Noise Impact Assessment

Westgate Estate - 253-267 Aldington Road, Kemps Creek NSW

Prepared for RP Infrastructure

November 2023

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RP Infrastructure

E230916 RP1

November 2023

Version	Date	Prepared by	Approved by	Comments
v1	25/10/23	Carl Fokkema	Najah Ishac	Draft
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3 November 2023

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1 Introduction

EMM Consulting Pty Limited (EMM) has been engaged by RP Infrastructure (RPI) to prepare a noise impact assessment (NIA) for an industrial site at Kemps Creek NSW (Figure 1.1). This report accompanies a State Significant Development Application (SSDA) for the construction and operation of an industrial estate comprising four warehouse buildings at 253-267 Aldington Road, Kemps Creek, NSW 2178 (SSD-23480429) for submission to NSW Department of Planning and Environment (DPE).

The application seeks consent for:

- Site establishment:
  - demolition and removal of existing rural residential structures including removal of farm dams
  - remediation as required
  - bulk earthworks (193,100 m^3 of fill) and retaining walls.
- Staged construction and operation of an industrial estate with a total gross floor area of 45,530 m^2, maximum FSR of 0.45:1, maximum height of 17.2 metres (m), split over four warehouses contained within three buildings with ancillary hardstand and office spaces:
  - Stage 1
    - Warehouse 1A: 8,700 m^2 with 660 m^2 office space (total GFA – 9,360 m^2)
    - Warehouse 1B: 9,130 m^2 with 750 m^2 office space (total GFA - 9,880 m^2)
    - Warehouse 1C: 8,405 m^2 with 655 m^2 office space (total GFA - 9,060 m^2)
  - Stage 2
    - Warehouse 2 (temperature controlled): 16,930 m^2 with 790 m^2 office space (total GFA - 17,230 m^2).
- Use of the buildings for warehouse and distribution purposes 24 hours per day 7 days per week.
- Ancillary development including:
  - signage (a pylon estate sign approximately 5 m high and individual tenant signage adjacent to each office)
  - car parking (263 vehicular spaces):
    - Warehouse 1A: 65 spaces
    - Warehouse 1B/ 1C: 113 spaces
    - Warehouse 2: 85 spaces
  - landscaping
  - retaining walls

- utility infrastructure and services connection
- stormwater management including naturalised open channel drainage as well as below ground on-site detention of stormwater
- construction and dedication of new local roads and an interim intersection with Aldington Road
- subdivision of the site into two Torrens title allotments along with a road reserve lot for the widening of Aldington Road.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-23480429) dated 30 July 2021 and additional SEARs issued on 25 March 2022. It also addresses the Test of Adequacy comments received on 1 October 2021.

This NIA has been prepared to respond to the SEARs and additional DPE requirements listed in Table 1.1.

Table 1.1 SEARs and additional DPE requirements

Item	Description of requirement	Section reference / Comment
Noise and Vibration	A quantitative noise and vibration impact assessment undertaken by a suitably qualified acoustic consultant in accordance with the relevant Environment Protection Authority guidelines and Australian Standards which includes:	
	• the identification of impacts associated with construction, site emission and traffic generation at noise affected sensitive receivers, including the provision of operational noise contours and a detailed sleep disturbance assessment	Sections 3, 4 and 5.1
	• details of noise monitoring survey, background noise levels, noise source inventory and 'worst case' noise emission scenarios	Sections 2 and 4
	• consideration of annoying characteristics of noise and prevailing meteorological conditions in the study area	Section 4
	• a cumulative impact assessment inclusive of impacts from other developments	Section 3
	• details and analysis of the effectiveness of proposed management and mitigation measures to adequately manage identified impacts, including a clear identification of residual noise and vibration following application of mitigation these measures and details of any proposed compliance monitoring programs.	Section 6
Noise and Vibration (DPE Additional)	• The operational noise assessment must consider the development of a Noise Management Precinct (see section 2.8 of the Noise Policy for Industry (2017) (NPfI)) and the method for deriving amenity noise levels in areas near an existing or proposed cluster of industry (see section 2.4.2 of the NPfI (2017)). All developable industrial zoned land within the Mamre Road Precinct and any existing/approved industrial sites near the precinct must be considered when using section 2.4.2 of the NPfI to derive project amenity noise levels.	Section 3
	• Operational noise assessment must be accompanied by a sensitivity analysis of the likely noise emissions from the range of anticipated tenants and industries. A worst-case source emission inventory need to be established from verifiable data to describe how noise would be generated by each operational activity (e.g. internal, external), each type of truck (e.g. rigid truck, semi-trailer, B-double, A-double), the specific vehicle manoeuvre (e.g. up ramp, down ramp, reversing, general forward movement) that would be performed, and any incidental noise that would be generated by the goods handling process. Contingency factors adopted must be identified in the Environmental Impact Assessment (EIS), or reasons for not incorporating contingency factors provided. Any attempts to omit the consideration of internal breakout noise must be well informed and appropriately justified in the EIS.	Section 4

Table 1.1 SEARs and additional DPE requirements

Item	Description of requirement	Section reference / Comment
Noise and Vibration (DPE Additional – based on previous NVIA by PWNA)	• There are discrepancies between the EIS, Noise and Vibration Impact Assessment (NVIA) and Visual Impact Assessment (VIA) in relation to the height and location of the solid fences and walls. The Applicant is required to update the EIS, NVIA and VIA to resolve the discrepancy.	Appendix A - based on current architectural drawing
	• A key requirement of the SEARs is that the NVIA must address cumulative impacts of other existing and proposed developments. For noise associated with the operation of the development, the NVIA should consider the provisions given in section 2.4 (amenity noise levels and project amenity noise levels) and section 2.8 (noise management precincts) of the NPfI.	Section 3 – as above
	• For site related traffic operating on public roads, the NVIA should undertake the assessment in accordance with the Road Noise Policy (RNP) and address the change in road function across the immediate and surrounding road network as well as any transitions between road categories when setting noise criteria. For road traffic noise assessment, further guidance can be found in Roads and Maritime's Noise Criteria Guideline	Section 3.4
	• The detail provided on meteorological conditions is not adequate. Section 2 of the NVIA states 'a mild temperature inversion is considered within the ISO 9613-2:1996 algorithm'. Further detail is required on what the prevailing weather conditions for the area are, how the conditions were determined, what impacts the conditions may have on the noise levels at the site and at receivers and whether a 'mild' temperature inversion sufficiently addresses any noise enhancing conditions that may be present in this locality.	Section 4.2.4
	• The modelled scenarios must represent all reasonable worse-case operational activities that may occur. The noise modelling scenario appears to be limited and does not include sources such as heavy vehicle types, vehicle swept paths, trucks accelerating, decelerating and reversing, noise breaking out of the facility, etc. The NVIA should be updated to include a noise emission inventory that accurately describes how noise would be generated by the operation of the development, including the quantities and locations of noise sources that have been assessed. The NVIA must clearly describe (in plain English) the noise emission assumptions (e.g. forward speed, reversing speed, duration of loading/unloading, source path footprint), how noise would be generated by the operations and the characteristics of the noise sources (including the potential for impulsive noise, intermittent noise, low frequency noise, etc). Furthermore, the NVIA should provide references to the input assumptions in Table 6-1. It is also unclear how the maximum noise sources contribute to the assessment of LAeq noise levels.	Section 4.2 and Appendix B
	• The NVIA should amended to include the details and analysis of the effectiveness of proposed management and mitigation measures to adequately manage identified impacts, including a clear identification of residual noise and vibration following application of mitigation these measures and details of any proposed compliance monitoring programs.	Section 7

Notes: 1. Considering the extent of the WSAP and MRP, potential other noise sources within the precinct and much closer to assessment locations, dynamic nature of surrounding environment and predicted compliance for this site with NPfI amenity criteria, the preparation of noise contours was not considered valid

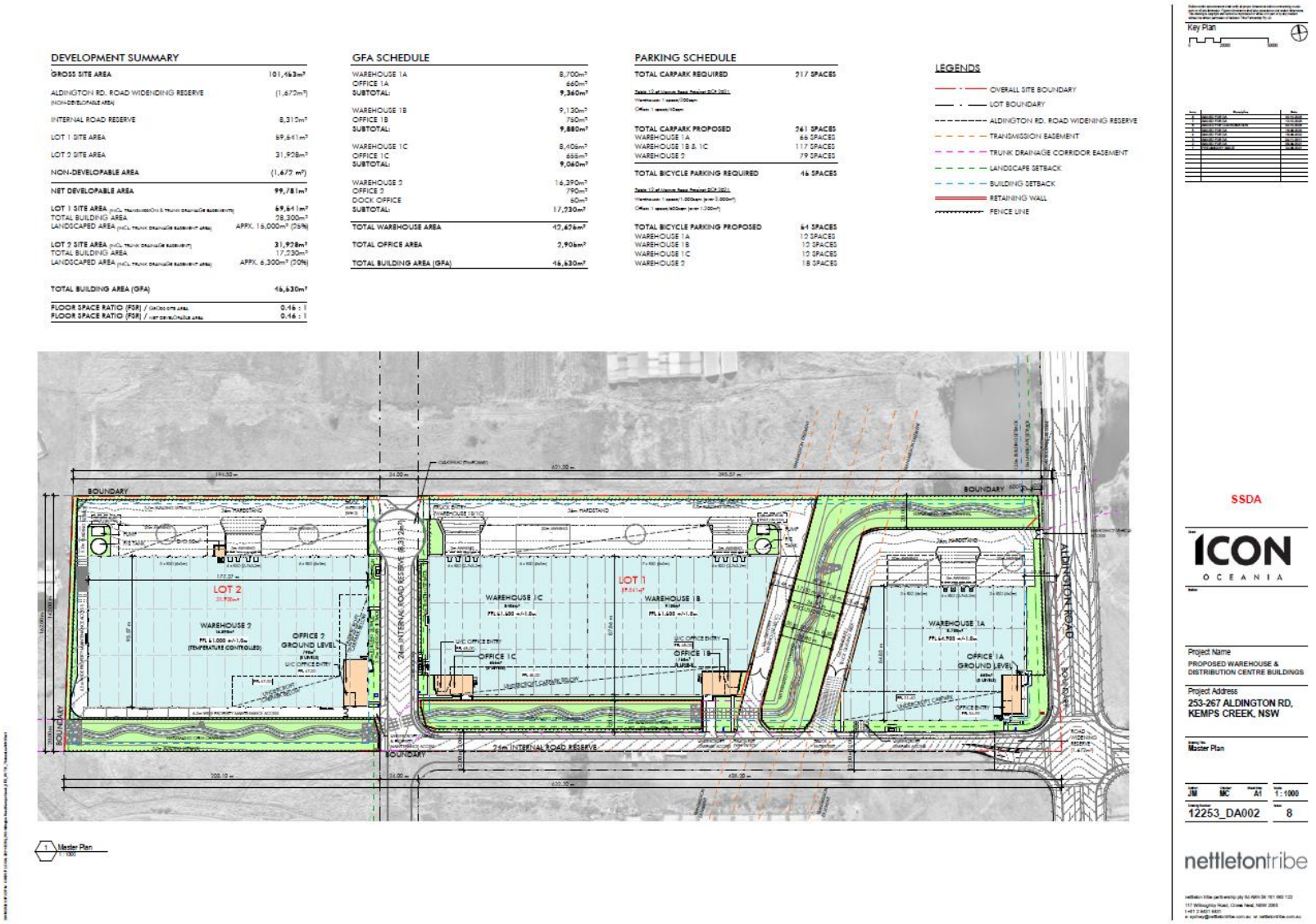


Figure 1.1 Site Masterplan

1.1 Glossary of acoustic terms

A number of technical acoustic descriptions are used in this report. A list of terms and a brief explanation are provided in Table 1.2.

Table 1.2 Glossary

Abbreviation or term	Definition
ABL	The assessment background level (ABL) is defined in the INP as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L_{A90} statistical noise levels.
Amenity noise criteria	The amenity noise criteria relate to the overall level of industrial noise. Where existing levels of industrial noise (excluding the subject development) approach the acceptable amenity noise criteria, then noise levels from new industries need to demonstrate that they will not be an additional contributor to existing industrial noise.
A-weighting	There are several different weightings utilised for describing noise, the most common being the 'A-weighting'. This attempts to closely approximate the frequency response of the human ear.
C-weighting	There are several different weightings utilised for describing noise, with the 'C-weighted' scale typically used to assess low frequency noise and is also utilised in the assessment of occupational noise.
Day period	Monday–Saturday: 7.00 am to 6.00 pm, on Sundays and public holidays: 8.00 am to 6.00 pm.
dB	Noise is measured in units called decibels (dB).
DPE	Department of Planning and Environment
EPA	The NSW Environment Protection Authority (formerly the Department of Environment, Climate Change and Water).
Evening period	Monday–Saturday: 6.00 pm to 10.00 pm, on Sundays and public holidays
Intrusive noise criteria	The intrusive noise criteria refers to noise that intrudes above the background level by more than 5 dB. The intrusiveness criterion is described in detail in Section 3.1.1.
L_{A1}	The A-weighted noise level exceeded for 1% of the time.
L_{A90}	The A-weighted noise level which is exceeded 10% of the time. It is roughly equivalent to the average of maximum noise level.
L_{A90}	The A-weighted noise level that is exceeded 90% of the time. Commonly referred to as the background noise level.
L_{Aeq}	The A-weighted energy average noise level. This is the equivalent continuous sound pressure level over a given period. The $L_{Aeq(15\text{-}minute)}$ descriptor refers to an L_{Aeq} noise level measured over a 15 minute period.
L_{Amax}	The maximum A-weighted sound pressure level received during a measurement interval.
Night period	Monday–Saturday: 10.00 pm to 7.00 am, on Sundays and public holidays: 10.00 pm to 8.00 am.
RBL	The rating background level (RBL) is an overall single value background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the average background levels.
SEARs	Secretary's environmental assessment requirements
Sound power level (L_w)	A measure of the total power radiated by a source. The sound power of a source is a fundamental property of the source and is independent of the surrounding environment.

Table 1.2 Glossary

Abbreviation or term	Definition
Temperature inversion	A meteorological condition where the atmospheric temperature increases with altitude.

1.2 Common noise levels

It is useful to have an appreciation of decibels (dB), the unit of sound measurement when reading this assessment. Table 1.3 gives some practical indication of what an average person perceives about changes in noise levels.

Table 1.3 Perceived change in noise

Change in sound level (dB)	Perceived change in noise
3	Just perceptible
5	Noticeable difference
10	Twice (or half) as loud
15	Large change
20	Four times as loud (or quarter) as loud

Examples of common noise levels are provided in Figure 1.2.

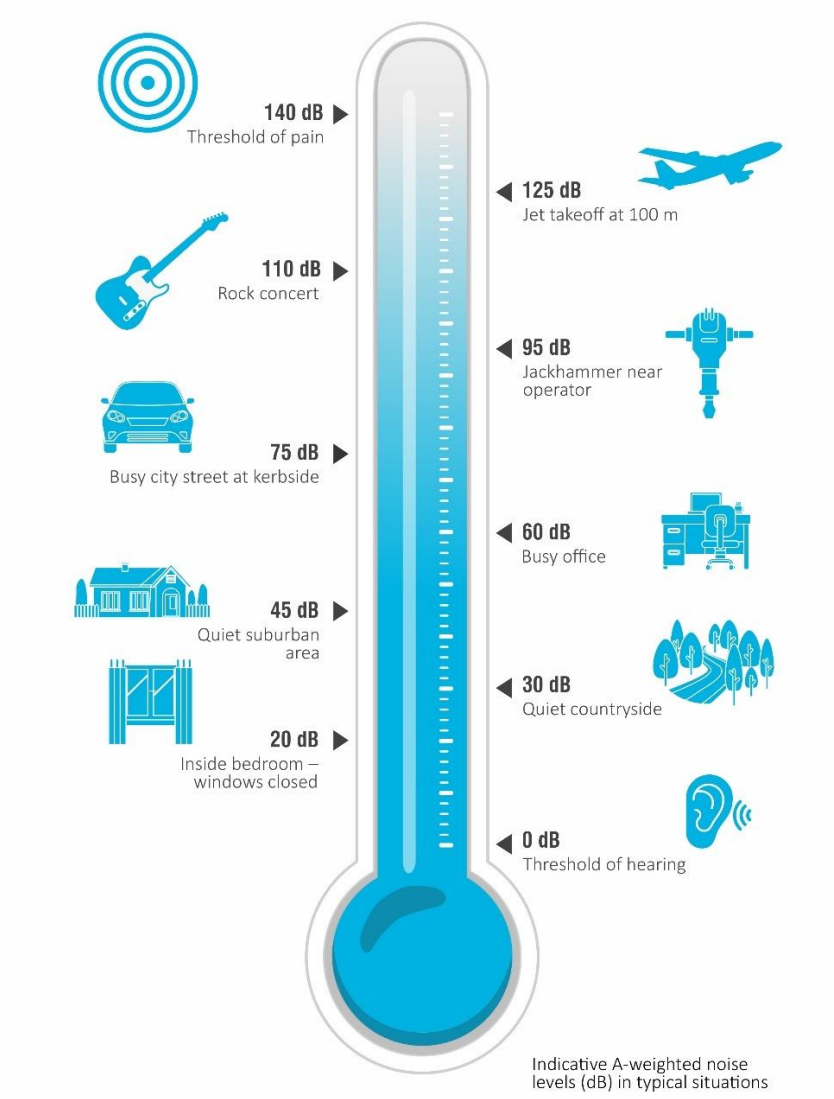


Figure 1.2 Common noise levels

2 Site and surrounding area

2.1 The site

The site is known as 253–267 Aldington Road, Kemps Creek NSW and is legally described as Lot 9 in Deposited Plan (DP) 253503. The site is rectangular in shape with an area of approximately 10 hectares (ha).

The site has a primary frontage along its eastern boundary to Aldington Road of 160 metres (m) and a depth of 630 m. The site is currently occupied by a dwelling house, sheds and agricultural land.

The site is undulating in parts but longitudinally falls slightly from Aldington Road at an RL 54.00 to the western boundary with an RL 44.00 which equates to an average grade of 1.5%. The site also falls across the site from north to south at an average grade of 4.3%.

The site is burdened by a 60.96 m wide Transgrid easement which runs north–south through the site. The easement is known as 'Dapto – Sydney West 330 kV Easement' and there is presently no high voltage transmission line infrastructure.

The site is approximately 5 kilometres (km) north-east of the Western Sydney International (Nancy-Bird Walton) Airport currently under construction, 14 km south-east of Penrith CBD and 38 km west of the Sydney CBD.

The site is located within the suburb of Kemps Creek, which falls within the Penrith Local Government Area (LGA). It is in the Mamre Road Precinct (MRP) within the broader Western Sydney Employment Area (WSEA) and is surrounded by rural residential land uses that are rapidly transitioning to commercial and industrial premises in accordance with the zoning and proposed land uses permitted within that zone. The MRP falls within the greater Western Sydney Aerotropolis Precinct. (WSAP).

Multiple state significant developments (SSDs) and Local development applications (DAs) are currently being progressed for industrial and warehouse development within the MRP which will substantially change the nature of the surrounding area.

The surrounding land uses include:

- **North**: Pastoral/ farmland extends towards the elevated Bakers Lane. Several properties have been purchased by developers for industrial development; these include Frasers and Fife Stockland with construction commencing. In addition, the BAPS Swaminarayan Hindu Temple located north of the site at 230-242 Aldington Road, Kemps Creek is currently under construction.
- **South**: Farm and pastoral lands with rural residential properties scattered within the landscape. The Mamre Road precinct extends further beyond Abbotts Road. A locally listed heritage item is located at 282 Aldington Road to the south east.
- **East**: The site is bound to the east by Aldington Road. On the opposite side of Aldington Road several properties have been purchased in seeking approval for industrial development. Land rises to the east which provides a natural screen to the residential E4 Environmental Living zone beyond at Mount Vernon.
- **West**: Farm and pastoral lands to Mamre Road and beyond. Sites on Mamre Road have been purchased for industrial uses. Further to the west is Twin Lakes Estate at Luddenham providing for rural residential properties.

All land in the immediate surrounding context to the north, east and south is zoned for industrial uses.

2.2 Assessment locations

The sensitive receiver areas surrounding the project site have been selected and used for the purpose of assessing noise from the project to the residences outside of the MRP and WSAP that will remain following the development of these precincts. The assessment has also considered the BAPS Temple currently under construction. These are described and summarised in Table 2.1 and shown in Figure 2.1.

This approach has been taken by EMM following a review of a number of current development consents within the MRP and greater WSAP and consents granted by NSW Department of Planning (DPE) that demonstrate whilst residences within these precincts have existing use rights to occupy the land as residential dwellings, they are not entitled to a residential noise amenity that would result in the sterilisation of the industrial rezoned land and not permit development for its intended use.

Examples of recent applications and consents from the Department of Planning within the Aerotropolis Precinct (including Mamre Road) confirm that noise limits are no longer applied to residences within the precincts. For example:

- 754-786 Mamre Road, Kemps Creek – SSD-10272349
- 788-882 Mamre Road, Kemps Creek – SSD-10448
- 106-228 Aldington Road, Kemps Creek – SSD-10479
- Westlink Industrial Estate – SSD-9138102.

The assessment has considered the three key noise catchment areas (NCAs) surrounding the site, comprising:

- NCA1 – West / North West - Residential
  - Twin Lakes Estate at Luddenham providing for rural residential properties specifically Medinah Avenue, Pennard Crescent, Woodhall Place and Ganton Way.
- NCA2 – North-east
  - BAPS Swaminarayan Hindu Temple site.
- NCA3 – East / South East – Residential
  - existing rural properties located at Mount Vernon specifically Mount Vernon Road and Kerrs Road.

Table 2.1 Assessment locations

Assessment location	NCA	Zone	Coordinates	
			Eastings	Northings
R1	NCA1 – West / North-west	MGA Grid 56	293211.4	6253579.5
R2	NCA1 – West / North-west	MGA Grid 56	293337.6	6253398.0
R3	NCA1 – West / North-west	MGA Grid 56	293271.2	6253227.5
R4	NCA1 – West / North-west	MGA Grid 56	293273.5	6253090.2
R5	NCA1 – West / North-west	MGA Grid 56	292879.5	6253034.6
R6	NCA1 – West / North-west	MGA Grid 56	292874.9	6252692.7

Table 2.1 Assessment locations

Assessment location	NCA	Zone	Coordinates	
			Eastings	Northings
R7	NCA1 – West / North-west	MGA Grid 56	292827.6	6252520.9
R8	NCA1 – West / North-west	MGA Grid 56	292865.3	6252429.4
R9	NCA1 – West / North-west	MGA Grid 56	292746.9	6252119.8
R10	NCA1 – West / North-west	MGA Grid 56	292626.7	6251863.3
T1	NCA2 – North-east – BAPS Temple	MGA Grid 56	296332.4	6252221.2
R11^	NCA3 – East / South-east	MGA Grid 56	295796.7	6250699.1
R12	NCA3 – East / South-east	MGA Grid 56	296097.4	6250682.7
R13	NCA3 – East / South-east	MGA Grid 56	296330.8	6250663.2
R14	NCA3 – East / South-east	MGA Grid 56	296495.4	6250651.3
R15	NCA3 – East / South-east	MGA Grid 56	296645.0	6250821.8
R16	NCA3 – East / South-east	MGA Grid 56	296688.4	6251055.2
R17	NCA3 – East / South-east	MGA Grid 56	296864.9	6251164.4
R18	NCA3 – East / South-east	MGA Grid 56	297114.7	6251330.5
R19	NCA3 – East / South-east	MGA Grid 56	297193.5	6251481.2
R20	NCA3 – East / South-east	MGA Grid 56	297354.1	6251667.1
R21	NCA3 – East / South-east	MGA Grid 56	297358.3	6251862.9
R22	NCA3 – East / South-east	MGA Grid 56	297418.8	6252051.6
R23	NCA3 – East / South-east	MGA Grid 56	297525.7	6252226.7
R24	NCA3 – East / South-east	MGA Grid 56	297688.9	6252383.3

Notes: ^ within WSAP

2.3 Existing noise environment

The process of establishing noise criteria for construction and operational activities typically requires the determination of background noise levels. However, it is important to note that area is and will continue to undergo a substantial period of development and that baseline ambient noise levels currently being enjoyed will also change, consistent with this project. The relevant methodology for this process, including siting of noise loggers, calculation of the rating background noise level (RBL) and filtering for meteorological conditions, is outlined in Fact Sheet B of the NPfI.

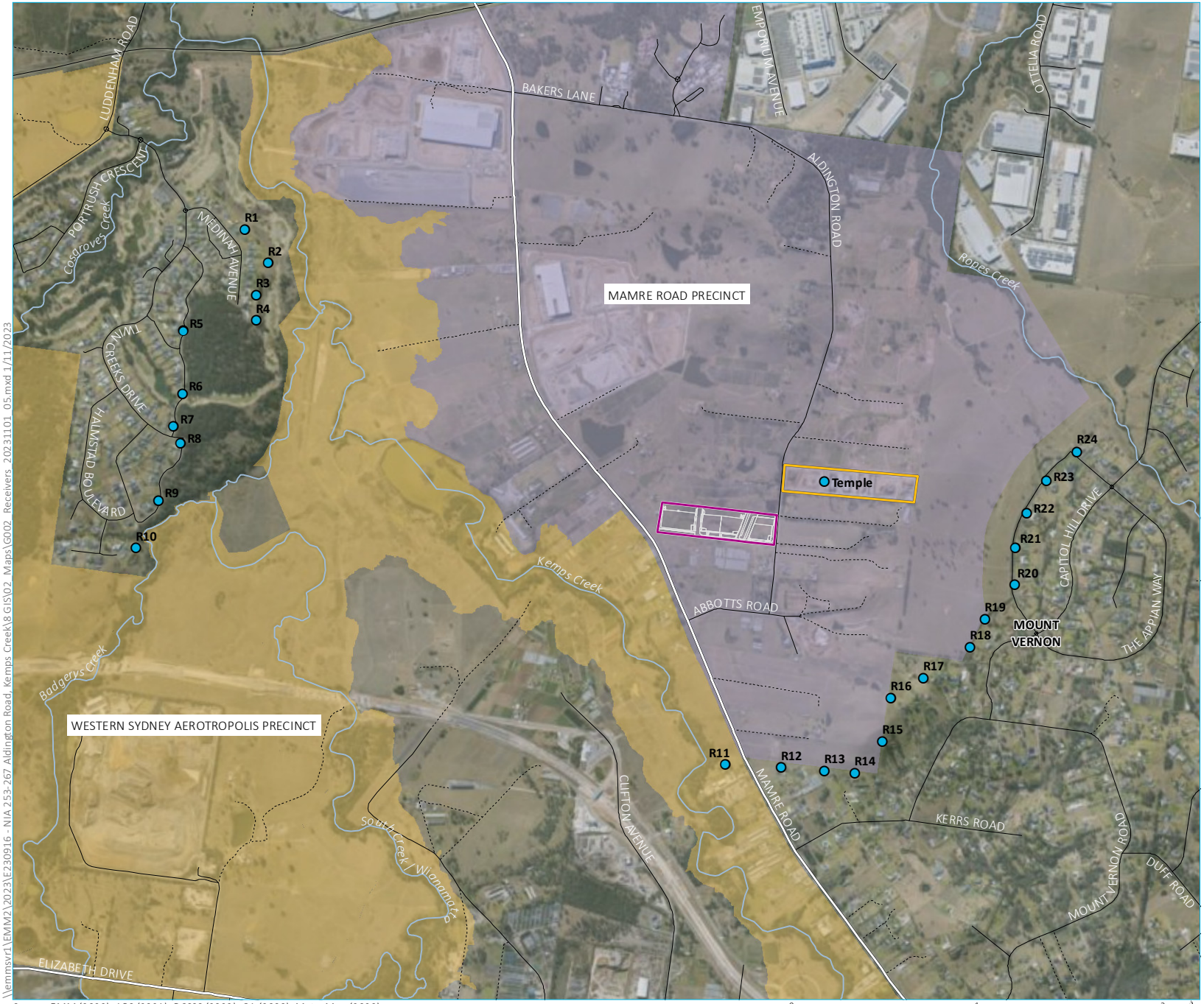
This is reflected in the SEARs and the Mamre Road Precinct development Control Plan 2021 (November 2021) – Section 4.3, that a NIA should describe the existing acoustic environment surrounding a project. A preliminary noise assessment was prepared for this project in September 2021[1] and confirmed background L_{A90} noise levels in

[1] Pulse White Noise Acoustics – Westgate Industrial Estate, Kemps Creek – Noise and Vibration Impact Assessment. Report number: 210256

the order of 37-39 dB during the day / evening and 34 dB at night, whilst ambient L_{Aeq} levels were 50-53 dB during the day / evening and 47 dB at night.

Similar historic measurements have been conducted in similar areas and indicate that pre-development of the airport and current development of MRP and WSAP, background noise levels could reasonably have been consistent with the minimum thresholds of the NSW Environment Protection Authority (EPA) Noise Policy for Industry (NPfI) of L_{A90} 35dB during the day and 30dB for evening and night. Whilst ambient noise levels within the Mount Vernon and Twin Creeks, Luddenham areas would also be expected to be quite low.

Notwithstanding the noise environment, the assessment of noise from this project and others within the MRP and WSAP is considered under amenity noise goals in accordance with the NPfI. This is consistent with current approvals granted by DPE and additional enquiries and correspondence from DPE confirming that measurement of existing noise levels and application of intrusive noise levels is not relevant to these precincts.



KEY

- Noise assessment location
- Site boundary
- Temple site
- Proposed layout
- Major road
- Minor road
- Vehicular track
- Named watercourse

Precinct boundary

- Mamre Road
- Western Sydney Aerotropolis

INSET KEY

- Major road
- NPWS reserve
- State forest

Source: EMM (2023); ABS (2021); DCSSS (2023); GA (2009); MetroMap (2023)

0 1 2 km

GDA2020 MGA Zone 56

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Site and assessment locations

Westgate Estate
253-267 Aldington Road, Kemps Creek NSW
Noise Impact Assessment
Figure 2.1

EMM
creating opportunities

3 Assessment guidelines

3.1 Operational noise

Noise from development in NSW is regulated by the local council, Department of Planning and Environment (DPE) and/or the EPA, and sites generally have a licence and/or development consent conditions stipulating noise limits. These limits are typically derived from project specific trigger or operational noise levels predicted at assessment locations. They are based on EPA guidelines (e.g. NPfI) or noise levels that can be achieved by a specific site following the application of all reasonable and feasible noise mitigation.

The objectives of noise trigger levels established in accordance with the NPfI are to protect the community from excessive intrusive noise and preserve amenity for specific land uses. It should be noted that the audibility of a noise source does not necessarily equate to disturbance at an assessment location.

To ensure these objectives are met, the EPA provides project specific noise trigger levels, namely intrusiveness and amenity.

3.1.1 Intrusiveness noise levels

The NPfI intrusiveness noise triggers require that $L_{Aeq,15min}$ noise levels (energy average noise level over a 15-minute period) from the project do not exceed the rated background level (RBL) by more than 5 dB during the relevant operational periods. The intrusiveness noise levels are only applicable at residential assessment locations.

Due to the nature of the rezoning and redevelopment of these precincts adjacent pre-existing residential properties that are also rezoned industrial, the intrusive noise triggers do not apply, and noise from projects is assessed under the amenity noise level guidelines as outlined in approvals granted by DPE in MRP.

3.1.2 Amenity noise levels

The assessment of amenity is based on noise levels specific to the land use. The noise levels relate only to industrial noise and exclude road or rail traffic noise. Where the measured existing industrial noise approaches recommended amenity noise levels, it needs to be demonstrated that noise levels from new developments will not contribute to existing industrial noise such that amenity noise levels are exceeded.

To ensure that industrial noise levels remain within the recommended amenity noise levels for an area and address potential for cumulative noise, the project amenity noise level for a new industrial development is the recommended amenity noise level (outlined in Table 2.2 of the NPfI) minus 5 dB. It is noted that this approach is based on a receiver being impacted by multiple industrial sites (or noise sources), typically three to four of equal noise contribution. It is acknowledged that with the full development of the WSAP and MRP that are significantly closer to the reference assessment locations, noise emissions from this project would not ultimately contribute to received noise levels and closer uses would dominate.

Residential areas potentially affected by the project's operational noise are located to the east and west, whilst a place of worship site (BAPS Temple) is located to the north-east. The project amenity noise levels for the identified assessment locations are presented in Table 2.1 based on a suburban noise amenity area consistent with the definitions of the NPfI. The NPfI defines suburban as an area that has local traffic with characteristically intermittent traffic flows or with some limited commerce or industry. This area often has the following characteristic: evening ambient noise levels defined by the natural environment and human activity.

