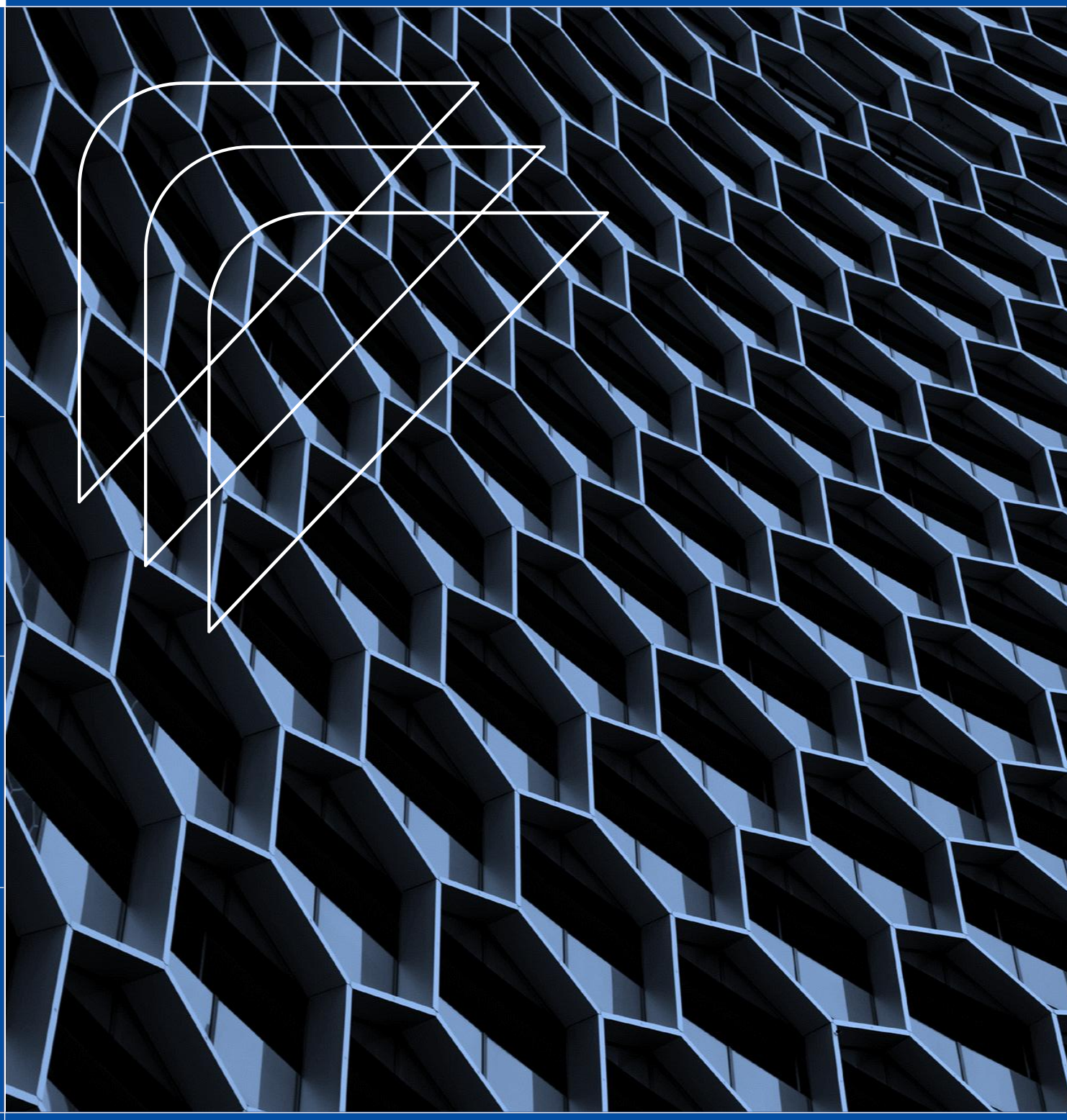
CIVIL

FLOODING

STORMWATER

STRUCTURAL

REMEDIAL



# Services & Infrastructure Report

142-150 Narrow Neck Road
Katoomba 2780

## Prepared For

**VDM Prime Pty Ltd**

deboke
ENGINEERING CONSULTANTS

File Reference: 20240356-SS-DA-CIV-REP-02-Services and Infrastructure Report

# Document Control

| | |
|---|---|
| Document Reference | 20240356-SS-DA-CIV-REP-02-Services and Infrastructure Report |
| Development Type | Multi-residential Development |
| Document Type | Services & Infrastructure Report |
| Author | Andrew Arida |
| Approved By | Andrew Arida |

## Revision History

| Revision | Date | Description | Issued By | Approved By | Signature |
|---|---|---|---|---|---|
| 01 | 05.11.25 | SS-DA Approval | ZZ | AA | |
| 02 | 15.01.26 | SS-DA Approval | ZZ | AA | |

## Document Approval

| | |
|---|---|
| Name | Andrew Arida |
| Title | Director |
| Client | VDM Prime Pty Ltd |
| Signature | |

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# 1 Introduction

## 1.1 Overview

Deboke Engineering Consultants Pty Ltd (Deboke) have been engaged by VDM Prime Pty Ltd to prepare a Services and Infrastructure report to support the multi-residential development at 142-150 Narrow Neck Road Katoomba 2780.

The works demonstrated in the report are subject to further approvals and cover works required to service the proposed works with regards to earthworks, stormwater drainage, sewerage, water supply, electricity, and communications to meet the VPA obligations.

## 1.2 Relevant Sources

This report has been prepared in accordance with the following sources:

1. Commonwealth of Australia (Geoscience Australia) (2019), Australian Rainfall and Runoff – A Guide to Flood Estimation;
2. NSW Department of Infrastructure, Planning and Natural Resources (2005), Floodplain Development Manual;
3. Blue Mountains Local Environmental Plan (LEP) 2015;
4. Blue Mountains City Council's Development Control Plan (DCP) 2015;
5. National Construction Code 2019 Volume 3 (Plumbing Code of Australia);
6. Australian Standard AS3500.3 Plumbing and Drainage Part 3: Stormwater Drainage;
7. Landcom Managing Urban Stormwater: Soils and Construction - Volume 1, 4th edition;
8. Detailed Site Survey prepared by Norton Survey Partners (refer to Appendix A);
9. Architectural plan prepared by Valentino Careri Atelier ref: S4.55-AR-033-B, Dated 04/12/23; and
10. 'Dial Before You Dig' (DBYD).

# 2 Site Description & Background Information

## 2.1 Site Description and Location

Refer to Table 1 for the existing site description summary.

*Table 1 - Site Description Summary*

| Summary | Site Description |
|---|---|
| **Address** | 142-150 Narrow Neck Road, Katoomba 2780 |
| **Lot/DP** | 1/DP1026915 |
| **LGA** | Blue Mountains City |
| **Existing Land Use** | Forest |
| **Total site** | 1.69 ha |

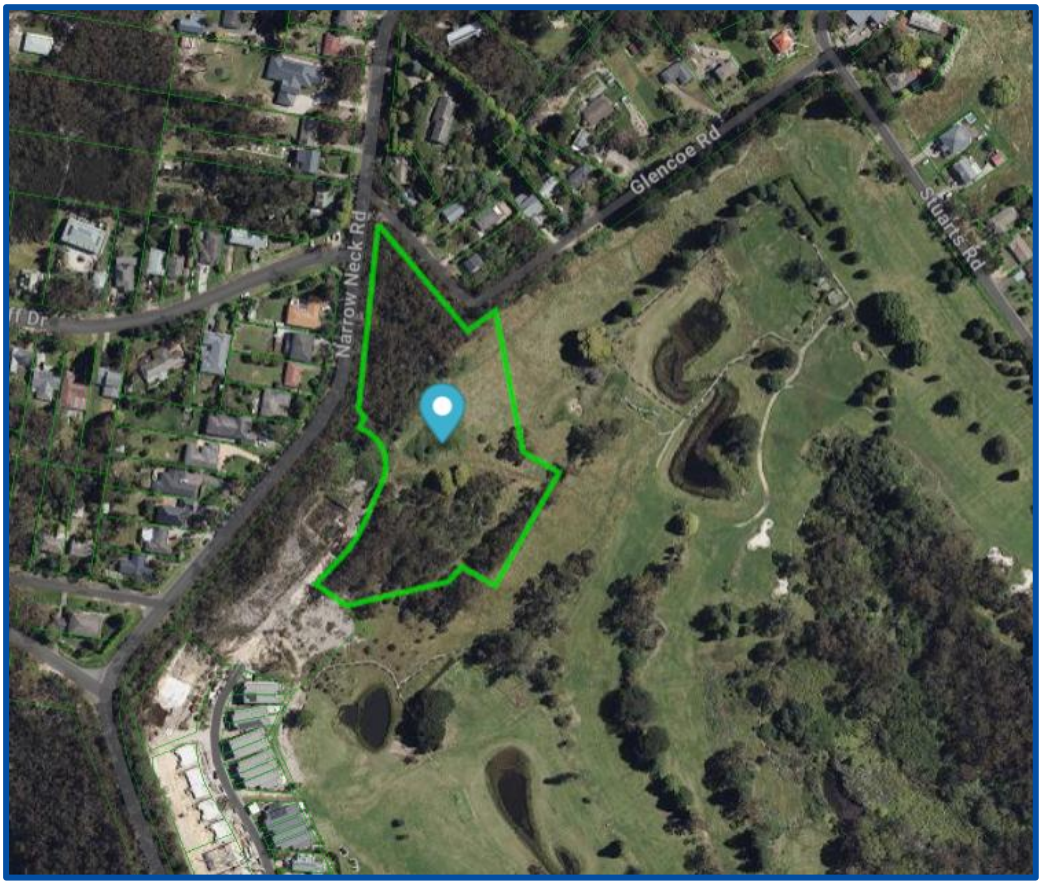



*Figure 1 - Location Plan (Mecone Image dated 23.11.2024)*

## 2.2 Proposed Works

The proposed development comprises a mixed-use residential and serviced accommodation precinct in the vicinity of the Planetary Health Precinct at Katoomba. It includes the construction of 218 residential units, supported by a restaurant and café precinct, private wellness facilities for residents and their guests, and high-quality landscaped open spaces. The design integrates medium-density, environmentally responsive buildings on the R3-Zoned site, arranged around shared courtyards, pedestrian linkages, and green corridors that connect to the surrounding natural landscape. Basement parking is proposed to each building.

The development is conceived as a model of sustainable living and regenerative urban design, combining housing diversity, eco-tourism, and community wellbeing within a framework consistent with the Blue Mountains' Planetary Health objectives and State planning policies for resilient, low-impact development.

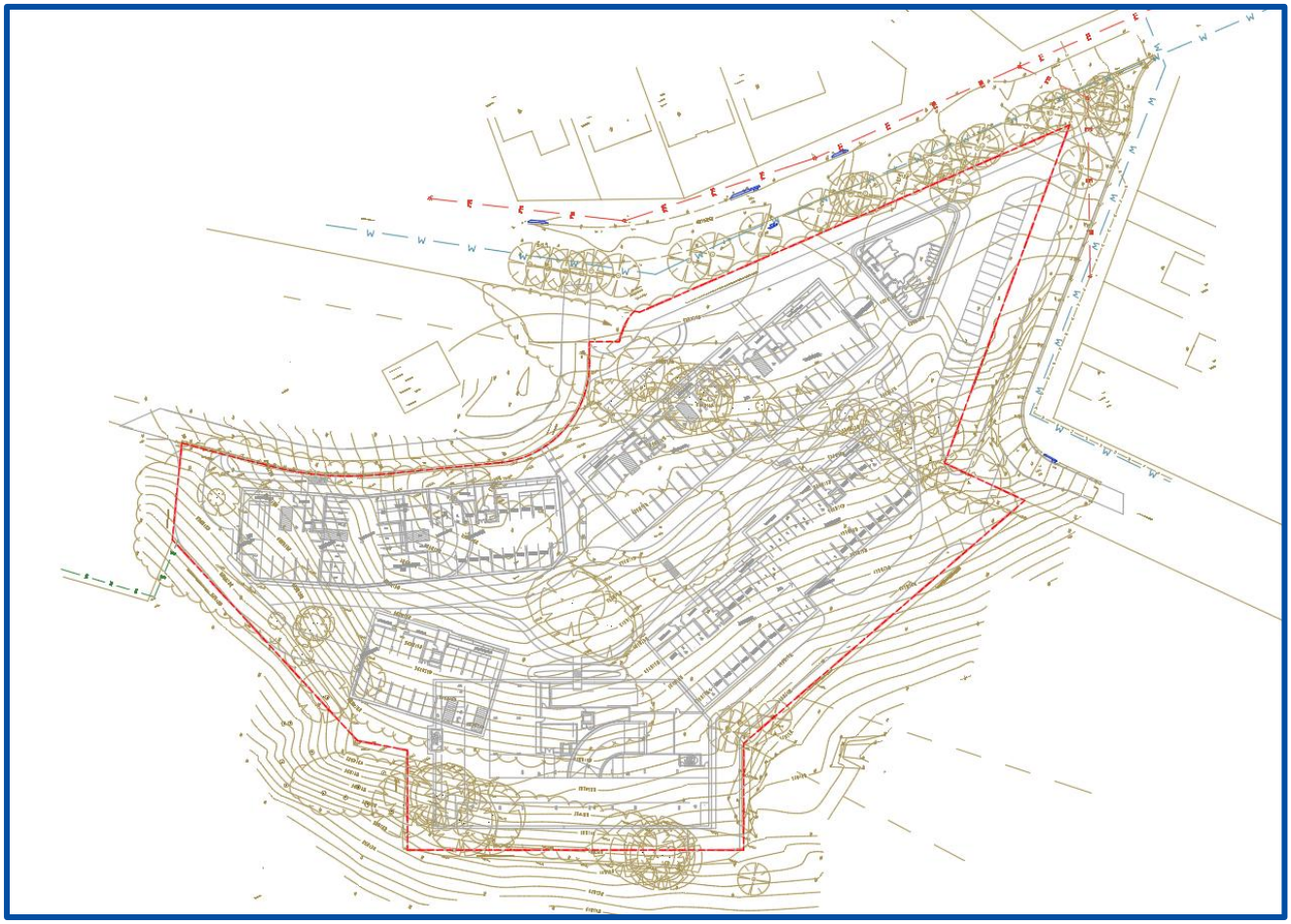


*Figure 2 - Site Layout (prepared by Antoniades Architects Dated 19/09/25)*

## 2.3 Surrounding Land Use

The subject site is located adjacent to the Blue Mountains Planetary Health Precinct in Katoomba, New South Wales, positioned on elevated terrain offering panoramic views across the Jamison Valley and surrounding escarpments. The land comprises a series of gently sloping and vegetated lots, currently occupied by a mix of low-intensity uses and cleared areas associated with previous residential and ancillary structures. The site benefits from direct access to established road infrastructure and proximity to existing utilities, public transport, and community facilities within the Katoomba township.

## 2.4 Easements

One Drainage easement is present within the site. The easements presently provide service and access rights for a range of services and corridors through the site. The existing easements is proposed to be extinguished as a part of this application.

# 3 Planned Service Realignment

The proposed works will involve the relocation and removal/decommissioning of existing utility services and easements to service the proposed development. These relocations will be corresponded to the removal of existing structures across the site. Where possible the proposal involves identification of services that require relocation which will be further identified during subsequent development applications to facilitate works across the site.

It is planned to relocate and upsize the existing drainage work to accommodate the future development on the site.

All telecommunications, power poles, water meters, fire hydrants, underground electrical pits and overhead electrical lines are to be installed on the service trench within the access road, with temporary and ultimate services installed where required. The full extent of this is to be confirmed during detailed design by specialist consultants.

Refer to Appendix A for Site Survey Appendix B for Deboke Civil drawings showing details of the existing layout and services.

# 4 Earthworks

Access road, the residential development works are expected to be completed before the earthworks construction of the site preparation. The proposed earthworks are influenced by future roads, further development and drainage as part of the overall site plan.

The planned finished surface involves the creation of earthwork pads over planned lots to facilitate construction of new structures and facilities. The earthworks pads are to be elevated such that they are free of flooding and road surfaces are to be shaped such that overland flows are to be directed to the vegetation between each service apartments.

The extent of bulk earthworks will extend to the Stage one work. There are two existing detention basins to the east and the south as shown in Former Katoomba Golf Course.

Refer to the Civil Plan by Deboke in Appendix B for further details regarding the proposed Earthworks.

# 5 Stormwater

## 5.1 Stormwater Discharge

The subject site sits on a steep site uphill of the Former Katoomba Golf Course that incorporates several existing water features. Notable to the subject site are 2 basins located to the east and the south as shown in Figure 3.

*Figure 3 – Aerial from March 2023 indicating the 2 basins local to the site (NearMap, 2023)*

Discharge to Basin 2 (East)

The current stormwater along Narrow Neck Rd infrastructure from the Council, comprising pits and pipes, currently flows through an easement on the site, entering the Former Katoomba Golf Course and discharging through a headwall into an existing swale leading towards Basin 2 (see Figure 3). The proposed design aims to reposition the Council's stormwater system within the subject site's layout. This redesign retains the discharge point at the headwall while integrating the drainage system of the subject site.

Discharge to Basin 1A (South)

Access Road along the south wing and generally the apartments off road are to drain down to Basin 1A south of the site, this will require a new stormwater line exiting the site and running across the Former Katoomba golf Course to discharge via new headwall to the existing basin 1A.

Alternatively in coordination with Council it may be beneficial to coordinate locating the discharge headwall nearer to the subject site boundary and providing a swale-type discharge down to Basin 1A, similar to the existing arrangement leading towards Basin 2 to the east.

## 5.2 Stormwater Quantity and Quality

The historical drawings, sourced from BMCC, pertaining to the subject site and the Former Katoomba Golf Course include the following documents:

- Road and stormwater drawings from the Escarpments Project Stage Two Katoomba Golf Course in Katoomba by G. B. Meyer & Associates Surveyors, dated June 2003.
- Civil drawings from the Katoomba Golf Course Redevelopment by Egis Consulting, dated August 2000.
- Landscape drawings from the Katoomba Golf Course by Pittendrigh Shinkfield and Bruce, dated August 2000.

These historical drawings meticulously outline the Council's stormwater pipe and easement, illustrating its drainage path from Narrow Neck Road through the subject site to the east basin. Additionally, they provide insights into the design of the Former Golf Course's basins, tailored to accommodate upstream catchments. For detailed reference, please consult APPENDIX C– HISTORICAL DRAWINGS.

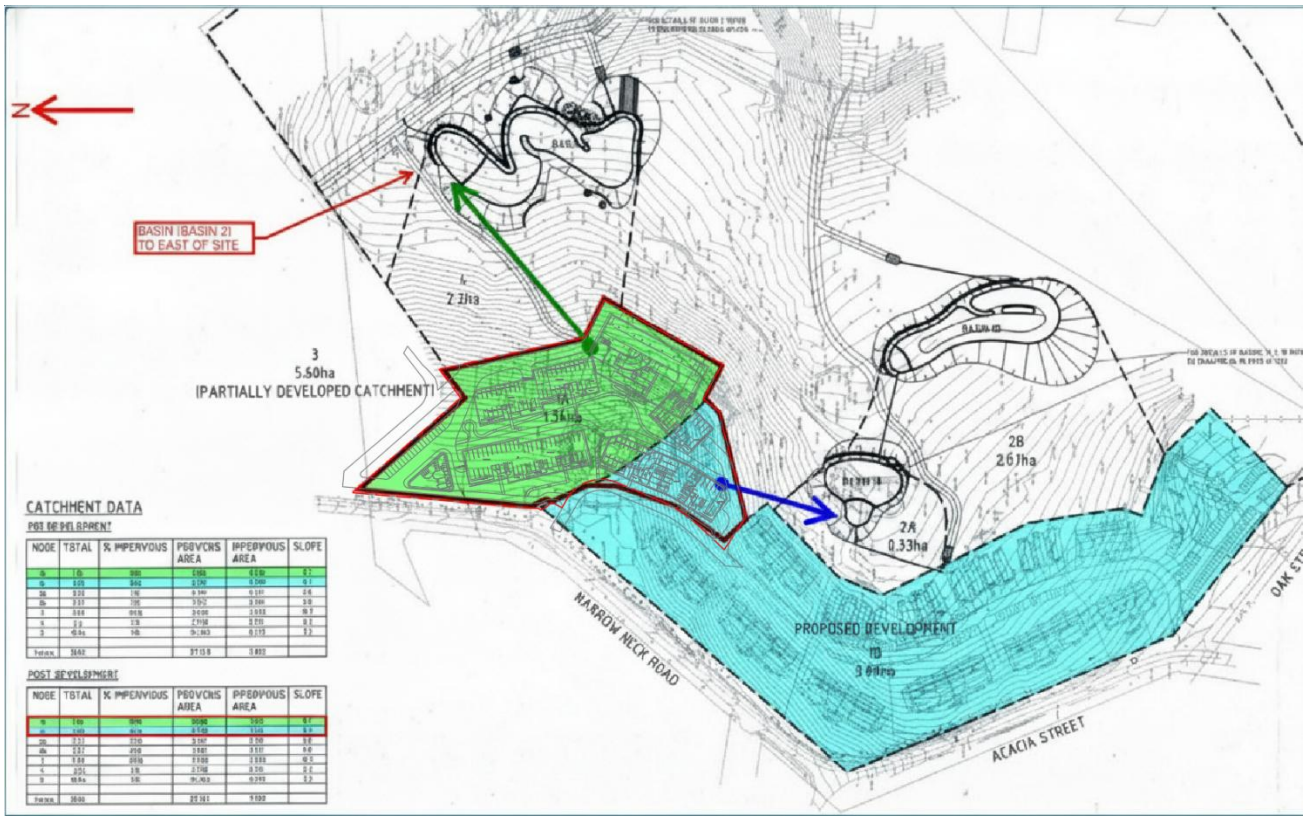



*Figure 4 – Excerpt With Markups From Historical Drawing Water Quality Control Plan By egis*

Figure 4 showing the subject site (red outline) spanning catchments 1a (green) and 1b (blue) draining to basin 2 and basin 1a respectively, arrows indicate how the portion of the catchment within the subject site drains to the basins (egis consulting, 2000).

Referring to the catchment data table in the lower-left corner of Figure 4, the current basins are designed to accommodate the subject site, considering an 80% impervious area in the post-development scenario. However, the proposed development for the subject site in this Development Application (DA) features a significantly lower impervious area at approximately 72.0%. Consequently, any potential stormwater

quantity or quality effects from the proposed development are anticipated to be effectively managed by the existing downstream basins.

While the concept DA design aims to align with the catchment split shown in Figure 4, it acknowledges the inherent variability. In subsequent design stages, the catchment split will be thoroughly reviewed and refined to closely adhere to the original apportionment, taking into account the advantages offered by the lower impervious area in the proposed layout.

It is important to note that the proposal aligns with the Draft Precinct Plan for the Former Katoomba Golf Course, which underwent public exhibition in March-April 2023 (refer to APPENDIX D – DRAFT PRECINCT PLAN FORMER KATOOMBA GOLF COURSE PLACED, PUBLIC EXHIBITION MARCH-APRIL 2023). The plan identifies the existing "Water Sensitive Urban Design Gardens" with "a rainfall catchment extending beyond the site to the west," including the subject site covered in this report (refer to section 5.3.4 Water Sensitive Urban Design Gardens of the Draft Precinct Plan).

The proposed development's stormwater runoff will be collected through the on-site drainage system and directed towards the northeastern section of the site, where it will be discharged and extended to the adjacent lake. This discharge route follows the natural flow path, ensuring that stormwater from the development is conveyed in a controlled manner to prevent erosion and maintain water quality. The proposed outfall connection to the lake has been designed to accommodate existing and future flows, supporting the downstream drainage network and maintaining the functionality of future developments within the catchment area.

## 5.3 Rainwater Reuse

In line with the WSUD initiatives set by the Council and as mentioned above, the development intended to provide a Reuse of Rainwater system using Rainwater tank as main collection points. These Rainwater tanks will supply the irrigation of surrounding landscape areas as well as the reuse for flushing in toilets within the building

In total, there are nine proposed rainwater tanks, one in each building. Each tank will collect the building's roof stormwater runoff and be circulated back either for irrigation or flushing. Also, each tank can contain up to 10,000L of rainwater. In this way and as the MUSIC model shows there will be a less impact to the current water quality of the site.

In summary, the proposed rainwater reuse system effectively aligns with Council's WSUD initiatives by promoting sustainable water management within the development. The integration of rainwater tanks for irrigation and toilet flushing will significantly reduce potable water consumption, mitigate stormwater runoff impacts, and enhance the overall environmental performance of the site. This approach demonstrates the development's commitment to implementing practical and environmentally responsible design solutions.

## 5.4 Raingarden, Swale and Permeable Pavement

Raingardens are proposed as an at source treatment and are to be located strategically throughout the site. Raingardens are planted filtration systems where water is allowed to temporarily pond and permeate through the ground allowing pollutants to be removed through natural processes. Raingardens are planted with nutrient removing plants which provide an effective means of extracting dissolved nitrates and phosphates. Pollutant removal rates for raingardens are not fixed within the MUSIC model, rather

they are based on a set of input parameters which determine the effectiveness. In developing the MUSIC model for the site, the following input parameter assumptions were made generally in accordance with the recommended defaults listed in Council's WSUD Technical Guidelines:

- Filter area = 256m$^2$
- Extended detention depth = 0.1m;
- Filter depth = 0.3m; and
- Saturated hydraulic conductivity = 100mm/hr

Swales are linear, depressed channels that collect and transfer stormwater. They can be lined with grass or more densely vegetated and landscaped. Vegetation is used to promote uniform flow and the slowing of water velocity to encourage the settlement of course sediments and capture significant amount of litter and organic matter. Runoff generated from road surface falls into swale and be collected at downstream before it connects to road drainage.

Permeable membrane roads, also known as permeable or porous pavements, are designed to allow rainwater to pass through the surface instead of running off, helping to reduce flooding, recharge groundwater, and improve stormwater quality. The top layer is made of porous materials such as permeable asphalt, pervious concrete, or interlocking pavers with small gaps that let water infiltrate through the surface rather than forming puddles. Beneath this is a permeable geotextile membrane, a fabric that allows water to pass through while filtering out fine particles to prevent clogging and maintain structural stability by separating the soil from the aggregate layers. Below the membrane lies a base and subbase composed of coarse aggregate or crushed stone, which act as a temporary storage reservoir where stormwater is held before slowly infiltrating into the ground or being directed to drainage pipes. In fully permeable systems, water infiltrates directly into the subsoil to replenish groundwater, while in semi-permeable systems, excess water is conveyed through underdrains to nearby swales, retention basins, or stormwater systems. Overall, permeable membrane roads mimic natural hydrology by reducing surface runoff, minimizing erosion, filtering pollutants, and enhancing water quality, all while maintaining the strength and function of conventional roadways.

Based on the proposed Water Sensitive Urban Design (WSUD) strategy, which integrates Raingardens, Swales, and Permeable Membrane Roads, the site is equipped with comprehensive at-source stormwater treatment and management measures. These systems are designed to effectively reduce runoff volume, slow water velocity, and naturally remove pollutants like nitrates, phosphates, coarse sediments, litter, and organic matter. Ultimately, the treated stormwater from the site will be directed toward the lake, as illustrated in Figure 4, significantly enhancing the quality of the discharge and promoting the overall health of the receiving water body and surrounding ecosystem.

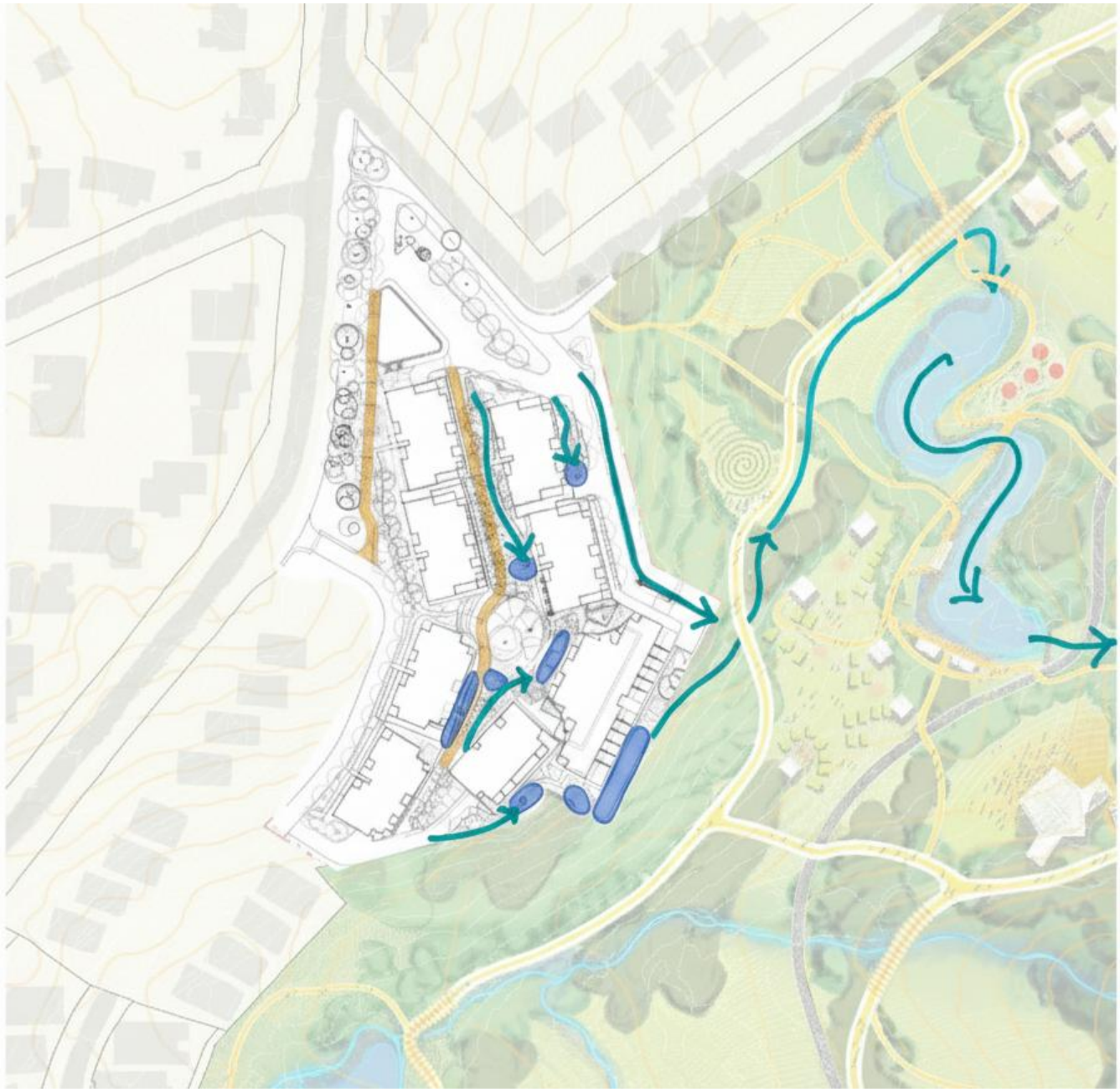


*Figure 5 – Stormwater Treatment and Discharge Location*

## 5.5 Proposed

With consideration of future drainage and infrastructure as part of the overall masterplan proposal, the proposed works will be as follows;

- Existing drainage servicing Narrow Neck Road and other stage not affected by this development is to be retained and decommissioned when replacement is achievable;
- New Ø300 RCP drainage line under the access road;
- Drainage work to each service apartment;
- Easement diversion and amplification work.

# 6 Sewer Drainage and Sanitary Plumbing

## 6.1 Existing Connection Point

It is proposed for the site to be drained to a single 225mm connection to the 225mm PVC sewer main at the south-eastern corner of the site.

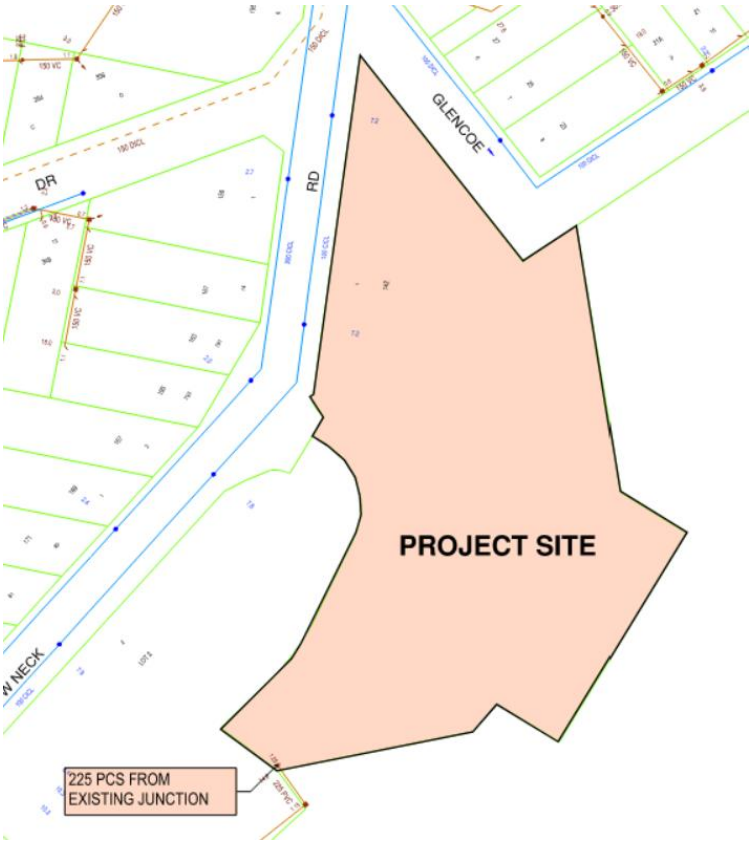



*Figure 6 - Sewer Infrastructure Map*

Through the detailed design phase, further coordination is required with the water servicing coordinator (WSC) to finalise the incoming sewer connection point.

## 6.2 Design Criteria

### 6.2.1 Sewer Loading

The main reticulated sewer drainage line serving the development will be in accordance with AS/NZS 3500.2-2021 and preliminary proposed fixture unit calculations are as follows:

*Table 2 - Sewer Demand*

| Area | Residential Buildings | Fixture Units |
|---|---|---|
| Residential development | 276 | 6,000 |
| Subtotal sewer connection | **6,000** | |
| **225mm @ 2.0% Grade** | | **7,090** |
| **225mm @ 2.5% Grade** | | **8,060** |

A network of sewer drainage systems will transfer sewerage waste from all levels of the proposed building to the nominated sewer connection.

### 6.2.2 Sewer Pump Stations

Due to the topographic nature of the site, it has been identified that the dwellings numbered D through to F will not be able to be drained via gravity to the property connection point and will be conveyed via localized below ground sewer pump station. This also applies to the residential development with plants rooms, amenities and trade waste provisions contained on the carpark level required to be conveyed via localized below ground sewer pump station.

# 7 Potable Cold Water

## 7.1 Connection Point

It is proposed the site's potable water is serviced via the 200 CICL water main in Narrow Neck Road which will likely be cross connected by The Escarpments.

The final connection location and the availability of water is to be confirmed/assessed via the Section 73 NOR which is undertaken by the water servicing coordinator (WSC).

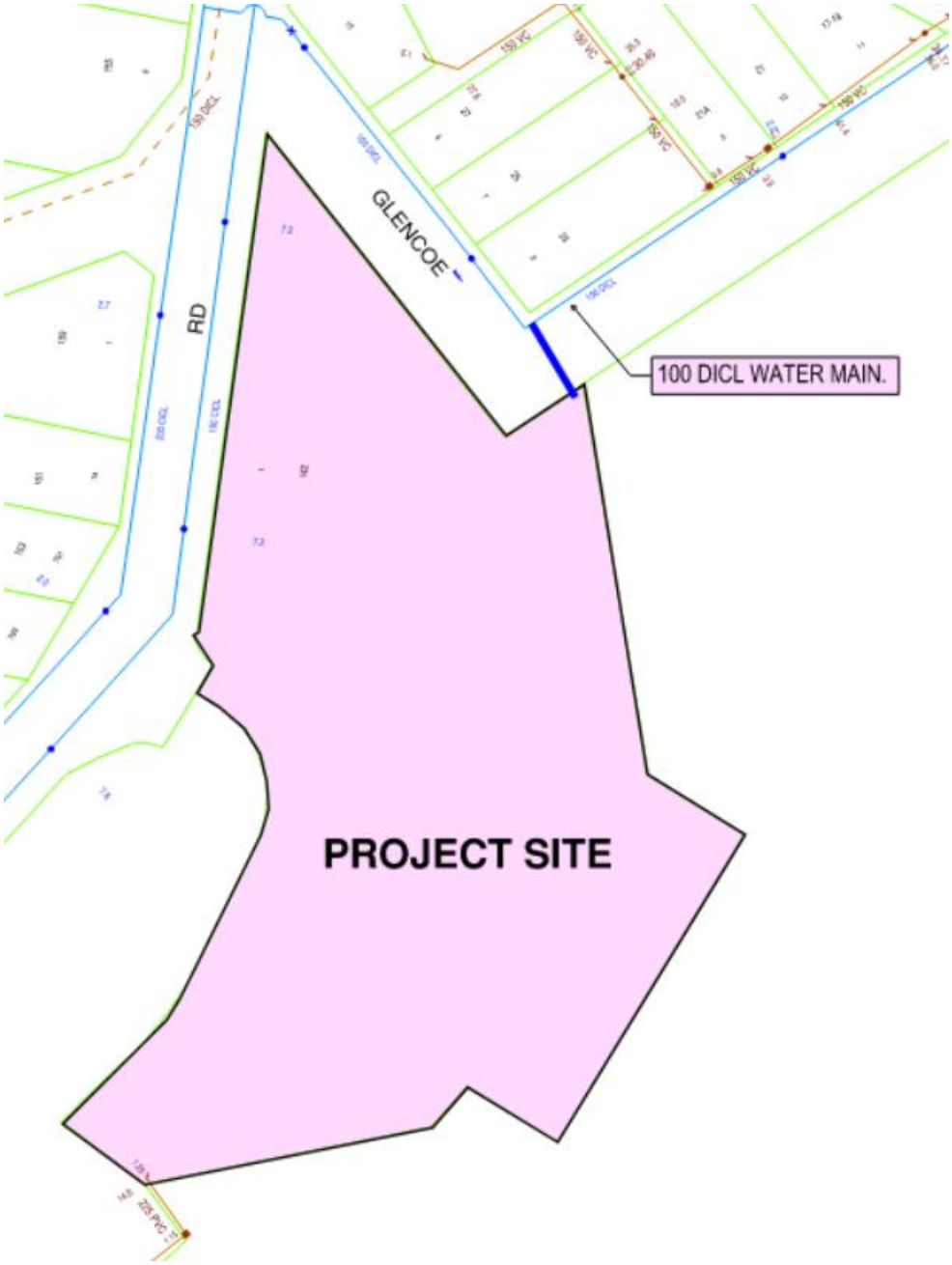



*Figure 7 - Water Infrastructure Map*

## 7.2 Design Criteria

### 7.2.1 Sizing

Potable cold water services will be sized with adequate capacity to convey water supply to all fixtures and appliances. Typically, the loading unit method of calculation has been utilized from AS3500.1-2021. A preliminary assessment of the probable simultaneous flow rates have been calculated as follows:

*Table 3 - Water Demand*

| Area | PFSR (L/s) |
|---|---|
| Residential Apartments | 13.55 |
| Serviced Apartments | 5.25 |

Due to the limited pressure available in the incoming water service, the water service for the residential development will be boosted by variable speed pumpsets to ensure the minimum pressures are achieved.

### 7.2.2 Metering

A single Sydney Water authority meter kit assembly will be provided immediately inside the boundary for the entire lot. Should sub-division or titling occur this may change the metering strategy.

Additional meters can be installed to meet leak detection requirements or ESD/water saving initiatives.

# 8 Natural Gas

## 8.1 Connection Point

From initial discussions with Jemena, it is understood the strategy for supplying gas to the development will be via connection to the 32NY 300kPa Glencoe Road.

It has been advised by Jemena from preliminary assessment that the existing 300kPa gas mains fronting the site is available and could be extended to supply any proposed development at this site depending on its commercial viability.

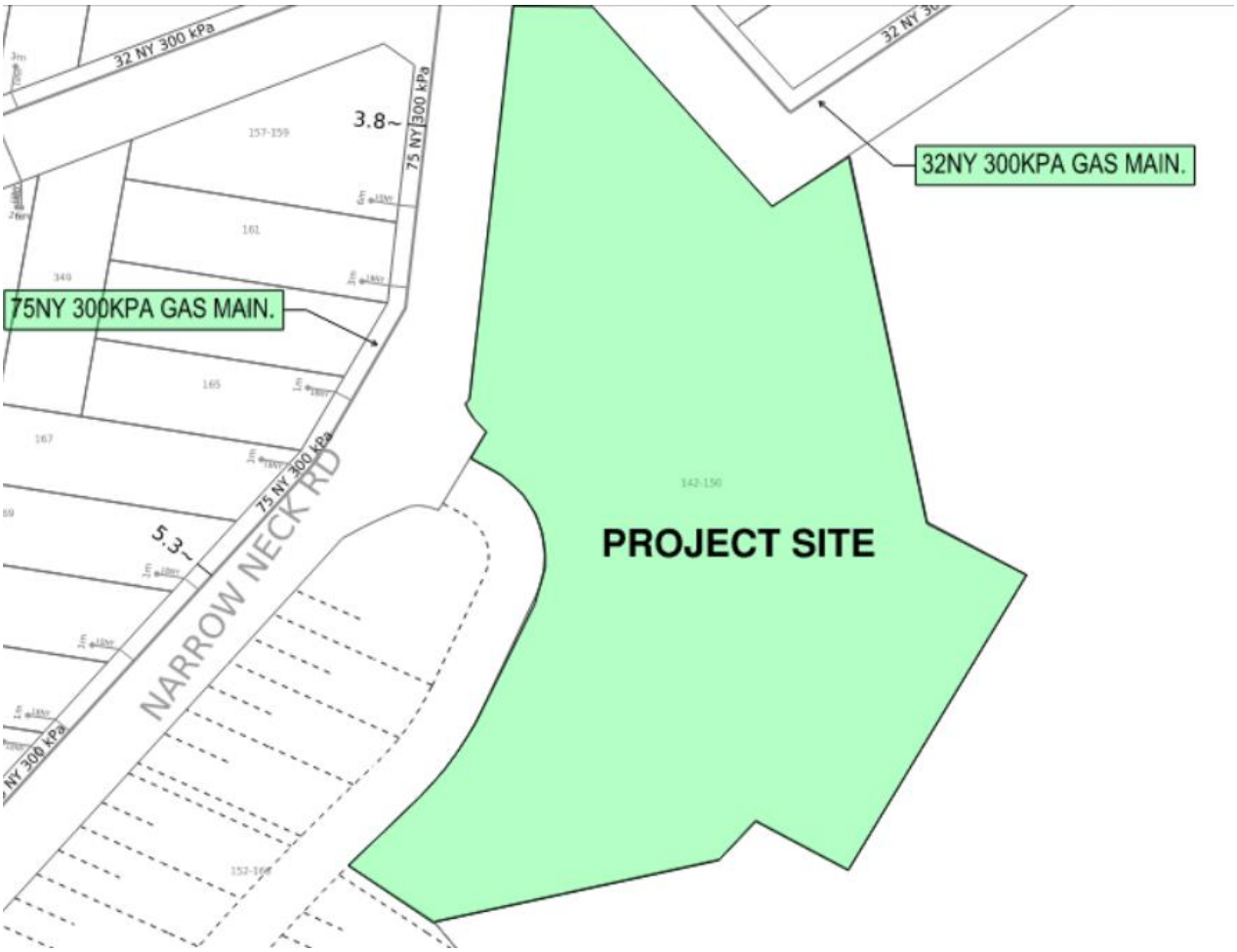



*Figure 8 - Gas Infrastructure Map*

## 8.2 Design Criteria

### 8.2.1 Sizing

Gas services will be sized with adequate capacity to convey gas supply to all connected appliances. The pipe sizing methods from AS5601 – 2022 will be used.

### 8.2.2 Metering

Below is the below proposed metering for the development.

*Table 4 - Gas Metering*

| Equipment | Description |
|---|---|
| Boundary Regulator and Meter Kit | Incoming 300kPa supply will be reduced down to 5kPa through this device. Meter kit to be installed downstream of Boundary Regulator. |

# 9 Power Supply

## 9.1 Connection Point

It is understood from desktop assessment that overhead high-voltage infrastructure is available along Narrow Nech Rd from Endeavour Energy.

Additionally, a pad-mount substation is identified along Narrow Neck Rd supplying neighboring properties adjacent to our development site.

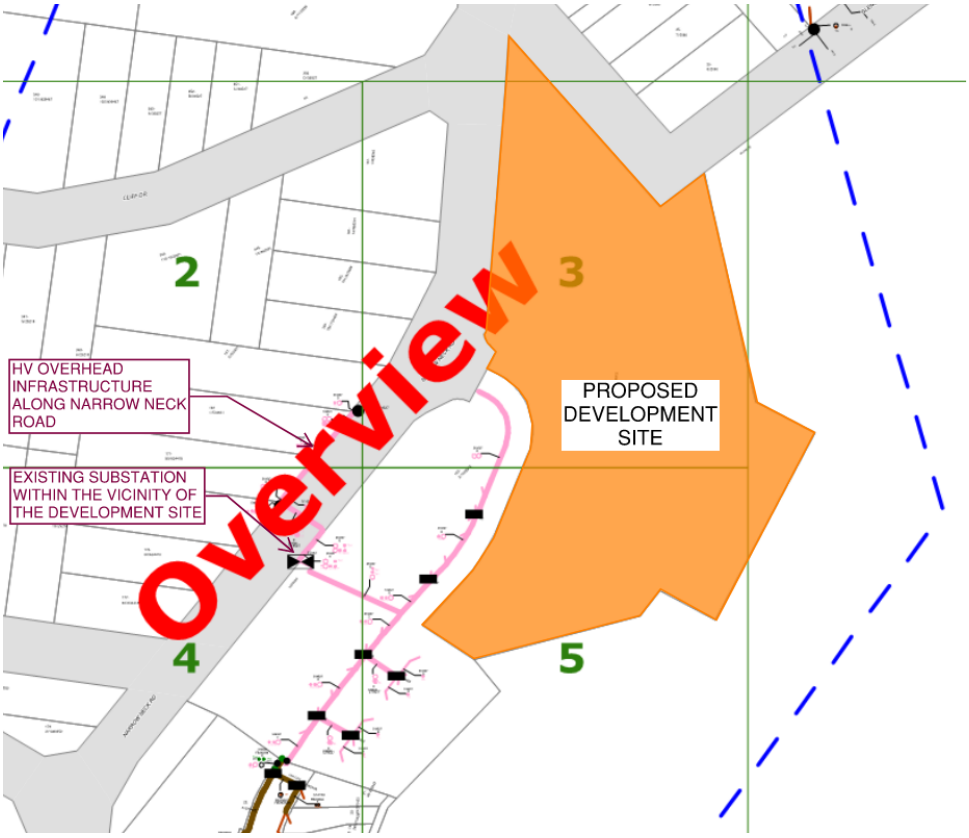



*Figure 9* - Existing Endeavour Energy Infrastructure Map

Through the detailed design phase, ASP Level 3 will assess and identify the best approach to extend the existing network to supply the subject development site accordingly.

## 9.2 Proposed Potential Method of Supply

This is understood that the development site is to remain as one lot which interpret to one point of supply in accordance with NSW Services and Installation Rules section 1.12.3.2. Considering the size of the

development, it is at the discretion of the developer and ASP Level 3 consultant to negotiate with the relevant supply authority to have more than one point of supply to the site.

Due to uncertainty of HV cabling availability along front property boundary of the site, it is expected that HV extension from overhead mains along Narrow Neck Road is required via underground pit and conduit network.

Method of supply sketch is included in Appendix F.

## 9.3 Electrical Load

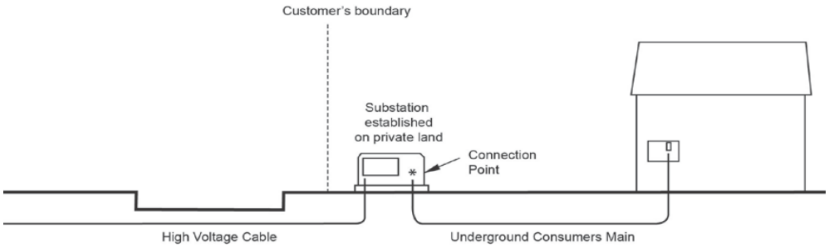
The estimated maximum demand has been calculated in accordance with AS3000 table C3 under VA/m2 engineering assessment. Refer to Appendix G.

Based on our engineering assessment, maximum demand on 270 units of the site is in order of 3600kVA (5200 Amps) the site will require 2 x 1000kVA and 2 x 1000kVA external substation along the front property boundary on different locations.

## 9.4 On-site Electrical Distribution Strategy

Site to have off main switchboard supplying the residential development. Depending on the final metering strategy to be confirmed by the developer, electrical infrastructure may be required to have multiple main distribution boards.

