from rooms located within the west and south of areas of the building.	**Moderate**	The Proposal would form a proximate, but minor visible element within the surrounding visual environment and is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	**Low**

Receiver viewpoint (Refer Figure 10)	View direction and distance	Existing view description	Visual sensitivity grading	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R7 Commercial properties	Looking north west toward the Proposal. The distance between the receiver viewpoint and the Proposal is between 100 metres and 150 metres.	Ground level and upper storey indirect views toward the Proposal are largely filtered by existing tree planting within property boundaries and alongside the southern boundary of the rail corridor.	**Moderate**	Views toward the Proposal would be partially filtered and screened by mature tree planting alongside Railway Parade and adjacent to the rail corridor. The Proposal would generally result in no discernible deterioration in the existing view.	**Negligible**
R8 Commercial Restaurant and shops	Looking north toward the Proposal. The distance between the receiver viewpoint and the Proposal is within and between 50 metres and 100 metres.	Ground level and upper storey views from commercial properties on the Railway Parade and Leura Mall intersection extend toward the station and Proposal with partial screening provided by tree and shrub planting along the rail corridor boundary.	**Moderate**	The Proposal would form a minor visible element within the surrounding visual environment. Some views toward the Proposal from surrounding shops would be partially filtered and/or screened by tree planting adjoining the Railway Parade road corridor. The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	**Low**
R9 Commercial properties	Looking north toward the Proposal. The distance between the receiver viewpoint and the Proposal is between 50 metres and 150 metres.	Ground level and first storey views from the receiver viewpoint toward the Proposal are largely screened by streetscape tree planting.	**Moderate**	The Proposal would not form a significantly visible element from these receiver viewpoints as views are blocked by tree planting within the streetscape corridor.	**Negligible**

Receiver viewpoint (Refer Figure 10)	View direction and distance	Existing view description	Visual sensitivity grading	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R10 Commercial properties	Looking north toward the Proposal. The distance between the closest receiver at this viewpoint and the Proposal is around 50 metres.	Indirect ground level and upper storey views from the receiver viewpoint are largely screened by adjoining built development and contained within the streetscape corridor.	**Moderate**	The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	**Low**
R11 Residential	Looking north east toward the Proposal. The distance between the receiver viewpoint and the Proposal is around 150 metres.	Ground level and upper storey views from the receiver viewpoint toward the station are screened by a rising landform and tree cover above the dwelling.	**High**	The Proposal would not form a visible element from this receiver viewpoint as views are blocked by a rising landform and tree cover north east of this receiver location.	**Negligible**
R12 Commercial	Looking north toward the Proposal. The distance between the receiver viewpoint and the Proposal is within 50 metres.	Ground level and upper storey views from commercial properties on the Railway Parade and Leura Mall intersection extend toward the station and Proposal with partial screening provided by tree and shrub planting along the rail corridor boundary.	**Moderate**	The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	**Low**

Receiver viewpoint (Refer Figure 10)	View direction and distance	Existing view description	Visual sensitivity grading	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R13 Railway Parade (east)	Looking east and north east toward the Proposal. The distance between the receiver viewpoint and the Proposal is within and between 50 metres and 150 metres.	Street level views toward Leura Station from the Railway Parade road corridor extend directly toward the station precinct, with more distant views west of the station partially screened and filtered by a road cutting and tree planting alongside the rail corridor.	**Moderate-Low**	The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. Views toward the Proposal would be transitory from vehicles or for pedestrians accessing or passing the station, and would be very short term. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	**Low**

Receiver viewpoint (Refer Figure 10)	View direction and distance	Existing view description	Visual sensitivity grading	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R14 Leura Mall (south)	Looking north toward the Proposal. The distance between the receiver viewpoint and the Proposal is within and between 50 metres and 150 metres.	Street level views toward the Proposal from the Leura Mall road corridor extend directly toward the station precinct, with more distant views south of the station partially screened and filtered by tree planting within the central grassed median.	**Moderate-Low**	The Proposal would form a visual element within the surrounding visual environment; however views toward some Proposal works would be partially filtered by street tree planting. The Proposal would introduce constructed elements which, in general, complement the scale and form of existing structures at the station. Views toward the Proposal would be transitory from vehicles or for pedestrians accessing or passing the station, and would be very short term. The Proposal is not expected to create a noticeable deterioration in the existing view.	**Low**