In reality the acoustic environment of Mount Vernon, Twin Creeks Estate, Luddenham and BAPS Temple shortly will transition to an Urban noise amenity under the definitions of the NPfI, which is an area with an acoustical environment that:

- is dominated by 'urban hum' or industrial source noise, where urban hum means the aggregate sound of many unidentifiable, mostly traffic and/or industrial related sound sources
- has through-traffic with characteristically heavy and continuous traffic flows during peak periods
- is near commercial districts or industrial districts
- has any combination of the above.

Table 3.1 Amenity noise levels

Assessment location	Time period[1]	Indicative area	Project amenity noise level[2] dB, $L_{Aeq,Period}$
R1-R24	Day	Suburban	47 (55–5)
	Evening		37 (45–5)
	Night		32 (40–5)
T1	When in use	Place of worship	60 (external)[3]
			40(internal)

Source: NPfI (EPA 2017)

1. Day: 7.00 am to 6.00 pm Monday to Saturday; 8.00 am to 6.00 pm Sundays and public holidays; evening: 6.00 pm to 10.00 pm; night: 10.00 pm to 7.00 am Monday to Saturday; 10.00 pm to 8.00 am Sundays and public holidays.
2. Project amenity noise level is Amenity noise level (Table 2.2 of NPfI) -5 dB in accordance with NPfI Section 2.4.2 assuming three to four industrial sites contributing to noise levels.
3. Internal noise level – equivalent external noise level of 60dB assuming windows closed and 20 dB reduction across building façade.

With respect to the BAPS Temple, it is noted in the Council Assessment Report and the BAPS Temple NIA that windows and doors would be closed during use of the premises in order to control noise emissions from the facility. On this basis it is reasonable to assume that a 20 dB noise reduction could be provided for a closed window / door façade and the equivalent external noise amenity level applied for this place of worship could be $L_{Aeq,period}$ 60 dB external.

3.1.3 Project noise goals

With respect to this project, the noise assessment has considered that there could be three to four separate sites that could impact the nearest reference assessment locations, acknowledging in the near future there will be many other commercial and industrial sites between this project and much closer to the assessment locations.

Table 3.2 Project amenity noise levels

Assessment location	Time period[1]	Project amenity noise level[2] dB, $L_{Aeq,Period}$	Project amenity noise level[3] dB, $L_{Aeq,15min}$
R1-R24	Day	50 (55–5)	53
	Evening	40 (45–5)	43
	Night	35 (40–5)	38
T1	When in use	60[4]	63[4]

Source: NPfI (EPA 2017)

1. Day: 7.00 am to 6.00 pm Monday to Saturday; 8.00 am to 6.00 pm Sundays and public holidays; evening: 6.00 pm to 10.00 pm; night: 10.00 pm to 7.00 am Monday to Saturday; 10.00 pm to 8.00 am Sundays and public holidays.
2. Project amenity noise level is Amenity noise level (Table 2.2 of NPfI) -8 dB in accordance with NPfI Section 2.4.2 assuming three to four industrial sites contributing to noise levels.
3. Project amenity $L_{Aeq,15min}$ noise level is the recommended amenity noise level LAeq,period +3 dB as per the NPfI.
4. External noise level – assuming windows closed and 20 dB reduction across building façade.

3.1.4 Sleep disturbance

The NPfI suggests that a detailed maximum noise level event assessment should be undertaken where night-time noise levels at a residential location exceed screening levels of:

- $L_{Aeq,15minute}$ 40 dB or the prevailing RBL plus 5 dB (whichever is the greater), and/or
- L_{Amax} 52 dB or the prevailing RBL plus 15 dB (whichever is the greater).

Guidance regarding potential for sleep disturbance is also provided in the RNP. The RNP calls upon numerous studies that have been conducted into the effect of maximum noise levels on sleep. The RNP acknowledges that, at the current (2011) level of understanding, it is not possible to establish absolute noise level criteria that will correlate to an acceptable level of sleep disturbance.

Additional information is outlined in WHO [World Health Organization] Night Noise Guidelines for Europe (WHO 2009) and the Environmental Noise Guidelines for the European Region: A Systematic Review on Environmental Noise and Effects on Sleep (Basner and McGuire 2018). Further guidance is also provided in the NSW RNP with reference to enHealth “as a rule for planning for short-term or transient noise events, for good sleep over 8 hours the indoor sound pressure level measured as a maximum instantaneous value should not exceed approximately 45 dB(A) L_{Amax} more than 10 or 15 times per night”. It is commonly accepted by acoustic practitioners and regulatory bodies (i.e. EPA) that a facade including a partially open window will reduce external noise levels by 10 dB. Therefore, external noise levels in the order of 55 dB calculated at the facade of a residence is unlikely to impact sleep according to the RNP.

If noise levels over the screening criteria are identified, then additional analysis will consider factors such as:

- how often the events will occur
- the time the events will occur
- whether there are times of day when there is a clear change in the noise environment (such as during early morning shoulder periods)
- current scientific literature available regarding the impact of maximum noise level events at night.

Table 3.3 provides the noise level event screening criteria for the residential assessment locations that has conservatively adopted a minimum night-time background L_{A90} of 30dB, acknowledging that current levels are potentially higher than this and future levels with operation of WSA and full development of the Aerotropolis and Mamre Road Precinct's would be significantly higher.

Table 3.3 Sleep disturbance screening criteria at residences

Assessment location	Adopted night RBL, dB	Night-time maximum noise level event screening criteria, dB	
		$L_{Aeq,15min}$	L_{Amax}
R1-R24	30	40	52

3.1.5 Mitigating noise

Where noise levels above the PNTLs are predicted, all feasible and reasonable mitigation are to be considered for the project to reduce noise levels towards the PNTLs, before any residual impacts are determined and addressed.

The significance of the residual noise impacts is generally based around the human perception to changes in noise levels as explained in the glossary of the acoustic terms. For example, a change in noise level of 1 to 2 dB is typically indiscernible to the human ear. The characterisation of a residual noise impact of 0 to 2 dB above the PNTL is therefore considered negligible. Table 4.1 of the NPfI provides a characterisation of residual noise impact as outlined in Table 3.4.

Table 3.4 Significance of residual noise impacts

If the predicted noise level minus the project noise trigger level is:	And the total cumulative industrial noise level is:	Then the significance of the residual noise level is:
≤2 dB	Not applicable	Negligible
≥3 but ≤5 dB	Less than recommended amenity noise level, or Greater than recommended amenity noise level, but the increase in total cumulative industrial noise level resulting from development is ≤1 dB.	Marginal
≥ 3 but ≤5 dB	Greater than recommended amenity noise level and the increase in total cumulative industrial noise level resulting from the development is >1 dB.	Moderate
>5 dB	Less than or equal to recommended amenity noise level.	Moderate
>5 dB	Greater than recommended amenity noise level.	Significant

Source: NPfI (NSW Government 2017)

3.2 Construction noise

The *Interim Construction Noise Guideline* (ICNG) (DECC 2009) has been jointly developed by NSW Government agencies, including the NSW Environment Protection Authority (EPA) and Department of Planning (DoP) (now DPE). The objectives of the guideline relevant to the planning process are to promote a clear understanding of ways to identify and minimise noise from construction and to identify 'feasible' and 'reasonable' work practices. The guideline recommends standard construction hours where noise from construction activities is audible at residential premises (i.e. assessment locations), as follows:

- Monday to Friday 7.00 am to 6.00 pm
- Saturday 8.00 am to 1.00 pm
- no construction work is to take place on Sundays or public holidays.

The ICNG acknowledges that works outside standard hours may be necessary, however, justification should be provided to the relevant authorities.

The ICNG provides two methodologies to assess construction noise emissions. The first is a quantitative approach, which is suited to major construction projects with typical durations of more than three weeks. This method requires noise emission predictions from construction activities at the nearest assessment locations and assessment against ICNG recommended noise levels.

The second is a qualitative approach, which is a simplified assessment process that relies more on noise management strategies. This method is suited to short-term infrastructure and maintenance projects of less than three weeks.

This assessment has adopted a quantitative approach. The qualitative aspects of the assessment include identification of assessment locations, description of works involved including predicted noise levels and proposed management measures that include a complaints handling procedure.

3.2.1 Construction noise management levels - residents

Table 3.5 provides ICNG noise management levels (NML) which apply to residential assessment locations.

Table 3.5 ICNG construction noise management levels for residences

Time of day	NML $L_{Aeq,15min}$	Application
Recommended standard hours: Monday to Friday 7.00 am to 6.00 pm, Saturday 8.00 am to 1.00 pm, no work on Sundays or public holidays	Noise-affected RBL + 10 dB	The noise-affected level represents the point above which there may be some community reaction to noise. • Where the predicted or measured $L_{Aeq,15min}$ is greater than the noise-affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. • The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.

Table 3.5 ICNG construction noise management levels for residences

Time of day	NML $L_{Aeq,15min}$	Application
	Highly noise affected 75 dBA	The highly noise-affected level represents the point above which there may be strong community reaction to noise. • Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: 1. times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences) 2. if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours	Noise-affected RBL + 5 dB	• A strong justification would typically be required for works outside the recommended standard hours. • The proponent should apply all feasible and reasonable work practices to meet the noise affected level. • Where all feasible and reasonable practices have been applied and noise is more than 5 dBA above the noise-affected level, the proponent should negotiate with the community. • For guidance on negotiating agreements see Section 7.2.2 of the ICNG.

Source: ICNG (EPA 2009).

3.2.2 Construction noise management levels – other noise sensitive land uses

Table 3.6 summarises the ICNG recommendations and provides NML for other land uses.

Table 3.6 ICNG noise levels at other land uses

Land use	Management level, $L_{Aeq,15min}$ dB
Industrial premises	External noise level 75 dB (when in use)
Offices, retail outlets	External noise level 70 dB (when in use)
Hotels[1]	External noise level 65 dB (7 am to 10 pm) 60 dB (10 pm to 7 am)
Classrooms at schools and other educational institutions	Internal noise level 45 dB (when in use)
Hospital wards and operating theatres	Internal noise level 45 dB (when in use)
Places of worship	Internal noise level 45 dB (when in use)
Active recreation areas	External noise level 65 dB (when in use)
Passive recreation areas	External noise level 60 dB (when in use)

Source: ICNG (DECC 2009).

1. NML based on AS2017 recommend maximum internal noise level and the premise that windows and doors for such development would typically remain closed, providing 20 dB of outdoor to indoor construction noise level reduction.

3.2.3 Project specific construction noise management levels

The project construction NMLs for recommended standard and out of hour periods are presented in Table 3.7 for all assessment locations based conservatively on minimum background noise level thresholds of the NPfI. Construction activities associated with the project have been assessed based on standard construction hours, however a full range of OOH has been provided for completeness and potential construction activity flexibility.

Table 3.7 Construction noise management levels – all assessment locations

Assessment location	Period	Adopted RBL[1]	NML $L_{Aeq,15min}$ dB
R1-R24	Day (standard ICNG hours)	35	45
	Day (OOH)	35	40
	Evening (OOH)	30	35
	Night (OOH)	30	35
T1 - Temple	When in use (internal)	n/a	65 (45 internal)[2]

1. Assuming minimum background noise levels in accordance with NPfI
2. Assuming windows closed during use and minimum 20dB noise reduction

3.3 Construction vibration

3.3.1 Human perception of vibration

Humans can detect vibration levels which are well below those causing any risk of damage to a building or its contents.

The actual perception of motion or vibration may not in itself be disturbing or annoying. An individual's response to that perception, and whether the vibration is "normal" or "abnormal", depends very strongly on previous experience and expectations, and on other connotations associated with the perceived source of the vibration. For example, the vibration that a person responds to as "normal" in a car, bus or train is considerably higher than what is perceived as "normal" in a shop, office, or dwelling.

Human tactile perception of random motion, as distinct from human comfort considerations, was investigated by Diekmann and subsequently updated in German Standard DIN 4150 Part 2 1999. On this basis, the resulting degrees of perception for humans are suggested by the vibration level categories given in Table 3.8.

Table 3.8 suggests that people will just be able to feel floor vibration at levels of approximately 0.15 millimetres per second (mm/s) and that the motion becomes "noticeable" at a level of approximately 1 mm/s.

Table 3.8 Peak vibration levels and human perception of motion

Approximate vibration level	Degree of perception
0.10 mm/s	Not felt
0.15 mm/s	Threshold of perception
0.35 mm/s	Barely noticeable
1 mm/s	Noticeable
2.2 mm/s	Easily noticeable

Table 3.8 Peak vibration levels and human perception of motion

Approximate vibration level	Degree of perception
6 mm/s	Strongly noticeable
14 mm/s	Very strongly noticeable

Note: These approximate vibration levels (in floors of building) are for vibration having a frequency content in the range of 8 Hertz (Hz) to 80 Hz.

3.3.2 Assessing vibration - a technical guideline

Environmental Noise Management – Assessing Vibration: a technical guideline (DEC 2006) (the guideline) is based on BS 6472 – 2008, Evaluation of human exposure to vibration in buildings (1–80 Hz).

The guideline presents preferred and maximum vibration values for the use in assessing human responses to vibration and provides recommendations for measurement and evaluation techniques. At vibration values below the preferred values, there is a low probability of adverse comment or disturbance to building occupants. Where all feasible and reasonable mitigation measures have been applied and vibration values are still beyond the maximum value, it is recommended that the operator negotiate directly with the affected community.

The guideline defines three vibration types and provides direction for assessing and evaluating the applicable criteria. Table 2.1 of the guideline provides examples of the three vibration types and has been reproduced in Table 3.9.

Table 3.9 Examples of types of vibration

Continuous vibration	Impulsive vibration	Intermittent vibration
Machinery, steady road traffic, continuous construction activity (such as tunnel boring machinery).	Infrequent: Activities that create up to three distinct vibration events in an assessment period, e.g. occasional dropping of heavy equipment, occasional loading and unloading. Blasting is assessed using ANZEC (1990).	Trains, intermittent nearby construction activity, passing heavy vehicles, forging machines, impact pile driving, jack hammers. Where the number of vibration events in an assessment period is three or fewer these would be assessed against impulsive vibration criteria.

Continuous vibration associated with compaction of road base for new site access road and hard stand areas is most relevant to the construction of the ARC.

Intermittent vibration (as defined in Section 2.1 of the guideline) is assessed using the vibration dose concept which relates to vibration magnitude and exposure time. Intermittent vibration is representative of heavy vehicle pass-bys and construction activities such as impact hammering, rolling, or general excavation work.

Section 2.4 of the guideline provides acceptable values for intermittent vibration in terms of vibration dose values (VDV) which requires the measurement of the overall weighted rms (root mean square) acceleration levels over the frequency range 1 Hz to 80 Hz.

To calculate VDV the following formula is used (refer to Section 2.4.1 of the guideline):

$$VDV = \left[\int_0^T a^4(t)dt\right]^{0.25}$$

Where VDV is the vibration dose value in $m/s^{1.75}$, *a (t)* is the frequency-weighted rms of acceleration in m/s^2 and *T* is the total period of the day (in seconds) during which vibration may occur.

The acceptable VDV for intermittent vibration are reproduced in Table 3.10.

Table 3.10 Acceptable vibration dose values for intermittent vibration

Location	Daytime		Night time	
	Preferred value, $m/s^{1.75}$	Maximum value, $m/s^{1.75}$	Preferred value, $m/s^{1.75}$	Maximum value, $m/s^{1.75}$
Critical areas	0.10	0.20	0.10	0.20
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions, and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

1. Daytime is 7.00 am to 10.00 pm and night time is 10.00 pm to 7.00 am.
2. These criteria are indicative only, and there may be a need to assess intermittent values against continuous or impulsive criteria for critical areas.

There is a low probability of adverse comment or disturbance to building occupants at vibration values below the preferred values. Adverse comment or complaints may be expected if vibration values approach the maximum values. The guideline recommends that activities should be designed to meet the preferred values where an area is not already exposed to vibration.

3.3.3 Structural vibration

i Australian Standard AS 2187.2 – 2006

In terms of the most recent relevant vibration damage criteria, Australian Standard AS 2187.2 – 2006 *Explosives – Storage and Use - Use of Explosives* recommends that the frequency dependent guideline values and assessment methods given in BS 7385 Part 2-1993 *Evaluation and measurement for vibration in buildings Part 2* be used as they are "applicable to Australian conditions".

The standard sets guide values for building vibration based on the lowest vibration levels above which damage has been credibly demonstrated. These levels are judged to give a minimum risk of vibration induced damage, where minimal risk for a named effect is usually taken as a 95% probability of no effect.

Sources of vibration that are considered in the standard include demolition, blasting (carried out during mineral extraction or construction excavation), piling, ground treatments (e.g. compaction), construction equipment, tunnelling, road and rail traffic and industrial machinery.

The recommended limits (guide values) for transient vibration to manage minimal risk of cosmetic damage to residential and industrial buildings are presented numerically in Table 3.11 and graphically in Figure 3.1.

Table 3.11 Transient vibration guide values - minimal risk of cosmetic damage

Line[1]	Type of Building	Peak component particle velocity in frequency range of predominant pulse	
		4 Hz to 15 Hz	15 Hz and above
1	Reinforced or framed structures Industrial and heavy commercial buildings	50 mm/s	50 mm/s
2	Unreinforced or light framed structures Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Notes: Refers to the "Line" in Figure 3.1.

The standard notes that the guide values in Table 3.11 relate predominantly to transient vibration which does not give rise to resonant responses in structures and low-rise buildings.

Where the dynamic loading caused by continuous vibration is such as to give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values in Table 3.11 may need to be reduced by up to 50%.

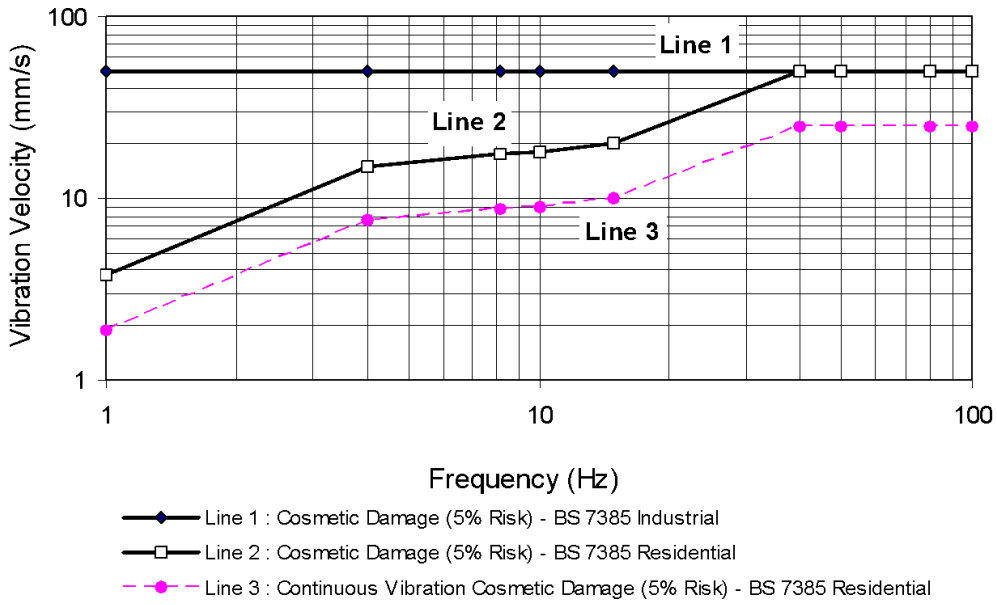

Figure 3.1 Graph of transient vibration guide values for cosmetic damage

In the lower frequency region where strains associated with a given vibration velocity magnitude are higher, the guide values for building types corresponding to Line 2 are reduced. Below a frequency of 4 Hz where a high displacement is associated with the relatively low peak component particle velocity value, a maximum displacement of 0.6 mm (zero to peak) is recommended. This displacement is equivalent to a vibration velocity of 3.7 mm/s at 1 Hz (as shown in Figure 3.1).

Fatigue considerations are also addressed in the Standard and it is concluded that unless calculation indicates that the magnitude and number of load reversals is significant (in respect of the fatigue life of building materials) then the guide values in Table 3.11 should not be reduced for fatigue considerations.

In order to assess the likelihood of cosmetic damage due to vibration, AS2187 specifies that vibration measurements should be undertaken at the base of the building and the highest of the orthogonal vibration components (transverse, longitudinal and vertical directions) should be compared with the criteria curves presented in Table 3.11.

It is noteworthy that in addition to the guide values nominated in Table 3.11 the Standard states that:

> Some data suggests that the probability of damage tends towards zero at 12.5 mm/s peak component particle velocity. This is not inconsistent with an extensive review of the case history information available in the UK.

3.4 Road traffic noise

The principal guidance to assess the impact of road traffic noise on assessment locations is in the *NSW Road Noise Policy* (RNP) (EPA 2011). Table 3.12 presents the road noise assessment criteria for residential land uses (i.e. assessment locations), reproduced from Table 3 of the RNP for road categories relevant to construction and use of the site.

All traffic would access or depart the site via Aldington Road either coming from Mamre Road and M12 (under construction) to the south or rejoin Mamre Road to the north prior to travelling to the M4 motorway.

Mamre Road, M12 and M4 would all be considered arterial roads, whilst under the definitions of the NSW RNP, Aldington Road is a sub-arterial road.

Table 3.12 Road traffic noise assessment criteria for residential land uses

Road category	Type of project/development	Assessment criteria – dBA	
		Day (7 am to 10 pm)	Night (10 pm to 7 am)
Freeway/arterial/sub-arterial roads	Existing residences affected by additional traffic on existing freeway/arterial/sub-arterial roads generated by land use developments.	$L_{eq,15hr}$ 60 (external)	$L_{eq,9hr}$ 55 (external)
Local roads	Existing residences affected by additional traffic on existing local roads generated by land use developments.	$L_{eq,1hr}$ 55 (external)	$L_{eq,1hr}$ 50 (external)

Additionally, the RNP states that where existing road traffic noise criteria are already exceeded, any additional increase in total traffic noise level should be limited to an increase of up to 2 dB.

In addition to meeting the assessment criteria in Table 3.12 any significant increase in total traffic noise at the relevant residential assessment locations must be considered. Residential assessment locations experiencing increases in total traffic noise levels above those presented in Table 3.13 should be considered for mitigation.

Table 3.13 Road traffic relative increase criteria for residential land uses

Road category	Type of project/development	Total traffic noise level increase – dBA	
		Day (7 am to 10 pm)	Night (10 pm to 7 am)
Freeway/arterial/sub-arterial roads and transit ways	New road corridor/redevelopment of existing road/land use development with the potential to generate additional traffic on existing road.	Existing traffic $L_{eq(15\text{-}hr)}$+12 dB (external)	Existing traffic $L_{eq(9\text{-}hr)}$+ 12 dB (external)

Appendix B of the RNP, states that noise levels shall be rounded to the nearest integer, whilst difference between two noise levels are to be rounded to a single decimal place.

The project comprises a relatively small site within the context of the total greater precinct where all traffic from WSAP and MRP was considered[2]. Traffic from this site will travel to and from the site via Aldington Road, wholly within an industrial zoned precinct, prior to joining Mamre Road, M12 or M4 that are highly trafficked arterial roads. In addition, all roads connecting to the WSA and MRP will be significantly upgraded including existing and new roads within the precinct. A review of projected traffic movements for future traffic for the development of the precinct for 2036[3] has confirmed the following projected annual average daily traffic (AADT) traffic volumes:

- Aldington Road 23,015
- Abbott Road 15,227
- Mamre Road (south) 56,746
- Mamre Road (north) 48,747
- Bakers Lane 22,734.

Any potential impacts from the project, comprising a forecast total 1,325 movements (light and heavy vehicles) per day and a peak one hour comprising 118 movements of which 86 are light vehicles and 32 are heavy vehicles would be suitably diluted within existing traffic volumes to not result in any perceivable noise impact.

Accordingly, traffic has not been considered further in this assessment.

[2] Ason Group. Transport Management & Accessibility Plan. 253-267 Aldington Road, Kemps Creek Report P1730r01 dated 3 November 2023 – File reference 1730r01v12 TMAP_259-263 Aldington Road, Kemps Creek, Issue

[3] Ason Group – Collaboration with TfNSW, DPE and LOG to establish the DCP road network

4 Noise assessment approach

4.1 Overview

This section presents the methods and base parameters used to model operational and construction noise and vibration emissions from the construction and operation of the project.

Operational and construction noise levels were predicted using DGMR Software proprietary modelling software, iNoise 2021.1. The model allows prediction under the ISO9613-2 "*Acoustics – Attenuation of Sound during Propagation Outdoors – general method*" algorithm. It was selected acknowledging the general terms of accuracy of 1,000 m (currently under review) on the basis that the closest and most exposed sensitive receivers (Mount Vernon and BAPS Temple) are in the order of this 1,000 m zone, accounts for building reflections and considers adverse meteorological effects. Features which affect the predicted noise level that are considered in the noise modelling include:

- equipment sound power levels and locations
- screening from structures
- receiver locations
- ground topography
- noise attenuation due to geometric spreading
- ground absorption
- atmospheric absorption.

The model was populated with 3-D topography of the project and surrounding area, extending past the nearest assessment locations. The model adopted concrete hardstand around the buildings and roadways on the site and grassland for remaining areas with absorption coefficients of 0 and 0.7, respectively.

Plant and equipment representing the range of proposed operation and construction scenarios was modelled at locations representing the worst-case noise levels for assessment locations. For construction, the whole site was considered as an area source, whilst for operation the model was a little more complicated and considered traffic generation outlined in the traffic impact assessment (TIA) by Ason Group[4].

4.2 Operational noise

The NIA was based on the layout (Figure 1.1), plant and equipment (Section 4.2) and truck movements outlined in the TIA (Ason Group 2023). The site is proposed to operate 24 hours per day, seven days per week.

[4] Ason Group. Transport Management & Accessibility Plan. 253-267 Aldington Road, Kemps Creek Report P1730r01 dated 3 November 2023 – File reference 1730r01v12 TMAP_259-263 Aldington Road, Kemps Creek, Issue

4.2.1 Warehouse designs

The assessment of noise emissions from within the warehouse building assumes the following based on construction and design materials outlined in the architectural drawings package prepared by Nettleton Tribe[5] and reproduced in Appendix A. The buildings are complex and include areas of sheet metal cladding and transparent sheeting both on walls and roof. In terms of Warehouse 1a, b and c, they are proposed as ambient warehouses. However, Warehouse 2 is proposed as a climate controlled warehouse and building materials are adjusted accordingly. A full summary of the insertion loss, percentage of building surface areas and total sound power levels adopted are provided in Appendix B.

Warehouses 1 a, b and c:

- Metal skin
  - outer skin of 0.48 mm base metal thickness (BMT) sheet metal
  - 60 mm internal insulation lining walls with perforated foil facing inwards.

The sound transmission loss of the proposed metal skin portion of walls/roof is presented in Table 4.1. This table also presents the anticipated reduction in performance due to detailing leaks at junctions.

Table 4.1 Minimum sound transmission loss of shed walls/roof - metal

Shed wall	Description	Octave band centre frequency, minimum transmission loss, dB							Rw	Rw + Ctr
		63	125	250	500	1 k	2 k	4 k		
Metal skin	In principle performance	6	12	16	21	27	30	40	24	23

- Transparent panels
  - Danpalon 16 (reduced to 8 mm).

The sound transmission loss of the proposed transparent portion of walls/roof is presented in Table 4.2.

Table 4.2 Minimum sound transmission loss of shed walls/roof - transparent

Shed wall	Description	Octave band centre frequency, minimum transmission loss, dB							Rw	Rw + Ctr
		63	125	250	500	1 k	2 k	4 k		
Transparent	In principle performance	5	5	7	11	16	20	24	15	12

- In terms of doors for Warehouse 1 a, b and c the assessment has adopted the areas of the architectural drawings and assumed they are open with the exception of the recessed docks where trucks are butted and coupled to the building.

Warehouse 2:

- Metal skin
  - outer skin of 0.42 mm BMT sheet metal

[5] Nettleton Tribe – Proposed Warehouse & Distribution Centre Buildings. 253-267 Aldington Road, Kemps Creek – 12253-ARCH. COMBINED_231030

- an air gap (with structure) of min 200 mm with 50 mm minimum 32 kg/m^3 insulation
- inner skin of 0.48 mm BMT sheet metal.

The sound transmission loss of the proposed metal skin portion of walls/roof is presented in Table 4.3. This table also presents the anticipated reduction in performance due to detailing leaks at junctions.

Table 4.3 Minimum sound transmission loss of shed walls/roof - metal

Shed wall	Description	Octave band centre frequency, minimum transmission loss, dB							Rw	Rw + Ctr
		63	125	250	500	1 k	2 k	4 k		
Metal skin	In principle performance	6	9	21	31	31	33	35	38	28

Notwithstanding Warehouse 2 being a temperature controlled building, this assessment has conservatively considered that there would be transparent panels in walls.

- Transparent panels
  - Danpalon 16 (reduced to 8 mm).

The sound transmission loss of the proposed transparent portion of walls is presented in Table 4.4.

Table 4.4 Minimum sound transmission loss of shed walls - transparent

Shed wall	Description	Octave band centre frequency, minimum transmission loss, dB							Rw	Rw + Ctr
		63	125	250	500	1 k	2 k	4 k		
Transparent	In principle performance	5	5	7	11	16	20	24	15	12

- In terms of doors for Warehouse 2 and acknowledging that it is a temperature controlled environment, the assessment has assumed either trucks are butted and coupled to the building and sealed – or there are fast acting PVC roller doors or equivalent. The acoustic performance adopted for the fast acting roller doors is provided in Table 4.5.

Table 4.5 Minimum sound transmission loss of doors - PVC

Shed wall	Description	Octave band centre frequency, minimum transmission loss, dB							Rw	Rw + Ctr
		63	125	250	500	1 k	2 k	4 k		
Doors	In principle performance	5	4	6	10	15	20	26	15	12

Warehouse 2 also incorporates a refrigeration plantroom. For assessment purposes this was considered as a plantroom on the roof of the building with a minimum of 100 m^2 open area utilised for ventilation and a total foot print of 15 m L x 10 m W x 2.5 m H. Plantroom would be constructed of wall and roof materials providing an acoustic performance of not less than Rw 35.

4.2.2 Plant and equipment

Plant and equipment of acoustic significance and associated sound power levels for the project are associated with heavy vehicles (semi-trailers and b-doubles) entering and traversing the site, fork trucks around the hardstand adjacent the loading docks and truck manoeuvring area on the north side of buildings, light vehicles for staff, air-conditioning plant for servicing offices and refrigeration plant for Warehouse 2 temperature controlled building. The list is based on EMM experience on similar logistic facilities and a review of a number of recent NIA submitted to support projects within the WSAP and MRP and represent the total sound power level (Lw) per item.

- Heavy vehicles (including semi-trailers and B-doubles) L_{Aeq} 106 dB
  L_{Amax} 120 dB
- Refrigerated truck idle L_{Aeq} 88 dB
- Fork trucks (gas) loading / unloading L_{Aeq} 90 dB
  L_{Amax} 120 dB
- Light vehicles L_{Aeq} 74 dB
- Air conditioning condensers L_{Aeq} 88 dB
- Chiller plantroom (space averaged) L_{Aeq} 85 dB

In terms of heavy vehicles, the adopted sound power level incorporated the full expected activity of a vehicle, accelerating on site (20 km/h), moving, idling, manoeuvring and reversing. For fork truck loading / unloading the assessment considered continuous use.

From experience and a review of source data, the plant and equipment listed do not present tonal characteristics as defined by the NPfI. A review of the A weighted and C weighted noise levels of mobile plant confirmed that they exhibit no low frequency or tonal characteristics. Review of the internal warehouse noise as an unattenuated level and attenuated level through the façade confirmed level differences greater than 15 dB threshold for assessment of low frequency noise (LFN). Accordingly, a review of the noise levels at the assessment locations was considered and confirmed that the low frequency noise level contributions from the buildings were significantly below the thresholds outlined in NPfI Fact Sheet C Table C2 and, accordingly, a low frequency penalty was not applied to the noise level contributions from the project at assessment locations.

A review of the TIA by Ason Group[6] enabled an evaluation of the peak hour traffic volumes for the day, evening and night assessment periods. These values were used and spread over the four warehouses (1 a, b and c and 2) to provide a worst case impact for each assessment period. A review of Appendix A of the TIA confirmed the following peak one hour site traffic movements for each assessment period considering maximum heavy vehicles (HV), whilst for light vehicles (LV) the assessment assumed a full changeover of proposed car parks to provide a conservative assessment and consider potential shift changeover:

- Day HV 30 LV 263
- Evening HV 10 LV 263

[6] Ason Group. Transport Management & Accessibility Plan. 253-267 Aldington Road, Kemps Creek Report P1730r01 dated 3 November 2023 – File reference 1730r01v12 TMAP_259-263 Aldington Road, Kemps Creek, Issue – Appendix A

- Night HV 20 LV 263.

A summary of the number of vehicles and items of plant are provided in Table 4.6 accounting for 15 minute assessment period and distribution of trucks over the four warehouses (1a, b, c and 2).