Since the substation located at the front property boundary, in order to comply with NSW Services and Installation Rules section 2.6.2 (also figure 1-2-e) , the development will require to have an externally mounted main switch board within less than 50 meters of the point of connection which in this instance is the substation low-voltage board.




**(e) Underground Services from Substation on relevant land**

Note that in this case, the Point of Common Coupling could be the:

- Connection point – if other future LV customer connections are likely, or,
- The High Voltage Connections for the High Voltage Tee line if assets are totally dedicated to the one installation, or,
- Any other point between the two options above depending on possible additional installation arrangements.

**Notes to Figure 1-1 and Figure 1-2**

* A connection must be able to be made at the Connection Point.

Note: for Figure 1-2, a terminal enclosure, pit or pillar is required if the service would exceed 50 metres. Refer to Clause 2.6.2.

Additional drawings may be added in later editions of the Rules.

*Figure 10* - Potential Connection Arrangement

# 10 National Broadband Network (NBN Co)

## 10.1 Connection Point

It is understood that the site is NBN ready for connection upon our desktop assessment. The developer will need to extend the existing services from the property boundary via pit and conduit network into the site.

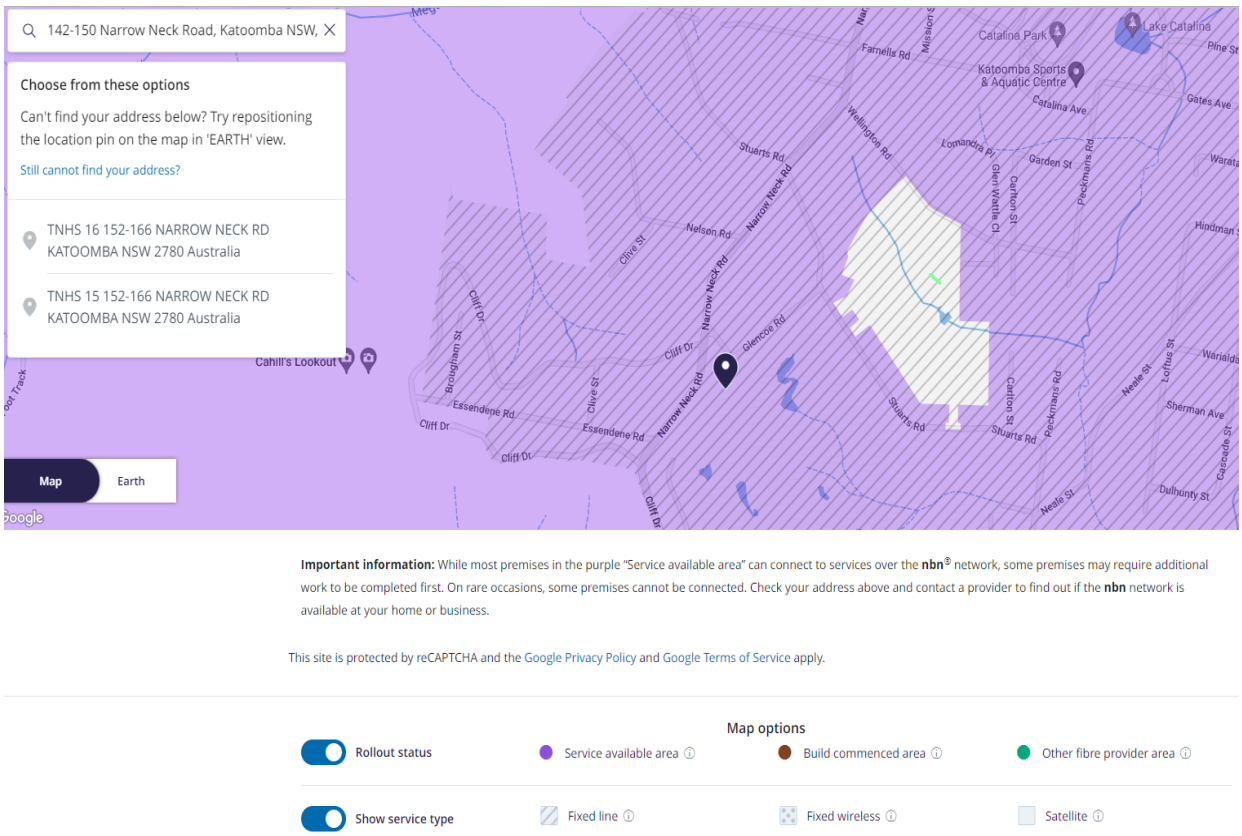



*Figure 11: NBN Availability Map*

Depending on final communication arrangement requiring confirmation from the developer, it is anticipated that each unit will receive a dedicated NBN connection. The commercial building will have business NBN with coverage provision throughout the building via passive and active communications infrastructure.

# 11 Wet Fire Services

## 11.1 Fire Water Infrastructure

The water supply requirements of the fire system can be split into two separate categories; one portion being the fire hydrant system requirements; and the other the fire sprinkler system requirements. The flow rates of these are as follows:

*Table 5 - Fire Water Infrastructure*

| System Component | Water Flow Requirement | Explanation |
|---|---|---|
| Fire Hydrant Component | 20L/s | The largest fire compartment on the project is the basement car park; having a combined floor area of greater than 1000m$^2$. This floor area within a sprinkler-protected building requires 2 fire hydrants (at 10L/s each) to be considered as flowing simultaneously. |
| Fire Sprinkler Component | 12L/s | The most onerous hazard classification within the site would be the carpark portion of the building; the area will be classified as OH 2 – thus requiring 12 sprinklers to be considered as operating simultaneously (at 1L/s each) |

From the above, we can obtain the full fire services water flow requirement as being **32L/s**. This does not include provisions for internal wall-wetting sprinklers, total water flow is subject to change pending confirmation of fire engineering requirements for internal separation between fire compartments.

Due to the low pressure and flow of the 100mm water main. 2 on-site fire tanks of approximately 288kL and 52kL (not including the internal wall-wetting sprinkler component) will be installed adjacent to the fire pump room at the entrance road of the site. The fire hydrant tank will be split into 50/50 compartments of 144kL each tank and the sprinkler tank as 1 compartment sized at 1hr of sprinklers +20%.

A Pressure and Flow Inquiry (PFI) has been completed and received for both the 100 CICL main and the water flow available being there is **14L/s** of flow available at **30m** pressure head 95% of the time.

The PFI is calculated using computer models to simulate the maximum demand conditions experienced in a supply zone, and the result is **not** determined or verified using field measurement testing. Additionally, Sydney Water state that they reserve the right to refuse or limit the amount of flow requested in the report, and this limit the size of the connection.

## 11.2 Fire Sprinkler Component

An Automatic Fire Sprinkler System will be provided throughout the development, in accordance with the AS 2118.1-2017 requirements

The hazard classification will be Light Hazard for the majority of the residential areas with Ordinary Hazard 1 for plant rooms and storage areas, Ordinary Hazard 2 for carpark areas, Light Hazard for the residential development.

The sprinkler system will have a demand of 12L/s and the primary water supply for this system is the on site water tank.

A fire sprinkler control valve assembly will be required to isolate the sprinkler system. This valve shall be located within a secure enclosure with direct access from open space.

From the alarm valves, sprinkler distribution pipes will feed off and reticulate throughout the building. Isolation valves will be incorporated to ensure the disruption to service that occurs when tests or alterations are required is minimised. Sprinkler heads will be selected to take advantage of the latest fast/quick response technology.

Isolation valves will be incorporated to ensure the disruption to service that occurs when tests or alterations are required is minimised. Sprinkler heads will be selected to take advantage of the latest fast/quick response technology. The fire sprinkler system will be interconnected with the FIP to monitor valves, flow and/or pressure switches.

### 11.2.1 Design Criteria

For the Sprinkler system the following design criteria shall apply:

*Table 6 - Wet Fire Design Criteria*

| Occupancy | Hazard Class | Sprinkler Heads Flowing Simultaneously |
|---|---|---|
| Plant | OH1 | 6 |
| Commercial Offices | Light Hazard | 6 |
| Residential | Light Hazard | 4<br>(Residential Heads) |
| Car park | OH2 | 12 |

## 11.3 Fire Hydrant Component

The fire hydrant component provided through the development will be designed in accordance with AS2419-2021. The hydrant system will have a demand of 20L/s and the water supply for this system will be from the onsite tank. The tank will hold 244kL.

From the pump room 150mm diameter fire hydrant main pipework will reticulate throughout the basement to each stair core, and hydrant risers will reticulate up the building within each of the fire-isolated stairs.

Fire hydrants will be generally located within the fire-isolated stairs. Where coverage from positions within the stairwell is insufficient to cover an area completely, additional fire hydrants will be installed in purpose-constructed fire services cupboards in readily accessible locations. Supplementary hydrants will be installed within 25m of a hydrant located in a fire stair.

### 11.3.1 Design Criteria

*Table 7 - Fire Hydrant 1.1.1 Design Criteria*

| Application | Criteria |
|---|---|
| Operating pressures at fixture outlets. | Minimum - 700kpa<br>Maximum – 1200kpa |

| | |
|---|---|
| Operating Velocities through pipework. | Maximum – 4m/sec |
| Minimum number of Hydrants to operate simultaneously | 2 |
| Minimum operating flow rate | 20L/s |

## 11.4 Portable Fire Extinguishers

Portable fire extinguishers and fire blankets to satisfy the requirements of the Building Code of Australia, Fire & Rescue NSW and the local authorities shall throughout the development in accordance with the requirements of the AS 2444-2001 standard and NCC Clause E1.6.

Within the residential component, dry chemical powder extinguishers will be provided within unlocked hydraulic water meter cupboards, such that they are within 10m travel distance from the entrance doorway of a sole-occupancy unit.

As part of the retail areas, portable fire extinguishers will be nominated within fire hose reel cupboards, such that they are within 40m travel distance from the any point on the floor. Additional wet chemical extinguishers and fire blankets shall be provided with the commercial kitchen portion of the retail areas.

# 12 Conclusion

This report has shown that the existing infrastructure located within and surrounding the Site is able to be relocated/removed to service the proposed works as part of the construction work to meet the obligations of the . Allowance for future connections have been considered once the supporting infrastructure planned within the Site has been constructed. The information discussed in this report is inferred from detailed survey plans in conjunction with DBYD records and respective services consultants.

The proposed works for the residential development are formulated over a sequence of staged works as part of masterplan proposal. Future design and applications will be made as part of the remaining construction stages to propose the connection of the stormwater, water, sewer and road networks to facilitate the planned staging of the development. To support future development approvals will be lodged over the respective stages to support the construction of associated infrastructure for the relevant stage.

Refer to Civil plans prepared by Deboke, as seen in Appendix B.

# 13 Appendices

Appendix A – Site Survey

Appendix B – Deboke Civil Drawings

Appendix C – Historical Drawings

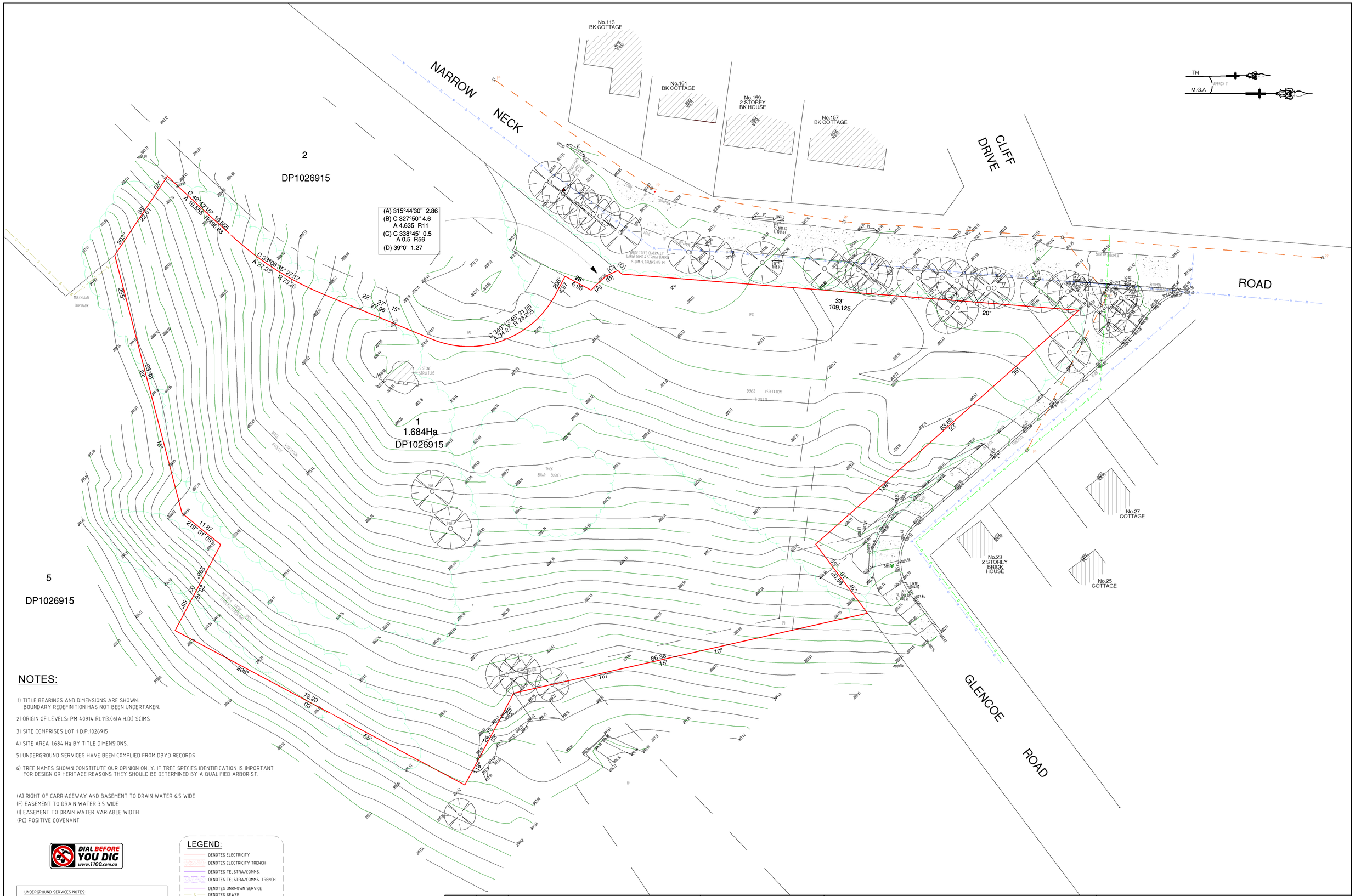
Appendix D – Draft Precinct Plan Former Katoomba Golf Course Placed, Public Exhibition March-April 2023

Appendix E – Sydney Water Pressure Flow

Appendix F – Method of Power Supply Sketch

Appendix G – Estimated Maximum Electrical Demand

# Appendix A
# Site Survey


NARROW NECK
CLIFF DRIVE
ROAD
GLENCOE ROAD
No.113 BK COTTAGE
No.161 BK COTTAGE
No.159 2 STOREY BK HOUSE
No.157 BK COTTAGE
No.27 COTTAGE
No.23 2 STOREY BRICK HOUSE
No.25 COTTAGE
TN
APPROX 7°
M.G.A
2
DP1026915
1
1.684Ha
DP1026915
5
DP1026915
(A) 315°44'30" 2.86
(B) C 327°50" 4.6
A 4.635 R11
(C) C 338°45' 0.5
A 0.5 R56
(D) 39°0' 1.27
C 340°13'45" 31.25
A 34.27 R 23.265
C 333°09'35" 27.17
A 27.35 R 73.26
C 42°42'10" 19.535
A 19.535 R 456.63
33' 109.125
20"
4°
28°
6.98
22°
27.96
15°
30°
22.61
39°
25°
23°
65.45
15°
11.87
219°01'05"
55°
51.52
200°
78.20
03°
55°
119°
24.15
03°
167°
86.36
15°
10"
138°
83.82
23°
35°
20.56
01°
45°
MULCH AND CHIP BARK
DENSE VEGETATION
THICK BRIAR BUSHES
PINE
S STONE STRUCTURE
TREES GENERALLY LARGE GUMS & STRINGY BARKS
BITUMEN
RIDGE OF BITUMEN
EDGE
KERB
GUTTER
CONCRETE
TOP OF BANK
BOTTOM OF BANK
UNTEL 900.93
UNTEL 900.76
UNTEL 900.46
UNTEL 900.46
UNTEL 900.84
UNTEL 901.07
UNTEL 901.07
UNTEL 901.07

# Appendix B
# Civil Plans

# Appendix C
# Historical Drawings

# ROADS AND STORMWATER

## DRAWING LIST

## GENERAL NOTES

1. ALL LEVELS TO A.H.D.
2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH BLUE MOUNTAINS CITY COUNCIL'S (B.M.C.C's) STANDARD SPECIFICATION AND TO THE SATISFACTION OF B.M.C.C's ENGINEER.
3. NO TREES TO BE REMOVED WITHOUT B.M.C.C's WRITTEN PERMISSION, UNLESS NOTED OTHERWISE.
4. THE LOCATION OF ALL SERVICES ARE APPROXIMATE ONLY & THEIR EXACT POSITION SHOULD BE PROVEN ON SITE PRIOR TO COMMENCEMENT OF WORK. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.
5. CONDUITS TO BE LAID AFTER POSITIONS HAVE BEEN DETERMINED BY THE RELEVANT AUTHORITIES AND BEFORE FINAL A.C. IS LAID. LOCATION TO BE CLEARLY MARKED TO B.M.C.C's STANDARDS.
6. STRIP AND STOCKPILE TOPSOIL FROM ROADWAYS AND FOOTPATHS AND RESPREAD ON BATTERS, FOOTPATHS AND BERMS. MIN 150mm TOPSOIL OVER FOOTPATHS AND BERMS.
7. UNSOUND MATERIALS TO BE REMOVED FROM ROADS PRIOR TO FILLING.
8. SUBSOIL DRAINS TO BE CONSTRUCTED WHERE SHOWN ON PLANS OR AS DIRECTED BY B.M.C.C's ENGINEER.
9. ALL NEW PIPES TO BE 375C CLASS 2 UNLESS NOTED OTHERWISE.
10. ALL DRAINAGE PITS AND HEADWALLS TO BE TO B.M.C.C's STANDARDS UNLESS OTHERWISE NOTED.
11. PRECAST KERB INLET LINTELS TO BE USED ON GULLY PITS. GRATES TO BE 'WELDLOK' TYPE GG 7850 OR EQUIVALENT. LINTEL LENGTHS AS NOTED IN PIT SCHEDULE.
12. INTERALLOTMENT DRAINAGE LINES TO HAVE A MINIMUM 450mm COVER AND DESIRABLE MINIMUM GRADE OF 1%, ABSOLUTE MINIMUM GRADE SHALL BE 0.5%.
13. ALL DRAINAGE PITS GREATER THAN 1200mm DEEP SHALL BE PROVIDED WITH SUITABLE RUNGS OR STEPS AT 300mm SPACING; SUCH RUNGS OR STEPS TO BE STAGGERED.
14. SMOOTH JUNCTION TO BE PROVIDED WITH ALL EXISTING WORKS.
15. ALL DISTURBED AREAS TO BE TOPSOILED AND HYDROMULCHED.
16. ALL LINEMARKING AND STREET SIGNS SHALL BE TO AUSTRALIAN STANDARDS.
17. STREET NAME SIGNS TO BE SUPPLIED AND INSTALLED BY CONTRACTOR TO B.M.C.C's STANDARDS.
18. ALL DRAINAGE LINES UNDER ROADS SHALL BE BACKFILLED WITH SHARP SAND AND HAVE 3.0m OF AGRICULTURAL LINE WRAPPED IN AN APPROVED FILTER FABRIC, DISCHARGING INTO THE DOWNSTREAM PIT.
19. ROAD CENTRELINES ARE NOT PEGGED. THEY ARE TO BE SET OUT ON SITE, BASED ON INFORMATION PROVIDED ON THE PLANS.
20. PERAMBULATOR RAMPS TO BE CONSTRUCTED WHERE SHOWN ON PLANS.
21. PLACE GRASS TURF BEHIND KERB LINES (1.2m WIDE).
22. LOT FILLING SHALL BE COMPACTED TO 95% STANDARD AND SHALL BE CARRIED OUT IN ACCORDANCE WITH B.M.C.C's STANDARD.
23. THE CONTRACTOR IS TO TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING ANY OPERATIONS ON ALL SITE FILL AREAS.
24. SUBSOIL DRAINAGE TO BE CONSTRUCTED WITH C100 AGG. PIPE WITH FILTER FABRIC SOCK SURROUNDING.
25. SUBSOIL DRAINAGE LINES SHALL BE PROVIDED WITH SUBSOIL FLUSHOUT POINTS WHERE SHOWN ON PLANS. FURTHER, FLUSHOUT POINTS SHALL BE PROVIDED WITHIN ALL DRAINAGE PITS.
26. RODDING EYES ARE TO BE PROVIDED DOWNSTREAM OF ALL SLOPE JUNCTIONS.

## G.B.MEYER & ASSOCIATES PLANS

| | | |
|---|---|---|
| KGC4-03 | A00 | GENERAL NOTES & DRAWING LIST |
| KGC4-03 | A01 | ROAD 1 SETOUT PLAN |
| KGC4-03 | A02 | LONGITUDINAL SECTION ROAD 1 (CH263.1 - CH453.746 |
| KGC4-03 | A03 | ROAD CROSS SECTIONS ( CH250.833 - CH 387 ) |
| KGC4-03 | A04 | ROAD CROSS SECTIONS ( CH 390 - CH 437.244 ) |
| KGC4-03 | A05 | DRAINAGE DETAIL & BULK EARTHWORKS PLAN (TERRACES 1,2,8 & HOTEL SITE ) |
| KGC4-03 | A06 | STORMWATER LONGITUDINAL SECTIONS |
| KGC4-03 | A07 | BULK EARTHWORKS, STORMWATER, ROUNDABOUT DRAINAGE |
| KGC4-03 | A08 | LONGITUDINAL SECTION STORMWATER |

NOTE: BULK EARTHWORKS FOR TERRACE BLOCKS AND HOTEL SITE AS SHOWN WILL BE SUBJECT TO FINAL CONFORMATION BY ARCHITECT FOR WHICH PLANS WITH ADDITIONAL DETAIL WILL BE PRODUCED

## EGIS CONSULTING PLANS

| | | |
|---|---|---|
| RL0045-01 | C02 | WATER QUALITY CONTROL PLAN |
| RL0045-01 | C04 | BASIN 2 GENERAL ARRANGEMENT PLAN |
| RL0045-01 | C05 | BASIN 1A,1B,& 2 CROSS SECTIONS |
| RL0045-01 | C06 | BASIN 1A,1B,& 2 TYPICAL DETAIL |
| RL0045-01 | C07 | BASIN 1A,1B,& 2 TYPICAL DETAIL |
| RL0045-01 | C08 | SOIL & WATER MANAGEMENT PLAN |
| RL0045-01 | C09 | SOIL & WATER MANAGEMENT NOTES & PLANS |
| RL0045- R | C01 | NARROW NECK RD ROUNDABOUT PLAN |
| RL0045- C | C11 | CENTRE ISLAND DETAIL FOR ROUNDABOUT |

## GEOTECHNICAL NOTES

1. THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES AS NECESSARY, AND TO THE SATISFACTION OF B.M.C.C. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND DURING CONSTRUCTION.
2. TESTS SHALL BE UNDERTAKEN ON ANY PROPOSED FILL MATERIALS TO ENSURE THAT THEY DO NOT HAVE A HIGH DISPERSION POTENTIAL AS DEFINED BY THE EMERSON CRUMB/DISPERSION TESTS (AS1289 C8-1980)
3. LOT FILL SHALL BE COMPACTED TO NOT LESS THAN 95% OF STANDARD MAXIMUM DRY DENSITY (SMDD) AT -1% TO +3% OF STANDARD OPTIMUM MOISTURE CONTENT.
   ROADS SHALL BE COMPACTED TO NOT LESS THAN 100% (SMDD) FOR SUBGRADE AND 98% FOR SUBBASE AND BASE OF MODIFIED MAXIMUM DRY DENSITY.

   ALL AREAS WHICH HAVE TEST RESULTS LESS THAN INDICATED STANDARDS SHOULD BE REWORKED AND RETESTED TO ENSURE COMPLIANCE, IN ACCORDANCE WITH A.S.A. 1289 TESTS 12 AND 13.
4. C.B.R. TESTS REQUIRED PRIOR TO PLACING SUBBASE, BASE COURSE EACH 50m INTERVAL OF ROAD
5. ROAD PAVEMENT TO BE 30mm AC10 HOTMIX SEAL OVER 125mm DGB20 ROADBASE ON 125mm F.C.R.SUBBASE SUBJECT TO C.B.R.TEST RESULTS
6. CUT BATTERS FOR BUILDING BENCHES SHALL BE 1.5H : 1V UP TP 2 METRES IN HEIGHT THEN 2H :1V
   CUT BATTERS SUBSTANTIALLY IN ROCK 0.75H : 1V FOR 3 METRES THEN1:1 TO NAT SURF
   PROVIDE V DRAIN AT TOP OF CUT BATTERS TO DIVERT OVERLAND FLOW
7. FILL BATTERS TO DE GENERALLY 1.5H : 1V

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ACCREDITED CONSULTANT
ACN 003 811 992

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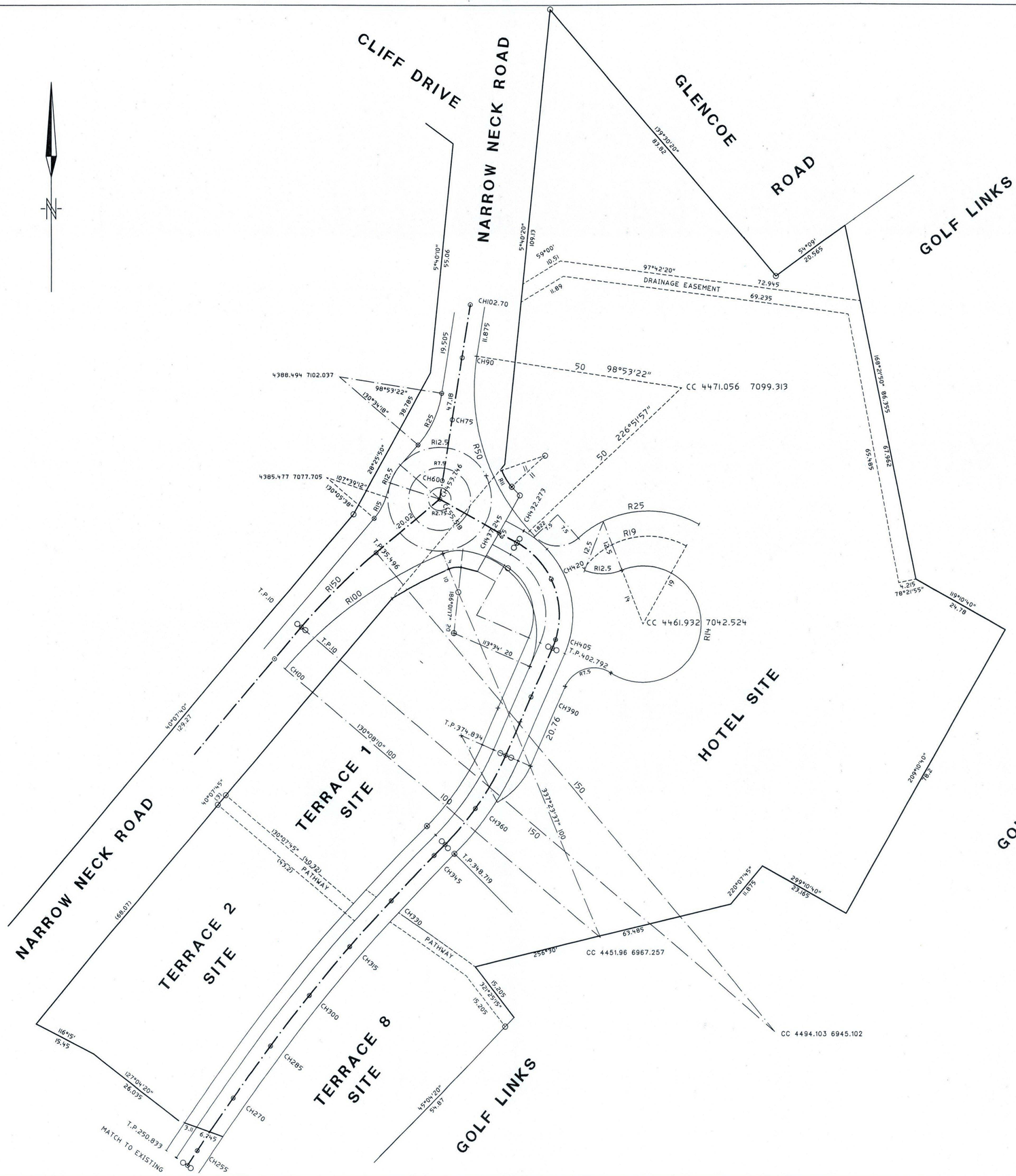
|---|---|---|---|---|
| **G.B.MEYER & ASSOCIATES SURVEYORS**<br>INCORPORATING JOHN D. SOPER SURVEYOR<br>CONSULTANTS IN LAND ENGINEERING & MINING SURVEYING<br>SUBDIVISIONAL DESIGN & PROJECT MANAGERS<br>P.O.BOX 264 KATOOMBA N.S.W.2780 PHONE (047)821079 FAX (047) 825455 | | | JOB REF 4-03<br>PLAN No KGC4-03 A00<br>CAD FILE 4-03-BG06<br>SHEET OF SHEETS | |
| PROJECT | ESCARPMENTS PROJECT STAGE TWO<br>KATOOMBA GOLF COURSE KATOOMBA<br>GENERAL NOTES | | | |
| APPROVED BY<br>G.MEYER<br>REGISTERED SURVEYOR<br>DATE JUNE 2003 | DATUM A.H.D. | SCALE AS SHOWN | CLIENT NUMARA P/L | A00 |
| | SURVEY GM | DESIGN GM | DRAWN GM | |

## CENTRE LINE ROAD No1

T.P.250.833 4352.367 6914.107
CH255 4354.666 6917.520
CH270 4363.282 6929.799
CH285 4372.261 6941.813
C.C. 4768.219 6636.497 CH300 4381.598 6953.553
R = 500 ARC = 97.886 CH315 4391.282 6965.007
CH330 4401.305 6976.165
CH345 4411.659 6987.018
T.P.348.719 4414.311 6989.696
CC. 4364.765 7039.144 CH360 4421.604 6998.287
R = 70 ARC = 26.115 T.P.374.834 4428.926 7011.157
CH375 4428.992 7011.309
T.P.402.792 4440.104 7036.783
CC. 4421.772 7044.779 CH405 4440.873 7038.851
R = 20 ARC = 29.48 CH420 4439.789 7053.462
T.P.432.273 4431.503 7062.253
CH437.245 4427.159 7064.672
CH453.746 4412.743 7072.700

## CENTRE LINE NARROW NECK ROAD

CH00 4372.979 7034.147
T.P.10 4379.425 7041.792
R = 150 A = 25.496 CC 4494.103 6945.102
T.P.35.496 4397.433 7059.797
CC 55.518 4412.743 7072.700
CH60 4413.436 7077.128
CH75 4415.754 7091.948
CH90 4418.071 7106.768
CH102.700 4420.034 7119.314

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A.C.N. 093 211 992

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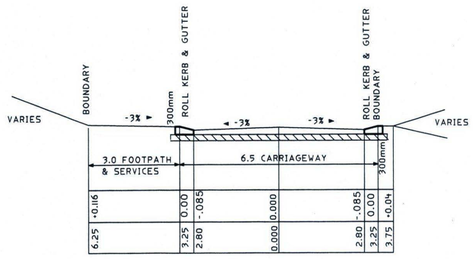
|---|---|---|---|
| **G.B.MEYER & ASSOCIATES SURVEYORS** INCORPORATING JOHN D. SOPER SURVEYOR<br>CONSULTANTS IN LAND ENGINEERING & MINING SURVEYING<br>SUBDIVISIONAL DESIGN & PROJECT MANAGERS<br>P.O.BOX 264 KATOOMBA N.S.W.2780 PHONE (047)821079 FAX (047) 825455 | | JOB REF 4-03<br>PLAN No KGC4/03 A01<br>CAD FILE 4-03-8 G01<br>SHEET OF SHEETS | |
| PROJECT | ESCARPMENTS PROJECT STAGE TWO<br>KATOOMBA GOLF COURSE KATOOMBA<br>ROAD 1 SET OUT PLAN | | |
| APPROVED BY<br>G.ME[redacted]<br>REGISTERED SURVEYOR<br>DATE JUNE 2003 | DATUM A.H.D.<br>SURVEY GM | SCALE 1:500<br>DESIGN GM | CLIENT NUMARA P/L<br>DRAWN GM | A01 |

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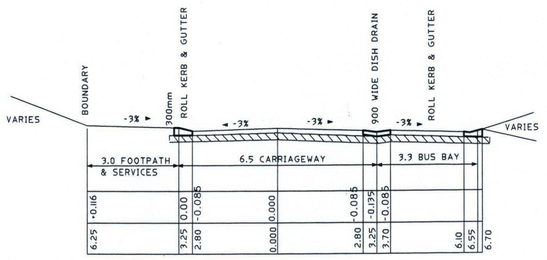
**CH255 - CH365**

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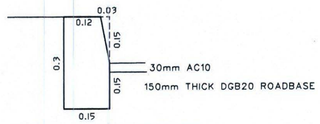
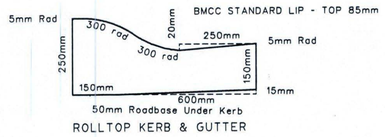
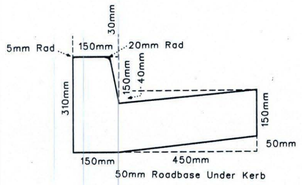
**CH365 - CH402**



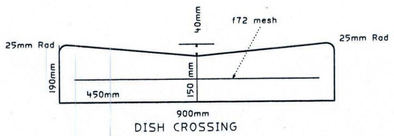

TYPICAL UPRIGHT KERB ONLY




ROLLTOP KERB & GUTTER




INTEGRAL KERB & GUTTER

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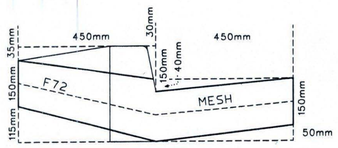
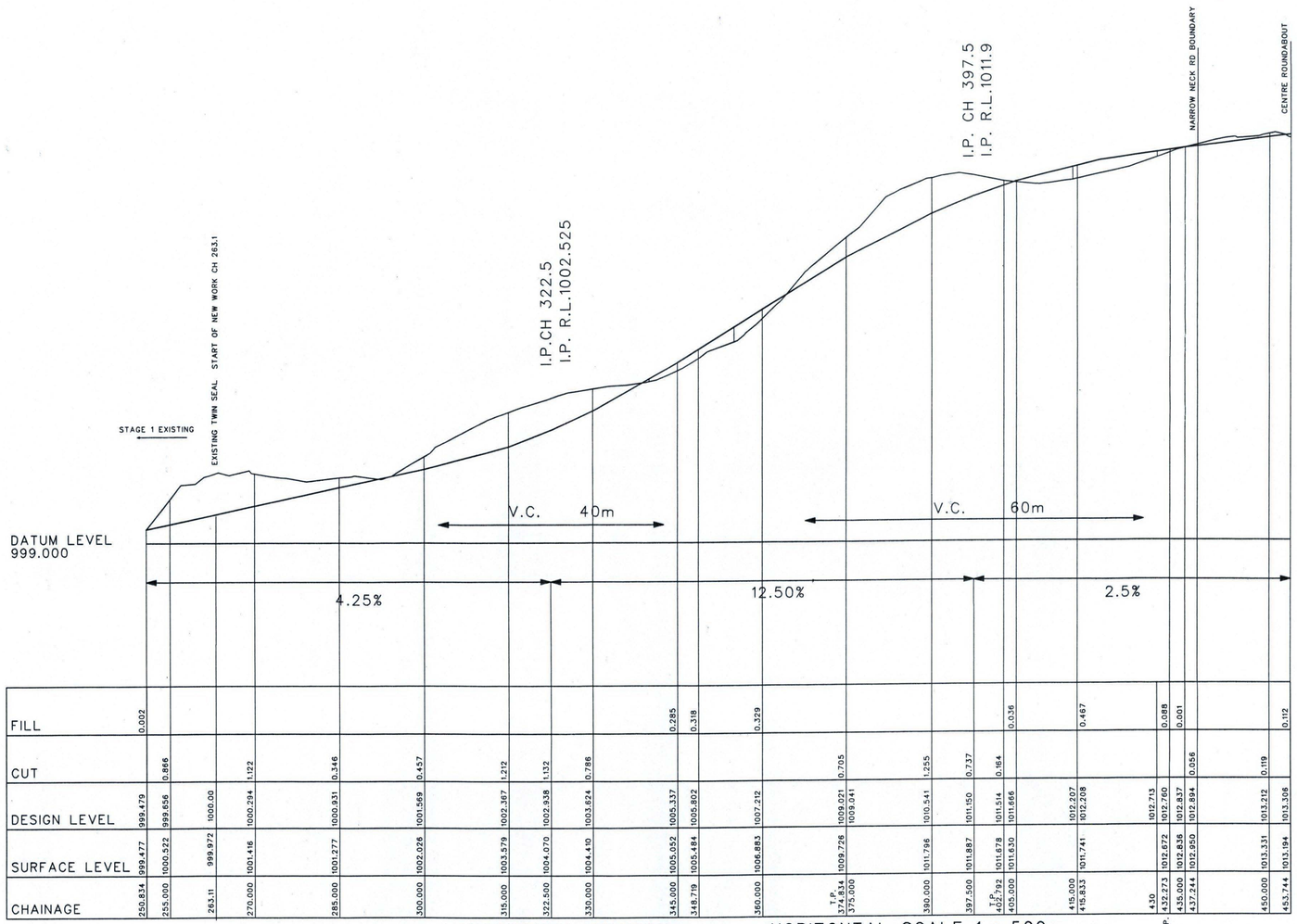



STANDARD LAYBACK CROSSING




LONGITUDINAL SECTION
CENTRE LINE FILE : 4-03-11

HORIZONTAL SCALE 1 : 500
VERTICAL SCALE 1 : 100

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McKEE CONSULTING PTY LTD
A.C.N. 093 211 999

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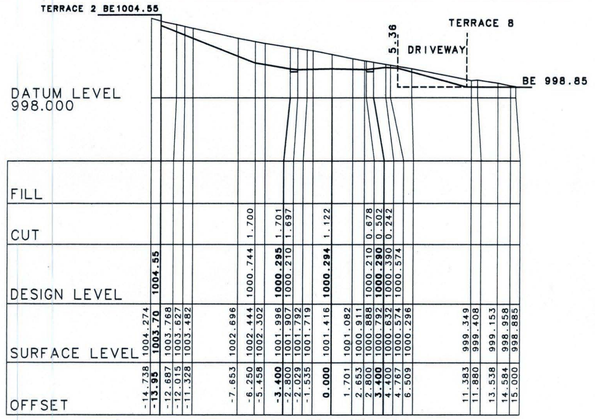
| PROJECT | ESCARPMENTS PROJECT STAGE TWO<br>KATOOMBA GOLF COURSE KATOOMBA<br>ROAD No1 LONGITUDINAL SECTION | | |
| APPROVED BY<br>G.MEYER [redacted]<br>REGISTERED SURVEYOR<br>DATE JUNE 2003 | DATUM A.H.D.<br>SURVEY GM | SCALE AS SHOWN<br>DESIGN GM | CLIENT NUMARA P/L<br>DRAWN GM | A02 |

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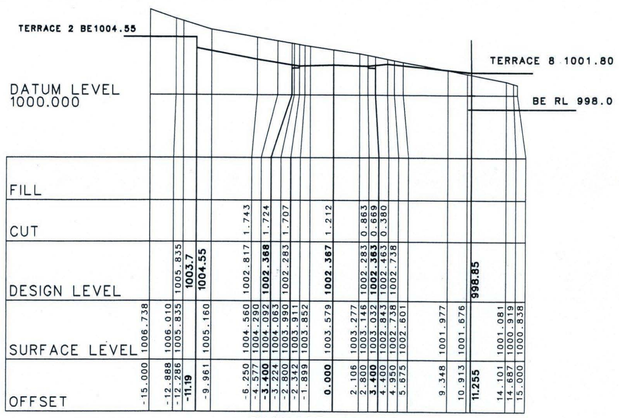


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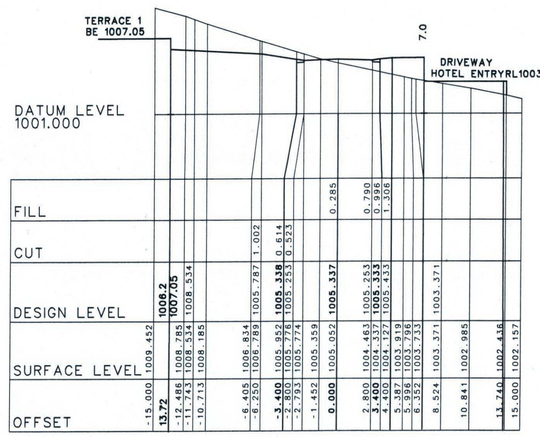


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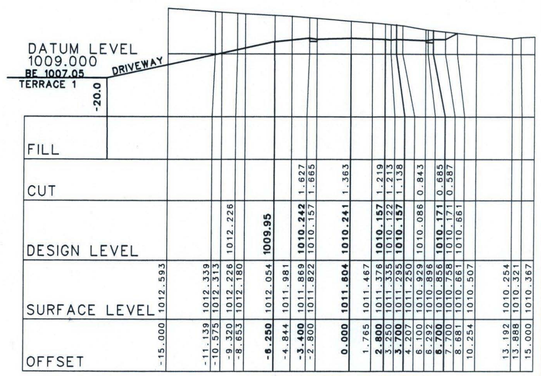
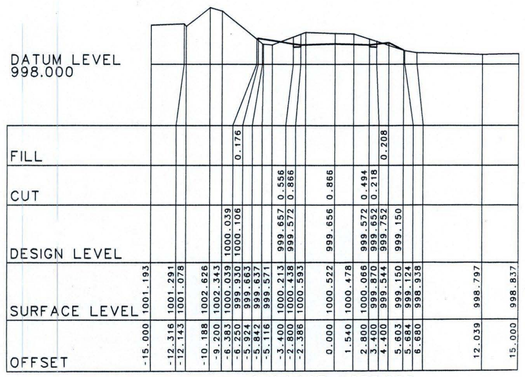
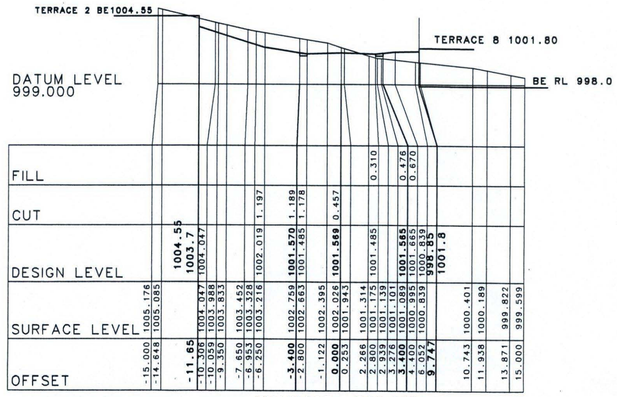
VERTICAL SCALE 1 : 250



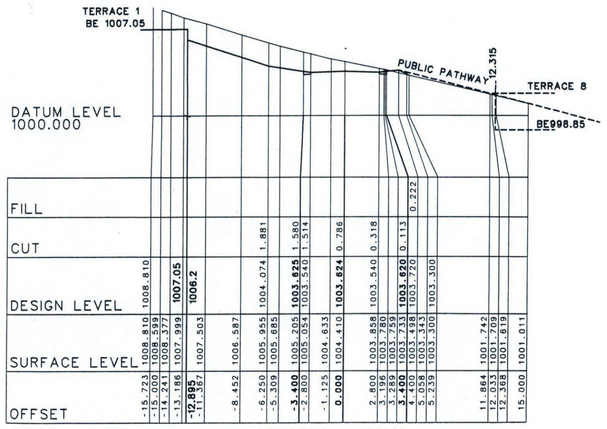

CHAINAGE : 387.000
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250



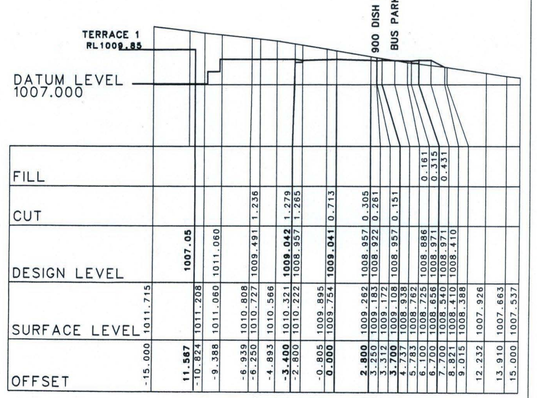

CHAINAGE : 255.000
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250



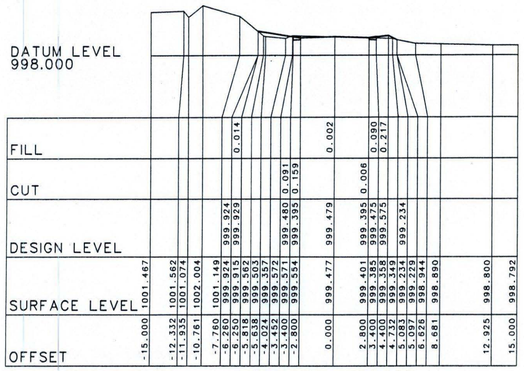

CHAINAGE : 300.000
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250



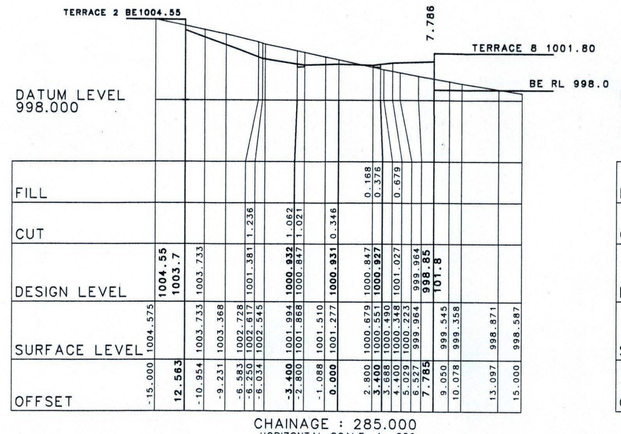

CHAINAGE : 330.000
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250



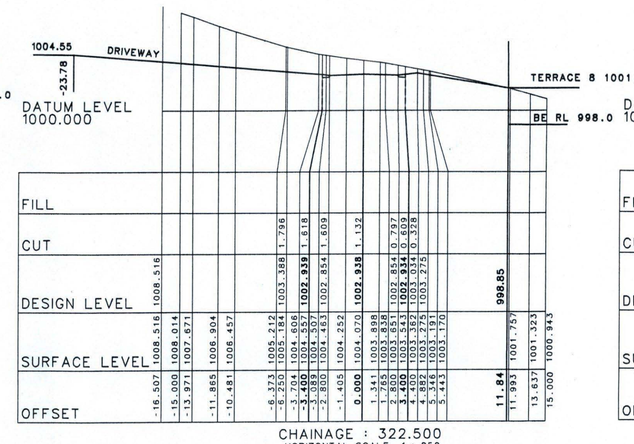

CHAINAGE : 375.000
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250



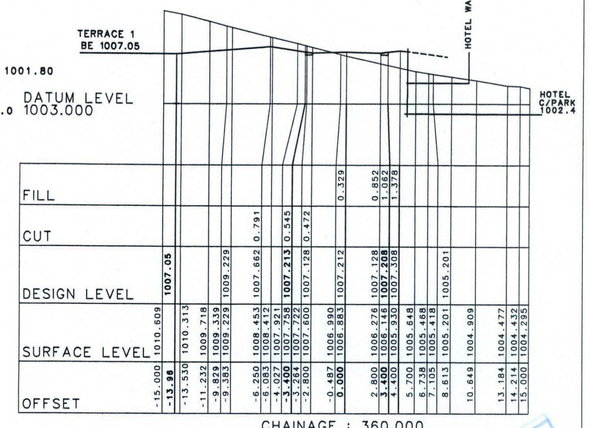

CHAINAGE : 250.833
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250




CHAINAGE : 285.000
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250




CHAINAGE : 322.500
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250



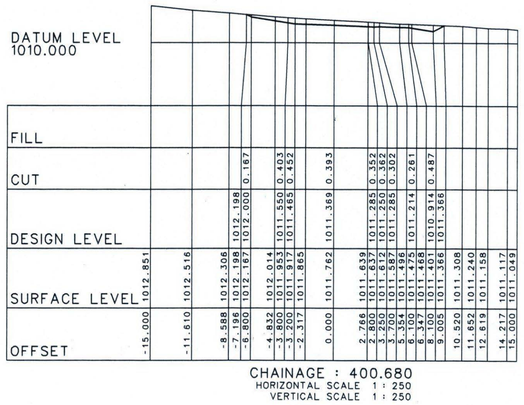

CHAINAGE : 360.000
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250

| | |
|---|---|
| **G.B.MEYER & ASSOCIATES SURVEYORS** | JOB REF 4-03 |
| INCORPORATING JOHN D. SOPER SURVEYOR | PLAN No KGC4-03G01 A3 |
| CONSULTANTS IN LAND ENGINEERING & MINING SURVEYING | CAD FILE 4-03-IIG01 |
| SUBDIVISIONAL DESIGN & PROJECT MANAGERS | SHEET OF SHEETS |
| P.O.BOX 264 KATOOMBA N.S.W.2780 PHONE (047)821079 FAX (047) 825455 | |

