## **Denman Storage Shed Complex**

## **Environmental Noise Assessment**

S220333RP1 Revision A Wednesday, 18 January 2023

#### **Document Information**

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#### **Revision Table**

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|                 |                  |              |              |               |

## Glossary

| A-weighting                 | A spectrum adaption that is applied to measured noise levels to represent human hearing. A-weighted levels are used as human hearing does not respond equally at all frequencies.   |
|-----------------------------|---|
| Ambient noise               | The total noise in a given situation, inclusive of all noise source contributions in the near and far field.  |
| Characteristic              | Associated with a noise source, means a tonal, impulsive, low frequency or modulating characteristic of the noise that is determined in accordance with the NSW EPA's <i>Noise Policy for Industry</i> to be fundamental to the nature and impact of the noise.   |
| Continuous noise level      | A-weighted noise level of a continuous steady sound that, for the period over which the measurement is taken using fast time weighting, has the same mean square sound pressure as the noise level which varies over time when measured in relation to a noise source and noise-affected premises in accordance with the <i>Noise Policy for Industry</i> . |
| Day                         | As defined in the Noise Policy for Industry between the hours of 7:00 am to 6:00 pm   |
| dB                          | Decibel—a unit of measurement used to express sound level. It is based on a logarithmic scale which means a sound that is 3 dB higher has twice as much energy. We typically perceive a 10 dB increase in sound as a doubling of loudness.  |
| dB(A)                       | Units of the A-weighted sound level.  |
| Evening                     | As defined in the Noise Policy for Industry between the hours of 6:00 pm to 10:00 pm  |
| Frequency (Hz)              | The number of times a vibrating object oscillates (moves back and forth) in one second. Fast movements produce high frequency sound (high pitch/tone), but slow movements mean the frequency (pitch/tone) is low. 1 Hz is equal to 1 cycle per second.  |
| L <sub>A1</sub>             | A-weighted energy noise level exceeded for 1% of the 15 minute interval.  |
| L <sub>A10</sub>            | A-weighted energy noise level exceeded for 10% of the 15 minute interval. Commonly referred to the average maximum noise level.   |
| L <sub>A90</sub>            | A-weighted energy noise level exceeded for 90% of time (background level). The average minimum background sound level (in the absence of the source under consideration)  |
| L <sub>Aeq</sub>            | Equivalent Noise Level— A-weighted energy averaged noise level over the measurement time.   |
| L <sub>Aeq</sub> , (15 min) | A-weighted energy averaged noise level over a 15-minute period. Used in the EPA's <i>Noise Policy for Industry</i> .  |
| Night-time                  | As defined in the Noise Policy for Industry between the hours of 10:00 pm to 7:00 am  |

| Rating Background Level<br>(RBL) | The RBL is the overall single figure background level representing each assessment period (day, evening and night) over the whole monitoring period (as opposed to over each 24-hour period used for the ABL). This is the level used for assessment purposes. It is the median value of: |
|----------------------------------|---|
|                                  | <ul> <li>All the day assessment background levels over the monitoring period for the day;</li> <li>All the evening assessment background levels over the monitoring period for the evening; or</li> </ul>   |
|                                  | All the night assessment background levels over the monitoring period for the night.  |
| Sound Power Level (SWL)          | The sound power level of a noise source is the sound energy emitted by the source. Notated as SWL, sound power levels are typically presented in $dB(A)$ .  |
| Sound Pressure Level (SPL)       | The level of noise, usually expressed as SPL in $dB(A)$ , as measured by a standard sound level meter with a pressure microphone. The sound pressure level in $dB(A)$ gives a close indication of the subjective loudness of the noise.   |

## **Table of Contents**

| 1 | Introc | duction                                      | 2  |
|---|--------|--|----|
| 2 | Propo  | osed development                             | 3  |
|   | 2.1    | Location                                     | 3  |
|   | 2.2    | Operation                                    | 3  |
|   | 2.3    | Noise sources                                | 4  |
| 3 | Existi | ing Acoustic Environment                     | 5  |
|   | 3.1    | Unattended noise monitoring                  | 5  |
|   | 3.2    | Weather conditions                           | 5  |
|   | 3.3    | Unattended noise logging results             | 6  |
| 4 | Noise  | e Criteria                                   | 7  |
|   | 4.1    | NSW EPA Noise Policy for Industry            | 7  |
|   |        | 4.1.1 Project Noise Trigger levels           | 7  |
|   |        | 4.1.2 Project specific noise criteria        | 7  |
|   |        | 4.1.3 Potential for sleep disturbance        | 8  |
|   | 4.2    | NSW Road Noise Policy                        | 8  |
| 5 | Opera  | ational Noise Assessment                     | 10 |
|   | 5.1    | Noise modelling                              | 10 |
|   |        | 5.1.1 Noise assessment methodology           | 10 |
|   |        | 5.1.2 Operational noise scenario and sources | 11 |
|   | 5.2    | Predicted operational noise levels           | 12 |
|   | 5.3    | Sleep disturbance impacts                    | 12 |
|   | 5.4    | Noise from traffic generation                | 13 |
|   | 5.5    | Mechanical services noise                    | 14 |
| 6 | Reco   | mmended Noise Control                        | 15 |
| 7 | Conc   | clusion                                      | 16 |

## 1 Introduction

Resonate Consultants (Resonate) has been engaged to provide an acoustic assessment of the potential noise impacts associated with the proposed development known as Denman Storage Shed Complex to be located at Turner Street, Denman.

This assessment has been prepared for submission with the Development Application (DA) to the Muswellbrook Shire Council and have been assessed against the relevant requirements of the NSW Environmental Protection Authority (EPA) Noise Policy for Industry (NPI) and the NSW Road Noise Policy (RNP).

The noise sources from the proposed development are expected to be from the vehicle movements through the site and use of the proposed car park, there is no mechanical plant or loading dock area proposed for the development. The closest noise sensitive receivers are residential premises located adjacent to the site at the west and north project site boundaries.

The architectural drawings by Conybeare Morrison International (Revision H, 1 November 2022) have been used for this assessment and are presented in Appendix A.

## 2 Proposed development

## 2.1 Location

The proposed development is to be located at the corner of Bell Street and Turner Street (Lot 42 in DP771226) adjacent to the railway line in Denman, NSW and within the Muswellbrook Shire Council. The closest noise sensitive receivers are residences located to the immediate west and north of the subject site. The subject site in context along with the sensitive receivers and noise monitoring location are presented in Figure 1.



Figure 1 – Site map presenting the subject site, sensitive receivers and noise monitor location

## 2.2 Operation

The storage facility is proposed to operate 24 hours a day, 7 days a week and offer 24 hour access to customers.

There are two access points to the site, one entry and exit point on Bell Street at the southern boundary and one entry point from Turner Street at the northern boundary. There are 11 formal carparking spaces (inclusive of one accessible parking space) located along the western boundary of the site.

The site will have one-way circulation on the outer aisles and a two-way through the centre of the site. The aisle widths and corners have been designed to allow for cars and non-articulated trucks to travel through the site.

For further details refer to drawings presented in Appendix A.

## 2.3 Noise sources

Noise sources associated with the operations of the proposed storage facility are as follows:

- Private vehicles including car and trucks travelling through the site
- Private vehicles using the car park.
- Traffic generation on public roads.

## **3 Existing Acoustic Environment**

## 3.1 Unattended noise monitoring

In order to characterise the existing acoustical environment of the nearest residential receiver, unattended noise monitoring was undertaken between the period 30 June and 19 July 2022 at the backyard of the residence located at 2 Bell Street, Denman (shown in Figure 1 above) to determine the background noise level for the surrounding residential receiver locations.

The instrumentation of the unattended noise monitoring comprised of one Rion NL-21 environmental noise logger (serial number: 00451254) fitted with a microphone shield. Field calibration was conducted at the commencement of the conclusion of the logging period and no significant calibration drift was observed (drift in calibration did not exceed  $\pm 0.5$  dB(A)). All instrumentation carried appropriate and current NATA (or manufacturer) calibration certificates.

