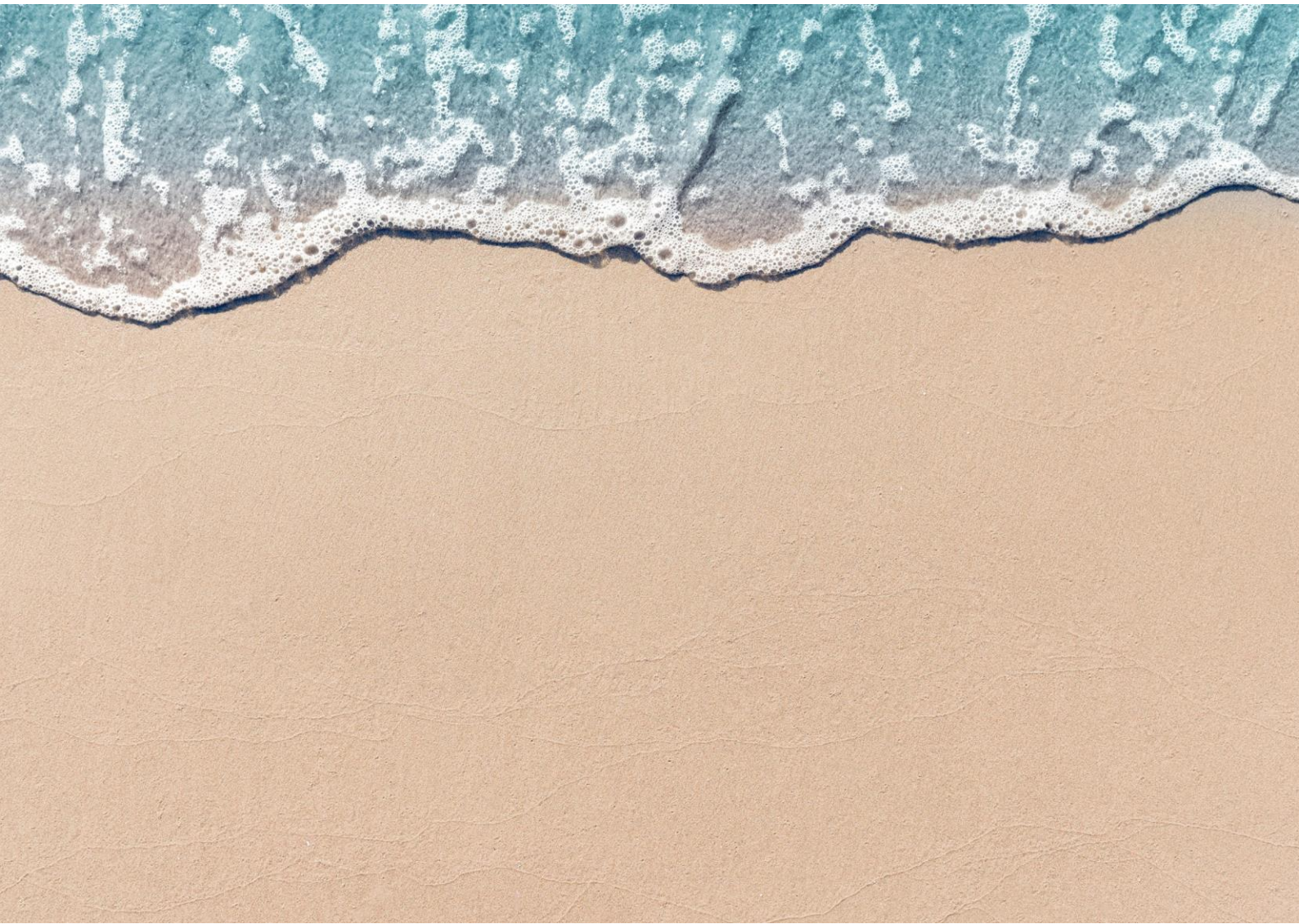
# Freshwater SLSC

## Noise emission assessment

B Plus A Pty Ltd

15 November 2024



| Project name | | Freshwater Surf Life Saving Club - acoustic assessment | | | | | |
|---|---|---|---|---|---|---|---|
| Document title | | Freshwater SLSC \| Noise emission assessment | | | | | |
| Project number | | 12655507 | | | | | |
| Status Code | Revision | Author | Reviewer | | Approved for issue | | |
| | | | Name | Signature | Name | Signature | Date |
| S0 | 0 | C Doyle<br>A Willis | E Milton |  | E Milton |  | 15/11/24 |

**GHD Pty Ltd | ABN 39 008 488 373**
Contact: Christopher Doyle, Acoustic Engineer | GHD
133 Castlereagh Street, Level 15
Sydney, New South Wales 2000, Australia
**T** +61 2 9239 7100 | **F** +61 2 9239 7199 | **E** sydmail@ghd.com | **ghd.com**

# Contents



# Table index

# Figure index



# Appendices

# 1. Introduction

## 1.1 Purpose of this report

GHD Pty Ltd (GHD) has been engaged by B Plus A Pty Ltd to prepare an acoustic assessment for a mixed use commercial and recreational development located at Freshwater Surf Life Saving Club (SLSC) at Kooloora Avenue, Freshwater. The proposed development comprises renovations to the existing SLSC to include a cafe, outdoor terrace and gym, amongst other facilities discussed further in Section 2.2. The objective of this assessment is to assess potential noise emissions at adjacent residential receivers from the use and operations of the proposed development.

## 1.2 Scope of work

GHD has completed the following scope of works as part of the licensed venue noise emission assessment:

- Travelled to site and conduct an inspection of the subject site.
- Undertaken long-term unattended noise monitoring for a period of 13 days to quantify noise emissions at a nearby noise sensitive receiver.
- Downloaded, processed and analysed the data to produce noise monitoring charts. This data has been used to establish the noise emission criteria during the operation of the proposal.
- Based on the background noise monitoring data for the site, and the review of relevant guidance documents, determined relevant noise criteria for assessment of external noise emission to nearby sensitive receivers. Relevant noise criteria for the site have been determined in accordance with the following documents:
    - Northern Beaches Council Warringah Development Control Plan for the assessment of mechanical plant noise and other guidance.
    - The Association of Australasian Acoustical Consultants Guideline for Gymnasium & Exercise Facility Assessment.
    - Under the vibrancy reforms, Liquor & Gaming NSW are now the lead regulator for entertainment and patron sound coming from licensed premises. As the café is to be licensed, a screening assessment has been undertaken against octave band noise criteria.
- The locations of nearby potentially affected noise sensitive receivers were identified.
- Noise modelling was conducted to determine noise levels at adjacent sensitive receivers, from dining areas, recreational spaces, and any other identified noise sources.
- Recommendations have been provided for noise mitigation to ensure the proposal does not disturb the quiet and good order of the residents or tenants of the neighbourhood or adversely impact any residential receivers.

## 1.3 Limitations

*This report: has been prepared by GHD for B Plus A Pty Ltd and may only be used and relied on by B Plus A Pty Ltd for the purpose agreed between GHD and B Plus A Pty Ltd as set out in section 1.1 of this report.*

*GHD otherwise disclaims responsibility to any person other than B Plus A Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.*

*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1.4 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.*

## 1.4 Assumptions

– This report relies on information provided by B Plus A Pty Ltd to GHD including the Architectural Drawing Set 241014 (October 2024) provided in Appendix A

– The results of this assessment are dependent on the assumptions defined in this report and also the noise modelling inputs and parameters defined in Section 4.

– This report considers noise emissions from the proposal to external residential receivers. It does not consider noise transmission within the proposed development or design advice relating to this.

– To assess inaudible within habitable rooms, a criteria for inaudibility has been defined. This is challenging as audibility is subjective and dependant on a variety of factors including variations in ambient noise levels, hearing sensitivity and acoustic masking. Changes to these factors may cause a previously inaudible sound to become audible. An inaudibility screening assessment criteria (conservatively applied externally) of the ambient $L_{A90(period)}$ – 10 dBA has been set to evaluate the potential for audible noise within habitable rooms.

# 2. Existing environment

## 2.1 Proposal site and sensitive receivers

The proposal is located at Kooloora Avenue, Freshwater, NSW 2096. The site is zoned under Northern Beaches Council's Local Environmental Plan as Public Recreation and the surrounding areas are broadly zoned as Low Density Residential.

Potentially impacted sensitive receivers are listed in Table 1, with their locations shown in Figure 1 below. The nearest receiver in each radial direction has been identified and assessed. It is assumed that all receivers further away have a lower received noise level than predicted for the nearest receiver identified in that direction.