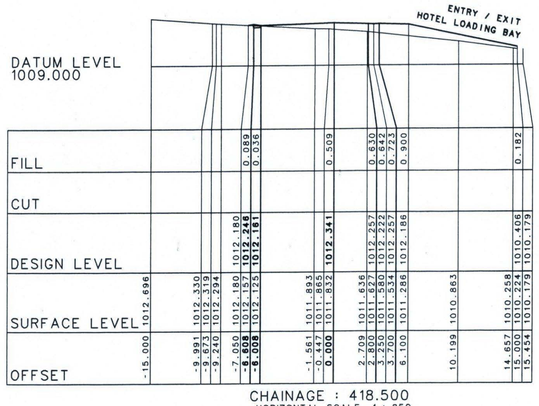
PROJECT
*ESCARPMENTS PROJECT STAGE TWO*
*KATOOMBA GOLF COURSE KATOOMBA*
*ROAD No1 CROSS SECTIONS*

| | | | | |
|---|---|---|---|---|
| APPROVED BY G.MEYER [redacted] REGISTERED SURVEYOR | DATUM A.H.D. | SCALE AS SHOWN | CLIENT NUMARA P/L | A03 |
| DATE JUNE 2003 | SURVEY GM | DESIGN GM | DRAWN GM | |

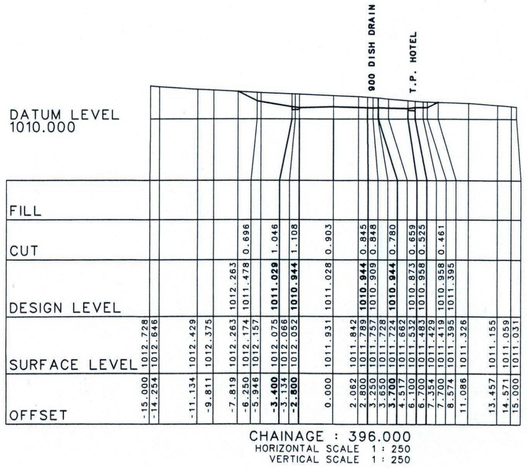
APPROVED
CONSTRUCTION
04/628-2



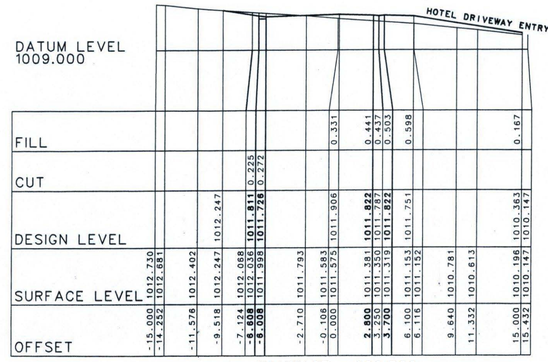

CHAINAGE : 400.680
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250



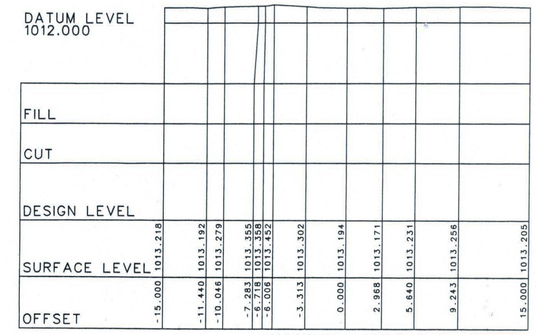

CHAINAGE : 418.500
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250



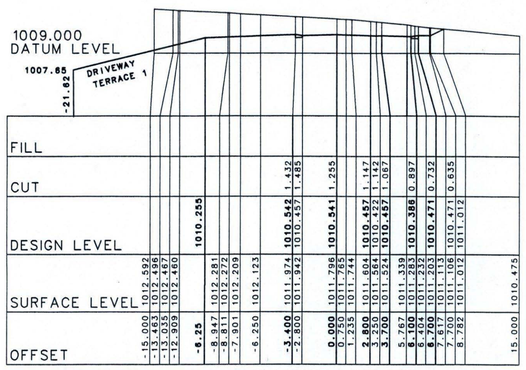

CHAINAGE : 396.000
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250



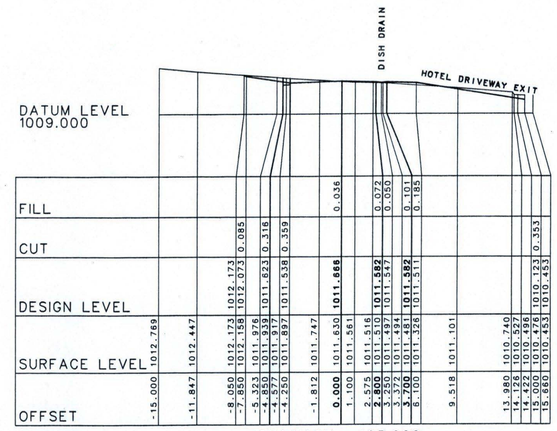

CHAINAGE : 409.800
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250



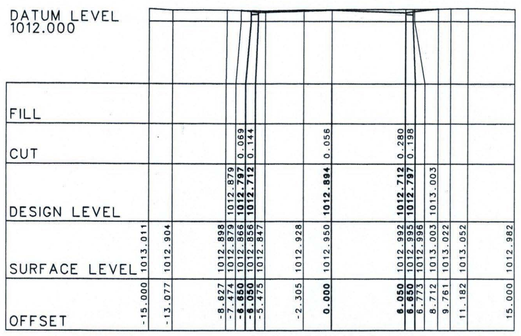

CHAINAGE : 453.745
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250




CHAINAGE : 390.000
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250




CHAINAGE : 405.000
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250




CHAINAGE : 437.244
HORIZONTAL SCALE 1 : 250
VERTICAL SCALE 1 : 250

**G.B.MEYER & ASSOCIATES SURVEYORS**
INCORPORATING JOHN D. SOPER SURVEYOR
CONSULTANTS IN LAND ENGINEERING & MINING SURVEYING
SUBDIVISIONAL DESIGN & PROJECT MANAGERS
P.O.BOX 264 KATOOMBA N.S.W.2780 PHONE (047)821079 FAX (047) 825455

JOB REF 4-03
PLAN No KGC4-03 A04
CAD FILE 4-03-IIGOI
SHEET OF SHEETS

PROJECT
ESCARPMENTS PROJECT STAGE TWO
KATOOMBA GOLF COURSE KATOOMBA
ROAD No1 CROSS SECTIONS

| APPROVED BY | DATUM | SCALE | CLIENT | |
|---|---|---|---|---|
| G.MEYER [redacted] REGISTERED SURVEYOR | A.H.D. | AS SHOWN | NUMARA P/L | A04 |
| DATE JUNE 2003 | SURVEY GM | DESIGN GM | DRAWN GM | |

APPROVED
CONSTRUCTION CERTIFICATE No.
04/628-2
CONSULTING (NSW) PTY. LTD.
A.C.N. 091 211 995

+ DENOTES EXISTING SURFACE LEVEL

DENOTES LIP OF KERB LEVEL

FALL FALL

START OF WORK

KERB 0.85% FALL

KERB 1% FALL

EXISTING INTEGRAL KERB & GUTTER

MATCH EXISTING KERB & GUTTER

ROAD BOUNDARY

DESIGN CENTRE LINE

EXISTING CENTRE LINE

# NARROW NECK ROAD

PUBLIC PATHWAY

FUTURE STAIRS

DRIVEWAY

DRIVEWAY GRADE 17.05%

CHANGE OF GRADE LINE

RAMP GRADE 20%

RAMP GRADE 11.8%

RAMP GRADE 15.5%

BUS PARKING

EXISTING BOUNDARY

RAMP

FUTURE R.C.P.

RAMP C/L 7.5%

GRADE 5.5%

TERRACE 1
B.E. R.L. 1007.05

TERRACE 2
B.E. R.L. 1004.55

TERRACE 3
BE RL1002.05

TERRACE 8
B.E. R.L. 998.85

B.E. R.L. 1003.7

B.E. R.L. 1006.2

B.E. R.L. 998.0

B.E.998.8

BE 998.2

BE 1002.25

BE 1002.25

BE-RL1001.75

BE 999.45 O

BE R.L. 996.85

B.E. R.L. 1002.25

B.E. R.L. 998.15

F.F.L. 1002.4

DETAIL TO BE INCLUDED IN BUILDING WORKS IN TERRACE

RETAINING WALL

DRIVEWAY RAMP TO TERRACE 3

LEVELS & DIMENSIONS SUBJECT TO DETAIL DESIGN OF HOTEL

DRIVEWAY LEVEL 1007.85

PLAN A07 AJOINS

13.00 13.01 13.02 13.03 13.04 13.05 13.06 14.00 15.00 16.00 17.00 4.01 4.0 11.00

R150 R18.5 R20 2.75 R 5.0 R 12.5 R

A47.575 A18.005 A5.22 A5.9

CH 437.24 TP 432.27

CH 415.42 TP 408.67

CH 396.59 TP 402.192

CH 360.32 TP 378.719

CH 339.45 TP 371.87

CH 300.97 TP 360.833

CH 285.97 CH 270.28 CH 255.97 CH 225.97 CH 60.039

T.300 T.2.975 T.2.300

60.039

13.21

27.96

6.593

4.975

17.182

14.67

7.5

12.5

18.4

28.1

61

7.5

5.5

6.5

3.5

12.5

18.4

7.5

6°01'15" 20°42'45" 113°39'55" 45°04'20" 42°24'43" 220°07'45"

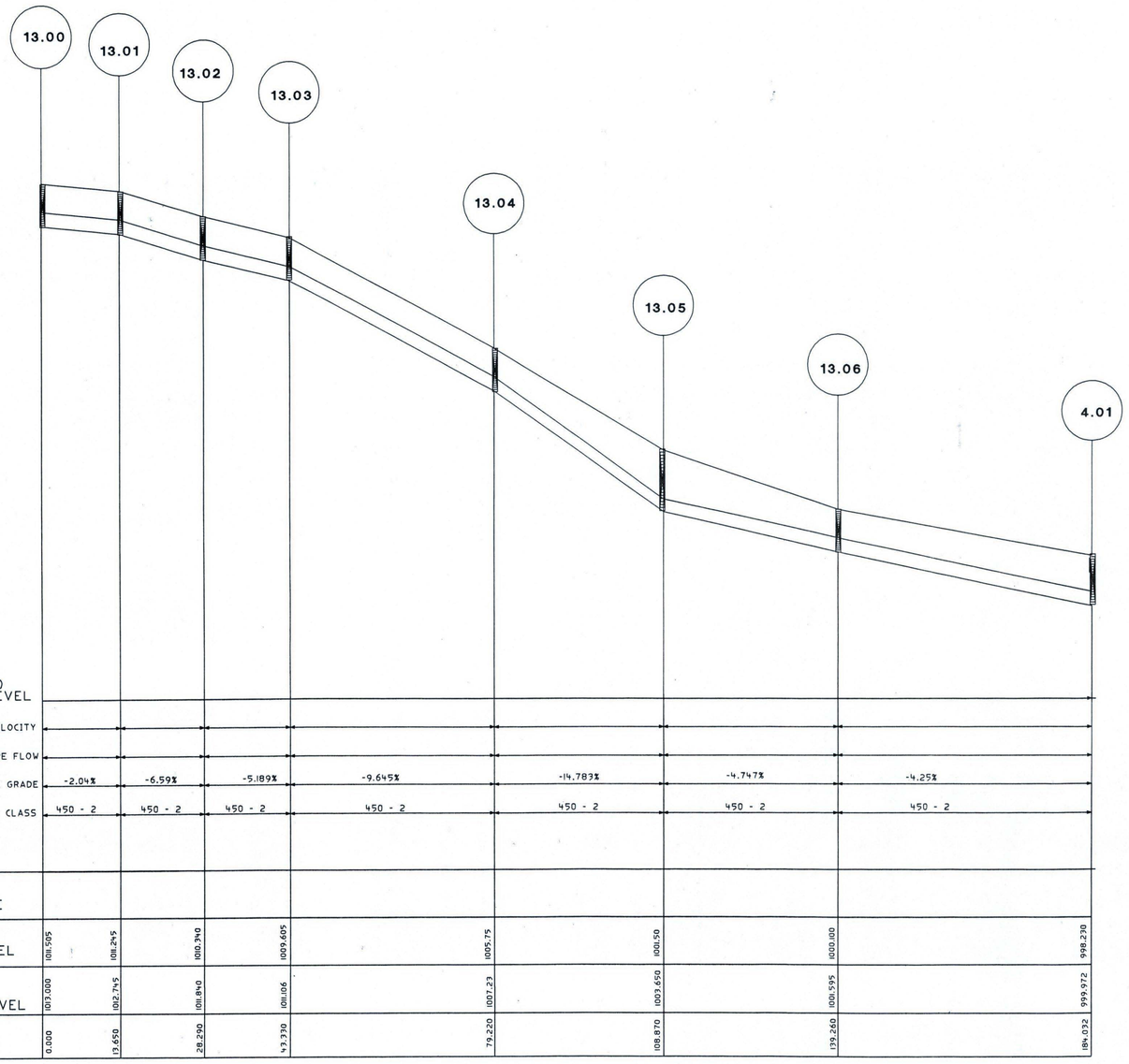
R21.25 C21.25

(68.07) 40°07'45" (3) 40°07'40" 129.27

(43.32) (4.54) (4.8) (3.025) (3.02) (5) (1) (2) (57.5) (25.66) (25) (32.4) (96) (50) (15.99)

54.87 26.035 22.265 (22.545) 63.405 25.690 11.875

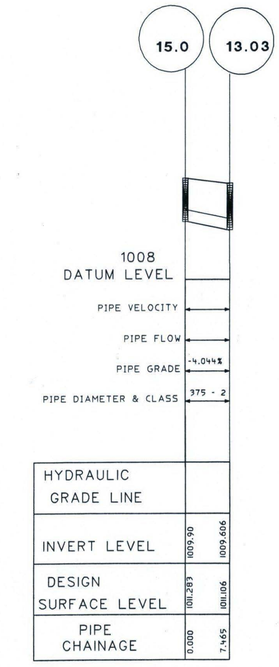
1000.67 1000.71 1000.76 1000.77 1002.15 1001.59 1003.42 1005.70 1003.42 1003.42 1003.42




| | 13.00 | 13.01 | 13.02 | 13.03 | 13.04 | 13.05 | 13.06 | 4.01 |
|---|---|---|---|---|---|---|---|---|
| 995.00 DATUM LEVEL | | | | | | | | |
| PIPE VELOCITY | | | | | | | | |
| PIPE FLOW | | | | | | | | |
| PIPE GRADE | -2.04% | -6.59% | -5.189% | -9.645% | -14.783% | -4.747% | -4.25% | |
| PIPE DIAMETER & CLASS | 450 - 2 | 450 - 2 | 450 - 2 | 450 - 2 | 450 - 2 | 450 - 2 | 450 - 2 | |
| HYDRAULIC GRADE LINE | | | | | | | | |
| INVERT LEVEL | 1011.595 | 1011.245 | 1010.340 | 1009.605 | 1005.75 | 1000.50 | 1000.000 | 998.230 |
| DESIGN SURFACE LEVEL | 1013.000 | 1012.745 | 1011.840 | 1011.106 | 1007.23 | 1003.650 | 1000.595 | 999.972 |
| PIPE CHAINAGE | 0.000 | 13.650 | 28.290 | 43.330 | 79.220 | 108.870 | 139.260 | 184.032 |

**LINE 13**

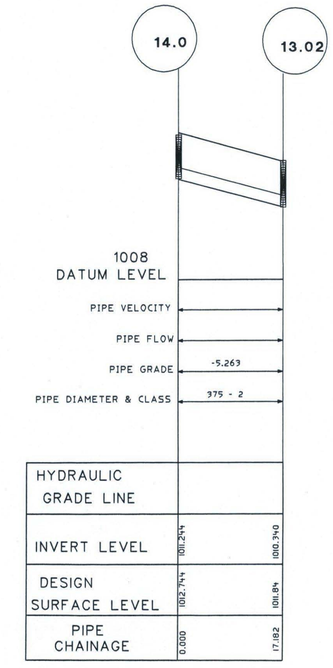
HORIZONTAL 1:500
VERTICAL 1:100
(DRAWN FOR RETURN PERIOD 1 IN 5 YEARS)




| | 15.0 | 13.03 |
|---|---|---|
| 1008 DATUM LEVEL | | |
| PIPE VELOCITY | | |
| PIPE FLOW | | |
| PIPE GRADE | -4.044% | |
| PIPE DIAMETER & CLASS | 375 - 2 | |
| HYDRAULIC GRADE LINE | | |
| INVERT LEVEL | 1009.90 | 1009.606 |
| DESIGN SURFACE LEVEL | 1011.283 | 1011.106 |
| PIPE CHAINAGE | 0.000 | 7.465 |

**LINE 15**

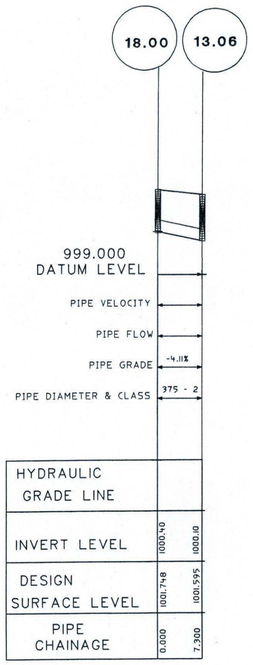
HORIZONTAL 1:500
VERTICAL 1:100
(DRAWN FOR RETURN PERIOD 1 IN 5 YEARS)




| | 14.0 | 13.02 |
|---|---|---|
| 1008 DATUM LEVEL | | |
| PIPE VELOCITY | | |
| PIPE FLOW | | |
| PIPE GRADE | -5.263 | |
| PIPE DIAMETER & CLASS | 375 - 2 | |
| HYDRAULIC GRADE LINE | | |
| INVERT LEVEL | 1011.244 | 1010.340 |
| DESIGN SURFACE LEVEL | 1012.744 | 1011.84 |
| PIPE CHAINAGE | 0.000 | 17.182 |

**LINE 14**

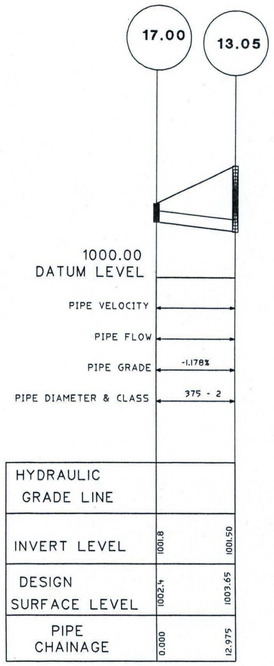
HORIZONTAL 1:500
VERTICAL 1:100
(DRAWN FOR RETURN PERIOD 1 IN 5 YEARS)




| | 18.00 | 13.06 |
|---|---|---|
| 999.000 DATUM LEVEL | | |
| PIPE VELOCITY | | |
| PIPE FLOW | | |
| PIPE GRADE | -4.11% | |
| PIPE DIAMETER & CLASS | 375 - 2 | |
| HYDRAULIC GRADE LINE | | |
| INVERT LEVEL | 1000.140 | 1000.10 |
| DESIGN SURFACE LEVEL | 1001.748 | 1001.595 |
| PIPE CHAINAGE | 0.000 | 7.300 |

**LINE 18**

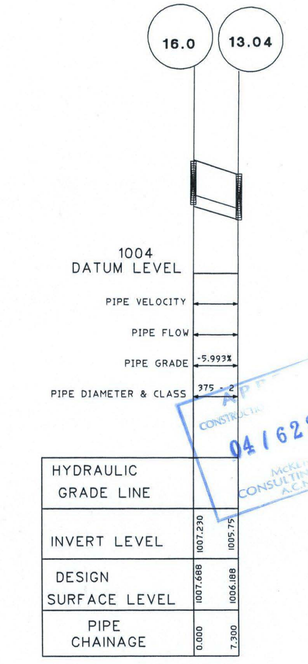
HORIZONTAL 1:500
VERTICAL 1:100
(DRAWN FOR RETURN PERIOD 1 IN 5 YEARS)




| | 17.00 | 13.05 |
|---|---|---|
| 1000.00 DATUM LEVEL | | |
| PIPE VELOCITY | | |
| PIPE FLOW | | |
| PIPE GRADE | -1.178% | |
| PIPE DIAMETER & CLASS | 375 - 2 | |
| HYDRAULIC GRADE LINE | | |
| INVERT LEVEL | 1000.8 | 1000.50 |
| DESIGN SURFACE LEVEL | 1002.4 | 1003.65 |
| PIPE CHAINAGE | 0.000 | 12.975 |

**LINE 17**

HORIZONTAL 1:500
VERTICAL 1:100
(DRAWN FOR RETURN PERIOD 1 IN 5 YEARS)




| | 16.0 | 13.04 |
|---|---|---|
| 1004 DATUM LEVEL | | |
| PIPE VELOCITY | | |
| PIPE FLOW | | |
| PIPE GRADE | -5.993% | |
| PIPE DIAMETER & CLASS | 375 - 2 | |
| HYDRAULIC GRADE LINE | | |
| INVERT LEVEL | 1007.230 | 1005.75 |
| DESIGN SURFACE LEVEL | 1007.688 | 1006.188 |
| PIPE CHAINAGE | 0.000 | 7.300 |

**LINE 16**

HORIZONTAL 1:500
VERTICAL 1:100
(DRAWN FOR RETURN PERIOD 1 IN 5 YEARS)

041628-2.1
CONSTRUCTION
McKEE CONSULTING PTY. LTD. A.C.N.

**G.B.MEYER & ASSOCIATES SURVEYORS**
INCORPORATING JOHN D. SOPER SURVEYOR
CONSULTANTS IN LAND ENGINEERING & MINING SURVEYING
SUBDIVISIONAL DESIGN & PROJECT MANAGERS
P.O.BOX 264 KATOOMBA N.S.W.2780 PHONE (047)821079 FAX (047) 825455

JOB REF 4-03
PLAN No KGC4-03 A02
CAD FILE 4-03-HG04
SHEET OF SHEETS

PROJECT
ESCARPMENTS PROJECT STAGE TWO
KATOOMBA GOLF COURSE KATOOMBA

STORMWATER DRAINAGE LONGITUDINAL SECTIONS

| | | | | |
|---|---|---|---|---|
| APPROVED BY G.MEYER REGISTERED SURVEYOR | DATUM A.H.D. | SCALE AS SHOWN | CLIENT NUMARA P/L | A06 |
| DATE JUNE 2003 | SURVEY GM | DESIGN GM | DRAWN GM | |

NARROW NECK RD

ROAD No1

CLENCOE STREET

NARROW NECK ROAD

SEE DIAGRAM

PLAN AOS AJOINS

REFER TO EGIS PLAN
RL0045-C-CII
FOR CENTRE ISLAND DETAIL

FOR SWAIL DETAIL
REFER TO EGIS PLAN
RL0045-01-C08

B.E.R.L.1005.5

B.E. R.L. 1002.7

B.E.R.L.996.85

B.E. R.L. 998.15

DRAINAGE EASEMENT BOUNDARY

SWAIL

DENOTES DESIGN LEVEL (LIP OF KERB)

DENOTES EXISTING LEVEL

EXISTING GK1

DESIGN CENTRE LINE

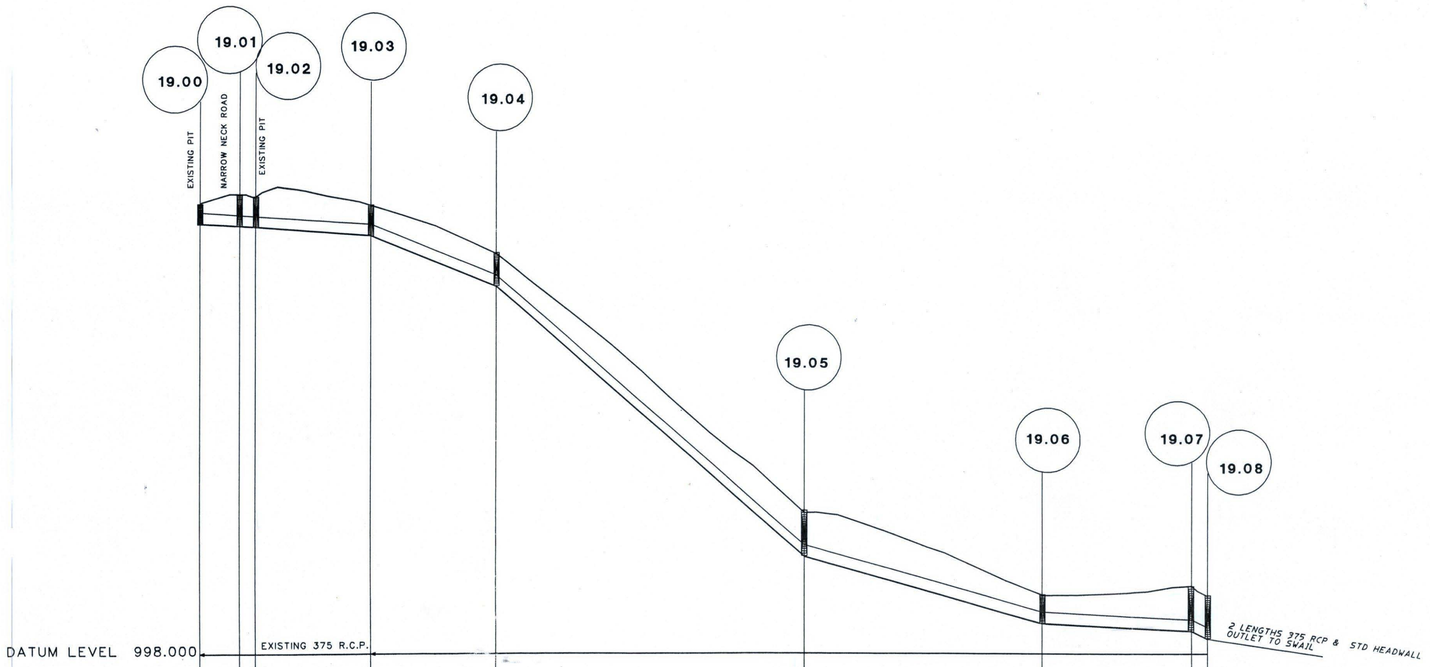
EXISTING CENTRE LINE

FALL 0.85%

DIAGRAM
1:100

APPROVED
CONSTRUCTION CERTIFICATE
04/628-2

| | | | | |
|---|---|---|---|---|
| G.B.MEYER & ASSOCIATES SURVEYORS<br>INCORPORATING JOHN D. SOPER SURVEYOR<br>CONSULTANTS IN LAND ENGINEERING & MINING SURVEYING<br>SUBDIVISIONAL DESIGN & PROJECT MANAGERS<br>P.O.BOX 264 KATOOMBA N.S.W.2780 PHONE (047)821079 FAX (047) 825455 | | | JOB REF 4-03<br>PLAN No KGC4-03 A07<br>CAD FILE 4-03-BG04<br>SHEET OF SHEETS | |
| PROJECT ESCARPMENTS PROJECT STAGE TWO<br>KATOOMBA GOLF COURSE KATOOMBA<br>ROAD DRAINAGE & BULK EARTWORK DETAIL | | | | |
| APPROVED BY<br>G.MEYER<br>REGISTERED SURVEYOR<br>DATE JUNE 2003 | DATUM A.H.D.<br>SURVEY GM | SCALE 1:250<br>DESIGN GM | CLIENT NUMARA P/L<br>DRAWN GM | A07 |




| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DATUM LEVEL 998.000 | | | EXISTING 375 R.C.P. | | | | | |
| PIPE VELOCITY | | | | | | | | |
| PIPE FLOW | | | | | | | | |
| PIPE GRADE | -0.99% | | -1.51% | -8.03% | -17.51% | -5.52% | -1.01% | -9.54% |
| PIPE DIAMETER & CLASS | 375 - 2 | | 375 - 2 | 375 - 2 | 375 - 2 | 375 - 2 | 375 - 2 | |
| | 0.667 | 0.992 | 0.993 | 1.081 | 1.45 | 0.915 | 1.460 | 1.378 |
| HYDRAULIC GRADE LINE | | | | | | | | |
| INVERT LEVEL | 1012.025 | 1011.930 | 1011.935 | 1011.550 | 1010.000 | 1001.150 | 999.000 | 998.750 | 998.500 |
| SURFACE LEVEL | 1012.692 | 1012.79 | 1012.927 | 1012.643 | 1011.081 | 1002.599 | 999.915 | 1000.210 | 999.878 |
| PIPE CHAINAGE | 0.000 | 6.500 | 9.082 | 27.940 | 48.500 | 99.044 | 138.00 | 162.630 | 165.251 |

| PIT SCHEDULE | | |
|---|---|---|
| PIT No | PIT TYPE | DESRIPTION |
| 14.01 | 600X900 1.8 GKI | EXISTING |
| 13.06 | 600X900 2.4 GKI | L.H.GRATE |
| 17.00 | 600X900 2.4 GKI | R.H.GRATE |
| 13.05 | 600X900 2.4 GKI | L.H.GRATE |
| 17.00 | 900X900 | SOLID COVER 2X900X450 |
| 13.04 | 600X900 2.4 GKI | L.H.GRATE |
| 16.00 | 900X900 V GRATE | H/DUTY GALVANISED |
| 13.03 | 600X900 2.4 GKI | L.H.GRATE |
| 15.00 | 900X900 V GRATE | H/DUTY GALVANISED |
| 13.02 | 600X900 2.4 GKI | L.H.GRATE |
| 14.00 | 600X900 2.4 GKI | R.H.GRATE |
| 13.01 | 600X900 2.4 GKI | L.H.GRATE |
| 13.00 | 600X900 2.4 GKI | L.H.GRATE |
| 19.01 | 600X900 3.6 GKI | L.H.GRATE |
| 19.02 | 600X900 EXISTING | MODIFY WITH RISER & SOLID COVER |
| 19.03 | 900X900 | SOLID COVER 2X900X450 |
| 19.04 | 900X900 | SOLID COVER 2X900X450 |
| 19.05 | 900X900 | SOLID COVER 2X900X450 |
| 19.06 | 900X900 | SOLID COVER 2X900X450 |
| 19.07 | 900X900 | SOLID COVER 2X900X450 |
| 19.08 | 900X900 | SOLID COVER 2X900X450 |
| | | |
| | | |
| | | |

**LINE 19**

HORIZONTAL SCALE 1 : 500
VERTICAL SCALE 1 : 100
(DRAWN FOR RETURN PERIOD 1 IN 5 YEARS)

APPROVED
CONSTRUCTION CERTIFICATE No.
04/628-2
MACKENZIE GROUP CONSULTING PTY LTD
A.C.N. 096 711 372

**G.B.MEYER & ASSOCIATES SURVEYORS**
INCORPORATING JOHN D. SOPER SURVEYOR
CONSULTANTS IN LAND ENGINEERING & MINING SURVEYING
SUBDIVISIONAL DESIGN & PROJECT MANAGERS
P.O.BOX 264 KATOOMBA N.S.W.2780 PHONE (047)821079 FAX (047) 825455

JOB REF 4-03
PLAN No KGC4-03 A08
CAD FILE 4-03-8G04
SHEET OF SHEETS

PROJECT
ESCARPMENTS PROJECT STAGE TWO
KATOOMBA GOLF COURSE KATOOMBA
STORMWATER LINE FROM NARROW NECK ROAD TO SWAIL

| | | | | |
|---|---|---|---|---|
| APPROVED BY G.MEYER [redacted] REGISTERED SURVEYOR | DATUM A.H.D. | SCALE AS SHOWN | CLIENT NUMARA P/L | A08 |
| DATE JUNE 2003 | SURVEY GM | DESIGN GM | DRAWN GM | |

HOTEL COMPLEX

HOTEL COMPLEX

EX. WALL

BUS PARKING (x2)

3.30

3.25

3.25

R 70.0

TP 402.791

TP 374.833

TP 348.718

B.M.

R 20.0

R 20.0

TP 432.271

PROPOSED
ROAD BOUNDARY

R 15.0

WATER

R 10.0

IP 453.74

R 2.75

R 7.5

EX. FENCE

EX. BOUNDARY

SAM SIGHT DISTANCE

R 60.0

WATER

R 100.0

EX. FENCE

EX. BOUNDARY

EX. EDGE OF BITUMEN

R 1250.0

NARROW NECK ROAD

3.5

3.5

EX. K & G

R 25.0

PP

TELSTRA

WATER

EXISTING DRIVEWAY

Widen layback + apron crossing

R 12.5

EXISTING DRIVEWAY

R 20.0

Reconstruct layback + apron crossing

TELSTRA

PROPOSED

R 153.5

R 150.0

IP 40.0

PP

FOOTPATH

B.M.

NARROW NECK ROAD

EX. EDGE OF BITUMEN

EX. EDGE OF BITUMEN

EXISTING DRIVEWAY

EX. BOUNDARY

TELSTRA

WATER

ROAD CREST CH 00

15m

PP 4

AHAD

AH AD

15m

BP

EXISTING DRIVEWAY

WATER

CITY OF BLUE MOUNTAINS
APPROVED/CERTIFIED
APPLICATION No: 905/98
DATE: 1/1/01
SIGNATURE: BL

CONSTRUCTION CERTIFICATE
04/1628-2
McKENZIE GROUP CONSULTING (NSW) PTY. LTD.

| REV | DESCRIPTION | DRAWN | CHECK | SUPV | APPR | DATE | DRAWING No | REFERENCE DRAWING |
|---|---|---|---|---|---|---|---|---|
| B | ISSUED FOR APPROVAL | L.B. | | | | 16/11/00 | | |

SCALE
2 0 4 8 12 m
1:200

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| | INITIALS | SIGNATURE | DATE |
|---|---|---|---|
| DRAWN | L.B. | | 14/11/00 |
| DRG CHKD | G.N. | | |
| DESIGNED | K.A. | | |
| SUPERVISOR | | | |
| MANAGER | | | |
| APPROVED | | | |

CLIENT
NOROTON PTY LTD

TITLE
KATOOMBA GOLF COURSE REDEVELOPMENT
NARROW NECK ROAD ROUNDABOUT PLAN

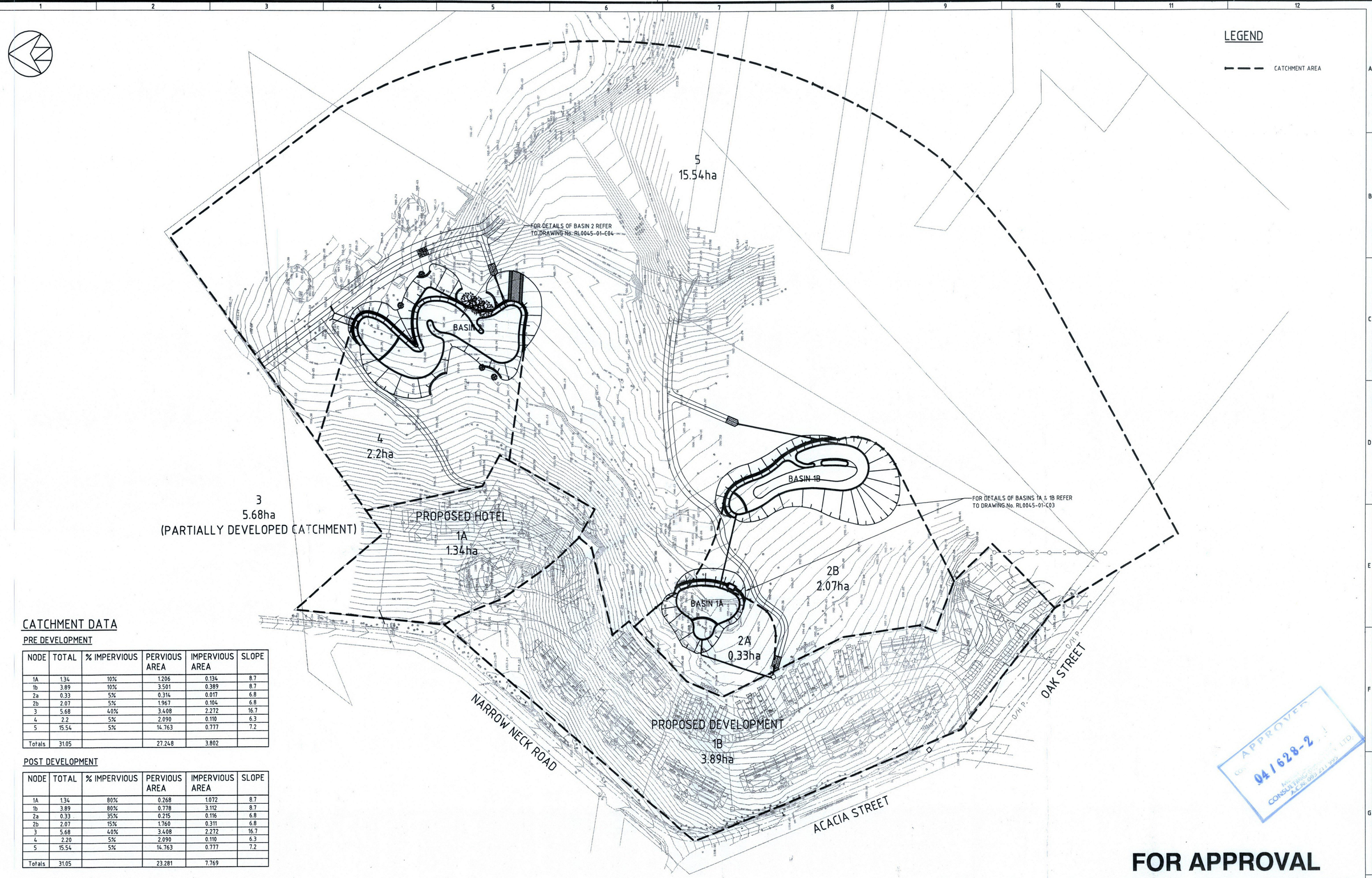
egis consulting Australia
67 Albert Avenue
CHATSWOOD NSW 2067
Tel : 61 2 9412 9999
Fax : 61 2 9412 9855
ACN 000 912 630 / ABN 18 000 912 630

| SIZE | PROJECT No | DRAWING No | SHEET No | REV |
|---|---|---|---|---|
| A1 | RL/0045 | RL0045-R-C01 | - OF - | C |

| CAD FILE No | PLOT INFO | XREFS |
|---|---|---|
| 0045R01- | 11:42 15/11/00 | 0045R1X- 0045U0X- |

JMSTD-DW-SY-G003 REV 7 JULY 2000

RL0045-R-C01




## CATCHMENT DATA

PRE DEVELOPMENT

| NODE | TOTAL | % IMPERVIOUS | PERVIOUS AREA | IMPERVIOUS AREA | SLOPE |
|---|---|---|---|---|---|
| 1A | 1.34 | 10% | 1.206 | 0.134 | 8.7 |
| 1b | 3.89 | 10% | 3.501 | 0.389 | 8.7 |
| 2a | 0.33 | 5% | 0.314 | 0.017 | 6.8 |
| 2b | 2.07 | 5% | 1.967 | 0.104 | 6.8 |
| 3 | 5.68 | 40% | 3.408 | 2.272 | 16.7 |
| 4 | 2.2 | 5% | 2.090 | 0.110 | 6.3 |
| 5 | 15.54 | 5% | 14.763 | 0.777 | 7.2 |
| | | | | | |
| Totals | 31.05 | | 27.248 | 3.802 | |

POST DEVELOPMENT

| NODE | TOTAL | % IMPERVIOUS | PERVIOUS AREA | IMPERVIOUS AREA | SLOPE |
|---|---|---|---|---|---|
| 1A | 1.34 | 80% | 0.268 | 1.072 | 8.7 |
| 1b | 3.89 | 80% | 0.778 | 3.112 | 8.7 |
| 2a | 0.33 | 35% | 0.215 | 0.116 | 6.8 |
| 2b | 2.07 | 15% | 1.760 | 0.311 | 6.8 |
| 3 | 5.68 | 40% | 3.408 | 2.272 | 16.7 |
| 4 | 2.20 | 5% | 2.090 | 0.110 | 6.3 |
| 5 | 15.54 | 5% | 14.763 | 0.777 | 7.2 |
| | | | | | |
| Totals | 31.05 | | 23.281 | 7.769 | |

APPROVED
94/628-2
CONSULTING ENGINEERS (N.S.W.) PTY. LTD.
A.C.N. 000 912 630

**FOR APPROVAL**

| REV | DESCRIPTION | DRAWN | CHECK | SUPV | APPR | DATE | DRAWING No | REFERENCE DRAWING |
|---|---|---|---|---|---|---|---|---|
| 0 | ISSUED FOR APPROVAL | J.K | | | | 07.08.00 | | |

SCALE
12.5 0 25 50 75 m
1 : 1250

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|---|---|---|---|
| DRAWN | J.K | | |
| DRG CHKD | | | |
| DESIGNED | | | |
| SUPERVISOR | | | |
| MANAGER | | | |
| APPROVED | | | |

CLIENT: NOROTON HOLDINGS PTY. LIMITED

TITLE: KATOOMBA GOLF COURSE REDEVELOPMENT
WATER QUALITY CONTROL PLAN

egis consulting Australia
67 Albert Avenue
CHATSWOOD NSW 2067
Tel : 61 2 9412 9999
Fax : 61 2 9412 9855
ACN 000 912 630 / ABN 18 000 912 630

| SIZE | PROJECT No | DRAWING No | SHEET No | REV |
|---|---|---|---|---|
| A1 | RL/0045 | RL0045-01-C02 | 3 OF 12 | 0 |

CAD FILE No: 0045-01-C02 | PLOT INFO: 10:59 14/08/00 | XREFS: 0045COX 0045ZU01

JMSTD-DW-SY-G003 REV 7 JULY 2000

0045-01-C02

RL0045-01-C02

SANDSTONE SPILLWAY
REFER TO DETAIL THIS DRG.

UPSTREAM I.L.988.700
5*0.225*0.9 RCBC
1.25% GRADE
PIPE LENGTH 18.0M
DOWNSTREAM I.L.988.500

C05

PRESERVE EXISTING TREES

RETAINING WALL REFER TO DETAIL
ON DRG. RL0045-01-C06
'BASINS 1A,1B & 2 - TYPICAL DETAILS SHEET 1 OF 2'

CASCADE STRUCTURE
REFER TO DRG C06

PLATFORM FOR PROPOSED TEE

SANDSTONE CASCADE STRUCTURE
REFER TO DRG. RL0045-01-C06
'BASINS 1A,1B & 2 - TYPICAL DETAILS SHEET 1 OF 2

RETAINING WALL REFER TO DETAIL
ON DRG. RL0045-01-C06
'BASINS 1A,1B & 2 - TYPICAL DETAILS SHEET 1 OF 2'

PRESERVE EXISTING TREES

BATTER SCOUR PROTECTION
REFER TO DRG C06.

BASIN 2

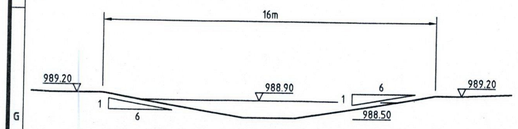
PWSL 988.50

OUTLET STRUCTURE
REFER DETAIL ON DRG. RL0045-01-C07
'BASINS 1 & 2 TYPICAL DETAILS'.