The logger determines  $L_{A1}$ ,  $L_{A10}$ ,  $L_{A90}$  and  $L_{Aeq}$  levels of the ambient noise.  $L_{A1}$ ,  $L_{A10}$ ,  $L_{A90}$  are the levels exceeded for 1%, 10% and 90% of the sample time respectively (see acoustic terminology definitions in glossary). The graphs in Appendix B show measured values of  $L_{A1}$ ,  $L_{A10}$ ,  $L_{A90}$  and  $L_{Aeq}$  for each 15-minute monitoring period.

## 3.2 Weather conditions

It is a requirement that noise data is captured during periods of favourable weather conditions avoiding adverse impacts of wind and rain on background noise levels. To assess weather conditions for the measurement period, half-hourly weather data was obtained from the Bureau of Meteorology (BOM) weather observation station ID 061363 at Scone Airport.

Noise data has been excluded from the processed results if:

- Rain was observed during a measurement period, and/or
- Wind speed exceeded 5 m/s (18 km/h) at the measurement height of 1.5 m above ground. Wind data obtained from the BOM is presented as the value at 10 m above ground.

The BOM wind speed data obtained for this report was measured at a height of 10 m above ground level. It is therefore necessary to apply a correction factor in order to estimate the wind speed at the height of the logger (1.5 m).

The methodology to formulate a correction factor has been derived<sup>1</sup>. The correction multiplier for the measured wind speed at 10 m is derived by the following formula:

$$W_{1.5} = W_{10} \times \left(\frac{M_{1.5,cat}}{M_{10,cat}}\right)$$

where:

 $W_{1.5}$  = Wind speed at height of 1.5 m

 $W_{10}$  = Wind speed at height of 10 m

M<sub>1.5,cat</sub> = AS 1170 multiplier for receiver height of 1.5 m and terrain category

W<sub>10,cat</sub> = AS 1170 multiplier for receiver height of 10 m and terrain category

Noise monitoring data that has been excluded due to adverse weather conditions is identified in the overall summary and daily noise monitoring graphs presented in Appendix B.

<sup>&</sup>lt;sup>1</sup> Gowen, T., Karantonis, P. & Rofail, T. (2004), *Converting Bureau of Meteorology wind speed data to local wind speeds at 1.5m above ground level*, Proceedings of ACOUSTICS 2004

## 3.3 Unattended noise logging results

The noise data obtained from the noise logger has been processed in accordance with the procedures contained in the NSW EPA's *Noise Policy for Industry* (NPI) to establish representative noise levels at the monitoring location. A summary of the  $L_{A90}$  and  $L_{Aeq}$  results from the unattended noise monitoring is presented in Table 1.

The background noise levels were determined by taking the arithmetic mean noise level that was exceeded for 90% of the time during the relevant assessment periods for each day, and then taking the median of all the days where monitoring took place for each assessment period as identified in the NPI. This process provides a single figure rating background noise level (RBL) for the day, evening and night periods. These RBLs were used to establish the relevant noise criteria in accordance with the NPI for each assessment period.

| Descriptor                  | Period                       |                               |                             |
|-----------------------------|------------------------------|-------------------------------|-----------------------------|
|                             | Daytime<br>7:00 am – 6:00 pm | Evening<br>6:00 pm – 10:00 pm | Night<br>10:00 pm – 7:00 am |
| L <sub>A90</sub> , dB (RBL) | 27                           | 26                            | 24                          |
| L <sub>Aeq</sub> , dB       | 50                           | 46                            | 44                          |

#### Table 1 Unattended noise monitoring results summary (2 Bell Street, Denman)

## 4 Noise Criteria

The operational noise assessments presented in this report have been conducted with due regard to and in general accordance with the following guidelines and policies.

## 4.1 NSW EPA Noise Policy for Industry

Mechanical services and operational noise impacts associated with proposed development will be assessed against the NSW Environmental Protection Authority (EPA) Noise Policy for Industry (NPI). The NPI sets out the EPA's requirements for the assessment and management of noise from industry in NSW.

The NPI is designed for large and complex industrial noise sources and outlines processes designed to strike a feasible and reasonable balance between the operations of industrial activities and the protection of the community from noise levels that may be intrusive or unpleasant.

The NPI measurement and evaluation methodology to quantify background noise levels has been adopted for this assessment.

## 4.1.1 Project Noise Trigger levels

The NPI describes 'Project noise trigger levels' which indicate the noise level at which feasible and reasonable noise management measures should be considered. Two forms of noise criteria are provided – one to account for 'intrusive' noise impacts and one to protect the 'amenity' of particular land uses.

- The intrusiveness of an industrial noise source is generally considered acceptable if the L<sub>Aeq</sub> noise level of the source, measured over a period of 15 minutes, does not exceed the background noise level by more than 5 dB. Intrusive noise levels are only applied to residential receivers. For other receiver types, only the amenity levels apply.
- To limit continual increases in noise levels from the use of the intrusiveness level alone, the ambient noise level within an area from all industrial sources should remain below the recommended amenity levels specified in the NPI for that particular land use.

#### 4.1.2 Project specific noise criteria

The criteria for operational noise generated by the facility are provided in Table 2. The Project Noise Trigger Level (PNTL) is the lowest value of the intrusiveness or amenity noise level for each period and are shown as bold values within Table 2. For this assessment, the area surrounding the proposal is considered to be 'rural'.

| Receiver               | Assessment<br>period | Noise level – dB(A)          |                      |                                      |  |
|------------------------|----------------------|------------------------------|----------------------|--------------------------------------|--|
|                        |                      | Recommended<br>amenity noise | Rating<br>background | d Project noise trigger level (PNTL) |  |
|                        |                      | IEVEI Leq (period)           | (RBL) <sup>(1)</sup> | Intrusiveness<br>noise level         | Project amenity<br>noise level <sup>(2)(3)</sup> |
|                        | Daytime              | 50                           | 35                   | 40                                   | 48   |
| Surrounding residences | Evening              | 45                           | 30                   | 35                                   | 43   |
|                        | Night                | 40                           | 30                   | 35                                   | 38   |

|             |       |          |        | •.      |       |
|-------------|-------|----------|--------|---------|-------|
| Table 2 NPI | noise | criteria | (rural | amenity | area) |

(1)

Actual RBLs are below assumed NPI minimums, therefore the NPI minimum RBLs have been adopted.

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- (2) The project amenity noise level is the Rural amenity noise level minus 5 dB(A) plus 3 dB(A) to convert from a period level to a 15-minute level.
- (3) The PNTL is the lowest of the intrusiveness and project amenity noise levels within each assessment period and has been bolded.

### 4.1.3 Potential for sleep disturbance

In addition to the above, the NPI provides an assessment procedure for assessing the potential for sleep disturbances from maximum noise level events generated at the development during the night time period (i.e. between 10:00 pm and 7:00 am). The term "sleep disturbance" is considered to be both awakenings and disturbance to sleep stages.

As recommended in Section 2.5 of the NPI, to assess the potential for sleep disturbances two-stages are recommended to be carried out:

- Step 1 Where the subject development/premises night-time noise levels at a residential location do not exceed the following then no mitigation is required to prevent sleep disturbances from the project:
  - L<sub>Aeq,15min</sub> 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater, and/or
  - L<sub>AFmax</sub> 52 dB(A) or the prevailing RBL plus 15 dB, whichever is greater,

From the above the average/maximum noise trigger levels have been determined for the Project and are presented below in Table 3. If the noise trigger levels are exceeded, then 'Step 2' which involves a detailed maximum noise level event assessment would be required.

#### Table 3 Sleep disturbance noise trigger levels

| eceiver Rating background |  | Sleep disturbance noise trigger levels, dB(A) |                   |  |
|---------------------------|--|---|-------------------|--|
|                           | L <sub>90, (period)</sub> dB(A) <sup>(1)</sup> | L <sub>eq</sub> 15 minute                     | L <sub>Fmax</sub> |  |
| Surrounding residences    | 30   | 40  | 52                |  |

(1) Actual RBLs are below assumed NPI minimums, therefore the NPI minimum RBLs have been adopted.

- Step 2 A detailed maximum noise level event assessment is to be undertaken when the average/maximum noise trigger levels are exceeded and should cover the maximum noise level, the extent the maximum noise levels exceeds the RBL, and the number of occurrences during the night time period. As is recommended in the explanatory notes of the NPI, this more detailed sleep disturbance assessment is conducted using the current sleep disturbance research detailed in the EPA Road Noise Policy (RNP). The RNP sleep disturbance research concludes that:
  - Maximum internal noise levels below 50-55dB(A) are unlikely to awaken people from sleep
  - One to two noise events per night with maximum internal noise levels of 60-75dB(A) are not likely to affect health and wellbeing significantly.