Table 4.6 Plant and equipment

Item No.	Equipment / Activity	Comments	Notes	Sound Power Level, dB		Quantity by period		
				L_{Aeq}	L_{Amax}	Day	Evening	Night
1	Warehouse 1a trucks	2m source height loop and manoeuvring	2 m source height	106.0	120.0	2	1	2
2	Warehouse 1a fork trucks	General area around docks - assume 90dBA - awning area - account for 4 fork trucks (+6dB)	1.5 m source height	90.0		4	4	4
3	Warehouse 1b trucks	2m source height loop and manoeuvring	2 m source height	106.0	120.0	2	1	2
4	Warehouse 1b fork trucks	General area around docks - assume 90dBA - awning area - account for 4 fork trucks (+6dB)	1.5 m source height	90.0		4	4	4
5	Warehouse 1c trucks	2m source height loop and manoeuvring	2 m source height	106.0	120.0	2	1	2
6	Warehouse 1c fork trucks	General area around docks - assume 90dBA - awning area - account for 4 fork trucks (+6dB)	1.5 m source height	90.0		4	4	4
7	Warehouse 2a trucks - refrigerated	2m source height loop and manoeuvring	2 m source height	106.0	120.0	2	1	2
8	Warehouse 2a trucks - refrigerated	parked along dock area - account for 4 parks and running refrigeration	3 m source height	87.9	-	4	4	4
9	Warehouse 2 fork trucks	General area around docks - assume 90dBA - awning area - account for 4 fork trucks (+6dB)	1.5 m source height	90.0	120-	4	4	4
10	Carpark breakout (Warehouse 1a - 65 spaces)	southern façade as shown DA011 - breakout from under croft parking	taken from WCX - 74dB/15min per vehicle then 50% utilisation assuming full car pack changeover in each period	92.2	95.0	65	65	65

Table 4.6 Plant and equipment

Item No.	Equipment / Activity	Comments	Notes	Sound Power Level, dB		Quantity by period		
				L_{Aeq}	L_{Amax}	Day	Evening	Night
11	Carpark breakout (Warehouse 1b/c 113 car spaces)	southern façade as shown DA012 - breakout from under croft parking	taken from WCX - 74dB/15min per vehicle then 50% utilisation assuming full carpark changeover in each period	94.6	95.0	113	113	113
12	Carpark breakout (Warehouse 1b/c 85 car spaces)	southern façade as shown DA013 - breakout from under croft parking	taken from WCX - 74dB/15min per vehicle then 50% utilisation assuming full carpark changeover in each period	93.3	95.0	85	85	85
13	Office AC/HVAC - Warehouse 1a	Office AC/HVAC - Warehouse 1a - 4 x Temperzone OSA950 or eq.	roof above offices	87.9	-	4	4	4
14	Office AC/HVAC - Warehouse 1b	Office AC/HVAC - Warehouse 1b - 4 x Temperzone OSA950 or eq.	roof above offices	87.9	-	4	4	4
15	Office AC/HVAC - Warehouse 1c	Office AC/HVAC - Warehouse 1c - 4 x Temperzone OSA950 or eq.	roof above offices	87.9	-	4	4	4
16	Office AC/HVAC - Warehouse 2	Office AC/HVAC - Warehouse 2 - 4 x Temperzone OSA950 or eq.	roof above offices	87.9	-	4	4	4
17	Condensers - Warehouse 2	Condensers for Warehouse 2 x 6 Lw89 each	roof centrally	94.9	-	1	1	1
18	Chiller Plantroom - Warehouse 2	Chillers plantroom Box on roof 10m W x 15m L x 2.5m H central (SA)	85 dBA internal and assume 100 m^2 opening - roof centrally – 25 m^2 opening on each side	85.0	-	1	1	1
19	Warehouse 1a - composites	north façade	14% open doors	83.5	-	1	1	1
20		east façade	3% transparent	68.5	-	1	1	1
21		south façade	3% transparent	71.3	-	1	1	1
22		west façade	5% transparent	70.6	-	1	1	1
23		roof	2% transparent	78.6	-	1	1	1

Table 4.6 Plant and equipment

Item No.	Equipment / Activity	Comments	Notes	Sound Power Level, dB		Quantity by period		
				L_{Aeq}	L_{Amax}	Day	Evening	Night
24	Warehouse 1b/c - composites	north façade	15% open doors	86.8	-	1	1	1
25		east façade	5% transparent	70.0	-	1	1	1
26		south façade	13% transparent	74.5	-	1	1	1
27		west façade	5% transparent	70.0	-	1	1	1
28		roof	2% transparent	81.7	-	1	1	1
29	Warehouse 2 - composites	north façade	15% doors – PVC closed	75.5	-	1	1	1
30		east façade	15% transparent	73.1	-	1	1	1
31		south façade	2% transparent	70.6	-	1	1	1
32		west façade	nil	67.3	-	1	1	1
33		roof	nil	90.8	-	1	1	1
34	All docks	L_{Amax} airbrake	All docks	120.2	120.2	All	All	All

4.2.3 Noise predictions

Noise levels at the assessment locations identified in Table 2.1 were predicted based on the noise sources outlined in Section 4.2.2 and assumptions of Table 4.6. The overall $L_{Aeq,15min}$ noise contribution was modelled for direct assessment against project amenity noise levels.

4.2.4 Noise enhancing meteorology

The model considered default noise enhancing meteorological conditions comprising:

- day – 20°C, 60% humidity and 3 m/s wind for all assessment locations
- evening – 20°C, 60% humidity and 3 m/s wind for all assessment locations
- night – 10°C, 90% humidity and 2 m/s wind and temperature inversion for all assessment locations.

4.3 Construction noise

4.3.1 Times

Construction activities associated with the project have been assessed based standard construction hours.

4.3.2 Equipment sound power levels

i Continuous

Equipment sound power levels have been taken from EMM database of attended noise measurements and *Update of Noise Database for Prediction of Noise on Construction and Open Sites* (DEFRA 2005), where unavailable.

Acoustically significant fixed and mobile equipment items were considered in the model for the site with 100% utilisation represent a key range of activities likely to be undertaken during the main construction works. A summary of the construction phases, duration, number of plant and cumulative sound power levels (Lw) are presented in Table 4.7. The model considered the cumulative plant and equipment sound power level as an area source across the project providing a potential worst-case scenario.

Table 4.7 Construction stages and equipment sound power levels

Equipment/activity	Number of items (per 15 minutes)	SWL per item, L_{Aeq}	Total SWL, L_{Aeq}	Cumulative SWL per phase, L_{Aeq}
Stage 1: Initial site preparation works/bulk earthworks				
Hino (watercart - 16KL)	2	100	103	116
TANA Compactor TGX450	2	108	111	
Excavator	2	107	110	
Dozer Komatsu D375A	1	109	109	
FEL CAT972G	1	106	106	
Loader	1	105	105	

Table 4.7 Construction stages and equipment sound power levels

Equipment/activity	Number of items (per 15 minutes)	SWL per item, L_{Aeq}	Total SWL, L_{Aeq}	Cumulative SWL per phase, L_{Aeq}
Stage 2: Concrete hardstand and roadways				
Concrete agitator	3	108	113	117
Concrete pump	3	109	114	
Crane 100t	3	99	104	
Telehandler (Dieci)	1	105	105	
Stage 3: Building structure and erection				
Angle Grinder (Grinding Steel)	3	109	113	116
Trucks	2	109	112	
Crane 100t	3	99	104	
Elevated work platform	1	103	103	

Works associated with commissioning, landscaping and demobilisation will generate significantly lower noise levels than the key construction phases identified in Table 4.7 and have not been considered further in the assessment on the assumption that if the high noise level activities comply with the requirements, then lower intensity activities will also comply.

4.3.3 Noise predictions

To assess a potential worst-case construction scenario, the assessment has considered the identified plant and equipment in Table 4.7 operating continuously over a 15-minute period. Construction noise levels were predicted to the assessment locations listed in Table 2.1 and identified in Figure 2.1.

4.4 Construction vibration

Safe working distances for typical items of vibration intensive plant are listed in Table 4.8. The safe working distances are quoted for both “Cosmetic Damage” (refer British Standard BS 7385) and “Human Response” Assessing Vibration – a technical guideline.

Table 4.8 Recommended safe working distances for vibration intensive plant

Plant item	Rating/description	Safe working distance	
		Cosmetic damage (BS 7385)	Human Response (AV-atg)
Vibratory Rollers	1–2 tonne	5 m	15 to 20 m
	2–4 tonne	6 m	20 m
	4–6 tonne	12 m	40 m
	7-13 tonne	15 m	100 m
	13-18 tonne	20 m	100 m
	>18 tonne	25 m	100 m

Source: Transport for NSW – Construction Noise and Vibration Strategy – April 2019.

Safe work distances relate to continuous vibration. For most construction activity, vibration emissions are intermittent in nature. The safe working distances are therefore conservative.

The safe working distances presented in Table 4.8 are indicative and will vary depending on the item of plant and local geotechnical conditions. They apply to cosmetic damage of typical buildings under typical geotechnical conditions.

The safe working distances have been used to assess the potential for construction vibration impacts based on proposed activities.

5 Impact assessment

5.1 Operational noise

5.1.1 Single point predictions

Predicted single point operational noise levels are provided in Table 5.1 for day, evening, and night operations of the project. The levels presented for each assessment location represents the energy-average noise level over a 15-minute period and assumes all plant and activities operating concurrently in accordance with scenarios outlined in Section 4.2 under noise enhancing conditions.

Table 5.1 Predicted operational noise levels

Assessment location	Period	Amenity noise goal[1] $L_{Aeq,15min}$	Predicted noise level $L_{Aeq,15min}$	Compliance
R1	Day	53	19	Yes
	Evening	43	20	Yes
	Night	38	21	Yes
R2	Day	53	21	Yes
	Evening	43	21	Yes
	Night	38	22	Yes
R3	Day	53	21	Yes
	Evening	43	22	Yes
	Night	38	23	Yes
R4	Day	53	22	Yes
	Evening	43	23	Yes
	Night	38	24	Yes
R5	Day	53	20	Yes
	Evening	43	21	Yes
	Night	38	22	Yes
R6	Day	53	21	Yes
	Evening	43	22	Yes
	Night	38	23	Yes
R7	Day	53	22	Yes
	Evening	43	22	Yes
	Night	38	23	Yes
R8	Day	53	22	Yes
	Evening	43	23	Yes

Table 5.1 Predicted operational noise levels

Assessment location	Period	Amenity noise goal[1] $L_{Aeq,15min}$	Predicted noise level $L_{Aeq,15min}$	Compliance
	Night	38	24	Yes
R9	Day	53	22	Yes
	Evening	43	23	Yes
	Night	38	24	Yes
R10	Day	53	21	Yes
	Evening	43	22	Yes
	Night	38	23	Yes
R11^	Day	53	33	Yes
	Evening	43	33	Yes
	Night	38	34	Yes
R12	Day	53	32	Yes
	Evening	43	33	Yes
	Night	38	33	Yes
R13	Day	53	29	Yes
	Evening	43	28	Yes
	Night	38	30	Yes
R14	Day	53	27	Yes
	Evening	43	27	Yes
	Night	38	28	Yes
R15	Day	53	25	Yes
	Evening	43	24	Yes
	Night	38	26	Yes
R16	Day	53	32	Yes
	Evening	43	32	Yes
	Night	38	33	Yes
R17	Day	53	33	Yes
	Evening	43	33	Yes
	Night	38	35	Yes
R18	Day	53	29	Yes
	Evening	43	29	Yes

Table 5.1 Predicted operational noise levels

Assessment location	Period	Amenity noise goal[1] $L_{Aeq,15min}$	Predicted noise level $L_{Aeq,15min}$	Compliance
	Night	38	30	Yes
R19	Day	53	28	Yes
	Evening	43	28	Yes
	Night	38	29	Yes
R20	Day	53	28	Yes
	Evening	43	28	Yes
	Night	38	29	Yes
R21	Day	53	29	Yes
	Evening	43	29	Yes
	Night	38	30	Yes
R22	Day	53	28	Yes
	Evening	43	28	Yes
	Night	38	29	Yes
R23	Day	53	26	Yes
	Evening	43	27	Yes
	Night	38	28	Yes
R24	Day	53	25	Yes
	Evening	43	25	Yes
	Night	38	26	Yes
T1	When in use	60[2]	46	Yes

Notes: 1. As per Section 3.1.3 assuming three to four sites affecting any one assessment location

2. External noise level – assuming windows closed and 20 dB reduction across building façade

R11^ within WSAP

Results of the modelling confirm compliance with the project amenity level for all reference assessment locations on the assumption that three to four sites of equal noise contribution could affect any single assessment location. It is noted that the site is significantly separated from the assessment locations and would be surrounded by adjacent industrial and / or commercial land uses in future. Acoustic shielding provided by these structures has not been considered in the modelling, as they are currently unknown, however it does result in a conservative assessment.

5.1.2 Intermittent noise events (sleep disturbance)

Modelling of intermittent maxima noise events at night considered a typical worst-case event for air brake release and a source sound power level of L_{Amax} 120 dB. Potential for these events were considered within truck manoeuvring and loading / unloading area and predicted to the identified residential assessment locations. The results of the predictions under noise enhancing conditions are presented in Table 5.2.

Table 5.2 Predicted intermittent noise levels

Assessment location	Period	Screening level, dB	Predicted intermittent noise level, dB L_{Amax}	Compliance
R1	Night	52	35	Yes
R2	Night	52	36	Yes
R3	Night	52	38	Yes
R4	Night	52	38	Yes
R5	Night	52	36	Yes
R6	Night	52	37	Yes
R7	Night	52	37	Yes
R8	Night	52	39	Yes
R9	Night	52	37	Yes
R10	Night	52	36	Yes
R11^	Night	52	48	Yes
R12	Night	52	48	Yes
R13	Night	52	45	Yes
R14	Night	52	42	Yes
R15	Night	52	40	Yes
R16	Night	52	47	Yes
R17	Night	52	49	Yes
R18	Night	52	43	Yes
R19	Night	52	42	Yes
R20	Night	52	42	Yes
R21	Night	52	42	Yes
R22	Night	52	43	Yes
R23	Night	52	42	Yes
R24	Night	52	41	Yes

Notes: R11^ within WSAP

Despite the adoption of minimum background noise thresholds, results of modelling confirm compliance with the L_{Amax} sleep disturbance screening criterion for all reference residential assessment locations.

In terms of the $L_{Aeq,15min}$ noise level contributions, Table 5.1 confirms all residential assessment locations comply with the strictest night time limit of 40 dB.

5.2 Construction noise

5.2.1 Single point predictions

In accordance with procedures outlined in Section 4.3.2, prediction of construction noise levels is provided in Table 5.3 for standard construction hours under noise enhancing conditions. The level presented for each assessment location represents the energy-average noise level over a 15-minute period and assumes all plant operating concurrently. The assessment against the ICNG noise affected NML (assuming minimum background thresholds) at each assessment location is also provided.

Table 5.3 Predicted construction noise levels - Day

Assessment location	Period[1]	Noise affected NML, dB	Predicted construction noise level, dB $L_{Aeq,15min}$	Level above NML[2]
Stage 1: Initial site preparation works/bulk earthworks				
R1	Standard	45	23	No
R2	Standard	45	24	No
R3	Standard	45	25	No
R4	Standard	45	25	No
R5	Standard	45	25	No
R6	Standard	45	26	No
R7	Standard	45	26	No
R8	Standard	45	26	No
R9	Standard	45	26	No
R10	Standard	45	25	No
R11^	Standard	45	37	No
R12	Standard	45	36	No
R13	Standard	45	33	No
R14	Standard	45	31	No
R15	Standard	45	29	No
R16	Standard	45	35	No
R17	Standard	45	37	No
R18	Standard	45	34	No

Table 5.3 Predicted construction noise levels - Day

Assessment location	Period[1]	Noise affected NML, dB	Predicted construction noise level, dB $L_{Aeq,15min}$	Level above NML[2]
R19	Standard	45	33	No
R20	Standard	45	32	No
R21	Standard	45	33	No
R22	Standard	45	32	No
R23	Standard	45	31	No
R24	Standard	45	30	No
T1	When is use	65 (45 internal)[3]	48	No
Stage 2: Concrete hardstand and roadways				
R1	Standard	45	24	No
R2	Standard	45	25	No
R3	Standard	45	26	No
R4	Standard	45	26	No
R5	Standard	45	26	No
R6	Standard	45	27	No
R7	Standard	45	27	No
R8	Standard	45	27	No
R9	Standard	45	27	No
R10	Standard	45	26	No
R11^	Standard	45	38	No
R12	Standard	45	37	No
R13	Standard	45	34	No
R14	Standard	45	32	No
R15	Standard	45	30	No
R16	Standard	45	36	No
R17	Standard	45	38	No
R18	Standard	45	35	No
R19	Standard	45	34	No
R20	Standard	45	33	No

Table 5.3 Predicted construction noise levels - Day

Assessment location	Period[1]	Noise affected NML, dB	Predicted construction noise level, dB $L_{Aeq,15min}$	Level above NML[2]
R21	Standard	45	34	No
R22	Standard	45	33	No
R23	Standard	45	32	No
R24	Standard	45	31	No
T1	When is use	65 (45 internal)[3]	49	No
Stage 3: Building structure and erection				
R1	Standard	45	23	No
R2	Standard	45	24	No
R3	Standard	45	25	No
R4	Standard	45	25	No
R5	Standard	45	25	No
R6	Standard	45	26	No
R7	Standard	45	26	No
R8	Standard	45	26	No
R9	Standard	45	26	No
R10	Standard	45	25	No
R11^	Standard	45	37	No
R12	Standard	45	36	No
R13	Standard	45	33	No
R14	Standard	45	31	No
R15	Standard	45	29	No
R16	Standard	45	35	No
R17	Standard	45	37	No
R18	Standard	45	34	No
R19	Standard	45	33	No
R20	Standard	45	32	No
R21	Standard	45	33	No
R22	Standard	45	32	No

Table 5.3 Predicted construction noise levels - Day

Assessment location	Period[1]	Noise affected NML, dB	Predicted construction noise level, dB $L_{Aeq,15min}$	Level above NML[2]
R23	Standard	45	31	No
R24	Standard	45	30	No
T1	When is use	65 (45 internal)[3]	48	No

1. Standard hours (7.00 am to 6.00 pm Monday to Friday, 8.00 am to 1.00 pm Saturday and no work on Sunday or public holidays.
2. Level above NML for standard hours only.
3. Assuming windows closed during use and minimum 20dB noise reduction

R11^ within WSAP

A review of the predicted levels in Table 5.3, confirm that the standard day NML of 45 dB based on minimum background noise thresholds will be satisfied for all anticipated phases of construction works and will not result in any adverse noise impacts at any reference assessment locations.

5.3 Construction vibration

In relation to human comfort response, the safe working distances in Table 4.8 relate to continuous vibration and apply to residential assessment locations. For most construction activities, vibration emissions are intermittent in nature and for this reason, higher vibration levels occurring over shorter periods are acceptable, as discussed in BS 6472-1.

The nearest assessment locations are more than 800 m to the closest proposed construction activities. This assessment location is well beyond the safe working distances for human response (Table 4.8). Vibration impacts from construction at residential assessment locations are therefore highly unlikely.

6 Noise mitigation and management

6.1 Operation

Noise modelling has predicted that operational noise contributions from the project satisfy the project amenity noise levels for all reference assessment locations (Table 5.1).

Assessment of potential sleep disturbance from operation of the project has confirmed compliance for all residential assessment locations in terms of L_{Amax} 52 dB (Table 5.2) and $L_{Aeq,15min}$ 40 dB (Table 5.1) under the procedures of the NPfI. No additional mitigation measures are therefore required to satisfy noise targets.

The project will need to be constructed in accordance with the assumptions and modelling parameters outlined in Section 4.2 and Table 4.6. Table 6.1 provides proposed mitigation measures during operations. Where site or building design changes are made, these must be remodelled to confirm results.

Table 6.1 Proposed mitigation measures during operation

Requirement	Mitigation measure	Responsibility	Timing
Internal design noise levels	Space averaged internal noise levels to satisfy the assumptions presented in 4.2.1.	End User / Contractor	Pre-construction / design / Operation
Building construction	Building construction materials and acoustic requirements in accordance with the assumptions presented in Section 4.2.1 or equivalent – including design and specification of refrigeration plantroom	Contractor / Designer	Pre-construction / design
Selection of plant and equipment	Specification for all plant and equipment to be in accordance with the noise levels presented in Section 4.2.2 or equivalent	Contractor	Design / operation
Maintenance	Plant and equipment to be maintained to satisfy the ongoing noise levels referenced in Section 4.2.2.	Operator	Operation

6.2 Construction

6.2.1 General

The EPA's NSW ICNG requires that construction noise levels are assessed against NMLs.

Compliance with NMLs has been predicted for all refence assessment locations. No noise exceedances of $L_{Aeq,15min}$ are predicted for any reference assessment location.

6.2.2 Work practices

Feasible and reasonable mitigation measures to reduce construction noise levels will be reviewed and implemented where complaints are received and validated by exceedance of NML.

Work practice methods may include:

- regular reinforcement (such as at toolbox talks) of the need to minimise noise and vibration
- avoiding the use of portable radios, public address systems or other methods of site communication that may unnecessarily impact upon nearby residents

- develop routes for the delivery of materials and parking of vehicles to minimise noise
- where possible, avoid the use of equipment that generates impulsive noise
- notify residents prior to the commencement of intensive and OOH works (fi required).

6.2.3 Plant and equipment

Additional measures for plant and equipment may include:

- where possible, choose quieter plant and equipment based on the optimal power and size to most efficiently perform the required task
- operate plant and equipment in the quietest and most efficient manner
- minimise the number of plant and equipment operating simultaneously while still meeting processing requirements
- switch off idle plant
- regularly inspect and maintain plant and equipment to minimise noise and vibration level increases, to ensure that all noise and vibration reduction devices are operating effectively.

6.2.4 Noise management levels

As discussed in Section 6.2.2, residents will be notified prior to works commencing. Noise monitoring during the initial stages of construction will be undertaken to confirm actual construction noise levels. If NMLs are exceeded, Contractor will identify feasible and reasonable mitigation measures that reduce construction noise levels to at or below NMLs where practical.

6.2.5 Quantifying noise reductions

Approximate noise reductions provided by some of these measures are provided in Table 6.2.

Table 6.2 Relative effectiveness of various forms of noise control

Noise control	Nominal noise reduction possible, in total A-weighted sound pressure level, dB
Increase source to receiver distance[1]	approximately 6 dB for each doubling of distance
Reduce equipment operating times or turn off idling machinery[2]	approximately 3 dB per halving of operating time
Operating training on quiet operation[2]	up to 3 to 5 dB
Screening (e.g. noise barrier)[1]	normally 5 dB to 10 dB, maximum 15 dB
Enclosure (e.g. shed/building)[1]	normally 15 dB to 25 dB, maximum 50 dB
Silencing (e.g. exhaust mufflers) [1]	normally 5 dB to 10 dB, maximum 20 dB

1. Sourced from AS2436-2010
2. Based on EMM's measurement experience at construction and mining sites

7 Conclusion

This assessment has been prepared to consider the noise and vibration impacts of the project on reference residential assessment locations and BAPS Temple in terms of site operations and construction.

7.1 Operations

Assessment of operational noise associated with the project has confirmed compliance with NSW NPfI (EPA 2017) requirements adopting the relevant amenity criteria and accounting for three to four site of equal noise contribution affecting the same reference residential receiver location. Compliance is also predicted at the place of worship location (BAPS Temple).

Night activities from trucks and fork trucks associated with loading / unloading are predicted to satisfy the adopted sleep disturbance screening criteria of L_{Amax} 52 dB and $L_{Aeq,15min}$ 40 dB as defined in the NSW NPfI (EPA 2017) for all reference residential assessment locations adopting a conservative approach of minimum background noise levels.

The project comprises a relatively small site within a total greater precinct where all traffic from WSAP and MRP was considered[7]. Traffic will travel to and from the site via Aldington Road, wholly within an industrial zoned precinct, prior to joining Mamre Road, M12 or M4 that are highly trafficked arterial roads. Any potential impacts from the project, comprising a forecast total 1,325 movements (light and heavy vehicles) per day and a peak one hour of comprising 118 movements of which 86 are light vehicles and 32 are heavy vehicles and would be suitably diluted within existing traffic volumes to not result in any perceivable impact.

With the effective management and incorporation of mitigation and management measures listed in Section 6.1, operational noise emissions from the project can be managed to minimise impacts.

7.2 Construction

Construction noise levels from the project are predicted to comply with noise management levels (NMLs) at all privately owned assessment locations. The assessment has considered standard construction hours under noise enhancing conditions and predicted that the NMLs would be satisfied for all assessment locations, accordingly no adverse noise impacts are anticipated from construction activities based on the assumptions of this assessment.

The potential for vibration impacts on residents and vibration sensitive structures near construction has been assessed. The nearest residence to construction activity is assessment location R2 which is approximately 800 m away from the closest proposed construction activities (new site access). This assessment location is well outside of the safe working distances of likely plant, required to maintain acceptable human response and structural vibration levels. Vibration impacts from construction at all assessment locations are therefore highly unlikely.

With the effective management and incorporation of mitigation and management measures listed in Section 6.2, construction noise and vibration emissions from the project can be managed to minimise impacts.

[7] Ason Group. Transport Management & Accessibility Plan. 253-267 Aldington Road, Kemps Creek Report P1730r01 dated 3 November 2023 – File reference 1730r01v12 TMAP_259-263 Aldington Road, Kemps Creek, Issue

References

Ason Group. Transport Management & Accessibility Plan. 253-267 Aldington Road, Kemps Creek Report P1730r01 dated 3 November 2023 – File reference 1730r01v12 TMAP_259-263 Aldington Road, Kemps Creek, Issue

Australian Standard AS 1055-2018 - *Acoustics - Description and Measurement of Environmental Noise*.

Australian Standard AS 2187.2-2006 *Explosives* - Storage *and Use - Use of Explosives*.

BS 7385 Part 2-1993 *Evaluation and measurement for vibration in buildings Part 2*.

BS 6472 – 2008 *Evaluation of human exposure to vibration in buildings (1-80Hz).*

Department of Environment, Food and Rural Affairs (DEFRA) 2005, *Update of Noise Database for Prediction of Noise on Construction and Open Sites*.

German Standard DIN 4150 Part 2 1975.

Nettleton Tribe – Proposed Warehouse & Distribution Centre Buildings. 253-267 Aldington Road, Kemps Creek – 12253-ARCH. COMBINED_231030

NSW Environment Protection Authority (EPA) 2017, *Noise Policy for Industry.*

NSW Department of Environment Climate Change and Water (DECCW) 2011, *Road Noise Policy* (RNP).

NSW Department of Environment and Conservation 2006, *Assessing Vibration: a technical guideline.*

NSW Department of Environment Climate Change (DECC) 2009, *Interim Construction Noise Guideline* (ICNG).

Appendix A
Architectural drawings

EMM
creating opportunities

ICON
OCEANIA
nettletontribe

DA DRAWING LIST

No.	SHEET NAME	REV	DATE
DA000	Cover Page	9	30.10.2023
DA001	Location Plan	4	13.10.2023
DA001A	Site Analysis	2	13.10.2023
DA002	Master Plan	8	30.10.2023
DA002A	Stage 1 Works Plan	5	30.10.2023
DA011	Warehouse 1A Floor Plan	9	30.10.2023
DA012	Warehouse 1B & 1C Floor Plan	8	13.10.2023
DA013	Warehouse 2 Floor Plan	8	13.10.2023
DA014	Warehouse 1A Roof Plan	8	30.10.2023
DA015	Warehouse 1B & 1C Roof Plan	7	30.10.2023
DA016	Warehouse 2 Roof Plan	8	30.10.2023
DA017	Office 1A Floor Plan	6	13.10.2023
DA018	Office 1B Floor Plan	6	13.10.2023
DA019	Office 1C Floor Plan	6	13.10.2023
DA020	Office 2 Floor Plan	6	13.10.2023
DA021	Warehouse 1A Elevations	7	13.10.2023
DA022	Warehouse 1B & 1C Elevations	7	13.10.2023
DA023	Warehouse 2 Elevations	7	13.10.2023
DA025	Office 1A Elevations	6	13.10.2023
DA026	Office 1B Elevations	5	13.10.2023
DA027	Office 1C Elevations	5	13.10.2023
DA028	Office 2 Elevations	6	13.10.2023
DA031	Warehouse 1A Sections	8	13.10.2023
DA032	Warehouse 1B & 1C Sections	7	13.10.2023
DA033	Warehouse 2 Sections	7	13.10.2023
DA061	Signage Strategy Plan	6	30.10.2023
DA090	3D Perspective - Office 1A	4	20.10.2023
DA091	3D Perspective - Office 1B	4	20.10.2023
DA092	3D Perspective - Office 1C	4	20.10.2023
DA093	3D Perspective - Office 2	4	20.10.2023

PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

253 -267 ALDINGTON ROAD, KEMPS CREEK, NSW

DEVELOPMENT APPLICATION

OCTOBER 2023

Key Plan

0 100000 250000

Issue	Description	Date
4	ISSUED FOR DA	13.10.2023
3	ISSUED FOR DA	10.09.2021
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	19.08.2021

SSDA

Client

ICON OCEANIA

Builder

Project Name

PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address

253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title

Location Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 5000

Drawing Number: **12253_DA001** Issue: **4**

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117 Willoughby Road, Crows Nest, NSW 2065
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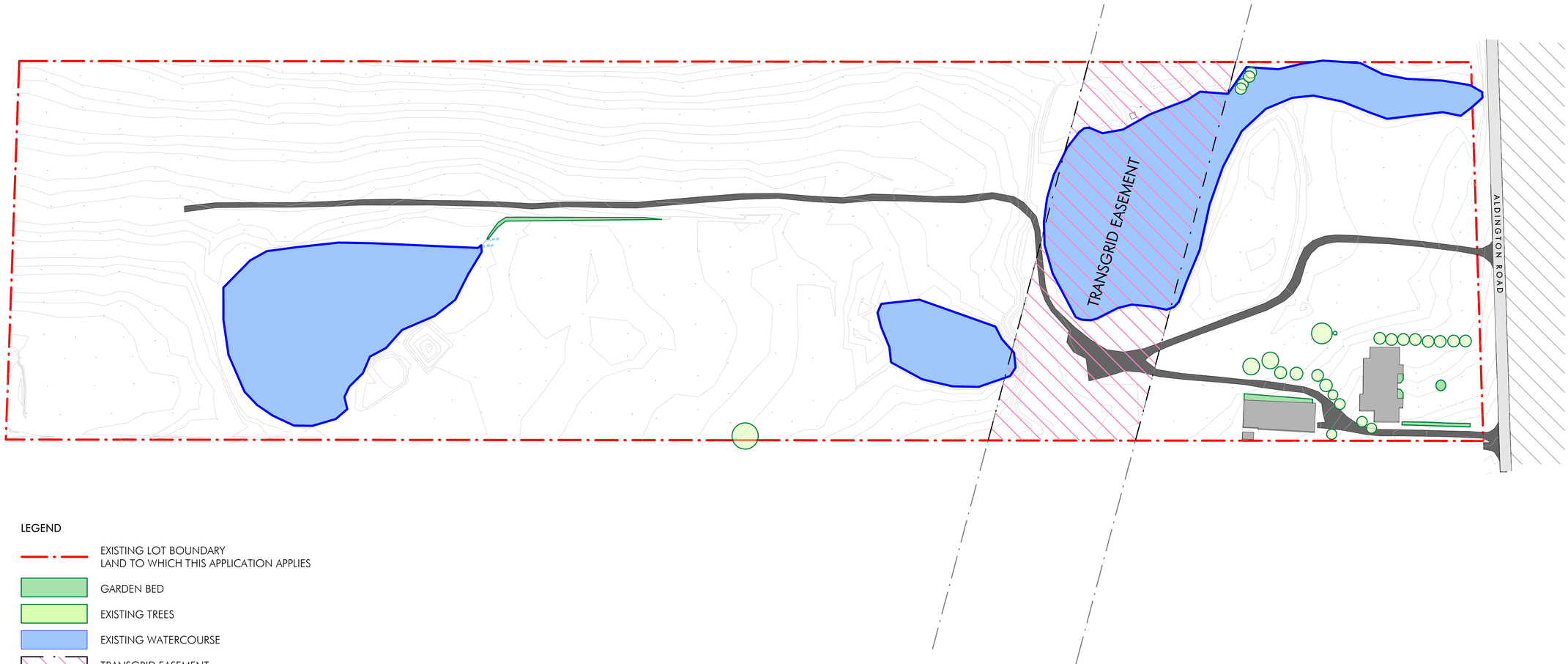
e: sydney@nettletontribe.com.au w: nettletontribe.com.au

Key Plan

0 2000 5000

Issue	Description	Date
2	ISSUED FOR DA	13.10.2023
1	ISSUED FOR DA	10.09.2021

NOTE:
REFER TO DESIGN REPORT FOR FURTHER SITE ANALYSIS.