RETAINING WALL REFER TO DETAIL
ON DRG. RL0045-01-C06
'BASINS 1A,1B & 2 - TYPICAL DETAILS SHEET 1 OF 2'

PRESERVE EXISTING TREES

RETAINING WALL REFER TO DETAIL
ON DRG. RL0045-01-C06
'BASINS 1A,1B & 2 - TYPICAL DETAILS SHEET 1 OF 2'




SPILLWAY DETAIL
SCALE N.T.S

APPROVED
CONSTRUCTION CERTIFICATE
04/628-2
COMMENCEMENT
CONDITIONS APPLY

FOR APPROVAL

| REV | DESCRIPTION | DRAWN | CHECK | SUPV | APPR | DATE | DRAWING No | REFERENCE DRAWING |
|---|---|---|---|---|---|---|---|---|
| 0 | ISSUED FOR APPROVAL | J.K | | | | 07.08.00 | | |

SCALE
2.5 0 5 10 15 m
1 : 250

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|---|---|---|---|
| DRAWN | J.K | | |
| DRG CHKD | | | |
| DESIGNED | G.N | | |
| SUPERVISOR | | | |
| MANAGER | | | |
| APPROVED | | | |

CLIENT
NOROTON HOLDINGS PTY. LIMITED

egis consulting Australia
67 Albert Avenue
CHATSWOOD NSW 2067
Tel : 61 2 9412 9555
Fax : 61 2 9412 9505
A.C.N. 000 912 630

TITLE
KATOOMBA GOLF COURSE REDEVELOPMENT
BASIN 2 - GENERAL ARRANGEMENT PLAN

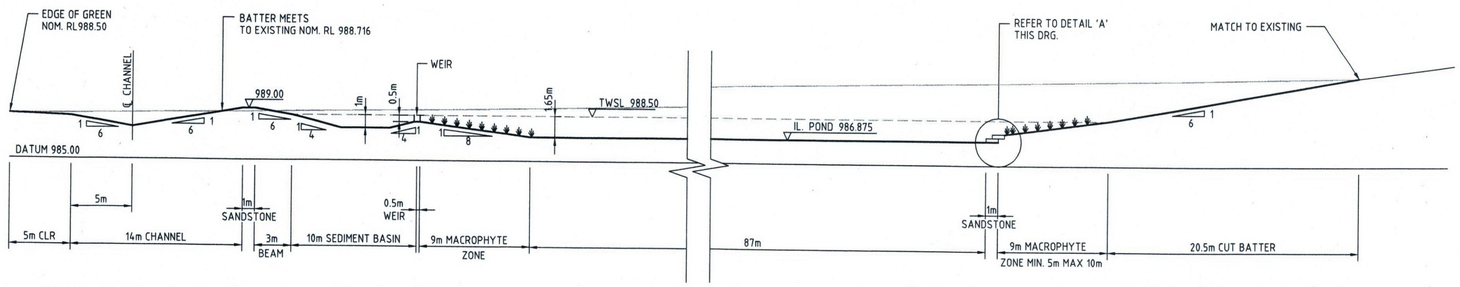
| SIZE | PROJECT No | DRAWING No | SHEET No | REV |
|---|---|---|---|---|
| A1 | RL/0045 | RL0045-01-C04 | 6 OF 12 | 0 |

CAD FILE No: 0045-01-C05
PLOT INFO: 11:04 14/08/00
XREFS: 0045C0X 0045Z001

JMSTD-DW-SY-G003 REV 4 JAN '99

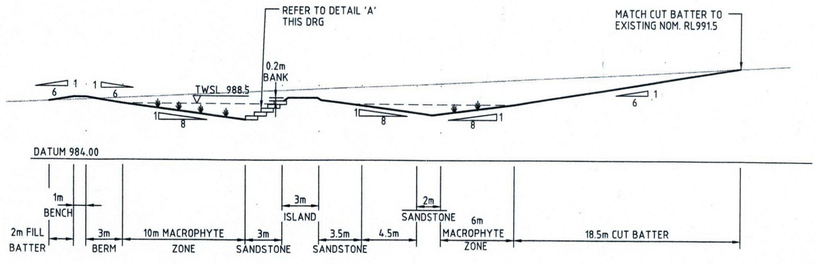
RL0045-04

RL0045-01-L04



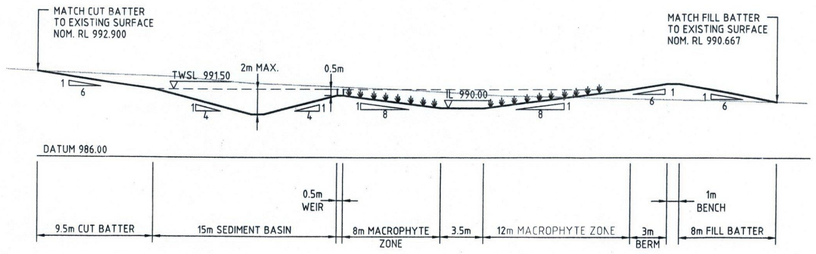

## BASIN 1B.

SECTION 1 / C03
SCALE 1:250



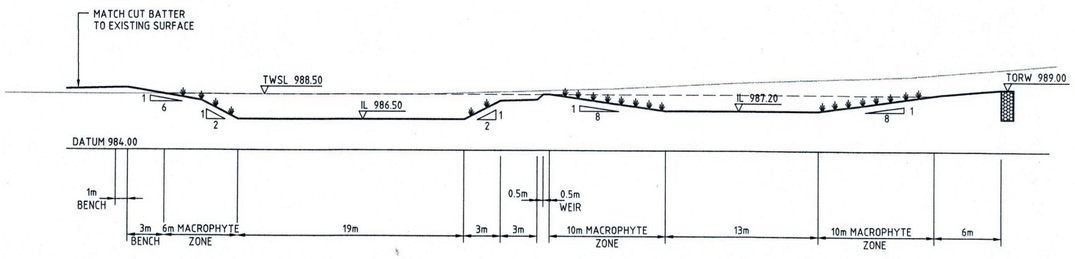

## BASIN 1B.

SECTION 2 / C03
SCALE 1:250



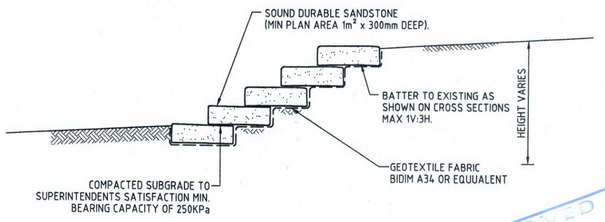

## BASIN 1A.

SECTION 3 / C03
SCALE 1:250




## BASIN 2.

SECTION 4 / C04
SCALE 1:250




DETAIL A / - 
SCALE 1:50

APPROVED
CONSTRUCTION CERTIFICATE No.
04/628-2
MCKENZIE GROUP CONSULTING PTY. LTD.
ACN 003 211 982

# FOR APPROVAL

| REV | DESCRIPTION | DRAWN | CHECK | SUPV | APPR | DATE | DRAWING No | REFERENCE DRAWING |
|---|---|---|---|---|---|---|---|---|
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| | INITIALS | SIGNATURE | DATE |
|---|---|---|---|
| DRAWN | K.E | | |
| DRG CHKD | | | |
| DESIGNED | G.N | | |
| SUPERVISOR | | | |
| MANAGER | | | |
| APPROVED | | | |

CLIENT: NOROTON HOLDINGS PTY. LIMITED

egis consulting Australia
67 Albert Avenue
CHATSWOOD NSW 2067
Tel : 61 2 9412 9999
Fax : 61 2 9412 9855
ACN 000 912 630 / ABN 18 000 912 630

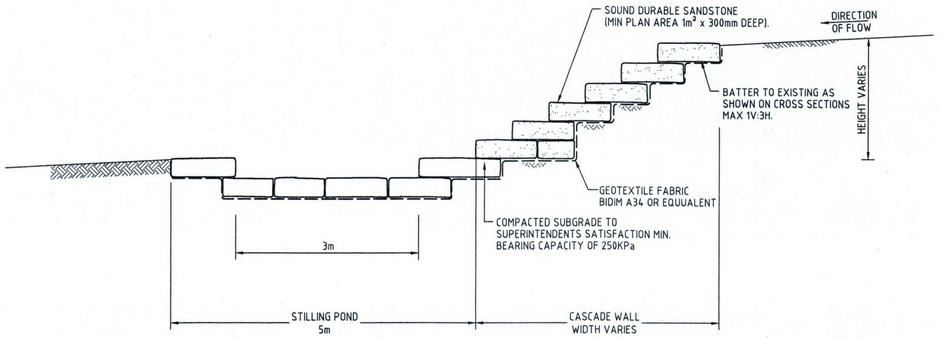
CAD FILE No 0045-01-C06 PLOT INFO 10:33 14/08/00 XREFS

TITLE: KATOOMBA GOLF COURSE REDEVELOPMENT
BASINS 1A, 1B & 2- CROSS SECTIONS

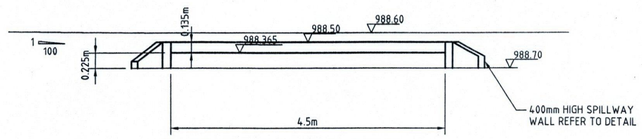
| SIZE | PROJECT No | DRAWING No | SHEET No | REV |
|---|---|---|---|---|
| A1 | RL/0045 | RL0045-01-C05 | 7 OF 12 | 0 |

JMSTD-DW-SY-0003 REV 7 JULY 2000

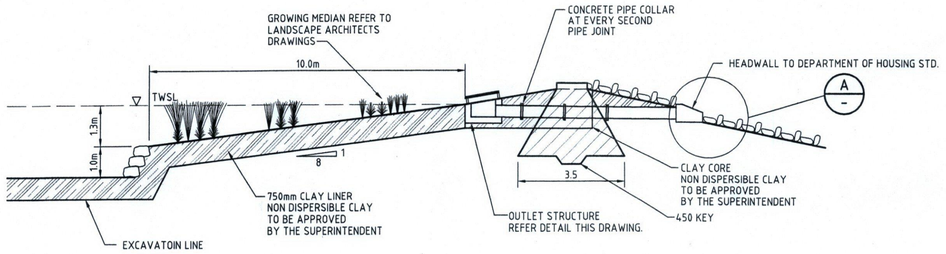
RL0045-01-C05



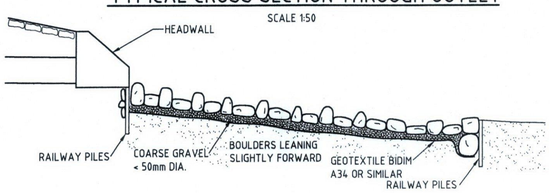

## TYPICAL SECTION OF CASCADE DROP
SCALE 1:50



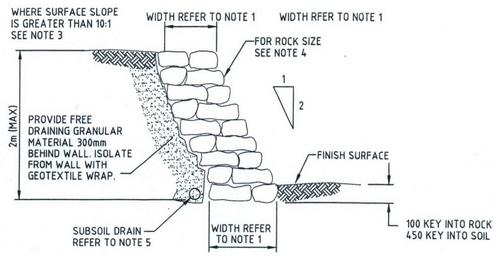

## BASIN 2 - CULVERT DETAIL
SCALE 1:50




## TYPICAL CROSS SECTION THROUGH OUTLET
SCALE 1:50




DETAIL A
NTS




## TYPICAL RETAINING WALL DETAIL
SCALE 1:50

## RETAINING WALL NOTES:

1. WIDTH OF ALL RETAINING WALLS IS 1.5m AT TOP SURFACE AND 1.5m AT BOTTOM.
2. BACK FILL IS TO BE GRANULAR, FREE DRAINING AND COMPACTED.
3. FOUNDATION TO BE APPROVED FOR A SAFE BEARING CAPACITY OF 200 Kpa PRIOR TO CONSTRUCTION
4. WHERE THE SURFACE SLOPE OF RETAINED MATERIAL IS BETWEEN 10:1 AND 4:1 THE WALL BASE DIMENSION IS TO BE INCREASED BY 0.5 METRES.
5. ROCK IS TO BE SOUND DURABLE SANDSTONE OR OTHER APPROVED MATERIAL AND AT LEAST 0.5 SQUARE METERS PLAN AREA SHAPE IS TO BE CONSISTENT AND COMPATIBLE WITH OTHER STONES TO ENSURE INTERLOCKING STABILITY. SHAPE OF ROCKS TO APPROVAL OF BLUE MOUNTAINS CITY COUNCIL LAND DEVELOPMENT ENGINEER
6. A CONTINUOUS 100mm DIA SUBSOIL DRAIN IS TO BE INSTALLED AT THE REAR OF THE WALL WHERE THE WALL HEIGHT EXCEEDS 3.0m OR WHERE THE WALL FOUNDATION CONSISTS OF OTHER THAN ROCK
7. ROCKS SHALL BE PLACED IN SUCH A MANNER THAT THEY ARE STABLE AND INTERLOCKING & LAID ROUGHLY COURSED & BEDDED ON THEIR BROADEST BASE.
8. AN ISOLATED JOINT IS TO BE INSTALLED BETWEEN THE FOOTPATH AND THE RETAINING WALL ABUTTING THE BROADWALK FOR THE TOTAL LENGTH OF THE RETAINING WALL

APPROVED
CONSTRUCTION
04/628-2
CONSTRUCTION CERTIFICATE

**FOR APPROVAL**

| REV | DESCRIPTION | DRAWN | CHECK | SUPV | APPR | DATE | DRAWING No | REFERENCE DRAWING |
|---|---|---|---|---|---|---|---|---|
| 0 | ISSUED FOR APPROVAL | J.K | | | | 07.08.00 | | |

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| | INITIALS | SIGNATURE | DATE |
|---|---|---|---|
| DRAWN | G.N | | |
| DRG CHKD | | | |
| DESIGNED | | | |
| SUPERVISOR | | | |
| MANAGER | | | |
| APPROVED | | | |

CLIENT: NOROTON HOLDNGS PTY LIMITED

egis consulting Australia
67 Albert Avenue
CHATSWOOD NSW 2067
Tel : 61 2 9412 9555
Fax : 61 2 9412 9505
A.C.N. 000 912 630

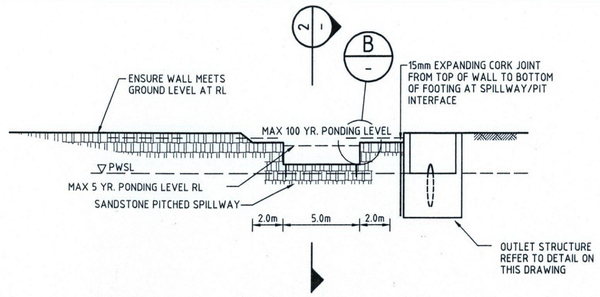
CAD FILE No: 0045-01-C07 | PLOT INFO: 11:22 14/08/00 | XREFS:

TITLE: KATOOMBA GOLF COURSE REDEVELOPMENT
BASINS 1A, 1B & 2 - TYPICAL DETAILS
SHEET 1 OF 2

| SIZE | PROJECT No | DRAWING No | SHEET No | REV |
|---|---|---|---|---|
| A1 | RL/0045 | RL0045-01-C06 | 8 OF 12 | 0 |

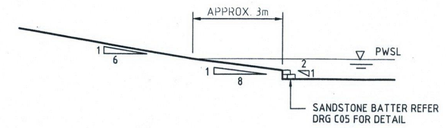
RL0045-06
RL0045-01-C06
JMSTD-DW-SY-G003 REV 4 JAN '99

## FOREBAY AREA WEIR (TYPICAL)

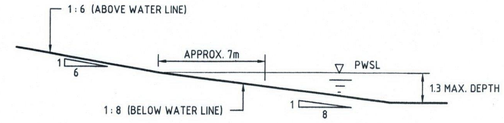



## SECTION THROUGH BASIN OUTLET SPILLWAY (TYPICAL)

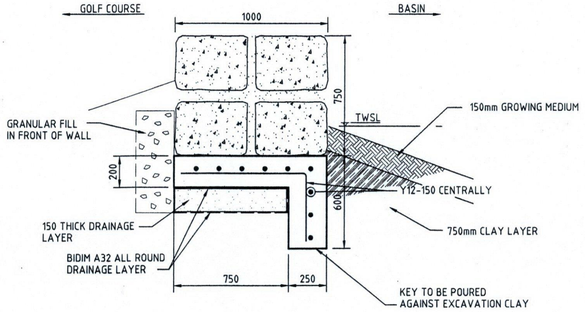
SCALE 1:200(H) 1:50(V)




## TYPICAL BANK PROFILE - SEDIMENTATION ZONE

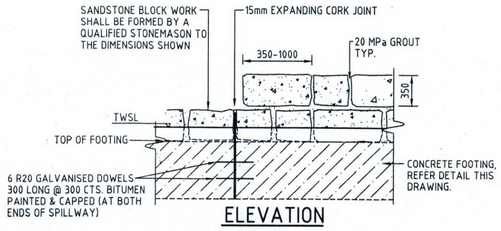



## TYPICAL BANK PROFILE

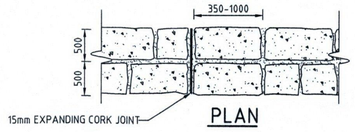



## SECTION 2 - CROSS SECTION OF OUTLET SPILLWAY

SCALE 1:20



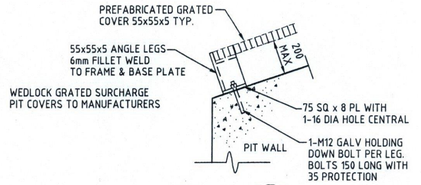

## ELEVATION




## PLAN

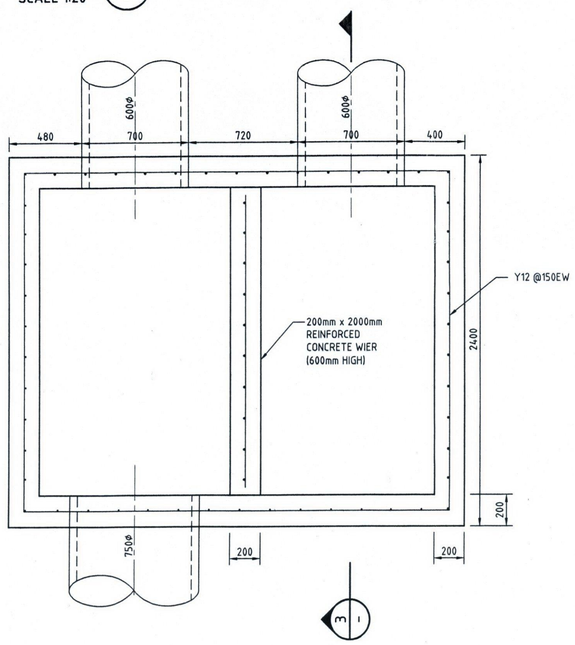
## DETAIL B

SCALE 1:20




## DETAIL A

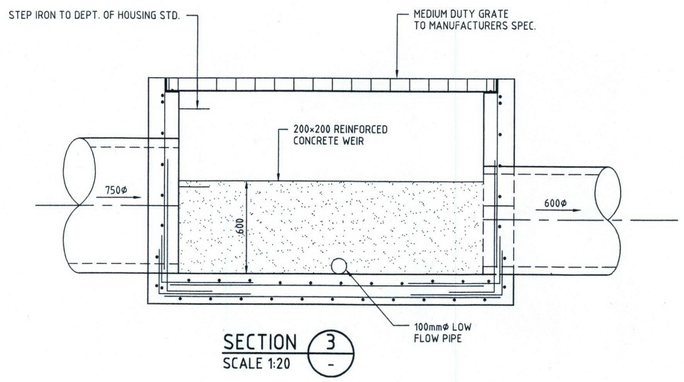
N.T.S.




## OFFTAKE PIT AT DEVELOPMENT OUTLET

## PLAN

SCALE 1:20

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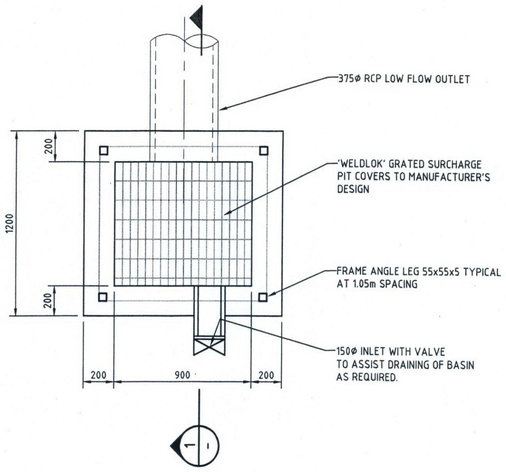
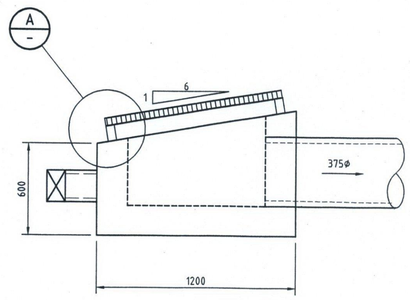



## TYPICAL OUTLET STRUCTURE

## PLAN

SCALE 1:20




## SECTION 1

SCALE 1:20

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04/628-2
McKENZIE CONSULTING (NSW) PTY. LTD.
A.C.N. 093 211 995

**FOR APPROVAL**

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| DRG CHKD | | | |
| DESIGNED | | | |
| SUPERVISOR | | | |
| MANAGER | | | |
| APPROVED | | | |

CLIENT: NOROTON HOLDNGS PTY LIMITED

egis consulting Australia
67 Albert Avenue
CHATSWOOD NSW 2067
Tel : 61 2 9412 9555
Fax : 61 2 9412 9505
A.C.N. 000 912 630

CAD FILE No: 0045-01-C08 | PLOT INFO: 11:17 14/08/00 | XREFS:

TITLE: KATOOMBA GOLF COURSE REDEVELOPMENT
BASINS 1 & 2 - TYPICAL DETAILS

| SIZE | PROJECT No | DRAWING No | SHEET No | REV |
|---|---|---|---|---|
| A1 | RL/0045 | RL0045-01-C07 | 8 OF 12 | 0 |

RL0045-06

RL0045-01-C07

JMSTD-DW-SY-G003 REV 1, JAN '99

## LEGEND

- S.F.① — SILT FENCE PHASE 1 WORKS (REFER DRAWING RL0045-01-C09 FOR CONSTRUCTION DETAILS)
- E.B.① — EARTH BANK (HIGH FLOW) PHASE 1 WORKS (REFER DRAWING RL0045-01-C09 FOR CONSTRUCTION DETAILS)
- STABILISED SITE ACCESS
- C.D.① — ROCK CHECK DAM PHASE 1 WORKS (REFER DRAWING RL0045-01-C09 FOR DETAIL)
- TRUCK HAULAGE ROUTE

REFER INSET FOR TEMPORARY BASIN DETAILS

TEMPORARY GABION MATTRESS SPILLWAY

WEIR TO BE BUILT AFTER DECOMISIONING OF TEMPORARY SEDIMENT BASIN

TEMPORARY SEDIMENT BASIN 1A
SCALE 1:500

TEMPORARY GABION MATTRESS SPILLWAY REFER DETAIL THIS DRAWING

TWSL 998.8

998.5

998.6 EXISTING GL

1:2 SANDSTONE BLOCK BATTER REFER DETAIL A DRG. No.RL0045-01-C05

SCOUR PROTECTION MIN. 20KG BOULDERS ON BIDIM A34 OR SIMILAR

TEMPORARY SEDIMENT BASIN 2
SCALE 1:500

TEMPORARY STOCKPILE SITE No. 3 REFER TO DRG. No. RL0045-C-009 "SOIL AND WATER MANAGEMENT NOTES AND DETAILS - SHEET 2 OF 2"

TEMPORARY STOCKPILE SITE No. 4 REFER TO DRG. No. RL0045-C-009 "SOIL AND WATER MANAGEMENT NOTES AND DETAILS - SHEET 2 OF 2"

REFER INSET FOR TEMPORARY BASIN DETAILS

TEMPORARY STOCKPILE SITE No. 2 REFER TO DRG. No. RL0045-C-009 "SOIL AND WATER MANAGEMENT NOTES AND DETAILS - SHEET 2 OF 2"

COMPACT SPOIL FROM CHANNEL EXCAVATION 150mm LAYERS HYDROSEED AND STRAW COMPACTED SPOIL WITHIN 30 DAYS OF CONSTRUCTION

400mm — WIDTH VARIES — 300mm

REMOVE MOUNDING ON STABILISATION OF UPPER CULVERT

SECTION 1
N.T.S

DURABLE STONE 20Kg OR GREATER

5m

GEOTEXTILE BIDIM A34 OR SIMILAR

SECTION 2
N.T.S

APPROVED
CONSTRUCTION CERTIFICATE NO.
04/628-2
McKEE CONSULTING PTY LTD
A.C.N. 093 211 993

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SCALE
10 0 20 40 60 m
1 : 1000

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|---|---|---|---|
| DRAWN | R.T. | | |
| DRG CHKD | | | |
| DESIGNED | | | |
| SUPERVISOR | | | |
| MANAGER | | | |
| APPROVED | | | |

CLIENT
NOROTON HOLDINGS PTY. LIMITED

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CHATSWOOD NSW 2067
Tel : 61 2 9412 9555
Fax : 61 2 9412 9505
A.C.N. 000 912 630

TITLE
KATOOMBA GOLF COURSE REDEVELOPMENT
SOIL AND WATER MANAGEMENT PLAN

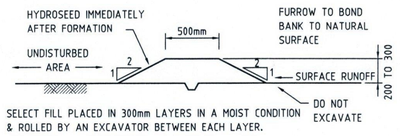
| SIZE | PROJECT No | DRAWING No | SHEET No | REV |
|---|---|---|---|---|
| A1 | RL/0045 | RL0045-01-C08 | 9 OF 12 | 0 |

CAD FILE No 0045-01-C09 | PLOT INFO 10:36 14/08/00 | XREFS 0045C0X 0045ZU01

RL0045-07

KLUU45-01-L08

JMSTD-DW-SY-G003 REV 4. JAN '99




SELECT FILL PLACED IN 300mm LAYERS IN A MOIST CONDITION & ROLLED BY AN EXCAVATOR BETWEEN EACH LAYER.

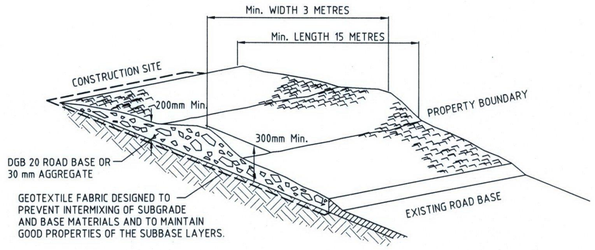
## DIVERSION BANK

N.T.S

## DIVERSION BANK CONSTRUCTION NOTES

1. CONSTRUCT ALONG GRADIENT AS SPECIFIED.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE.
3. DRAINS TO BE OF PARABOLIC OR TRAPEZOIDAL CROSS SECTION AS OPPOSED TO V-SHAPED
4. EARTH BANKS TO BE ADEQUATELY COMPACTED IN ORDER TO PREVENT FAILURE.
5. PERMANENT OR TEMPORARY STABILISATION OF THE EARTH BANK TO BE COMPLETED WITHIN 10 DAYS OF CONSTRUCTION
6. ALL OUTLETS FROM DISTURBED LANDS ARE TO FEED INTO A SEDIMENT BASIN OR SIMILAR
7. DISCHARGE RUNOFF COLLECTED FROM UNDISTURBED LANDS ONTO EITHER A STABILISED OR AN UNDISTURBED DISPOSAL SITE WITHIN THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED
8. COMPACT WITH A SUITABLE IMPLEMENT IN SITUATIONS WHERE THEY ARE REQUIRED TO FUNCTION FOR MORE THAN FIVE DAYS.
9. EARTH BANKS TO BE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.

SD 5-3




## STABILISED SITE ACCESS

N.T.S

## STABILISED SITE ACCESS CONSTRUCTION NOTES

1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE - PUNCHED GEOTEXTILE.
4. CONSTRUCT 200mm THICK PAD OVER GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE. MINIMUM LENGTH 15 METRES OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3 METRES.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP.

SD 5-7

## CONSTRUCTION SEQUENCE

PHASE 1 - WATER QUALITY CONTROL PONDS AND CHANNEL.

TO BE READEN IN CONJUNCTION WITH DRG RL0045-01-C08.

1. COMMENCE CONSTRUCTION AT DOWNSTREAM END OF CONSTRUCTED CHANNELS. EACH ROCK CHECK DAM SHALL BE CONSTRUCTED WHERE INDICATED AS SOON AS POSSIBLE AFTER THAT SECTION OF CHANNEL HAS BEEN FORMED. HYDROSEED AND STRAW MULCH CHANNEL IMMEDIATELY AFTER DISTURBANCE.
2. CONSTRUCT TEMPORARY SEDIMENT BASIN 1A AND 2 AFTER INSTALLING SEDIMENT FENCE AS SHOWN ON THE SOIL AND WATER MANAGEMENT PLAN (SWMP). NOTE THAT THE EARTH WORKS AND OUTLET SPILLWAY FOR BASIN 2 IS TO BE FULLY CONSTRUCTED.
3. COMPLETE CHANNEL WORKS WITH ASSOCIATED EROSION CONTROL MEASURES TO DOWNSTREAM LIMIT OF WORKS.
4. CONSTRUCT DIVERSION BANKS TO CONVEY DISTURBED SITE WATER TO SEDIMENT BASINS.

PHASE 2 - BUILDING AND PREPARATION OF ROAD AND DRAINAGE CONSTRUCTION

1. INSTALL SEDIMENT FENCE AND DIVERSION BANKS AS SHOWN ON THE SWMP PRIOR TO UNDERTAKING EARTHWORKS ON ROAD OR BUILDING PAD.
2. CONSTRUCT MAIN HAULAGE ROAD TO THE UNDERSIDE OF THE WEARING COURSE.
3. INSTALL PIPE DRAINAGE. ENSURE THAT ALL PITS ARE ENCAPSULATED BY INLET SEDIMENT TRAP.
4. COMMENCE BULK EARTHWORKS FOR BUILDING PAD PREPARATION.

PHASE 3 - ROAD AND BUILDING WORKS STABILISED.

1. DECOMMISSION SEDIMENT BASINS AND COMPLETE CONSTRUCTION OF PERMANENT BASINS 1A AND 2. CONSTRUCT SEDIMENT BASIN 1B.
2. REMOVE DIVERSION BANKS ON ROCK CHECK DAMS ONCE DISTURBED AREAS HAVE STABILISED.
3. CONSTRUCT PERMANENT CHANNEL PLANTINGS, RIPPLE ZONE AND SEDIMENT POOLS.

## SOIL EROSION CONTROL NOTES

1. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES & STRUCTURES SHALL BE LOCATED AS SHOWN & SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GUIDELINES & PRINCIPALS AS OUTLINED IN MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION (MUSSC)1998 NSW DEPARTMENT OF HOUSING.
2. EARTHWORKS SHALL BE CARRIED OUT GENERALLY IN ACCORDANCE WITH MUSSC & REQUIREMENTS OF THE ENVIRONMENTAL MANAGEMENT PLAN & BLUE MOUNTAINS CITY COUNCIL.
3. ALL DIVERSIONS, WATERWAYS & RELATED STRUCTURES SHALL BE HYDROSEEDED & IF NECESSARY, MULCHED IMMEDIATELY AFTER THEY ARE SEEDED.
4. ALL SEDIMENT RETENTION TRAPS TO BE CONSTRUCTED WITH A LONGITUDINAL GRADE PARALLEL TO THE STRUCTURE NOT EXCEEDING 1%. LOCATIONS OF SEDIMENT & EROSION CONTROL FEATURES SHOWN ON THIS PLAN ARE SCHEMATIC ONLY. FINAL LOCATIONS ARE TO BE DETERMINED ON SITE TO SUIT THE LOCATION OF NATURAL FEATURES.
5. CONSTRUCTION SHOULD BE PHASED SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE. THIS WILL LIMIT THE DURATION FOR WHICH DISTURBED AREAS ARE EXPOSED TO EROSION. STABILISATION MEASURES SHALL BE APPLIED ON THE FIRST DISTURBED SECTION BEFORE THE NEXT SECTION IS OPENED UP.
6. ALL TOPSOIL TO BE STOCKPILED SHALL BE PLACED IN DEDICATED STOCKPILE SITES. TOPSOIL SHALL NOT BE SPREAD ON ANY OTHER AREAS UNLESS SPECIFICALLY INSTRUCTED BY THE SUPERINTENDENT. IF THEY ARE TO REMAIN FOR LONGER THAN ONE MONTH, STOCKPILES SHALL BE PROTECTED FROM EROSION BY COVERING THEM WITH A MULCH & HYDROSEEDING & IF NECESSARY BY LOCATING GRASS OR DRAINS UPSLOPE TO DIVERT THE RUNOFF AROUND THEM.
7. THE CONTRACTOR SHALL REGULARLY MAINTAIN ALL SEDIMENT & EROSION CONTROL DEVICES & REMOVE ACCUMULATED SILT FROM SUCH DEVICES BEFORE NO MORE THAN 60% OF THEIR CAPACITY IS LOST. ALL THE SILT REMOVED SHALL BE DISPOSED OF AS DIRECTED BY THE SUPERINTENDENT. (NO SILT SHALL BE PLACED OUTSIDE THE LIMIT OF WORKS). THE PERIOD FOR MAINTAINING THE DEVICES SHALL BE AT LEAST UNTIL ALL DISTURBED AREAS ARE RE-VEGETATED & FURTHER AS MAY BE DIRECTED BY THE SUPERINTENDENT.
8. FENCING/BARRIERS TO BE PLACED AS MARKED.
9. THE CONTRACTOR SHALL SUPPLY APPROPRIATE RECEPTICLES FOR ALL RUBBISH AND WASTE MATERIAL. THE CONTRACTOR SHALL ENSURE THAT ALL LITTER IS PLACED IN BINS PROVIDED IN ORDER TO MAINTAIN THE SENSITIVE ENVIRONMENT DOWNSTREAM.
10. STORMWATER MANAGEMENT PLAN WILL BE READ WITH THE ENGINEERING PLANS OR INSTRUCTONS THAT MAY BE ISSUED IN RELATION TO DEVELOPMENT AT THE SUBJECT SITE.
11. ALL SUB-CONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.

## CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5m LONG STAR PICKETS INTO GROUND, 3m APART.
3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFUL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POST WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.

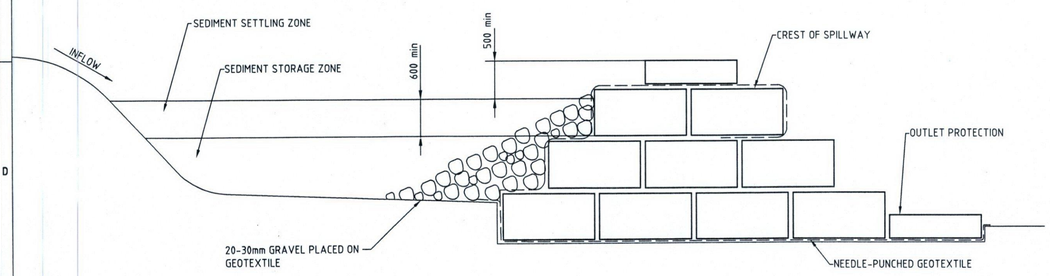
## SEDIMENT BASIN DECOMMISSIONING NOTES

1. CAPTURED STOMWATER TO BE PUMPED INTO ESTABLISHED STORMWATER SYSTEM PROVIDED ACCEPTABLE WATER QUALITY (e.g. 50mg/l NON FILTERABLE RESIDUES) IS ACHIEVED.
2. WHERE ACCEPTABLE WATER QUALITY IS NOT MET, DOSING WITH GYPSUM AT A RATE OF 2kg/100m³ OF STORMWATER IN ACCORDANCE WITH M.U.S.S & C.
3. ALL COLLECTED SEDIMENT TO BE COLLECTED AND DISPOSED OF.
4. OFF-SITE SILT FENCE TO BE ERECTED ON DOWNSTREAM FACE OF BASIN TO BE FILLED.
5. BASIN TO BE FILLED IN ACCORDANCE WITH BULK EARTHWORKS NOTES AND GEOTECHNICAL NOTES.

## SEDIMENT BASIN CALCULATION SUMMARY

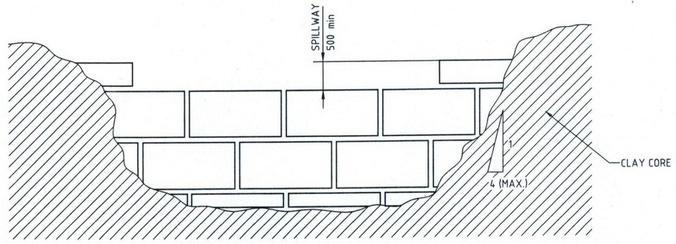
| PARAMETER | BASIN 1 (TYPE C) | BASIN 2 (TYPE C) |
|---|---|---|
| 1. SETTLING ZONE; | | |
| $Q_{2\theta}$ | 3.417m³/s | 4.190m³/s |
| SETTLE VELOCITY | 0.007m/s | 0.007m/s |
| SETTLE AREA | 488m² | 598m² |
| REQUIRED SETTLE VOLUME @ 0.6 DEEP | 293m³ | 359m³ |
| 2. STORAGE ZONE (RUSLE) | | |
| R | 3200 | 3200 |
| K | 0.035 | 0.035 |
| Cs | 6.6 | 6.6 |
| P | 0.8 | 0.8 |
| C (CONSTRUCTION) | 0.4 | 0.4 |
| DISTURBED AREA | 4.14 | 3.29 |
| REQUIRED STORAGE VOLUME | 166m³ | 132m³ |
| REQUIRED TOTAL VOLUME REQUIRED | 459m³ | 491m³ |
| BASIN INVERT DIMENSIONS | 31 x 7 | 25 x 10 |
| BASIN TWSL DIMENSIONS | 41 x 16 | 27 x 12 |
| SPILLWAY LEVEL | 991.5 | 988.5 |
| INVERT LEVEL | 990.3 | 987.0 |
| VOLUME AVALIBLE BELOW 0.6m | 185m³ | 160m³ |
| VOLUME AVALIBLE BELOW TWSL | 480m³ | 512m³ |

BASIN CALCULATIONS ARE IN ACCORDANCE WITH "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION, 3rd EDITION, AUGUST 1998. IN THE ABSENCE OF GEOTECHNICAL INFORMATION ON THE SITE, TYPE F SOIL ASSUMED.
BASIN CONSTRUCTION IS IN ACCORDANCE WITH STANDARD DRAWINGS SD6-2 OF M.U.S.S.C.
DESIGN ARI FOR SEDIMENT CONTROL MEASURES IS 20 YEARS




## GABION SEDIMENT BASIN

SCALE 1:50




## DOWNSTREAM ELEVATION

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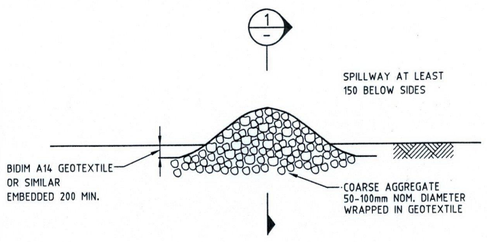
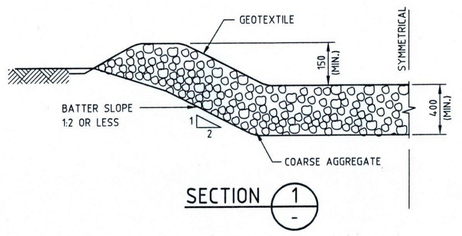



## ROCK CHECK DAM

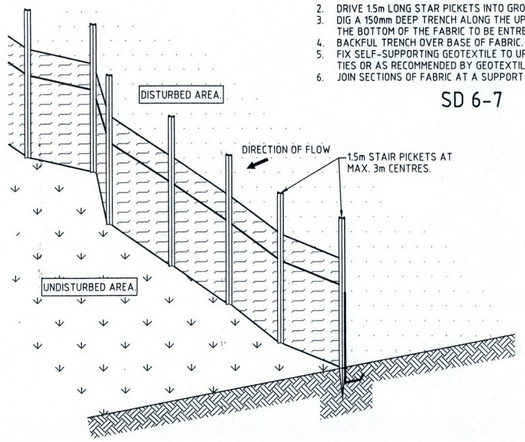


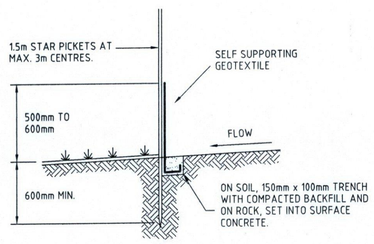

SECTION 1 -

## SILT FENCE CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5m LONG STAR PICKETS INTO GROUND, 3m APART.
3. DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFUL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POST WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.

SD 6-7




## SILT FENCE (S.F.) SECTION

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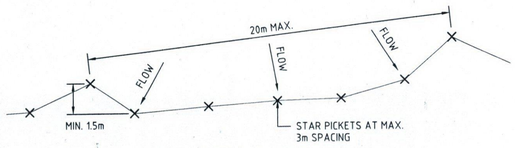


## SILT FENCE (S.F.)PLAN

N.T.S.

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04/628-2
MACKENZIE GROUP CONSULTING (NSW) PTY. LTD.
A.C.N. 088 211 995

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| | INITIALS | SIGNATURE | DATE |
|---|---|---|---|
| DRAWN | R.T. | | |
| DRG CHKD | | | |
| DESIGNED | | | |
| SUPERVISOR | | | |
| MANAGER | | | |
| APPROVED | | | |

CLIENT: NOROTON HOLDINGS PTY. LIMITED

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ACN 000 912 630 / ABN 18 000 912 630

CAD FILE No: 0045-01-C10 | PLOT INFO: 11:30 14/08/00 | XREFS

TITLE: KATOOMBA GOLF COURSE REDEVELOPMENT
SOIL AND WATER MANAGEMENT
NOTES AND DETAILS - SHEET 1 OF 2

| SIZE | PROJECT No | DRAWING No | SHEET No | REV |
|---|---|---|---|---|
| A1 | RL/0045 | RL0045-01-C09 | 10 OF 12 | 0 |

RL0045-08
RL0045-01-C09
JMSTD-DW-SY-6003 REV 7 JULY 2000

# ROUNDABOUT APPROACH SIGNPOSTING DETAILS

* TO BE USED BEFORE & AFTER CONSTRUCTION

R1-3A — (60-80m) — W2-7A — (80-100m) — T1-V113A — (80-100m) — I3-203

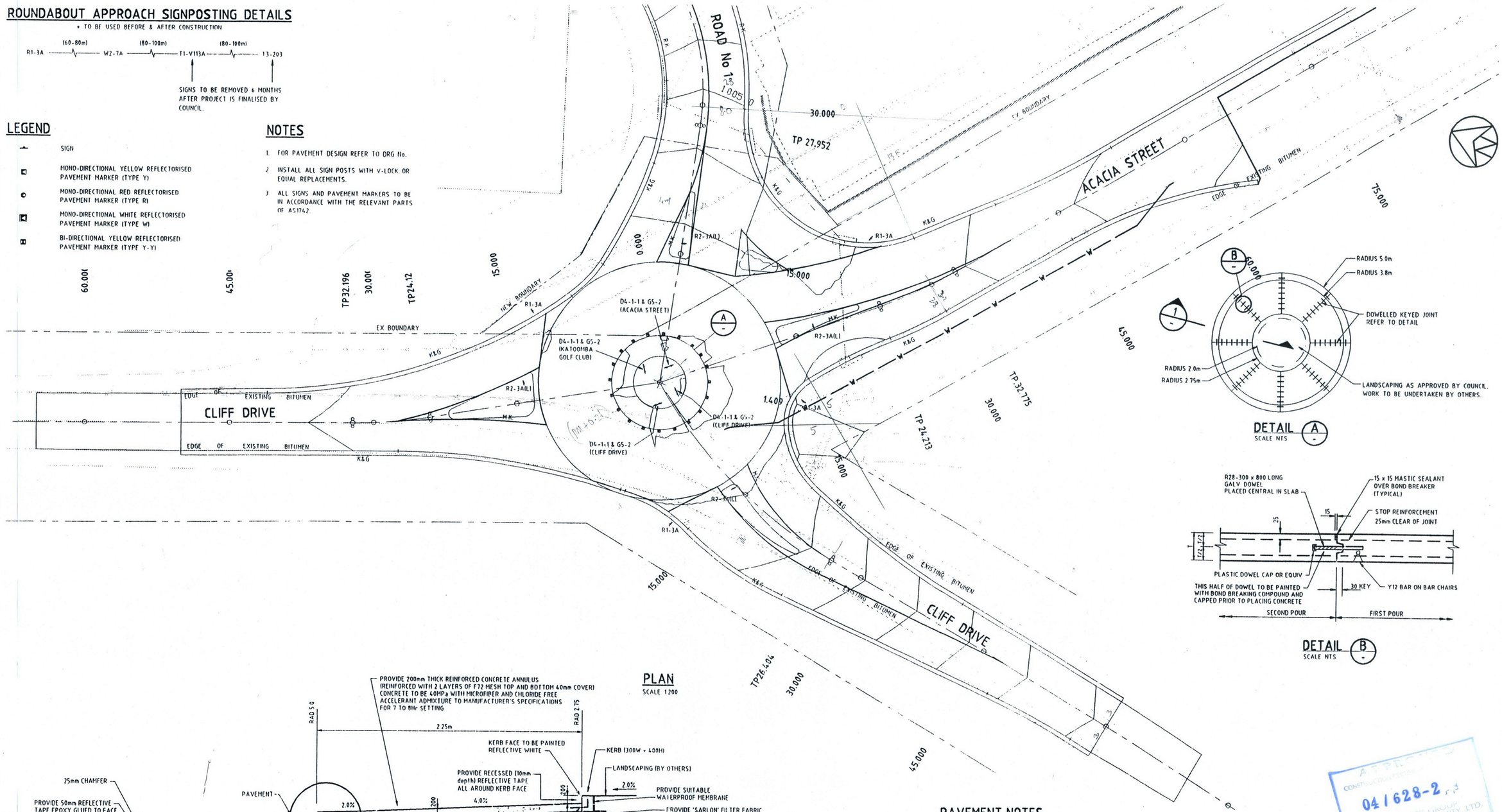
SIGNS TO BE REMOVED 6 MONTHS AFTER PROJECT IS FINALISED BY COUNCIL.

## LEGEND

- SIGN
- MONO-DIRECTIONAL YELLOW REFLECTORISED PAVEMENT MARKER (TYPE Y)
- MONO-DIRECTIONAL RED REFLECTORISED PAVEMENT MARKER (TYPE R)
- MONO-DIRECTIONAL WHITE REFLECTORISED PAVEMENT MARKER (TYPE W)
- BI-DIRECTIONAL YELLOW REFLECTORISED PAVEMENT MARKER (TYPE Y-Y)

## NOTES

1. FOR PAVEMENT DESIGN REFER TO DRG No.
2. INSTALL ALL SIGN POSTS WITH V-LOCK OR EQUAL REPLACEMENTS.
3. ALL SIGNS AND PAVEMENT MARKERS TO BE IN ACCORDANCE WITH THE RELEVANT PARTS OF AS1742.