## 4.2 NSW Road Noise Policy

The NSW Road Noise Policy (RNP) provides guidance, criteria and procedures for assessing noise impacts from existing, new and redeveloped roads and traffic generating developments. The assessment of road traffic noise impacts on public roads is assessed under the RNP.

The RNP details a number of noise assessment criteria for various road categories and land uses. Road access to the facility will be via Bell Street and Turner Street, both roads would be classified as a local road by the RNP.

The Application Notes for the RNP states that:

'For existing residences and other sensitive land uses affected by additional traffic on existing roads generated by land use developments, any increase in the total traffic noise level as a result of the development should be limited to 2 dB above that of the noise level without the development. This limit applies wherever the noise level without the development is within 2 dB of, or exceeds, the relevant day or night noise assessment criterion.'

If road traffic noise during the Project operation is within 2 dB(A) of current levels, then the objectives of the RNP are met and no specific mitigation measures are required. Where the road traffic noise during the Project operation levels exceeds 2 dB(A) of current levels than the consideration should be given to the actual noise levels associated with the Projects operation road traffic and whether or not these levels comply with the RNP criteria as presented in Table 4.

#### Table 4 RNP residential road traffic noise criteria

| Road Category | Type of Project/Land Use  | Assessment Criteria, dB(A)                            |   |
|---------------|---|---|---|
|               |   | Day<br>7:00 am – 10:00 pm                             | Night<br>10:00 pm – 7:00 am                           |
| Local roads   | Existing residences affected by<br>additional traffic on existing local<br>roads generated by land use<br>developments. | L <sub>Aeq, (1 hour)</sub> 55 (external) <sup>1</sup> | L <sub>Aeq, (1 hour)</sub> 50 (external) <sup>1</sup> |

The assessment criteria for external noise levels apply at 1 metre from the facade of any affected residential receiver.

## **5** Operational Noise Assessment

Activities carried out at the Project may generate noise impacts at nearby sensitive receivers. This section details the assessment of the operational impacts from the new storage facility. Operational noise impacts predicted at nearest residential receivers have been assessed against the adopted noise criteria set out in Section 4.

## 5.1 Noise modelling

#### 5.1.1 Noise assessment methodology

Potential operational noise impacts from the maintenance facility at surrounding receptors have been modelled using the CONCAWE algorithm within SoundPLAN v8.2. This method is commonly used and accepted by regulatory agencies in NSW.

Terrain has been based on 2 metres LIDAR scans of the area sourced from NSW Spatial Services. Noise sources and receivers have been based on aerial imagery sourced from Nearmap. Building footprints and heights have been based on a combination of aerial imagery, street level photography and site inspections. The parameters adopted in the noise modelling are presented in Table 5 below.

| Parameter                   | Input data   |
|-----------------------------|--|
| Buildings                   | <ul> <li>Footprints taken from aerial photography</li> <li>Typical building heights have been estimated from Google Street-view and site inspections as follows: per floor 3 m, pitched roof 3 metre</li> <li>Number of floors taken from Google Street-view and site inspections</li> <li>Developments existing and proposed buildings have been incorporated from development plans</li> </ul> |
| Terrain                     | 2 metre ground contours from NSW Spatial Services.   |
| Noise wall                  | Proposed 2.4 m fence (as discussed in Section 6) located at the western and northern boundary of the project site has been included in the noise model.  |
| Ground surface / absorption | Ground coverage in the study area has been assumed to be hard (0 ground absorption) in the Storage Facility and soft (0.6 ground absorption) in the off-site environment.  |
| Receivers                   | Surrounding buildings have been digitised into the model. Ground floor receivers have been placed at an elevation of 1.5 m and first floor receivers at an elevation of 4.5 m.   |
| Sources                     | <ul> <li>Noise emission scenarios and sources associated with the storage facility based on the details in Section 5.1.2 and recommendations within Section 6.</li> <li>The buildings within the project site have been digitised into the model.</li> <li>All noise emitting equipment in each operational scenario has been modelled to operate simultaneously.</li> </ul>                     |
| SoundPLAN module            | CONCAWE industrial module  |
| Noise contours              | The noise contours height has been set at 1.5 metres.  |
| Meteorological<br>condition | <ul> <li>Meteorological conditions for all periods.</li> <li>Pasquill Category F</li> <li>Worst case source to receiver distance at 2m/s</li> <li>70% relative humidity</li> <li>20°C temperature</li> </ul>   |

Table 5 Operational noise modelling parameters

Denman Storage Complex - DA acoustic report—Environmental Noise Assessment S220333RP1 Revision A www.resonate-consultants.com

| Parameter  | Input data  |
|------------|---|
|            | 1013 mbar air pressure  |
| Assessment | <ul> <li>The assessment has been broken into two components:</li> <li>L<sub>Aeq</sub> assessment against NPI criteria to consider long term noise sources such as vehicle movements and use of the carpark.</li> <li>L<sub>Amax</sub> assessment to consider potential sleep disturbance impacts associated with short term noise sources from the use of the carpark.</li> </ul> |

### 5.1.2 Operational noise scenario and sources

Operational noise emissions from vehicle movements and the use of the car park expected at the storage facility have been assessed in accordance with the requirements of the NPI for the day (7am - 6pm), evening (6pm - 10pm) and night (10pm - 7am) assessment periods.

The operational noise scenarios and sources presented in Table 6 are based on previous project experience as well as the traffic generation data supplied by PSA consulting's traffic report (Revision: V2, dated 22 April 2021) for the development which was based on the proposed storage facilities size of GFA and a conservative assumption.

The assumed worse case operational noise scenarios for the NPI day, evening and night assessment periods are presented in Table 6 below for a given 15 minute period. The sound power levels for the noise sources were obtained from Resonate's database.

| Activities  | Individual sound power | Duration of activities | Number of activities |                     |                   |  |
|---|------------------------|------------------------|----------------------|---------------------|-------------------|--|
|   | levels, dB(A)          |                        | Day<br>scenario      | Evening<br>scenario | Night<br>scenario |  |
| Box truck (3-4.5 tonne)<br>moving at 10km/hr around<br>the facility | 93                     | 15 minutes             | 1                    | 0                   | 0                 |  |
| Car moving at 10km/hr<br>around the facility                        | 82                     | 15 minutes             | 2                    | 2                   | 1                 |  |
| Car door closing  | 95                     | 1 second               |                      | -                   |                   |  |
| Car engine starting   | 90                     | 1 second               |                      | -                   |                   |  |

#### Table 6 Assumed typical operational scenarios

## 5.2 Predicted operational noise levels

A summary of the predicted noise levels at the surrounding residences during the NPI assessment periods are presented in Table 7.

| Receiver                    | Predicted L <sub>Aeq</sub><br>operational noise<br>level, dB(A) <sup>(1)</sup><br>Day / Evening /<br>Night | Noise criteria, dB(A)<br>Day / Evening /<br>Night | Exceedance, dB(A)<br>Day / Evening /<br>Night | Compliance<br>(Yes/No)<br>Day / Evening /<br>Night |
|-----------------------------|--|---|---|--|
| 2 Bell Street,<br>Denman    | 38 / 29 / 26   | 40 / 35 / 35                                      | -/-/-   | Yes / Yes / Yes                                    |
| 12 Turner Street,<br>Denman | 37 / 29 / 26   | 40 / 35 / 35                                      | -/-/-   | Yes / Yes / Yes                                    |
| 14 Turner Street,<br>Denman | 38 / 27 / 24   | 40 / 35 / 35                                      | -/-/-   | Yes / Yes / Yes                                    |

Table 7 Predicted operational noise levels from the operation of the new development

(1) Predicted noise levels have been rounded off to the nearest 1 dB(A).

Based on the predicted operational noise levels presented in Table 7 the following have been assessed:

- Daytime operational scenario operational noise levels comply with the day PNTL at all surrounding residential receivers.
- Evening operational scenario operational noise levels comply with the evening PNTL at all surrounding residential receivers.
- Night-time operational scenario operational noise levels comply with the night PNTL at all surrounding residential receivers.