LEGEND

- EXISTING LOT BOUNDARY LAND TO WHICH THIS APPLICATION APPLIES
- GARDEN BED
- EXISTING TREES
- EXISTING WATERCOURSE
- TRANSGRID EASEMENT
- EXISTING BUILDINGS
- EXISTING GRAVEL PATH

DETAIL SURVEY PLAN

DRAWING NUMBER: 2101126-DET-001-A
REVISION: A
DATE: 01.06.2021 **SSDA**
PREPARED BY:BEVERIDGE WILLIAMS
LAND DEVELOPMENT CONSULTANTS
REGISTERED SURVEYORS

Client: ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Site Analysis

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 1200

Drawing Number: **12253_DA001A** Issue: **2**

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DEVELOPMENT SUMMARY

GROSS SITE AREA	101,453m²
ALDINGTON RD. ROAD WIDENDING RESERVE (NON-DEVELOPABLE AREA)	(1,672m²)
INTERNAL ROAD RESERVE	8,312m²
LOT 1 SITE AREA	59,541m²
LOT 2 SITE AREA	31,928m²
NON-DEVELOPABLE AREA	(1,672 m²)
NET DEVELOPABLE AREA	99,781m²
LOT 1 SITE AREA (INCL. TRANSMISSION & TRUNK DRAINAGE EASEMENTS)	59,541m²
TOTAL BUILDING AREA	28,300m²
LANDSCAPED AREA (INCL. TRUNK DRAINAGE EASEMENT AREA)	APPX. 15,000m² (25%)
LOT 2 SITE AREA (INCL. TRUNK DRAINAGE EASEMENT)	31,928m²
TOTAL BUILDING AREA	17,230m²
LANDSCAPED AREA (INCL. TRUNK DRAINAGE EASEMENT AREA)	APPX. 6,300m² (20%)
TOTAL BUILDING AREA (GFA)	45,530m²
FLOOR SPACE RATIO (FSR) / GROSS SITE AREA	0.45 : 1
FLOOR SPACE RATIO (FSR) / NET DEVELOPABLE AREA	0.46 : 1

GFA SCHEDULE

WAREHOUSE 1A	8,700m²
OFFICE 1A	660m²
SUBTOTAL:	9,360m²
WAREHOUSE 1B	9,130m²
OFFICE 1B	750m²
SUBTOTAL:	9,880m²
WAREHOUSE 1C	8,405m²
OFFICE 1C	655m²
SUBTOTAL:	9,060m²
WAREHOUSE 2	16,390m²
OFFICE 2	790m²
DOCK OFFICE	50m²
SUBTOTAL:	17,230m²
TOTAL WAREHOUSE AREA	42,625m²
TOTAL OFFICE AREA	2,905m²
TOTAL BUILDING AREA (GFA)	45,530m²

PARKING SCHEDULE

TOTAL CARPARK REQUIRED	217 SPACES

Table 12 of Mamre Road Precinct DCP 2021
Warehouse: 1 space/300sqm
Office: 1 space/40sqm

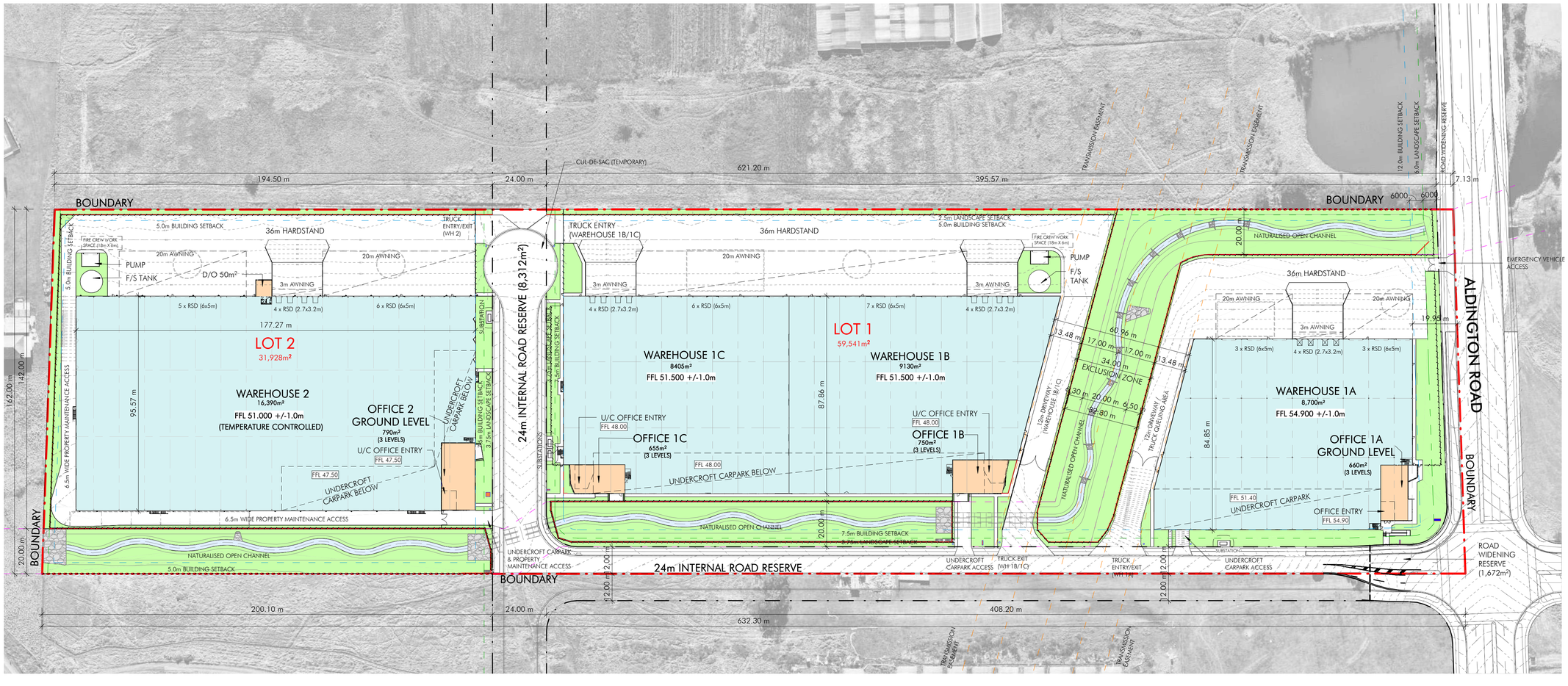
TOTAL CARPARK PROPOSED	261 SPACES
WAREHOUSE 1A	65 SPACES
WAREHOUSE 1B & 1C	117 SPACES
WAREHOUSE 2	79 SPACES
TOTAL BICYCLE PARKING REQUIRED	45 SPACES

Table 12 of Mamre Road Precinct DCP 2021
Warehouse: 1 space/1,000sqm (over 2,000m²)
Office: 1 space/600sqm (over 1,200m²)

TOTAL BICYCLE PARKING PROPOSED	54 SPACES
WAREHOUSE 1A	12 SPACES
WAREHOUSE 1B	12 SPACES
WAREHOUSE 1C	12 SPACES
WAREHOUSE 2	18 SPACES

LEGENDS

- OVERALL SITE BOUNDARY
- LOT BOUNDARY
- ALDINGTON RD. ROAD WIDENING RESERVE
- TRANSMISSION EASEMENT
- TRUNK DRAINAGE CORRIDOR EASEMENT
- LANDSCAPE SETBACK
- BUILDING SETBACK
- RETAINING WALL
- FENCE LINE



1 Master Plan
1 : 1000

Key Plan
0 20000 50000

Issue	Description	Date
8	ISSUED FOR DA	30.10.2023
7	ISSUED FOR DA	13.10.2023
6	ISSUED FOR COORDINATION	04.10.2023
5	ISSUED FOR DA	16.08.2023
4	ISSUED FOR DA	18.08.2022
3	ISSUED FOR DA	04.11.2011
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Master Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 1000

Drawing Number: **12253_DA002** Issue: **8**

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DEVELOPMENT SUMMARY

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NET DEVELOPABLE AREA	99,781m²
LOT 1 SITE AREA (INCL. TRANSMISSION & SYDNEY WATER EASEMENTS)	59,541m²
TOTAL BUILDING AREA	28,300m²
LANDSCAPED AREA (INCL. SYDNEY WATER EASEMENT AREA)	APPX. 15,000m² (25%)

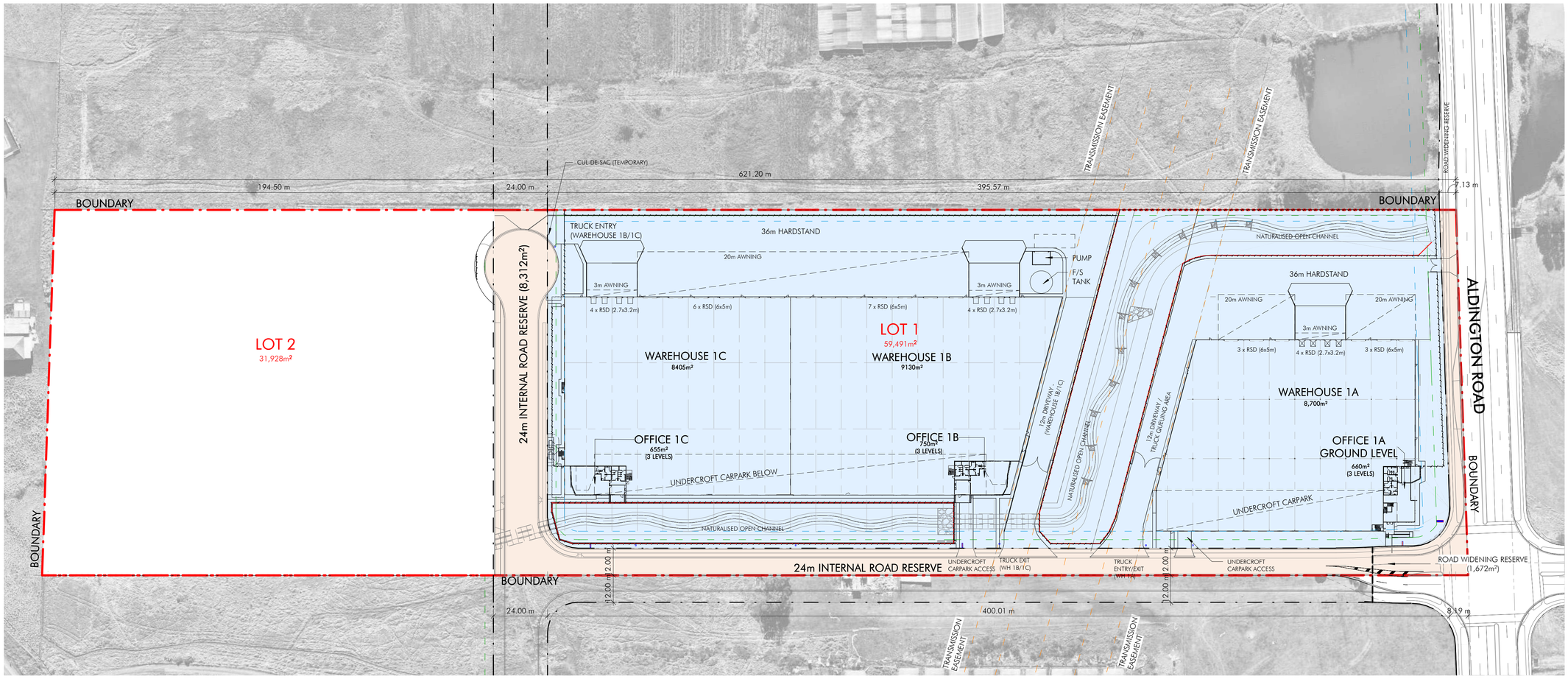
STAGE 1 WORKS

EXTENT OF WORKS INCLUDED ON STAGE 1:

- INTERNAL ROAD WORKS
- BUILDING WORKS ON LOT 1
- BULK EARTHWORKS INCLUDING STORMWATER
& RETAINING WALL PLANS (REFER TO CIVIL ENGINEER'S PLANS)

LEGENDS

- OVERALL SITE BOUNDARY
- LOT BOUNDARY
- ALDINGTON RD. ROAD WIDENING RESERVE
- TRANSMISSION EASEMENT
- TRUNK DRAINAGE CORRIDOR EASEMENT
- LANDSCAPE SETBACK
- BUILDING SETBACK
- RETAINING WALL
- FENCE LINE



1 Stage 1 Works Plan
1 : 1000

Key Plan

0 20000 50000

Issue	Description	Date
5	ISSUED FOR DA	30.10.2023
4	ISSUED FOR DA	13.10.2023
3	ISSUED FOR DA	16.08.2023
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021

LEGEND:

Stage 1
Infrastructure Works

Stage 1
On Site works

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Stage 1 Works Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 1000

Drawing Number: **12253_DA002A** Issue: **5**

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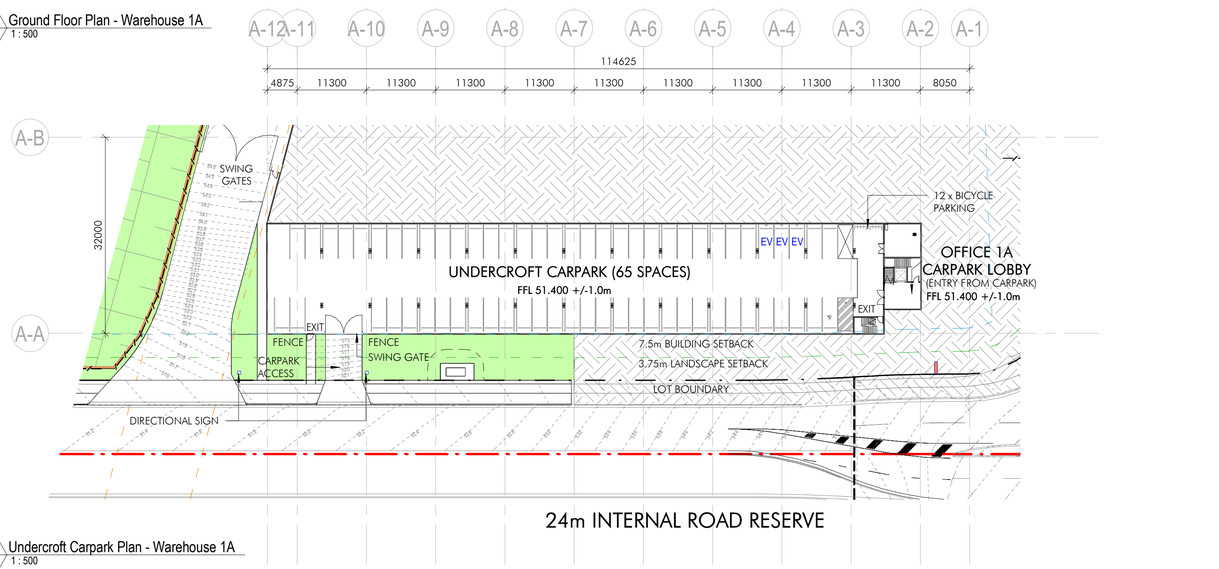
1 Ground Floor Plan - Warehouse 1A
1 : 500



2 Undercroft Carpark Plan - Warehouse 1A
1 : 500

LEGENDS

- OVERALL SITE BOUNDARY
- LOT BOUNDARY
- TRANSMISSION EASEMENT
- TRUNK DRAINAGE CORRIDOR EASEMENT
- LANDSCAPE SETBACK
- BUILDING SETBACK
- RETAINING WALL
- FENCE LINE

Key Plan

0 10000 25000

Issue	Description	Date
9	ISSUED FOR DA	30.10.2023
8	ISSUED FOR DA	13.10.2023
7	ISSUED FOR COORDINATION	04.10.2023
6	ISSUED FOR DA	16.08.2023
5	ISSUED FOR DA	19.08.2022
4	ISSUED FOR DA	08.09.2021
3	PRELIMINARY ISSUE	03.09.2021
2	PRELIMINARY ISSUE	24.08.2021
1	PRELIMINARY ISSUE	19.08.2021

SSDA

Client: ICON OCEANIA

Builder:

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 1A Floor Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 500

Drawing Number: **12253_DA011**

Issue: **9**

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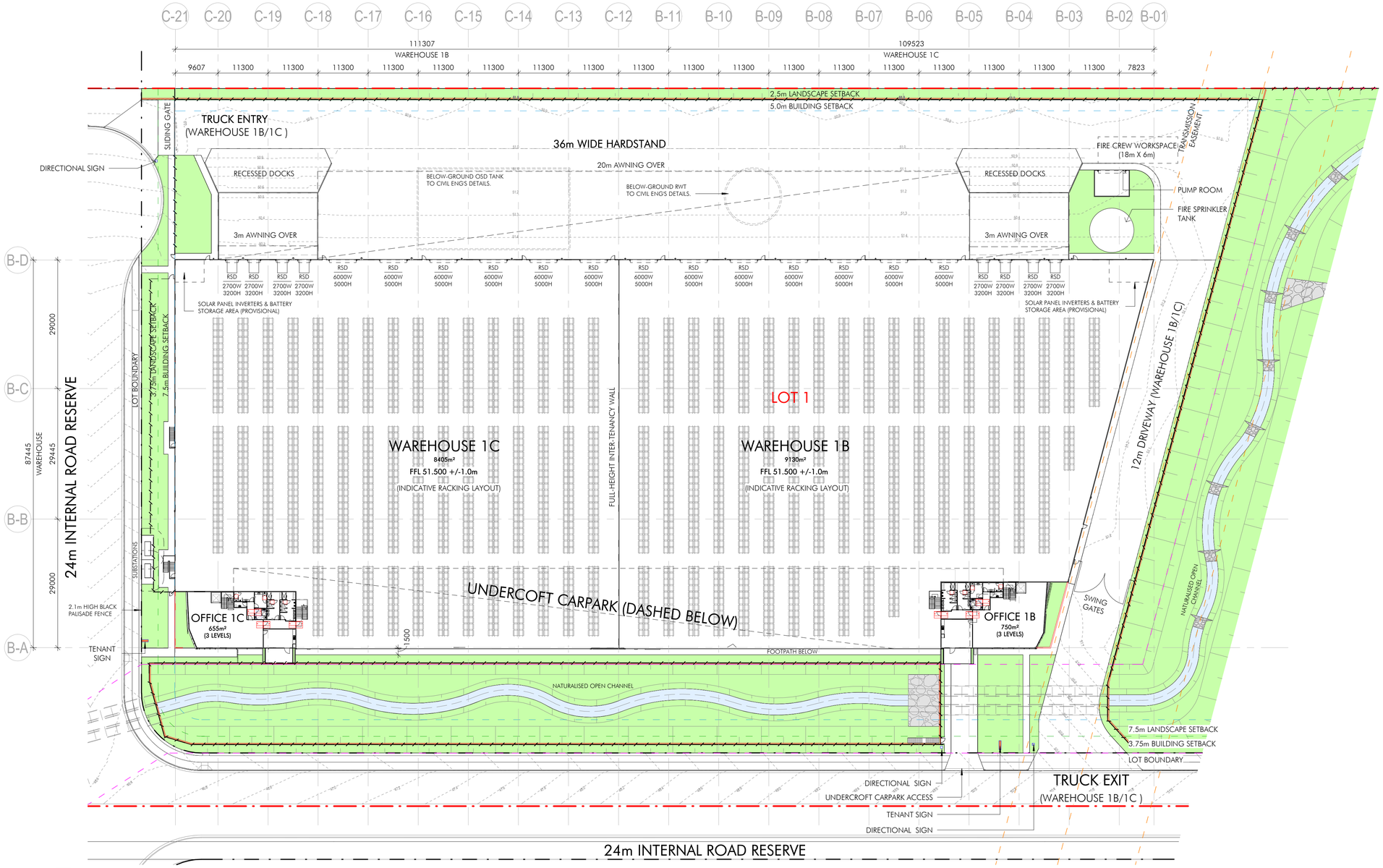
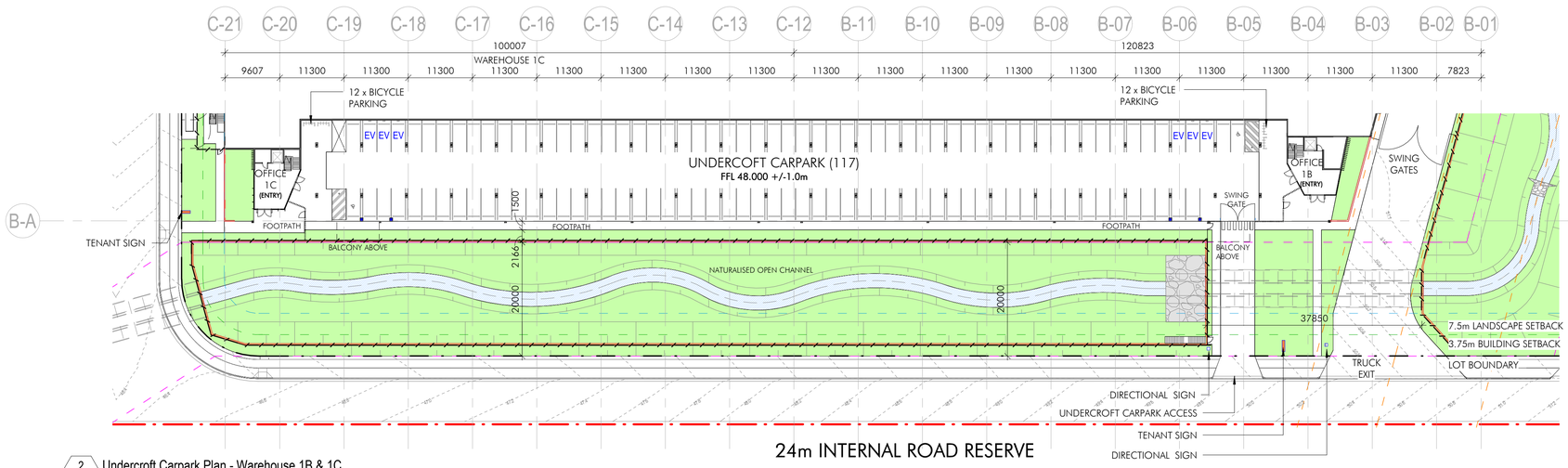


1 Ground Floor Plan - Warehouse 1B & 1C
1 : 500



2 Undercroft Carpark Plan - Warehouse 1B & 1C
1 : 500

LEGENDS

- OVERALL SITE BOUNDARY
- LOT BOUNDARY
- TRANSMISSION EASEMENT
- TRUNK DRAINAGE CORRIDOR EASEMENT
- LANDSCAPE SETBACK
- BUILDING SETBACK
- RETAINING WALL
- FENCE LINE

Key Plan

0 10000 25000

Issue	Description	Date
8	ISSUED FOR DA	13.10.2023
7	ISSUED FOR COORDINATION	04.10.2023
6	ISSUED FOR DA	16.08.2023
5	ISSUED FOR DA	19.08.2022
4	ISSUED FOR DA	08.09.2021
3	PRELIMINARY ISSUE	03.09.2021
2	PRELIMINARY ISSUE	24.08.2021
1	PRELIMINARY ISSUE	19.08.2021

SSDA

Client
ICON OCEANIA
Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 1B & 1C Floor Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 500

Drawing Number: **12253_DA012** Issue: **8**

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117 Willoughby Road, Crows Nest, NSW 2065
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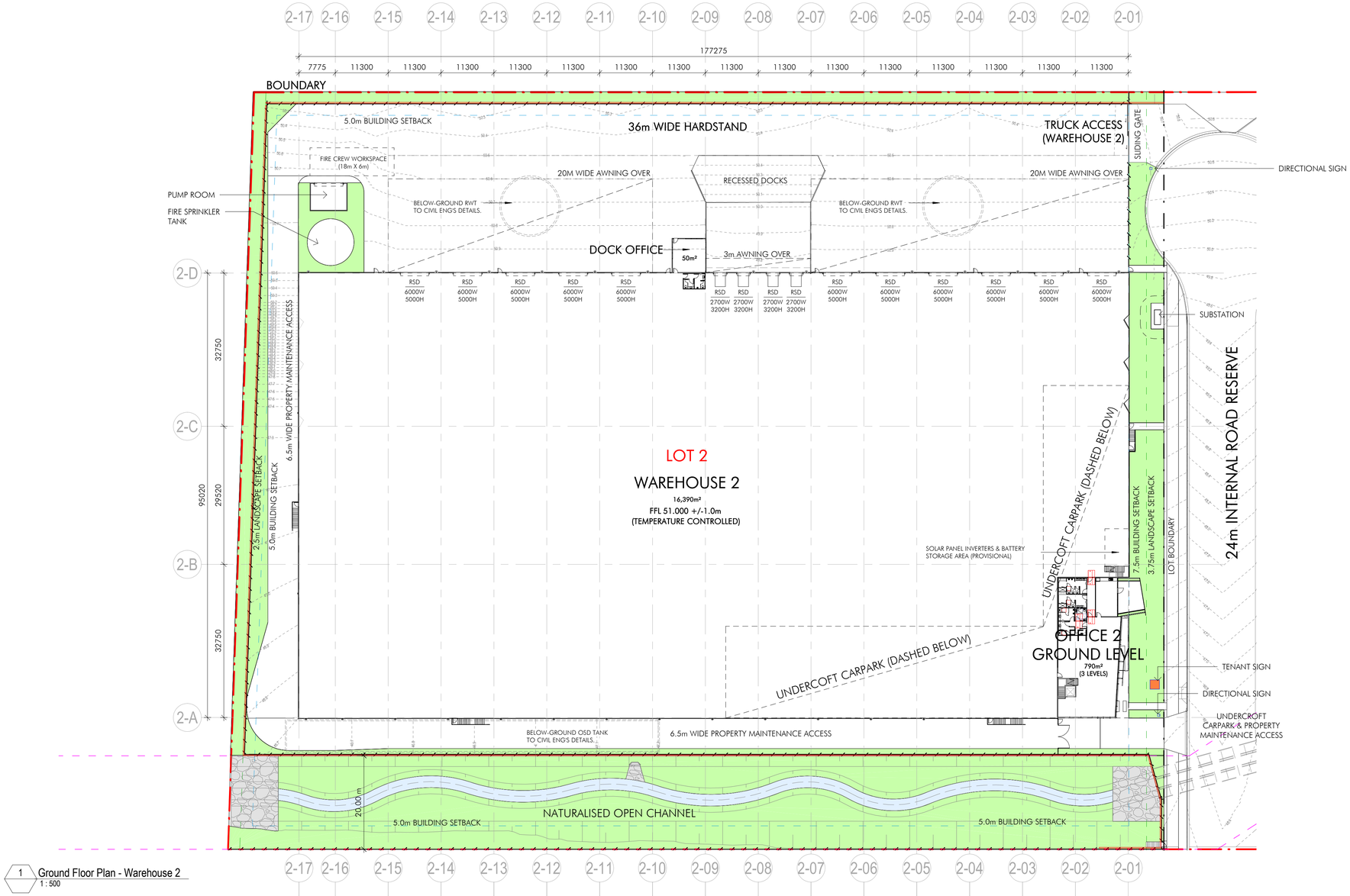

1 Ground Floor Plan - Warehouse 2
1 : 500

2 Undercroft Carpark Plan - Warehouse 2
1 : 500

LEGENDS

- OVERALL SITE BOUNDARY
- LOT BOUNDARY
- TRANSMISSION EASEMENT
- TRUNK DRAINAGE CORRIDOR EASEMENT
- LANDSCAPE SETBACK
- BUILDING SETBACK
- RETAINING WALL
- FENCE LINE

Key Plan

0 10000 25000

Issue	Description	Date
8	ISSUED FOR DA	13.10.2023
7	ISSUED FOR COORDINATION	04.10.2023
6	ISSUED FOR DA	16.08.2023
5	ISSUED FOR DA	19.08.2022
4	ISSUED FOR DA	08.09.2021
3	PRELIMINARY ISSUE	03.09.2021
2	PRELIMINARY ISSUE	24.08.2021
1	PRELIMINARY ISSUE	19.08.2021

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 2 Floor Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 500

Drawing Number: **12253_DA013** Issue: **8**

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117 Willoughby Road, Crows Nest, NSW 2065
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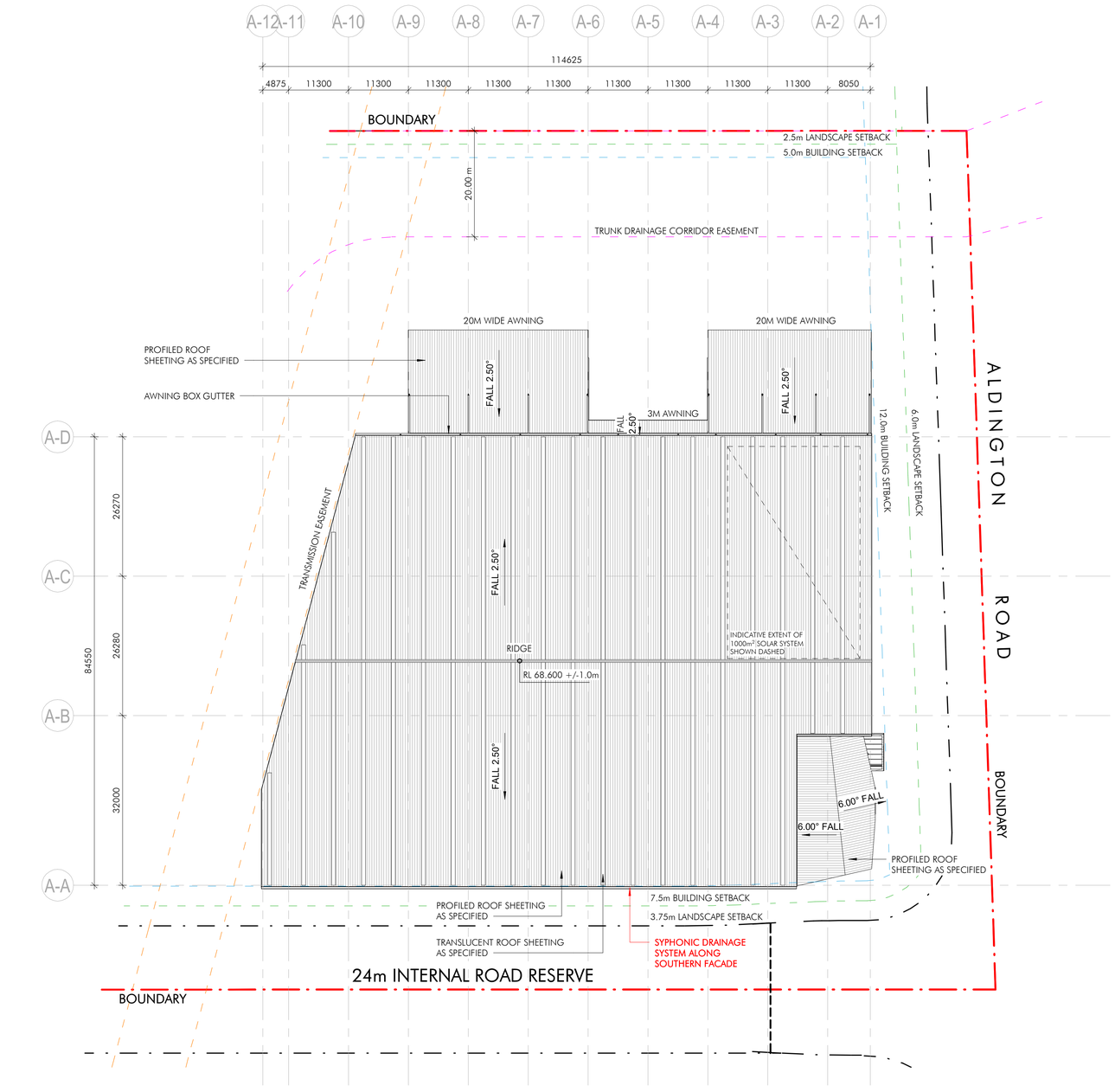
Key Plan

0 10000 25000

Issue	Description	Date
8	ISSUED FOR DA	30.10.2023
7	ISSUED FOR DA	13.10.2023
6	ISSUED FOR COORDINATION	04.10.2023
5	ISSUED FOR DA	16.08.2023
4	ISSUED FOR DA	19.08.2022
3	ISSUED FOR DA	08.09.2021
2	PRELIMINARY ISSUE	24.08.2021
1	PRELIMINARY ISSUE	19.08.2021



1 Roof Plan - Warehouse 1A
1 : 500

LEGENDS

- OVERALL SITE BOUNDARY
- LOT BOUNDARY
- TRANSMISSION EASEMENT
- TRUNK DRAINAGE CORRIDOR EASEMENT
- LANDSCAPE SETBACK
- BUILDING SETBACK
- RETAINING WALL
- FENCE LINE