Receiver viewpoint (Refer Figure 10)	View direction and distance	Existing view description	Visual sensitivity grading	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R15 Railway Parade (west)	Looking west toward the Proposal. The distance between the receiver viewpoint and the Proposal is within and between 50 metres and 150 metres.	Street level views toward Leura Station from the Railway Parade road corridor extend directly toward the station precinct in proximity to Leura Mall, with more distant views west of the station partially screened and filtered by tree planting alongside the rail corridor.	**Moderate-Low**	The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial buildings beyond the station. Views toward the Proposal would be transitory from vehicles or for pedestrians accessing or passing the station, and would be very short term. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	**Low**

Receiver viewpoint (Refer Figure 10)	View direction and distance	Existing view description	Visual sensitivity grading	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R16 Leura Mall (overbridge)	Looking west toward the Proposal. The distance between the receiver viewpoint and the Proposal is adjoining and within 50 metres.	Street level views from the Leura Mall overbridge are located within the Proposal works extent. Existing views from the overbridge extend north and south along the Leura Mall road corridor and west across the station toward skyline views of buildings and tree cover within Katoomba.	**Moderate-Low**	The Proposal would form a prominent visual element within the surrounding visual environment. The Proposal would introduce constructed elements which, in general, complement the scale and form of existing structures at the station and within the surrounding urban area. Views toward the Proposal would be transitory from vehicles or for pedestrians accessing or passing the station, and would be very short term. The Proposal is not expected to create a noticeable deterioration in the existing view.	**Low**

Receiver viewpoint (Refer Figure 10)	View direction and distance	Existing view description	Visual sensitivity grading	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R17 Leura Mall (north)	Looking south toward the Proposal. The distance between the receiver viewpoint and the Proposal is within and between 50 metres and 150 metres.	Street level views in proximity to the Railway Parade and Leura Mall roundabout, and crossing the rail bridge, extend directly toward the Proposal from the Leura Mall road corridor	**Moderate-Low**	The Proposal would form a visual element within the surrounding visual environment; however views toward some Proposal works would be partially filtered by street tree planting. The Proposal would introduce constructed elements which, in general, complement the scale and form of existing structures at the station. Views toward the Proposal would be transitory from vehicles or for pedestrians accessing or passing the station, and would be very short term. The Proposal is not expected to create a noticeable deterioration in the existing view.	**Low**

8.6 Assessment of visual impacts

The RMS practice note stipulates that the impact of the Proposal on each viewpoint be assessed and that the visual impact should be based on a composite of the sensitivity of the view and magnitude of the Proposal in that view. A composite visual impact grading has been determined for each receiver viewpoint by reference to the visual impact grading matrix set out in Table 2.

Table 4 identifies:

- receiver viewpoints for the Proposal
- the visual sensitivity grading for each receiver location
- the visual magnitude grading for each receiver location
- an assessment of the visual impact (erring on the side of caution) for the Proposal.

Table 4 Proposal visual impact assessment matrix

Receiver viewpoint (Refer Figure 10)	Visual sensitivity grading	Visual magnitude grading	Visual impact
R1 Commercial Hotel Alexandria	Moderate	Negligible	**Negligible**
R2 Church	Moderate	Negligible	**Negligible**
R3 Commercial Antiques and restaurant	Moderate	Negligible	**Negligible**
R4 Commercial Restaurant	Moderate	Negligible	**Negligible**
R5 Hotel and Serviced Apartments	Moderate	Low	**Moderate-Low**
R6 Commercial and restaurant	Moderate	Low	**Moderate-Low**
R7 Commercial properties	Moderate	Negligible	**Negligible**
R8 Commercial Restaurant and shops	Moderate	Low	**Moderate-Low**

Receiver viewpoint (Refer Figure 10)	Visual sensitivity grading	Visual magnitude grading	Visual impact
R9 Commercial properties	Moderate	Negligible	**Negligible**
R10 Commercial properties	Moderate	Low	**Moderate-Low**
R11 Residential	High	Negligible	**Negligible**
R12 Commercial	Moderate	Low	**Moderate-Low**
R13 Railway Parade (east)	Moderate-Low	Low	**Moderate-Low**
R14 Leura Mall (south)	Moderate-Low	Low	**Moderate-Low**
R15 Railway Parade (west)	Moderate-Low	Low	**Moderate-Low**
R16 Leura Mall (overbridge)	Moderate-Low	Low	**Moderate-Low**
R17 Leura Mall (north)	Moderate-Low	Low	**Moderate-Low**

8.7 Summary of visual impact

This VIA has determined that:

- Ten of the seventeen receiver viewpoints would likely experience a moderate-low visual impact
- Seven of the seventeen receiver viewpoints would likely experience a negligible visual impact.