## 5.3 Sleep disturbance impacts

The potential for sleep disturbances during the night period (i.e. between 10:00 pm and 7:00 am) from the operational noise level events generated at the development have been assessed in this section. The maximum noise level events from the proposed development are due to the use of the carpark (i.e. car door closing and car engine starting). In accordance with the NPI the relevant predicted noise levels have been first assessed against the average/maximum noise trigger levels to determine whether a detailed maximum noise level event assessment would be required, the results are presented in Table 8.

| Receiver                 | Predicted operational<br>noise level, dB(A) <sup>(1)</sup><br>L <sub>eq, 15 minute</sub> / L <sub>Fmax</sub> | Sleep disturbance noise<br>trigger levels, dB(A)<br>L <sub>eq, 15 minute</sub> / L <sub>Fmax</sub> | Above Screening Level<br>(Yes/No)<br>L <sub>eq, 15 minute</sub> / L <sub>Fmax</sub> |
|--------------------------|--|--|---|
| 2 Bell Street, Denman    | 26 / 60  | 40 / 52  | No / Yes  |
| 12 Turner Street, Denman | 26 / 56  | 40 / 52  | No / Yes  |
| 14 Turner Street, Denman | 24 / 54  | 40 / 52  | No / Yes  |

Table 8 Sleep disturbance noise trigger levels

Denman Storage Complex - DA acoustic report—Environmental Noise Assessment S220333RP1 Revision A www.resonate-consultants.com 12 of 18

(1) Predicted noise levels have been rounded off to the nearest 1 dB(A)

As shown above in Table 8 the maximum noise levels are predicted to exceed the screening trigger levels for sleep disturbance at the surrounding residences. The maximum noise levels result from a car engine starting, and a car door being closed loudly within the site. The RNP sleep disturbance research concludes that maximum internal noise levels below 50-55 dB(A) are unlikely to awaken people from sleep. An internal noise level of 50-55dB(A) would typically equate to an external noise level of 60-65 dB(A). The maximum noise level predicted is no more than 60 dB(A, it is also noted that no more than one car is expected to enter the premises per 15 minute period during the night time. Furthermore, noise controls have been recommended in Section 6 to prevent impacts from these noise sources impacting surrounding residence.

## 5.4 Noise from traffic generation

This section assesses noise impacts from the additional traffic due to the operation of the Project. PSA consulting's traffic report (Revision: V2, dated 22 April 2021) states the roads surrounding the site provide access to residential lots and recreation lots. Turner Street extends from Kenilworth Street in the north to the northern boundary of the site, and provides access to 8 residential houses. Bell Street in the south meets at a corner on the southern boundary of the site and provides access to residential, recreation and sporting land uses.

The traffic report states that the peak hour (AM & PM) traffic volume for the development will be up to 11 vehicle trips and that this figure has been based on the proposed storage facilities size of Gross Floor Area (GFA). It also notes that there are two entries to the site, one at Bell Street (South) and Turner Street (North) and vehicles are expected to be split equally between these entrances, also all vehicles will exit at the sole exit from Bell Street. However as stated in the recommendations within Section 6, trucks will need to be restricted from entering at Bell Street and should only enter from Turner Street then exit from Bell Street.

The worst case existing AM/PM peak vehicle trips have been assumed to be the following for both Turner Street and Bell Street:

• AM/PM Peak – 10 vehicle trips, which includes 2 heavy vehicle trips.

The anticipated noise level contribution of operational traffic on local roads has been assessed in Table 9 using the TfNSW Road Traffic Noise Estimator. Assessment has been based on assumed worse case existing traffic volumes and predicted worse case traffic volumes from the traffic report.

| Location      | Vehicle type   |          | AM/PM      | /I Peak     |   |
|---------------|----------------|----------|------------|-------------|---|
|               |                | Existing | Additional | Total AM/PM | Increase in<br>total noise<br>level – dB(A) |
| Turner Street | Light vehicles | 8        | +10        | 18          |   |
| (North)       | Heavy Vehicles | 2        | +1         | 3           | 2   |
|               | Total          | +10      | +11        | 21          |   |
| Bell Street   | Light vehicles | 8        | +10        | 18          |   |
| (South)       | Heavy Vehicles | 2        | +1         | 3           | 2   |
|               | Total          | +10      | +11        | 21          |   |

#### Table 9 Operational road traffic noise assessment

The table above presents the increase in noise levels due to additional vehicles on Bell Street and Turner Street from the operation of the Project. The increase in noise levels is predicted to be 2 dB(A) which is within the not more than 2 dB(A) increase allowance of the RNP and therefore no further assessment or mitigation measures are required.

## 5.5 Mechanical services noise

At this stage there is no mechanical services and external plant for the proposed development. If at a later stage of the development process some mechanical services or external plant is introduced, it is recommended that mechanical plant should be located to take advantage of acoustic shielding provided by the bulk of the built form and located away from the surrounding residences.

Mechanical services shall be designed such that they are compliant with the noise criteria as per the requirements of the NPI provided in Section 4.1.

## 6 Recommended Noise Control

Based on our assessment of the predicted exceedances at the nearby residential receivers the following reasonable and feasible noise management and control measures are recommended to be implemented to the operation of the storage facility:

• To mitigate noise to surrounding residences a 2.4 m high acoustic fence is recommended in the location shown in Figure 2 below. The fence should be constructed from a solid material with no gaps, for example profile steel sheet, or alternative material with a minimum surface mass of 8 kg/m<sup>2</sup>.



Figure 2 – Proposed location of acoustic fence

- Trucks larger than box trucks (3-4.5 tonne) are to be restricted from accessing the site.
- Permitted trucks are only to access the premises during the day period (i.e. 7am to 6pm).
- Permitted trucks would only enter the premises from Turner Street and exit from Bell Street. They may also travel along the middle internal road of the site but are restricted from access the western boundary of the site or entering from Bell Street.
- Traffic speed of 10km/h should be signposted within the facility. Expect all drivers to comply with the speed limit and to implement responsible driving within the facility to minimise noise associated with unnecessary acceleration and braking within the facility.
- Vehicles are not to be left idling when within the premises.
- Install signposts at the entrances and within the parking bays advising drivers to respect the neighbours and keep noise to a minimum within the premises this will include the advice to not leave vehicles idling and careful opening and closing of storage shed and vehicle doors.
- A mechanism for nearby receivers should be provided such that noise related issues can be fed back to the operator and the plan of management updated if required.

Denman Storage Complex - DA acoustic report—Environmental Noise Assessment S220333RP1 Revision A www.resonate-consultants.com 15 of 18

## 7 Conclusion

Resonate Consultants has conducted an environmental noise assessment of the proposed Denman Storage Shed Complex at Turner Street, Denman.

This assessment has demonstrated that the noise emissions from the typical operation of the development are predicted to comply with the relevant environmental noise criteria at all residences in the vicinity of the site provided that the recommendations in Section 6 are followed.

On this basis the proposed storage facility will be able to operate within the relevant noise provisions in the NSW EPA Noise Policy for Industry and the NSW Road Noise Policy.



## Appendix A – Denman Storage Shed Complex Drawings by CM<sup>+</sup>

Denman Storage Complex - DA acoustic report—Environmental Noise Assessment S220333RP1 Revision A www.resonate-consultants.com 17 of 18

# DENMAN STORAGE SHED COMPLEX

DA DOCUMENTATION - NOVEMBER 2022 FOR MUSWELLBROOK SHIRE COUNCIL



# **NOT FOR CONSTRUCTION**

Document Notes Verify all dimensions on site before commencing work. Report all discrepancies to the Architect Prior to construction. Use figured dimensions in preference to scaled dimensions. Drawings made to larger scales and those showing particular parts of the works take precedence over drawings made to smaller scales or for general purposes. All work is to conform to relevant Australian Standards and Codes together with all Authorities' requirements and Regulations. 
 REV
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 DESCRIPTION

 A
 31/03/21
 ISSUED FOR INFORMATION

 B
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 ISSUED FOR COORDINATION

Document Notes

 B
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CLIENT:



ARCHITECT:

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0 SCALE 1:500 20 SCALE: 1:500 @ A1

PROJECT: 20034

DENMAN STORAGE SHED COMPLEX TURNER STREET, DENMAN, NSW

DRAWING TITLE: COVER



#### NOTES

#### GENERAL

ALL WORK SHALL BE CARRIED OUT USING NEW MATERIALS TO A FIRST CLASS QUALITY OF WORKMANSHIP AND IN ACCORDANCE WITH ALL RELEVANT REGULATIONS, BCA REQUIREMENTS, SAA CODES AND LOCAL AUTHORITY REQUIREMENTS.