***Table 1 Noise sensitive receivers***

| Receiver ID | Address | Land use |
|---|---|---|
| R01 | 73 Undercliff Road, Freshwater NSW 2096 | Residential |
| R02 | Moore Rd, Freshwater NSW 2096 | Commercial restaurant |
| R03 | 71 Undercliff Road, Freshwater NSW 2096 | Residential |
| R04 | 69 Undercliff Road, Freshwater NSW 2096 | Residential |
| R05 | 67 Undercliff Road, Freshwater NSW 2096 | Residential |
| R06 | 63 Undercliff Road, Freshwater NSW 2096 | Residential |
| R07 | 61 Undercliff Road, Freshwater NSW 2096 | Residential |
| R08 | 70 Undercliff Road, Freshwater NSW 2096 | Residential |
| R09 | 37 Moore Road, Freshwater NSW 2096 | Residential |
| R10 | 30 Moore Road, Freshwater NSW 2096 | Residential |
| R11 | 4 Gore Street, Freshwater NSW 2096 | Residential |
| R12 | 6 Gore Street, Freshwater NSW 2096 | Residential |
| R13 | 8 Gore Street, Freshwater NSW 2096 | Residential |
| R14 | 31 Kooloora Avenue, Freshwater NSW 2096 | Residential |
| R15 | 48 Kooloora Avenue, Freshwater NSW 2096 | Residential |
| R16 | 48A Kooloora Avenue, Freshwater NSW 2096 | Residential |
| R17 | 41 Ocean View Road, Freshwater NSW 2096 | Residential |
| R18 | 43 Ocean View Road, Freshwater NSW 2096 | Residential |

| Receiver ID | Address | Land use |
|---|---|---|
| R19 | 53 Ocean View Road, Freshwater NSW 2096 | Residential |
| R20 | Beach Street, Freshwater NSW 2096 | Commercial |
| R21 | 48 Ocean View Road, Freshwater NSW 2096 | Residential |

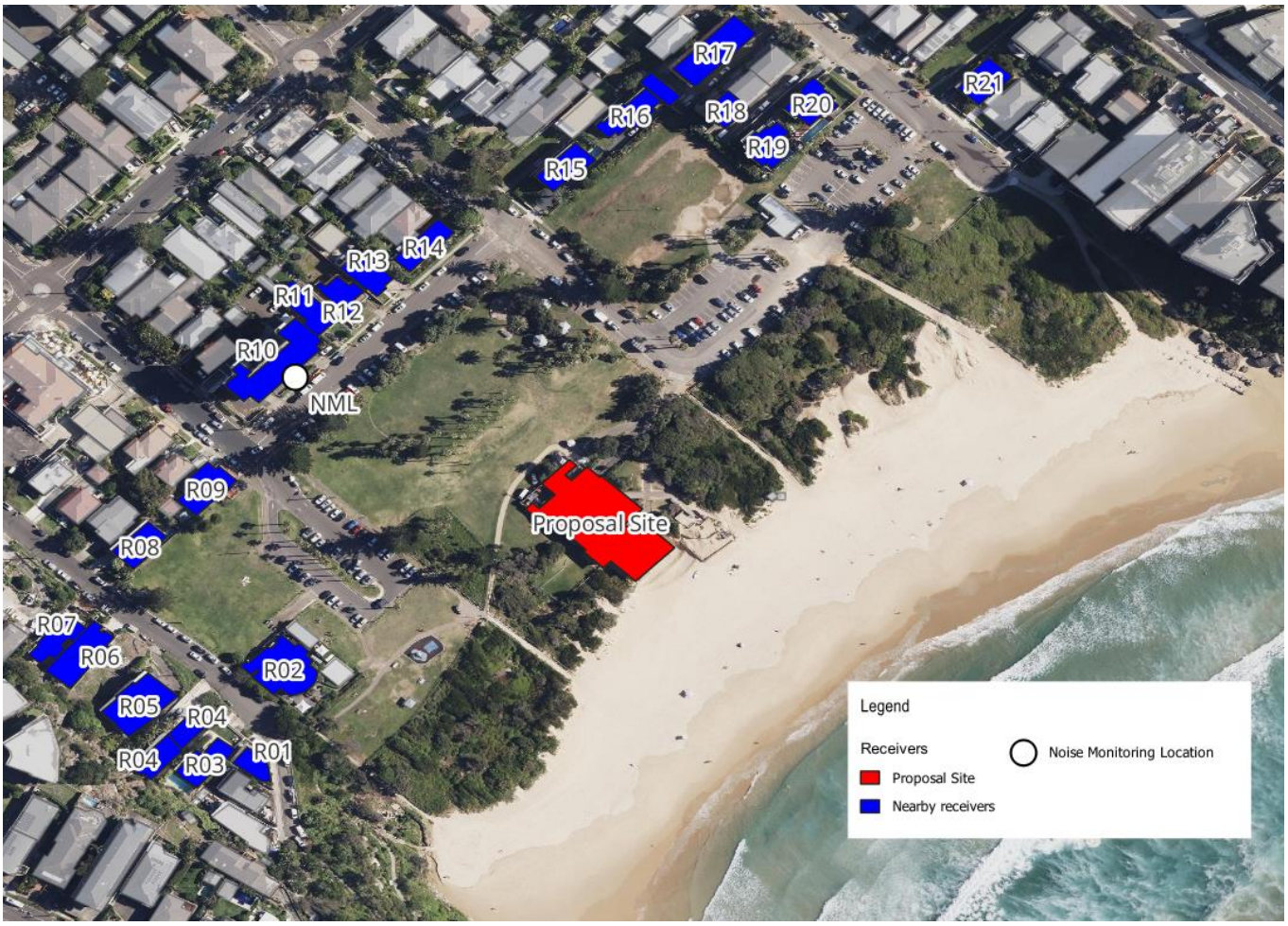



*Figure 1* *Proposal site, nearby noise sensitive receivers and noise monitoring location*

## 2.2 Proposal description

This proposal is seeking consent for alterations and additions to the Freshwater SLSC. A summary of the proposal is as follows:

- Cafe on the second floor with capacity to host a maximum of 128 people to operate during breakfast, lunch and dinner hours.
- Outdoor cafe seating on the Western Veranda with a capacity of 60 people.
- Multipurpose hall renovations to accommodate an additional badminton court (3 in total). The hall is also expected to be used for community purposes including yoga classes, community group meetings. The space is not to be used for live music or other noise intensive events.
- Museum of surf located adjacent 1935 building and is to feature exhibit pieces.
- Gymnasium featuring cardio equipment, free weights and weight machines. Capacity of 60 people.
- Additional mechanical plant to service development. New plant room to house café, HVAC, condenser units, and photovoltaic equipment.

In addition to these alterations, the SLSC features the following existing spaces/uses by level:

- Level 1:

    - Storage facilities for boats, craft, boards, clothing and club equipment including vehicle access
    - Amenities including locker rooms, showers and toilets
    - SLSC operations including first aid facilities, patrol room and beach inspector office
- Level 2:
    - Café kiosk with outdoor seating
    - Active recreational uses such as a multipurpose hall with badminton courts
    - Freshwater room and member's lounge
    - Amenities including toilets
    - SLSC office and reception
- Level 3:
    - Gymnasium with cardio equipment, free weights and other equipment
    - Working spaces including training rooms, a meeting room and office
    - Resident apartment for the caretaker, including bedroom, bathroom, kitchen and dining and living area
    - Plant and equipment room

## 2.3 Proposal operational hours

It is proposed that the licensed café have the following operational hours:

- 7 days a week, Monday to Sunday: 7:00 am to 10:00 pm

It is proposed that the gymnasium have the following operational hours:

- 7 days a week, Monday to Sunday: 5:00 am to 9:00 pm (members only)

## 2.4 Background noise monitoring

### 2.4.1 Monitoring methodology

GHD attended site and conducted long term unattended noise monitoring between 31 October 2024 and 12 November 2024 to quantify the existing background noise levels of the site.

Data was collected and processed in accordance with the guidelines presented in the EPA Noise Policy for Industry (2017) (Fact Sheet A). The survey methodology included the following:

- A calibration check was performed on the noise monitoring equipment using a sound level calibrator with a sound pressure level of 94 dBA at 1 kHz. At completion of the measurements, the meter's calibration was re-checked to ensure the sensitivity of the noise monitoring equipment had not varied. The noise logger was found to be within the acceptable tolerance of ± 0.5 dBA.
- The data collected by the loggers was downloaded and analysed, and any invalid data removed. Invalid data generally refers to periods of time where average wind speeds were greater than 5 m/s (adjusted for ground level), or when rainfall occurred. Meteorological data was sourced from the Manly (North Head) AWS (ID: 66197).
- Noise monitoring was undertaken using a Svan 977 sound receiver. The sound level meter was programmed to accumulate $L_{A90}$, $L_{A10}$, and $L_{Aeq}$ noise descriptors continuously over the entire monitoring period.
- Unattended noise monitoring was conducted by a competent Acoustic Engineer Chris Doyle, who:
    - Is a member employee of GHD, a member firm of the Association of Australasian Acoustical Consultants (AAAC)
    - Possesses the qualification Bachelor of Mechanical Engineering, attained at the University of New South Wales (UNSW) in 2021

## 2.4.2 Overall background noise monitoring results

Table 2 provides the ambient and background noise level summaries during the monitoring period. Appendix A provides the daily noise monitoring charts.