PLAN
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DETAIL A
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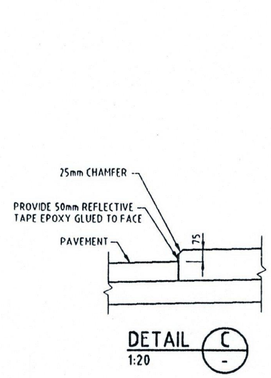
DETAIL B
SCALE NTS




DETAIL C
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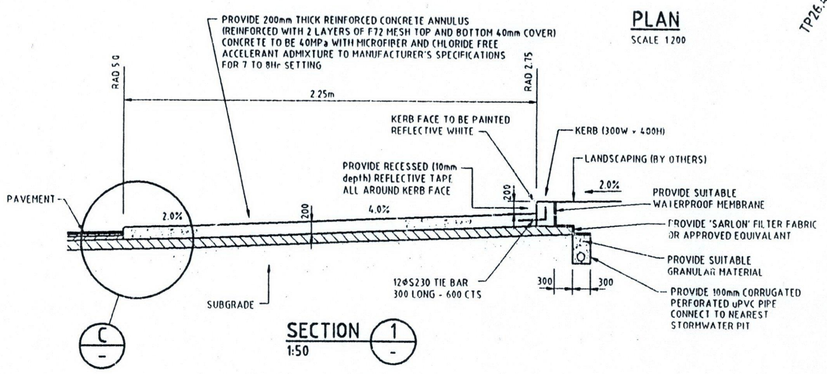


SECTION 1
1:50

CENTER ISLAND DETAIL

## PAVEMENT NOTES


APPROVED
CONSTRUCTION CERTIFICATE
04/628-2
McKENZIE GROUP CONSULTING (NSW) PTY. LTD.
A.C.N. 089 211 995


**FOR APPROVAL**

| REV | DESCRIPTION | DRAWN | CHECK | SUPV | APPR | DATE | DRAWING No | REFERENCE DRAWING |
|---|---|---|---|---|---|---|---|---|
| 1 | ISSUED FOR APPROVAL | ATW | | | | | | |
| 0 | ISSUED FOR TENDER | L.B. | | | M.G. | 12.12.00 | | |

SCALE 2 0 4 8 12 m — 1:200


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| DRG CHKD | G.N. | | |
| DESIGNED | G.N. | | |
| SUPERVISOR | | | |
| MANAGER | | | |
| APPROVED | | M.GRAY | 12.12.00 |

CLIENT: NOROTON PTY LTD


egis consulting Australia
67 Albert Avenue
CHATSWOOD NSW 2067
Tel : 61 2 9412 9999
Fax : 61 2 9412 9855
ACN 000 912 630 / ABN 18 000 912 630


TITLE: KATOOMBA GOLF COURSE REDEVELOPMENT - STAGE 1 - ACACIA STREET ROUNDABOUT PAVEMENT AND LINEMARKING PLAN

| SIZE | PROJECT No | DRAWING No | SHEET No | REV |
|---|---|---|---|---|
| A1 | RL/0045 | RL0045-C-C11 | - OF - | 1 |

| CAD FILE No | PLOT INFO | XREFS |
|---|---|---|
| 0045C11 | 08:35 27/05/02 | 0045C0X- 0045U0X- |


MSTD-DW-SY-4003 REV 7 JULY 2000


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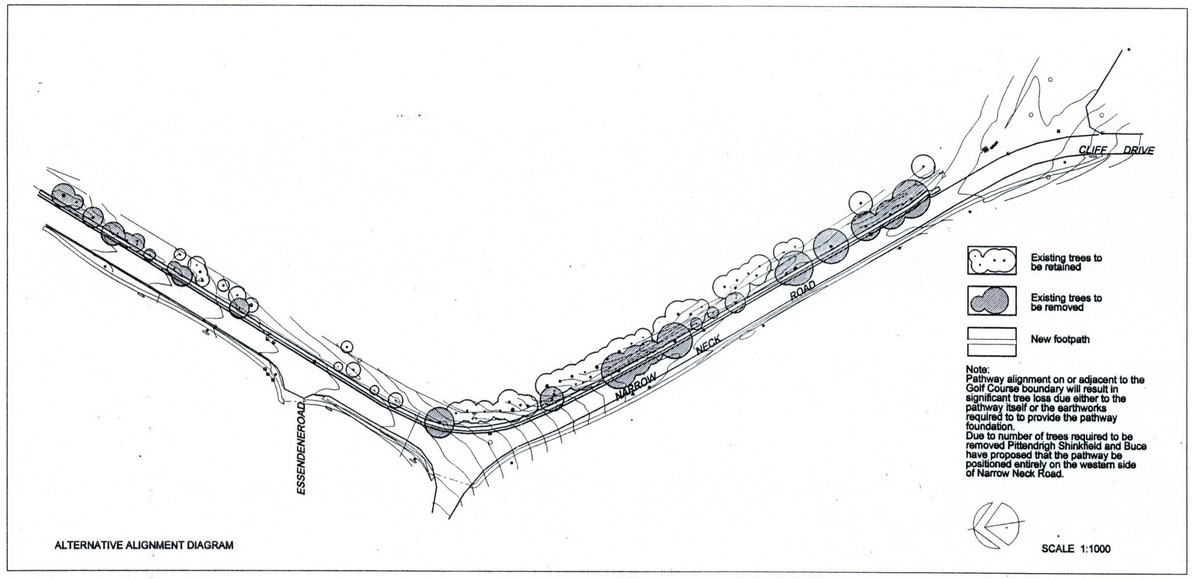
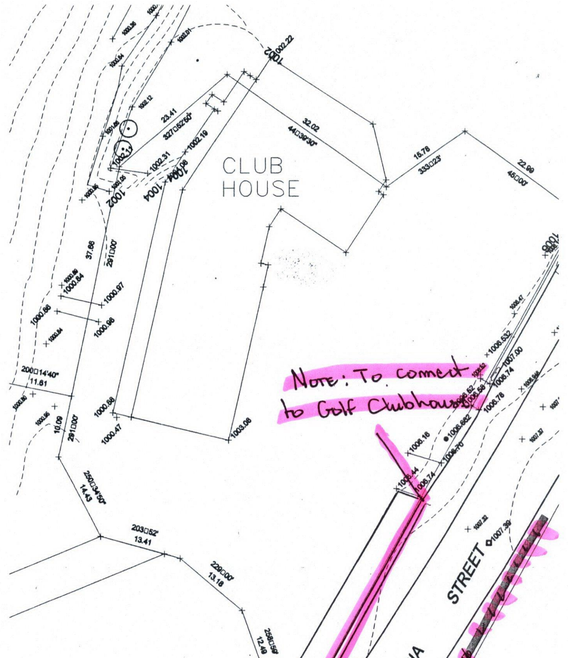



ALTERNATIVE ALIGNMENT DIAGRAM







CITY OF BLUE MOUNTAINS
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APPLICATION No: 905/98
DATE: 11.1.01
SIGNATURE:

Note:
Base survey data taken from G.B Meyer and Associates
Surveyors documentation dated 21.03.00.

| Issue | Amendment | Date | Checked |
|---|---|---|---|
| A | Issue for review | 12.05.00 | KP/KK |

Client

NOROTON HOLDINGS PTY LTD

Project

KATOOMBA GOLF COURSE

Title

FOOTPATH ALIGNMENT PLAN


Landscape Architecture

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Crows Nest NSW
2065 Australia
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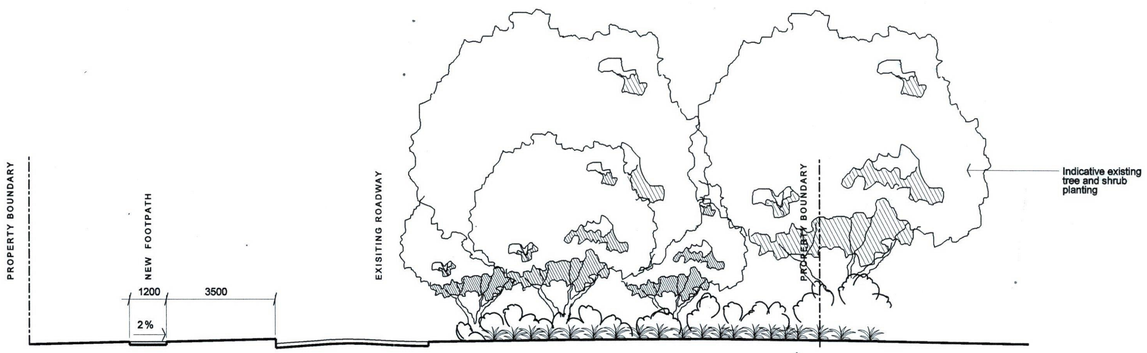
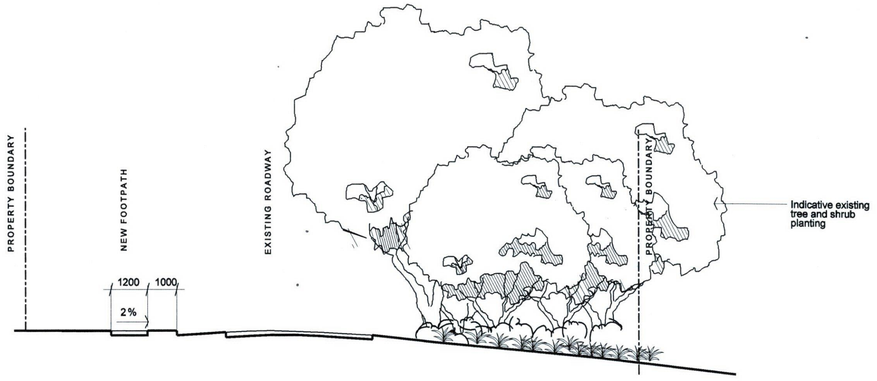
Email psb@psb.com.au

PITTENDRIGH SHINKFIELD AND BRUCE
ACN 057 378 866

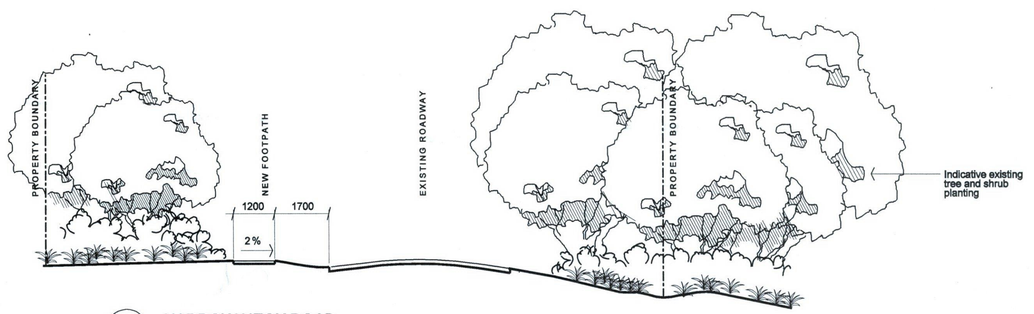

| Drawn | Scale | Drawing No. | Issue |
|---|---|---|---|
| | 1:500 | | |
| Job No. | Paper Size | SK01 | A |
| 00063 | A1 | | |



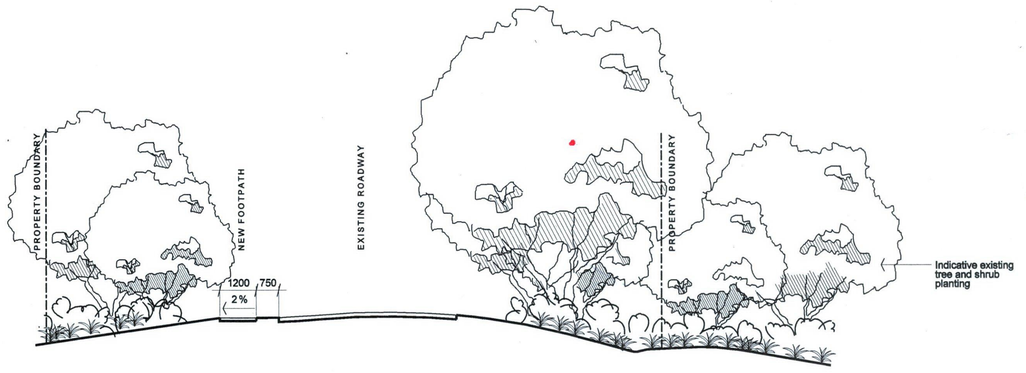

A NARROW NECK ROAD
SECTION A




B NARROW NECK ROAD
SECTION B




C NARROW NECK ROAD
SECTION C




D NARROW NECK ROAD
SECTION D

CITY OF BLUE MOUNTAINS
APPROVED/CERTIFIED
APPLICATION No: 905/99
DATE: 11.1.00
SIGNATURE:

0 1 2 3 4 5 10

| Issue | Amendment | Date | Checked |
|---|---|---|---|
| A | Issue for review | 19.05.00 | AB KS |

Client

NOROTON HOLDINGS PTY LTD

Project

KATOOMBA GOLF COURSE

Title

TYPICAL SECTIONS

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PITTENDRIGH SHINKFIELD AND BRUCE
ACN 007 978 990

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|---|---|---|---|
| | 1:100 | SK02 A | |
| Job No. 00063 | Paper Size A1 | | |

EXISTING HANGING SWAMP

Existing wetland

CREEKLINE OUTLET POINT
into the existing watercourse

BASIN 2

PROPOSED CREEKLINE

PROPOSED CREEKLINE

BASIN 1 (B)

BASIN 1 (A)

HOTEL

CLUBHOUSE

TOWNHOUSES

TOWNHOUSES

TERRACE 1

TERRACE 2

TERRACE 3

TERRACE 4

TERRACE 5

TERRACE 6

TERRACE 7

TERRACE 8

EXTENT OF DWG SK05 SHOWN DASHED

EXTENT OF DWG SK04 SHOWN DASHED

## LEGEND

- Existing trees to be removed
- Existing trees (interpolated from aerial photo)
- Existing trees (located from survey))
- Proposed shrub planting
- Proposed tree planting
- Fairway
- Creekline containing stone pitc channel and native grasses (refer SK04 and SK05 for exte
- Macrophyte planting to basins
- Existing Contours

NOTES:
1) Drawings to be read in conjunction with the EGIS Australia 'Water Cycle Management Study'

2) Where nominated plant species are naturally occurring on-site all stock is to be nursery grown from seed collected on-site or other propagation methods as required. All other material is to be nursery grown from stock/seeds collected within the immediate area.

3) Planting works are to incorporate (2) species of conservation significance found on the site:
- Persoonia acerosa (Sandstone plateau forest)
- Almaleea incurvata (Blue Mountains Sedge Swamp)

4) Landscape restoration works planting strategy will be based on the following endemic communities:
- Blue Mountains Sandstone Plateau Forest
- Blue Mountains Sedge Swamp

5) Base survey data taken from G.B Meyer and Associates
Surveyors documentation dated 21.03.00.

CITY OF BLUE MOUNTAINS
APPROVED/CERTIFIED
APPLICATION No: 905/98
DATE: 11.1.01
SIGNATURE:

0 10 20 30 40 50 100m

| | | |
|---|---|---|
| A | Client Issue | 09.08.00 |
| A | Client Issue | 07.08.00 |
| Issue | Amendment | Date Checked |

Client

NOROTON HOLDINGS PTY LTD

Project

KATOOMBA GOLF COURSE

Title

BASINS AND CREEK LAYOUT MASTERPLAN


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Drawn VC
Job No. 00083
Scale 1:500
Paper Size A1
Drawing No. SK03
Issue B

ADJOINS DWG SK05

Interface with existing watercourse

Sandstone rubble channel to accommodate base flows. 25% of the surface area occupied by the rubble creekline is to be planted with macrophytes to soften its visual impact, promote habitat diversity and remove particulate matter.

Ripped sandstone cascade (nominal sizing 500-2000mm dia) to dissipate and aerate flows before entering the existing watercourse

D02 SK06

D03 SK06

Basin 1 (B) low flow outlet pipe (designed to accomodate flows up to the 1:2 year ARI storm event)

Formed grass swale with 1:12 batters to direct storm flows from Basin 1 (B) to the constructed creekline

Ripped sandstone interplanted and stablised with native grasses to protect batter from scour and dissipate flows during storm events.

Macrophyte grasses capable of withstanding both regular and sporadic innundation to swale batters. (Refer typical sections for their extent)

Baffle to maximise water detention time within the basin and direct flows through macrophytes

Macrophytes

BASIN 1 (B) WL 988.5

Open water

Open water

D01 SK06

03

375 dia. low flow pipe to Basin 1(B)

Cascade and open water settling pool

1:6 Cut batters to be grassed with a turf variety to match the existing fairway

Sedimentation Basin with fringing macrophytes planted on a 2m wide shallow safety edge

D04 SK06

Ripped sandstone interplanted and stablised with native grasses to protect batter from scour and dissipate flows during storm events.

BASIN 1 (A)

10

02

18

16

01

CLUBHOUSE

TOWNHOUSES

TOWNHOUSES

TERRACE 7

TERRACE 8

ADJOINS DWG SK05

Stormwater outlet pipe and weir structure to distribute the majority of storm flows < 1:2 storm event through Basins 1 (A) + (B). A small base flow of 30 L/sec will be allowed to bypass the Basins and continue along the creekline.

CITY OF BLUE MOUNTAINS
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APPLICATION No: 905/98
DATE: 11.1.01
SIGNATURE:

0 10 20 30 40 50 100m

## LEGEND

- Existing trees to be removed
- Existing trees (interpolated from aerial photo)
- Existing trees (located from survey))
- Proposed shrub planting
- Proposed tree planting
- Macrophyte planting tpo basins
- Fairway
- Creekline containing stone pitched channel and native grasses (refer SK05 for detail)
- Macrophyte planting to basins
- 988.000 Existing contours

NOTES:
1) Drawings to be read in conjunction with the EGIS Australia 'Water Cycle Management Study'

2) Where nominated plant species are naturally occurring on-site all stock is to be nursery grown from seed collected on-site or other propagation methods as required. All other material is to be nursery grown from stock/seeds collected within the immediate area.

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- Blue Mountains Sedge Swamp

5) Base survey data taken from G.B Meyer and Associates
Surveyors documentation dated 21.03.00.

| Issue | Amendment | Date | Checked |
|---|---|---|---|
| A | Client Issue | 09.08.00 | AB/KS. |

Client: NOROTON HOLDINGS PTY LTD

Project: KATOOMBA GOLF COURSE

Title: BASINS (1A) & (1B) AND CREEK LAYOUT LANDSCAPE PLAN


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2065 Australia
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ACN 057 378 980


Job No. 00063
Scale 1:500
Paper Size A1
Drawing No. SK04
Issue A

Ripped sandstone cascade (nominal sizing 500-2000mm dia) to dissipate and aerate flows before entering the existing watercourse

Channel crossing structure
Rocklined creekline/channel to divert basin 2 outflows into existing watercourse

Adjoins DWG SK04

Cascade and open water settling pool

Low-flow outlet (flows up to and including the 2 year ARI storm event

Ripped sandstone interplanted and stabilised with native grasses to protect batter from scour and dissipate flows during storm events.

Baffle to maximise water detention time within the basin and direct flows through macrophytes

Stone pitched weir to divert the majority of flows <1:2 storm event. A small base flow of 30 L/sec will be allowed to bypass Basin 2 and continue along the creekline.

D04 SK06
D02 SK06
D01 SK06
D03 SK06

BASIN 2
WL 988.5

Open water
Open water
Macrophytes

Pedestrian wetland crossing structure

Walling to prevent alteration of the ground levels within the drip lines of existing trees

1:6 Cut batters to be grassed with a turf variety to match the existing fairway

Macrophyte grasses capable of withstanding both regular and sporadic innundation to swale batters. (Refer typical sections for their extent)

Sandstone rubble channel to accommodate base flows. 25% of the surface area occupied by the rubble creekline is to be planted with macrophytes to soften its visual impact, promote habitat diversity and remove particulate matter.

07 02 04 11 12 08

SITE BOUNDARY

Stormwater outlet point from development

HOTEL

Adjoins DWG SK04

## PLANT SCHEDULE OF TYPICAL SPECIES

TREES
Eucalyptus seiberi
Eucalyptus mannifera
Eucalyptus piperita
Eucalyptus sclerophylla

TALL UNDERSTOREY
Acacia longifolia
Acacia terminalis
Acacia falciformis
Banksia ericifolia
Banksia serrata

SHRUBS
Bauera rubioides
Callistemon citrinus
Leptospermum trinervium
Banksia spinulosa
Hakea dactyloides
Lamberta formosa
Dianella caerulea
Lomandra longifolia

CREEKLINE GRASSES
Carex appressa
Carex fascicularid
Gahnia clarkei
Gahnia melanocarpa
Juncus usitatus

BASINS
Eleocharis sphacelata
Lepironia articulata
Phragmites australis
Schoenoplectus mucronatus
Bolboschoenus fluvaitilis
Schoenoplectus mucronatus
Alisma plantago-aquatica
Cyperus exaltatus
Viallarsia exaltata

0 10 20 30 40 50 100m

## LEGEND

- Existing trees to be removed
- Existing trees (interpolated from aerial photo)
- Existing trees (located from survey))
- Proposed shrub planting
- Proposed tree planting
- Macrophyte planting tpo basins
- Fairway
- Creekline containing stone pitched channel and native grasses (refer SK06 for detail)
- Macrophyte planting to basins
- Existing contours

NOTES:
1) Drawings to be read in conjunction with the EGIS Australia 'Water Cycle Management Study'

2) Where nominated plant species are naturally occurring on-site all stock is to be nursery grown from seed collected on-site or other propagation methods as required. All other material is to be nursery grown from stock/seeds collected within the immediate area.

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4) Landscape restoration works planting strategy will be based on the following endemic communities:
- Blue Mountains Sandstone Plateau Forest
- Blue Mountains Sedge Swamp

5) Base survey data taken from G.B Meyer and Associates
Surveyors documentation dated 21.03.00.

CITY OF BLUE MOUNTAINS
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APPLICATION No: 405/99
DATE: 11.1.01
SIGNATURE:

| Issue | Amendment | Date | Checked |
|---|---|---|---|
| A | Client Issue | 08.08.00 | |

Client
NOROTON HOLDINGS PTY LTD

Project
KATOOMBA GOLF COURSE

Title
BASIN (2) AND CREEK LAYOUT LANDSCAPE PLAN

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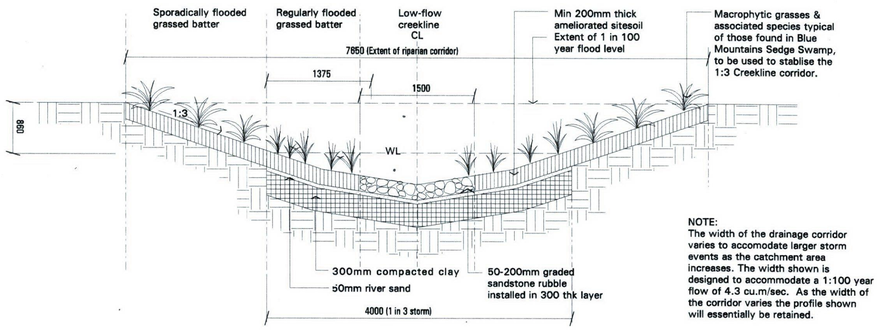
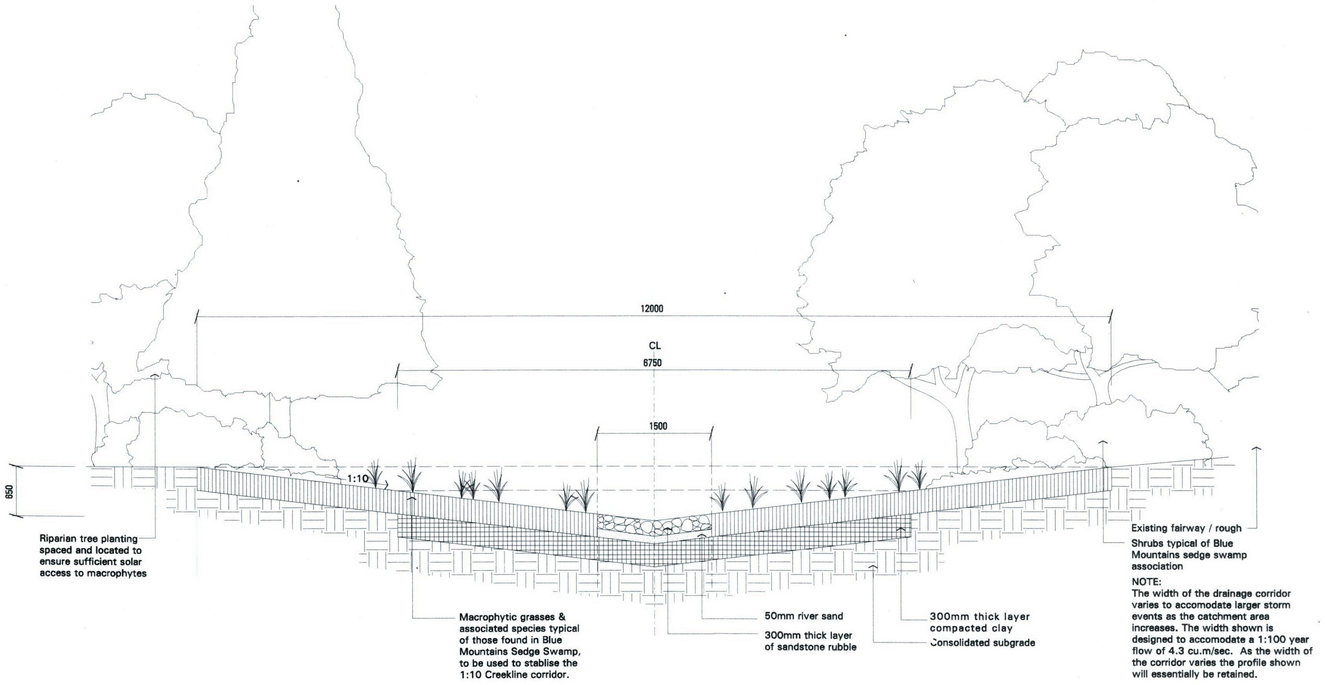
ACN 057 578 980

| Drawn | Scale | Drawing No. | Issue |
|---|---|---|---|
| Job No. 00063 | 1:500 | SK05 | A |
| | Paper Size A1 | | |



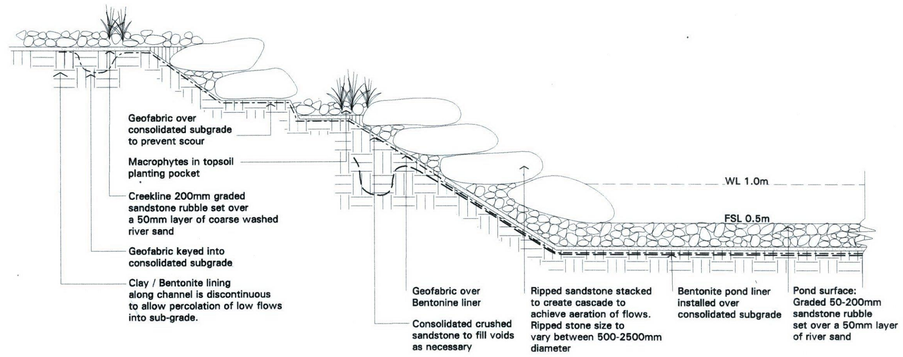

NOTE:
The width of the drainage corridor varies to accomodate larger storm events as the catchment area increases. The width shown is designed to accommodate a 1:100 year flow of 4.3 cu.m/sec. As the width of the corridor varies the profile shown will essentially be retained.

**D01** Typical Section: Creekline Crossing Fairway — SCALE 1:40 @A1

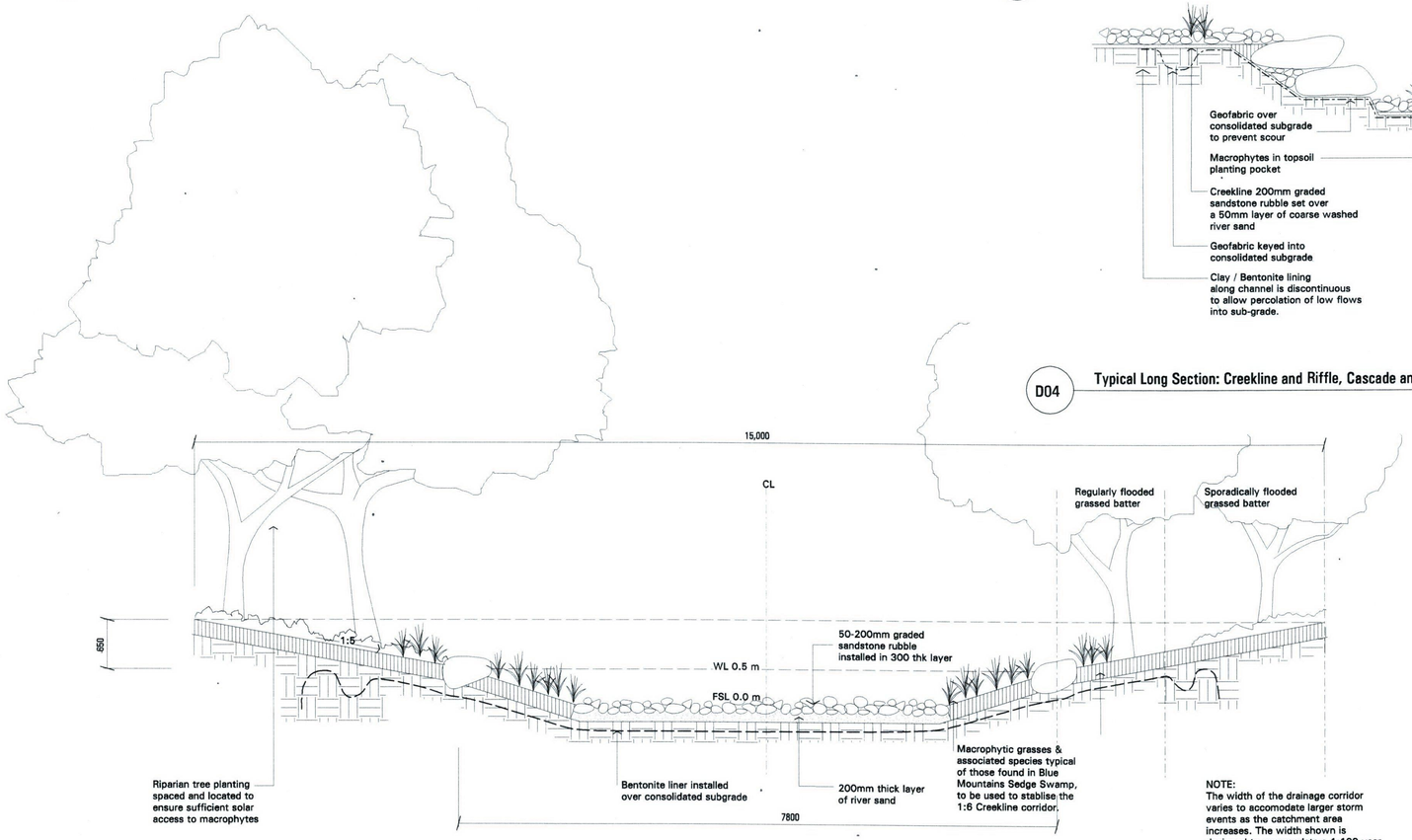



NOTE:
The width of the drainage corridor varies to accomodate larger storm events as the catchment area increases. The width shown is designed to accomodate a 1:100 year flow of 4.3 cu.m/sec. As the width of the corridor varies the profile shown will essentially be retained.

**D03** Typical Cross Section: Creekline and Riparian Corridor — SCALE 1:40 @A1




**D04** Typical Long Section: Creekline and Riffle, Cascade and Pool Sequence — SCALE 1:40 @A1




NOTE:
The width of the drainage corridor varies to accomodate larger storm events as the catchment area increases. The width shown is designed to accomodate a 1:100 year flow of 4.3 cu.m/sec. As the width of the corridor varies the profile shown will essentially be retained.

**D02** Typical Detail: Open Water Pond — SCALE 1:40 @A1

CITY OF BLUE MOUNTAINS
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APPLICATION No: 905/98
DATE: 11.01.01
SIGNATURE:

0 0.4 0.8 1.2 1.6 2 4m

Note:
Base survey data taken from G.B Meyer and Associates
Surveyors documentation dated 21.03.00.

| Issue | Amendment | Date | Checked |
|---|---|---|---|
| B | Client Issue | 09.08.00 | AB/4 |
| A | Client Review | 07.08.00 | |

Client
NOROTON HOLDINGS PTY LTD

Project
KATOOMBA GOLF COURSE

Title
CREEKLINE DETAILS

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Drawn
Job No. 00063
Scale 1:40
Paper Size A1
Drawing No. SK06
Issue B

# Appendix D
# Draft Precinct Plan

# Draft
# Precinct Plan
# Former Katoomba Golf Course

blue mountains City Council

Draft for Public Exhibition March-April 2023

## Acknowledgement

Blue Mountains City Council has produced this report in collaboration with:

Atlas Urban

EcoLogical Australia

GHD

Engage2

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**Vision**

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**Part 6: Delivery Framework**

# Acknowledgement of *Ngurra* (Country)

The City of the Blue Mountains is located within the Ngurra (Country) of the Dharug and Gundungurra peoples. Blue Mountains City Council recognises that Dharug and Gundungurra Traditional Owners have a continuous and deep connection to their Country and that this is of great cultural significance to Aboriginal people, both locally and in the region.

For Dharug and Gundungurra People, Ngurra takes in everything within the physical, cultural and spiritual landscape - landforms, waters, air, trees, rocks, plants, animals, foods, medicines, minerals, stories and special places. It includes cultural practice, kinship, knowledge, songs, stories and art, as well as spiritual beings, and people: past, present and future.

Blue Mountains City Council pays respect to Elders past and present while recognising the strength, capacity and resilience of past and present Aboriginal and Torres Strait Islander people in the Blue Mountains region.

*"If we care for Country...*
*...it will care for us."*

# Message from the Mayor

**At this extraordinary time, at an extraordinary site in our City within a World Heritage Area, we have an amazing opportunity to do something special.**

As much of Australia and the World reels from a string of natural disasters, the links between the health of natural systems and human health are becoming self-evident. So too are the increasingly extreme and detrimental impacts of climate change. Over the past four years our City has been severely impacted by five declared Natural Disasters including the 2019-2020 Black Christmas bushfires that surrounded the City on three fronts, and four extreme wet weather events causing major damage to our built infrastructure (roads, landslides and buildings) and natural environment (flora and fauna).

The time to act is now to take tangible steps to ensure the long-term sustainability and resilience of our City and our community. But how can we do this?

One way is through establishing a Planetary Health Precinct and possible Planetary Health Centre on the Former Katoomba Golf Course Site that guides local action to restore planetary health and build community resilience. Inspired by the wisdom and knowledge of First Nations people and working collaboratively in partnership with community, environment organisations, the business sector, tertiary institutions and other key stakeholders, such a Precinct and Centre could provide an exemplary model to other Local Government Areas across the world.

Right now we have the opportunity to position our City and its unique setting within a World Heritage Area, as a globally recognised hub of innovation and excellence in the field of sustainability and planetary health.

Blue Mountains City Council has a long history of embedding sustainability into our operations and practices and helping to protect the planet. Our journey continued when we purchased the former Katoomba Golf Course clubhouse in 2020. The Vision for the site is to establish a Planetary Health Precinct in collaboration with traditional Custodians, our community, and educators and researchers from a number of universities, all working together to achieve such a hub in the Blue Mountains region.

Precinct Plans are long-term planning documents which describe and illustrate the vision, guiding principles and priorities for the future of a particular area or site. The former Katoomba Golf Course Precinct Plan sets out the vision, principles and directions for its future development as a Planetary Health Precinct. It honours First Nations wisdom, and facilitates community and visitors gathering, learning and sharing. It suggests potential uses and activities that will contribute to positive long-term economic, environmental, cultural and social outcomes for the Blue Mountains.

This Draft Precinct Plan considers both what must be done to protect and preserve the distinctive qualities of this unique site, as well as the aspirations to re-activate it as a thriving, healthy, sustainable, and cherished Precinct that will benefit current and future generations. Much community consultation has already occurred on this plan and I encourage you all to read this document and to consider the opportunities that it presents.

**Mayor, Cr Mark Greenhill OAM**

# Message from the CEO

**As a leader in sustainability and environmental planning over the last 20 years, and as one of only two cities in the world located within a UNESCO declared World Heritage Area, Blue Mountains City Council recognises its stewardship responsibility in managing the Blue Mountains sustainably within a landscape of globally significant biodiversity.**

With this and the recent bushfires, floods and COVID in mind, and within a philosophy of "think globally, act locally", the Council initiated the Blue Mountains Planetary Health Initiative. This Initiative supports and complements the achievement of the Blue Mountains Community Strategic Plan Community Vision for: "A more sustainable and successful Blue Mountains by 2035, environmentally, socially and economically".

Since the establishment of the Blue Mountains Planetary Health Initiative we've partnered with the Monash Sustainable Development Institute, Western Sydney University, the University of Technology's Institute for Sustainable Futures, the Blue Mountains World Heritage Institute (WHI), Notre Dame University, the National Parks and Wildlife Service (NPWS), and Sydney University's Environment Institute with a shared vision of advancing our understanding and capabilities in the rapidly evolving field of planetary health. The overarching aim of the Initiative is to create an inspiring City-wide Planetary Health Action program which will provide local, regional and potentially broader benefits, including a range of projects, research, education and local job creation. The proposed Planetary Health Precinct on the former Katoomba Golf Course site, forms an important part of the Planetary Health Initiative. It is also supported by the work of the Blue Mountains Planetary Health Advisory Committee established in 2021 to guide the Council on the possible establishment of a Planetary Health Initiative (PHI) and action program that would include such activities as:

- The establishment of a Planetary Health Centre in Katoomba with the aim of providing local, regional, national and international benefits and connections, including a reinvigorated sustainability model for the region based on the principles of planetary health, deep connection with, and respect of, indigenous wisdom and knowledge and a better understanding of how local government areas can contribute to planetary health by "thinking globally and acting locally";
- Consideration of innovative governance structures for supporting planetary health;
- Consideration of how the Planetary Health initiative and Leadership Centre could be resourced and financed;
- Development and implementation of a range of planetary health initiatives – environmental, social, economic and governance – with potential local, regional, national and international significance;
- Building partnerships and connections with community and other agencies and organisations, including higher education institutions and other levels of government, relevant stakeholders and groups, that will advance and support Planetary Health action;
- Increasing understanding of emerging planetary health challenges and opportunities; and
- Guiding and advising the Council on ways its services, local action programs and City governance can best support planetary health and achievement of a more sustainable Blue Mountains into the future.

As climate change impacts the World, the City of Blue Mountains has an opportunity to step up and take exemplary leadership in becoming an even brighter "lighthouse of hope" demonstrating innovative and creative ways to take local action to restore planetary health and live in harmony with nature.

**CEO, Dr Rosemary Dillon**

# Vision

***The vision for this site arises during extraordinary times of climate change, natural disasters and COVID19, hard felt throughout the community. At this extraordinary place, there is a significant opportunity to respond, and do things differently.***

We aim to create an evolutionary Planetary Health Precinct that will be intergenerational, supporting the needs of the present and future generations. Our vision is to reimagine the role and potential of the 'public estate' by hosting initiatives that promote Planetary Health, while creating a space that fosters a sense of community, innovation, and sustainability.

We envision a place where all people can gather, share, learn and contribute to living sustainably, to healing Country and to restoring the health of the planet.

This precinct will be a place to come together to create, experiment, and demonstrate models of sustainability that restore the balance between humans and the rest of the natural world, inspired by First Nations' wisdom and knowledge.

We will mobilise the community and utilise our collective expertise to demonstrate innovative models of sustainability. Our precinct will be financially self-sustaining, with enduring economic stability for the community through the creation of a prospering local green economy.

Leveraging our unique location within a City of the Arts, surrounded by a UNESCO World Heritage Area, we will create a precinct of local, national, and international significance that will provide unique, diverse, and enriching experiences for our community and visitors from around the world.

*"This Draft Plan presents a rare opportunity to create an exemplary Planetary Health Precinct on the former Katoomba Golf Course site.*

*Working collaboratively together, we can create something really special and important in the Blue Mountains that has global significance.*

*Guided by Planetary Health Principles and the Blue Mountains Planetary Health Initiative, this is our chance to think globally and take action locally, for the benefit of current and future generations."*

***Clr Mick Fell, Chair of the Planetary Health Advisory Committee***

# 1 CONNECTING WITH COUNTRY

# Grounded in Country: A Model for the Future

**With deep respect to Elders past, present, and emerging, and guided by their knowledge, this plan looks to the future.**

The former Katoomba Golf Course was established on the lands of the Gundungurra and Dharug People and is intersected by the traditional pathways that connected the wider area of Kedumba (Katoomba) and beyond. In the words of Traditional Owners, this place provided deep connection, and a series of pathways to learn from and connect with Country.

To develop this document, Council worked alongside Traditional Owners and the wider local Aboriginal community, who generously provided a deeper understanding of the place, and its importance. This included walking the site with Traditional Owners and gaining understanding of its connection to the broader cultural landscape, and also the value of this place now, despite its modification and change as a result of previous uses.

This Draft Plan captures what we have heard and takes a holistic approach which embeds Aboriginal perspectives and values into the future care and development of this site, knowing that 'if we Care for Country – it will Care for Us'.

It is this fundamental recognition of the inherent connection between the health of natural systems and the health of all life, that defines Planetary Health. Now embedded within the strategic planning framework of the Council, the principles of Planetary Health (refer to Section 3.1) have set the strategic direction for the site.

Design and planning processes generally prioritise people. However, as captured in the *Draft Connecting with Country Framework* (NSW Government Architect), learning from Traditional Aboriginal knowledge, with a greater focus on natural systems that includes people, animals, resources and plants equally could make a significant contribution to a more sustainable future world. Therefore, planning and design processes must be adapted, and work towards a Country-centred approach.

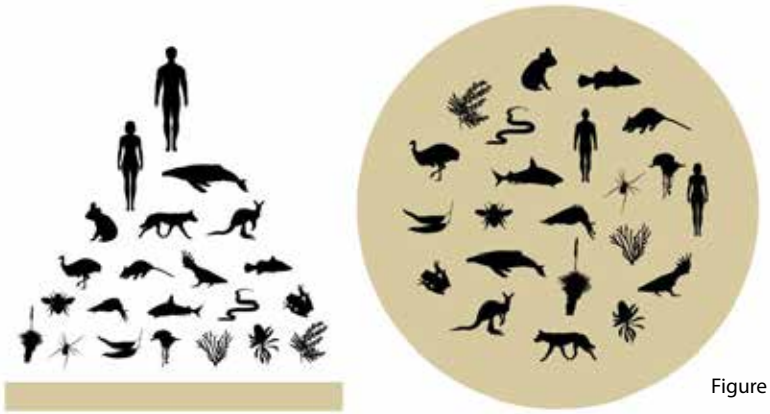


Figure 1: Human-centred or Country-centred.

# A Different Approach

This Draft Precinct Plan seeks to do things differently. A strong ambition to restore the health of this precinct underpins the thinking and design considerations behind this plan, and reflects the knowledge shared with us by Traditional Owners. A particular focus has been placed on water health, water connections within the site and into the Kedumba catchment, and the important role of water in the broader well-being of Country.

The Draft Plan also acknowledges that Country is not static. It will need different things at different times depending on influences, external affects or as areas are supported and restored. This need for flexibility and responsiveness is captured in the draft principles, objectives and actions of this Plan. The approach aims to leave space to respond to what Country needs, while also providing spaces that promote gathering, sharing and learning that impact lightly on the landscape and can be adapted over time. This approach also seeks to deliver on commitments made in the *Blue Mountains City Council Statement of Recognition and Commitment*.

This statement includes the '*Acknowledging, addressing and eliminating the inherent colonial perspectives and behaviours formed within generations of non-Aboriginal Australians in interacting with Traditional Owners and First Nations people in the City and commencing a journey towards local de-colonising attitudes, policy, processes and practices.*'

In particular, the Draft Precinct Plan responds to the following commitments:

- **Formally recognising the vital importance and the contributions of Traditional Owners and First Nations people in strengthening and enriching the City of the Blue Mountains and the broader region.**
- **Promoting activities that increase respect for, and acceptance of, cultural sensitive appreciation and understanding towards Traditional Owners and First Nations peoples.**
- **Providing an opportunity for non- Aboriginal people in the broader community to build a deeper respect for Ngurra and embracing its central importance for current and future generations of Traditional Owners.**

# Messages from the Traditional Custodians

## David King

Aunty Mary King, my mother and a grandmother used to talk about home. Home for the little girl called "Nellie Mac" was the Gully (Garguree) and Katoomba (Gedumba). Her stories were about Country, people and community.

My mum would talk about the tracks around Garguree that took you up to the centre of town or out to Narrow neck. There were the swampy areas. The dry lines would take you out across the ridge to places that are now the roads and the golf course.

My mum would walk with her family. The golf course connected you to areas like Narrow Neck, Maple Grove, and Katoomba Falls out to Echo Point. Throughout all these sites you would learn about your Culture and connect to the Country. Education was not in a room but it was along these pathways for thousands of years. Pathways are important for us. Beyond our connection the Australian native flora and fauna also live and grow along these pathways.

Sitting on Country in areas like the Gully, the Golf Course and Katoomba Falls connected us to our Culture and Country. When you learn to listen you connect. My mum always took her shoes off and told us to feel Country. That meant a lot to her.

**David King, a Gundungurra Man**

Member of the Blue Mountains Planetary Health Advisory Committee

# Chris Tobin

The well-being of Country is one of our peoples' primary cultural responsibilities. We are taught that our role as humans is to be good managers of Country. It is a job we are born into and is part of our identity as Aboriginal people to be good custodians or carers of County.

Nura or 'Country' for Aboriginal people includes not just the beautiful rocks, trees and waterways; not just the glorious animal and birds that share our home here, but that we as humans are very much a part of this Country too. As we teach our young people, to look after Country is to look after yourself and your family. It is a job we take quite seriously and many of us find it very distressing to not be able to do that as well as our old people have done in the past.

We are grateful to our old people to leave us such a beautiful example – evident in the beautiful bushlands that surround us, of how well humans can live with Country.

We are fortunate in the Mountains that we have been largely spared the excessive development that has left other areas of our Country off the Mountains with less than 5% of the natural bush and acknowledge this to be an ongoing task to protect and care for what we have. Many of us in fact feel a deep sense of responsibility to maintain the health of our Country here to share with others while our brothers and sisters in other areas make their way back to health after the devastation of the last 200 years. It is something I believe is part of our fundamental purpose for being here – to help each other heal.

I am excited to be involved in the Planetary Health initiative which also sees the necessity to find more sustainable and earth friendly ways of living on and looking after Country. We can achieve great things by working together to learn and develop better relationships with our Country that draws on the strong Aboriginal heritage values here and the growing awareness in our community and Council to take seriously our responsibilities to care for and protect our precious Country. Together we have an opportunity to work towards a just and sustainable future that puts the health and wellbeing of our Country above all other concerns; not just for us today but for our children and the future generations that rely on us to do this well.

**Chris Tobin, A Dharug Man**

Member of the Blue Mountains Planetary Health Advisory Committee

# 1.1 A Planetary Health Approach

Planetary health is about safeguarding the health and wellbeing of current and future generations through good stewardship of Earth's natural systems and by rethinking the way we feed, move, house, power, clothe, connect, and care for the world. Blue Mountains City Council has been advancing its sustainability model since the early 2000s. This model recognises the inherent connections between the quality of life for people and all other life on the planet.

The current dominant human culture is at the heart of planetary health challenges. And yet, changing this culture is the only solution to these challenges. Human development must be de-coupled from excess resource use and environmental degradation. There is a pressing need for a change of mindset to ways of living that are in harmony with nature—to a planetary consciousness in everyday life and in wider socioeconomic and commercial systems.

There is much to learn from Indigenous ways of understanding the world. Although planetary health is a new term* in research and public policy, knowledge that human health entirely depends on the health of natural systems is not new for Indigenous people.

Understandings of the links between the health of people and natural systems are central to Indigenous spiritual traditions and cultural practices.

This Draft Plan for the former Katoomba Golf Course anticipates the site evolving as an exemplar in which a local community can demonstrate and show leadership in planetary health in a learning environment.

The Plan aims to foster engagement of all in our community in the practical experience of looking after this special site, and in furthering the respect for and connection with the Blue Mountains environment beyond. The site is envisaged as a place for the sharing of planetary health understandings among the local community and the many visitors to the World Heritage listed Greater Blue Mountains Area.

**Anthony Capon**

**Director, Monash Sustainable Development Institute**
**Professor of Planetary Health**

Member of the Blue Mountains Planetary Health Advisory Committee

* Whitmee S, A Haines, C Beyrer, F Boltz, AG Capon et al (2015). *Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation*–Lancet Commission on planetary health. The Lancet 386: 1973-2028.

## 1.2 The Land

The land to which this Draft Precinct Plan relates currently exists as two lots: the golf course itself, and a smaller lot containing the former golf course club house. The land was modified and developed into a golf course more than one hundred years ago, resulting in substantial changes to topography, hydrology, and vegetation. Similarly, land around the site has been developed over time, containing largely residential development on small allotments, consistent with the settlement pattern across the Blue Mountains.

The strategic direction the Council has set for this site presents a unique opportunity. An opportunity to establish a Planetary Health Precinct that exemplifies local action to restore planetary health. An opportunity to observe, reconsider and restore significant environmental attributes, and to learn from Traditional Custodians about the connections between this land and surrounding places; the way water and pathways create important connections that must be protected in order to restore the health of Country, particularly the Kedumba Catchment.

Many areas of the site, including important swamp land and vegetation communities of types only found in the Blue Mountains, are protected under Council's *Local Environmental Plan* (LEP) (refer to Section 2.5). The majority of the site is also mapped as bush fire prone land. Site analysis has been completed against these planning considerations (refer to Part 4), and future development will need to carefully consider these environmental attributes.

Through a collaborative approach with Traditional Custodians, First Nations people and the community, the site represents an opportunity for Council to demonstrate leadership in adaptation to climate change, in emergency preparedness, water management and environmental responsiveness.

## 1.3 A Gathering Place

*Connecting with Country* is intended to assist all of us – Aboriginal and non-Aboriginal people – to work together collectively, respectfully, and with open minds to unite our complementary knowledge. The site is an opportunity for the meeting and connecting of people: Traditional Custodians and First Nations people, the community, visitors, researchers, educators, and students.

A yarning circle is an important process within Aboriginal and Torres Strait Islander culture and has been used traditionally to learn from a collective group, build respectful relationships, and to preserve and pass on cultural knowledge.

**As the first formal action within the precinct it is proposed that yarning circles will be created, representing both the physical and symbolic intention that this be a place for people to gather, share stories and ideas, and learn. The design and location of the yarning circles will be co-designed with Traditional Custodians (detailed in Section 5).**

# 2 PLANNING CONTEXT & COMMUNITY ENGAGEMENT

# 2.Strategic Planning Context

## 2.1 Purpose & Structure of this Precinct Plan

This Draft Precinct Plan investigates the former Katoomba Golf Course (KGC); a place which presents a unique opportunity to create a sustainable and adaptable Planetary Health Precinct that is recognised across Australia as a model for learning, experimentation and sharing. The Draft Plan considers what must be done to protect and preserve the attributes of this pivotal site, to re-activate it as a thriving, healthy, sustainable, and cherished precinct for the community.

This document sets out the vision, principles, and objectives for the future development of the precinct and presents potential land uses and activation proposals to be implemented over the short, medium, and long term. It also reinforces the strategic importance of this site for education, sustainable tourism and creativity, while also factoring in financial sustainability to enable delivery of key activities and outcomes. The implementation of this Draft Precinct Plan will create an adaptable, educative, and evolving site which contributes to positive long-term environmental, cultural, economic, and social outcomes for the Blue Mountains.

The approach is innovative in that it moves beyond prescribing set structures and detailed design solutions. It brings a holistic lense to establish the precinct as an intergenerational demonstration model, which develops over time. Activations and experiences will also reflect the competitive advantage of Katoomba and the Blue Mountains, as a leader in sustainability and Planetary Health.

Supporting the vision for the Precinct, this document is structured in 6 parts:

**Part 1** Introduces the site and grounding in Country;

**Part 2** Explains the purpose of the Precinct Plan, the strategic context and intent of the project;

**Part 3** Outlines the principles and objectives for future uses based on the principles of Planetary Health and input from the community;

**Part 4** Outlines an understanding of the site, it's constraints and opportunities;

**Part 5** Provides an overview of the potential activities and future spatial layout of these activities;

**Part 6** Provides the delivery and implementation framework including immediate-short, medium and long-term actions.

## 2.2 Site Ownership

The site is owned by Blue Mountains City Council (BMCC) and includes the former Katoomba Golf Course as well as the site of the former clubhouse. The Council has owned the majority of the golf course for more than a century, and purchased the clubhouse site including building and adjoining parking area in 2020.

## 2.3 The Blue Mountains - A City within a World Heritage Area

The City of Blue Mountains is nested within the UNESCO Greater Blue Mountains World Heritage Area. This vast and beautiful landscape, inhabited by Aboriginal people over millennia, is comprised of delicately calibrated ecosystems, recognised worldwide for their ecological value. It also stands adjacent to the largest metropolis in Australia. From an environmental and tourism point of view, the Greater Blue Mountains, through their scale and symbiosis with Greater Sydney, with Katoomba as their strategic centre, exemplify the links between wild places and human aspirations.

As one of only two cities in the world within a World Heritage National Park, this perfectly places the Blue Mountains local government area to be a leader in responding to climate change, and to model sustainable living, as well as sustainable industries and innovations.

## 2.4 Regional Context and the Blue Mountains within Western Sydney

*The Greater Sydney Region Plan* (March 2018) was the first regional plan developed by the Greater Sydney Commission, with a vision for connected cities: Eastern Harbour City, Central River City and Western Parkland City. Therefore, at a state planning level, the Blue Mountains is located within the Western Parkland City and Katoomba is identified as the strategic centre of the Blue Mountains within the Western City District Plan. This recognises its importance as a service centre for the community and as a key visitor destination.

The Blue Mountains broadly provides recreation space for greater Sydney, and particularly with growth in Western Sydney, is a regular destination for domestic visitors. Katoomba is the primary visitor destination. The location of this precinct within Katoomba provides a unique opportunity to leverage existing visitation, creating a unique destination at a regional level.

At the time of writing this Draft Plan, the now Greater Cities Commission had released *The Six Cities Region Discussion Paper*, in advance of developing the *Six Cities Region Plan*. The Council will seek to elevate the importance of sustainable tourism and environmental education, in contributing to the development of these regional plans.

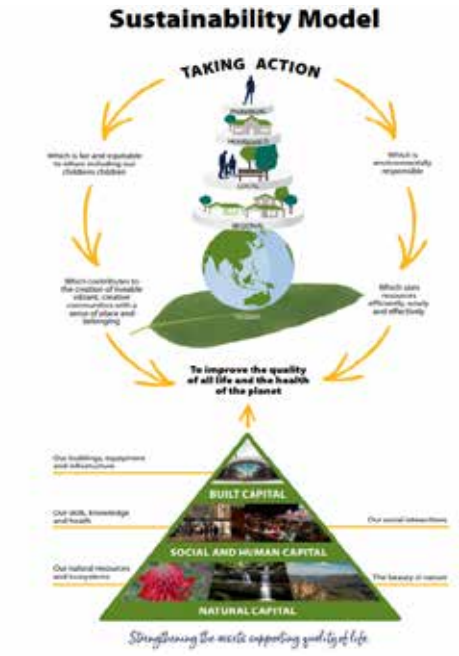
# 2.5 Local Strategic Planning Context

Blue Mountains City Council has for more than two decades, demonstrated leadership in environmental policy and sustainability in the local government sector.