#### DEMOLITION

COMPLETE ALL DEMOLITION REQUIRED TO COMPLETE THE WORKS. DEMOLITION TO BE CARRIED OUT AND REFUSE REMOVED WITH MINIMUM DISTURBANCE TO THE EXISTING DWELLING AND ADJOINING DWELLINGS. MAKE GOOD DISTURBED SURFACES AND STRUCTURE BEFORE COMMENCING NEW WORK. DEMOLITION TO BE CARRIED OUT IN ACCORDANCE WITH AS2601-2001.

#### **CARPENTRY & JOINERY**

ALL TIMBERS SHALL BE BEST QUALITY OF THEIR RESPECTIVE SELECTION AND GRADE CONFORMING WITH AS 1684 LIGHT TIMBER FRAMING CODE SPECIFICATION REQUIREMENTS. STRUCTURAL TIMBER SHALL BE MINIMUM F7 GRADE. FRAMING SHOWN IS INDICATIVE ONLY.

#### DAMP PROOFING, FLASHING & WATERPROOFING INSTALL FLASHINGS, DRIPS, STORM MOLDS, WEATHER SEALS, CAULKING, POINTING, OR THE LIKE SO THAT WATER IS PREVENTED FROM ENTERING THE BUILDING. ALL WATERPROOFING TO BE IN ACCORDANCE WITH AS 3740. ALL WET AREAS TO BE EXAMINED AND CERTIFIED BY AN ACCREDITED

## SMOKE ALARMS

CERTIFIER.

SMOKE ALARMS TO BE PROVIDED IN ACCORDANCE WITH AS 3786-1993 AND PART 3.7.2 OF THE BCA

#### PLUMBING & DRAINAGE WORK SHALL BE CARRIED OUT BY A LICENSED CONTRACTOR IN

ACCORDANCE WITH AUTHORITIES HAVING JURISDICTION OVER THE WORKS. CONNECT NEW BATHROOMS TO EXISTING SEWERAGE. CONNECT ALL NEW STORMWATER DRAIN POINTS TO EXISTING STORMWATER DRAINAGE. CONNECT ROOF CATCHMENT TO NEW RAINWATER TANK AND CONNECT TO PLUMBING TO WATER GARDENS; REFER HYDRAULIC DRAWINGS. TOILET CISTERNS TO BE WATER EFFICIENT DUAL FLUSH SYSTEMS AND PLUMBING FIXTURES TO BE WATER EFFICIENT TRIPLE A RATED. ALL NEW HOT WATER SERVICE PIPES TO BCA AND AS3500.

## BRICKWORK

ALL BRICKWORK TO BE PERFECTLY LEVEL, STRAIGHT & PLUMB & PERFECTLY BONDED. BUILD IN ALL DPC'S, ARCH BARS, WALL TIES & THE LIKE. ALL WORK TO BE CARRIED OUT IN A SKILLFUL & WORKMANLIKE MANNER IN ACCORDANCE WITH BEST TRADE PRACTICE, & AS PER AUSTRALIAN STANDARDS.

#### STEELWORK

ALL STEELWORK TO BE IN ACCORDANCE WITH STRUCTURAL ENGINEERS PLANS & SPECIFICATION.

#### ELECTRICAL

WORK SHALL BE CARRIED OUT BY A LICENSED CONTRACTOR IN ACCORDANCE WITH AUTHORITIES HAVING JURISDICTION OVER THE WORKS. SMOKE ALARMS ARE TO BE INSTALLED TO COMPLY WITH AS3786

#### PLASTERING & RENDERING

13MM STANDARD GRADE PLASTERBOARD TO ALL STUD WALLS, FIXED IN ACCORDANCE WITH MANUFACTURES INSTRUCTIONS. VILLABOARD TO WET AREAS.

#### BOUNDARIES

NO PORTION OF THE PROPOSED ALTERATIONS AND ADDITIONS, INCLUDING THE FOOTINGS AND ROOF EAVES, IS TO ENCROACH BEYOND THE BOUNDARIES OF THE SUBJECT PROPERTY.

#### STRUCTURE

ALL STRUCTURAL WORKS TO PRACTISING STRUCTURAL ENGINEER'S DETAILS AND SPECIFICATIONS. REFER ALL STRUCTURAL ENGINEER'S DETAILS PRIOR TO CONSTRUCTION.

#### EXISTING STRUCTURE WHERE POSSIBLE EXISTING MATERIALS ARE TO BE RE-USED FOR

THE PURPOSE OF NEW CONSTRUCTION AND WASTE MINIMISED GENERALLY.

## WINDOWS & DOORS

ALL EXTERNAL DOORS AND WINDOWS ARE TO INCLUDE WEATHER-STRIPPING TO MANUFACTURER'S RECOMMENDATIONS AND/OR SPECIFICATION.

#### TERMITE CONTROL

ALL TERMITE CONTROL TO BE PROVIDED TO COMPLY WITH BCA AND COUNCIL REQUIREMENTS.

#### BASIX COMMENTS LIGHT FITTINGS:

A MINIMUM OF 40% OF NEW OR ALTERED LIGHT FITTINGS ARE TO BE FITTED WITH FLUORESCENT, COMPACT FLUORESCENT OR LED LAMPS.

#### WATER FIXTURES:

NEW OR ALTERED SHOWER HEADS MUST HAVE A FLOW RATE OF NO GREATER THAN 9L/ MINUTE OR A 3 STAR WATER RATING. NEW OR ALTERED TOILETS MUST HAVE A FLOW RATE OF NO GREATER THAN 4L/ AVERAGE FLUSH OR A MINIMUM 3 STAR WATER RATING.NEW OR ALTERED TAPS MUST HAVE A FLOW RATE OF NO GREATER THAN 9L/ MINUTE OR A MINIMUM 3 STAR WATER RATING

#### THERMAL INSULATION: N/A GLAZING:

STANDARD ALUMINIUM, SINGLE CLEAR, (U-VALUE: 7.63, SHGC: 0.75)AND;STANDARD ALUMINIUM, SINGLE PYROLYTIC LOW E, (U-VALUE: 5.7, SHGC: 0.47)AND;IMPROVED ALUMINIUM, TONED/AIR GAP/ CLEAR, (OR U-VALUE: 4.09, SHGC: 0.47)

#### SKYLIGHTS: N/A

#### JOINERY NOTES

TYPICALLY ALL INTERNAL CARCASSES & SHELVES TO BE 18mm HMR BOARD WITH WHITE MELAMINE FINISH. ROBE HANGING RAILS TO BE PROPRIETARY 30mm DIAMETER CHROME PLATED TUBULAR RAIL WITH PROPRIETARY FIXING TO ROBE CARCAS.ALL JOINERY TO BE SITE MEASURED AND CUSTOM BUILT TO SUIT EXACT DIMENSIONS.ALL JOINERY DOORS TO BE 18mm MDF WITH SELECTED FINISH APPIED TO ALL FACES DOOR HARDWARE: MADINOZ STAINLESS STEEL D PULL HANDLES (MDZ100F).