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 1A Roof Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 500

Drawing Number: **12253_DA014** Issue: **8**

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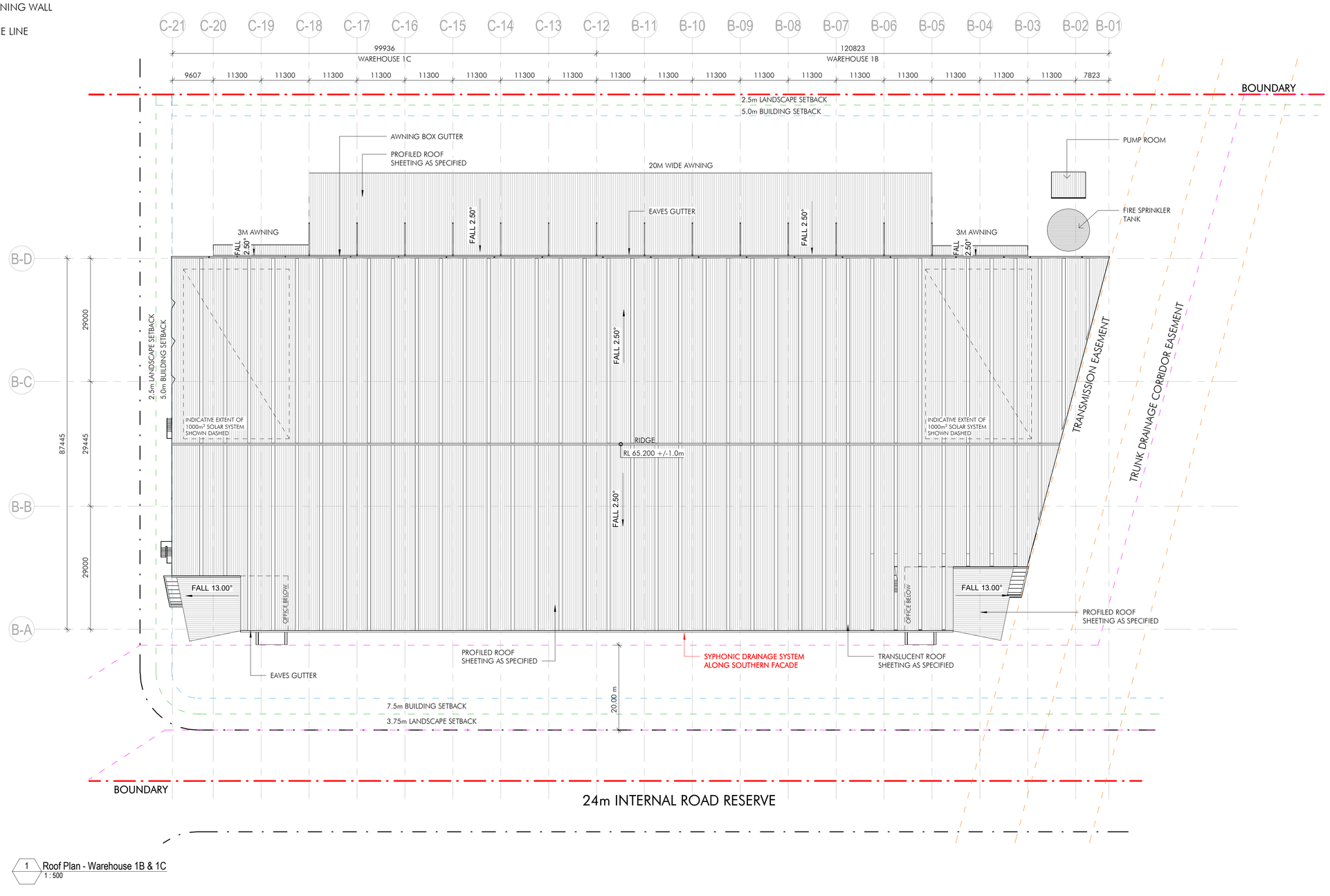
LEGENDS

- OVERALL SITE BOUNDARY
- LOT BOUNDARY
- TRANSMISSION EASEMENT
- TRUNK DRAINAGE CORRIDOR EASEMENT
- LANDSCAPE SETBACK
- BUILDING SETBACK
- RETAINING WALL
- FENCE LINE



1 Roof Plan - Warehouse 1B & 1C
1 : 500

Key Plan

0 10000 25000

Issue	Description	Date
7	ISSUED FOR DA	30.10.2023
6	ISSUED FOR DA	13.10.2023
5	ISSUED FOR COORDINATION	04.10.2023
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3	ISSUED FOR DA	08.09.2021
2	PRELIMINARY ISSUE	24.08.2021
1	PRELIMINARY ISSUE	19.08.2021

SSDA

Client: ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 1B & 1C Roof Plan

Author:	Checker:	Sheet Size:	Scale:
TL	MC	A1	1 : 500

Drawing Number: **12253_DA015**

Issue: **7**

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LEGENDS

- OVERALL SITE BOUNDARY
- LOT BOUNDARY
- TRANSMISSION EASEMENT
- TRUNK DRAINAGE CORRIDOR EASEMENT
- LANDSCAPE SETBACK
- BUILDING SETBACK
- RETAINING WALL
- FENCE LINE

1 Roof Plan - Warehouse 2
1 : 500

Key Plan

0 10000 25000

Issue	Description	Date
8	ISSUED FOR DA	30.10.2023
7	ISSUED FOR DA	13.10.2023
6	ISSUED FOR COORDINATION	04.10.2023
5	ISSUED FOR DA	16.08.2023
4	ISSUED FOR DA	19.08.2022
3	ISSUED FOR DA	08.09.2021
2	PRELIMINARY ISSUE	24.08.2021
1	PRELIMINARY ISSUE	19.08.2021

SSDA

Client
ICON OCEANIA
Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 2 Roof Plan

Author:	Checker:	Sheet Size:	Scale:
TL	MC	A1	1 : 500

Drawing Number: **12253_DA016**
Issue: **8**

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Key Plan

Issue	Description	Date
6	ISSUED FOR DA	13.10.2023
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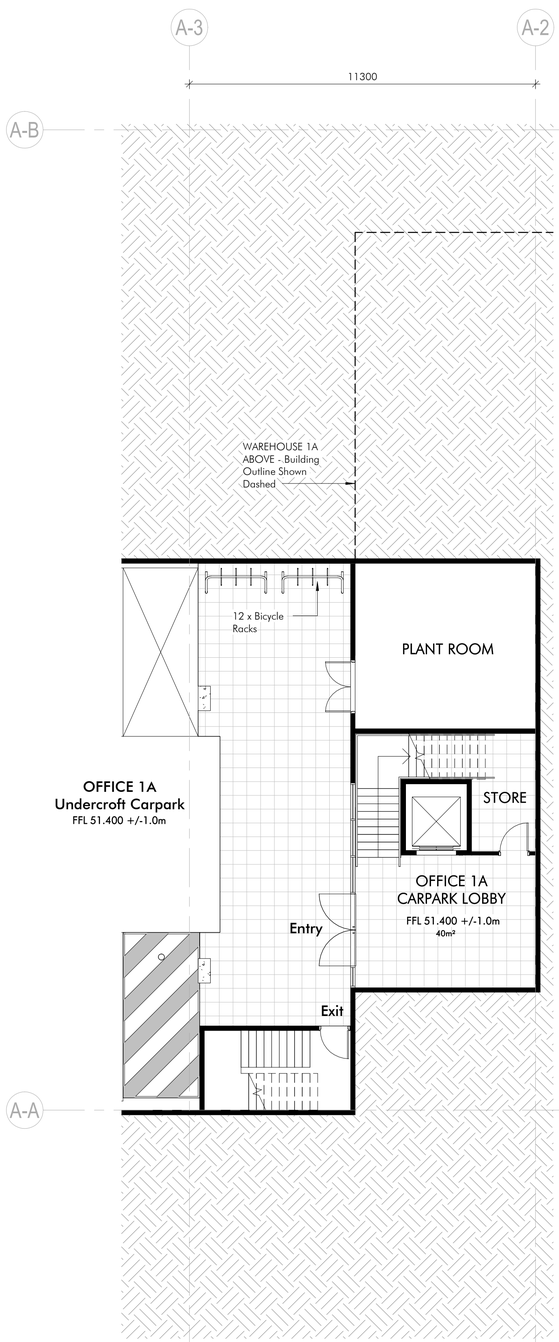
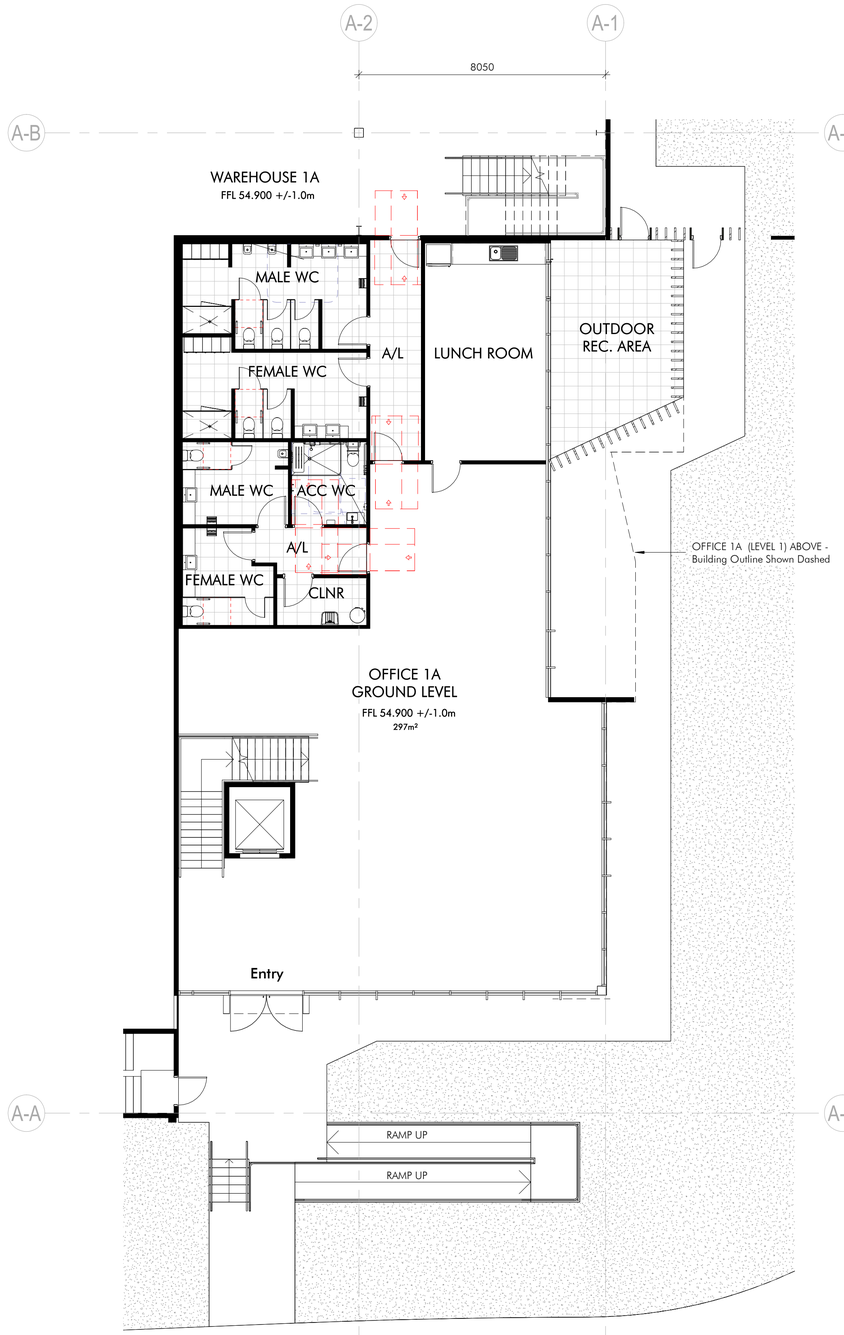
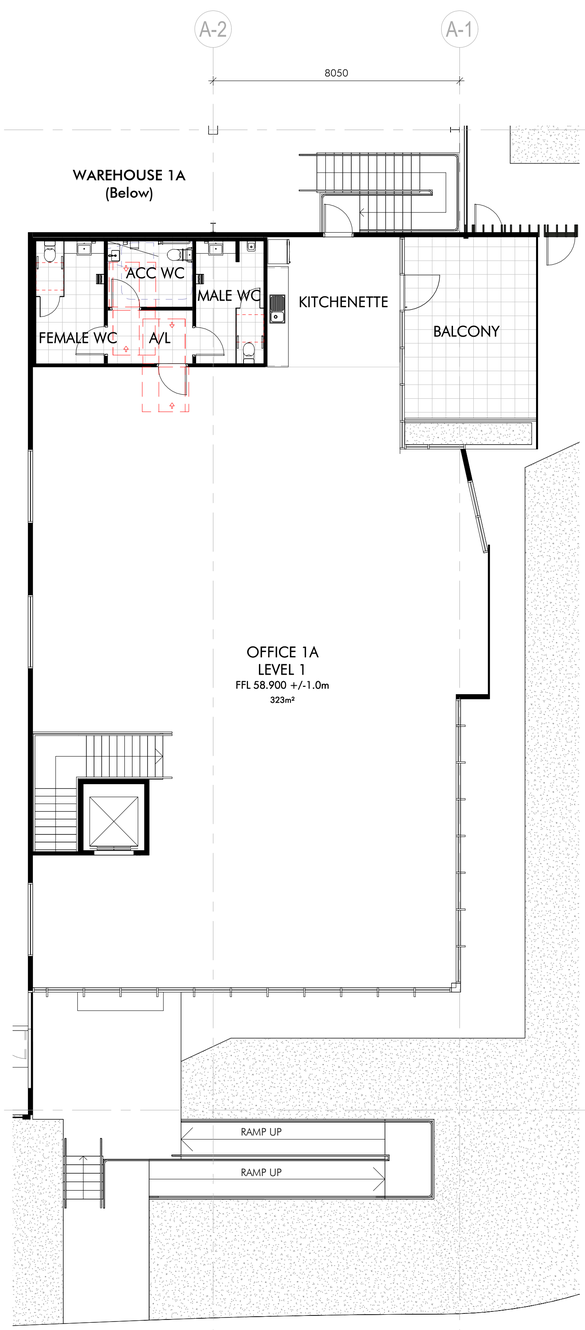
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021



1 Office 1A - Undercroft Car Park Plan
1 : 100



2 Office 1A - Ground Plan (Warehouse Level)
1 : 100



3 Office 1A - Level 1 Plan (Office Entrance Level)
1 : 100

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Office 1A Floor Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 100

Drawing Number: **12253_DA017**

Issue: **6**

nettleton tribe partnership pty ltd ABN 58 161 683 122

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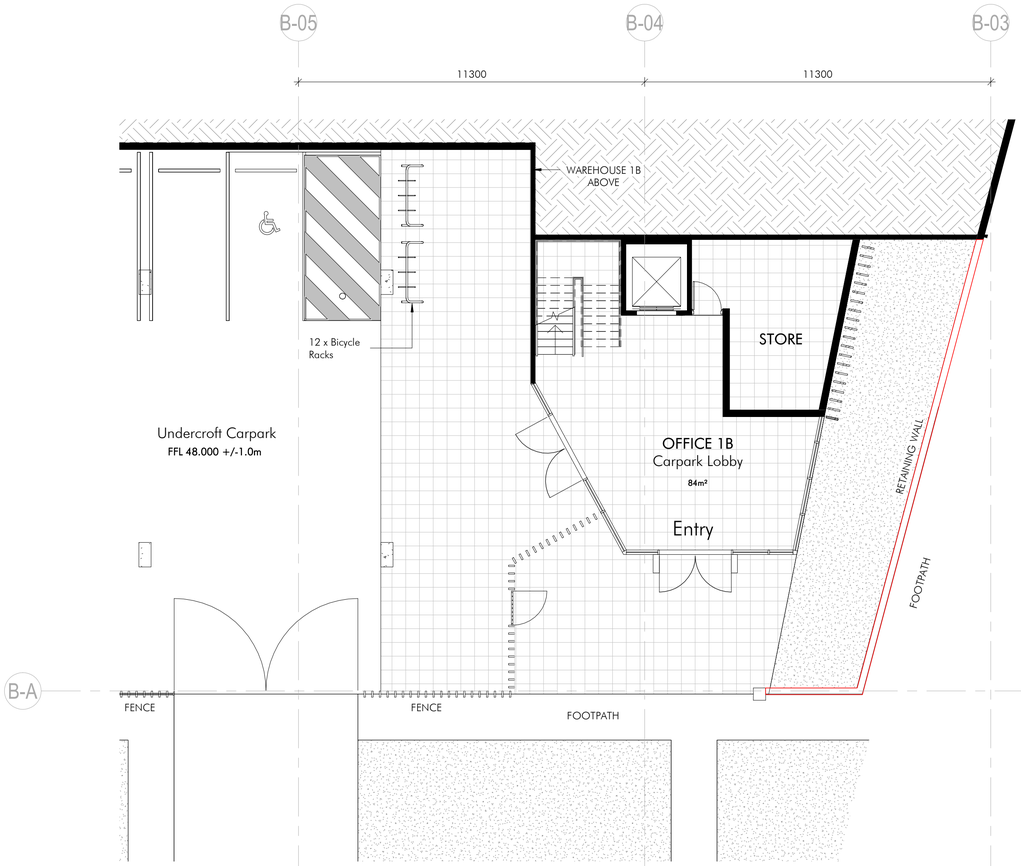
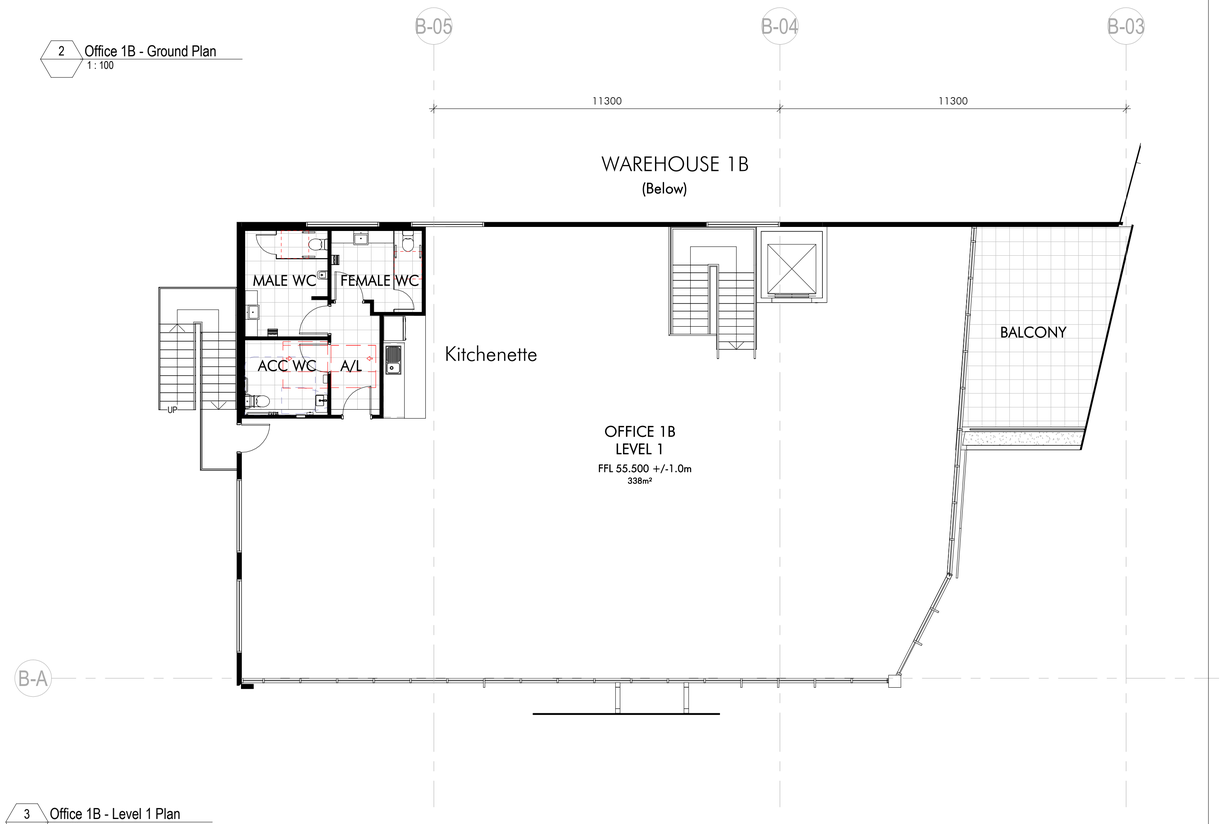


1 Office 1B - Entry Level Plan
1 : 100

2 Office 1B - Ground Plan
1 : 100



3 Office 1B - Level 1 Plan
1 : 100

Key Plan

0 2000 5000

Issue	Description	Date
6	ISSUED FOR DA	13.10.2023
5	ISSUED FOR COORDINATION	04.10.2023
4	ISSUED FOR DA	16.08.2023
3	ISSUED FOR DA	19.08.2022
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Office 1B Floor Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 100

Drawing Number: **12253_DA018**

Issue: **6**

nettleton tribe partnership pty ltd ABN 58 161 683 122

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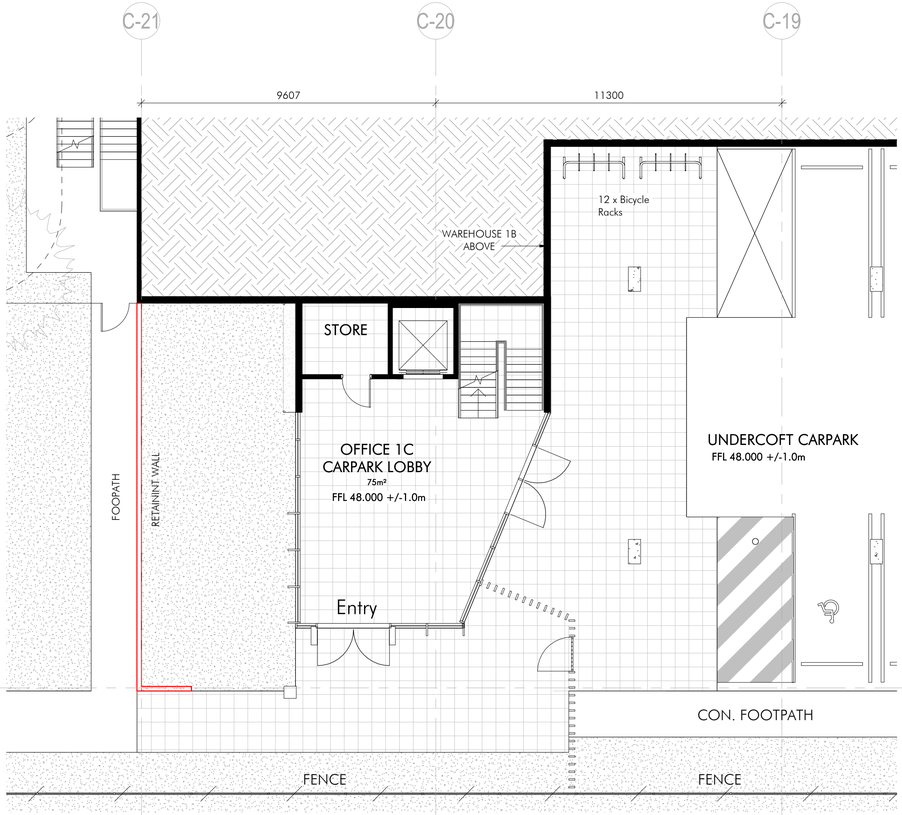
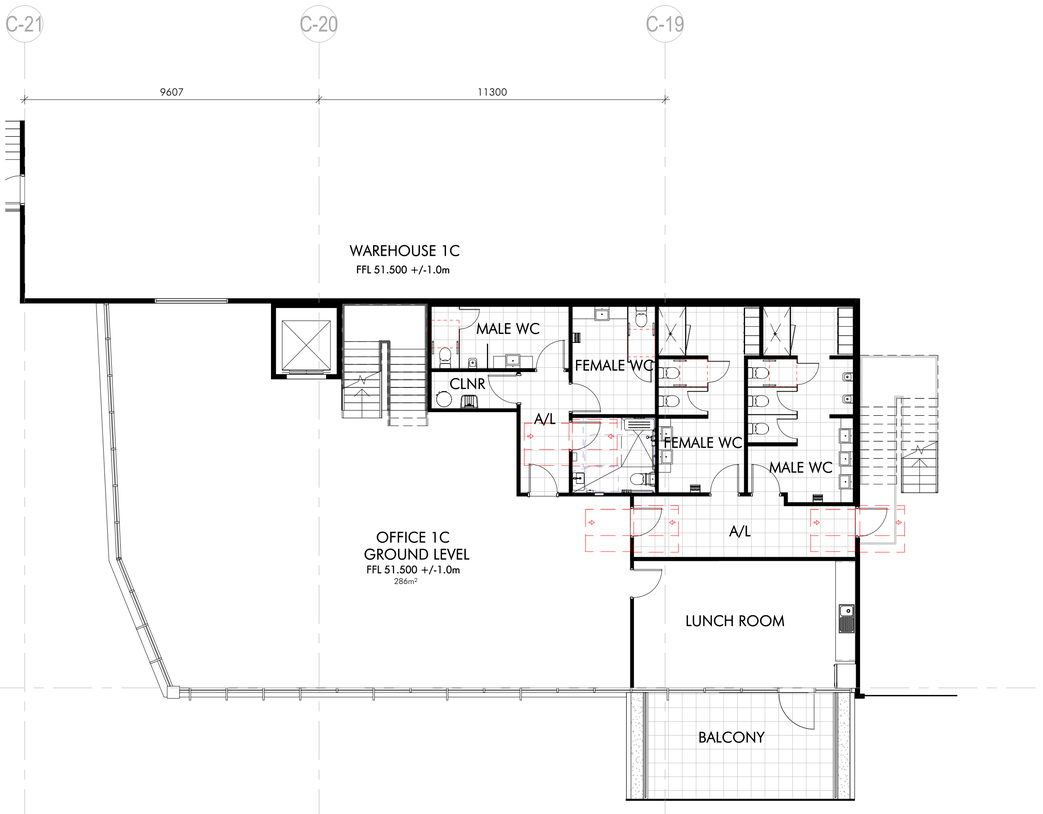
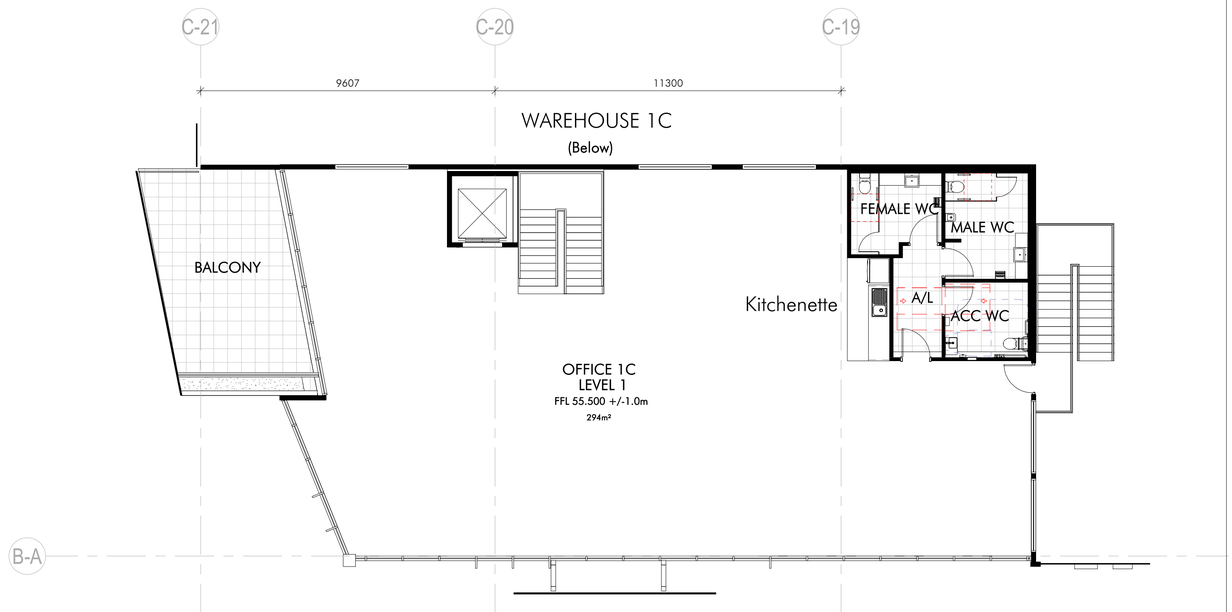


1 Office 1C - Entry Level Plan
1 : 100



2 Office 1C - Ground Plan
1 : 100



3 Office 1C - Level 1 Plan
1 : 100

Key Plan

0 2000 5000

Issue	Description	Date
6	ISSUED FOR DA	13.10.2023
5	ISSUED FOR COORDINATION	04.10.2023
4	ISSUED FOR DA	16.08.2023
3	ISSUED FOR DA	19.08.2022
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Office 1C Floor Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 100

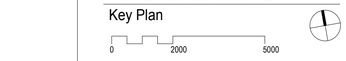
Drawing Number: **12253_DA019**

Issue: **6**

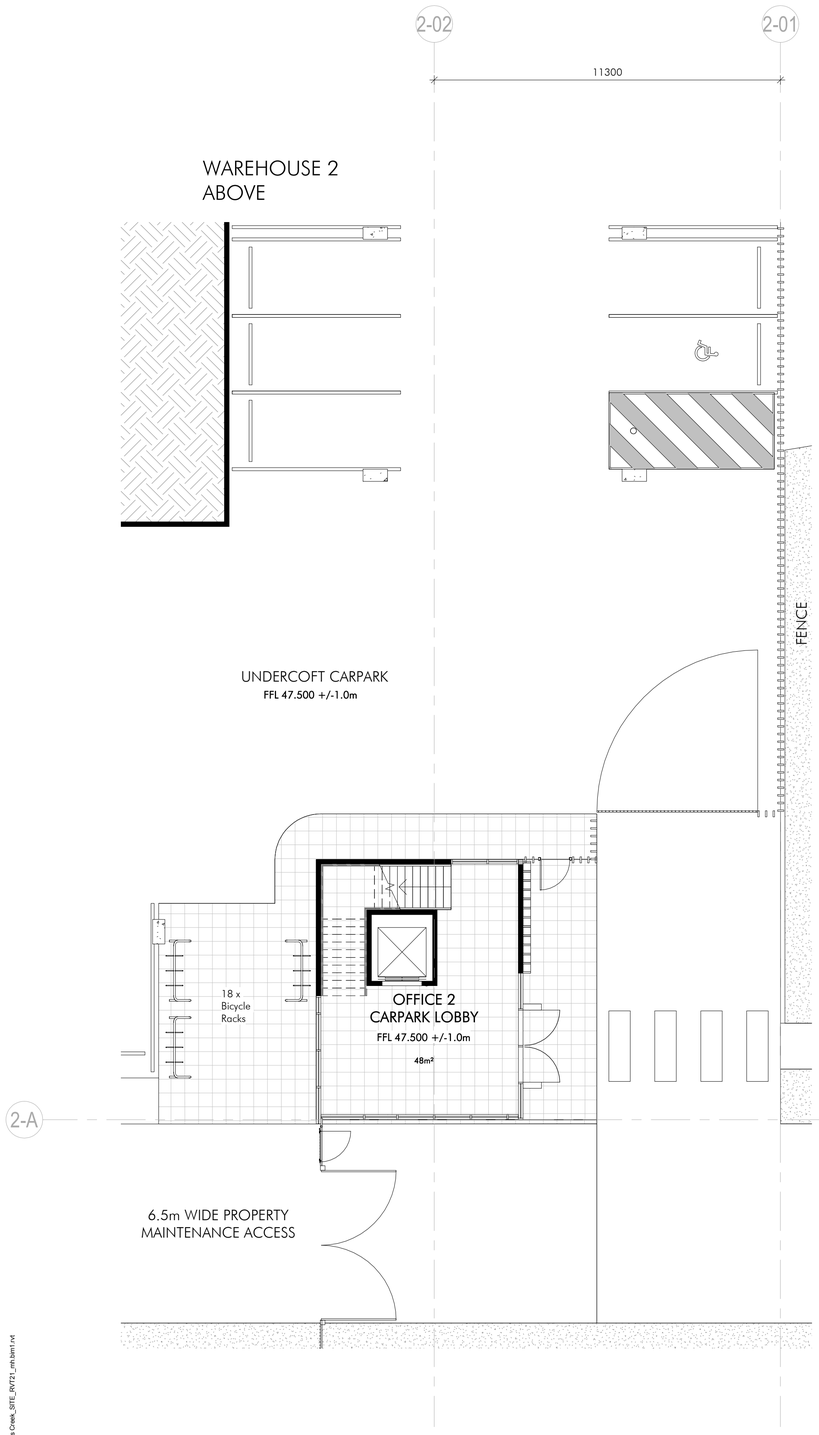
nettleton tribe partnership pty ltd ABN 58 161 683 122