**Community Strategic Plan and Blue Mountains Sustainability Model**

At the time of inscription of the Greater Blue Mountains Area into the UNESCO world heritage list, Blue Mountains City Council established its Sustainability Model *(as shown below)*. This model highlighted the importance of action at all levels, to improve quality of all life and the life of the planet. The creation of the model and synthesis of these concepts in a Community Strategic Plan more than 20 years ago, was ground-breaking. It set the Blue Mountains at the forefront of sustainability, planning, placing the environment at the centre of the planning and reporting framework.

This is evidenced by its vision for the community 'to achieve a more sustainable Blue Mountains - environmentally, socially and economically.'




(Community Strategic Plan: *Sustainable Blue Mountains 2035*).

**The Local Strategic Planning Statement – *Blue Mountains 2040: Living Sustainably***

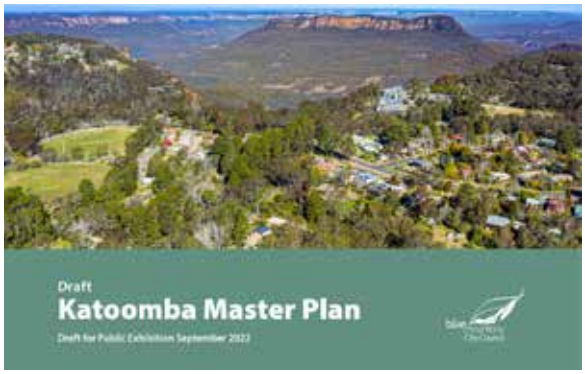
Endorsed in 2020, the Local Strategic Planning Statement (LSPS): *Blue Mountains 2040: Living Sustainably,* reinforced the long held environmental planning principles captured in the Community Strategic Plan, and identifies the basis for strategic planning within the Blue Mountains. This statement includes an action to develop an International Centre of Excellence in the Blue Mountains for sustainable living, environmental science or Planetary Health (Action 1.17).

This clear direction informs Council's strategic and operational practices and underpins key planning documents such as the Draft Katoomba Masterplan (KMP), the 'umbrella document' for this Precinct Plan.

**The Draft Katoomba Draft Masterplan 2022-2023**

The Draft Katoomba Master Plan (KMP) is a 20-year strategic planning framework guiding revitalisation, development, and investment within Katoomba, responding to community need. It assists Council in organising and prioritising projects and works programs, preparing strategies and applying for grant funding. The Draft KMP was developed in extensive consultation with the community and key stakeholders between 2020-2022 and was publicly exhibited at the end of 2022.

The former Katoomba Golf Course is identified in the KMP as a key strategic site for both Katoomba and the broader Blue Mountains, due to its unique location, and environmental, social and cultural attributes. Given the interplay between the strategic direction of the former Katoomba Golf Course site and Katoomba as a whole, it will be important that these two documents are finalised concurrently, and responses from the community on both documents be considered collectively.




**Current Land Zoning under Blue Mountains Local Environmental Plan 2015**

In the local planning context, the site is currently zoned RE1 Public Recreation under Council's *Local Environmental Plan* (LEP) 2015. This zoning permits a range of uses including most of the activities identified in this precinct plan. However, some activities proposed would likely require an amendment to the local planning framework.

The current zoning permits information and education facilities and research stations which would cover much of learning and discovery and educational activities considered for the site. However more extensive multipurpose facilities or uses such as a plant nursery or accommodation options to support education programs are not currently permitted in the existing zone. Should these uses proceed, an amendment to the LEP would be required. This would include a separate and extensive public process.

Part 6 of this Draft Plan details how the local planning framework would be amended to support this Precinct Plan once adopted.

**Land Classification**

All Council owned land is classified as either community or operational land. The former Katoomba Golf Course, including the former Clubhouse is classified as operational land. Historically the site was subject to a Trust when it was dedicated to Council in 1920, and when the Local Government Act 1993 introduced land classifications the site was classified as community land. The site was subsequently reclassified to operational through the making of LEP 112 in 1998, which also discharged the trust previously associated with the land.

# 2.6 Planetary Health as a Model for Sustainability

**What is Planetary Health?**
Part 1 of this document, Connecting with Country, underpins the thinking and design considerations for the Draft Precinct Plan and reflects the knowledge generously shared by Traditional Owners in the development of this plan.

The health of Country is central, and fundamentally recognises the inherent connection between the quality of life of people and the health of the planet. This is the basis of Planetary Health; a focus on, and understanding of, the interdependencies of human and natural systems.

Critical also is shifting our focus from human centredness, to understand the importance of a more symbiotic approach recognising the interconnectedness of all life and natural systems.

In 2020 BMCC adopted the principles of Planetary Health in the LSPS: *Blue Mountains 2040: Living Sustainably,* now also presented as a defining element of the update to the Blue Mountains Community Strategic Plan 2035.

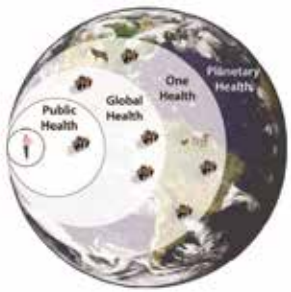



Figure 2: Planetary Health recognises the health of the planet as a system.

**Planetary Health Initiative & Planetary Health Advisory Committee**
With a philosphy of "think globally, act locally" in 2021 BMCC formed the Planetary Health Initiative (PHI). This initiative highlights the role local government can play in facilitating collaborative local action that restores the health of our planet's social, economic and environmental systems. Council has progressed this initiative, developing an inclusive, city-wide approach in collaboration with the community, Traditional Owners and other First Nations peoples, local stakeholders, university groups and other organisations.

To guide the Council's Planetary Health Initiative, the Blue Mountains Planetary Health Advisory Committee (PHAC) was established and is comprised of national and global academics, researchers, and practitioners and local community stakeholders. The Committee advises Council on the establishment and implementation of Planetary Health activities across the Blue Mountains, including the possible establishment of a Planetary Health Centre in the Blue Mountains.

Council has also entered into Memoranda of Understanding (MoUs) with a number of higher education institutions, to also explore opportunities to establish a leadership centre of national and international significance, in the field of Planetary Health.

This Draft Precinct Plan explores the potential for such a leadership centre to be established on the former golf course site.

The Planetary Health Initiative located in the former clubhouse is already generating income for planetary health projects and will seek to increase this to support development of the precinct for the benefit of future generations.

## 2.7 Council's Planetary Health Initiative and the Precinct

Since the purchase of the former clubhouse building in 2020, as part of Council's Planetary Health Initiative, a range of investment, works and activities have been undertaken on the site. The lower ground floor of the clubhouse is being used as the base for the Council's Planetary Health Initiative and programs.

Works have been undertaken to retrofit and improve the Clubhouse and surrounds as a space for income generation as well as community and research activities aligned with Planetary Health. Tenancies have been established with the National Parks and Wildlife Service and the Blue Mountains World Heritage Institute, and conference spaces are being hired for meetings and events to community groups like the Blue Mountains Aboriginal Culture and Resource Centre (ACRC). These leasing and hiring arrangements are covering the costs of managing the precinct for the community.

Regular maintenance works have been carried out for the golf course site, the road verge and the landscaping areas around the clubhouse. Repair and refurbishment work has also been undertaken for existing infrastructure including amenities and the old machinery shed. Council's Swampcare and Woody Weed Wanderers are also engaging the community and actively regenerating the site. The PHI has established its office in the former clubhouse with a small exhibition space, Planetary Health Library and Herbarium, a facility for workshops, meetings and events, and edible gardens and a compost hub for tenants of the Precinct.

The PHI has run Planetary Health, permaculture, social enterprise design and teaching courses, hosted workshops in collaboration with community organisations, worked with researchers from Sydney University's Sydney Environment Institute on the *Grounded Imaginaries Project* and worked to engage the community in site restoration with Council's Bushcare team.

The initiative has conducted education tours for a range of organisations including UTS's Institute for Sustainable Futures, the Integral Ecology Emerging Leaders Program, and Sydney University's Grounded Imaginaries Project, as well as being the case study on sustainable building for students from Wollongong University.

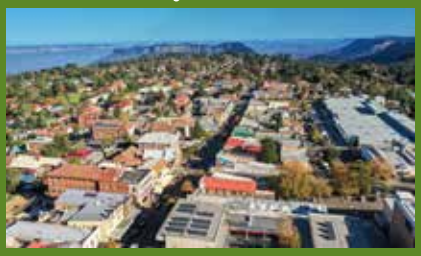
A major grant has been received to create a Water for Disaster Risk Reduction Demonstration site with a range of community engagement and learning programs. These programs are generating local employment and will support the community in restoring planetary health and reducing disaster risks.

## 2.8 Community Engagement

The following diagram details key milestones in the planning process to date, as well as community engagement and stakeholder activities which have contributed to the Draft Precinct Plan.

**Oct – Dec 2020**

Katoomba Masterplan and Precinct Plan endorsed



**Jan – Mar 21**

Katoomba Masterplan early engagement, including the former KGC as a key site.

**Apr – Aug 21**

Site visits with Traditional Owners

Planetary Health Advisory Committee established

**Sep 21 – Feb 22**

Draft Principles developed with the Planetary Health Advisory Committee.

**Mar – April 22**

Early engagement
- Over 40,000 postcards distributed
- Face to face engagement and community workshops
- Nearly 400 survey participants
- Over 100 written submissions

| Jul – Sep 22 | Oct – Dec 22 | Jan – Feb 23 | Mar – April 23 |
| --- | --- | --- | --- |
| Oucomes of early enagement reported to Council | Workshops held with Focus Group of key stakeholders | Draft Precinct Plan considered by Council for Public Exhibition | Public exhibition of the Draft Precinct Plan |

## 2.9 What We Have Heard

Between March and April 2022 Council conducted a series of early community engagement activities. The results of this early engagement were provided publicly in a report to Council in July 2022 and can be found on Council's website. The outcomes have been used to inform the ideas and proposals presented in this Draft Plan, balanced against the draft planning principles and the opportunities and constraints of the site itself.

This assessment of site opportunities and constraints includes the environmental values and conditions on the site, but also planning and infrastructure considerations and matters such as emergency access and evacuation routes. Many of the potential uses and activities suggested by the community appear in the Draft Plan and are captured in the key themes on the following page. These include recreation, educational opportunities and environmental conservation as well as comments around visitation and financial sustainability.

However other uses such as a hospital or affordable housing, may be more appropriately located in other parts of Katoomba or the Blue Mountains. As referenced above, the Katoomba Masterplan is being prepared concurrently with this Draft Precinct Plan. The draft Katoomba Masterplan identifies the Blue Mountains ANZAC Memorial Hospital as a key site, highlighting the need for state government investment for a new or upgraded hospital on the existing site or within the upper Blue Mountains. Key considerations for such a development include proximity to public transport, primary access to a main road and emergency access to name few. The former KGC site would not easily provide these.

Similarly, the draft Katoomba Masterplan addresses the importance of housing diversity in the Blue Mountains, including the significant issue of housing affordability. The Masterplan highlights areas for investigation for such housing. Importantly, these investigation areas are largely outside of land mapped as bush fire prone. The Council has made a commitment to not rezone (or increase density on) land that is bush fire prone to limit new residences being put in harms way. The former Katoomba Golf Course site is mapped as being mostly bush fire prone, and while it may be suitable for small areas of temporary accommodation, permanent housing would be more appropriately located in other parts of Katoomba or the Blue Mountains.

The Draft Katoomba Masterplan can be found on Council's website, and it is important that these two documents be read together to gain a complete picture of current strategic planning for Katoomba.

# 2.10 Initial Community Engagement – Themes and Ideas

The following section describes the findings and key themes from initial community engagement. These themes include environmental, social, cultural and economic considerations as well as feedback on maintenance, access and long-term aspirations for the site, and have informed the key objectives in this Draft Precinct Plan (refer to Section 3.2 Objectives). Internal engagement with Council staff was also undertaken.

Positively, many of the proposed uses, particularly those related to education and recreation, have complimentary elements and have the potential to co-exist on the site, both in temporary and more permanent variations. In this way, the site presents a rare opportunity to respond to many ideas raised by the community and consider how these uses complement each other and progress over time.

## Traditional Custodians & First Nations People

- Importance of engaging with, and listening to, Traditional Custodians and First Nations people.
- Opportunity to learn about, and connect with, Traditional practices.
- Promotion of the integral role of Traditional knowledge in sustainable practices.

## Community Access, Recreation & Open Space Use

- Importance of retaining managed community access for a variety of uses including informal recreational activities.
- Desire to use the site for outdoor recreation, now and into the future, including activities such as walking, cycling, picnicking, children's play.

## Natural Environment: Vegetation, Wildlife and Water Management

- Future uses need to work around existing environmental conditions such as vegetation and watercourses and consider impacts on plants and wildlife.
- Protect, restore and nurture native vegetation and ancient swamplands.
- Suggestions for growing and planting activities including community gardens, food forests, bush tucker trails, botanical gardens and plant nurseries. Many respondents saw this as compatible with other recreational uses

## Governance & Financial Sustainability

- Need for appropriate governance and management of the site to ensure an integrated and coordinated approach to its development.
- Need to ensure governance model includes financial sustainability and viability considerations.

## Sustainability & Planetary Health

- Interest in demonstration sites for sustainability projects, research and educational opportunities.
- Need for building and infrastructure to use renewable energy, have good water management systems and incorporate sustainable building materials.

## Cultural Activities & Events

- Opportunities for the creation of a range of different indoor and outdoor spaces, used for meetings, events, art exhibitions, and other creative activities.
- Availability of spaces for the local community.
- Opportunities for programs and events to be developed for the site to inspire, educate and provide artistic interpretation of environmental themes.

## Hospitality & Temporary Accommodation

- Openness to temporary, low impact accommodation on site including camping, and accommodation for researchers.
- Opportunities for hospitality such as café or restaurant serving locally sourced and sustainable food.

## Learning, Experimentation & Research

- Potential destination for education, research and experimentation.
- Destination for primary, secondary and tertiary education students from across New South Wales, and Australia, to learn about sustainability.
- Experiential educational opportunities, such as learning about water management and important flora and fauna.

## General Themes and other Considerations

Following is a consolidation of other considerations, opportunities and issues raised by the community during early engagement. A summary response is provided to each of these below, acknowledging that these matters may not be captured as overtly as the key themes, through land use activities.

### Dogs

A number of respondents raised dogs or dog walking as part of the vision for the site, both off-leash and on-leash. Many of the responses and ideas on this topic mentioned dogs as a part of an overall shared vision for the site, alongside other uses. Some comments related to dogs suggested the site could be dedicated for dogs off-leash, and others mentioned the need to be aware of potential conflict between off-leash dogs and other recreational users.

It is acknowledged that some parts of the community informally, use the site for dog walking (on and off leash) and for general recreation. The site is not currently a public park or dog off or on-leash area. While largely dormant at present, the site has been identified as a golf course for close to one hundred years, until more recently when it has been the subject of a range of similar recreational uses. As a golf course, the site was closed to the general public for activities other than golf.

This Draft Precinct Plan seeks to provide managed public access to this site and considers how a range of uses may be able to be accommodated and provided. As referenced in Section 2.9, the Precinct Plan must also consider whether this site is appropriate for all uses and whether there are more suitable sites located within Katoomba or the Blue Mountains generally. This broader assessment in Katoomba is currently being undertaken as part of the Draft Katoomba Master Plan.

### Traffic & Parking

The impacts of traffic and parking on nearby residents and neighbours was mentioned and participants commented that access to the site should prioritise walking, cycling and buses to minimise vehicles and parking on the site. Some comments also referenced the lack of existing footpaths around the site.

Parking proposals are included in the Draft Plan for both short and long term considerations as the site evolves. Innovation will be important in this regard, to ensure that short term parking areas can be reversed and adapted for different uses, as more sustainable transport options become available. These considerations are detailed throughout the document.

### Zoning of the Site

A few respondents questioned how future uses and activities would work with the current zoning of the site and whether rezoning would be required.

The current zoning of the site is a mix of RE1 Public Recreation and C2 Environmental Conservation. The Public Recreation zone enables such land to be used for a range of public open space or recreational purposes. The Environmental Conservation zone is more restrictive and permits a limited range of land uses in keeping with strong environmental objectives.

The draft proposed uses for the site will be considered against the current land zoning and other planning controls. Should any changes be required to achieve the outcomes of the Precinct Plan once finalised, such changes would be the subject of a separate public process with extensive community engagement.

### Bushfire Mitigation

Concerns regarding a potential increase in bushfire risk were raised, particularly with reference to ideas around the revegetation of the site.

Council has engaged specialist bushfire consultants to undertake a Strategic Bushfire Study for this site. This will inform any futures uses, including the location and density of any revegetation.

# 3 PRINCIPLES & OBJECTIVES

# 3.1 Draft Principles to Guide Strategic Direction

The following nine overarching draft principles are intended to guide future development and activities on site and represent the broad framework from which objectives and actions have been drafted and presented in this document. These draft principles were developed through intensive workshop sessions with the Council's Planetary Health Advisory Committee and input from early engagement with the community. They also reflect the strategic direction in Council's key planning documents including the Community Strategic Plan and Local Strategic Planning Statement, and should be read in conjunction with the Ojectives in 3.2

| A place for | A place which | A place that provides |
|---|---|---|
| Caring for Country – Listening to and learning from Country and Traditional Custodians | Protects, restores and respects water, soil, vegetation and animals | Spaces and supporting structures that are environmentally responsive & integrated within the site |
| The community, particularly our youth, to come together to investigate, innovate and demonstrate Planetary Health | Demonstrates and communicates strategies for restoring Planetary Health | Flexible, multipurpose and adaptive structures and spaces which shape interactions and build relationships |
| Learning, discovery, scientific and artistic exploration within the Blue Mountains region and internationally | Evolves over time and responds to lessons learned to achieve environmental, social and economic sustainability | International leadership on Planetary Health through a Blue Mountains Lens |
| **Country** | | |

# 3.2 Objectives

The following objectives draw together the key themes from the community engagement process, outcomes from the Planetary Health strategic workshops, findings of the precinct plan analysis and design review workshops, and the results of internal Council consultation.

These objectives will inform future development considerations and proposed activities for the site and align with the overall vision of developing the site as a Planetary Health Precinct.

| Traditional Custodians & First Nations People |
| --- |
| To recognise and promote First Nations values and connections to the site and broader cultural landscape as fundamental to the development of the precinct. |
| To actively involve and consult Traditional Custodians and First Nations Peoples in the planning process. |
| To create opportunities for learning, sharing, and demonstrating Aboriginal cultural values and Connection to Country. |
| To support the hosting of Aboriginal and First Nations cultural events and activities. |

| Natural Environment: Vegetation, Wildlife and Water Management |
| --- |
| To develop and demonstrate innovative water management as integral to restoration, recharge, stormwater management, the design of infrastructure and site activations. |
| To manage vegetation sensitively and expand naturally where possible, while minimising negative human impacts on flora, fauna and water sources on site. |
| To protect, restore and regenerate environmentally significant areas and native wildlife with the help of community groups and experts. |
| To learn from Traditional Custodians and involve community groups and local knowledge holders to investigate suitable locations for sustainable food growing, bush tucker and horticulture opportunities. |

| Sustainability & Planetary Health |
| --- |
| To develop the site as an exemplary Planetary Health Precinct modelling social, economic and environmental (built and natural) sustainability outcomes. |
| To establish baseline data for the precinct against which environmental targets can be based, including water and soil quality, emissions, and waste management. |
| To focus on demonstration opportunities and integration of sustainability models as part of any future development, using environmental design principles, renewable technology and climate responsive solutions. |
| To target and promote sustainable transport options including public transport, carpooling, cycling and walking, which link the precinct to key destinations in Katoomba. |
| To deliver a world-class destination for learning, experimentation, sustainable living and Planetary Health. |
| **Community Access, Recreation & Open Space Uses** |
| To provide managed public access to natural recreation areas and low-impact activities, balanced with the management of the site and other uses within the precinct. |
| To create accessible and inclusive spaces for visitors of all ages and abilities to play, rest, learn and experience the natural environment. |
| To create connectivity across the precinct by establishing circulation networks of footpaths, boardwalks and service routes. |

| Events, Arts & Cultural Activities |
| --- |
| To establish a range of indoor and outdoor spaces for creative activities that draw on the unique attributes of the environment, including the integration of public and functional art into the precinct. |
| To develop and host site specific programs, exhibitions, events and residencies to inspire, educate and generate creative responses to Planetary Health. |
| To promote sustainable event management practices including alternative modes of transport, waste management and energy use. |

| Visitation, Hospitality & Temporary Accommodation |
| --- |
| To adapt existing structures and develop multi-purpose infrastructure for a variety of uses that align with the planetary health focus for the precinct including hospitality, retail and temporary accommodation. |
| To draw on and continue to develop strategic partnerships with local enterprises, cultural organisations and tourism operators to extend and cross-pollinate visitor experiences. |
| To develop unique precinct experiences, that result in specialised competitive advantages for Katoomba, the Blue Mountains and the region more broadly. |

| Learning, Discovery, Experimentation & Research |
| --- |
| To develop multi-purpose and adaptable education, learning and experimentation spaces that can be used by a range of stakeholders. |
| To integrate engaging learning and discovery opportunities across the site for visitors of all demographics as well as schools and tertiary education students. |
| To develop a digital platform and online education resources to broaden learning opportunities and promote virtual tourism. |

| Governance & Financial |
| --- |
| To establish transparent governance and management structures that ensure environmental, social and economic benefits align with the principles of Planetary Health. |
| To implement income generating activities which support the economic sustainability of the precinct over the short, medium and long term. |
| To foster sustainable economic development prospects and strategic partnerships with local and key stakeholders for the benefit of the community including short and long-term employment opportunities. |

# 4 SITE ANALYSIS WITHIN THE PLANNING FRAMEWORK

# 4. INTRODUCTION

The former Katoomba Golf Course site, spanning 30 hectares, is nestled along the southern Katoomba escarpment, and is bounded by Cliff Drive, Acacia Street and Stuarts Road. The site is located on the edge of the UNESCO World Heritage listed Blue Mountains National Park, and was once a Traditional pathway to Narrow Neck and into the Jamison and Megalong Valleys. This physical connection, as well as that of the water and vegetation is a central focus of the Draft Precinct Plan.

The exploration of the future use of the site has been guided by the principles of Planetary Health. The starting point is a thorough understanding of the site to inform what, where, and how different activities and experiences could be accommodated.

Planning has started from the perspective of natural systems, especially water, and the site's connection to Katoomba Falls and the valley beyond. This approach has identified a set of fundamental considerations relating to water, vegetation, terrain, habitat, and bushfire, which inform the spatial framework.

This site analysis acknowledges that the site is not a blank canvas or an isolated site. The land has been shaped and modified by its former use as a golf course and sits within an established urban setting. It connects to downstream environments and is impacted by stormwater and overland flow from surrounding streets.

Any future use needs to respond to this context, considering potential impacts on adjoining and surrounding neighbours, as well as connections in the wider township of Katoomba along both existing and improved transport routes.

The environmental attributes of the site are significant. It contains important swamp land and vegetation communities which are protected under Council's Local Environmental Plan (LEP) and the site plays a highly significant role in the management of stormwater runoff and environmental interconnectedness with the Kedumba Catchment.

The majority of the site is mapped as bush fire prone land. Whilst future development will need to carefully respond to these environmental attributes, the site also represents an opportunity for Council to demonstrate leadership in climate change mitigation and adaptation, in emergency preparedness, water management and environmental responsiveness, amongst other areas.

The site is also close to many famous walking tracks and lookouts towards the Jamison and Megalong Valleys, and is located in close proximity to key tourism areas and sites along the Jamison Valley escarpment, including a clear potential connection with the Grand Cliff Top Walk currently proposed by NSW National Parks and Wildlife Service. Key strategic connections are addressed at Section 4.8 Key Strategic and Visitation Connections.

## 4.1 Water & Terrain

At the centre of the site is natural swamp area, fed by ground water and overland flow. This is highly valuable for its retention and slow release of water downstream to Kedumba Creek and into Lake Burragorang, Sydney's most significant drinking water catchment. The management of water feeding into this ecosystem and catchment needs to be carefully managed.

The site consists of undulating landform with gentle ridges and gullies creating natural promontories and amphitheatres, all of which direct water entering the site to the sensitive swamp area.

There are existing managed water bodies higher in the landscape which function as water retention for irrigation when the site functioned as a golf course. They were a feature in the manicured golf course landscape, but are also connected with pipes, drains and flood walls to manage water flow across the site.

Water management has been identified as central to restoring the health of Country, and underpins the approach and objectives contained within the Draft Plan. The site also provides the opportunity to transparently demonstrate innovative and sustainable models of water management to be used in the broader community.

## 4.2 Vegetation

Large areas of the site have been historically cleared, given the long history of the land as a golf course. This has resulted in large areas of open grassland or mown spaces bordered by exotic vegetation and trees (some of which date to the beginnings of the golf course).

The current mapping for the site captures significant vegetation, protected under Blue Mountains Local Environmental Plan 2015, including Blue Mountains Swamps in the central part of the site, as well as remnants of tall open Forest and modified bushland. Some of these vegetation communities only exist in the Blue Mountains and will form part of the restoration and educative activities proposed for the site.

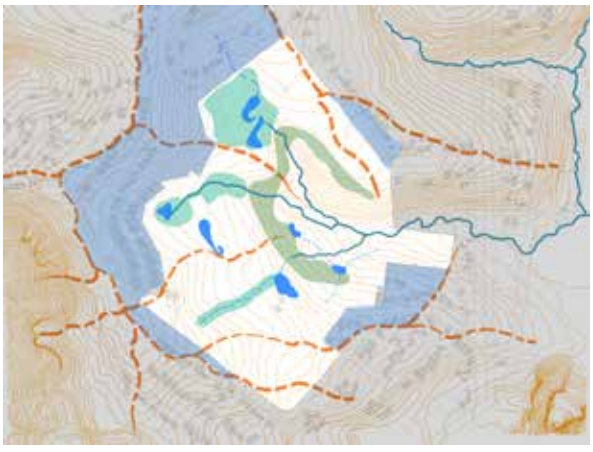


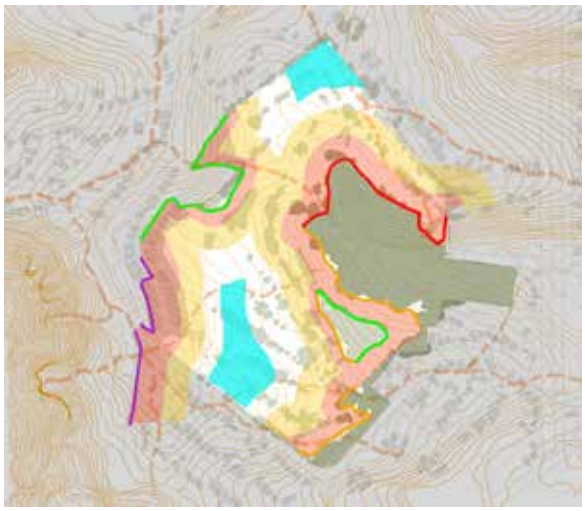
Figure 3: (left) Water and terrain
Figure 4: (right) Significant vegetation.

## 4.3 Bushfire

Fire is a fundamental factor in shaping the living systems of this landscape. The periodic severe events disrupt natural and human systems. Katoomba and the City of the Blue Mountains' setting within the natural landscape means it faces significant bushfire risk.

Bushfire risk mapping corresponds with vegetation and slope. The site is well- positioned. The mapping illustrates the bushfire prone area on all sides of the site. The site is largely separated from the forest to the west and south. Residential areas lie to the north and south. The gully area is identified as an area of fire risk.

Bush fire risk is a key consideration for uses and activities proposed for the site, particularly with reference to large gatherings of people or overnight accommodation. This is addressed in the Draft Plan.



## 4.4 Aspect and Climate

The site is a distinct bowl with a generally easterly orientation with an elevation of around 1000 metres above sea level. This disposition means that despite its proximity to the towering escarpment of the Megalong Valley to the west, it is partially shielded from westerly winds.

The northern part of the site has a fairly level area along Stuarts Road and a south-facing drop-off, which is small in the area due to its steep gradient.

The swamp and creek line at the eastern part of the site is in a fairly deep and narrow gully, creating a relatively cool and moist micro-climate.

The southern side of the site has a gentle slope that is oriented towards the north and east, which means it enjoys warm winter sun and avoids the direct impact of the hot and drying summer's afternoon sun. Notwithstanding, exposed parts of the site record high temperatures in summer.

Environmental conditions and aspects of the site have been aligned with suggested activities and land uses to ensure that these respond to the current, natural attributes of the site as well as the projected environmental conditions when certain areas are regenerated and restored.

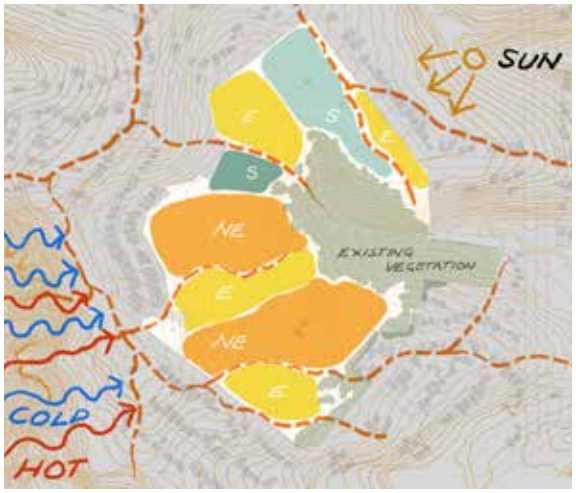



Figure 5: (top) Bushfire.
Figure 6: (bottom) Aspect & Climate

## 4.5 Existing Infrastructure

The former use of the site as a golf course means that there is existing infrastructure which currently informs how activities could be spatially laid out, but also has the potential to be repurposed or utilised to facilitate activities. This infrastructure includes the former Clubhouse and car parking (currently leased and utilised by NSW National Parks and Wildlife Service), maintenance facilities, amenities buildings, roads, pathways, fences and the like.

The Council's Planetary Health Initiative, the National Parks and Wildlife Service and the Blue Mountains Heritage Institute are all currently colocated within the clubhouse and have invested in significant retrofitting and equipment in the building.

Further, the remnant features of the golf course itself, including fairways, tees and greens as well as bunkers and sand barriers, have heavily modified the site to create artificially flat areas and landscaped rooms.

These existing features will be considered as part of the design process, to look for opportunities for adaptive reuse and repurposing in a sustainable way.

## 4.6 Access and Internal Circulation

The existing site access and circulation has developed over time, largely as a response to the use of the site as a golf course. As is typical of golf course layouts, the course was designed for people to progress along successive holes (tees, fairways, and greens), optimising the variety and pleasure of walking over terrain, experiencing landscaped settings and enjoying vistas.

The point of arrival for the site is the former clubhouse building on Acacia Street, also providing access to the existing parking area. There is a secondary, paved service entry point from Oak Street, near the existing sheds.

There are multiple pedestrian access points including on Glencoe, Oak and Kamillaroi Roads.

Section 5.2.5 of the Plan details proposed access and circulation.

Existing access points and the current design of internal circulation routes provide an initial starting point from which activation can be considered. The draft Precinct Plan considers the nature and combination of uses and activities that could occur on the site over the short, medium and long term. This naturally generates the need for new access points, management of entry areas to ensure multiple uses can work together, as well as consideration of the boundary of the site as a whole. This is highlighted against each relevant activity within the Draft Plan.

## 4.7 Neighbours and the Site in its Urban Setting

The former Katoomba Golf Course site is integrated with the surrounding urban fabric, with residential development along all boundaries, much of which enjoys views into the site and across the green open space. The majority of adjoining residential development is comprised of single houses along the surrounding and adjoining roads of Acacia Street, Oak Street, Stuarts Road and Glencoe Road. Oak Street also contains highly valuable community services including Family Gateway Services, Blue Mountains Aboriginal Culture Resource Centre and Wild Plant Rescue. On the western site boundary, The Escarpment housing development is directly connected to the site, and the established residences have a direct outlook onto the golf course.

Key engagement has been undertaken with adjoining and surrounding neighbours within the early phase of the project and it will be important that carefully consideration be given to the location and nature of proposed uses, and potential impacts to the amenity of these residents. Further, at the time of writing this Draft Plan, additional construction was occurring adjacent to The Escarpments housing on the western boundary of the site. The interplay between this development approval and proposals for this area of the former golf course site are being carefully considered.

## 4.8 Key Strategic and Visitation Connections

The Precinct is in a highly strategic location, within close proximity of the southern escarpment and Cliff Drive, a key tourist route which provides access to areas of significant visitation including Echo Point and Scenic World. Additionally, this immediate connection to Cliff Drive also places the site close to the end of the planned Grand Cliff Top Walk, to be delivered by NSW National Parks and Wildlife Service.

The coordinated delivery of visitor infrastructure to connect the site with the southern tourism area, and key visitor facilities in Katoomba Town Centre such as shops, restaurants and accommodation is essential. Given the proximal nature of numerous points of interest and key vantage points along the escarpment, a collaborative approach to alternate modes of transport, centrally located parking areas and mutually beneficial connections for walking and cycling will be critical for the long-term strategic success of the area as a whole. Such infrastructure will further enable sustainable tourism within one of the most visited locations in Australia, and collaboration could include partnerships with agencies such as NPWS, as well as opportunities for strategic alliances with other organisations and operators. The opportunity is to deliver a seamless and coordinated visitor experience, while providing infrastructure which also delivers local benefits. These considerations would also form part of the site's governance model and business planning into the future.

# 5 FUTURE ACTIVITIES & SITE LAYOUT

# 5. INTRODUCTION

This section describes a range of possible activities in response to the vision, guiding principles and objectives for the site. The activities and programs would be designed and delivered overtime and within resourcing capacity. It is also expected that the form and scale of these activities will also evolve as the site and the Planetary Health Initiative matures.

The proposed activities are designed with the intention to rejuvenate, enhance, and enliven the precinct, while supporting sustainable economic development, keeping in mind the broader site's environmental footprint, now and into the future.

As outlined in Part 4, there are several characteristics that influence the consideration of specific areas for particular uses and activities. These include but are not limited to environmental attributes, water flow, access, existing infrastructure and consideration of noise and amenity. This section focuses on key areas that will be activated as focal points for activities to occur.

Many proposed activities are complementary, to be delivered in an integrated and coordinated way, rather than a series of separate disconnected activities. The spatial layout proposes that some activities will occur across the site, such as recreation and learning, whilst others will be more contained to a single area, such as accommodation. It is expected that spaces or structures to facilitate these activities will be multi-facetted, and support or provide a range of activities.

As part of the Planetary Health Initiative, the development of a digital platform, online education resources and digital-storytelling tools will coincide with physical activations of the site as a Planetary Health Precinct. The interactive platform may offer information about the site, its connection to Planetary Health, educational and interpretation materials as well as engaging multimedia content. It could be used by schools, tertiary education providers and organisations from across Australia, or as online teaching and research material, either in preparation for a visit or as a standalone resource. Complementing a visit to the precinct, this digital access would also be invaluable for those unable to attend the site in person.

Additionally, an online presence and digital platform may be used a promotional tool to showcase leanings and share data, and highlight best practice models of Planetary Health for the local and broader community.

# 5.1 Activities

## 5.1.1 Gathering & Meeting Places

The site is an opportunity for the meeting and connecting of people: Traditional Owners and First Nations people, the community, visitors, researchers, educators, and students. Planetary Health as a discipline is emerging, and has strong alignment with First Nations' connection to Country, wisdom, knowledge, and cultural practices. This site provides a real opportunity to invite and encourage conversation between people, and importantly between diverse groups of people.

**Yarning Circles**

A yarning circle is an important process within Aboriginal and Torres Strait Islander culture and has been used traditionally to learn from a collective group, build respectful relationships, and to preserve and pass on cultural knowledge.

As captured at the beginning of this document, the creation of yarning circles will be a proposed first formal step towards the implementation of this Planetary Health Precinct. Both physically and symbolically, they represent a clear intention that this place is one for people to gather, share stories, learn and share ideas.

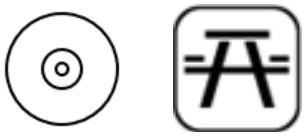
The design and location of yarning circles will be determined in collaboration with Traditional Owners and other First Nations people. It is intended that they function as welcoming, inviting, democratic and inclusive places to encourage people to share and connect. Indicative locations are suggested in the draft Precinct Plan, which consider weather and protection from winds for example, as well as places which incorporate views towards significant parts of the precinct and align with natural waterflow. The social function of yarning circles is also important for design, ensuring easy access and proximity to supporting such as a kitchen and amenities.

**Aboriginal Meeting Place**

The opportunity exists to consider creating a dedicated Aboriginal & First Nations meeting space, in addition to the yarning circles. This would offer a culturally safe space to be used by the local Aboriginal community for a number of purposes such as meetings, cultural activities and art making.

**Arrival & Meeting Points**

Other opportunities exist for informal and more formalised gathering and meeting activities, which could occur in open spaces or in future structures and buildings. A consideration in the development of the precinct is the establishment of arrival and meeting points as well as staging areas for larger groups. These meeting areas also provide opportunities for wayfinding information including signage and maps, as well as simple structures for weather protection.



## 5.1.2 Informal Learning & Discovery

Learning and discovery for all visitors and users is one of the most critical functions of the site. A central aim is for immersive learning, where visitors leave the precinct with an increased understanding and awareness of the environment, even if they didn't visit the site with that intention.

The potential to reach a broad audience and build awareness of Planetary Health is a key opportunity. This could be done initially through interpretive signage, integrated into circulation paths and infrastructure. As the precinct develops the principles of Planetary Health would guide how other activities, structures, or functions are designed and managed, embedding demonstration and learning in all aspects of any development, as well as digital platforms.

For example, water management systems could be designed and implemented as visible learning tools and feature interpretive information that explains their function; bush regeneration on site could be highlighted by signage; guided bushtucker tours or on-site talks could be hosted for a broad range of audiences.

**Demonstration Sites**
Future buildings and other infrastructure such as car parks could be designed to demonstrate best practice in sustainable design and material use, acting both as functional structures as well as learning instruments.

All activities on site should be designed and managed with the purpose of providing opportunities for the wider community to learn and discover more about Country, and Planetary Heath, as well as the why and how of demonstrated processes and activities. Learning and discovery opportunities should be designed for all demographics, and be accessible for those with no previous knowledge, through to experts and everyone in between.

## 5.1.3 Education, Research & Demonstration

A key focus proposed for the precinct is the education and research into the environment, sustainability, and demonstration of local action for restoring Planetary Health environmentally, socially and economically. In addition to informal opportunities for learning and discovery, it is proposed that more structured education and research activities could be undertaken. This may occur through the Planetary Health Initiative becoming a Registered Training organisation, through existing education institutions and programs and through strategic partnerships with tertiary education providers.

**Multi-purpose Structures**

Education programs would be supported initially by the provision of simple, multi-purpose structures and spaces that lend themselves to presentations and group discussions, utilising meeting and gathering spaces. These spaces and structures could expand and evolve overtime, using modular design approaches and repurposed materials.

**Research & Education Facilities**

As part of Council's strategic direction and embedding of Planetary Health, links have been made with a number of tertiary institutions through Memoranda of Understanding to explore opportunities to work together on the establishment of a Planetary Health Leadership Centre in Katoomba. This leadership centre would guide a range of research, learning and education opportunities and initiatives.

Facilities and general infrastructure across the precinct could feature environmental (and other) data collection initiatives and devices which monitor a range of aspects such as water health, soil PH values and heat mapping to name a few. Data collected on site could contribute to research programs and be shared with other research facilities , including the expansion and demonstration of Council's own water monitoring program.

Education facilities and spaces would be flexibly designed to also accommodate primary and secondary schools or community education courses, but also allow for research to be observed, by the public or designated groups, and to facilitate interaction and cross-pollination between different groups and educators. Making such facilities and learning opportunities accessible for those who may not undertake formal education will also be a significant consideration .

Programs or spaces will be designed not just for students or academics, but also for cultural tours by Traditional Custodians and other educational tours or experiences, complemented by interpretive signage on site. This could include immersive and interactive experiences, as well as potential development of viewing pods or bird hides within the site.

## 5.1.4 Recreation & Open Space Uses

The site currently incorporates large areas of open space, and it is envisaged that the precinct will continue to provide space for recreational activities for the community and visitors. This could be associated with other activities on the site, and/ or enable people, particularly local residents, to use the site for recreation separate from these activities.

This draft precinct plan suggests recreation on site to be informal such as walking paths, seating, covered spaces such as picnic shelters and nature play areas, rather than providing formalised recreation facilities such as sports courts or fields. These more structured types of recreation are provided for elsewhere in Katoomba. One of the distinctive features of the precinct lies in its history as a former golf course. It was used for 'long duration' recreational activities that took time to complete and incorporated walking the entirety of the site. The golf course offered the unique ability to be immersed within the site – and within nature – yet being able to access and leave it from anywhere on site within 5 minutes and be in Katoomba town centre. This distinct quality should be considered when designing recreational activities and infrastructure.

**Recreational Opportunities**

Recreational opportunities specifically designed to attract visitors and enrich and expand their experience are proposed. These could include boardwalks or aerial walks along regenerated natural areas, incorporating points of interests such as restored wetlands, environmentally significant areas, picturesque viewpoints and so forth. While these types of uses could be publicly accessible, in some instances access may need to be managed or associated with other activities, such as educational tours.

**Dog Walking**

On-leash dog walking is considered in conjunction with other managed recreation, open space uses and activities occurring on site. This Draft Plan nominates that on-leash dog walking could occur within some designated areas of the site. Any nominated, designated areas will need to take into consideration environmental attributes and sensitivities, as well as compatibility with other uses and activities proposed to occur within the Precinct.

A balance between free, informal recreation spaces and activities and managed recreation experiences will be investigated for ongoing management of the precinct.

**Nature Play**

Some areas of the site have great potential to cater for nature play spaces designed for children and young people as well as broad recreation for health and well-being. These could include kinetic learning and adventure play, gravity play such as sliding or rolling, climbing structures, swings, or opportunities for organised physical events. Play features that stimulate learning and discovery could include water pumps, cascades, whirlpool infiltration, and a miniature town for play and education about Water Sensitive Urban Design and other concepts.

Recreation spaces and areas would be designed and located to complement other activities on site, especially for visitors. It is important that recreation areas are designed to be as inclusive as possible and accessible to users of all ages and abilities. In the medium to long term weather protection and all-weather options should be considered if more substantial recreation infrastructure is to be provided.

## 5.1.5 Events, Arts & Cultural Activities

With consideration for the size and attributes of the site, there is potential for spaces and facilities to be designed and managed to support small scale events, creative and cultural activities. This aligns with the broader vison for the precinct to be a focal point for the innovative and creative exploration of Planetary Health and draws on the unique character of the site, located in a City of the Arts within a World Heritage Area. Strategic partnerships could be formed with established local events such as Blue Mountains Writers Festival and potential future events may be hosted on site such as star gazing nights, NAIDOC celebrations, sustainable health & wellness festivals and local makers and artisan markets. More broadly the site could support and facilitate ongoing arts and cultural activities in addition to one-off events. Art can help express ideas, capture the value or essence of a place or concept, and communicate or appeal more broadly, as a means to explore and communicate Planetary Health outside the standard classroom approach to learning and research. Temporary or more permanent activities such as sculpture trails, public art, nature drawing courses and arts-science collaborations could have a focus on environmental and broader Planetary Health themes.

**Arts Programs**

Informally, artistic programs could be supported or facilitated on site. More formally, infrastructure could support programs such as artists-in-residence or artistic education and workshops. From a design perspective this means ensuring that spaces or facilities for other activities such as education are multi-functional and flexible to also support artistic programs.

**Creative Spaces**

There is the potential to explore existing infrastructure and spaces that could support artists, creative practitioners and the creative industries more broadly. This could include re-purposing spaces within the existing sheds. Artistic and cultural activities and events could potentially be associated with other activities and lend themselves to interdisciplinary collaboration.

## 5.1.6 Temporary Accommodation

Temporary accommodation is proposed to support and complement other key activities on site, such as visiting researchers, academics and scientists, short student intensive courses, artist in residence programs, and potentially small school groups as part of education programs. Accommodation would not be available for short term stays not associated with activities or programs on the site.

**Light-touch Accommodation Structures**
It is envisaged that accommodation could vary from light touch platforms of tent like structures to small self-sustaining pods or bunk houses that could support small groups in a communal setting. The provision of accommodation facilities and infrastructure would be a medium to long term proposal, that would support activities once they are established, and the precinct has matured.

Accommodation would need to be sited with appropriate separation from other site uses and areas, especially those accessible to the public. As with all structures on site, opportunities exist to use accommodation infrastructure as a demonstration tool for low-impact, sustainable living. The design and management of accommodation would need to be particularly cognisant of bushfire risk.

## 5.1.7 Hospitality & Retail

Hospitality and retail uses that aligned with the planetary health focussed vision for the site are proposed to support other activities developed on site. These uses would serve the needs of visitors and users as well as have the potential to generate revenue and support the financial sustainability of the precinct. Such activities could include a local food produce store; a café serving locally and sustainably grown food; and a retail space to showcase sustainable and ethically sourced wares, or retail associated with makers spaces.

In the short term these may be temporary or intermittent uses operating alongside other programs which inherently draw visitation. With time, as activities on the site expand and there is a critical mass of users and visitors, hospitality activities could become more permanent or full time.

It is proposed that initially, this will principally be provided through the utilisation of existing structures on site, for example in the old machinery shed workshop shed. This may be expanded over time and potentially incorporated into new buildings alongside other uses.

## 5.1.8 Conservation, Restoration and Water Management

The site incorporates a variety of environmentally sensitive sections including water recharge areas, swamps, creeks, riparian land and critical habitat for native plants and animals.

**Restoration**
General restoration of native vegetation and habitat is proposed to occur in certain areas, while also carefully considering bushfire risk and appropriate mitigation measures. Opportunities exist for redevelopment of the existing ponds into 'rain gardens', showcasing sustainable water management and treatment options for urban runoff to protect downstream swamps and habitat.

**Interpretation**
Low impact interpretive information about native plants, wildlife, and significant eco-systems, displayed throughout the site could enhance understanding and appreciation of the environmental significance of the precinct. This could also be coupled with bird watching, night 'spotting' and guided tours for interactive learning opportunities.

Activities within or near environmentally sensitive areas (such as the Blue Mountains Swamp) needs to be carefully managed, considering the connectivity of the site within the broader Kedumba catchment and National Park beyond. It is proposed that access be contained to the periphery of such areas, while also enhancing and promoting these areas as learning, research and demonstration sites.

**Environmental Learning Activities**
Learning activities would be supported by environmentally sensitive structures. Examples may include a low-touch tree-top walk above the hanging swamp, or a raised boardwalk around the swamp periphery featuring viewing platforms and interpretive signage.

This type of infrastructure could be a focus for medium to long-term activation of the site, attracting a range of visitors including school groups, tertiary students, and general visitors.

**A place for volunteers and staff**

The precinct could consider including spaces for Landcare and Bushcare volunteers, to base themselves and to meet and share with community and visitors. It could also be a base site for Council workers engaged in planetary health activities.

## 5.1.9 Plant Nursery, Bush Tucker & Food Cultivation

Certain parts of the site have gently sloping areas (some facing north-east) which are well situated to collect, utilise, and treat water, as well as benefit from good solar exposure and protection from prevailing winds.

These areas lend themselves to activities such as treating water and potentially growing plants and food, with sufficient space across the site to support growing areas for a variety of potential purposes, while still maintaining larges areas of open space.

Growing spaces would gradually develop over time alongside complementary programs, and food could be grown as produce for cafes on site or in the local area. Opportunities existing to work with Traditional Custodians on spaces or gardens for growing bush tucker, to be integrated into bushtucker trails to support education programs.

The site also presents the potential for a plant nursery. Working with community groups, establishment of a plant nursery to grow and provide endemic and other appropriate plant species for the Blue Mountains environment, could contribute to the educative intent of the precinct. Plants could also be grown to demonstrate fire wise planting, endemic plantings for local backyards, with potential links to permaculture courses or a horticultural trainee program.

# 5.2 Spatial Layout

The Spatial Layout is an indicative illustration of how the activities and programmes can be accommodated, while responding to known and potential future environmental conditions. This will occur over time through future design processes and as the site evolves. The layout presents first steps which are grounded in Country; followed by activities and proposals over the short, medium and long term. These layouts illustrate how these activities can work together and how proposals may expand and change as the site matures, aligning with the guiding principles and objectives.

## 5.2.1 Strategic Approach

**A Different Approach to Spatial Design and Site Responsiveness**

The previous sections of the Precinct Plan capture the importance of Connecting with Country and responding to and respecting its environmental attributes and environmental connectivity, within the broader landscape. The nature and range of activities described earlier have also been chosen as they appropriately respond to both the site but also to the draft principles guiding the strategic approach (refer to Section 3.1).