#### ABBREVIATIONS

AG ACCESS GRATE AC AIR CONDITIONING DRAWING LIST

DA0000

DA0001

DA0101

DA1001

DA1011

DA2001

DA6001

DA6101

DA6201

DA7001

DA9001

DA9002

DA9003

DEVELOPMENT TABLE

TYPE OF CONSTRUCTION

SITE DEVELOPMENT AREA

CLASSIFICATION

RISE IN STOREYS

LANDSCAPE AREA

BUILDNG AREA

FSR

DRAWING NO. DRAWING NAME

COVER

DRAWING LIST AND NOTES

ELEVATIONS AND SECTIONS

PLAN - GROUND LEVEL

SCHEDULE - FINISHES

SCHEDULE - FIXTURES

SCHEDULE - SIGNAGE

PERSPECTIVE - SHEET 1

PERSPECTIVE - SHEET 2

PERSPECTIVE - SHEET 3

MATERIALS BOARD

PLAN - ROOF LEVEL

- AL ALUMINIUM AFFL ABOVE FINISHED FLOOR LEVEL
- ADJ ADJUSTABLE SHELF AW ARTWORK
- AHD AUSTRALIAN HEIGHT DATUM AS AUSTRALIAN STANDARDS
- BSN BASIN BBQ BARBECUE
- BTH BATH BW BASIN/BATH WASTE
- BID BIDET BIN BIN

CH

- BDY BOUNDARY BOTTLE TRAP BT
- BOX GUTTER BG BULLETIN BOARD BB
- CONCEALED HINGE CPT CARPET CR CEMENT RENDER
- CERAMIC TILE CT
- CEILING FAN CF COS CHECK ON SITE
- CIS CISTERN CFC COMPRESSED FIBRE CEMENT CONCRETE
- CHIMNEY COWL
- CONCRETE PAVER CP CJ CONTROL JOINT CTP COOKTOP
- CPD CUPBOARD DW DISHWASHER
- DIV DIVERTOR DOOR
- D DOOR STOP DS
- DOWN PIPE DP DWR DRAWER
- DG DRIP GROOVE EDGE PULL EP
- EX EXISTING EAVES GUTTER EG
- FACE BRICKWORK FB FCL FINISHED CEILING LEVEL
- FINISHED FLOOR LEVEL FFL FSL FINISHED STRUCTURE LEVEL
- FP FIREPLACE FS FIXED SHELF
- FW FLOOR WASTE FLB FLUSH BUTTON
- FPL FLUSH PULL
- FRAMELESS GLASS FG FR FRIDGE
- GATE G GM GAS METER
- GRATED DRAIN GD GR GRILLE
- HANDLE н ROBE HOOK ΗK
- HIT + MISS BRICKWORK HM HANDRAIL HR
- HWS HOT WATER SYSTEM
- IM ICE MAKER JOINERY FINISH
- JOINERY TO DETAIL JN LIGHT
- LVR DOOR LEVER MW MICROWAVE OVEN
- MIRROR MR MIX MIXER
- MS METAL SHEET NEW Ν
- OF OVERFLOW OUTLET OSD ON SITE DETENTION
- OV OVEN PFT PAINT FINISH TYPE
- PIT STORMWATER PIT PB PEBBLE BALLAST
- PBD PLASTERBOARD PHOTO-VOLTAIC PANEL ΡV
- PUSH CATCH
- DOOR PULL PAN TOILET PAN
- ROOF COWL RC RANGEHOOD
- REDUCED LEVEL RI RWO ROOF WATER OUTLET
- SJ SAWN JOINT
- SB SKIMMER BOX SEW SEWER DRAINAGE PIPE
- SIM SIMILAR
- SNK SINK SH SHOWER HEAD
- SK SKYLIGHT SPH SOLAR POOL HEATING
- SPT SPOUT
- SS STAINLESS STEEL STEEL COLUMN SC
- STONE ST STM STEAMER
- STORMWATER SW SHS SQUARE HOLLOW SECTION
- TELEVISION ΤV TCF TENNIS COURT FENCE
- TCS TENNIS COURT SURFACE TIMBER
- TB TIMBER CLADDING
- TIMBER DECKING TIMBER FLOOR TIMBER SHINGLES
- TBH TOILET BRUSH HOLDER

TVM TELEVISION MOUNT

VILLABOARD

WATER CLOSET

VENT PIPE

WINDOW

WM WATER METER ZIP ZIP HEATER

TPZ

TUB TUB

TYP TYPICAL

TT

VB

VP

WC

W

TPH TOILET PAPER HOLDER TONGUE AND GROOVE TIMBER TOWEL RAIL

TREE PROTECTION ZONE

VEHICLE TURNTABLE

UNO UNLESS NOTED OTHERWISE

# REVISION EXISTING AND DEMOLITION - PLAN - GROUND LEVEL

7B (STORAGE UNITS) TYPE C (LEAST FIRE RESISTANT)

ONE (1)

6,432 SQM

1,994 SQM

943 SQM

0.31



CLIENT:



ARCHITECT:



## PROJECT: 20034

DENMAN STORAGE SHED COMPLEX

DRAWING TITLE:

TURNER STREET, DENMAN, NSW





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4 TYPICAL LONG ELEVATION 1:200



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| FINISHES SCHEDULE |                     |  |                      |                           |                            |                     |
|-------------------|---------------------|--|----------------------|---------------------------|----------------------------|---------------------|
| ELEMENT CODE      | ELEMENT             | DESCIPTION   | SUPPLIER             | MODEL/PRODUCT             | COLOUR/CODE                | FINISH              |
| EXTERNAL FINISHES |                     |  |                      |                           |                            |                     |
| -                 | PALISADE FENCE      | P AND C FENCING PALISADE FENCING.  | P AND C FENCING      | PALISADE FENCING          | DULUX COLORBOND MONUMENT   | MATT                |
|                   |                     | HORIZONTAL STEEL PAILS AND FIXED TO STRUCTURAL GRADE POSTS.                                |                      |                           | 029                        |                     |
|                   |                     | HOT DIPPED GALVANIZED STEEL WITH POWDER COATED FINISH.                                     |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| •                 | COLORBOND FENCE     | SOLID COLORBOND SHEET FENCE. COLORBOND STEEL SHEET ATTACHED TO HORIZONTAL                  | LYSAGHT              | CUSTOM ORB                | COLORBOND MONUMENT         | MATT                |
|                   |                     | STEEL RAILS AND FIXED TO STRUCTURAL GRADE POSTS.   |                      | (OR APPROVED EQUIVALENT)  |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| FLOOPS            |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| -                 | CONCRETETEOOR       | P3/R10 SLIP RATING REQUIRED FOR WET AREAS OF PUBLIC BUILDINGS.                             | BICONINACION         | BICONTRACTOR              |                            | WOODTEOAT           |
|                   |                     | AS PER NCC, AS 4586 AND SA HB 198 REQUIREMENTS.  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| WALLS             |                     |  |                      |                           |                            |                     |
| •                 | METAL WALL CLADDING | PRE-FINISHED PROFILED METAL WALL CLADDING.   | LYSAGHT              | CUSTOM ORB                | COLORBOND SHALE GREY       | MATT                |
|                   |                     | LYSAGHT CUSTOM ORB (OR APPROVED EQUIVALENT)  |                      | (OR APPROVED EQUIVALENT)  |                            |                     |
|                   |                     | ORIENTATION: VERTICAL  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| POOF              |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            | ΜΛΤΤ                |
| -                 | ROOF CLADDING       | LYSAGHT KLIP-LOK (OR APPROVED EQUIVALENT)  | LISAGIII             | (OR APPROVED EQUIVALENT)  | COLORDOND SHALL OKET       |                     |
|                   |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| -                 | SOFFIT LINING       | PRE-FINISHED PROFILED METAL SOFFIT LINING.   | LYSAGHT              | CUSTOM ORB                | COLORBOND SHALE GREY       | MATT                |
|                   |                     | LYSAGHT CUSTOM ORB (OR APPROVED EQUIVALENT)  |                      | (OR APPROVED EQUIVALENT)  |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| -                 | FASCIA              | COLORBOND STEEL FASCIA PLATE.  | LYSAGHT              |                           | COLORBOND DEEP OCEAN       | CLASSIC             |
|                   |                     |  |                      | (ON ALL NOVED EQUIVALENT) |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| -                 | DOWNPIPE            | COLORBOND STEEL DOWNPIPE. SIZE AND SPECIFICATION TO HYDRAULIC ENGINEER'S                   | BY CONTRACTOR        | BY CONTRACTOR             | COLORBOND DEEP OCEAN       | CLASSIC             |
|                   |                     | DETAIL.  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
|                   |                     | GALVANISED STEEL COLUMN SIZE AND SPECIFICATION TO STRUCTURAL ENGINEER'S                    |                      |                           |                            |                     |
| -                 |                     | DETAIL.  | BIOONINAOTOK         | BICONTRACTOR              | OCEAN C24                  | DOLOX WEATHERMAAN   |
|                   |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| 00000             |                     |  |                      |                           |                            |                     |
| DOORS             |                     |  |                      |                           |                            |                     |
| -                 | DOOR                | ALUMINIUM FRAMED SOLID CORE TIMBER LEAF WITH PAINT GRADE PLY FACING.                       | BY CONTRACTOR        | BY CONTRACTOR             | DEEP OCEAN C24             | DULUX AQUANAMEL SEI |
|                   |                     |  |                      |                           | LEAF: DULUX COLORBOND DEEP |                     |
|                   |                     |  |                      |                           | OCEAN C24                  |                     |
|                   |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| -                 | ROLLER SHUTTER      | PRE-FINISHED STEEL SECURITY ROLLER DOOR.   | ROLLASHIELD SHUTTERS |                           | DULUX COLORBOND DEEP       | DULUX AQUANAMEL SE  |
|                   |                     |  |                      | (OR APPROVED EQUIVALENT)  | OCEAN C24                  |                     |
|                   |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| INTERNAL FINISHES |                     |  |                      |                           |                            |                     |
| FLOORS            |                     |  |                      |                           |                            |                     |
| -                 | CONCRETE FLOOR      | CONCRETE FLOOR SLAB, WOOD FLOAT FINISH R13 SLIP RESISTANCE                                 | BY CONTRACTOR        | BY CONTRACTOR             |                            | WOOD FLOAT          |
|                   |                     | P3/R10 SLIP RATING REQUIRED FOR WET AREAS OF PUBLIC BUILDINGS.                             |                      |                           |                            |                     |
|                   |                     | AS PER NCC, AS 4586 AND SA HB 198 REQUIREMENTS.  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
| WALLS             |                     |  |                      |                           |                            |                     |
| -                 | METAL WALL CLADDING | PRE-FINISHED PROFILED METAL SOFFIT LINING.<br>LYSAGHT CUSTOM ORB (OR APPROVED FOLIIVALENT) | LYSAGHT              | CUSTOM ORB                | COLORBOND SHALE GREY       | MATT                |
|                   |                     | ORIENTATION: VERTICAL  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
|                   |                     |  |                      |                           |                            |                     |
|                   | 1                   | 1  | 1                    | 1                         |                            | 1                   |