Ten receiver viewpoints have been determined to have an overall moderate-low visual impact with regard to the Proposal. The moderate-low visual impact occurs from proximate views (within and between 50 metres to 100 metres from the Proposal) which results in potential direct and detailed views toward Proposal structures. Whilst some existing deciduous and non-deciduous tree species would screen and filter views, the Proposal would be visible and reasonably prominent within the available, but limited viewshed. Views would include key features such as the station lift, stairs and canopy structures.

Seven of the receiver viewpoints have been determined to have an overall negligible visual impact with regard to the Proposal. The negligible visual impact results from the screening and blocking effect of mature tree planting between the receiver viewpoint and the station.

Whilst some visible built elements associated with the Proposal may be subject to change including form and colour, during the next stages of design the overall visible scale of the Proposal within the context of the surrounding urban village environment would remain relatively unchanged.

The majority of surrounding receivers within or around commercial properties would not be significantly impacted by the Proposal. This would include receivers within or travelling between commercial buildings along the Leura Mall and Railway Parade road corridors. Views would be partially screened and in many areas blocked by mature tree cover or built development within the surrounding urban areas.

Whilst the more significant visual Proposal elements (lift shaft and canopies) would be visible from proximate views from the overbridge and areas immediately adjoining the Railway Parade and Leura Mall roundabout, the structures would not entirely block or screen existing sightlines toward local road corridors, or buildings beyond the station precinct. Opportunities to gain middle to distant skyline views, toward the Katoomba skyline would be retained from the overbridge through the proposed throw screen structure.

Pedestrians and motorists travelling along local road corridors would not experience any major change with regard to the Proposal. Views toward the Proposal would be partially screened by existing mature tree and shrub planting to the north and south of the station, and where visible the Proposal would be viewed against a backdrop of surrounding tree cover, or the existing urban character. Potential visual impacts would also be limited due to the transitory and relatively short term nature of views from surrounding road corridors.

Short to medium term views toward the Proposal works may be created by the removal of tree and shrub planting alongside the station on Railway Parade; however, appropriate mitigation including replacement landscape planting works would assist in establishing a screen toward the station, platform and proposed lift, stair and canopy structures.

8.8 Construction activities

Whilst construction activities would tend to be more visible than the operational stage of the Proposal, the construction activities would be temporary and transient in nature. Views toward construction activities would be partially restricted by existing tree cover surrounding the station precinct.

Typical construction impacts include:

- temporary fencing and hoardings
- road barriers and signage
- scaffolding
- temporary site office and amenities.

8.9 Night time lighting

The Proposal would require installation of lighting for operational, safety, security and maintenance purposes. Night lighting would include building and pole mounted directional spot lighting and pole mounted pedestrian lighting. The Proposal would avoid broad area or floodlighting where possible. Light installations would be installed in accordance with the Australian Standard Control of the obtrusive effects of outdoor lighting (AS 4282-1997), and avoid light spill to adjoining road corridors and residential areas. In summary, night time lighting is not anticipated to have an adverse impact.

8.10 Overshadowing

The location of the Proposal in relation to the offset distance to public domain areas, road corridors and residential areas would result in shadows cast by new infrastructure being largely contained within the station precinct boundary. The Proposal is unlikely to create any significant cumulative shadowing in addition to existing shadowing from mature tree plantings adjoining the station precinct.

Section 9. Photomontages

9.1 Photomontages

Two photomontages have been provided by TfNSW. The photomontages locations are illustrated in Figure 3 and the photomontages are presented in Figure 11 and Figure 12.

The locations include:

- Photomontage 1 looking north from Leura Mall
- Photomontage 2 looking south east from the footpath along the north side of the station.

The photomontages help to illustrate individual built elements associated with the Proposal, such as the lift, canopy/awning structures, which would be visually legible as additional structures. Whilst the lift and canopy structures may be regarded as distinct visual elements, their scale and height are considered to be in proportion to the overall Proposal and are unlikely to form dominant skyline features from surrounding receiver locations.

Photomontage from photo location V3 - Proposed view looking north from Leura Mall and Railway Parade roundabout
Note: The photomontage is indicative only and is based on a concept design

Figure 11
Photomontage 1

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Leura Station Upgrade

Photomontage from photo location V2 - Proposed view looking south east from the footpath along the north side of the station
Note: The photomontage is indicative only and is based on a concept design

Figure 12
Photomontage 2

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Section 10. Cumulative impact assessment

10.1 Cumulative Impact Assessment

A cumulative visual impact could result from elements of the Proposal being constructed in conjunction with other existing or proposed developments which could be either associated or separate to it. Separate developments could occur or be located within a local context where visibility is dependent on a journey between each site or within the Proposal viewshed.