These draft principles articulate opportunity and potential to do things differently. To learn from Traditional Custodians and view the site as a connected part of Country, a place to gather and learn.

The proposed spatial layout, and future design process for the site will not simply consider the site in its current condition but look at how the health of Country can be restored, and how uses and activities should occur in this environment as it evolves over time.

The spatial layout seeks to demonstrate a deep understanding of the site. Rather than viewing the site as natural or sensitive areas to be protected and separated from those areas where development and activity can occur, it is understanding that all parts of the site are parts of the natural system. Where and how future interventions occur on the site, whether construction or regeneration, will need to consider how they can restore and improve natural systems.

The precinct represents a significant opportunity to demonstrate how development associated with human activity, on land within an urban setting, can move beyond a model of designing development to minimise impact – this Precinct Plan sees human activity and the development that supports it, as needing intelligent, innovative design that acknowledges it is part of, and sits within, the broader environment.

Fundamentally, the way the spatial layout can achieve this has been centred around water, understanding how it moves and shapes the landscape and ecology. The layout of proposed activities, infrastructure, and facilities responds to this understanding of the site, and incorporates responses to environmentally sensitive areas, topography, existing conditions, bushfire risk, and the surrounding neighbourhood and context.

**Preparation of the Spatial Layout**

The site is a heavily modified landscape, cleared and reshaped more than one hundred years ago to create a golf course, and surrounded by residential development. It would not be appropriate or possible to restore the site to a previous natural state, or viable to respond to the strategic intent for the site, without certain development or infrastructure. Rather, this site is the opportunity to demonstrate development that activity is these areas can be done sensitively and appropriately.

In preparing the spatial layout, the site has been analysed to understand the behaviour of water

in the landscape and how this should guide future activity on the site. Areas with natural ground water discharge have been observed, indicative of potential for restorative expansions of existing swampland for example. Responding to topography, recharge areas, on ridges at the edge of the site, have been identified as locations for groundwater penetration to be maintained or restored. Other features such as natural wet areas or places with existing overland flow in heavy rain events, have also been identified to guide future design processes.

Figure 7: Restoration of water recharge and buffer zones

## 5.2.2 Key Activity Focal Points

Most activities will occur at various locations across the site. There will however be key focal points where facilities and supporting infrastructure is provided for certain activities. Particularly in the short to medium term as the site becomes established, the concentration of activity at these key areas will be important for the efficient utilisation of infrastructure, and to focus investment to facilitate as many activities as possible.

- Meeting & Gathering
- Informal Learning & Discovery
- Retail & Hospitality
- Plant Nursery, Bush Tucker & Food Cultivation
- Trees
- Car Parking
- Education & Research Areas
- Recreation & Open Space Uses
- Events, Arts & Cultural Activities
- Temporary Accommodation
- Conservation, Restoration and Water Management
- Existing Buildings

This following table outlines key activities per area on site.

| | Area | Activity Symbol | Section |
|---|---|---|---|
| 1 | Former clubhouse | | 5.3.1 |
| 2 | Existing sheds | | 5.3.2 |
| 3 | Acacia street – former fairways | | 5.3.3 |
| 4 | Acacia street - edge | | 5.3.3 |
| 5 | Swamp and Restoration area | | 5.3.6 |
| 6 | North Easterly slope | | 5.3.5 |
| 7 | Water gardens | | 5.3.4 |
| 8 | The Knoll | | 5.3.7 |
| 9 | Stuarts Rd – former fairways | | 5.4.8 |
| 10 | Stuarts Rd - corner | | 5.4.8 |

**Symbol key**

| | |
|---|---|
| Education, Demonstration & Research Areas | Gathering & Meeting Places |
| Retail & Hospitality | Conservation, Restoration and Water Management |
| Recreation & Open Space Uses | Plant Nursery, Bush Tucker & Food Cultivation |
| Informal Learning & Discovery | Temporary Accommodation |
| Events, Arts & Cultural Activities | Arrival Points & Parking |

Figure 8: (left) Key activity focal points

### 5.2.3 Whole of Site Activities

As outlined, in addition to the key focus areas, many activities will occur across the site. In the short term this would be through the simple use of existing spaces for activities such as education and research, supported by infrastructure and facilities in key areas. Overtime as the site develops, infrastructure to support a range of activities will be establised across the site, such as nature play and passive recreation spaces, and learning and discovery opportunities as part of the cirulation network.

The table below captures the key activities that will oocur throughout the site, which will ultimately have supporting infrastructure beyond the key focal areas.

A critical component to connecting these activities and experiences to each other is the circulation network. The following section details how the site is proposed to be accessed, and how users and visitors can be connected to different areas and activities across the site.

| | |
|---|---|
| **Gathering and meeting places** | Opportunities exist for informal gathering and meeting spaces which could occur in open spaces or in future structures and buildings.<br><br>These meeting areas also provide opportunities for wayfinding information including signage and maps, as well as simple structures for weather protection |
| **Informal learning and discovery** | Learning and discovery for visitors and users is an important function of the site. Development and programming of activities will be designed and managed with the purpose of providing opportunities for the wider community to learn and discover more about Country, about Planetary Heath, as well as the why and how of demonstrates processes and activities. |
| **Education and research** | Education programs would be supported by simple, multi-purpose structures and spaces that lend themselves to presentations and group discussions, utilising meeting and gathering spaces. Programs or spaces will be designed not just for students or academics, but also for cultural tours by Traditional Custodians, educational tours or experiences, complemented by interpretive signage. |
| **Events, arts, and cultural activities** | Spaces across the site could support and facilitate ongoing arts, cultural and recreation activities as well as one-off events. Art will also be incorporated into new infrastructure, and as part of the informal learning and discovery experiences. |
| **Conservation, restoration, and water management** | The site incorporates a variety of environmentally sensitive areas where conservation and restoration will be focused, but management of vegetation and weeds, included areas of restoration, will occur precinct wide. Water management will also be a precinct wide consideration in all development and activity. |

## 5.2.4 Access points, transport and circulation

The vision for the site is as a precinct containing a series of related and interconnected activities. How people travel to the site, access areas and move around, engaging with these different activities, is critical to creating memorable and meaningful experiences for local community and visitors to the site.

**Access**

The site was formerly a golf course and therefore, a private recreation space with access only for members or paying visitors, rather than an accessible space for the general public. Currently, the site is largely dormant and the golf course use not in operation, but the space is accessed informally by parts of the community.

The draft Precinct Plan proposes the opening of the site for public access for the community and visitors, with large areas of open space combined with a range of activities in different sections of the site, to develop over time. To ensure a variety of activities can operate concurrently on the site, safely and enjoyably, consideration must be given to how spaces are managed and separated as needed.

**Points of Arrival and Access Points**

The main point of arrival to the site is currently the former clubhouse on Acacia Street. This location is proposed to remain the primary entry point for visitors to the site arriving by private vehicle or public transport.

Figure 9: Access

In the short term, a reconfiguration of this entry point is envisaged, to provide a clear and accessible point of arrival for pedestrians and vehicles that is separated from the Planetary Health Initiative and National Parks and Wildlife Service offices. This would incorporate information signage and wayfinding, introducing people to available experiences and activities, as well as providing weather protected areas to cater for larger groups arriving and departing the site.

In addition to the primary points of arrival, it is envisaged that parts of the site would also be accessible to pedestrians from a number of frontages and vantage points. Pathways to and from the street edges will also be upgraded and potentially created, with marked points of arrival. This could include providing an access point from adjoining residential development. Overtime as activities become established on site, vehicle access points for servicing and separated user access for specific activities, such as accommodation will also be required.

**Inclusivity and Accessibility**

The precinct is planned as a place for people of all ages and abilities, providing experiences of, and interactions with, the natural environment that may not be available in other settings. Any new access points (and augmentation of existing ones) would ensure accessible access from the entry and parking areas and connection to accessible pathways for all visitors.

The circulation network and pathways within the site is described in detail below. Wherever possible, this will follow the contours of the site to create pathways that are accessible to people of all ages and abilities.

**Fencing and Separation of Space**

Currently, there is a boundary fence around the majority of the site perimeter, with a number of pedestrian access points and informal openings in the fence line at some locations. To open the site to the public as well as manage site access and the

designation of areas for certain activities, the current fencing will need to be adjusted and upgraded.

While the design of structures and elements on site will need to consider where and how access to certain activities is managed, this can also be achieved via methods other than fencing. Opportunities for landscape design using planting or changes in level to define spaces will also be explored. Similar, new structures and their careful placement can also define areas and allow for management of space without formal fencing.

**Designated Areas**
There will be some facilities and activities where access needs to be managed. For example, certain activities will be nominated to occur in defined spaces and in specific parts of the site only, such as for protection and education around sensitive natural areas or where programs and events may be ticketed, and numbers limited.

Designation of space will also include the nomination of some designated areas where dogs could be walked on-leash. Further detail is provided at Section 5.1.4 of this Draft Plan. However, in summary, to ensure both the consistent and carefully restoration of the environmental attributes of the site and to enable a variety of complementary activities across the precinct, the draft Plan proposes that dogs off-leash will not be supported on the site. This is necessary to ensure safety of site users and the environmental health of the precinct.

**Connectivity**
A key consideration for how the site is accessed is its connection to the escarpment; the National Park and attractions such as Scenic World and other visitor destinations. Although the site is situated close to the escarpment, there is currently no clear or legible connections to these areas, and limited footpath infrastructure. As the site becomes established, creating a link for visitors between the escarpment and the site will be critical for integration into the overall visitor experience of Katoomba.

**Transport**
The site sits within the broader Katoomba context. The draft Katoomba Masterplan considers how visitors, and the community, will move around and access key destinations across Katoomba, particularly destinations along the southern escarpment such as Echo Point and Scenic World.

As the former Katoomba Golf Course site becomes established as a centre for Planetary Health it will become a key destination in a Katoomba.
How people get to the site and connect between the site, other destinations, and the town centre will be critical, and will contribute to overall visitor experience of Katoomba.

**Carparking**
It is acknowledged that the current behaviour of users and the design of the urban environment of Katoomba is very car dependant. This means that in the short term at least, visitors and users of the site are likely to predominantly arrive by private car, requiring parking to be provided within the precinct. However, this provides an opportunity to demonstrate how parking can be delivered in a sustainable, low impact way, incorporating treatment and infiltration of water, and mitigation of potential urban heat island effects for example. Any parking construction will also consider future reversibility when sustainable transport options may reduce parking need, as well as designing parking in different ways, depending on their functionality as high-use peak areas or infrequently used overflow locations for events.

**Bicycle Parking and Infrastructure**

Although it is expected that most people will arrive at the site by car, even in the short term, infrastructure needs to be provided for those who choose to arrive by bike. Secure weather protected bike parking at the point of arrival is important to making cycling to the site more appealing. Overtime, this could be expanded to meet increased demand as the active transport network of Katoomba, and the convenience of cycling to the site improves.

**Active and Public Transport**

The site is currently accessible by a public bus service, but services are limited. Similarly there is no current dedicated footpath or cycleway to the site. The draft Katoomba Masterplan proposes the improved movement of residents and visitors around Katoomba. This will be achieved through the provision and extension of active transport routes, creating a convenient network of shared paths and on road cycle paths, and the creation a shuttle bus service, particularly for the movement of visitors between key destinations.

This active and public transport network would be designed to make connecting between destinations convenient and intuitive. The aim is to encourage more visitors to arrive at Katoomba by train knowing they can easily access all destinations. Where visitors do arrive by car, parking at a single location and making all internal trips via public or active transport is the desired approach. Connecting the former Katoomba Golf Course site as a Planetary Health Precinct into this network of visitor attractions will be critical to encouraging visitation of the site, and improving the overall visitor experience of Katoomba.

Figure 10: Existing Bus routes

**Sustainable Event Transport Management**
In addition to considering day to day access, the sustainable management of events is also important. In these instances, providing alternatives to private motor vehicle access and parking at site will be more critical. Ultimately a sustainable shuttle bus service is envisaged for Katoomba which could be augmented to provided additional capacity for events and peak periods. In the short term shuttle services or other arrangements would need to be established for events, to transport participants to the site from the train station, or centralised parking at the arrival point to Katoomba, envisaged to be provided at locations such as the Council Headquarters site and the commuter car park.

**Large Group Management**
Another key consideration is larger groups arriving by bus, particularly school groups. Drop off and pick up space will be needed at the point of arrival which would also be designed to provide a staging area for groups arriving by different means to meet up. Layover areas for these buses will also be required and the capacity for the site to host school groups will be linked to the capacity to accommodate such modes of transport. Once established, regular shuttle services around Katoomba could provide an alternative for groups to arrive by public transport rather than by bus, which could expand the site's potential to accommodate larger groups.

**Circulation within the Precinct**
Circulation within the site serves the practical purpose of connection from one part of the site to another, however it can also be an opportunity to offer an immersive experience, to invite exploration that may not have occurred otherwise, to share knowledge informally or provide connection to activities and experiences that a visitor may not originally sought out.

**Previous Golf Course Use and Existing Pathways**
A network of circulation paths is proposed through the site, which are both meandering and immersive, but also provide direct functional connection. The previous use of the site as a golf course has provided a valuable starting point, where the design offered a recreational experience of traversing the site slowly but allowing users to return quickly and easily to the clubhouse or exit points.

**Circulation Layout and Loop Walk**
The circulation layout will ultimately form a series of interconnected loops, allowing people to take short walks around parts of the site or much longer walks traversing the precinct as a whole. The layout of pathways will also invite users to leave the main direct routes and explore side paths. The interconnection between the loops will also allow users who need to move from one part of the site to another to do so directly when needed.

The circulation network also provides a primary opportunity for informal learning and discovery. Pathways will incorporate interpretive signage, viewing platforms or hides, and pause points to share knowledge about the site, natural systems, and provide an understanding of Country. As the site matures, the circulation network will be designed to create key loops or routes that can be used as part of education programs, with the infrastructure to accommodate larger groups and presentations at key points.

Ideally it would be possible to walk the perimeter of the site, with opportunities to enter or exit at different points. There is a logical loop walk around the edges of the site, which follows contours with gradual changes in grades, and ensures careful consideration of sensitive environmental areas and the amenity of adjacent properties. This could form the primary circulation loop and is captured in Section 5.2.5.

Within the circulation network some pathways will also need to accommodate access for service vehicles for cleaning, maintenance, or transporting materials and goods. These paths would also form the basis for shared pathways that also allow cycling through and around the site, as both a means of transport to connect to different activities and as a form of recreation.

## 5.2.5 Future Design Considerations

The delivery of the spatial layout will involve more detailed design of key spaces, infrastructure, and facilities. How these are designed will be critical to ensuring the principles, vision, and objectives for the site are achieved. Section 5.4 details design considerations for each key area of the site. In addition, following are overarching design considerations for all future interventions on site.

- Structure or Infrastructure will be sustainably designed, with consideration of materials used, construction methods, resource efficiency, and water management. Given many activities will require power, even lighting of circulation, energy efficiency and the incorporation of renewable energy infrastructure will be critical.
- The management of water needs to be considered in the siting and design of any building or infrastructure, and as a resource for use on site, for irrigation, washing, cleaning, and drinking, as a waste product that will need to be treated, and as an integral part of the natural system management which shouldn't be compromised by development.
- In designing for the future, infrastructure on site should consider climate resilience, and respond to potential changes in increased risks expected in the future. This can be in the construction itself but also in the provision of spaces such as all weather spaces.
- Consideration to be given to retention, adaptation and/or retrofitting of existing structures on the site as a resource-efficiency measure where appropriate.
- The site is a place for exploration, research and discovery of planetary health. The design and construction of facilities and infrastructure on site is an opportunity to test ideas, technologies, and construction techniques. This is also the opportunity for development on site to also be a demonstration of techniques or designs that can be applied elsewhere.
- A key consideration for any intervention on site, particularly in the short to medium term, is that it is flexible, multipurpose, and able to be adapted in the future as needs change. This could mean that the space could be repurposed or that the structure could be relocated or reused elsewhere on site. This is important for encouraging activation in the short term that doesn't compromise more substantial development in the future.
- Facilities and spaces should be accessible to all potential visitors and users. The site and the design of spaces and buildings should invite participation by as many people as possible in as many activities as possible.
- Consider possible establishment of ebike and electric vehicle charging stations.

# 5.3 Key Activity Areas

## 5.3.1 Former clubhouse

The former clubhouse is an important piece of existing infrastructure. It provides spaces and servicing to support activities in the short term and is the current office location for the Blue Mountains Planetary Health Initiative, the Blue Mountains World Heritage Institute and the Blue Mountains National Parks and Wildlife Service.

Although architecturally uninspiring with an at grade car park presenting to the street, the building is located at a high point of the site with fairly level street access, separation from sensitive areas, and a visual presence to arriving and passing vehicles at the roundabout on Cliff Drive. In the short term it remains an opportunity to be the point of arrival and an anchor for activity on the site. It provides space and supporting facilities for programs and events on site, importantly offering an all weather alternative for activities or events without the need for construction of new facilities.

As the point of arrival at the site, wayfinding signage would be provided to guide visitors to activities on site and provide an overview and understanding of the site as a Planetary Health Precinct. The clubhouse currently houses the Blue Mountains Planetary Health Initiative and provides a logical site to house a Planetary Health Centre.

Infrastructure is also proposed to provide a large weather protected space to allow groups, such as schools or tours, to gather when they arrive on site. This would include reconfiguration of

the vehicle access alongside new parking and space for bus drop off and pick up. See section 5.3.3 for more detail on carparking.

There is potential to extend the existing facilities to create a new 'face' for the site. This could be achieved through a new landmark building and forecourt, to serve as an improved point of arrival, with enhanced sustainability and bushfire resistance in the building. This could also serve as a gathering space with extended views towards Katoomba. Such a building could incorporate and reuse the existing building and surrounds.

In the long term, expansion of the clubhouse or new associated buildings could also incorporate offices and administrative functions similar to NPWS associated with activities on site or integral to the management of Blue Mountains and the World Heritage area. The opportunity to co-locate agencies or organisations could assist collaboration. There is also the potential for cross pollination with tertiary institutions and educational programs.

Figure 11: (left) Club house and arrival point

## 5.3.2 Existing Sheds

**Sheds**

There are existing sheds (an old machinery shed and a workshop) in the south eastern corner of the site, with servicing, existing pedestrian pathways, and vehicle access from the street. This existing infrastructure presents an opportunity to repurpose these existing buildings to provide space for a range of activities. The activation of these sheds with the co-location of other activities could create a focal point for activity on the site in the short to medium term. Additionally, this area is connected via an existing pathway to the former clubhouse building, which when improved, could provide an important and accessible link between these two activity areas.

Between the two existing sheds is location identified for a yarning circle, which would be one of the first interventions on the site towards its future as a planetary health centre. This could be the starting point for activity in this area, to create a gathering place for groups or people participating in other activities, as well as been a place to meet people on site.

The proposal is to refurbish and reuse the existing sheds for a variety of potential activities. This could include education rooms, makers spaces, retail of goods and local made wares, a café selling sustainably sourced food, and indoor and/or outdoor kitchens. In the short term these may be temporary or intermittent operating alongside events or particular programs that bring visitors to the site. With time, as activities on the site expand and there is a critical mass of users and visitors, these activities could become more permanent or full time.

The large grassed areas to the west of the sheds could be used for recreation in association with activities in the sheds. If food was sold at the sheds there could be space provided for picnicking, as well as nature play areas for children.

There is a degraded swamp area, between the sheds and the amenities block, that provides an opportunity for bush regeneration to be done incorporating boardwalks and other infrastructure to provide discovery and educational opportunities. This is further discussed in section 4.3.6.

As a starting point, this part of the site is intended to be used to test ideas and practices. It is also anticipated that as the site matures, this area would also evolve and could expand to incorporate weather protected areas for gathering and recreation spaces, and additional learning and education opportunities. A logical extension of activity in this area is below the identified yarning circle location toward the swamp, and would include bush regeneration and infrastructure to support education, discovery, and research.

**South-eastern Corner (Acacia and Oak Streets)**

With level access and good street frontage, this part of the site could play an important role in supporting and complementing activity at the sheds and potentially providing a point of access to the site. It also provides a logical connection point for transport connections to nearby tourism locations along the escarpment.

Consideration has also been given to the practical ongoing needs that the redevelopment of this site will be required, and the need to identify an area suitable for a works depot area. It is anticipated that this would serve the whole site and provide a laydown area for: staging events; maintenance, construction, gardening, and horticulture.

Figure 12: (above): Sheds, yarning circle, growing space and potential future structures to support activities on site

## 5.3.3 Acacia Street

**Former fairways**
The former fairways running southeast from the old clubhouse (parallel to Acacia Street) are considered the most conducive to a concentration of activity and infrastructure. This area of the site is not bushfire prone, with decent separation from the swamp environment, street access for users and servicing, and the potential for future building envelopes to make use of the sites topography to minimise visual intrusion from Acacia Street. Due to this, in the medium to long term, this area of the site is where multi-purpose spaces and facilities are proposed to facilitate education, cultural programs, and other activities. This area sits adjacent to the clubhouse and along the route that connects to the existing sheds and potential activities in that area. The connections between these two spaces will be important, envisaged as key activation areas over the short to medium term.

Despite the absence of certain environmental constraints as nominated above, this area is however on a ridge and would originally have been an important location for water recharge before discharging to the catchments below. With consideration for site restoration and Caring for Country, it will be important to ensure that any grey (hard) infrastructure does not impact the recharging of ground water. There are also natural overland flow points along the length of this part of the site, to which future uses will need to respond.

**Parking**
Acacia Street is the most suitable point of access for people arriving by public transport or car. It is a visually logical point of arrival coming from Cliff Drive and the existing roundabout at the intersection. The Acacia Street carriageway is large enough to accommodate vehicles moving in and out of the site, to provide separate shared paths, and to potentially incorporate on street parking.

Carparking and vehicle access on this site will be considered differently. Acknowledging the car dependency of our society, and current realities of how the site will be accessed, a key opportunity will be to demonstrate how car parking and vehicle access can be done in a more sustainable way. Innovations in water management and material usage will be a focus, to mitigate heat island effects, and long term reversibility or use of areas once car parking is no longer required. More detail on transport and access to the site is provided in section 5.2.5.

The design and layout of this access and parking will evolve over time as activity on the site increases. Similarly, parking and access can be designed and constructed differently to serve everyday needs and peak (event) loads). For example, this could incorporate water infiltration across the parking area, compared to everyday access and parking areas which would require a more robust construction with water infiltration at edges.

Where and how parking is provided will need to respond to activities and how these evolve, such as the short term activation of the existing sheds, or longer term transport connections and public transport improvements. Should large strategic moves be achieved (such as the concept of a visitor shuttle bus as proposed in the Draft Katoomba Masterplan) the reliance and need to cater for private car access to the site can be revisited.

Figure 13: (top): Potential future structures located close to the golf course club house
Figure 14: (bottom): Potential future car parking on Acacia Street

## 5.3.4 Water Sensitive Urban Design Gardens

On the site there are a number of existing water sensitive urban design gardens which help to manage stormwater runoff into the gully from the site and across the site.

This area has a rainfall catchment which extends beyond the site towards the west. There is an existing constructed lake in a serpentine configuration. The concept for this area is that it should present the process of WSUD in a beautiful setting. Similarly to natural wetlands, constructed wetlands act as a biofilter and/or can remove a range of pollutants (such as organic matter, nutrients, pathogens, heavy metals) from the water. Constructed wetlands are designed to remove water pollutants such as suspended solids, organic matter and nutrients (nitrogen and phosphorus).

## 5.3.5 North-easterly Slope

There is a sloped area adjacent to the clubhouse at the western edge of the site which adjoins the neighbouring apartment complex. Ensuring a respectful interface with neighbours is important, to minimise any potential amenity impacts on residential accommodation and ensure that proximity to these residential uses doesn't compromise or detract from activities proposed on site.

This gently  sloping area with two water bodies oriented towards the north and east, which means it enjoys warm winter sun and avoids the direct impact of the hot and drying summer's afternoon sun. The excellent solar exposure is a good location to grow plants and treat water.

With a good aspect for growing plants and produce and it is broadly proposed that this area of the site be set aside for growing space.  While planting will occur across the site for regeneration and landscaping, this area is specifically proposed for more intense managed productive planting for a range of purposes.

The use of this area for planting will maintain a landscaped vegetated outlook for neighbouring residents and be a lower intensity less public use which will also minimise potential amenity impacts on neighbours. Sections of this area may be accessible to the public as part of education or other programs on site, but it is otherwise envisaged as being a controlled area of the site.

Figure 15: (top left): Potential growing areas on north-easterly slope and near sheds

## 5.3.6 Swamp and Restoration Area

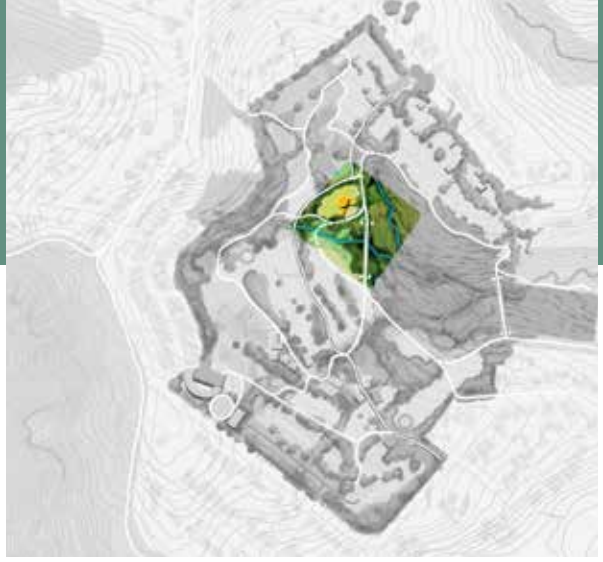
In the centre of the site is remaining swampland at the head of a watercourse which flows to Katoomba Falls and into the Jamison Valley. There is currently grass up to the edge of this natural area which has been impacted by weeds. There are some concrete paths from the site's former use as a golf course through the edge of this swamp which help to provide access for monitoring and regeneration, but also impact water PH and disrupt the ground water flow.

The conservation and restoration of this area is critical. Based on the study of the hydrology of the site, ground water is discharging above the current swamp, indicating that the swamp should be regenerated at least up to this point. This provides an opportunity to incorporate infrastructure such as boardwalks and viewing platforms into the restored area. This would provide recreation, learning, and research opportunities without needing to impact on the existing vegetated area.

The swamp and the buffer or interface around it takes in a large area which includes a variety of spaces with different characteristics and opportunities.

A key short term opportunity is an area of degraded swamp near the existing sheds. Given its proximity to this existing infrastructure, which is proposed to be activated in the short term, this is an area where regeneration and infrastructure for education and research could occur alongside each other in a visible and accessible location. This would be an opportunity to start to implement and test how education programs could run on site, and how bush regeneration and new infrastructure to aid access and research and can be done in an integrated way.

From the head of the swamp there are views down the watercourse to the valley beyond. This presents an excellent opportunity to visually demonstrate the importance of water management. The topography of the site means that there is the potential for this to be enhanced in the long term through an elevated boardwalk. Such a boardwalk could be relatively level and accessible from high points adjacent to the swamp, but would span over a portion of the swamp providing an overview of the swamp ecosystem as well as capitalising on the opportunity to highlight the importance of this area to the quality of downstream water in the Jamison Valley beyond.



## 5.3.7 The Knoll

The Knoll is identified as a point of prominence in the landscape, with the land falling dramatically towards the east to Kedumba Creek. This is a focal point in the circulation network and a natural meeting place in a beautiful location, with level areas for gathering.

The draft Plan proposed use of this space for temporary events and education and cultural programs. In the medium to long term this could be formalised with flexible multipurpose structures that would support these events and programs, including a yarning circle with this part of the site. These could include facilities such as toilets which also serve broader users of the site.

This central location is close to sensitive natural areas, away from the street edges, presenting excellent opportunities for a unique learning and gathering place. This location raises challenges with servicing such as electricity, water and sewer, without broader disruption to the site.

This is a critical consideration for the design of any infrastructure in this area, calling for innovation.

It is expected that this part of the site will see many iterations as it evolves over time. In the short term it would be connected into the circulation network as it develops, facilitating programmed use of the space. Overtime temporary weather protection could be constructed. This would need to be done in a way that could be relocated or reused elsewhere on the site, should more substantial infrastructure to be built in the longer term. As well as physical structures, landscaping the area could formalise or enhance the natural amphitheatre of the area, to support presentations and events.

Infrastructure or activities at the Knoll in the medium to long term would need to be supported by access to servicing and vehicles for events, perhaps most appropriately located off Stuarts Road. This is described in the Stuarts Road section.

Figure 16: The Knoll area sketch.

Figure 17: The Knoll area with multi-purpose facility for temporary events and education and cultural programs.

## 5.3.8 Stuarts Road

**North Corner (Glencoe Rd)**

It is envisaged that this area of the site would include activities and infrastructure more likely to be used by residents and the community, rather than visitors participating in programs or other activities on site. This would include space and infrastructure for recreation and gathering. This would be connected into the circulation network of the site, creating connection into other activities as well as further recreation opportunities.

The spaces and infrastructure in this area could also incorporate or be integrated with augmentation of the the water gardens, and associated learning and discovery opportunities, reaching people using the site primarily for recreation opportunities.

The Katoomba Masterplan nominates the creation of active transport infrastructure along Narrow Neck Road, in part to support the Grand Cifftop Walk and Greater Blue Mountains Trail connecting from the escarpment to the Highway to Medlow Bath. Should this proceed, active transport access to this corner of the site would be improved via a relatively level route along Bathurst Rd onto Valley Road (Narrow Neck Rd). Such a connection would also provide access for people walking and riding from North Katoomba.

**Stuarts Road former fairways**

The area along Stuarts Road, between the road and the bushland gully is relatively flat with good access and is separated from other parts of the site. This area is identified as a potential location for small scale accommodation used in conjunction with other activities on the site, such as artists-in-residence or visiting scientists or educators.

This opportunity would be for low scale studios or cabins to accommodate individuals or small groups, with construction and design providing exemplars in sustainability and planetary health. Alternatively, consideration may be given to accommodation for student groups, sharing communal facilities (cooking, gathering and learning), while having space for a limited number of tents in the area. While a more intense form of accommodation, the proposal would be limited to use in conjunction with a program or activity occurring on the site.

Stuarts Road is also a potential service access point for activities at the Knoll. It could provide relatively direct and level access to that area without needing to be situated close to more sensitive natural areas compared to Acacia Street. In association with infrastructure to support activities at the Knoll in the medium to long term, an access and staging point could be created on Stuarts Road to support those activities. The point of arrival to the site for participants of events would still be most appropriate from Acacia Rd.

This part of the site is furthest from potential bushfire threat from the escarpment, making it the most suitable part of the site for an emergency evacuation point for activities on site. The same infrastructure and site access that could be used for staging to support events could also be used as a staging point to move people from site.

Figure 18: (top) Stuarts Road with low-impact, temporary accommodation

# 5.4 Evolution over Time

The development of this Draft Precinct Plan has taken a holistic approach, which considers the site as an intergenerational demonstration model for planetary health restoration and sustainable solutions. The precinct will therefore develop over time and cater for future generations, rather than restraining its development to a limited timeframe. It differs from conventional planning approaches by moving beyond the prescription of set structures and detailed design solutions, and presents potential land uses and activations, to be implemented over the short, medium and long term, creating an adaptable, educative and evolving Planetary Health Precinct which contributes to positive long-term environmental, cultural, economic, and social outcomes for the Blue Mountains.

The following sections provide an overview of this site evolution over time: the first steps, where investment and activity might possibly be focused in the first few years to build a critical mass of activity, how that might be enhanced and expanded with key interventions in the medium term, and ultimately how the site could look in the next 15-20 years. Importantly, even this long term view presumes and acknowledges change, adaptation and evolution, to respond to learnings and innovations into the future.

## 5.4.1First Steps

A key first step will be confirming the governance and management structure of the Planetary Health Precinct that will support activation of the site in an integrated, coordinated and financially sustainable way.

There are existing tenants on site. Currently NPWS and the Greater Blue Mountains World Heritage Institute lease office spaces in the former clubhouse building. Council's Planetary Health Initiative is based and operating from the clubhouse, hosting regular events, courses and other activities within this part of the site and a demonstration garden has been established on the lower-level of the former clubhouse building.

A number of first steps are proposed for the activation of the precinct. The first formal step toward realising the site as a place for learning and sharing knowledge, and to welcome the public to the precinct is the creation of yarning circles, in collaboration with Traditional Custodians. Other initiatives will include the creation of an arrival and information point for visitors, and the formalisation of connections to, and between, the yarning circles.

Figure 19: (right) Proposed first steps on site

## Key

- Existing Building
- Future Building
- Yarning Circle
- Car Park
- Occasional Car Park
- Water Garden
- Constructed wetland
- Growing plots
- Grass
- Trees & Bush
- Main Service Track
- Accessible Track
- Accessible Boardwalk
- Footbridge

## 5.4.2 Short Term Spatial Layout

Activation of the precinct over the short term needs to ensure that key operational infrastructure is in place, and a critical mass of activity is established to test proposals, engender interest and investment, and promote the long-term vision.

Over the short term it is proposed to establish circulation paths connecting key areas, featuring wayfinding and interpretive signage. This could include integrated learning opportunities such as QR codes linking to online content, to expand educative and promotional opportunities, including linking into school curricula or offerings around virtual eco-tourism.

The activation of existing sheds and their surrounds will create a node of concentrated activity around the yarning circle. The area will be able to grow and potentially incorporate weather protection for the yarning circle and gathering spaces, as well as additional amenities such as a kitchen and bathrooms to assist in hosting groups such as visiting students. The existing shed structures may be re-developed over time, starting with a simple refit that allows for multiple uses, to a more dedicated facility build.

The ongoing fit out and retrofit of the clubhouse including upgrades and improvement to the lower ground floor area will support education opportunities and events. Retrofitting the existing building will be targeted to improve the environmental performance of the clubhouse and could include water harvesting, solar energy generation and reduction of energy consumption through improved insulation.

Over the next 18 months, a Water for Disaster Risk Reduction demonstration site will be created on the precinct in proximity to the clubhouse. This initiative is part of a $1.1 million grant project being implemented.

Bush regeneration and water management improvements will be ongoing activities for the precinct and will be prioritised to start in the short term. Establishing baseline environmental performance monitoring across the precinct will enable Council to collect valuable data, measure the health and environmental performance of the site and support environmental program funding applications.

Other short-term, activation may see the start of small growing spaces across the site for food, native plants and bushtucker as well as climate-wise planting as part of ongoing programs.

Figure 20: (right) Proposed short term spatial layout

## Key

- Existing Building
- Future Building
- Yarning Circle
- Car Park
- Occasional Car Park
- Water Garden
- Constructed wetland
- Growing plots
- Grass
- Trees & Bush
- Main Service Track
- Accessible Track
- Accessible Boardwalk
- Footbridge

## 5.4.3 Medium Term Spatial Layout

Over the medium term, it is envisaged that a range of Planetary Health focussed learning, research, demonstrations, events and other program initiatives will be implemented.

Also in the medium term, the extension of the circulation paths and addition of infrastructure such as seating and lookout points will create visitor experience 'loops' and support recreation and learning opportunities. By this time, a number of key points on the site will be connected.

The establishment of outdoor weather-protected education, gathering and event spaces is proposed for the centre of the Precinct (near the Knoll). Any structures would be light-touch, relocatable and flexible to adapt over time.

Nature based play spaces and designated areas for informal learning and exploration, such as bird hides, viewing platforms and water-play areas would occur in various areas.

Additional infrastructure would support activities at the clubhouse and sheds such as extended parking spaces, access for public transport and active transport connections beyond site.

In the medium term growing spaces will become more formalised and support a variety of programs and activities, for example a café serving locally grown food, permaculture courses, or a plant nursery that grows native and fire wise plants to be used across the Blue Mountains.

Environmental performance monitoring and bush regeneration will continue and important sets of data will assist in the ongoing regeneration and environmental management.

Innovative water management systems will have been integrated with circulation pathways and begin to be used demonstration sites and learning opportunities.

Figure 19: Proposed medium term spatial layout

## Key

- Existing Building
- Future Building
- Yarning Circle
- Car Park
- Occasional Car Park
- Water Garden
- Constructed wetland
- Growing plots
- Grass
- Trees & Bush
- Main Service Track
- Accessible Track
- Accessible Boardwalk
- Footbridge

## 5.4.4 Long Term Spatial Layout

As the precinct matures the evolution of short and medium-term activities will continue.

The creation of a more formal education, research and multipurpose spaces near the clubhouse and shed precinct will be in place, with supporting facilities. This long-term aim will depend on funding and strategic partnerships including public investment and possible private donations and philanthropic contributions.

By this stage significant scientific data from environmental monitoring and research activities may be available for sharing with other stakeholders and the community.

Planetary Health demonstration projects will be established across the site.

Low impact temporary accommodation may be established to support other activities and programmes on site and may host visiting researchers, students doing intensive course on site, artists-in residence, or school visits.

Figure 20: Proposed long term spatial layout

## Key

- Existing Building
- Future Building
- Yarning Circle
- Car Park
- Occasional Car Park
- Water Garden
- Constructed wetland
- Growing plots
- Grass
- Trees & Bush
- Main Service Track
- Accessible Track
- Accessible Boardwalk
- Footbridge

# 6 DELIVERY FRAMEWORK

# 6.1 Purpose of the Delivery Framework

The delivery framework outlines key considerations and components necessary to deliver on the vision for the site. Critically, the first step will be establishing an enduring governance and management framework that will guide the development and ongoing management of the site as a Planetary Health Precinct. It describes how the vision, objectives and proposed activities in this plan will be delivered overtime and identifies short-term, medium-term, and long-term priorities. It considers resources required for implementation, as well as broader stakeholder and industry collaboration and investment.

# 6.2. How to use the Delivery Framework

The delivery framework should be used as a guide and reference for the prioritisation of future activity, investment and focus for the precinct. It provides a guiding framework for the future governance and management model for the site.

The precinct plan identifies several actions that will inform future delivery programs and operational plans future service planning, resource planning, asset works and strategic financial planning. These actions have been categorised into the following timeframes:

**Ongoing, immediate to short-term actions:**
0-3 years (2023-2025)

Some actions may already be underway or programmed for the immediate future (in Council's current Delivery and Operational Plan) such as the ongoing maintenance of the site and activation as part of the Planetary Health initiative.

Key actions are proposed to guide future development and management by establishing an enduring governance and management framework and preparing amendments to the local statutory planning framework.

Other activities are proposed as a priority, in particular the establishment of yarning circles, as a first activation to welcome visitors and stakeholders to the precinct.

**Medium-term actions:**

3-10 years (2026 – 2036)

These actions and activities will be incorporated into future Delivery and Operational Plan cycles. These actions will be dependent on the economic sustainability of the precinct being established, and collaboration and investment from key stakeholders.

**Long-term actions:**

10+ years (2036 onwards)

The long term actions are more complex or represent substantial projects requiring further planning and investment. They may also rely on strategic partnerships. This timeframe aligns with long term actions in Council's Local Strategic Planning Statement.

The spatial layout, and overview of key activity areas and the evolution of the site overtime in Part 5 provide an overview where these actions are proposed on site, their timeframes and how they relate to one another. Changes and refinements will to be made to these actions following feedback from the public exhibition process.

Medium and long-term actions require greater investment and are more complex projects. However, opportunities may arise such as collaboration with State agencies, tertiary institutions, funding agencies, or through philanthropic support, that allow these projects to be delivered more quickly. Conversely, where projects have several dependencies, particularly where they rely on significant investment, delivery may take longer than identified.

# 6.3 Governance & Management

One of the first actions identified is the establishment of an enduring Council governance and management framework for the site to guide future delivery, investment and management within a sound probity framework.

The site is Council owned and managed operational land, and as such Council has multiple roles in relation the strategic planning, development and ongoing management of the precinct.

Priority will be given to ensuring sound probity principles and governance is implemented providing clarity and transparency around decision making and processes related to the site.

## 6.3.1 Council's Role

A key role of Council is to set the strategic direction for the precinct, to both align with the Community Strategic Plan and the Local Strategic Planning Statement. As  a planning authority, Council will use this precinct plan to inform planning controls and guide future developments on site.

Council will play an active role as owner and manager of the site and is invested in its ongoing development as a Planetary Health Precinct modelling sustainble local actions environmentally, socially and economically. In this capacity, and guided by this precinct plan, Council will manage and determine how the various areas and facilities on site are developed, managed, used, as well as how they look and feel. These deliverables are often dependent on funding opportunities, coordination and partnerships with other stakeholders.

## 6.3.2 Statutory Planning Framework

The use and development of land is governed by the statutory planning framework. Blue Mountains Local Environmental Plan (LEP) 2015 and Development Control Plan (DCP) 2015 are the principal statutory planning instruments controlling development in the Blue Mountains, including the former Katoomba Golf Course site.

One of the first steps to implement the Precinct Plan will be relevant amendments LEP 2015 and DCP 2015. This would introduce precinct objectives in LEP 2015, supported by development controls in DCP 2015, enshrining the principles, objectives, and key design outcomes of the Precinct Plan in a statutory framework. This will establish clear requirements for any future development application to ensure that it aligns with the Precinct Plan.

In addition to new objectives and controls, LEP 2015 may also need to be amended to expand the range of uses permitted on the site (see next page) should all activities in the draft Plan proceed. Many of the activities proposed in the draft Precinct Plan are already permissible under the current RE1 Public Recreation zoning of the site. However, some activities would require an amendment to LEP 2015.

To achieve this, a change to land zoning is unlikely to be proposed. Rather, the approach would be to add additional permitted uses to the site, with criteria to ensure they are of an appropriate scale and nature.  As with any LEP Amendment, should this proceed, a separate statutory process including community engagement and public exhibition would be undertaken.

The following tables outline the currently permissible land uses, and uses that would need to be made permissible to facilitate certain activities.

| Proposed activities that are currently permissible | |
|---|---|
| **Activities proposed** | **Facilitated by currently permissible land uses** |
| Informal learning and discovery such as board-walks, bird hides, walking tracks, seating, and shelters | Environmental facilities |
| Spaces and facilities that provide information and education for visitors | Information and education facilities |
| Space or facilities for gathering and meeting, community use, or cultural activities | Community facilities |
| Passive recreation and nature play space | Recreation areas |
| More extensive adventure play or recreation space or facilities | Recreation facilities (outdoor) |
| Events, functions, and exhibitions | Function centre |
| Selling of some food, drinks ,and products | Kiosks |
| Serving of food and drink | Restaurants or cafes |
| Public authorities such as National Parks to be based on site | Public administration buildings |
| Temporary accommodation in the form of camping, including communal amenities | Camping grounds |

| Proposed activities that require an LEP amendment to be made permissible | |
|---|---|
| **Activities proposed** | **Land uses required to be made permissible** |
| Spaces used for formal education and teaching | Educational establishments |
| Growing of produce or plants | Horticulture |
| The sale of plants grown on site | Plant nursery |
| Temporary accommodation in suites or small apartments | Eco-tourist facility and/or hotel or motel accommodation |
| Crafting or making of goods, and the creation of art such as artists' studio space | Creative industry |
| Sale of goods or produce associated with the site | Shops |

## 6.3.3 Role of Stakeholders, Partners, State Agencies and the wider Community

The development and activation of the precinct will be governed and managed by the Council working collaboratively and in partnership with key stakeholders.

It will depend on the input, support and contributions of many on a strategic, operational and financial level. Key stakeholders include First Nations people, the Blue Mountains Planetary Health Initiatve Advisory Commitee, community, local tourism operators and businesses, state and federal agencies, the education sector at the secondary and tertiary level to name a few.

**Community**

The community's feedback and ideas have been central to the development of this precinct plan. It is intended that future work and planning for the precinct, will continue to involve a high degree of community and stakeholder engagement.

By utilising the site and its amenities and participating in future events and activities, local residents and the broader Blue Mountains community will play a vital role in activating the site.

## 6.3.4 Financial Sustainability

A key consideration for the precinct is its long-term financial sustainability. To ensure the realisation and longevity of the vision and objectives for this site, it is crucial to establish and maintain sufficient revenue to meet its resource and financial requirements, and to be able fund future projects and programs.

To ensure capacity to generate income and be financially self-sufficient Council will develop a business plan for the precinct. A mix of funding opportunities, both public and private will be considered. Whilst opportunities may exist for grant funding to undertake works on site, ongoing funding for the precinct's maintenance, programming and management also needs to be considered. Opportunities exist to create income generating activities for the site, that will support its long-term financial sustainability.

**Commercial opportunities**
Several actions in the precinct plan relate to potential upgrades, improvements, or redevelopment of infrastructure on site. There is potential to consider incorporating income-generating components, such as leasable spaces i.e. short term venue hire and retail opportunities into these projects to provide a financial return, making these projects more viable and less dependent on operational funding to be delivered.

Consideration could also be given to partnering with established businesses or services providers to run programs or activities on site. Particularly in the short term, commercial partnerships could help to generate activity on site by leveraging the existing resources, business models and know how that partners could bring to the site.

Any commercial partnership or opportunity would need to be aligned to the principles prepared for the site, which are underpinned by environmental sustainability and Planetary Health.

**Ticketed experiences and activities**
As a site that will provide a range of activities and experiences to a variety of users, it is reasonable that there is the ability to charge visitors a fee for some activities, to participate in certain programs, or for access or use of some areas of the site. This is particularly important to consider for services or infrastructure provided for visitors that would otherwise need to be paid for from Council's operating budget, and can include guided tours, or other paid visitor facilities and experiences.

To facilitate the ability to charge visitors a fee for some activities and experiences, areas of the site would need to have controlled access, or the ability to control access. This may be on a temporary basis to accommodate events or intermittent uses on the site. This would also facilitate commercial opportunities such as the leasing of space.

# 6.4 Summary of Actions

Within available resourcing, the following table provides a guiding list of the immediate-short, medium and long term actions proposed for the former Katoomba Golf Course Precinct, to enable it to become a Planetary Health Precinct.