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SHEET NUMBER: DA6001



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## PROJECT: 20034

CLIENT:

ARCHITECT:

DENMAN STORAGE SHED COMPLEX

CONYBEARE MORRISON INTERNATIONAL P\L | ABN 50 055 972 248 T | 61 2 8244 8888 W | www.cmplus.com.au E | mail@cmplus.com.au Bill Morrison NSW ARB No 2447

muswellbrook shire council

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APP

MM AL

REV DATE DESCRIPTION A 15/04/21 ISSUED FOR COORDINATION B 26/04/21 ISSUED FOR COORDINATION

 B
 25/04/21
 ISSUED FOR COORDINATION

 C
 28/07/21
 ISSUED FOR COORDINATION

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 01/09/21
 ISSUED FOR COORDINATION

 E
 09/05/22
 ISSUED FOR COORDINATION

 F
 12/07/22
 ISSUED FOR DA

 G
 01/11/22
 ISSUED FOR DA

TURNER STREET, DENMAN, NSW

DRAWING TITLE: SCHEDULE - FINISHES



| ELEMENT CODE      | ELEMENT   | DESCIPTION   | SUPPLIER                     | MODEL/PRODUCT   | COLOUR/CODE      | FINISH                        |
|-------------------|---|--|------------------------------|---|------------------|-------------------------------|
| EXTERNAL FIXTURES |   |  |                              |   |                  |                               |
| -                 | DOOR HANDLE<br>(ACCESSIBLE WC)                    | DDA COMPLIANT HANDLE - EXTERNAL PLATE WITH INDICATOR & EMERGENCY TURN (RH)   | LOCKWOOD                     | LOCKWOOD 1814/70SC<br>(OR APRROVED EQUIVALENT)  | 1814/70SC        | SATIN STAINLESS STEEI         |
| ROOF              |   |  |                              |   |                  |                               |
| •                 | LEAF GUARD  | GUMLEAF 1200MM COLORBOND METAL CORRUGATED GUTTER GUARD - MONUMENT.<br>GUTTER GUARD WITH A 4MM SIZE HOLE.   | GUMLEAF GUTTER<br>PROTECTION | MONUMENT CORRUGATED<br>(OR APPROVED EQUIVALENT)   | MONUMENT 3041642 | MONUMENT                      |
| -                 | LADDER ACCESS                                     | ANKAME 525 X 525 X 80MM LADDER ACCESS BRACKET  | ANKAME                       | ANKAME LADDER ACCESS  | R LADD1-4        | ALUMINIUM, LINISH FINIS       |
|                   |   |  |                              | (OR APPROVED EQUIVALENT)  |                  |                               |
| -                 | ROOF SAFETY LINE                                  | CLASSIC - SAFETYLINK SURFACE MOUNTED ROOF ANCHOR<br>PRODUCT CODE: HSURF001 - STAINLESS STEEL BASE PLATE  | SAFETYLINK                   | CLASSIC - SAFETYLINK SURFACE<br>MOUNTED ROOF ANCHOR<br>(OR APPROVED EQUIVALENT)                             | HSURF001         | STAINLESS STEEL               |
|                   |   |  |                              |   |                  |                               |
| INTERNAL FIXTURES |   |  |                              |   |                  |                               |
| -                 | ACCESSIBLE TOILET<br>SUITE                        | BRITEX S.S. ACCESSIBLE CENTURION TOILET SUITE. 4* WELS RATING AND WATERMARK<br>CERTIFIED. P TRAP PAN TO HAVE 14MM SAFETY RADIUS FRONT EDGE AND 2 X SIDE<br>ACCESS PANELS, FULLY SHROUDED TO REAR WALL AND DOUBLE-SKINNED CISTERN CASE<br>WITH RAISED BUTTONS. COMPLETE WITH FITTED TOILET SEAT, CODE SVRC-B. AS1428<br>COMPLIANT - PRODUCT CODE PTSDCP | BRITEX                       | ACCESSIBLE TOILET SUITE<br>(OR APPROVED EQUIVALENT)   | PTSDCP           | STAINLESS STEEL               |
| -                 | TOILET SEAT                                       | BRITEX BLACK VANDAL RESISTANT CLOSED FRONT TOILET SEAT - PRODUCT CODE SVRC-B   | BRITEX                       | BLACK VANDAL RESISTANT<br>CLOSED FRONT TOILET SEAT<br>(OR APPROVED EQUIVALENT)                              | SVRC-B           | BLACK                         |
| -                 | GRAB RAIL - SIDE WALL                             | BTR-01-016: S.S. 90° FLUSH MOUNT SIDE WALL & CISTERN GRAB RAIL SET RHS - INCLUDES 300MM RAIL.  | BRITEX                       | S.S. RHS 90° FLUSH MOUNT SIDE<br>WALL & CISTERN GRAB RAIL SET<br>(OR APPROVED EQUIVALENT)                   | BTR-01-016       | GRADE 304 STAINLESS S         |
| -                 | GRAB RAIL - CISTERN                               | BTR-01-016: S.S. 90° FLUSH MOUNT SIDE WALL & CISTERN GRAB RAIL SET RHS - INCLUDES 300MM RAIL.  | BRITEX                       | S.S. RHS 90° FLUSH MOUNT SIDE<br>WALL & CISTERN GRAB RAIL SET<br>(OR APPROVED EQUIVALENT)                   | BTR-01-016       | GRADE 304 STAINLESS S         |
| -                 | TOILET ROLL HOLDER                                | BRITEX S.S. CONTOUR DOUBLE ROLL TOILET PAPER DISPENSER. AS1428 COMPLIANT -<br>PRODUCT CODE BTX-06-060  | BRITEX                       | S.S. CONTOUR DOUBLE ROLL<br>TOILET PAPER DISPENSER<br>(OR APPROVED EQUIVALENT)                              | BTX-06-060       | GRADE 304 STAINLESS S         |
| -                 | SANITARY BIN                                      | ASI JD MACDONALD SURFACE MOUNTED SANITARY WASTE BIN. LID IS DRAWN ONE-PIECE<br>CONSTRUCTION AND IS SECURED TO THE CABINET WITH A HEAVYDUTY 3.5 MM<br>MULTI-STAKED CONCEALED PIANO HINGE. RECEPTACLE BODY IS FORMED SEAMLESS AND<br>HAS A BOWED FACE AND GENTLY RADIUSSED FRONT VERTICLE EDGES. SATIN FINISH WITH<br>A WASTE CAPACITY OF 3.8 L.         | ASI JD MACDONALD             | SURFACE MOUNTED SANITARY<br>WASTE BIN   | 10-20852         | SATIN STAINLESS STEEI         |
| -                 | ACCESSIBLE BASIN                                  | BRITEX S.S. ACCESSIBLE HAND BASIN - 445 X 470 X 380D O/A. SUPPLIED WITH ROLLED<br>SAFETY FASCIA, ACCESS PANEL, MOUNTING BRACKET AND 40MM WASTE OUTLET. AS1428<br>COMPLIANT - PRODUCT CODE HBDA-TW-9103   | BRITEX                       | ACCESSIBLE HAND BASIN<br>(OR APPROVED EQUIVALENT)   | HBDA-TW-9103     | STAINLESS STEEL               |
| -                 | ACCESSIBLE PILLAR TAP                             | BRITEX HOB MOUNTED TIMED FLOW LEVER PILLAR TAP - PRODUCT CODE TW-9103  | BRITEX                       | TIMED FLOW LEVER PILLAR TAP<br>(OR APPROVED EQUIVALENT)   | TW-9103          | CHROME                        |
| -                 | MIRROR  | BRITEX POLISHED S.S. MIRROR 450MM X 1000MM (ACCESSIBLE COMPLIANT) - PRODUCT<br>CODE BTX-07-032   | BRITEX                       | POLISHED S.S.<br>MIRROR-BTX-07-032: 450MM X<br>1000MM (ACCESSIBLE<br>COMPLIANT)<br>(OR APPROVED EQUIVALENT) | BTX-07-032       | GRADE 304 STAINLESS S         |
| -                 | SOAP DISPENSER                                    | BRITEX VERTICAL LIQUID SOAP DISPENSER S.S. W STANDARD NOZZLE - PRODUCT CODE<br>BTX-05-023  | BRITEX                       | VERTICAL LIQUID SOAP<br>DISPENSER S.S - STANDARD<br>NOZZLE  | BTX-05-023       | SATIN STAINLESS STEEI         |
| -                 | COAT HOOK   | BRITEX DIE CAST ZINC HOOK WITH RUBBER BUMPER 73X18X93MM - PRODUCT CODE<br>BTX-10-036   | BRITEX                       | DIE CAST ZINC HOOK WITH<br>RUBBER BUMPER<br>(OR APPROVED EQUIVALENT)  | BTX-10-036       | BRUSH NICKEL - STAINL<br>LOOK |
| -                 | FLOOR WASTE                                       | ALLPROOF INDUSTRIES CHROME ON BRASS TILE GRATES. CHROME ON BRASS, SQUARE<br>OPTIONS, 100MM, COMPATIBLE WITH LEAK CONTROL FLANGE, CYCLONE AND REVOLVER  | ALLPROOF INDUSTRIES          | CHROME ON BRASS TILE GRATES   | 5 168.100SCPT    | CHROME ON BRASS               |
| -                 | DOOR HANDLE<br>(ACCESSIBLE WC)                    | DDA COMPLIANT HANDLE - INTERNAL PLATE WITH INDICATOR & DDA COMPLIANT (RH)  | LOCKWOOD                     | LOCKWOOD 1941/70SC<br>(OR APPROVED EQUIVALENT)  | 1941/70SC        | SATIN STAINLESS STEE          |
| CLEANER'S STORE   | CLEANER'S SINK                                    | BRITEX CLEANER'S SINK - 600X500X250MM DEEP. 46L BOWL CAPACITY. SUPPLIED WITH<br>STAINLESS STEEL BUCKET GRATE, WALL BRACKETS ONLY AND 50MM WASTE OUTLET -<br>PRODUCT CODE CSB   | BRITEX                       | CLEANER'S SINK WITH BRACKETS<br>(OR APPROVED EQUIVALENT)  | S CSB            | STAINLESS STEEL               |
| -                 | WALL MOUNTED SINK<br>SET WITH GOOSENECK<br>SWIVEL | BRITEX WALL MOUNTED SINK SET WITH GOOSENECK SWIVEL SPOUT - PRODUCT CODE<br>TW-SET-05   | BRITEX                       | WALL MOUNTED SINK SET WITH<br>GOOSENECK SWIVEL<br>(OR APPROVED EQUIVALENT)                                  | TW-SET-05        | CHROME                        |
|                   |   |  |                              |   |                  |                               |