The Proposal would be located within the visual envelope of the existing station which contains rail infrastructure, station buildings and associated utility infrastructure. Constructed elements associated with the Proposal would be similar in scale, line and form to existing infrastructure within the existing station precinct. The potential for an associated cumulative impact between the Proposal and existing infrastructure would be minimised by the visual relationship between the proposed and existing works, with the Proposal forming an enhancement and extension to existing infrastructure rather than being viewed and recognised as a standalone development.

The Proposal is considered to have limited potential to increase the significance of cumulative visual impact with regard to existing large scale visual elements located beyond Leura Station. This is largely due to visual screening surrounding the Proposal for the majority of receiver locations and the location of proposed constructed elements relative to existing infrastructure.

Section 11. Mitigation measures

11.1 Mitigation measures

Mitigation measures should be considered to minimise the level of residual visual impacts during construction and operation. The mitigation measures generally involve reducing the extent of visual contrast between the visible portions of the Proposal structures and the surrounding landscape, and/or screening direct views toward the Proposal where possible.

11.2 Detail design

Mitigation measures during the detail design process should consider:

- further refinement in the design of the lift and canopy structures to articulate and form profiles which may assist in the mitigation of bulk and height
- a review of materials and colour finishes for selected components including the use of non reflective finishes to surfaces and roof structures
- appropriate selection of plant material and sizes to replace existing plants to be removed
- anti-throw screens which allow for continued views across the station and to Katoomba from the overbridge.

11.3 Construction

Mitigation measures during the construction period should consider:

- installation of screen hoarding and/or shade cloth screens
- minimise tree removal
- avoidance of temporary light spill beyond the construction site where temporary lighting is required
- rehabilitation of disturbed areas
- removal of graffiti in accordance with TfNSW standard requirements
- protection of mature and heritage listed trees
- traffic management and parking arrangements including potential for cars to park along residential streets due to reduced number of spaces due to construction activity.

11.4 Operation

Mitigation measures during the operational period should consider:

- light installation to be designed and placed in accordance with AS 4282-1997, to minimise obtrusive effects for surrounding receivers
- ongoing maintenance and repair of constructed elements
- replacement of damaged or missing constructed elements
- long term maintenance (and replacement as necessary) of tree planting within the station precinct to maintain visual filtering and screening of external views.

Section 12. Conclusion

12.1 Summary

The Proposal would introduce a range of constructed elements into the existing visual environment including key visual features such as a lift structures, awnings, steps, and canopies.

The Proposal is unlikely to result in a significant impact on the sensitivity of existing views as key Proposal infrastructure, including the lift, would not be inconsistent with the scale of some existing multi storey commercial buildings within the surrounding urban context. The Proposal would also introduce visual elements commonly associated with other stations in the Blue Mountains area. The Proposals key features would not be unexpected or considered not associated with a contemporary station development.

The Proposal would be more prominent and clearly defined than the existing station. This would help delineate the transport mode and to assist with wayfinding. The urban character which surrounds the station results in a relatively high VAC. The high VAC would tend to absorb changes to the visual environment associated with the upgrade works.

Whilst more visually prominent than the existing station, the Proposal is intended to integrate with the existing streetscape character. The Proposal is considered to have an overall low impact upon the existing urban character.

This VIA determined that the Proposal would have a moderate-low visual impact on the majority of people living/working in or travelling through the urban landscape surrounding Leura Station.

The consideration and application of mitigation measures outlined in this VIA would assist to minimise the potential visual impact of the Proposal.

References

Guidelines for Landscape and Visual Impact Assessment Landscape Institute and Institute of Environmental Management & Assessment (3rd Edition), 2013

Environmental Impact Assessment Practice Note, Guideline for Landscape Character and Visual Impact Assessment EIA-N04 Roads and Maritime Services, March 2013

Leura Rural and Regional Interchange Precinct Concept Design Plan Report Cardno, March 2015

Limitations

GBD has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of Transport for NSW and authorised third parties. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report. It is prepared in accordance with the scope of work and for the purpose outlined in the GBD Proposal dated 26 September 2015.

The methodology adopted and sources of information used are outlined in this report. GBD has made no independent verification of this information beyond the agreed scope of works and GBD assumes no responsibility for any inaccuracies or omissions. No indications were found during our investigations that information contained in this report as provided to GBD was false.

This report was prepared in March 2016 and is based on the conditions encountered and information reviewed at the time of preparation. GBD disclaims responsibility for any changes that may have occurred after this time.

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