### 6.4.1 Ongoing, Immediate & Short Term Actions

**0-3 years (2023-2025)**

| | Action | Key Objectives of the Draft Plan |
|---|---|---|
| S1 | Establish a yarning circle as a gathering space and place to welcome visitors to the precinct. | Traditional Custodians & First Nations People |
| S2 | Develop the governance and management framework and financially sustainable business plan for the precinct. | Governance & Management |
| S3 | Review and amend planning controls in *Blue Mountains Local Environmental Plan* 2015 and *Development Control Plan* 2015, to facilitate the range of activities envisaged, and ensure future development aligns with the principles and objectives of the Precinct Plan. | Governance & Management |
| S4 | Continue leasing of existing buildings to tenants that are aligned with Planetary Health values such as NPWS and the Greater Blue Mountains World Heritage Institute to support financial sustainability and activation of the site. | Governance & Management |
| S5 | Establish grant funded Water for Disaster Risk Reduction demonstration on the site and associated planetary health research. | Learning, Discovery, Experimentation & Research |
| S6 | Promote early community engagement with the site as a Planetary Health Precinct through a diversified and creative communication strategy to reach a broad range of stakeholders. | Learning, Discovery, Experimentation & Research |
| S7 | Establish priority environmental areas of enquiry and commence annual data monitoring program. | Natural Environment: Vegetation, Wildlife and Water Management |
| S8 | Upgrade and activate the existing sheds for planetary health focussed uses such as educational activities, hospitality, retail and creative making. | Visitation, Hospitality & Temporary Accommodation<br><br>Learning, Discovery, Experimentation & Research |

## 6.4.1 Ongoing, Immediate & Short Term Actions (continued)

**0-3years (2023-2025)**

| | Action | Key Objectives of the Draft Plan |
|---|---|---|
| S9 | Develop arrival points and wayfinding signage for the Planetary Health Precinct. | Community Access, Recreation & Open Space Uses |
| S10 | Establish interpretive signage which is integrated into the circulation network and highlights significant natural, historical and cultural aspects of the precinct. | Learning, Discovery, Experimentation & Research |
| S11 | Upgrade existing walkways and circulation to create a seamless and accessible walking experience, connect key areas and support the establishment of other activities. | Community Access, Recreation & Open Space Uses |
| S12 | Preserve and establish areas for passive and informal recreation. | Community Access, Recreation & Open Space Uses |
| S13 | Continue bush regeneration in priority areas, including opportunities to incorporate infrastructure such as boardwalks, hides, and viewing platforms to support education programs and learning & discovery opportunities. | Natural Environment: Vegetation, Wildlife and Water Management<br><br>Learning, Discovery, Experimentation & Research |
| S14 | Install infrastructure to support sustainable transport options such as bicycle stands and electronic vehicle charging stations. | Community Access, Recreation & Open Space Uses |
| S15 | Work with Traditional Custodians to facilitate and support Aboriginal cultural events and activities such as NAIDOC celebrations. | Traditional Custodians & First Nations People |
| S16 | Collaborate with Aboriginal community groups to facilitate cultural education workshops. | Traditional Custodians & First Nations People |
| S17 | Investigate growing opportunities for food, native plants and bushtucker across the site. Develop partnerships with local community groups to establish and maintain these areas. | Natural Environment: Vegetation, Wildlife and Water Management |
| S18 | Integrate renewable technologies and sustainable materials into existing and new future infrastructure, including solar power, water recycling and green star-rated buildings. | Sustainability & Planetary Health |
| S19 | Consult with Traditional Custodians on naming future buildings and precinct spaces in language (Gundungurra/ Dharug) | Traditional Custodians & First Nations People |

## 6.4.2 Medium Term Actions

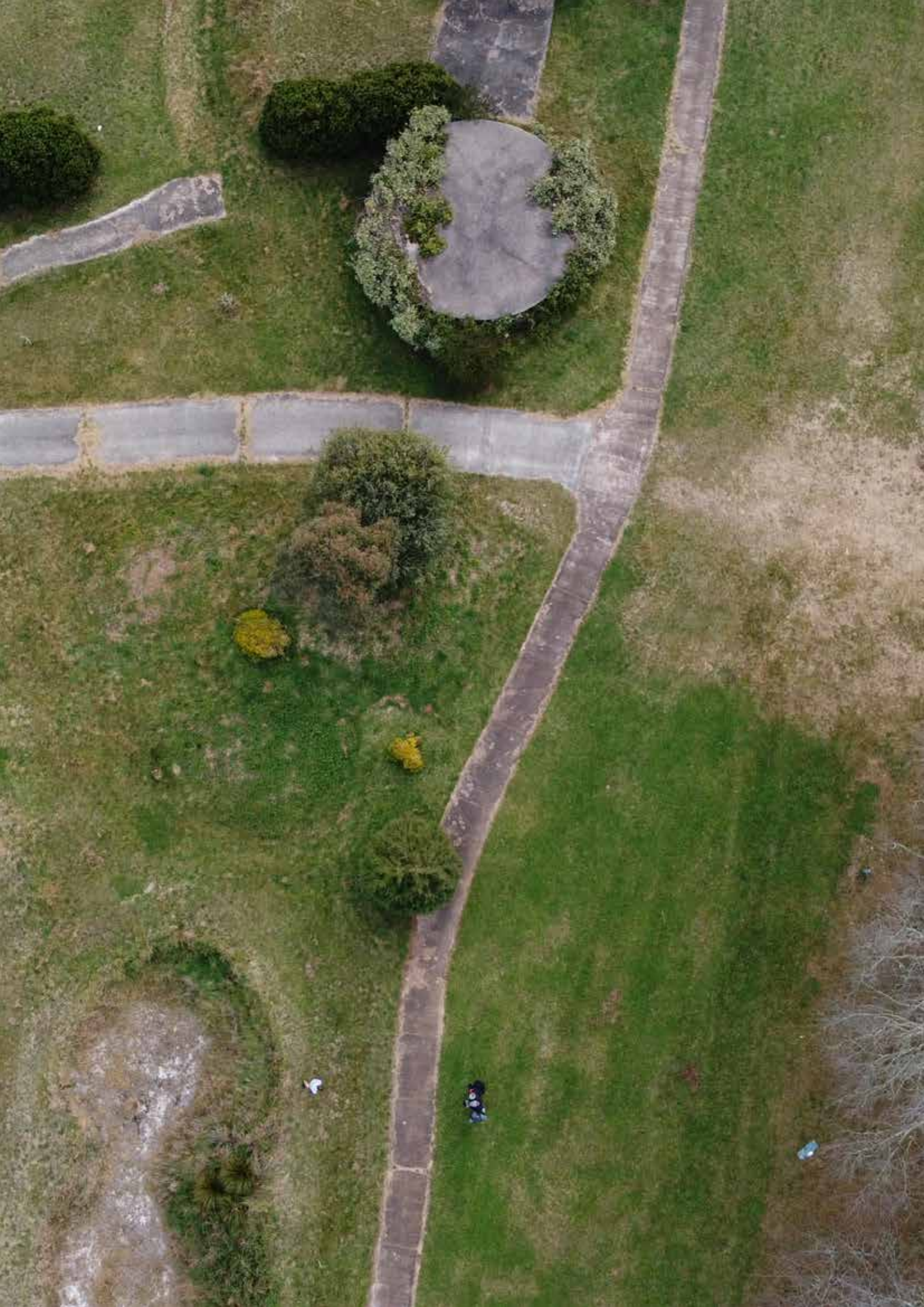
**3-10 years (2026 – 2036)**

| | Action | Key Objectives of the Draft Plan |
|---|---|---|
| M1 | Prioritise water recharge zones, drainage, and storage areas to support the site's hydrologic cycle and to promote waterway health in consultation with Traditional Custodians and other water experts. | Natural Environment: Vegetation, Wildlife and Water Management |
| M2 | Implement key actions from the business plan that support the sustainability of the precinct, environmentally, socially and economically. | Governance & Management |
| M3 | Leverage strategic partnership with stakeholders that align with Planetary Health principles to expand the precinct programs and activations. | Governance & Management |
| M4 | Collaborate with stakeholders and seek investment to deliver flexible and multi-purpose space at the Knoll to cater for events of different types and scales. | Events, Arts & Cultural Activities<br><br>Learning, Discovery, Experimentation & Research<br><br>Governance & Management |
| M5 | Expand walkways, service routes and circulation networks to connect key areas and support site-wide activities. | Community Access, Recreation & Open Space Uses |
| M6 | Create supporting infrastructure such as amenities or weather-protected areas. | Community Access, Recreation & Open Space Uses |
| M7 | Create accessible gathering, resting and meeting spaces featuring seating and under cover areas, that are suitable for people of all ages and physical abilities. | Community Access,<br>Recreation & Open Space Uses |
| M8 | Establish nature play and discovery areas that accord with the vision for the precinct. | Community Access, Recreation & Open Space Uses<br><br>Learning, Discovery, Experimentation & Research |
| M9 | Provide sustainable and adaptable parking solutions for high, medium, and low impact areas. | Community Access, Recreation & Open Space Uses |
| M10 | Develop educational activities for primary, high school and tertiary education on site and online as a planetary health learning focus and potential source of income. | Learning, Discovery, Experimentation & Research |
| M11 | Develop a strong digital presence for the precinct, incorporating online platforms, interpretation materials e.g. self-guided walks, and digital storytelling opportunities. | Learning, Discovery, Experimentation & Research |

### 6.4.3 Long Term Actions

**10+ years (2036 onwards)**

| | Action | Key Objectives of the Draft Plan |
|---|---|---|
| L1 | Deliver Planetary Health education centre, leveraging strategic partnerships and philanthropic support. | Governance & Management |
| L2 | Implement long-term transport initiatives such as e-bike hire, shuttle bus services, electric vehicle charging stations, cycling stations and improved pedestrian paths, to sustainably move people between the site, the southern escarpment and Katoomba town centre. | Governance & Management<br><br>Visitation, Hospitality & Temporary Accommodation |
| L3 | Install temporary, self-sustaining accommodation opportunities that caters for visiting students, researchers, and artists in residence. | Visitation, Hospitality & Temporary Accommodation<br><br>Events, Arts & Cultural Activities |
| L4 | Provide traineeships, awards and planetary health opportunities associated with the unique environmental attributes of the precinct and surrounding world heritage area. | Sustainability & Planetary Health |



# Abbreviations

| | |
|---|---|
| AWP | Asset Works Program |
| BMCC | Blue Mountains City Council |
| CSP | Blue Mountains Community Strategic Plan 2035 |
| DCP | Blue Mountains Development Control Plan |
| District Plan | Western Sydney District Plan |
| EP&A Act | Environmental Planning and Assessment Act 1979 |
| FG | Focus Group |
| GBMWHA | Greater Blue Mountains World Heritage Area |
| GSC | Great Sydney Commission |
| Hospital | Blue Mountains ANZAC Memorial Hospital |
| ILUA | Indigenous Land Use Agreement |
| IP&R | Integrated Planning & Reporting |
| KGC/ the site/ the precinct | Former Katoomba Golf Course |
| KMP or The Master Plan | Katoomba (Draft) Master Plan |
| LEP | Blue Mountains Environmental Plan 2015 |
| LGA | Local Government Area |
| LSPS | Local Strategic Planning Statement – *Blue Mountains 2040: Living Sustainably* |
| MoUS | Planetary Health Memorandum of Understanding Signatories |
| NPWS | National Parks & Wildlife Service |
| PHAC | Planetary Health Advisory Committee |
| PHI | Planetary Health Initiative |
| SEMP | Southern Escarpment Masterplan |
| TIA | Traffic Impact Assessment |
| UHI | Urban Heat Island |
| WSDU | Water Sensitive Urban Design |

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# Glossary

**Engagement** – Referring to community engagement activities for the Katoomba Master Plan, including in-place, digital and in-place engagement, and the provision of a conversation kit.
**Have Your Say** – An online forum for the community to find out about Blue Mountains City Council projects and proposals that are open for public comment and to provide feedback to contribute to Council's decision making.
**In-place engagement** – Community engagement activities conducted at various locations in Katoomba and nearby areas.
**Master Plan** – A long-term planning document. Master Plans outline the vision, principles and priorities for the future of an area and are used to guide growth and development.
**Participants** –The number of individuals who took part in a particular engagement activity.
**Respondents** –The number of unique responses received in the Katoomba Master Plan survey. This term is used instead of 'participants' because the survey was anonymous and could be taken more than once.

blue mountains City Council

## Contact


**Katoomba Office**
2 Civic Place
Katoomba NSW 2780

**Springwood Office**
104 Macquarie Road
Springwood NSW 2777

**Telephone**
For local call cost:
Lower Mountains 4723 5000
Upper Mountains 4780 5000

**Postal Address**
Locked Bag 1005
Katoomba NSW 2780

**Email**
council@bmcc.nsw.gov.au

**Council Website**
bmcc.nsw.gov.au

**Have Your Say Website**
bluemountainshaveyoursay.com.au

# Appendix E – Sydney Water Pressure Flow

# Statement of Available Pressure and Flow

Sydney WATER

**Fadi Taouk**
**432 Parramatta Road**
**Petersham, 2049**

**Attention: Fadi Taouk** Date: 05/01/2024

**Pressure & Flow Application Number: 1799003**
**Your Pressure Inquiry Dated: 2023-12-20**
**Property Address: 142 Katoomba Street, Katoomba 2780**

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

**ASSUMED CONNECTION DETAILS**

| | |
|---|---|
| Street Name: Narrow Neck Road | Side of Street: East |
| Distance & Direction from Nearest Cross Street | Middle of Cliff Drive |
| Approximate Ground Level (AHD): | 1009 metres |
| Nominal Size of Water Main (DN): | 100 mm **– As per Diagram Provided** |

**EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT**

| Normal Supply Conditions | |
|---|---|
| Maximum Pressure | 50 metre head |
| Minimum Pressure | 42 metre head |

| WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS | Flow l/s | Pressure head m |
|---|---|---|
| Fire Hose Reel Installations<br>(Two hose reels simultaneously) | 0.66 | 42 |
| Fire Hydrant / Sprinkler Installations<br>(Pressure expected to be maintained for 95% of the time) | 10<br>14 | 36<br>30 |
| Fire Installations based on peak demand<br>(Pressure expected to be maintained with flows combined with peak demand in the water main)<br><br>Maximum Permissible Flow | 10<br><br><br>14 | 33<br><br><br>26 |

**(Please refer to reverse side for Notes)**

**For any further inquiries regarding this application please email :**

hydraulicassessment@sydneywater.com.au

# Appendix F – Method of Power Supply Sketch

## MAXIMUM DEMAND RESIDENTIAL INSTALLATION

*(AS/NZS 3000:2018 TABLE C1)*

**PROJECT :** 142-150 Narrow Neck Road, Katoomba

**JOB No. :** 23176 **DATE :** 30/10/2025

**LOAD GROUP** **SUMMARY SHEET**

**Select number of total units**

270 / 3

90.00 90.00 90.00

**Heaviest load is :** 90.00

**MAXIMUM BLOCKS OF LIVING UNITS PER PHASE:** 90

| Load Group | | Amps | kVA | Diversity Factor | Amps | kVA | Remark |
|---|---|---|---|---|---|---|---|
| LOT 1 | | 1435 | 994 | 35% | 933 | 646 | Supplied via Sub 1 |
| LOT 2 | | 1901 | 1317 | 35% | 1236 | 856 | Supplied via Sub 2 |
| LOT 3 | | 1881 | 1303 | 35% | 1223 | 847 | Supplied via Sub 2 |
| LOT 4 | | 2584 | 1790 | 35% | 1680 | 1164 | Supplied via Sub 1 |
| LOT 5 | | 100 | 69 | 35% | 65 | 45 | Supplied via Sub 2 |
| LOT 6 | | 24 | 17 | 35% | 16 | 11 | Supplied via Sub 2 |
| LOT 7 | | 18 | 12 | 35% | 12 | 8 | Supplied via Sub 2 |
| LOT 8 | | 9 | 6 | 35% | 6 | 4 | Supplied via Sub 2 |
| | | | | | | | |
| | **Total:** | **7952** | **5509** | **Total:** | **5169** | **3581** | |

Clarifications & Assmuptions: -

- Our estimate for lift is inline with similar type development for trasporting passengers
- We have considered electric instantaneous water heaters for hot-water generation and cooking appliances
- Our estimate for mechanical for residential units is inline with similar type development
- Assuming no 15amp or above sockets are required for living units

potential extension of HV cabling to connect back to the overhead HV poles and creating a ring main for authority HV infrastructure

incoming NBN services to reticulate round the site and later supply each lot with dedicated fibre service connection

200A/3ph pillar to lot 6 CP for future use

new underground high-voltage extension from narrow neck road HV mains along glencoe road and into new substation location (option 1)

NARROW NECK RD

THE ESCARPMENT

Proposed easement diversion

PEDESTRIAN AND BUSHFIRE TRACK

PEDESTRIAN PATH

RESTAURANT

1,103.74 sq m

LOT 6

LOT 5

800A/3ph supply to lot 1 to serve building A&G main switchboard

LOT 1

LOT 2

950A/3ph supply to lot 2 to serve building B&C main switchboard

200A/3ph pillar to lot 5 restaurant

SUBSTATION

SUBSTATION

SUBSTATION

SUBSTATION

833.67 sq m

LOT 7

1050A/3ph supply to lot 3 to serve building D&E main switchboard

LOT 3

200A/3ph pillar to lot 8 CP for future use

LOT 8

411.25 sq m

GLENCOE RD

LOT 4

1300A/3ph supply to lot 4 to serve building H&F main switchboard

**Substation 1 Location: -**
Supplying building A,G,H & F
Endeavour Energy outdoor pad-mount substation requires below spatial: -
2 x 1000kVA *subject to final maximum demand and development site.*
Substation easement of 6000mm(W) x 3000mm(D)

- No services or structures allowed within the easement
- All structures within the 3m restriction zones must be 2 hrs fires rated (new requirement contradicting with below diagram)
- Fire hydrant/booster assembly to be minimum 10m away

also refer below for clearances and FRLs relevant to the substation.

Note that if the two lots remain separate, the substation will not be dedicated to stage 1 as it will supply stage 2 lot as well. as per NSW service and installation rules requirement the service mains from the substation supplying stage 1 can not exceed 50m in length and therefore

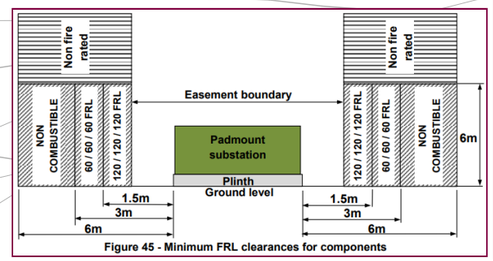

Figure 45 - Minimum FRL clearances for components

**Substation 2 Location: -**
Supplying building B,C,D,E, Restaurant and CPs
Endeavour Energy outdoor pad-mount substation requires below spatial: -
*2x1000kVA subject to final maximum demand and development site.*
Substation easement of 6000mm(W) x 3000mm(D)

- No services or structures allowed within the easement
- All structures within the 3m restriction zones must be 2 hrs fires rated (new requirement contradicting with below diagram)
- Fire hydrant/booster assembly to be minimum 10m away

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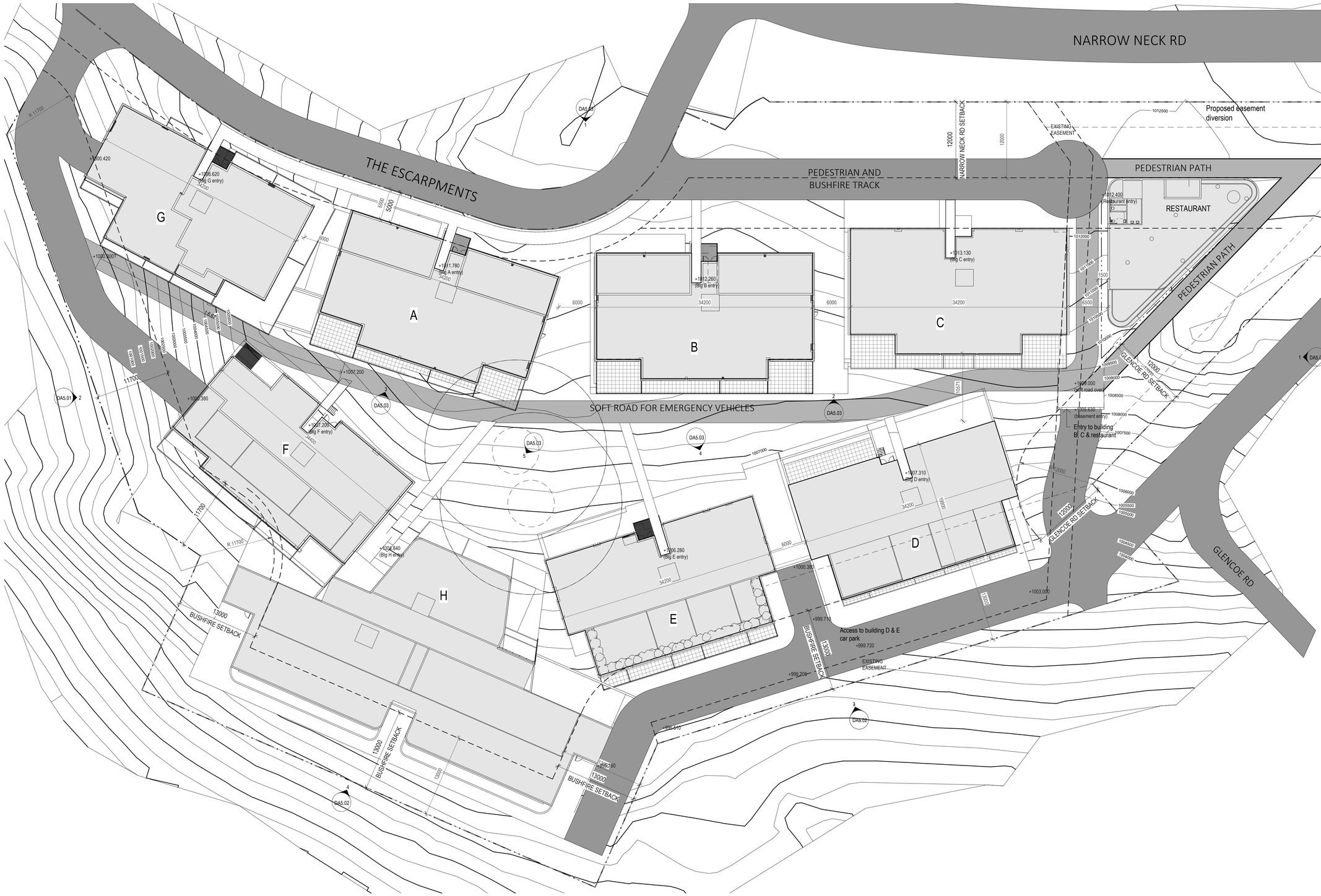
- Report any discrepancies to Antoniades Architects Pty Ltd.
- All boundary dimensions and bearings to be verified by licensed surveyor prior to proceeding with work.

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
| A | Issued for Information | JF | 09.12.2024 |

ANTONIADES ARCHITECTS
www.antoniades.com.au
ACN 129 731 559
Nominated Architect: Andreas Antoniades
NSW Registration 7954

PROJECT PHASE: DEVELOPMENT APPLICATION
STATUS: PRELIMINARY
PROJECT NO.: 24012
PROJECT: -
ADDRESS: 142-150 Narrow Neck Road, Katoomba
CLIENT: Management 7BBH
DRAWING SERIES: DA3 Overall Plans
DRAWING TITLE: Subdivision Plan
DRAWING NO.: SK.28
REVISION: A
SCALE: 1 : 500 @A3
Scale 1:100
DRAWN BY: Author
CHECKED BY: Checker
NORTH
10.00 m




**Legend:**

- Property Boundary
- Setbacks
- Overhead
- Hidden
- RL 0.00 — Level Marker (Plan)
- RL 0.00 — Level Marker (Elevation)
- RL 0.00 — Level Marker (Spot)
- Zone for Service Penetration

**Room Tag**

- Number / Name / Area — Room Number / Room Name / Room Area

AB-XX — **Material Tag** See Material Board for code reference

- BR-XX Brick
- CPT-XX Carpet Finish
- CONC-XX Concrete Finish
- GL-XX Glass
- LV-XX Louvers
- PCF-XX Powdercoat Finish
- PAV-XX Pavers
- PMB-XX Permeable Driveway
- PF-XX Paint Finish
- RF-XX Roof Sheeting
- STN-XX Stone Finish
- TL-XX Tile Finish
- TMB-XX Timber Finish

**Finishes**

- Tile
- Carpet
- Timber Floors
- Grass
- Gravel/Stone
- Brickwork
- Metal Sheet

**Abbreviations**

- RL Relative Level (AHD)
- FFL Finished Floor Level
- AFFL Above FFL
- TOW Top Of Wall Level
- TOR Top of Ridge Level
- P Full Height Pantry Cupboard
- S Storage Cupboard
- R Wardrobe

**Hatches**

- Existing Elements (Cut)
- Existing Elements (Projection)
- Demolished Elements
- Existing Tree to be retained
- Existing Tree to be removed

**Shadow Diagrams**

- Existing Building
- Proposed Building
- Proposed Building

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| B | Issued for Information | JF | 28.11.2024 |
| C | Issued for Information | JF | 04.12.2024 |
| D | Issued for Information | JF | 09.12.2024 |

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**24012**

PROJECT
**-**

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CLIENT
Management 7BBH

DRAWING SERIES
**DA3 Overall Plans**

DRAWING TITLE
**Site Plan**

DRAWING NO.
**DA3.01**

REVISION
**D**

DRAWN BY
**Author**

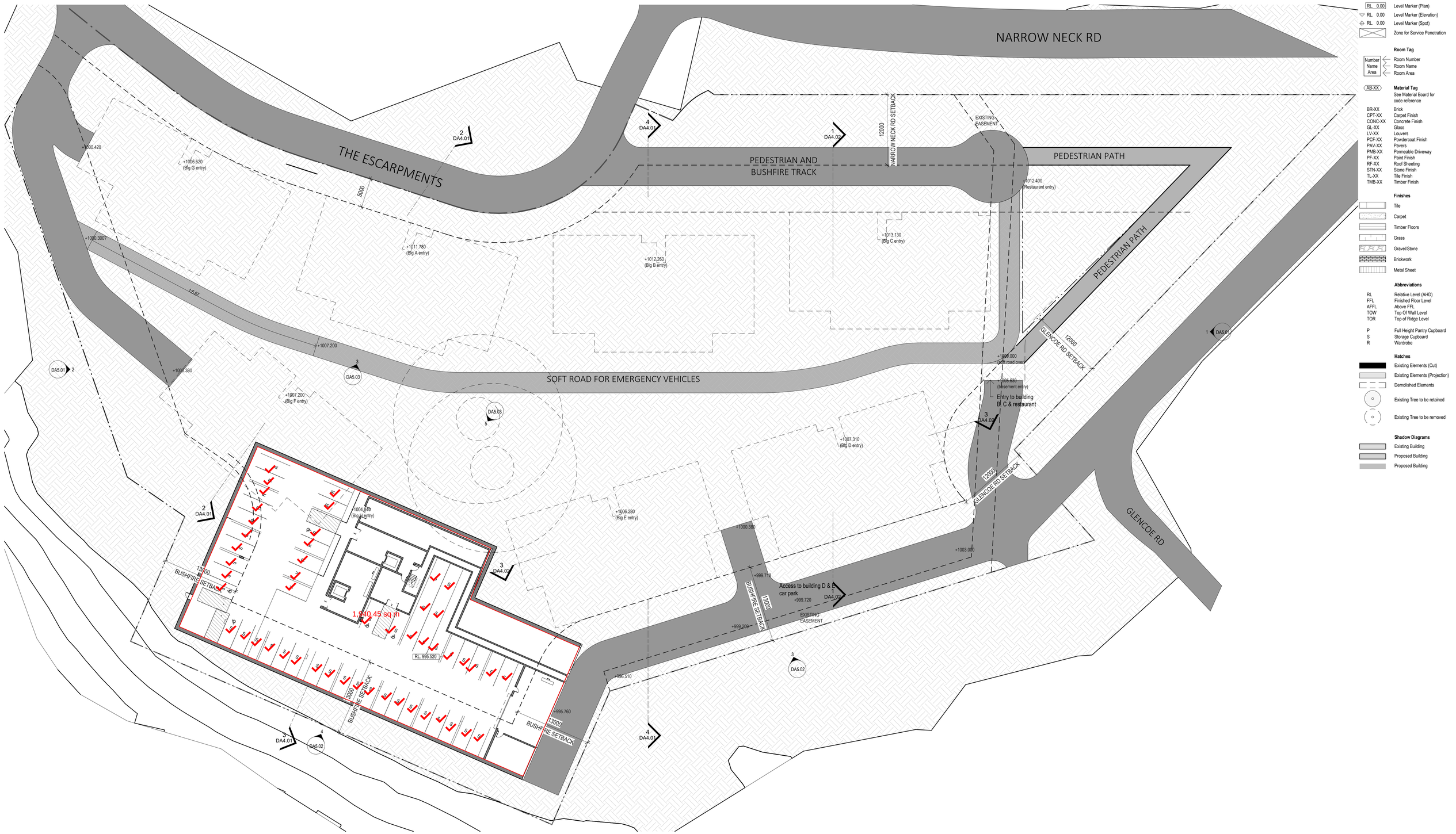
CHECKED BY
**Checker**

SCALE
As indicated @A1

0m 2 4 5m

Scale 1:100

NORTH

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DRAWING TITLE
**Lower Basement**

DRAWING NO.
**DA3.07**

REVISION
**F**

DRAWN BY
**Author**

CHECKED BY
**Checker**

SCALE
As indicated @A1

0m 2 4 5m

Scale 1:100

NORTH

NARROW NECK RD

THE ESCARPMENTS

PEDESTRIAN AND BUSHFIRE TRACK

PEDESTRIAN PATH

PEDESTRIAN PATH

SOFT ROAD FOR EMERGENCY VEHICLES

GLENCOE RD

627.4 sq m

Entry to building B, C & restaurant

Access to building D & E car park

NARROW NECK RD SETBACK

GLENCOE RD SETBACK

GLENCOE RD SETBACK

BUSHFIRE SETBACK

BUSHFIRE SETBACK

BUSHFIRE SETBACK

BUSHFIRE SETBACK

EXISTING EASEMENT

EXISTING EASEMENT

5000

12000

12000

13000

13000

13000

13000

+1000.420

+1006.620 (Blg G entry)

+1000.3007

+1011.780 (Blg A entry)

+1012.260 (Blg B entry)

+1013.130 (Blg C entry)

+1012.400 (Restaurant entry)

+1007.200

+1005.380

+1004.200 (Blg F entry)

+1004.840 (Blg H entry)

+1006.280 (Blg E entry)

+1007.310 (Blg D entry)

+1005.000 (Crt road over)

+1005.630 (basement entry)

+1000.380

+1003.000

+999.718

+999.720

+999.209

+995.510

+995.760

RL 998.520

1:5.67

1 DA4.01

2 DA4.01

3 DA4.01

4 DA4.01

1 DA4.02

2 DA4.02

3 DA4.02

1 DA5.01

2 DA5.01

3 DA5.02

4 DA5.02

3 DA5.03

4 DA5.03

5 DA5.03

**Legend:**

- Property Boundary
- Setbacks
- Overhead
- Hidden
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- RL 0.00 — Level Marker (Spot)
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- Tile
- Carpet
- Timber Floors
- Grass
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- S Storage Cupboard
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**Hatches**

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- Existing Elements (Projection)
- Demolished Elements
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**Shadow Diagrams**

- Existing Building
- Proposed Building
- Proposed Building

NOT FOR CONSTRUCTION

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|---|---|---|---|
| A | Issued for Information | JF | 13.11.2024 |
| B | Issued for Information | JF | 18.11.2024 |
| C | Issued for Information | JF | 25.11.2024 |
| D | Issued for Information | JF | 28.11.2024 |
| E | Issued for Information | JF | 04.12.2024 |
| F | Issued for Information | JF | 09.12.2024 |

ANTONIADES ARCHITECTS

www.antoniades.com.au
ACN 129 731 559

Nominated Architect: Andreas Antoniades
NSW Registration 7954

PROJECT PHASE
DEVELOPMENT APPLICATION

STATUS
PRELIMINARY

PROJECT NO.
**24012**

PROJECT
**-**

ADDRESS
142-150 Narrow Neck Road, Katoomba

CLIENT
Management 7BBH

DRAWING SERIES
**DA3 Overall Plans**

DRAWING TITLE
**Upper Basement**

DRAWING NO.
**DA3.08**

REVISION
**F**

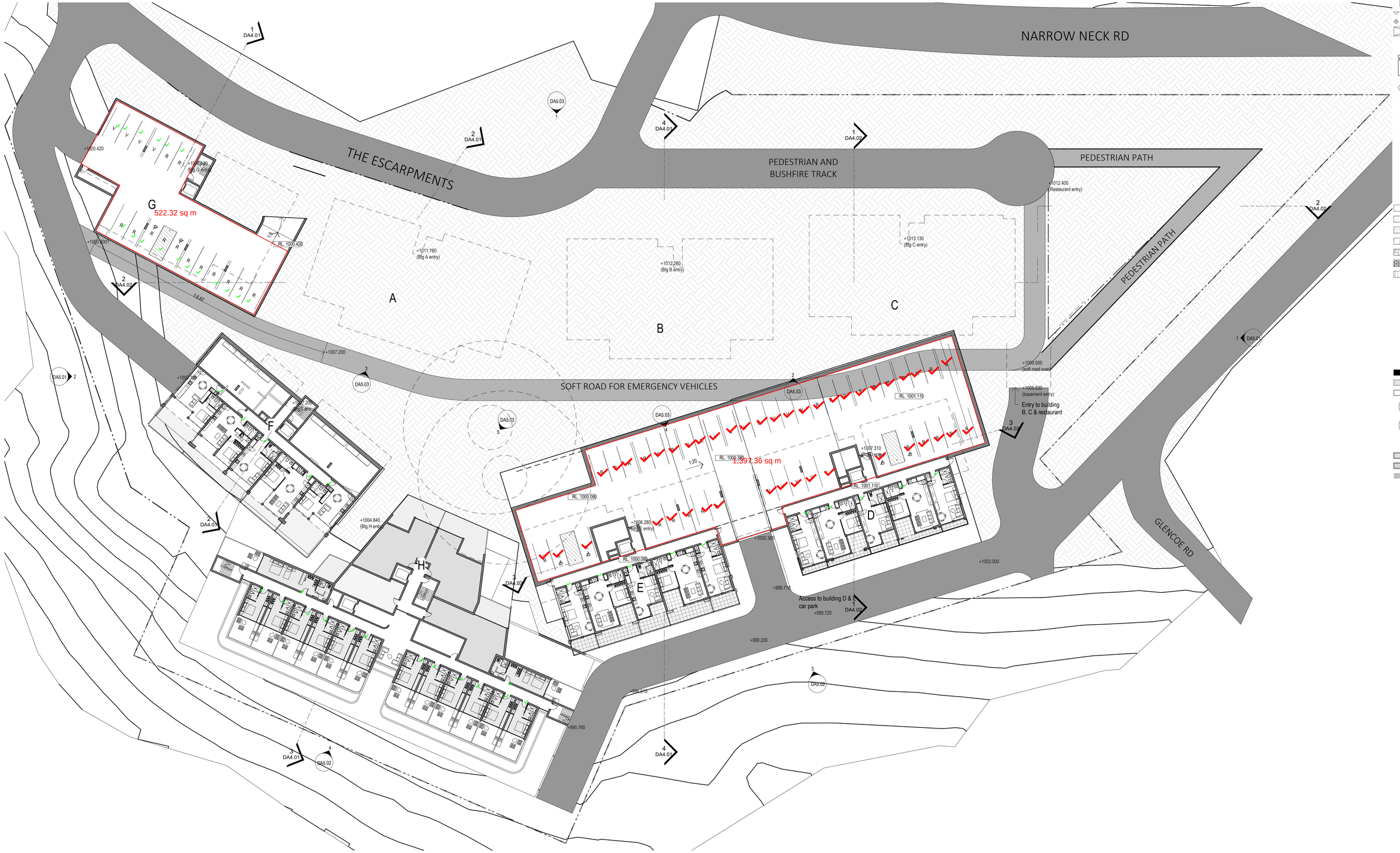
DRAWN BY
**Author**

CHECKED BY
**Checker**

SCALE
As indicated @A1

0m 2 4 5m
Scale 1:100

NORTH

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DEVELOPMENT APPLICATION

STATUS
PRELIMINARY

PROJECT NO.
**24012**

PROJECT
-

ADDRESS
142-150 Narrow Neck Road, Katoomba

CLIENT
Management 7BBH

DRAWING SERIES
**DA3 Overall Plans**

DRAWING TITLE
**Lower Ground**

DRAWING NO.
**DA3.09**

REVISION
**F**

DRAWN BY
**SX**

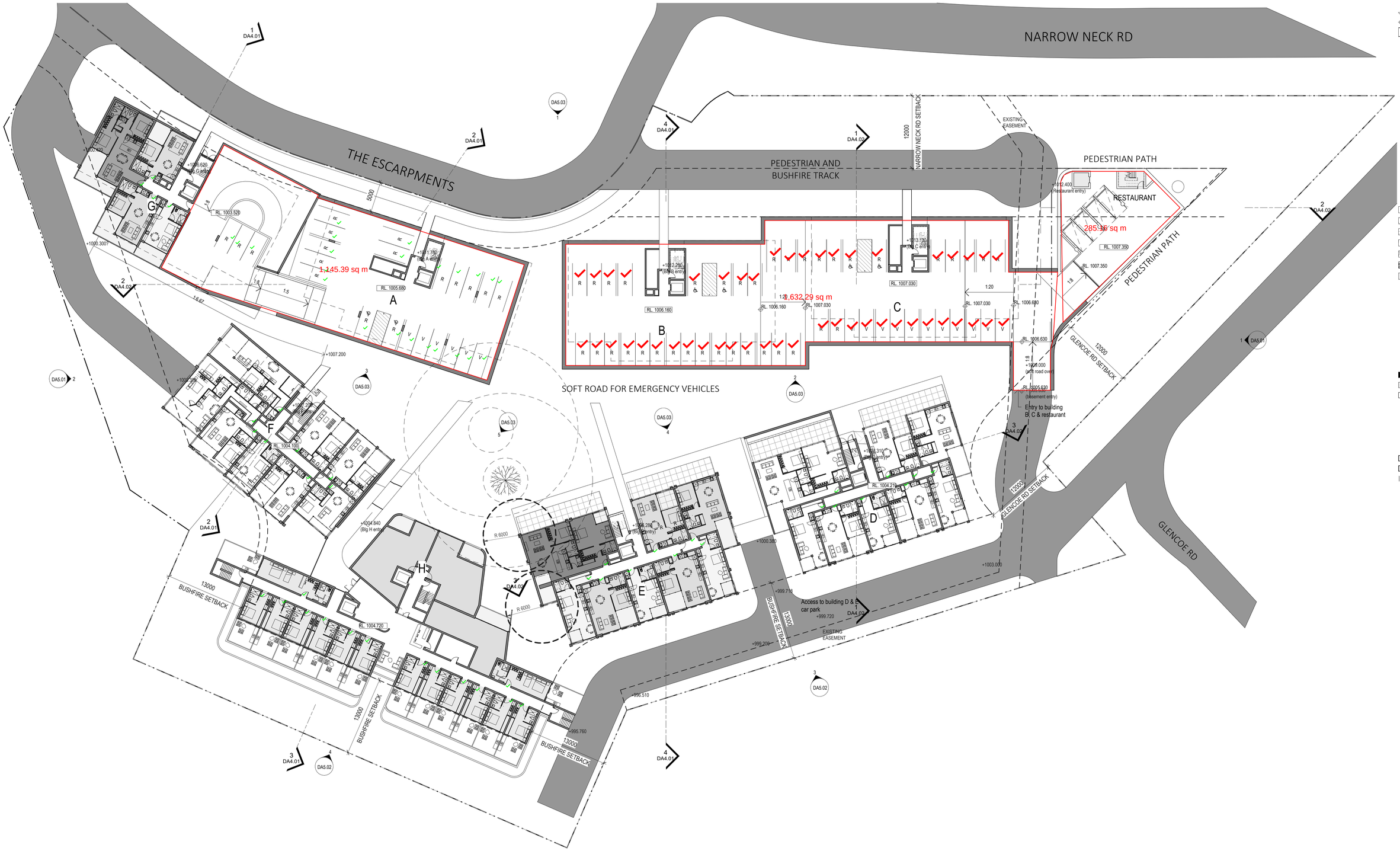
CHECKED BY
**AA**

SCALE
As indicated @A1

0m 2 4 5m

Scale 1:100

NORTH

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|---|---|---|---|
| A | Issued for Client's Review | SX | 12.11.2024 |
| B | Issued for information | JF | 13.11.2024 |
| C | Issued for information | SX | 15.11.2024 |
| D | Issued for Information | JF | 18.11.2024 |
| E | Issued for Information | JF | 25.11.2024 |
| F | Issued for Information | JF | 28.11.2024 |
| G | Issued for Information | JF | 04.12.2024 |
| H | Issued for Information | JF | 09.12.2024 |


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DEVELOPMENT APPLICATION

STATUS
PRELIMINARY

PROJECT NO.
**24012**

PROJECT
-

ADDRESS
142-150 Narrow Neck Road, Katoomba

CLIENT
Management 7BBH

DRAWING SERIES
**DA3 Overall Plans**

DRAWING TITLE
**Ground Level**

DRAWING NO.
**DA3.10**

REVISION
**H**

DRAWN BY
**SX**

CHECKED BY
**AA**

SCALE
As indicated @A1

0m 6 12 15m

Scale 1:300

NORTH

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Nominated Architect: Andreas Antoniades
NSW Registration 7954

PROJECT PHASE
DEVELOPMENT APPLICATION

STATUS
PRELIMINARY

PROJECT NO.
**24012**

PROJECT
-

ADDRESS
142-150 Narrow Neck Road, Katoomba

CLIENT
Management 7BBH

DRAWING SERIES
**DA3 Overall Plans**

DRAWING TITLE
**Level 01**

DRAWING NO.
**DA3.11**

REVISION
**C**

DRAWN BY
**Author**

CHECKED BY
**Checker**

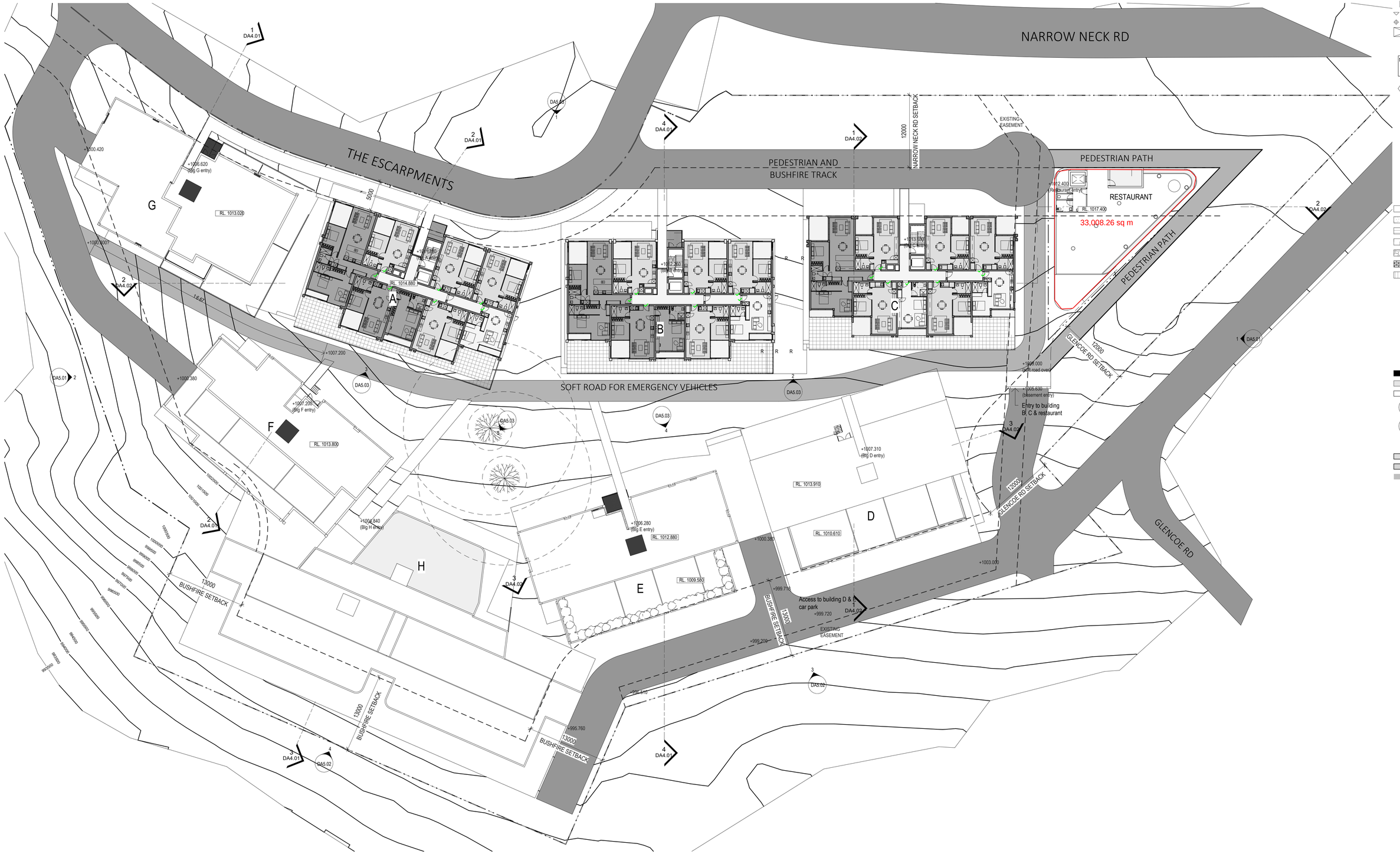
SCALE
As indicated @A1

0m 2 4 5m

Scale 1:100

NORTH

NARROW NECK RD
THE ESCARPMENTS
PEDESTRIAN AND
BUSHFIRE TRACK
NARROW NECK RD SETBACK
12000
EXISTING
EASEMENT
PEDESTRIAN PATH
RESTAURANT
330.08 sq m
PEDESTRIAN PATH
GLENCOE RD SETBACK
12000
SOFT ROAD FOR EMERGENCY VEHICLES
12m ADG BUILDING SEPERATION
+1012.400
Restaurant entry
RL 1012.400
+1003.000
(soft road over)
+1005.530
(basement entry)
Entry to building
B, C & restaurant
Access to building D & E
car park
+999.720
EXISTING
EASEMENT
+999.209
+999.718
+1000.380
+1003.000
+995.760
+995.610
+1004.840
(Big H entry)
RL 1009.580
RL 1010.610
BUSHFIRE SETBACK
13000
GLENCOE RD
A
B
C
D
E
F
G
H
RL 1009.720
RL 1011.780
+1000.420
+1000.380
+1007.200
+1000.380
+1000.420
+1000.380
+1000.380
+1000.380

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ANTONIADES ARCHITECTS

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ACN 129 731 559

Nominated Architect: Andreas Antoniades
NSW Registration 7954


PROJECT PHASE
DEVELOPMENT APPLICATION

STATUS
PRELIMINARY

PROJECT NO.
**24012**

PROJECT
-

ADDRESS
142-150 Narrow Neck Road, Katoomba

CLIENT
Management 7BBH

DRAWING SERIES
**DA3 Overall Plans**

DRAWING TITLE
**Level 03**

DRAWING NO.
**DA3.13**

REVISION
**C**

DRAWN BY
**Author**

CHECKED BY
**Checker**

SCALE
As indicated @A1

0m 2 4 5m
Scale 1:100

NORTH

# Appendix G – Estimated Maximum Electrical Demand

| AREA | M^2 | Lighting (VA) | Power (VA) | Mechanical (VA) | kVA | Amp/ph | |
|---|---|---|---|---|---|---|---|
| Carpark | 2900 | 3 | 5 | 10 | 52 | 75 | |
| **GROUNDFLOOR** | | | | | | | |
| Pool | 200 | 5 | 5 | 150 | 32 | 46 | |
| Fitness | 90 | 5 | 30 | 150 | 17 | 24 | |
| Female Change Room | 50 | 5 | 10 | 15 | 2 | 2 | |
| Male Change room | 40 | 5 | 10 | 15 | 1 | 2 | |
| Plant room | 50 | 6 | 10 | 15 | 2 | 2 | |
| Gallery | 260 | 20 | 10 | 60 | 23 | 34 | |
| Storage 2 | 40 | 3 | 10 | 15 | 1 | 2 | |
| Storage 1 | 40 | 3 | 10 | 15 | 1 | 2 | |
| Kitchen | 80 | 6 | 200 | 300 | 40 | 58 | |
| Female toilet | 30 | 5 | 10 | 15 | 1 | 1 | |
| Male toilet | 20 | 5 | 10 | 15 | 1 | 1 | |
| ACC Toilet | 10 | 5 | 10 | 15 | 0 | 0 | |
| SPA and sitting | 200 | 5 | 50 | 60 | 23 | 33 | |
| Salt room | 100 | 5 | 100 | 60 | 17 | 24 | |
| SPA/Hamam/showers | 60 | 5 | 150 | 60 | 13 | 19 | |
| lobby | 120 | 5 | 10 | 60 | 9 | 13 | |
| outdoor terrace | 550 | 5 | 10 | 0 | 8 | 12 | |
| Wet room | 20 | 5 | 10 | 30 | 1 | 1 | |
| **LEVEL 1** | | | | | | | |
| Restaurant | 250 | 16 | 10 | 60 | 22 | 31 | |
| Private dining | 100 | 16 | 10 | 60 | 9 | 12 | |
| kitchen | 100 | 5 | 200 | 300 | 51 | 73 | |
| Female and Men toilets | 50 | 5 | 10 | 15 | 2 | 2 | |
| Gallery | 250 | 20 | 10 | 60 | 23 | 32 | |
| Outdoor communal area | 300 | 5 | 10 | 0 | 5 | 6 | |
| lobby | 100 | 5 | 10 | 60 | 8 | 11 | |
| **LEVEL 2** | | | | | | | |
| Corridors | 100 | 5 | 10 | 60 | 8 | 11 | |
| Lobby | 100 | 5 | 10 | 60 | 8 | 11 | |
| Outdoor terrace | 50 | 5 | 10 | 0 | 1 | 1 | |
| **LEVEL 3** | | | | | | | |
| Lobby | 30 | 5 | 10 | 60 | 2 | 3 | |
| **LEVEL 4** | | | | | | | |
| Lobby | 30 | 5 | 10 | 60 | 2 | 3 | |
| Terrace | 400 | 5 | 10 | 0 | 6 | 9 | |
| **TOWNHOUSES** | | | | | | | |
| Townhouses Stage 1 | 20 | | | | 200 | 289 | 10kVA per townhouse |
| Townhouses Stage 2 | 18 | | | | 180 | 260 | 10kVA per townhouse |
| **HOTEL SUITES** | | | | | | | |
| Small Suite | 19 | | | | 57 | 82 | 3kVA per suite |
| Big Suite | 5 | | | | 30 | 43 | 6kVA per suite |
| **HOTEL EV CHARGERS** | | | | | | | |
| 20% of Car Spaces | 17 | | | | 187 | 270 | 11kW |
| **LIFTS** | | | | | | | |
| Passenger Lift | 1 | | | | 15 | 22 | 15KVA/3ph |
| Car Lifts | 2 | | | | 40 | 58 | 20KVA/3ph |
| | | | | | | | |
| | | | | **TOTAL** | 1095 | 1581 | |
| | | | | **30% SPARE CAPACITY FUTURE EXPANSION** | 1424 | 2055 | |
| | | | | | **(KVA)** | **(A)** | |

Assumptions & Clarifications

- GFB calculation is considering gas connection to kitchen appliances in townhouses and suites
- GFB calculation is considering gas powered hot water generation
- GFB calculation is considering gas connection to commercial kitchen
- GFB calculation is considering two car lifts only to serve 1 level from ground to basement
- GFB calculation is considering a passenger lift only for the hotel and exclude goods lift