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DRAWING TITLE: SCHEDULE - FIXTURES

CLIENT:

ARCHITECT:

PROJECT: 20034



DENMAN STORAGE SHED COMPLEX

TURNER STREET, DENMAN, NSW

muswellbrook shire council

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APP

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 25/04/21
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 C
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 D
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| SIGNAGE SCHEDULE  |   |  |           |   |                                     |              |
|-------------------|---|--|-----------|---|-------------------------------------|--------------|
| ELEMENT CODE      | ELEMENT   | DESCIPTION   | SUPPLIER  | MODEL/PRODUCT   | COLOUR/CODE                         | FINISH       |
| EXTERNAL FIXTURES |   |  |           |   |                                     |              |
| DOORS             |   |  |           |   |                                     |              |
| -                 | UNISEX RH ACCESSIBLE<br>TOILET BRAILLE<br>SIGNAGE | BTX-02-170: BRUSHED ALUMINIUM<br>BRUSHED ALUMINIUM<br>TEXT HEIGHT: 20MM<br>SYMBOL HEIGHT: 82MM<br>SIZE: 180X250MM<br>D3.6 AND AS1428.1 COMPLIANT | BRITEX    | UNISEX RH ACCESSIBLE TOILET<br>BRAILLE SIGNAGE - BRUSHED<br>ALUMINIUM<br>(OR APPROVED EQUIVALENT) | BTX-02-170                          | BRUSHED ALU  |
| WALLS             |   |  |           |   |                                     |              |
| -                 | FEATURE WALL SIGNAGE                              | 2400 HIGH STONE CLAD FEATURE BOUNDARY WALL WITH BACKLIT LED ILLUMINATED 3D<br>LETTERING SIGNAGE.   | SIGNARAMA | 3D SIGNS AND LETTERING<br>(OR APPROVED EQUIVALENT)  | LETTERING: BLACK<br>LIGHTING: WHITE | ALUMINIUM LE |



1 SIGNAGE - FEATURE WALL DA1001 1:50

| IMAGE            |
|------------------|
|                  |
| Unisex Toilet RH |
| <b>BARBA</b>     |
|                  |



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CONCRETE FLOOR SLAB, NATURAL CONCRETE COLOUR, WOOD FLOAT FINISH





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DRAWING TITLE: MATERIALS BOARD



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1 PERSPECTIVES - VIEW 3

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Appendix B – Unattended Noise Monitoring Graphs

Denman Storage Complex - DA acoustic report—Environmental Noise Assessment S220333RP1 Revision A www.resonate-consultants.com 18 of 18



## 2 Bell Street, Denman - Tuesday, 5 July 2022



2 Bell Street, Denman - Thursday, 30 June 2022





2 Bell Street, Denman - Saturday, 2 July 2022

Wind Speed, m/s



2 Bell Street, Denman - Sunday, 3 July 2022



Rion NL-21 888253 Calibration: 2022-07-28

2 Bell Street, Denman - Monday, 4 July 2022









2 Bell Street, Denman - Saturday, 9 July 2022



## 2 Bell Street, Denman - Sunday, 10 July 2022



## 2 Bell Street, Denman - Monday, 11 July 2022



Rion NL-21 888253 Calibration: 2022-07-28

## 2 Bell Street, Denman - Tuesday, 12 July 2022





## 2 Bell Street, Denman - Thursday, 14 July 2022



Rion NL-21 888253 Calibration: 2022-07-28

## 2 Bell Street, Denman - Friday, 15 July 2022

Resonate



## 2 Bell Street, Denman - Saturday, 16 July 2022