117 Willoughby Road, Crows Nest, NSW 2065
t +61 2 9431 6431
e: sydney@nettletontribe.com.au w: nettletontribe.com.au

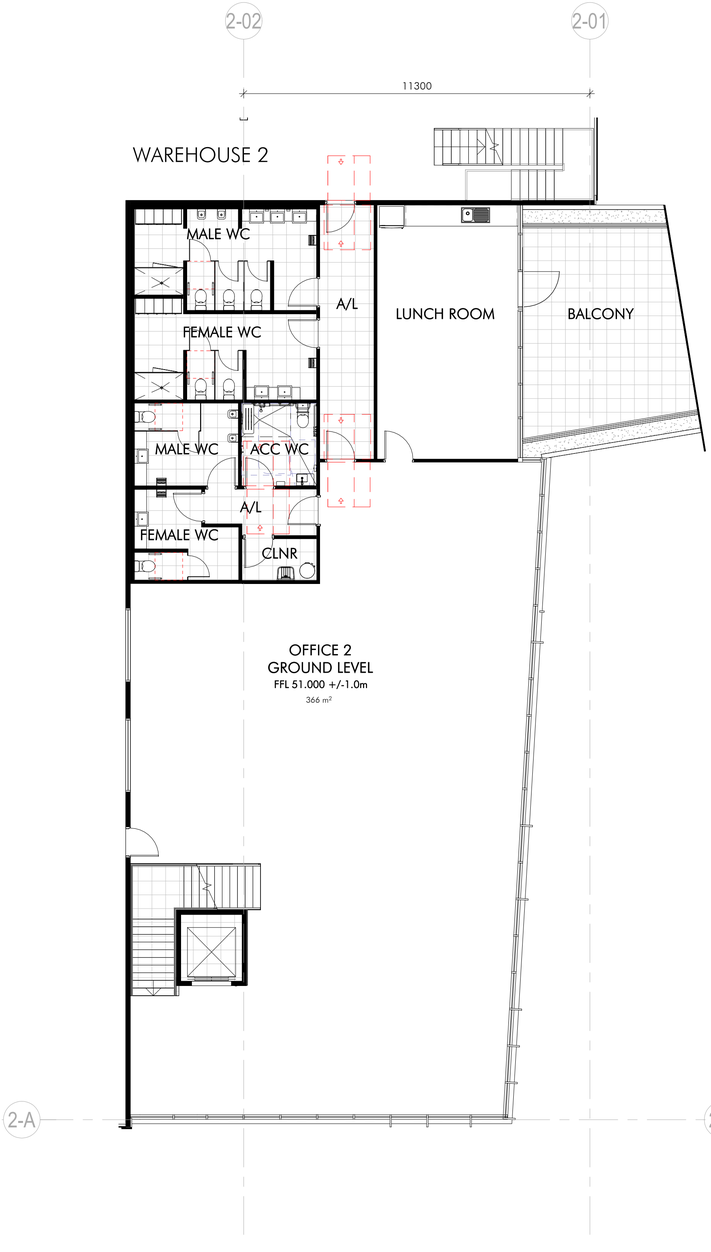
Key Plan



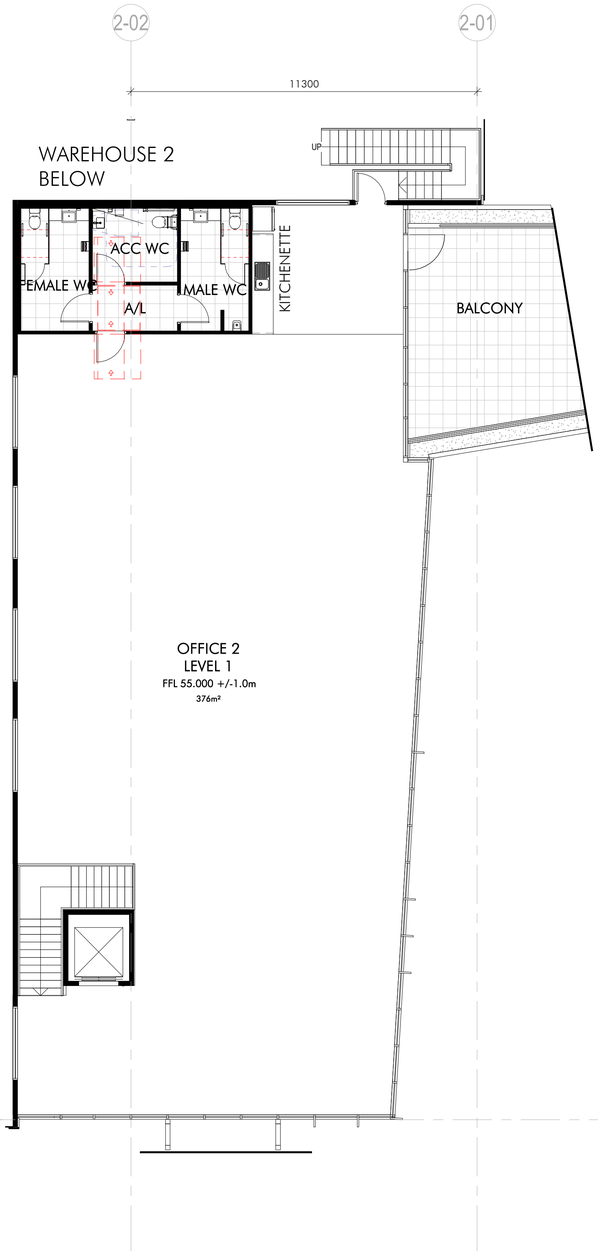
Issue	Description	Date
6	ISSUED FOR DA	13.10.2023
5	ISSUED FOR COORDINATION	04.10.2023
4	ISSUED FOR DA	16.08.2023
3	ISSUED FOR DA	19.08.2022
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021



1 Office 2 - Entry Level Plan
1 : 100



2 Office 2 - Ground Floor Plan
1 : 100



3 Office 2 - Level 1 Plan
1 : 100

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Office 2 Floor Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 100

Drawing Number: **12253_DA020** Issue: **6**

nettleton tribe partnership pty ltd ABN 58 161 683 122
117 Willoughby Road, Crows Nest, NSW 2065
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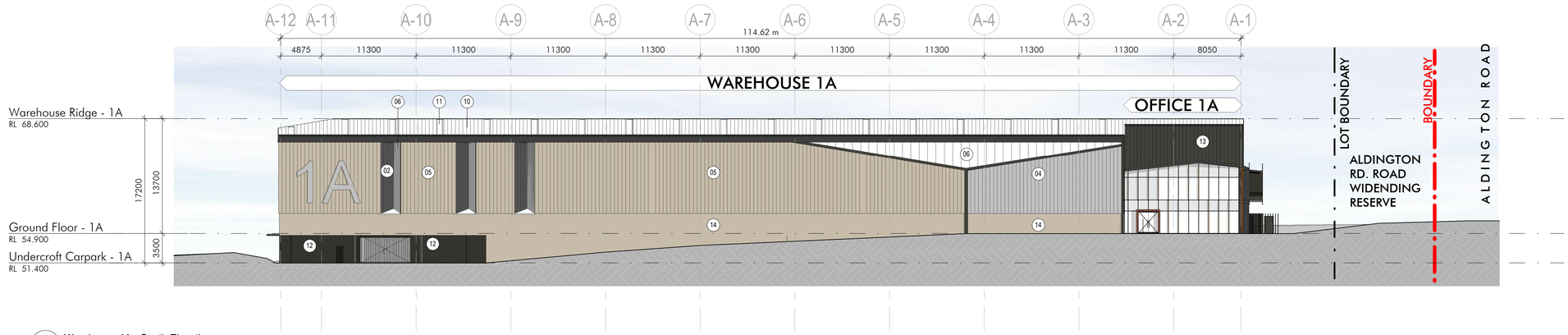
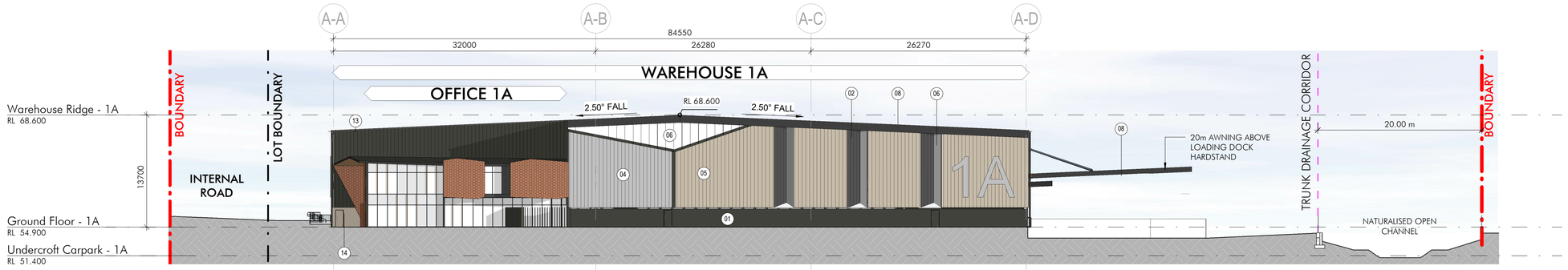
e: sydney@nettletontribe.com.au w: nettletontribe.com.au

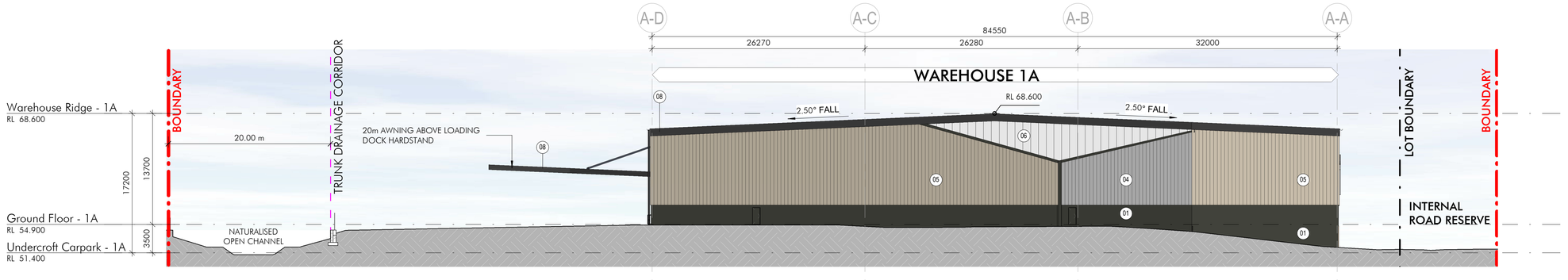


S Warehouse 1A - South Elevation
1 : 300

N Warehouse 1A - North Elevation
1 : 300



E Warehouse 1A - East Elevation
1 : 300



W Warehouse 1A - West Elevation
1 : 300

NOTE: ALL BUILDING LEVELS TO BE + / - 1.0m

Key Plan

0 5000 12500

Issue	Description	Date
7	ISSUED FOR DA	13.10.2023
6	ISSUED FOR COORDINATION	04.10.2023
5	ISSUED FOR DA	16.08.2023
4	ISSUED FOR DA	19.08.2022
3	ISSUED FOR DA	25.10.2021
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021

WAREHOUSE FINISHES

01. PRECAST PANEL - PAINTED IN COLORBOND "WOODLAND GREY"
02. PROFILED METAL SHEETING - COLORBOND "LONGLINE" MONUMENT
03. PROFILED METAL SHEETING - COLORBOND "SURFMIST"
04. PROFILED METAL SHEETING - COLORBOND "SHALE GREY"
05. PROFILED METAL SHEETING - COLORBOND "DUNE"
06. DANPALON / TRANSLUCENT POLYCARBONATE SHEETING
07. PROFILED METAL SHEETING - COLORBOND "DOVER WHITE"
08. GUTTERS, ROOF FASCIA, DOWNPIPES & TOE MOULD - COLORBOND "MONUMENT"
09. ROLLER SHUTTER DOOR - POWDERCOATED "WOODLAND GREY"
10. PROFILED ROOF SHEETING - COLORBOND "DOVER WHITE"
11. TRANSLUCENT PROFILED ROOF SHEETING
12. VERTICAL METAL SLAT FENCING - COLORBOND "JASPER"
13. PROFILED METAL SHEETING - COLORBOND "WOODLAND GREY"
14. PRECAST PANEL - PAINTED IN COLORBOND "DUNE"

OFFICE FINISHES

21. FEATURE WALL- PERFORATED ALUMINIUM SCREEN
22. CONCRETE COLUMN - PAINTED IN COLORBOND "WOODLAND GREY"
23. VISION GLAZING - LIGHT GREY
24. SPANDREL GLAZING - LIGHT GREY TO MATCH VISON GLAZING
25. ALUMINIUM FRAMES TO GLAZING - COLORBOND "MONUMENT"
26. ALUMINIUM SUNSHADE ATTACHMENT - TIMBER LOOK
27. TIMBER LOOK SOLID ALUMINIUM PANEL
28. PROFILED ROOF SHEETING - COLORBOND "WOODLAND GREY"
29. GREEN WALL/TENSILE WIRE CLIMBING PLANT STRUCTURE
30. SOLID ALUMINIUM CLADDING - COLOUR TO MATCH COLORBOND "MONUMENT"

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 1A Elevations

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 300

Drawing Number: **12253_DA021** Issue: **7**

nettletontribe

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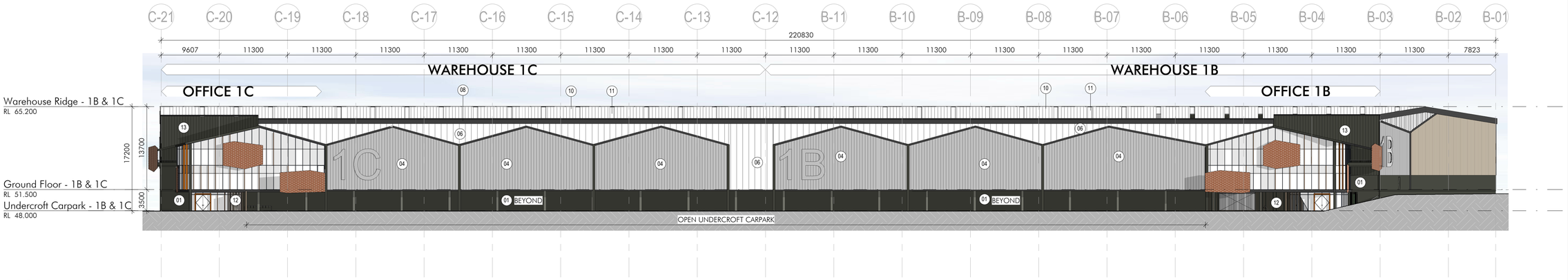
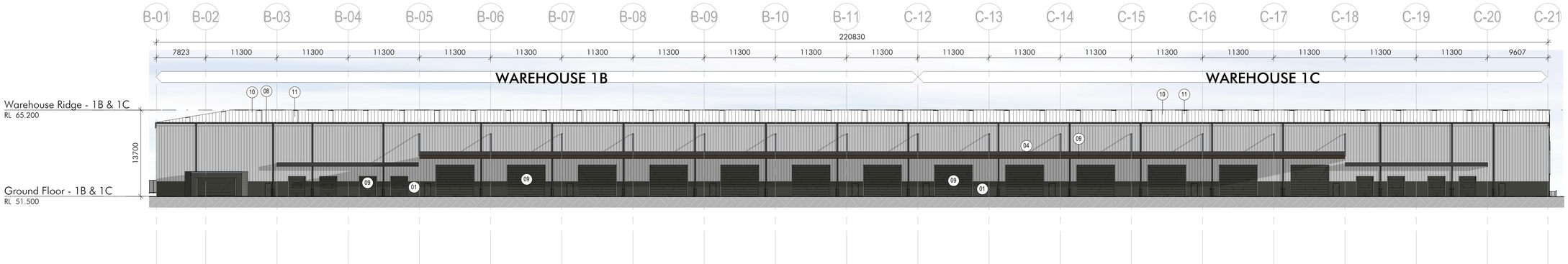
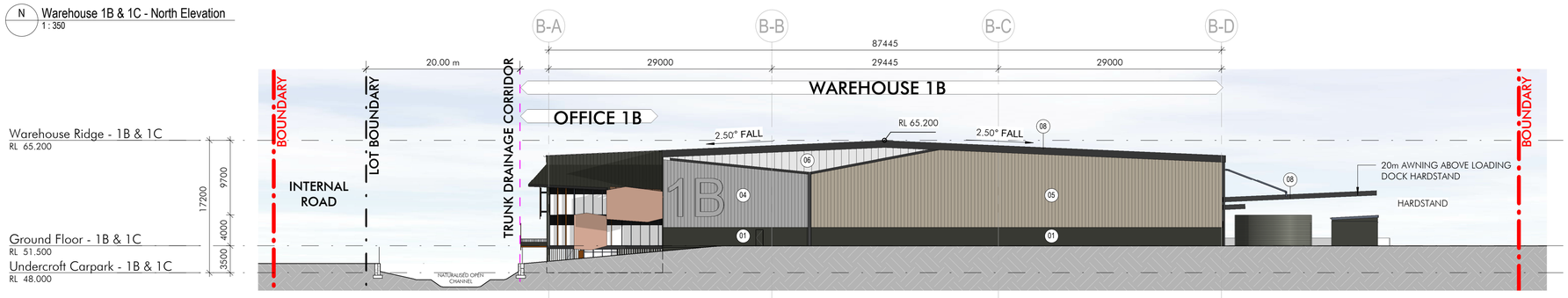


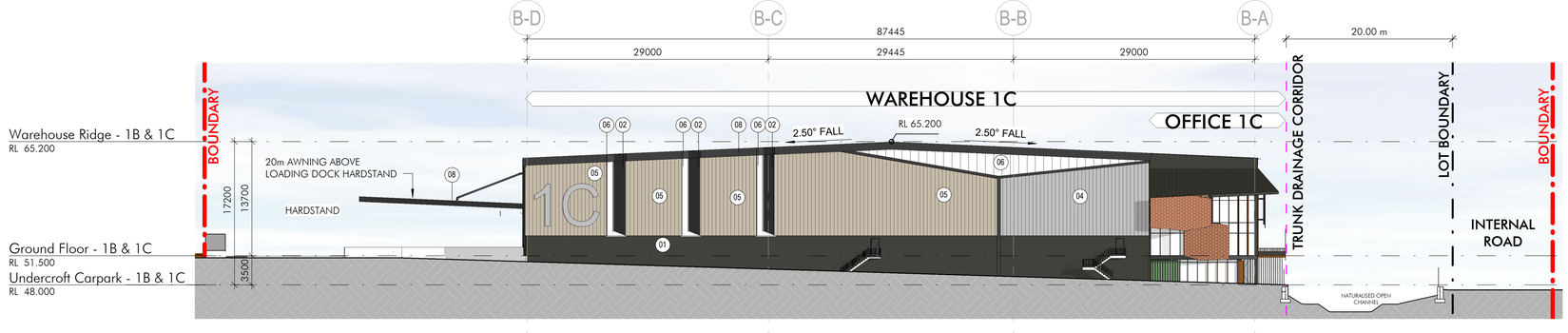
S Warehouse 1B & 1C - South Elevation
1 : 350



N Warehouse 1B & 1C - North Elevation
1 : 350



E Warehouse 1B - East Elevation
1 : 350



W Warehouse 1C - West Elevation
1 : 350

NOTE: ALL BUILDING LEVELS TO BE + / - 1.0m

Key Plan

Issue	Description	Date
7	ISSUED FOR DA	13.10.2023
6	ISSUED FOR COORDINATION	04.10.2023
5	ISSUED FOR DA	16.08.2023
4	ISSUED FOR DA	25.10.2021
3	ISSUED FOR DA	08.09.2021
2	PRELIMINARY ISSUE	27.08.2021
1	PRELIMINARY ISSUE	24.08.2021

WAREHOUSE FINISHES

01. PRECAST PANEL - PAINTED IN COLORBOND "WOODLAND GREY"
02. PROFILED METAL SHEETING - COLORBOND "LONGLINE" MONUMENT
03. PROFILED METAL SHEETING - COLORBOND "SURFMIST"
04. PROFILED METAL SHEETING - COLORBOND "SHALE GREY"
05. PROFILED METAL SHEETING - COLORBOND "DUNE"
06. DANPALON / TRANSLUCENT POLYCARBONATE SHEETING
07. PROFILED METAL SHEETING - COLORBOND "DOVER WHITE"
08. GUTTERS, ROOF FASCIA, DOWNPIPES & TOE MOULD - COLORBOND "MONUMENT"
09. ROLLER SHUTTER DOOR - POWDERCOATED "WOODLAND GREY"
10. PROFILED ROOF SHEETING - COLORBOND "DOVER WHITE"
11. TRANSLUCENT PROFILED ROOF SHEETING
12. VERTICAL METAL SLAT FENCING - COLORBOND "JASPER"
13. PROFILED METAL SHEETING - COLORBOND "WOODLAND GREY"
14. PRECAST PANEL - PAINTED IN COLORBOND "DUNE"

OFFICE FINISHES

21. FEATURE WALL - PERFORATED ALUMINIUM SCREEN
22. CONCRETE COLUMN - PAINTED IN COLORBOND "WOODLAND GREY"
23. VISION GLAZING - LIGHT GREY
24. SPANDREL GLAZING - LIGHT GREY TO MATCH VISON GLAZING
25. ALUMINIUM FRAMES TO GLAZING - COLORBOND "MONUMENT"
26. ALUMINIUM SUNSHADE ATTACHMENT - TIMBER LOOK
27. TIMBER LOOK SOLID ALUMINIUM PANEL
28. PROFILED ROOF SHEETING - COLORBOND "WOODLAND GREY"
29. GREEN WALL/TENSILE WIRE CLIMBING PLANT STRUCTURE
30. SOLID ALUMINIUM CLADDING - COLOUR TO MATCH COLORBOND "MONUMENT"

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 1B & 1C Elevations

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 350

Drawing Number: **12253_DA022**
Issue: **7**

nettleton tribe partnership pty ltd ABN 58 161 683 122
117 Willoughby Road, Crows Nest, NSW 2065
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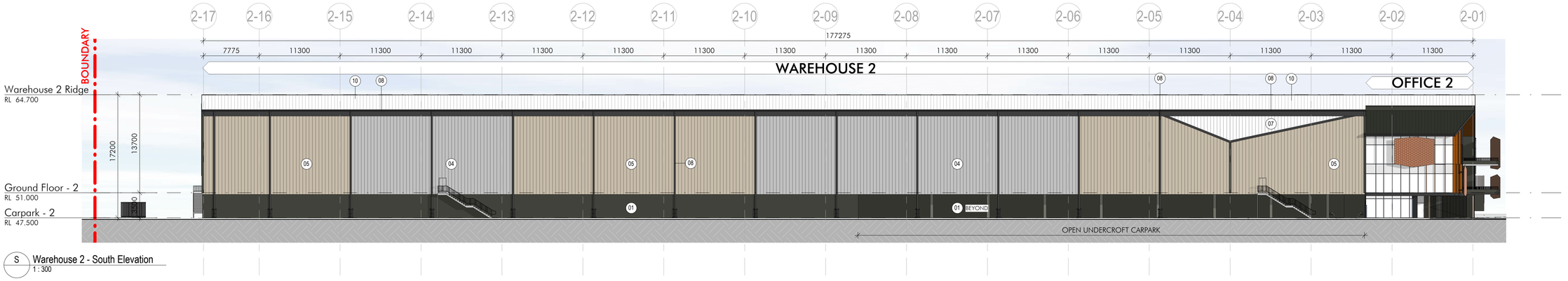
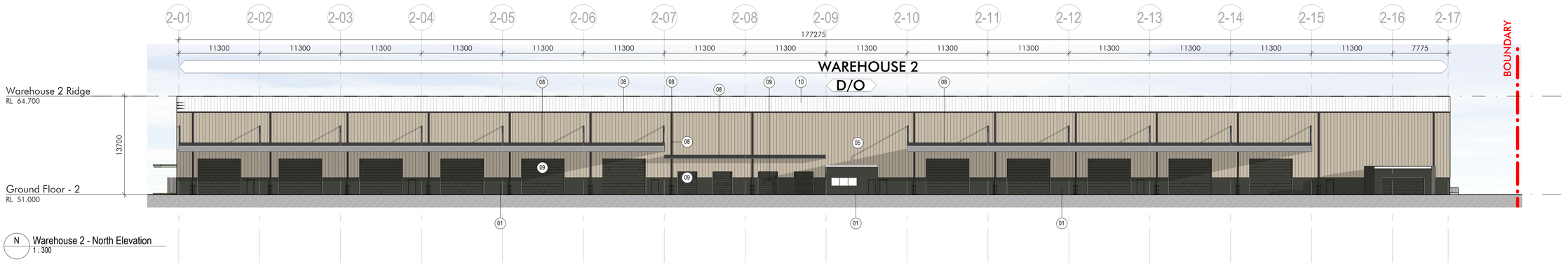
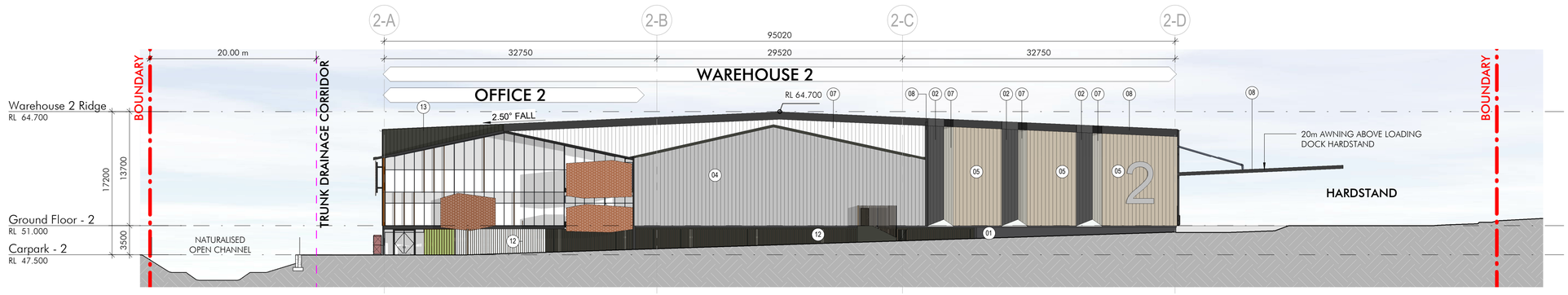
e: sydney@nettletontribe.com.au w: nettletontribe.com.au



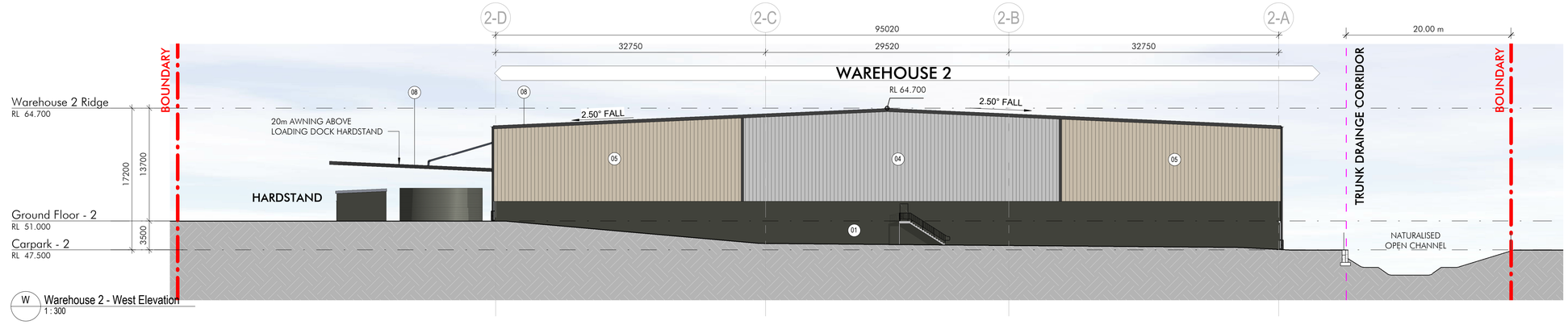
S Warehouse 2 - South Elevation
1 : 300



N Warehouse 2 - North Elevation
1 : 300



E Warehouse 2 - East Elevation
1 : 300



W Warehouse 2 - West Elevation
1 : 300

NOTE: ALL BUILDING LEVELS TO BE + / - 1.0m

Key Plan

0 6000 15000

Issue	Description	Date
7	ISSUED FOR DA	13.10.2023
6	ISSUED FOR COORDINATION	04.10.2023
5	ISSUED FOR DA	16.08.2023
4	ISSUED FOR DA	19.08.2022
3	ISSUED FOR DA	25.10.2021
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021

WAREHOUSE FINISHES

01. PRECAST PANEL - PAINTED IN COLORBOND "WOODLAND GREY"
02. PROFILED METAL SHEETING - COLORBOND "LONGLINE" MONUMENT
03. PROFILED METAL SHEETING - COLORBOND "SURFMIST"
04. PROFILED METAL SHEETING - COLORBOND "SHALE GREY"
05. PROFILED METAL SHEETING - COLORBOND "DUNE"
06. DANPALON / TRANSLUCENT POLYCARBONATE SHEETING
07. PROFILED METAL SHEETING - COLORBOND "DOVER WHITE"
08. GUTTERS, ROOF FASCIA, DOWNPIPES & TOE MOULD - COLORBOND "MONUMENT"
09. ROLLER SHUTTER DOOR - POWDERCOATED "WOODLAND GREY"
10. PROFILED ROOF SHEETING - COLORBOND "DOVER WHITE"
11. TRANSLUCENT PROFILED ROOF SHEETING
12. VERTICAL METAL SLAT FENCING - COLORBOND "JASPER"
13. PROFILED METAL SHEETING - COLORBOND "WOODLAND GREY"
14. PRECAST PANEL - PAINTED IN COLORBOND "DUNE"

OFFICE FINISHES

21. FEATURE WALL- PERFORATED ALUMINIUM SCREEN
22. CONCRETE COLUMN - PAINTED IN COLORBOND "WOODLAND GREY"
23. VISION GLAZING - LIGHT GREY
24. SPANDREL GLAZING - LIGHT GREY TO MATCH VISON GLAZING
25. ALUMINIUM FRAMES TO GLAZING - COLORBOND "MONUMENT"
26. ALUMINIUM SUNSHADE ATTACHMENT - TIMBER LOOK
27. TIMBER LOOK SOLID ALUMINIUM PANEL
28. PROFILED ROOF SHEETING - COLORBOND "WOODLAND GREY"
29. GREEN WALL/TENSILE WIRE CLIMBING PLANT STRUCTURE
30. SOLID ALUMINIUM CLADDING - COLOUR TO MATCH COLORBOND "MONUMENT"

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 2 Elevations

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 300

Drawing Number: **12253_DA023** Issue: **7**

nettleton tribe partnership pty ltd ABN 58 161 683 122
117 Willoughby Road, Crows Nest, NSW 2065
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e: sydney@nettletontribe.com.au w: nettletontribe.com.au