***Table 2 Overall background noise monitoring results summary***

| Day | Noise monitoring results | | | | | |
|---|---|---|---|---|---|---|
| | Rating background level (RBL) $L_{90(15min)}$, dBA | | | Ambient $L_{Aeq(15min)}$ noise level, dBA | | |
| | Day[1] | Evening[1] | Night[1] | Day[1] | Evening[1] | Night[1] |
| Thursday-31-Oct-24 | 53 | 51 | 52 | 68 | 58 | 56 |
| Friday-1-Nov-24 | 53 | 54 | 54 | 57 | 57 | 57 |
| Saturday-2-Nov-24 | 53 | 55 | 49 | 58 | 57 | 54 |
| Sunday-3-Nov-24 | 52 | 47 | 48 | 58 | 53 | 52 |
| Monday-4-Nov-24 | 50 | 49 | 49 | 57 | 53 | 54 |
| Tuesday-5-Nov-24 | 52 | 51 | 47 | 56 | 55 | 53 |
| Wednesday-6-Nov-24 | 51 | 50 | 48 | 59 | 55 | 54 |
| Thursday-7-Nov-24 | 48 | 49 | 42 | 55 | 53 | 52 |
| Friday-8-Nov-24 | 49 | 50 | 49 | 58 | 55 | 56 |
| Saturday-9-Nov-24 | 54 | 52 | 51 | 60 | 57 | 55 |
| Sunday-10-Nov-24 | 55 | - | - | 60 | - | - |
| **RBL and Leq Overall** | **52** | **51** | **49** | **58** | **55** | **54** |

**Monitoring location**

30 Moore Street, Freshwater

**Site observations**

General ambient noise environment heavily dominated by ocean noise. Significant bird noise in the mornings. Occasional road noise from adjacent street (Gore Street).

| Sound level meter details | Sound level calibrator results | Equipment settings |
|---|---|---|
| Svan 977<br>Type 1 Sound level meter<br>SN: 45744<br>IEC 61672-3:2013 Compliant<br>Manufactured prior 2019<br>Free-field conditions | SVAN SV30A<br>Class 1 Sound level calibrator<br>SN: 29030<br>AS 60942:2003 Compliant<br>Manufactured prior 2017 | A-weighted<br>Fast time response<br>15-minute intervals<br><br>Pre and post calibration drift: - 0.2 dB |

Note 1:
Day – 7:00 am to 6:00 pm
Evening – 6:00 pm to 10:00 pm
Night – 10:00 pm to 7:00 am

## 2.4.3 International Standard ISO 226: 2003

The ISO 226 :2003 – Normal Equal-Loudness-Level contours presents *Tf* values for the threshold of human hearing in third octave bands. The *Tf* corresponding to each octave band centre frequency is presented in Table 3 below.

***Table 3 Threshold of human hearing (ISO 226:2003 Table 1)***

| Weighting | dB in octave bands [Hz] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| Z - weighted | 59.5 | 37.5 | 22.1 | 11.4 | 4.4 | 2.4 | -1.3 | -5.4 | 12.6 |
| A - weighted | 20.1 | 11.3 | 6 | 2.8 | 1.2 | 2.4 | -0.1 | -4.4 | 11.5 |

Where octave band background noise levels are below the threshold of human hearing, the A-weighted threshold of human hearing will be used.

## 2.4.4 Background noise monitoring results (octave-band)

The criteria presented in Section 3 requires the assessment of noise emissions in octave-band noise levels (dBA). Octave band background noise levels are presented in Table 4. The octave-band background noise levels have been used to establish the criteria for the licensed venue with reference to the conditions that could be imposed by the Liquor and Gaming NSW on a liquor license.

***Table 4 Octave band background noise levels***

| Time period | RBL $L_{A90}$ in octave bands [Hz], dBA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 7 am to 6pm (day) | 20[1] | 24 | 33 | 40 | 45 | 47 | 45 | 40 | 28 |
| 6 pm to 10 pm (evening) | 20[1] | 18 | 29 | 37 | 43 | 45 | 45 | 38 | 27 |
| 10 pm to 12:00 am midnight (night shoulder period) | 20[1] | 19 | 31 | 38 | 44 | 45 | 44 | 37 | 24 |
| Note 1: Where the measured background noise level is below the threshold of human hearing (as defined in ISO 226:2003), the threshold of human hearing has been used as the background noise level instead. | | | | | | | | | |

# 3. Assessment criteria

## 3.1 Environmental Health Referral Response

Council's Environmental Health Referral Response provided for the development application requires further information and clarification in regards to acoustics before proceeding with the final assessment:

> *A suitably qualified person is to complete an acoustic report to determine if any adverse noise impacts from the development are likely to occur. The acoustic report is to detail all sources of noise from the development once operational and assess whether the noise can cause an adverse impact on residential receivers and if so, what mitigation measures can be applied to reduce noise to an acceptable level. The acoustic report is to include the following noise sources, but not limited to, noise from the gymnasium, patron use of the restaurant, including the terrace, music noise (if relevant), badminton noise.*

## 3.2 Existing consent conditions

A review of existing consent conditions for the SLSC was undertaken and no conditions relevant to the emission of noise from the site was identified.

## 3.3 Warringah DCP (2011)

A review of the relevant Northern Beaches Council Development Control Plan (DCP) (Warringah DCP) was undertaken and the following guidance in regard to noise emission is provided:

***D3 Noise***

*Requirements:*

1. *Noise from combined operation of all mechanical plant and equipment must not generate noise levels that exceed the ambient background noise by more than 5dB(A) when measured in accordance with the NSW Industrial Noise Policy at the receiving boundary of residential and other noise sensitive land uses.*
2. *Development near existing noise generating activities, such as industry and roads, is to be designed to mitigate the effect of that noise.*
5. *Where possible, locate noise sources away from the bedroom areas of adjoining dwellings/properties to minimise impact.*

It is noted that the NSW Industrial Noise Policy has been superseded by the Noise Policy for Industry (EPA, 2017), which will be referred to when appropriate. Table 5 provides the adopted criteria for the assessment of mechanical plant noise from the proposal. Warringah DCP clause D3 has been used to determine the noise emission criteria for the operation of mechanical plant from the proposal.

***Table 5 Mechanical plant noise emission criteria, dBA***

| Time Period | Rating background noise level, $L_{A90,\ 15\ min}$ | Mechanical plant noise emission criteria, $L_{Aeq,\ 15\text{-}minute}$ |
|---|---|---|
| Day | 52 | 57 |
| Evening | 51 | 56 |
| Night | 49 | 54 |

## 3.4 Liquor Act 2007 (the Act)

The development is proposed to have a liquor license so will be regulated by Liquor and Gaming NSW under the Liquor Act 2007 (generally in response to a noise complaint).

The Act includes a "disturbance complaints" and "order of occupancy" principle as follows:

– If the complainant (residents, tenants or workers) has been in the area longer than the licensed premises have been operating, the threshold for a valid complaint is lower. A statutory disturbance complaint may be upheld if the quiet and good order of the neighbourhood in which the licensed venue is located has been 'unduly disturbed'.

    If the licensed premises have been operating longer than the complainant has lived or worked in the area, a complaint may be upheld if: the quiet and good order of the neighbourhood in which the licensed premises are located has been unreasonably and seriously disturbed, and

    the alleged disturbance was not reasonably foreseeable by the complainant when the complainant began residing or working in the area.

The Disturbance Complaint Guidelines For licensed premises (L&GNSW, 2024) states

– 'Undue disturbance', is not defined in the Liquor Act and as such L&GNSW affords the term a general meaning to be a disturbance to the quiet and good order of the residents or tenants of the neighbourhood that is not appropriate or suitable having regard to the particular context. This is a subjective assessment with weight placed on the strength and relevance of the evidence obtained during the disturbance complaint process'.
– 'Unreasonable and serious disturbed' is not defined in the Liquor Act and as such L&GNSW affords the terms a general meaning to be significant and beyond the limits of what is acceptable. This is a subjective assessment with weight placed on the strength and relevance of the evidence obtained during the disturbance complaint process.

To mitigate against excessive noise from a venue or address issues relating to patron management or amenity concerns, Liquor and Gaming NSW are able to impose certain noise-related conditions on liquor licences. These conditions are generally only imposed after a disturbance complaint regarding noise has been investigated and upheld under the Liquor Act, or there are specific issues associated with the operation or management of a venue that need to be addressed via a specific condition.

A typical noise condition imposed on liquor licenses where there is a history of noise complaints is the measured octave band noise level from the licensed premises should not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz–8kHz inclusive) by more than 5dB between 7:00 am and 12:00 midnight at the boundary of any affected residence. Note that this is considered a stringent criterion which would typically only be applied for a venue that has amplified music (above background music) or live events which receives complaints. Nevertheless, this has been adopted as a screening criteria to assess the potential for adverse impact on residential receivers.

Noting that cafe operations are not proposed to operate after 10:00 pm until 7:00 am and no noise impacts are anticipated during this period. Based on the octave band background noise levels measured during the noise monitoring program (presented in Section 2.3.4), Table 6 provides the screening criteria for the assessment of the licensed premises.

***Table 6 Licensed premises screening criteria, dBA***

| Time period | Octave bands [Hz] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| Day – 7 am to 6 pm | 25 | 29 | 38 | 45 | 50 | 52 | 50 | 45 | 33 |
| Evening – 6 pm to 10 pm | 25 | 23 | 34 | 42 | 48 | 50 | 50 | 43 | 32 |
| Night Shoulder Period - 10 pm to 12 am | 25 | 24 | 36 | 43 | 49 | 50 | 49 | 42 | 29 |

# 3.5 Gymnasium and exercise facilities noise guidance

Noise emissions from gym operations to external residential receivers have been assessed with reference to the *Guideline for Gymnasium & Exercise Facility Assessment V1.0 (AAAC, 2022)*.

This assessment provides the following criteria for general noise emission to residential receivers:

*The following criteria apply to noise emission from music, patrons and staff within the premises to residential receivers. Note should be made that "general noise" does not include the occasional impulsive noise from activities such as weight drops. Such noise sources are assessed under "Impulsive Noise":*

*a) The LA10(15min) noise contribution from music, patrons and staff emitted from the gymnasium or exercise facility shall not exceed the background noise level in any octave band frequency (31.5 Hz to 8 kHz inclusive) by more than 5 dB at the boundary, or within at any affected residence between 7am* and 10pm (*8am on Sundays and public holidays).*

*b) The LA10(15min) noise contribution from music, patrons and staff emitted from the gymnasium or exercise facility shall not exceed the background noise in any octave band centre frequency (31.5 Hz to 8 kHz inclusive) at the boundary, or within any affected residence between 10pm and 7am* (*8am on Sundays and public holidays).*

*c) Notwithstanding compliance of the above, noise from music, patrons and staff at the gymnasium or exercise facility shall not be audible in any habitable room in any residential premises between the hours of 10pm and 7am* (*8am on Sundays and public holidays)."*

*d) Where the LA10(15min) noise level is below the threshold of hearing, Tf at any Octave Band Centre Frequency as defined in Table 1 of International Standard ISO 226:2003 "Acoustics – Normal equal-loudness-level contours" then the value of Tf corresponding to that Octave Band Centre Frequency shall be used instead.*

To address c) above, criteria for inaudibility must be defined. This is challenging as audibility is subjective and dependant on a variety of factors including variations in ambient noise levels, hearing sensitivity and acoustic masking.

If a source of noise is perceived at a noise level of 10 dBA below the ambient background noise level, it is unlikely to be audible. This has been used to determining a screening criteria of $L_{A90(15nin)}$ **39 dBA during the night time period** (based on a night time background noise level of 49 dBA)**.** Conservatively this screening criteria has been applied externally, with no attenuation assumed from receiver façades.

Table 7 provides the adopted criteria for the assessment of noise from the gymnasium and exercise facilities in the proposal.

***Table 7 Gymnasium and exercise facilities noise criteria, dBA***

| Time period | Octave bands [Hz] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| Day – 7 am to 6 pm | 25 | 29 | 38 | 45 | 50 | 52 | 50 | 45 | 33 |
| Evening – 6 pm to 10 pm | 25 | 23 | 34 | 42 | 48 | 50 | 50 | 43 | 32 |
| Night Shoulder Period – 10 pm to 12 am | 20 | 19 | 31 | 38 | 44 | 45 | 44 | 37 | 24 |

Additionally, the AAAC guideline provides criteria for impulsive noise emissions to residential receivers from weight drops or other similar sources. Overall contributed $L_{AFmax}$ within octave bands of interest (octave bands containing the impulse energy, generally 31.5 Hz to 250 Hz, as determined by the acoustic consultant) should not exceed the following levels:

- $L_{AFmax(\Sigma Oct,31.5\text{-}250Hz)} \leq$ 35 dB for daytime (7 am to 6 pm)
- $L_{AFmax(\Sigma Oct,31.5\text{-}250Hz)} \leq$ 30 dB for evening (6pm to 10pm)
- $L_{AFmax(\Sigma Oct,31.5\text{-}250Hz)} \leq$ 25 dB for night-time (10pm to 7 am, 8 am on Sundays and Public Holidays).

# 4. Assessment of impacts

## 4.1 Noise modelling parameters

Noise modelling was undertaken in CadnaA 2023 using *Acoustics – Attenuation of sound during propagation outdoors* (ISO 9613:1993). The algorithm takes into account the presence of a well-developed moderate ground-based temperature inversion that commonly occurs on clear, calm or downwind conditions that are favourable to sound propagation. Therefore, predicted noise levels would represent a worst-case scenario.

Noise levels were assessed at the nearest sensitive receivers. The following noise modelling assumptions were used in the noise model:

- Surrounding land was modelled assuming a mixture of 25% hard and 75% soft ground with a ground absorption coefficient of 0.75
- Modelled scenarios consider the shielding effect from surrounding buildings and structures on and adjacent to the site. A reflection order of 1 has been assumed. Buildings have been modelled with an absorption coefficient of 0.1 in each octave band, corresponding the highly reflective surfaces
- Terrain topography with a one metre resolution of the study area was used to generate the site used to predict noise levels
- Modelled scenarios take into account the shielding effects from surrounding terrain, buildings and structures
- Receivers are modelled at 1.5 metres above the ground level of each storey (3 metres for each floor)
- Atmospheric air absorption was based on an average temperature of 10°C and an average humidity of 70%. These assumptions are considered conservative

## 4.2 Noise modelling scenarios

Table 8 provides the modelling scenarios for the assessment of noise emissions from the licensed premises. Modelled scenarios have been selected to represent worst-case noise emissions from the site which would mainly be associated with the cafe at maximum capacity with sliding doors open and patrons dining outdoors on the veranda.

***Table 8 Noise modelling scenarios***

| Scenario and applicable time periods | Scenario description | Source parameters | Attenuation |
|---|---|---|---|
| **S01**<br>**Patrons – Sliding doors closed**<br>7:00 am to 10:00 pm | Conservatively assume 100% capacity of indoor café seating and outdoor veranda area (as provided in Section 0), with light background music underneath patrons talking.<br>Sliding doors for café are assumed to be closed. | Assuming half of the people are talking at any given time with:<br>– 50% of those are speaking at a normal level<br>– 30% at a raised level and<br>– 20% at a loud level.<br>Following these assumptions, the indoor café has a cumulative internal reverberant noise level of 81 dBA using the breakdown below:<br>– 32 patrons speaking normally<br>– 20 patrons speaking at a raised level<br>– 12 patrons speaking loudly.<br>The outdoor veranda area has a cumulative sound power level of 91 dBA using the breakdown:<br>– 15 patrons speaking normally<br>– 10 patrons speaking at a raised level<br>– 5 patrons speaking loudly. | Sliding glazed doors to internal seating area of café assumed to be closed.<br>Glazing assumed to be Rw 30. |

| Scenario and applicable time periods | Scenario description | Source parameters | Attenuation |
|---|---|---|---|
| **S02**<br>**Patrons – Sliding doors open**<br>7:00 am to 10:00 pm | Conservatively assume 100% capacity of each seating area (as provided in Section 0), with light background music underneath patrons talking.<br>Sliding doors for cafe are assumed to be open | As above | Sliding glazed doors to internal seating area of café assumed to be open and provide no attenuation. |
| **S03**<br>**Mechanical plant**<br>All times | Plant & equipment room located within designated plant room on level 3 above the second-floor kitchen. | Generic mechanical plant condenser spectrum used to model plant room noise emissions. A conservative internal reverberant noise level of 95 dBA has been used to model plant noise. | Plant & equipment room to be completely enclosed with 300 mm thick masonry wall<br>Lightweight roof construction<br>Rw 45 assumed for masonry walls<br>Rw 31 assumed for roof construction |
| **S04**<br>**Gymnasium**<br>5:00 am to 9:00 pm | Gymnasium located on level 3 at full capacity.<br>Multipurpose hall featuring badminton courts (expected to be loudest use of space) located on level 2 at full capacity. | Gymnasium assumed to have an SPLi of 84 dBA. Spectrum of previous GHD site measurements used. Source measurement includes gym noise, music, patron noise and barbell/weights noise.<br>Multipurpose hall assumed to have an internal reverberant noise level of 74 dBA. This level is expected during badminton operations, with other uses expected to have an equal or lesser internal reverberant level. | Glazing surrounding gymnasium area assumed to be Rw 30.<br>Sliding doors adjacent multipurpose hall assumed open Rw 0. |
| **S05**<br>**Gymnasium impulsive noise** | Impulsive noise from barbell drops within gymnasium space | Barbell drop modelled within gym space with $L_{Amax}$ 102 dBA.<br>Measurement data sourced from previous GHD measurements of gym operations. | Glazing surrounding gymnasium area assumed to be Rw 30. |

# 4.3 Noise modelling results

## 4.3.1 Licensed premises – café operations

Table 9 presents the results for café noise with the glazed doors open.

Table 10 presents the results for café noise with the glazed doors closed (west veranda still modelled at full capacity). The results have been assessed against the octave band screening criteria, the Night Shoulder Period (10:00 pm to 12:00 am). Assessment is not required at non-residential receivers. No exceedances of the octave band screening noise criteria are predicted at residential receivers, with the licensed premises operating at maximum capacity.