Key Plan

0 2000 5000

Issue	Description	Date
6	ISSUED FOR DA	13.10.2023
5	ISSUED FOR COORDINATION	04.10.2023
4	ISSUED FOR DA	16.08.2023
3	ISSUED FOR DA	19.08.2022
2	ISSUED FOR DA	25.10.2021
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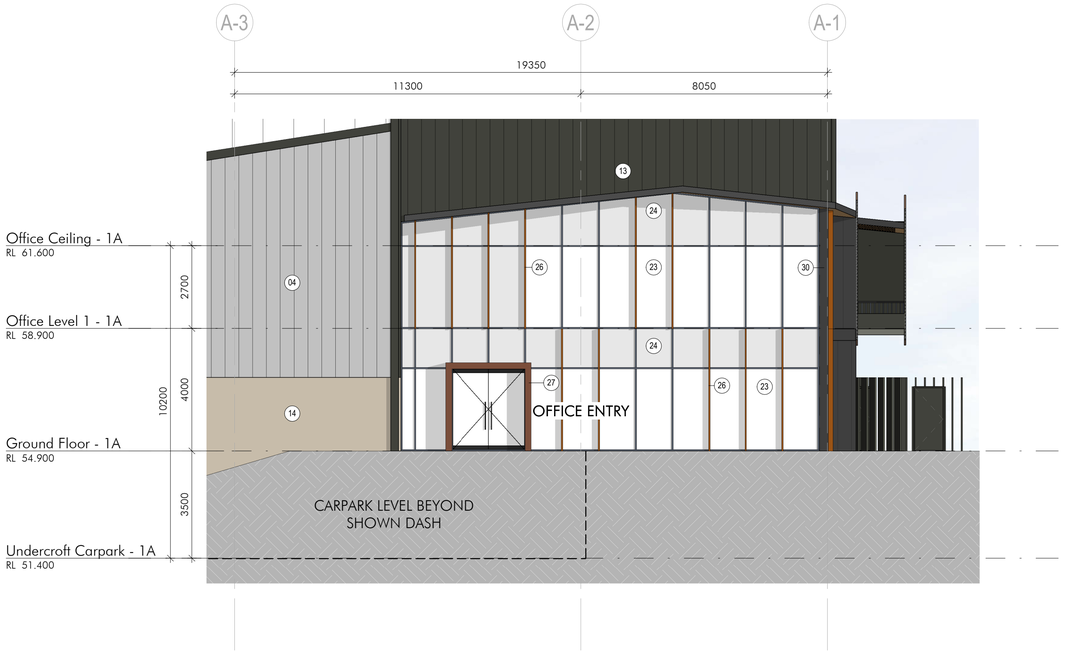
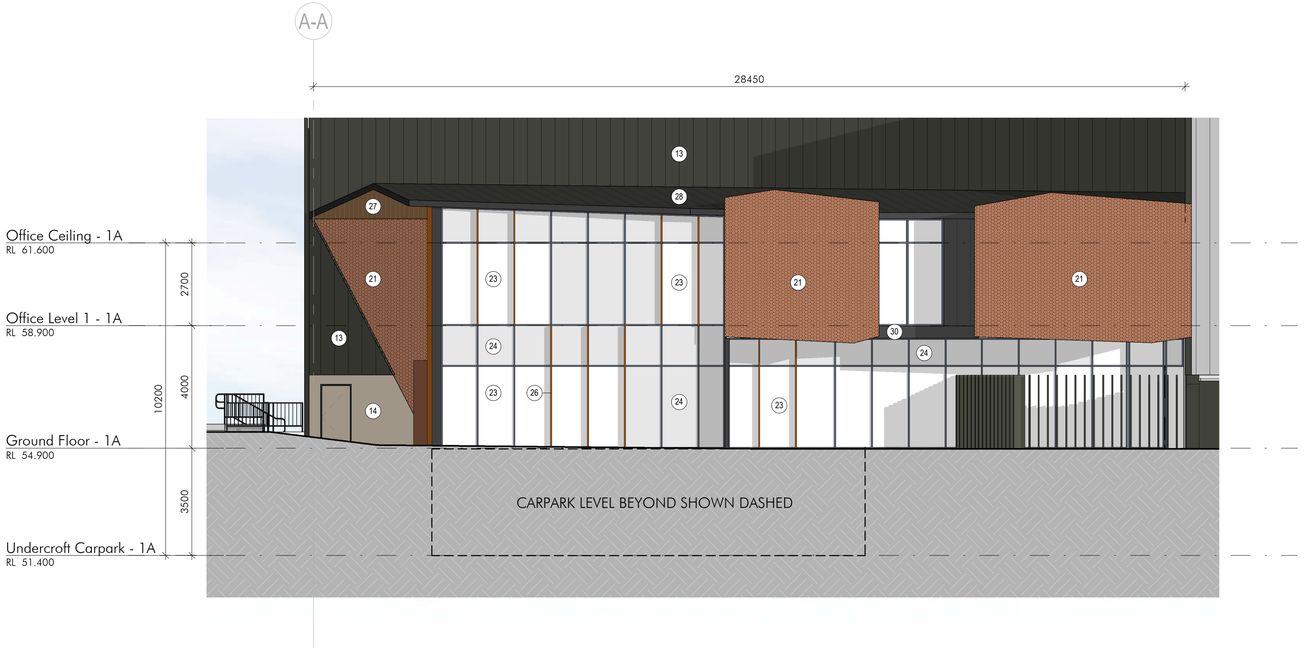


S Office 1A - South Elevation
1 : 100



E Office 1A - East Elevation
1 : 100

WAREHOUSE FINISHES

01. PRECAST PANEL - PAINTED IN COLORBOND "WOODLAND GREY"

02. PROFILED METAL SHEETING - COLORBOND "LONGLINE" MONUMENT

03. PROFILED METAL SHEETING - COLORBOND "SURFMIST"

04. PROFILED METAL SHEETING - COLORBOND "SHALE GREY"

05. PROFILED METAL SHEETING - COLORBOND "DUNE"

06. DANPALON / TRANSLUCENT POLYCARBONATE SHEETING

07. PROFILED METAL SHEETING - COLORBOND "DOVER WHITE"

08. GUTTERS, ROOF FASCIA, DOWNPIPES & TOE MOULD - COLORBOND "MONUMENT"

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11. TRANSLUCENT PROFILED ROOF SHEETING

12. VERTICAL METAL SLAT FENCING - COLORBOND "JASPER"

13. PROFILED METAL SHEETING - COLORBOND "WOODLAND GREY"

14. PRECAST PANEL - PAINTED IN COLORBOND DUNE

OFFICE FINISHES

21. FEATURE WALL- PERFORATED ALUMINIUM SCREEN

22. CONCRETE COLUMN - PAINTED IN COLORBOND "WOODLAND GREY"

23. VISION GLAZING - LIGHT GREY

24. SPANDREL GLAZING - LIGHT GREY TO MATCH VISON GLAZING

25. ALUMINIUM FRAMES TO GLAZING - COLORBOND "MONUMENT"

26. ALUMINIUM SUNSHADE ATTACHMENT - TIMBER LOOK

27. TIMBER LOOK SOLID ALUMINIUM PANEL

28. PROFILED ROOF SHEETING - COLORBOND "WOODLAND GREY"

29. GREEN WALL/TENSILE WIRE CLIMBING PLANT STRUCTURE

30. SOLID ALUMINIUM CLADDING - COLOUR TO MATCH COLORBOND "MONUMENT"

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Office 1A Elevations

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 100

Drawing Number: **12253_DA025**

Issue: **6**

nettletontribe

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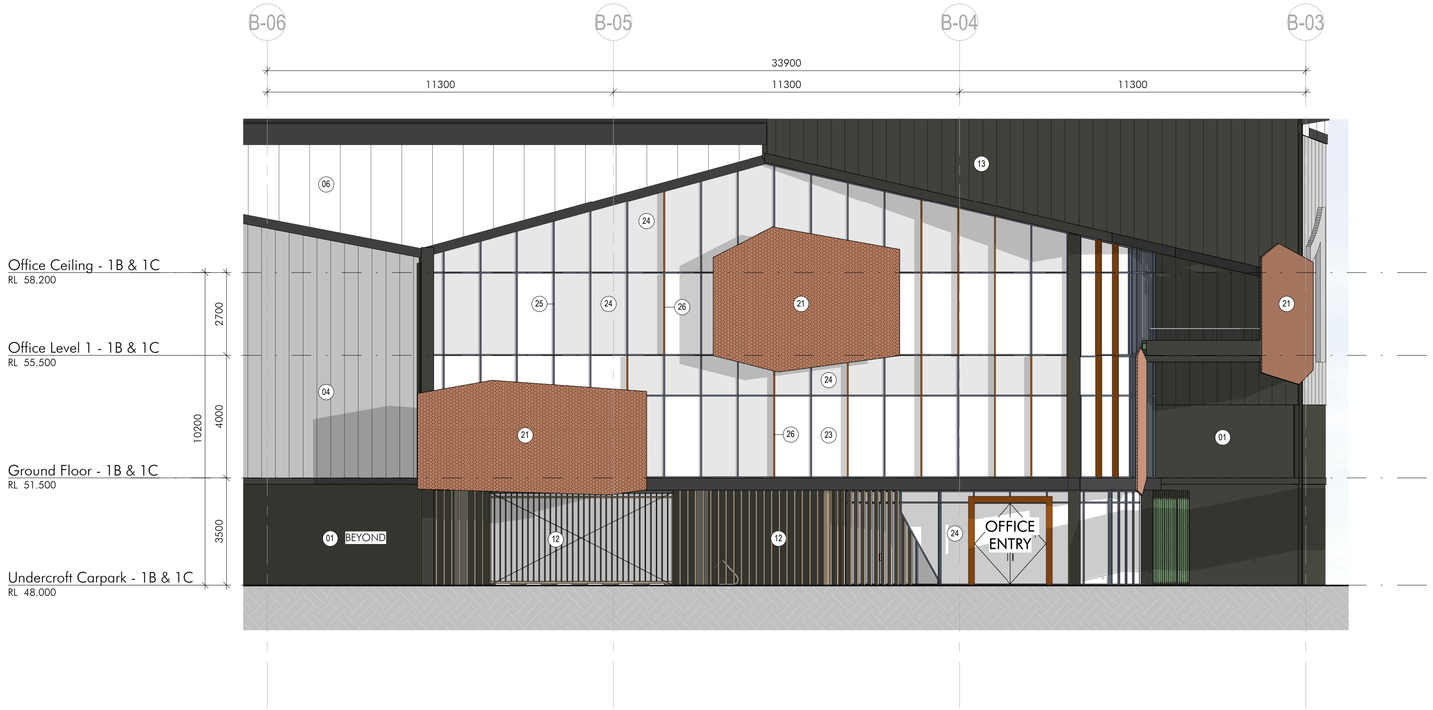
NOTE: ALL BUILDING LEVELS TO BE + / - 1.0m

2 Office 1B - East Elevation
1 : 100



1 Office 1B - South Elevation
1 : 100

NOTE: ALL BUILDING LEVELS TO BE + / - 1.0m

Key Plan

0 2000 5000

Issue	Description	Date
5	ISSUED FOR DA	13.10.2023
4	ISSUED FOR COORDINATION	04.10.2023
3	ISSUED FOR DA	16.08.2023
2	ISSUED FOR DA	25.10.2021
1	ISSUED FOR DA	08.09.2021

WAREHOUSE FINISHES

01. PRECAST PANEL - PAINTED IN COLORBOND "WOODLAND GREY"

02. PROFILED METAL SHEETING - COLORBOND "LONGLINE" MONUMENT

03. PROFILED METAL SHEETING - COLORBOND "SURFMIST"

04. PROFILED METAL SHEETING - COLORBOND "SHALE GREY"

05. PROFILED METAL SHEETING - COLORBOND "DUNE"

06. DANPALON / TRANSLUCENT POLYCARBONATE SHEETING

07. PROFILED METAL SHEETING - COLORBOND "DOVER WHITE"

08. GUTTERS, ROOF FASCIA, DOWNPIPES & TOE MOULD - COLORBOND "MONUMENT"

09. ROLLER SHUTTER DOOR - POWDERCOATED "WOODLAND GREY"

10. PROFILED ROOF SHEETING - COLORBOND "DOVER WHITE"

11. TRANSLUCENT PROFILED ROOF SHEETING

12. VERTICAL METAL SLAT FENCING - COLORBOND "JASPER"

13. PROFILED METAL SHEETING - COLORBOND "WOODLAND GREY"

14. PRECAST PANEL - PAINTED IN COLORBOND DUNE

OFFICE FINISHES

21. FEATURE WALL- PERFORATED ALUMINIUM SCREEN

22. CONCRETE COLUMN - PAINTED IN COLORBOND "WOODLAND GREY"

23. VISION GLAZING - LIGHT GREY

24. SPANDREL GLAZING - LIGHT GREY TO MATCH VISON GLAZING

25. ALUMINIUM FRAMES TO GLAZING - COLORBOND "MONUMENT"

26. ALUMINIUM SUNSHADE ATTACHMENT - TIMBER LOOK

27. TIMBER LOOK SOLID ALUMINIUM PANEL

28. PROFILED ROOF SHEETING - COLORBOND "WOODLAND GREY"

29. GREEN WALL/TENSILE WIRE CLIMBING PLANT STRUCTURE

30. SOLID ALUMINIUM CLADDING - COLOUR TO MATCH COLORBOND "MONUMENT"

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Office 1B Elevations

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 100

Drawing Number: **12253_DA026**

Issue: **5**

nettleton tribe partnership pty ltd ABN 58 161 683 122
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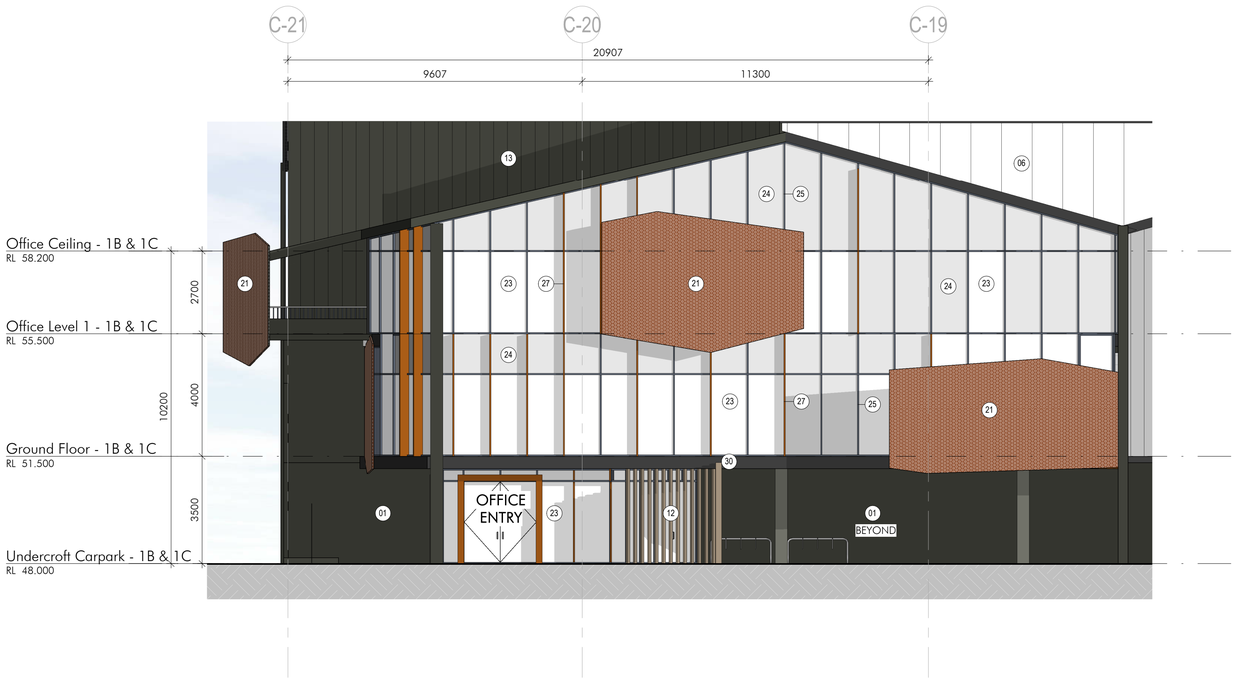
e: sydney@nettletontribe.com.au w: nettletontribe.com.au

1 Office 1C - West Elevation
1 : 100



2 Office 1C - South Elevation
1 : 100

NOTE: ALL BUILDING LEVELS TO BE + / - 1.0m

Key Plan

0 2000 5000

Issue	Description	Date
5	ISSUED FOR DA	13.10.2023
4	ISSUED FOR COORDINATION	04.10.2023
3	ISSUED FOR DA	16.08.2023
2	ISSUED FOR DA	25.10.2021
1	ISSUED FOR DA	08.09.2021

WAREHOUSE FINISHES

01. PRECAST PANEL - PAINTED IN COLORBOND "WOODLAND GREY"

02. PROFILED METAL SHEETING - COLORBOND "LONGLINE" MONUMENT

03. PROFILED METAL SHEETING - COLORBOND "SURFMIST"

04. PROFILED METAL SHEETING - COLORBOND "SHALE GREY"

05. PROFILED METAL SHEETING - COLORBOND "DUNE"

06. DANPALON / TRANSLUCENT POLYCARBONATE SHEETING

07. PROFILED METAL SHEETING - COLORBOND "DOVER WHITE"

08. GUTTERS, ROOF FASCIA, DOWNPIPES & TOE MOULD - COLORBOND "MONUMENT"

09. ROLLER SHUTTER DOOR - POWDERCOATED "WOODLAND GREY"

10. PROFILED ROOF SHEETING - COLORBOND "DOVER WHITE"

11. TRANSLUCENT PROFILED ROOF SHEETING

12. VERTICAL METAL SLAT FENCING - COLORBOND "JASPER"

13. PROFILED METAL SHEETING - COLORBOND "WOODLAND GREY"

14. PRECAST PANEL - PAINTED IN COLORBOND DUNE

OFFICE FINISHES

21. FEATURE WALL- PERFORATED ALUMINIUM SCREEN

22. CONCRETE COLUMN - PAINTED IN COLORBOND "WOODLAND GREY"

23. VISION GLAZING - LIGHT GREY

24. SPANDREL GLAZING - LIGHT GREY TO MATCH VISON GLAZING

25. ALUMINIUM FRAMES TO GLAZING - COLORBOND "MONUMENT"

26. ALUMINIUM SUNSHADE ATTACHMENT - TIMBER LOOK

27. TIMBER LOOK SOLID ALUMINIUM PANEL

28. PROFILED ROOF SHEETING - COLORBOND "WOODLAND GREY"

29. GREEN WALL/TENSILE WIRE CLIMBING PLANT STRUCTURE

30. SOLID ALUMINIUM CLADDING - COLOUR TO MATCH COLORBOND "MONUMENT"

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Office 1C Elevations

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 100

Drawing Number: **12253_DA027**

Issue: **5**

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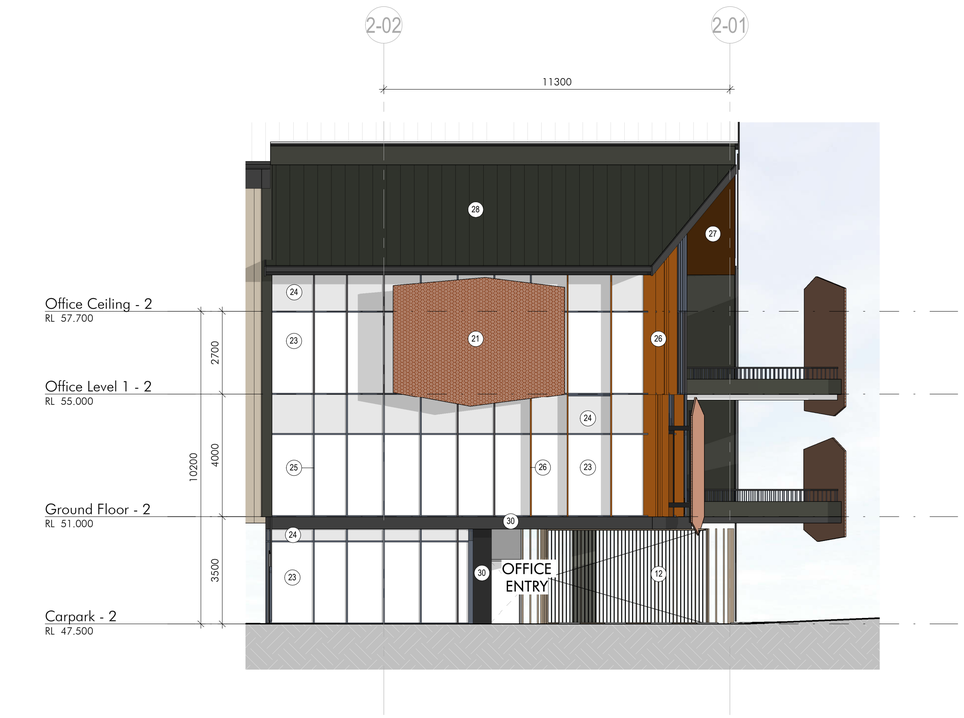
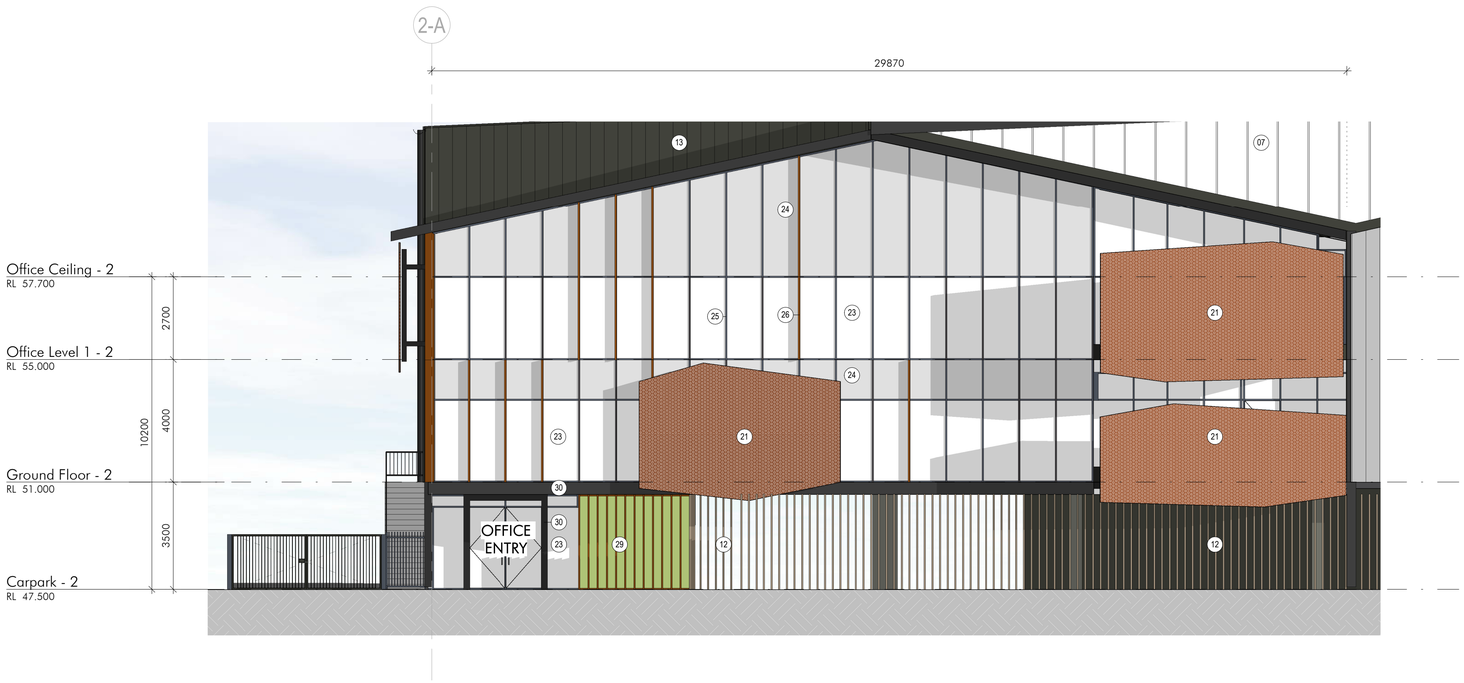


S Office 2 - South Elevation
1 : 100



E Office 2 - East Elevation
1 : 100

NOTE: ALL BUILDING LEVELS TO BE + / - 1.0m

Key Plan

0 2000 5000

Issue	Description	Date
6	ISSUED FOR DA	13.10.2023
5	ISSUED FOR COORDINATION	04.10.2023
4	ISSUED FOR DA	16.08.2023
3	ISSUED FOR DA	19.08.2022
2	ISSUED FOR DA	25.10.2021
1	ISSUED FOR DA	08.09.2021

WAREHOUSE FINISHES

01. PRECAST PANEL - PAINTED IN COLORBOND "WOODLAND GREY"

02. PROFILED METAL SHEETING - COLORBOND "LONGLINE" MONUMENT

03. PROFILED METAL SHEETING - COLORBOND "SURFMIST"

04. PROFILED METAL SHEETING - COLORBOND "SHALE GREY"

05. PROFILED METAL SHEETING - COLORBOND "DUNE"

06. DANPALON / TRANSLUCENT POLYCARBONATE SHEETING

07. PROFILED METAL SHEETING - COLORBOND "DOVER WHITE"

08. GUTTERS, ROOF FASCIA, DOWNPIPES & TOE MOULD - COLORBOND "MONUMENT"

09. ROLLER SHUTTER DOOR - POWDERCOATED "WOODLAND GREY"

10. PROFILED ROOF SHEETING - COLORBOND "DOVER WHITE"

11. TRANSLUCENT PROFILED ROOF SHEETING

12. VERTICAL METAL SLAT FENCING - COLORBOND "JASPER"

13. PROFILED METAL SHEETING - COLORBOND "WOODLAND GREY"

14. PRECAST PANEL - PAINTED IN COLORBOND DUNE

OFFICE FINISHES

21. FEATURE WALL- PERFORATED ALUMINIUM SCREEN

22. CONCRETE COLUMN - PAINTED IN COLORBOND "WOODLAND GREY"

23. VISION GLAZING - LIGHT GREY

24. SPANDREL GLAZING - LIGHT GREY TO MATCH VISON GLAZING

25. ALUMINIUM FRAMES TO GLAZING - COLORBOND "MONUMENT"

26. ALUMINIUM SUNSHADE ATTACHMENT - TIMBER LOOK

27. TIMBER LOOK SOLID ALUMINIUM PANEL

28. PROFILED ROOF SHEETING - COLORBOND "WOODLAND GREY"

29. GREEN WALL/TENSILE WIRE CLIMBING PLANT STRUCTURE

30. SOLID ALUMINIUM CLADDING - COLOUR TO MATCH COLORBOND "MONUMENT"

SSDA

Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Office 2 Elevations

Author:	Checker:	Sheet Size:	Scale:
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Drawing Number: **12253_DA028**

Issue: **6**

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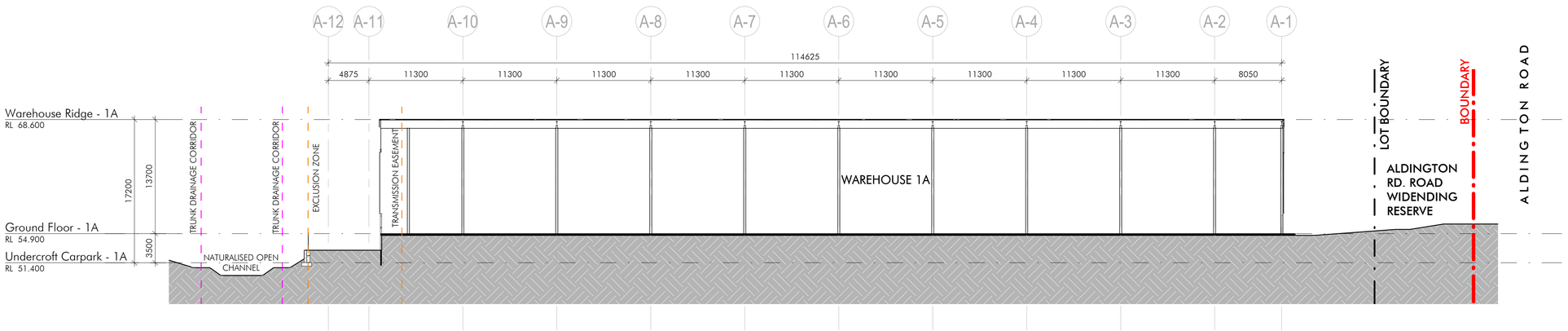
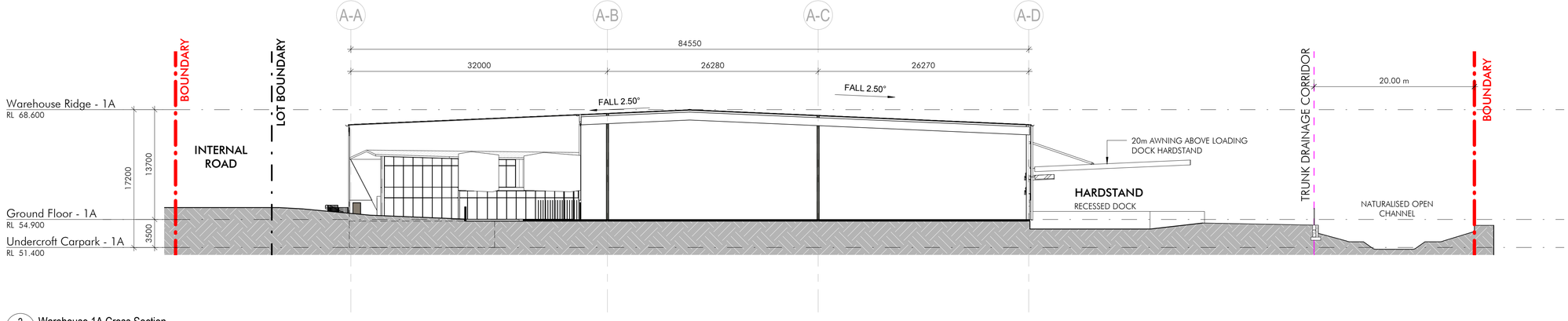
Key Plan

0 2000 5000

Issue	Description	Date
8	ISSUED FOR DA	13.10.2023
7	ISSUED FOR COORDINATION	04.10.2023
6	ISSUED FOR DA	16.08.2023
5	ISSUED FOR DA	19.08.2022
4	ISSUED FOR DA	25.10.2021
3	ISSUED FOR DA	08.09.2021
2	PRELIMINARY ISSUE	24.08.2021
1	PRELIMINARY ISSUE	19.08.2021



1 Warehouse 1A Section
1 : 300



2 Warehouse 1A Cross Section
1 : 300

NOTE: ALL BUILDING LEVELS TO BE + / - 1.0m

SSDA

Client
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Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 1A Sections