***Table 9 Licensed premises – doors open octave band noise level results, dBA***

| Receiver ID | Octave band [Hz] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **31.5** | **63** | **125** | **250** | **500** | **1000** | **2000** | **4000** | **8000** |
| **Night Shoulder Period criteria** | **25** | **24** | **36** | **43** | **49** | **50** | **49** | **42** | **29** |
| R01 | 0 | 0 | 7 | 21 | 34 | 38 | 31 | 20 | 0 |
| R03 | 0 | 0 | 6 | 22 | 34 | 35 | 28 | 17 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| R04 | 0 | 0 | 5 | 22 | 34 | 36 | 29 | 18 | 0 |
| R05 | 0 | 0 | 9 | 23 | 36 | 40 | 33 | 23 | 0 |
| R06 | 0 | 0 | 9 | 23 | 36 | 40 | 33 | 22 | 0 |
| R07 | 0 | 0 | 8 | 22 | 36 | 39 | 32 | 21 | 0 |
| R08 | 0 | 0 | 10 | 25 | 38 | 41 | 35 | 25 | 2 |
| R09 | 0 | 0 | 12 | 27 | 40 | 44 | 37 | 28 | 7 |
| R10 | 0 | 0 | 14 | 28 | 41 | 45 | 38 | 29 | 9 |
| R11 | 0 | 0 | 13 | 27 | 40 | 44 | 38 | 28 | 8 |
| R12 | 0 | 0 | 10 | 27 | 40 | 43 | 37 | 28 | 8 |
| R13 | 0 | 0 | 13 | 27 | 40 | 43 | 37 | 28 | 8 |
| R14 | 0 | 0 | 11 | 26 | 39 | 43 | 37 | 27 | 7 |
| R15 | 0 | 0 | 8 | 24 | 37 | 41 | 34 | 24 | 2 |
| R16 | 0 | 0 | 6 | 22 | 36 | 39 | 33 | 22 | 0 |
| R17 | 0 | 0 | 7 | 21 | 34 | 38 | 31 | 20 | 0 |
| R18 | 0 | 0 | 5 | 19 | 31 | 35 | 27 | 16 | 0 |
| R19 | 0 | 0 | 3 | 17 | 29 | 33 | 26 | 15 | 0 |
| R21 | 0 | 0 | 0 | 12 | 23 | 26 | 18 | 5 | 0 |

***Table 10 Licensed premises – doors closed octave band noise level results, dBA***

| **Receiver ID** | **Octave band [Hz]** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **31.5** | **63** | **125** | **250** | **500** | **1000** | **2000** | **4000** | **8000** |
| **Night shoulder period criteria** | **25** | **24** | **36** | **43** | **49** | **50** | **49** | **42** | **29** |
| R01 | 0 | 0 | 2 | 15 | 28 | 33 | 26 | 15 | 0 |
| R03 | 0 | 0 | 0 | 16 | 27 | 29 | 21 | 10 | 0 |
| R04 | 0 | 0 | 0 | 16 | 27 | 29 | 22 | 11 | 0 |
| R05 | 0 | 0 | 2 | 16 | 28 | 33 | 26 | 16 | 0 |
| R06 | 0 | 0 | 2 | 15 | 28 | 33 | 26 | 15 | 0 |
| R07 | 0 | 0 | 2 | 15 | 28 | 32 | 25 | 14 | 0 |
| R08 | 0 | 0 | 4 | 17 | 30 | 35 | 28 | 18 | 0 |
| R09 | 0 | 0 | 6 | 20 | 32 | 37 | 30 | 21 | 0 |
| R10 | 0 | 0 | 8 | 21 | 34 | 38 | 32 | 23 | 3 |
| R11 | 0 | 0 | 7 | 21 | 33 | 38 | 31 | 22 | 2 |
| R12 | 0 | 0 | 5 | 21 | 34 | 38 | 31 | 22 | 2 |
| R13 | 0 | 0 | 7 | 21 | 34 | 38 | 32 | 22 | 3 |
| R14 | 0 | 0 | 5 | 21 | 33 | 38 | 31 | 22 | 2 |
| R15 | 0 | 0 | 3 | 18 | 30 | 35 | 29 | 18 | 0 |
| R16 | 0 | 0 | 1 | 16 | 29 | 33 | 27 | 16 | 0 |
| R17 | 0 | 0 | 1 | 14 | 27 | 32 | 25 | 14 | 0 |
| R18 | 0 | 0 | 2 | 15 | 28 | 32 | 26 | 15 | 0 |
| R19 | 0 | 0 | 0 | 14 | 27 | 32 | 25 | 14 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| R21 | 0 | 0 | 0 | 9 | 21 | 25 | 17 | 5 | 0 |

### 4.3.2 Mechanical plant

A plant and equipment room located on level three is proposed as part of the alterations and additions. Exact details of the equipment in the room are not known at this stage and therefore a conservative internal reverberant level has been assumed to provide an indication of compliance with the relevant criteria. The Warringah DCP (2011) provides the appropriate guidance for the assessment of noise from the proposed plant, and it is provided in Section 3.2.

Table 11 provides the received noise level at each receiver against the nighttime mechanical plant noise criteria. Compliance is predicted at all receivers during the most stringent (the nighttime criteria) period of the day. Once exact mechanical plant and façade constructions are known (such as prior to the issue of a Construction Certificate) a detailed mechanical plant noise emission assessment should be undertaken to ensure compliance with the Warringah DCP noise criteria for mechanical plant.

***Table 11 Predicted mechanical plant noise levels, dBA***

| Receiver ID | Most stringent applicable criteria, $L_{Aeq(15min)}$ dBA | Predicted mechanical plant noise level, $L_{Aeq(15min)}$ dBA |
|---|---|---|
| R01 | 54 | 31 |
| R02 | | 33 |
| R03 | | 29 |
| R04 | | 30 |
| R05 | | 31 |
| R06 | | 31 |
| R07 | | 30 |
| R08 | | 32 |
| R09 | | 34 |
| R10 | | 36 |
| R11 | | 35 |
| R12 | | 35 |
| R13 | | 35 |
| R14 | | 35 |
| R15 | | 33 |
| R16 | | 31 |
| R17 | | 30 |
| R18 | | 31 |
| R19 | | 31 |
| R20 | | 30 |
| R21 | | 28 |

### 4.3.3 Gymnasium and multipurpose hall operations

Table 12 provides the modelled noise levels for gymnasium and multipurpose hall operations. Also provided in the table is the overall noise level, which has been assessed against the inaudibility criteria of 39 dBA.

Table 13 provides the modelled noise levels for the impulsive noise level assessment.

No exceedances of the octave band noise criteria, impulsive noise criteria, or inaudibility screening criteria are predicted to occur when the gymnasium and multipurpose hall are operating at maximum capacity.

*Table 12 Gymnasium and multipurpose hall operations, dBA*

| Receiver ID | Octave band [Hz] | | | | | | | | | Overall, dBA |
|---|---|---|---|---|---|---|---|---|---|---|
| | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | |
| **Night-time background level** | 20 | 19 | 31 | 38 | 44 | 45 | 44 | 37 | 24 | 39 |
| R01 | 0 | 0 | 0 | 5 | 19 | 24 | 26 | 26 | 7 | 31 |
| R03 | 0 | 0 | 0 | 4 | 17 | 22 | 23 | 22 | 3 | 28 |
| R04 | 0 | 0 | 0 | 3 | 15 | 19 | 20 | 21 | 3 | 25 |
| R05 | 0 | 0 | 0 | 4 | 18 | 23 | 25 | 24 | 5 | 29 |
| R06 | 0 | 0 | 0 | 4 | 18 | 23 | 24 | 24 | 4 | 29 |
| R07 | 0 | 0 | 0 | 3 | 17 | 22 | 24 | 23 | 2 | 28 |
| R08 | 0 | 0 | 0 | 5 | 20 | 25 | 26 | 26 | 8 | 31 |
| R09 | 0 | 0 | 0 | 7 | 21 | 26 | 28 | 29 | 13 | 33 |
| R10 | 0 | 0 | 0 | 8 | 22 | 27 | 29 | 29 | 14 | 34 |
| R11 | 0 | 0 | 0 | 5 | 17 | 22 | 24 | 24 | 8 | 29 |
| R12 | 0 | 0 | 0 | 3 | 14 | 16 | 17 | 16 | 0 | 22 |
| R13 | 0 | 0 | 0 | 2 | 12 | 13 | 15 | 15 | 0 | 20 |
| R14 | 0 | 0 | 0 | 1 | 9 | 10 | 12 | 14 | 0 | 18 |
| R15 | 0 | 0 | 0 | 0 | 6 | 5 | 9 | 10 | 0 | 14 |
| R16 | 0 | 0 | 0 | 0 | 4 | 4 | 8 | 8 | 0 | 13 |
| R17 | 0 | 0 | 0 | 0 | 4 | 4 | 8 | 7 | 0 | 12 |
| R18 | 0 | 0 | 0 | 0 | 2 | 4 | 5 | 4 | 0 | 10 |
| R19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| R21 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 |

*Table 13 Impulsive gym noise emission assessment results*

| Receiver ID | Octave band [Hz] | | | |
|---|---|---|---|---|
| | 31.5 | 63 | 125 | 250 |
| **Night impulsive criteria** | **25** | **25** | **25** | **25** |
| R01 | 5 | 5 | 2 | 14 |
| R03 | 2 | 4 | 4 | 16 |
| R04 | 0 | 0 | 0 | 10 |
| R05 | 0 | 0 | 0 | 9 |
| R06 | 3 | 3 | 2 | 13 |
| R07 | 4 | 4 | 2 | 13 |
| R08 | 4 | 3 | 1 | 12 |
| R09 | 6 | 5 | 3 | 14 |
| R10 | 7 | 7 | 5 | 16 |
| R11 | 8 | 8 | 6 | 16 |
| R12 | 5 | 5 | 5 | 15 |
| R13 | 4 | 3 | 0 | 10 |
| R14 | 3 | 2 | 0 | 9 |
| R15 | 2 | 0 | 0 | 6 |
| R16 | 0 | 0 | 0 | 2 |
| R17 | 0 | 0 | 0 | 0 |
| R18 | 0 | 0 | 0 | 0 |
| R19 | 0 | 0 | 0 | 0 |
| R21 | 0 | 0 | 0 | 0 |

### 4.3.4 Cumulative noise

Although it is unlikely for the licensed premises, gymnasium and multipurpose hall to operate at maximum capacity at the same time, results for this are presented in Appendix C. No exceedances are predicted for this scenario.