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 300

Drawing Number: **12253_DA031**

Issue: **8**

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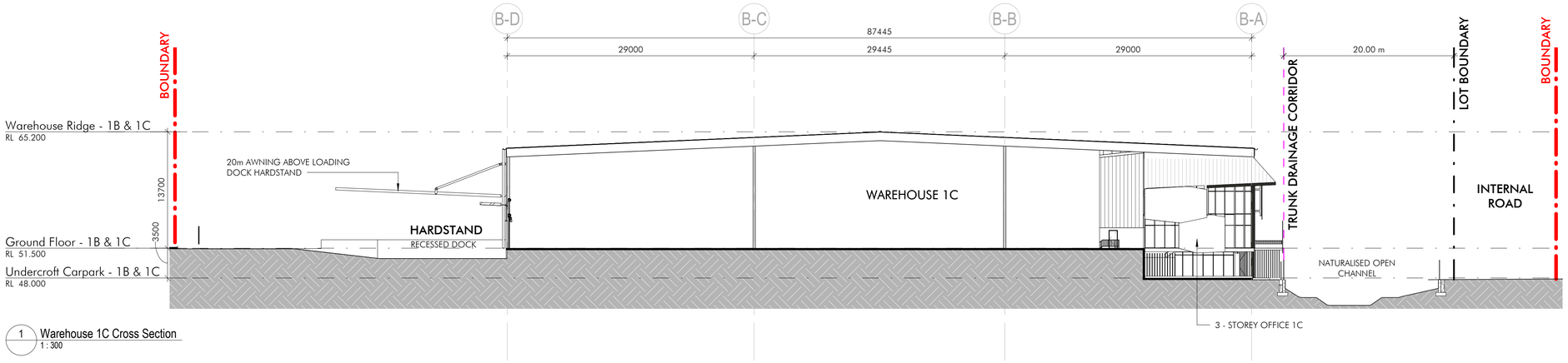
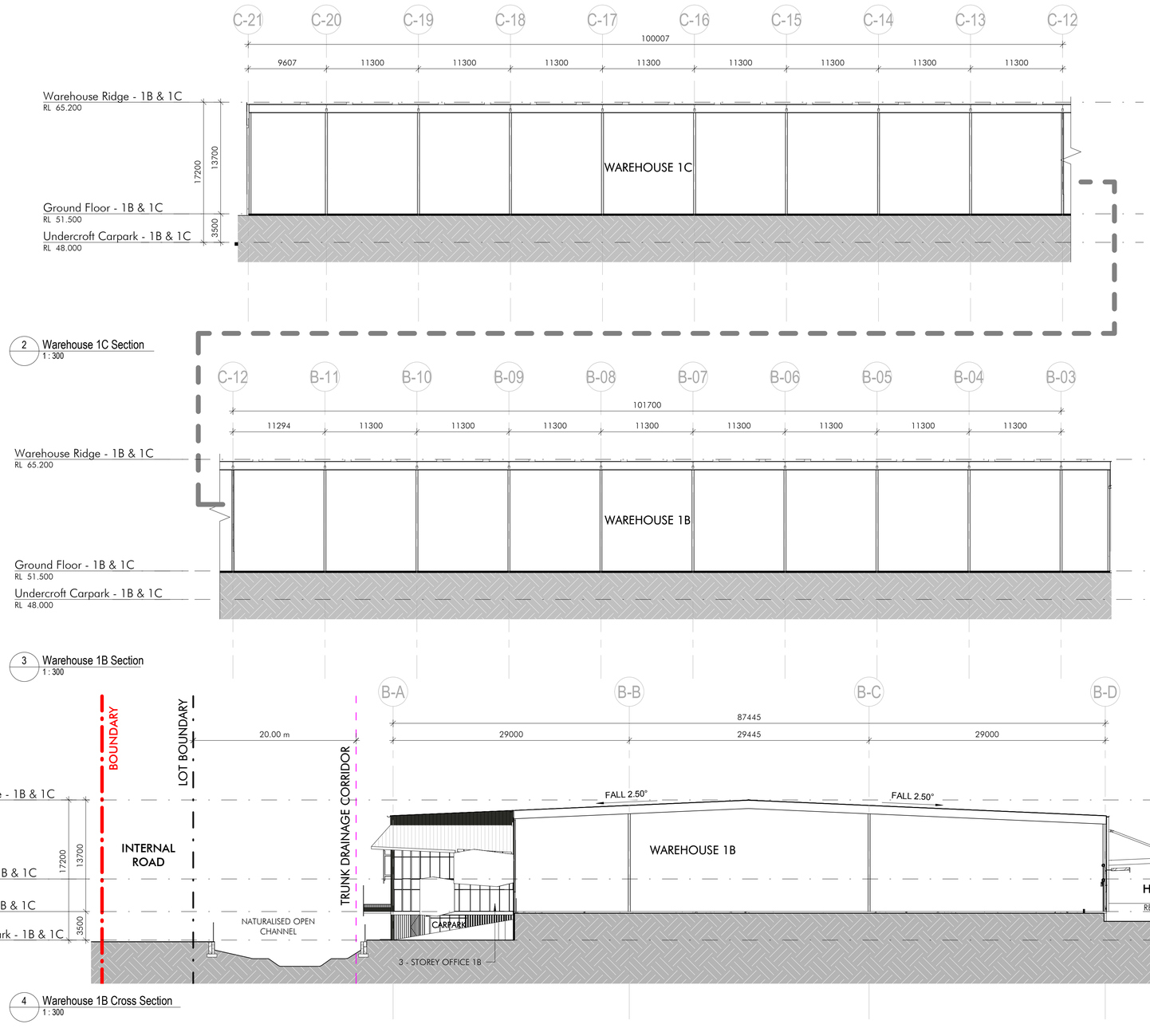
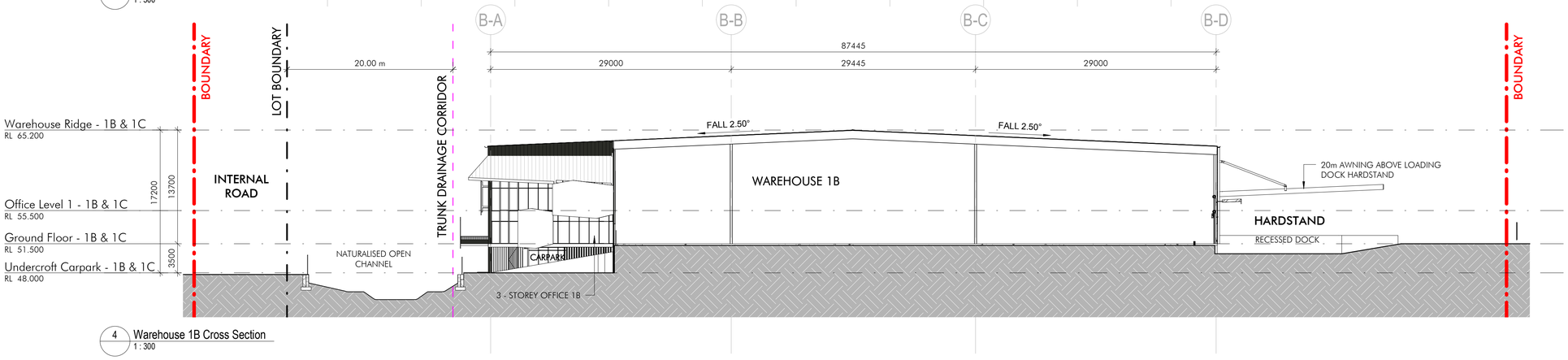


1 Warehouse 1C Cross Section
1 : 300



2 Warehouse 1C Section
1 : 300

3 Warehouse 1B Section
1 : 300



4 Warehouse 1B Cross Section
1 : 300

NOTE: ALL BUILDING LEVELS TO BE + / - 1.0m

Key Plan

0 2000 5000

Issue	Description	Date
7	ISSUED FOR DA	13.10.2023
6	ISSUED FOR COORDINATION	04.10.2023
5	ISSUED FOR DA	16.08.2023
4	ISSUED FOR DA	25.10.2021
3	ISSUED FOR DA	08.09.2021
2	PRELIMINARY ISSUE	24.08.2021
1	PRELIMINARY ISSUE	19.08.2021

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Client
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Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 1B & 1C Sections

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 300

Drawing Number: **12253_DA032**

Issue: **7**

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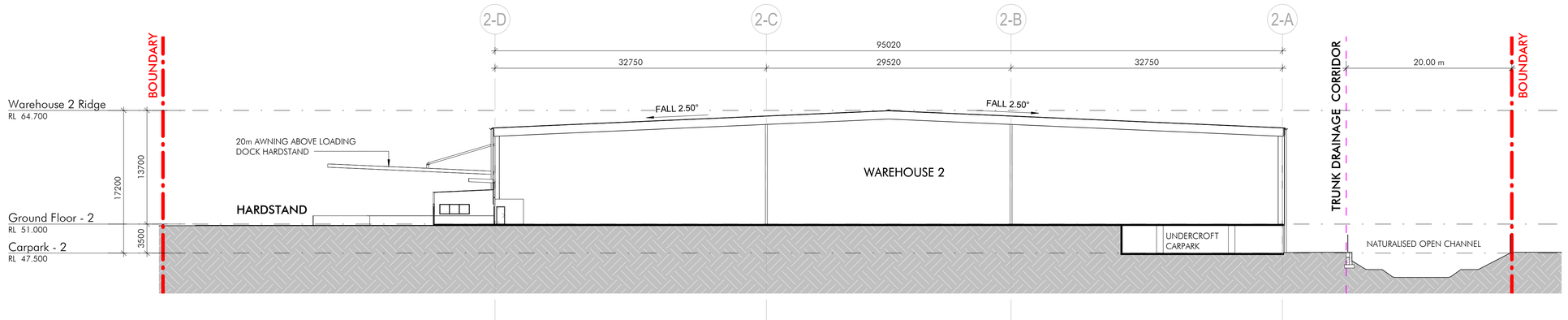
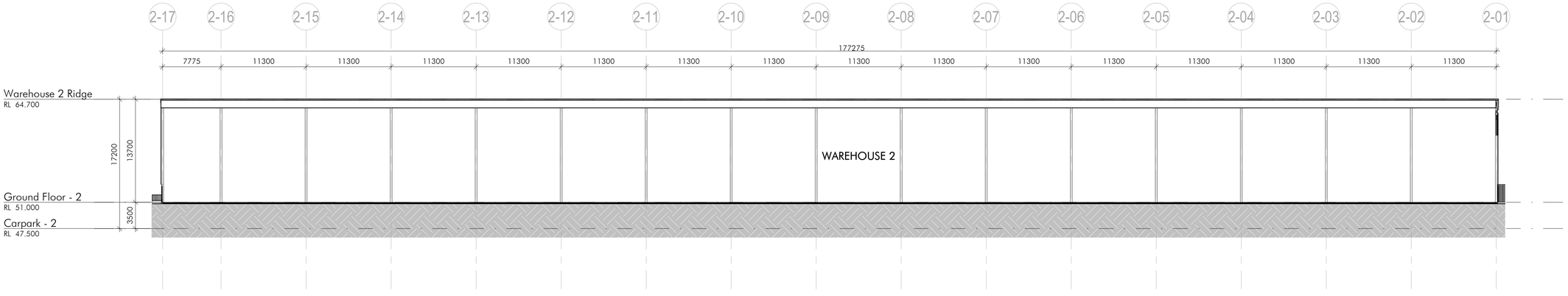
Key Plan

0 6000 15000

Issue	Description	Date
7	ISSUED FOR DA	13.10.2023
6	ISSUED FOR COORDINATION	04.10.2023
5	ISSUED FOR DA	16.08.2023
4	ISSUED FOR DA	19.08.2022
3	ISSUED FOR DA	25.10.2021
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021



1 Warehouse 2 Cross Section
1 : 300



2 Warehouse 2 Section
1 : 300

NOTE: ALL BUILDING LEVELS TO BE + / - 1.0m

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Client
ICON OCEANIA

Builder

Project Name
PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address
253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title
Warehouse 2 Sections

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 300

Drawing Number: **12253_DA033** Issue: **7**

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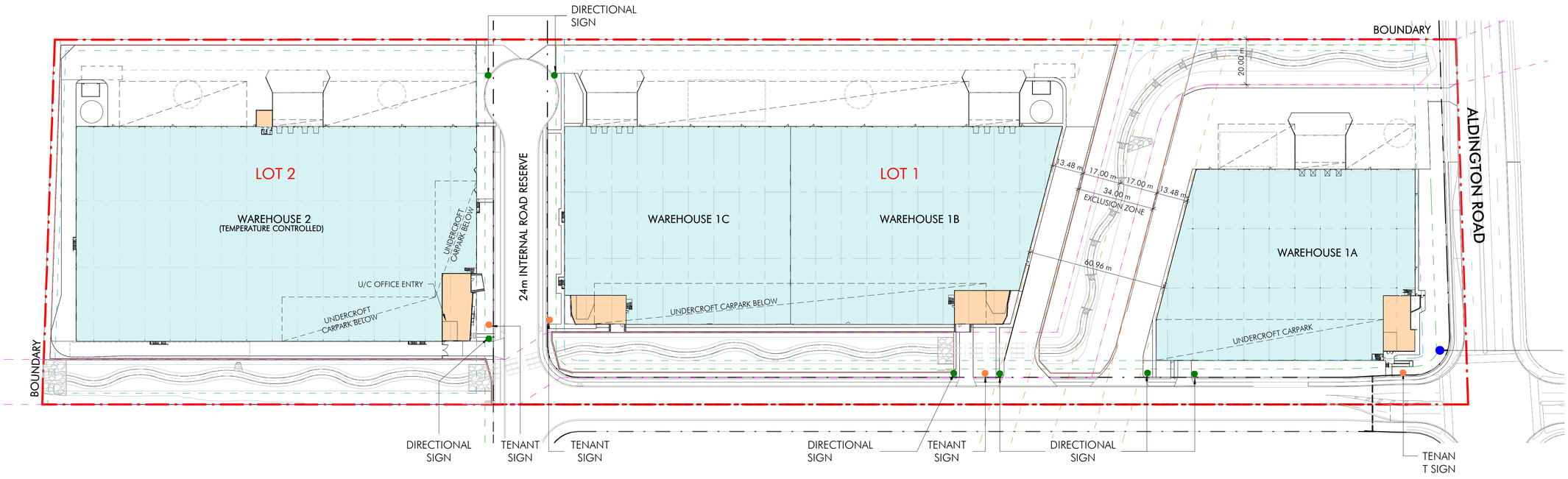
Key Plan

0 20000 50000

Issue	Description	Date
6	ISSUED FOR DA	30.10.2023
5	ISSUED FOR DA	13.10.2023
4	ISSUED FOR DA	16.08.2023
3	ISSUED FOR DA	19.08.2022
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021



1 Signage Strategy Plan
1 : 1000

LEGEND:

- ESTATE SIGN
- TENANT SIGN
- DIRECTIONAL SIGN

SSDA

Client

ICON OCEANIA

Builder

Project Name

PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address

253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title

Signage Strategy Plan

Author:	Checker:	Sheet Size:	Scale:
JM	MC	A1	1 : 1000

Drawing Number: **12253_DA061** Issue: **6**

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Key Plan

Issue	Description	Date
4	ISSUED FOR DA	20.10.2023
3	ISSUED FOR DA	13.10.2023
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021

Office 1A - South-east Corner Perspective from Aldington Road

SSDA

Client

ICON OCEANIA

Builder

Project Name

PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address

253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title

3D Perspective - Office 1A

Author:	Checker:	Sheet Size:	Scale:
WC	MC	A1	

Drawing Number: **12253_DA090** Issue: **4**

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Key Plan

Issue	Description	Date
4	ISSUED FOR DA	20.10.2023
3	ISSUED FOR DA	13.10.2023
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021

Office 1B - South-east Corner Perspective from Internal Road

SSDA

Client

ICON OCEANIA

Builder

Project Name

PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address

253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title

3D Perspective - Office 1B

Author:	Checker:	Sheet Size:	Scale:
WC	MC	A1	

Drawing Number:	Issue:
12253_DA091	4

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Key Plan

Issue	Description	Date
4	ISSUED FOR DA	20.10.2023
3	ISSUED FOR DA	13.10.2023
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021

Office 1C - South-west Corner Perspective from Internal Road

SSDA

Client

ICON OCEANIA

Builder

Project Name

PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address

253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title

3D Perspective - Office 1C

Author:	Checker:	Sheet Size:	Scale:
WC	MC	A1	

Drawing Number: **12253_DA092** Issue: **4**

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Key Plan

Issue	Description	Date
4	ISSUED FOR DA	20.10.2023
3	ISSUED FOR DA	13.10.2023
2	ISSUED FOR DA	08.09.2021
1	PRELIMINARY ISSUE	24.08.2021

Office 2 - South-east Corner Perspective from Internal Road

SSDA

Client

ICON OCEANIA

Builder

Project Name

PROPOSED WAREHOUSE & DISTRIBUTION CENTRE BUILDINGS

Project Address

253-267 ALDINGTON RD, KEMPS CREEK, NSW

Drawing Title

3D Perspective - Office 2

Author:	Checker:	Sheet Size:	Scale:
WC	MC	A1	

Drawing Number:	Issue:
12253_DA093	4

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Appendix B

Noise modelling assumptions and inputs

EMM
creating opportunities

Item No.	Equipment/Activity	Comments	Notes	Sound Power Level, dB LAeq	LAmax	Period Day	Eve	Night	1/3 Octave Sound Power Level, dB LZeq (Hz) 31.5	63	125	250	500	1k	2k	4k	8k
1	Warehouse 1a trucks	2m source height loop and manoeuvring General area around docks - assume 90dBA - awning area - account for 4 fork trucks	2m source height	106.0	120	2	1	2	115.4	112.0	105.5	98.7	101.0	102.4	99.4	93.4	83.2
2	Warehouse 1a fork trucks	(+6dB)	1.5m source height	90.0					99.4	96.0	89.5	82.7	85.0	86.4	83.4	77.4	67.2
3	Warehouse 1b trucks	2m source height loop and manoeuvring General area around docks - assume 90dBA - awning area - account for 4 fork trucks	2m source height	106.0	120	2	1	2	115.4	112.0	105.5	98.7	101.0	102.4	99.4	93.4	83.2
4	Warehouse 1b fork trucks	(+6dB)	1.5m source height	90.0					99.4	96.0	89.5	82.7	85.0	86.4	83.4	77.4	67.2
5	Warehouse 1c trucks	2m source height loop and manoeuvring General area around docks - assume 90dBA - awning area - account for 4 fork trucks	2m source height	106.0	120	2	1	2	115.4	112.0	105.5	98.7	101.0	102.4	99.4	93.4	83.2
6	Warehouse 1c fork trucks	(+6dB)	1.5m source height	90.0					99.4	96.0	89.5	82.7	85.0	86.4	83.4	77.4	67.2
7	Warehouse 2a trucks - refrigerated	2m source height loop and manoeuvring parked along dock area - account for 4 parks	2m source height	106.0	120	2	1	2	115.4	112.0	105.5	98.7	101.0	102.4	99.4	93.4	83.2
8	Warehouse 2a trucks - refrigerated	and running refrigeration General area around docks - assume 90dBA - awning area - account for 4 fork trucks	3m source height	87.9	120	4	4	4			91.0	86.0	85.0	84.0	79.0	72.0	
9	Warehouse 2 fork trucks	(+6dB)	1.5m source height	90.0					99.4	96.0	89.5	82.7	85.0	86.4	83.4	77.4	67.2
10	Carpark breakout (Warehouse 1a - 65 spaces)	southern façade as shown DA011 - breakout from under croft parking	taken from WCX - 74dB/15min per vehicle then 50% utilisation assuming full carpark changeover in each period	92.2	95	65	65	65	98.3	90.3	90.3	91.3	89.3	87.3	84.3	79.3	71.3
11	Carpark breakout (Warehouse 1b/c 113 car spaces)	southern façade as shown DA012 - breakout from under croft parking	taken from WCX - 74dB/15min per vehicle then 50% utilisation assuming full carpark changeover in each period	94.6	95	113	113	113	100.7	92.7	92.7	93.7	91.7	89.7	86.7	81.7	73.7
12	Carpark breakout (Warehouse 1b/c 85 car spaces)	southern façade as shown DA013 - breakout from under croft parking	taken from WCX - 74dB/15min per vehicle then 50% utilisation assuming full carpark changeover in each period	93.3	95	85	85	85	99.5	91.5	91.5	92.5	90.5	88.5	85.5	80.5	72.5
13	Office AC/HVAC - Warehouse 1a	Temperzone OSA950 or eq. Office AC/HVAC - Warehouse 1b - 4 x	roof above offices	87.9		1	1	1			91.0	86.0	85.0	84.0	79.0	72.0	
14	Office AC/HVAC - Warehouse 1b	Temperzone OSA950 or eq. Office AC/HVAC - Warehouse 1c - 4 x	roof above offices	87.9		1	1	1			91.0	86.0	85.0	84.0	79.0	72.0	
15	Office AC/HVAC - Warehouse 1c	Temperzone OSA950 or eq. Office AC/HVAC - Warehouse 2 - 4 x	roof above offices	87.9		1	1	1			91.0	86.0	85.0	84.0	79.0	72.0	
16	Office AC/HVAC - Warehouse 2	Temperzone OSA950 or eq.	roof above offices	87.9		1	1	1			91.0	86.0	85.0	84.0	79.0	72.0	
17	Condensers - Warehouse 2	Condensers for Warehouse 2 x 6 Lw89 each	roof centrally	94.9		1	1	1			98.0	93.0	92.0	91.0	86.0	79.0	
18	Chiller Plantroom - Warehouse 2	Chillers plantroom for Warehouse 2 Box on roof 10m W x 15m L x 2.5m H central (SA) 85dBA internal and assume 100m2 opening	roof centrally - 25m2 opening on each side	85.0		1	1	1		90.2	81.2	82.2	82.2	81.7	75.2	71.2	61.7
19	Warehouse 1a - composites	north façade		83.5					94.8	85.5	82.9	83.1	80.7	78.6	75.5	70.5	62.5
20		east façade		68.5					91.3	81.3	75.7	73.0	66.2	58.5	52.2	39.5	31.5
21		south façade		71.3					94.0	84.0	78.5	75.8	69.0	61.3	55.0	42.3	34.3
22		west façade		70.6					92.9	82.9	77.6	75.1	68.5	60.8	54.5	42.5	34.5
23		roof		78.6					101.6	91.6	85.9	83.2	76.3	68.5	62.3	49.1	41.1
24	Warehouse 1b/c - composites	north façade		86.8					97.9	88.6	86.1	86.4	84.0	81.9	78.8	73.8	65.8
25		east façade		70.0					92.3	82.3	77.0	74.5	67.8	60.1	53.8	41.8	33.8
26		south façade		74.5					95.3	85.3	81.0	78.9	72.5	65.1	58.5	48.0	40.0
27		west façade		70.0					92.3	82.3	77.0	74.5	67.8	60.1	53.8	41.8	33.8
28		roof		81.7					104.7	94.7	89.0	86.2	79.4	71.5	65.4	52.1	44.1
29	Warehouse 2 - composites	north façade		75.5					96.2	86.2	84.3	79.5	73.0	66.4	58.9	49.2	41.2
30		east façade		73.1					93.8	83.8	81.9	77.1	70.6	64.0	56.5	46.8	38.8
31		south façade		70.6					95.7	85.7	82.8	73.3	64.2	59.7	53.7	46.1	38.1
32		west façade		67.3					93.3	83.3	80.3	69.3	57.3	55.3	50.3	43.3	35.3
33		roof		90.8					105.3	95.3	96.3	95.3	89.3	82.3	74.3	63.3	55.3
34	All docks	LAmax airbrake		120.2					118.2	118.4	121.6	115.8	115.3	113.3	114.1	111.7	108.9
						per light vehicle		74.0	80.2	72.2	72.2	73.2	71.2	69.2	66.2	61.2	53.2

	SEL	No. of Events/15min	LAeq,15min (worst case)	Total (-LAmax events)	
LAmax event	120	8	99	110	No contribution

								80.2	72.2	72.2	73.2	71.2	69.2	66.2	61.2	53.2
		PBR shed validation	77.8	construction				84.0	76.0	76.0	77.0	75.0	73.0	70.0	65.0	57.0
		Adjust for 2107 industrial storage 60	60.0	warehouse				66.2	58.2	58.2	59.2	57.2	55.2	52.2	47.2	39.2
	Insertion loss for walls and roof warehouse 1a	0.48mm BMT sheet metal, 60mm insulation with perforated foil facing)						4	6	12	16	21	27	30	40	40
	Insertion loss for walls and roof warehouse 2	outer 0.42 BMT sheet metal, 200mm air gap with 100mm insulation 18kg/m3, inner 0.48mm BMT						4	6	9	21	31	31	33	35	35
	Doors - Warehouse 2 (warehouse 1a, b and c	using 1.8mm rubber Rw15						3	5	4	6	10	15	20	26	26
	translucent sheeting (some walls and roof)	Danpalon 16 (reduced to 8mm)						3	5	5	7	11	16	20	24	24
GS to populate above	Levels below based on internal SPL - TL + SA for component							**1/3 Octave Sound Power Level, dB LZeq (Hz)**								
Space averaged internal noise level	**Warehouse 1a, 1b and 1c walls and roof**	**warehouse (60dB)**		**Area**	**SA**	**Trans**		**31.5**	**63**	**125**	**250**	**500**	**1k**	**2k**	**4k**	**8k**
	Warehouse 1a			north	1289.0		69.8	93.3	83.3	77.3	74.3	67.3	59.3	53.3	38.3	30.3
			open	doors - north	214.6	14%	83.3	89.5	81.5	81.5	82.5	80.5	78.5	75.5	70.5	62.5
				east	774.7		67.6	91.1	81.1	75.1	72.1	65.1	57.1	51.1	36.1	28.1
				east - trans	23.2	3%	61.4	76.9	66.9	66.9	65.9	59.9	52.9	45.9	36.9	28.9
				south	1458.6		70.3	93.8	83.8	77.8	74.8	67.8	59.8	53.8	38.8	30.8
				south - trans	45.0	3%	64.3	79.7	69.7	69.7	68.7	62.7	55.7	48.7	39.7	31.7
				west	1100.4		69.1	92.6	82.6	76.6	73.6	66.6	58.6	52.6	37.6	29.6
				west - trans	57.9	5%	65.4	80.8	70.8	70.8	69.8	63.8	56.8	49.8	40.8	32.8
				roof	8526.0		78.0	101.5	91.5	85.5	82.5	75.5	67.5	61.5	46.5	38.5
				roof-trans	174.0	2%	70.2	85.6	75.6	75.6	74.6	68.6	61.6	54.6	45.6	37.6
	Warehouse 1b/c			north	2566.3		72.8	96.3	86.3	80.3	77.3	70.3	62.3	56.3	41.3	33.3
			open	doors - north	459.1	15%	86.6	92.8	84.8	84.8	85.8	83.8	81.8	78.8	73.8	65.8
				east	950.8		68.5	92.0	82.0	76.0	73.0	66.0	58.0	52.0	37.0	29.0
				east - trans	48.5	5%	64.6	80.1	70.1	70.1	69.1	63.1	56.1	49.1	40.1	32.1
				south	1710.5		71.0	94.5	84.5	78.5	75.5	68.5	60.5	54.5	39.5	31.5
				south - trans	256.6	13%	71.8	87.3	77.3	77.3	76.3	70.3	63.3	56.3	47.3	39.3
				west	950.8		68.5	92.0	82.0	76.0	73.0	66.0	58.0	52.0	37.0	29.0
				west-trans	48.5	5%	64.6	80.1	70.1	70.1	69.1	63.1	56.1	49.1	40.1	32.1
				roof	17184.0		81.0	104.6	94.6	88.6	85.6	78.6	70.6	64.6	49.6	41.6
				roof - trans	351.0	2%	73.2	88.7	78.7	78.7	77.7	71.7	64.7	57.7	48.7	40.7
	Warehouse 2			north	2064.0		69.3	95.3	85.3	82.3	71.3	59.3	57.3	52.3	45.3	37.3
			closed	doors - north	364.6	15%	74.3	88.8	78.8	79.8	78.8	72.8	65.8	57.8	46.8	38.8
				east	1187.8		66.9	92.9	82.9	79.9	68.9	56.9	54.9	49.9	42.9	34.9
				east - trans	209.6	15%	71.9	86.4	76.4	77.4	76.4	70.4	63.4	55.4	44.4	36.4
				south	2185.8		69.6	95.6	85.6	82.6	71.6	59.6	57.6	52.6	45.6	37.6
				south -trans	33.3	2%	63.9	78.4	68.4	69.4	68.4	62.4	55.4	47.4	36.4	28.4
				west	1301.8		67.3	93.3	83.3	80.3	69.3	57.3	55.3	50.3	43.3	35.3
				roof	16390.0		90.8	105.3	95.3	96.3	95.3	89.3	82.3	74.3	63.3	55.3

Warehouse 1a

Day

Update route length from model

Truck	Segment	Truck speed km/h	No of trucks	Truck speed m/h	Truck speed m/min	Truck speed m/sec	Length of route (m)	Time spend on route (sec)	Time spend on route (min)	dB correction to 15 minutes
Full site sweep (in/out)	Total	20	**2**	20000	333.3333333	5.555555556	390	70.2	1.17	-8.1

Eve

Truck	Segment	Truck speed km/h	No of trucks	Truck speed m/h	Truck speed m/min	Truck speed m/sec	Length of route (m)	Time spend on route (sec)	Time spend on route (min)	dB correction to 15 minutes
Full site sweep (in/out)	Total	20	**1**	20000	333.3333333	5.555555556	390	70.2	1.17	-11.1

Night

Truck	Segment	Truck speed km/h	No of trucks	Truck speed m/h	Truck speed m/min	Truck speed m/sec	Length of route (m)	Time spend on route (sec)	Time spend on route (min)	dB correction to 15 minutes
Full site sweep (in/out)	Total	20	**2**	20000	333.3333333	5.555555556	390	70.2	1.17	-8.1

Warehouse 1b/c

Day

Update route length from model

Truck	Segment	Truck speed km/h	No of trucks	Truck speed m/h	Truck speed m/min	Truck speed m/sec	Length of route (m)	Time spend on route (sec)	Time spend on route (min)	dB correction to 15 minutes
Full site sweep (in/out)	Total	20	**4**	20000	333.3333333	5.555555556	1131.6	203.688	3.3948	-0.4

Eve

Truck	Segment	Truck speed km/h	No of trucks	Truck speed m/h	Truck speed m/min	Truck speed m/sec	Length of route (m)	Time spend on route (sec)	Time spend on route (min)	dB correction to 15 minutes
Full site sweep (in/out)	Total	20	**2**	20000	333.3333333	5.555555556	1131.6	203.688	3.3948	-3.4

Night

Truck	Segment	Truck speed km/h	No of trucks	Truck speed m/h	Truck speed m/min	Truck speed m/sec	Length of route (m)	Time spend on route (sec)	Time spend on route (min)	dB correction to 15 minutes
Full site sweep (in/out)	Total	20	**4**	20000	333.3333333	5.555555556	1131.6	203.688	3.3948	-0.4

Warehouse 2

Day

Update route length from model

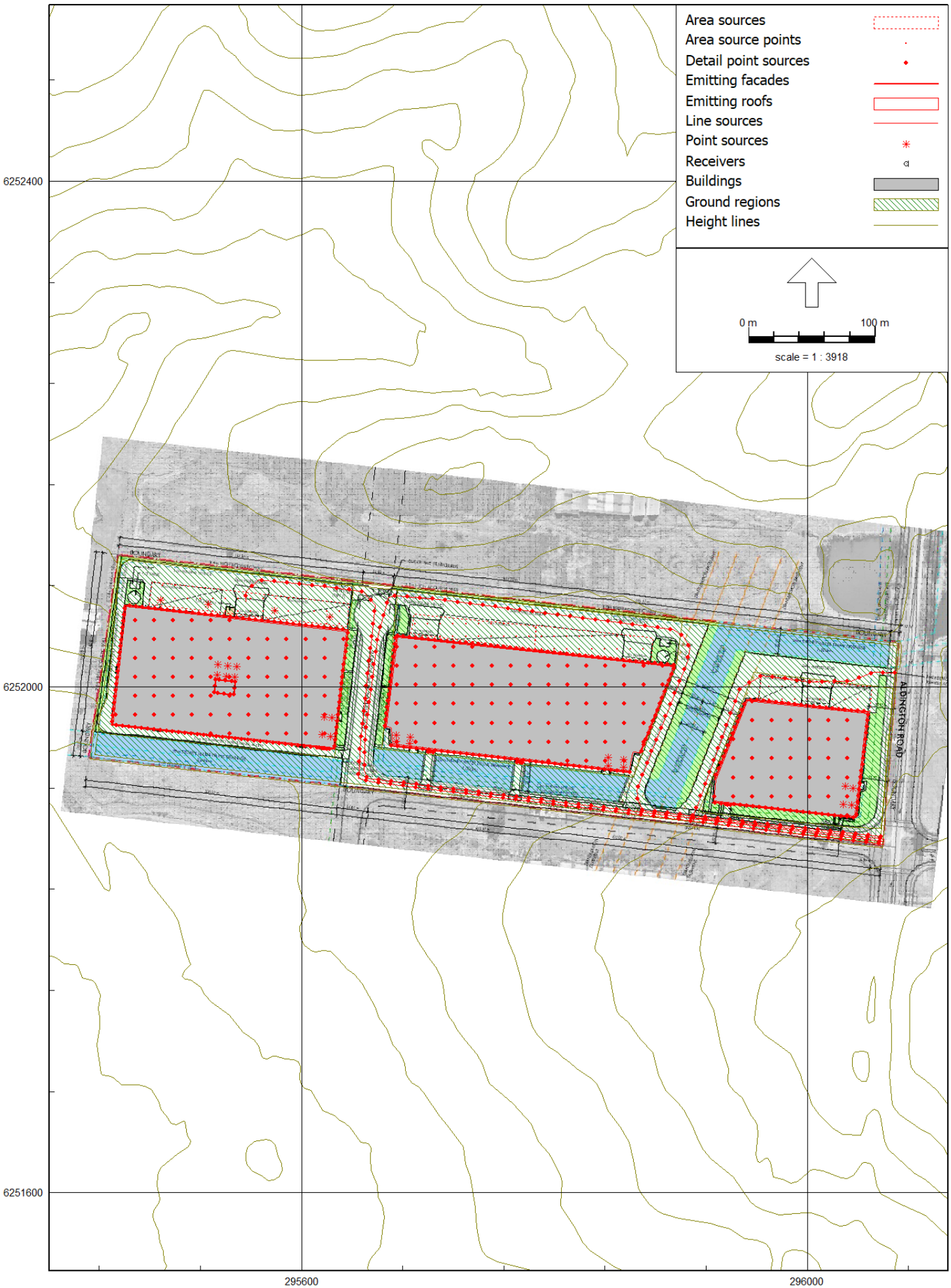
Truck	Segment	Truck speed km/h	No of trucks	Truck speed m/h	Truck speed m/min	Truck speed m/sec	Length of route (m)	Time spend on route (sec)	Time spend on route (min)	dB correction to 15 minutes
Full site sweep (in/out)	Total	20	**4**	20000	333.3333333	5.555555556	677	121.86	2.031	-2.7

Eve

Truck	Segment	Truck speed km/h	No of trucks	Truck speed m/h	Truck speed m/min	Truck speed m/sec	Length of route (m)	Time spend on route (sec)	Time spend on route (min)	dB correction to 15 minutes
Full site sweep (in/out)	Total	20	**2**	20000	333.3333333	5.555555556	677	121.86	2.031	-5.7

Night

Truck	Segment	Truck speed km/h	No of trucks	Truck speed m/h	Truck speed m/min	Truck speed m/sec	Length of route (m)	Time spend on route (sec)	Time spend on route (min)	dB correction to 15 minutes
Full site sweep (in/out)	Total	20	**4**	20000	333.3333333	5.555555556	677	121.86	2.031	-2.7


Area sources
Area source points
Detail point sources
Emitting facades
Emitting roofs
Line sources
Point sources
Receivers
Buildings
Ground regions
Height lines
0 m
100 m
scale = 1 : 3918
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6252000
6251600
295600
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