# 5. Recommendations

## 5.1 Complaints management

If during operations, a complaint has been lodged from any of the nearby sensitive receivers, the following process should be followed to ensure all complaints are dealt with in an appropriate manner:

– All complaints should be documented and responded to in a timely, consistent, and sensitive manner.
– A staff member will be nominated to deal with complaints from the community.
– All complaints will be logged within a complaint register that details the nature of the complaint and the actions taken to address the complaint.
– The complaint register should be reviewed at regular intervals to identify any common and recurring complaints and measures should be actively taken to reduce the number of complaints.

## 5.2 Licensed café management measures

The following mitigation and management measures should be included in the plan of management and design of the development in order to ensure that the acoustic amenity of the surrounding area can be preserved:

– Patrons should not be allowed to congregate in large numbers outside of the venue after 10 pm
– The erection of clear signage at all entries and exits advising patrons/members that they must not generate excessive noise when entering and leaving the premises;
– A member of staff should be designated onsite to monitor patron behaviour in, and in the vicinity of, the premises. Practical steps should be taken to ensure the quiet and orderly behaviour of patrons in the venue and also particularly in departing the licensed venue after the conclusion of night time operations
– To avoid the potential for sleep disturbance, waste disposal activities such as the disposal of glass bottles, recycling and food waste into bins is to be completed before 10pm, or not until after 7am the following day.

## 5.3 Gymnasium management measures

Following the guideline for acoustic assessment of gymnasiums and exercise facilities, the following mitigation and management measures are recommended:

– The erection of clear signage at all entries and exits advising patrons/members that they must not generate excessive noise when entering and leaving the premises;
– Staff monitoring the behaviour of patrons/members within the subject premises and as they enter/exit to ensure noise emission of patrons/members is kept to a minimum;
– The noise level of background music should be kept to an appropriate level, to enable speech intelligibility, and to ensure patrons/members are not required to raise their voices;
– Installation of impact sound absorbing flooring (such as REGUPOL everroll and sonusfit construction) to reduce the regenerated noise and vibration in areas where high levels of impact are expected. This includes:
    - Free-weights areas;
    - Any area where free-weights are otherwise used or stored;
    - Functional training areas; and
    - Pin- and plate-loaded machine areas.

## 5.4 Mechanical plant further works

The mechanical plant noise modelling in this assessment has used indicative source levels and sound reduction performances. The results of the assessment illustrate that compliance is readily achievable. Once exact mechanical plant and façade constructions are known (such as prior to the issue of a Construction Certificate) a detailed mechanical plant noise emission assessment should be undertaken to ensure compliance with the Warringah DCP noise criteria for mechanical plant.

# 6. Conclusion

GHD has prepared this acoustic assessment to predict noise emissions from the proposed development to nearby noise sensitive receivers. The assessment has considered noise emissions from café operations, gymnasium operations, multipurpose hall operations and from mechanical plant noise emissions.

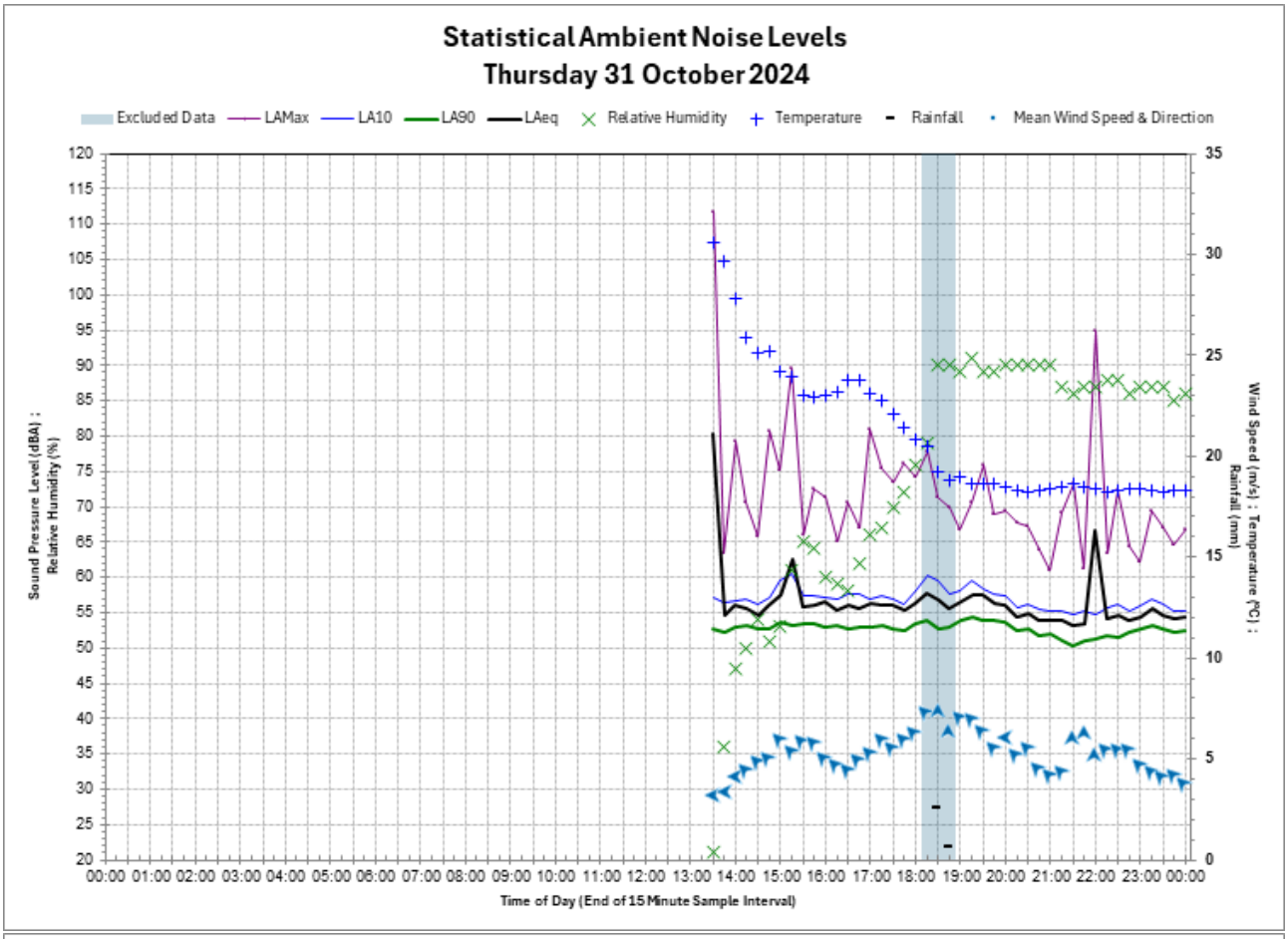
The results of the noise modelling indicate compliance with the relevant noise assessment criteria for each source of noise and the proposed development should not unduly disturbed the quiet and good order of the neighbourhood or adversely impact any residential receivers.

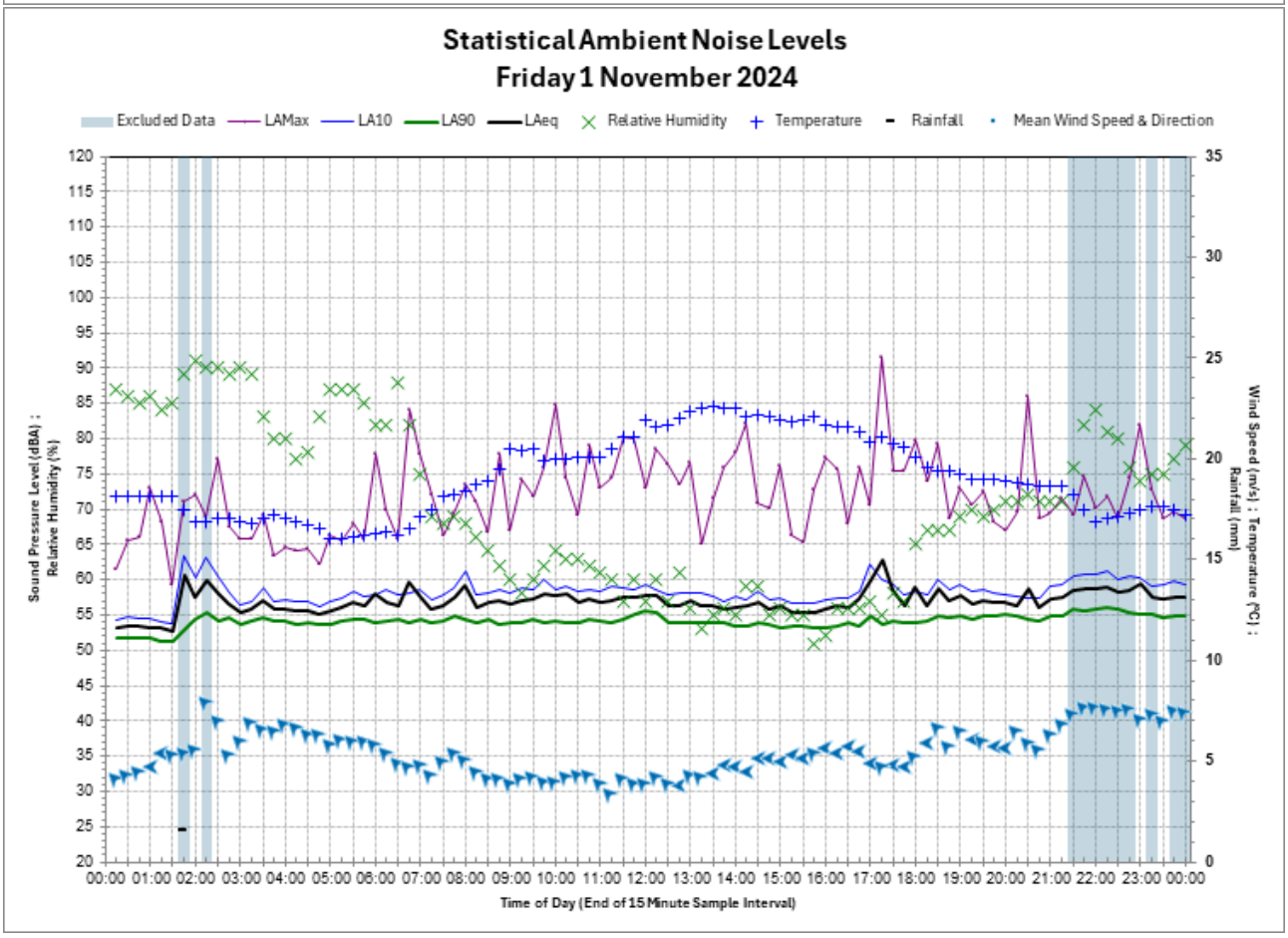
Recommendations have been made in Section 5 in regard to management measures and for further assessment of mechanical plant noise emissions to be undertaken once the design has progressed sufficiently.

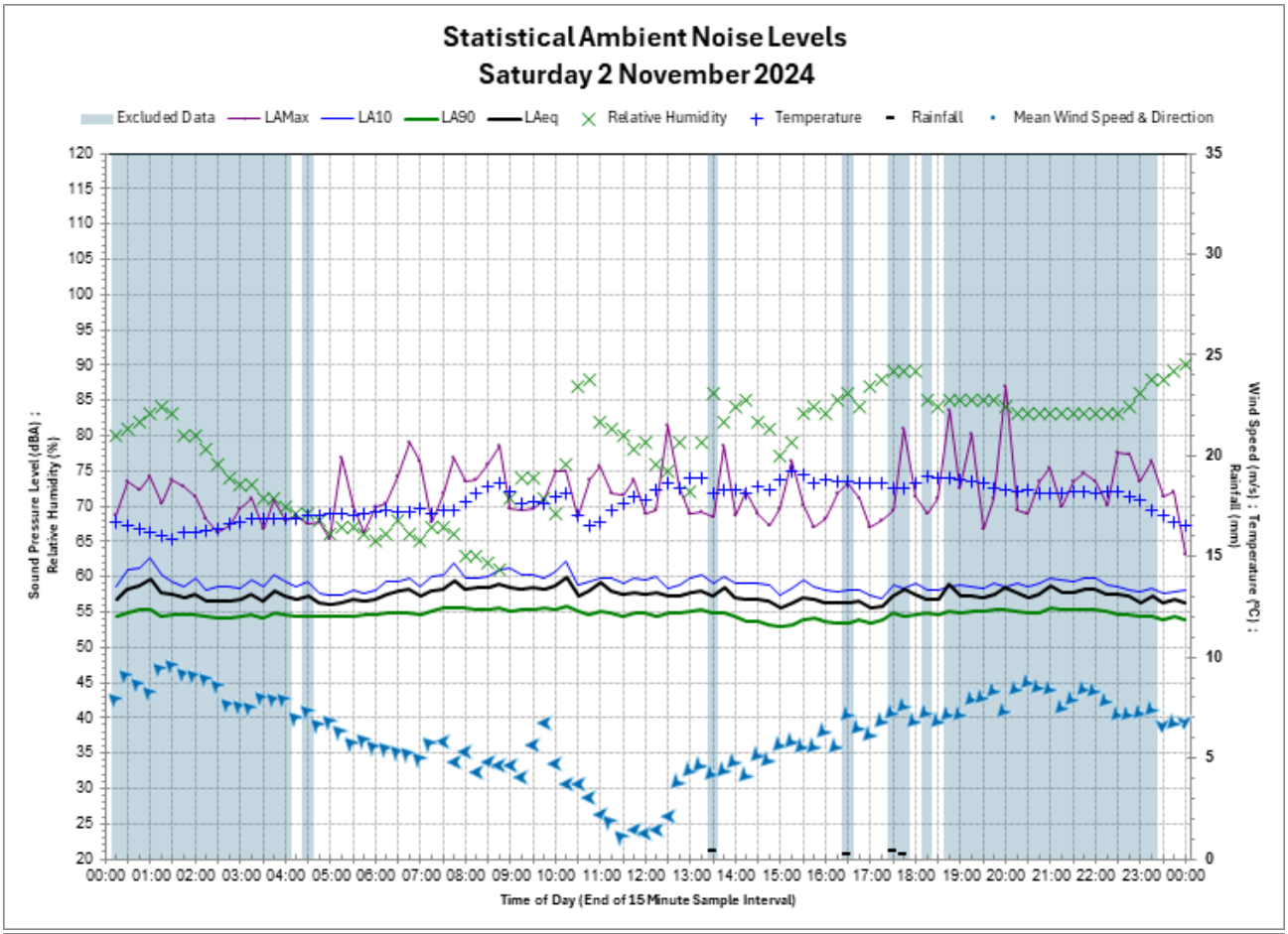
# Appendices

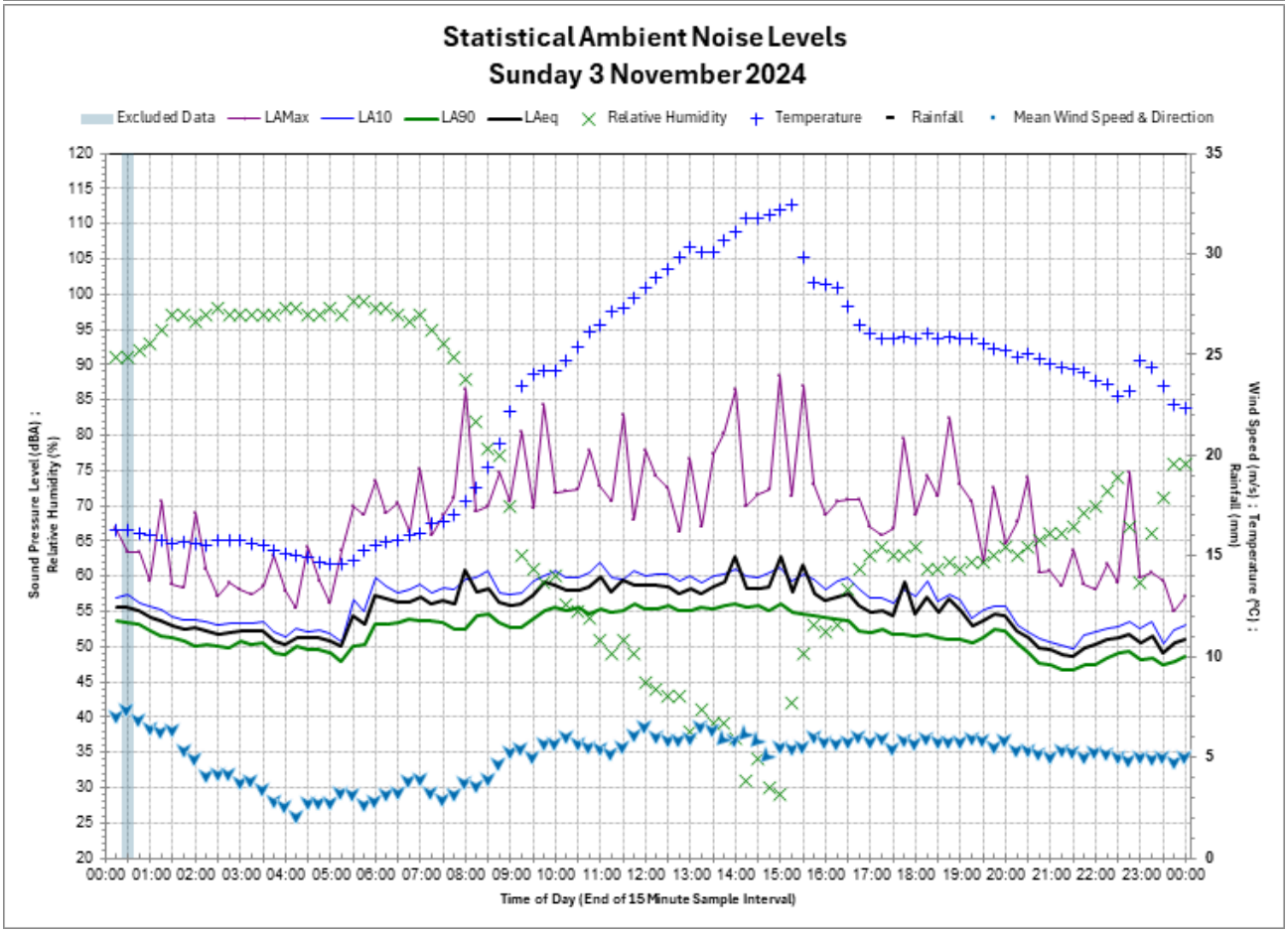
# Appendix A

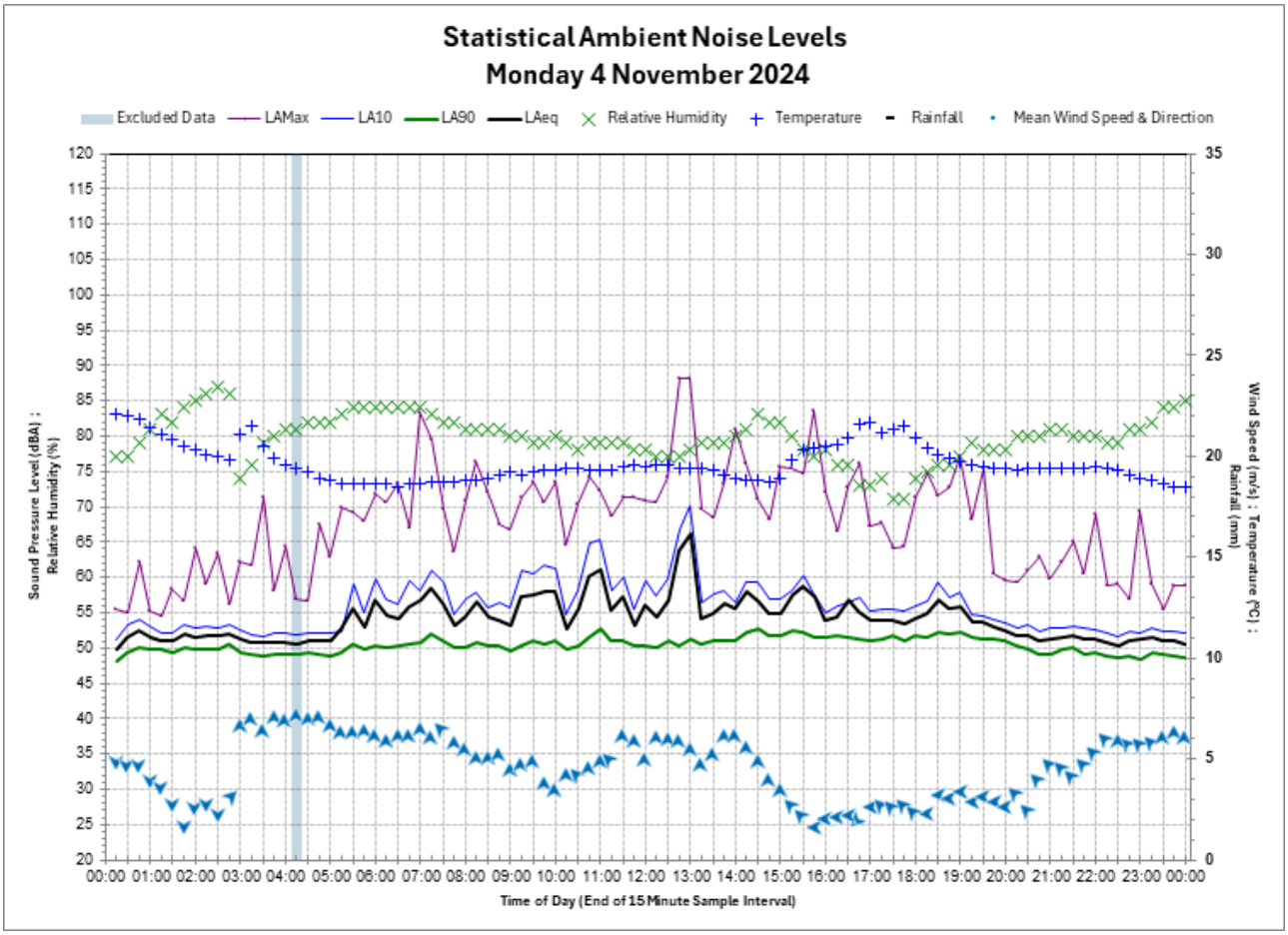
## Noise monitoring charts

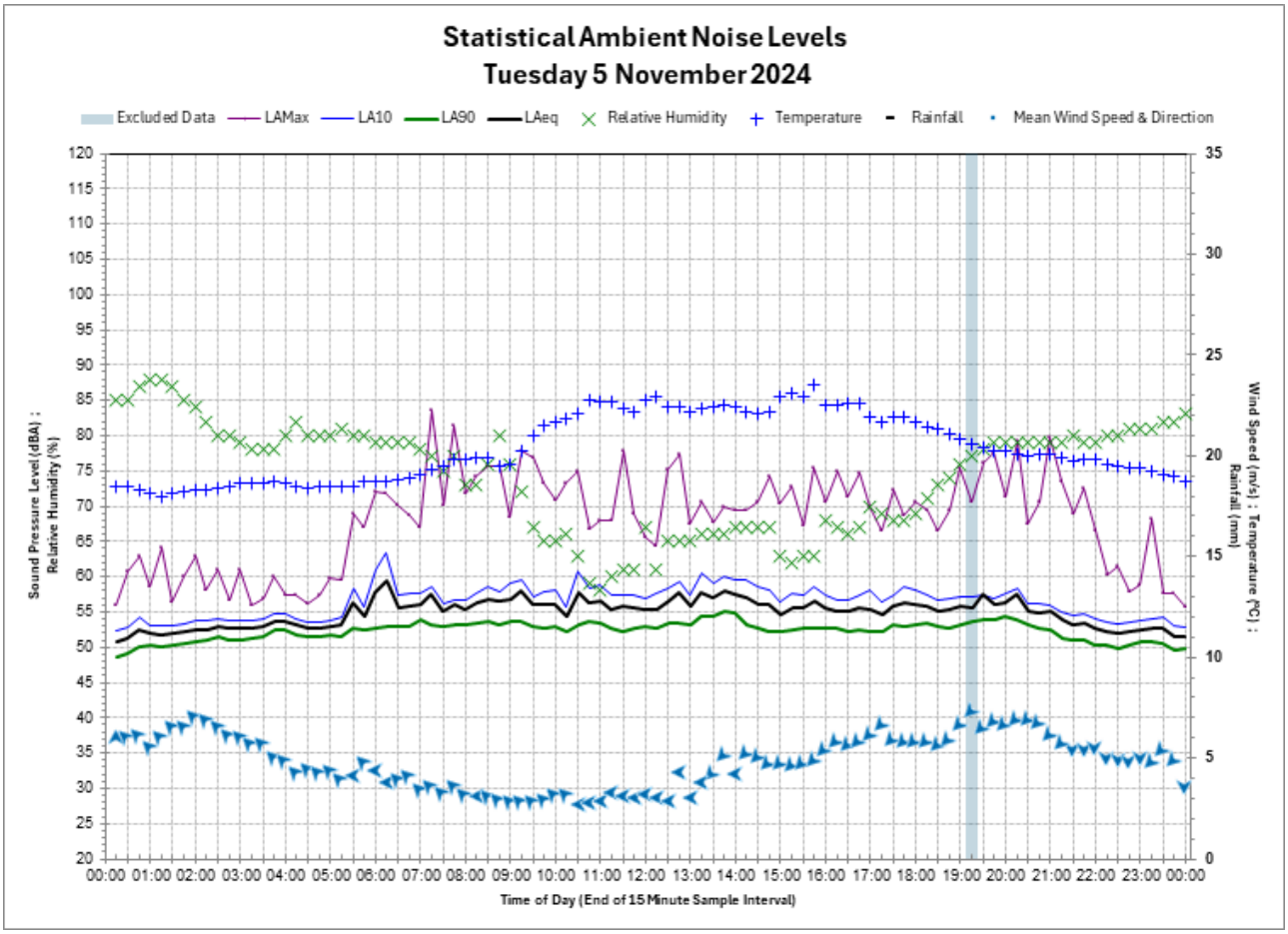

Statistical Ambient Noise Levels
Thursday 31 October 2024
Excluded Data
LAMax
LA10
LA90
LAeq
Relative Humidity
Temperature
Rainfall
Mean Wind Speed & Direction
Sound Pressure Level (dBA) ; Relative Humidity (%)
Wind Speed (m/s) ; Temperature (°C) ; Rainfall (mm)
Time of Day (End of 15 Minute Sample Interval)

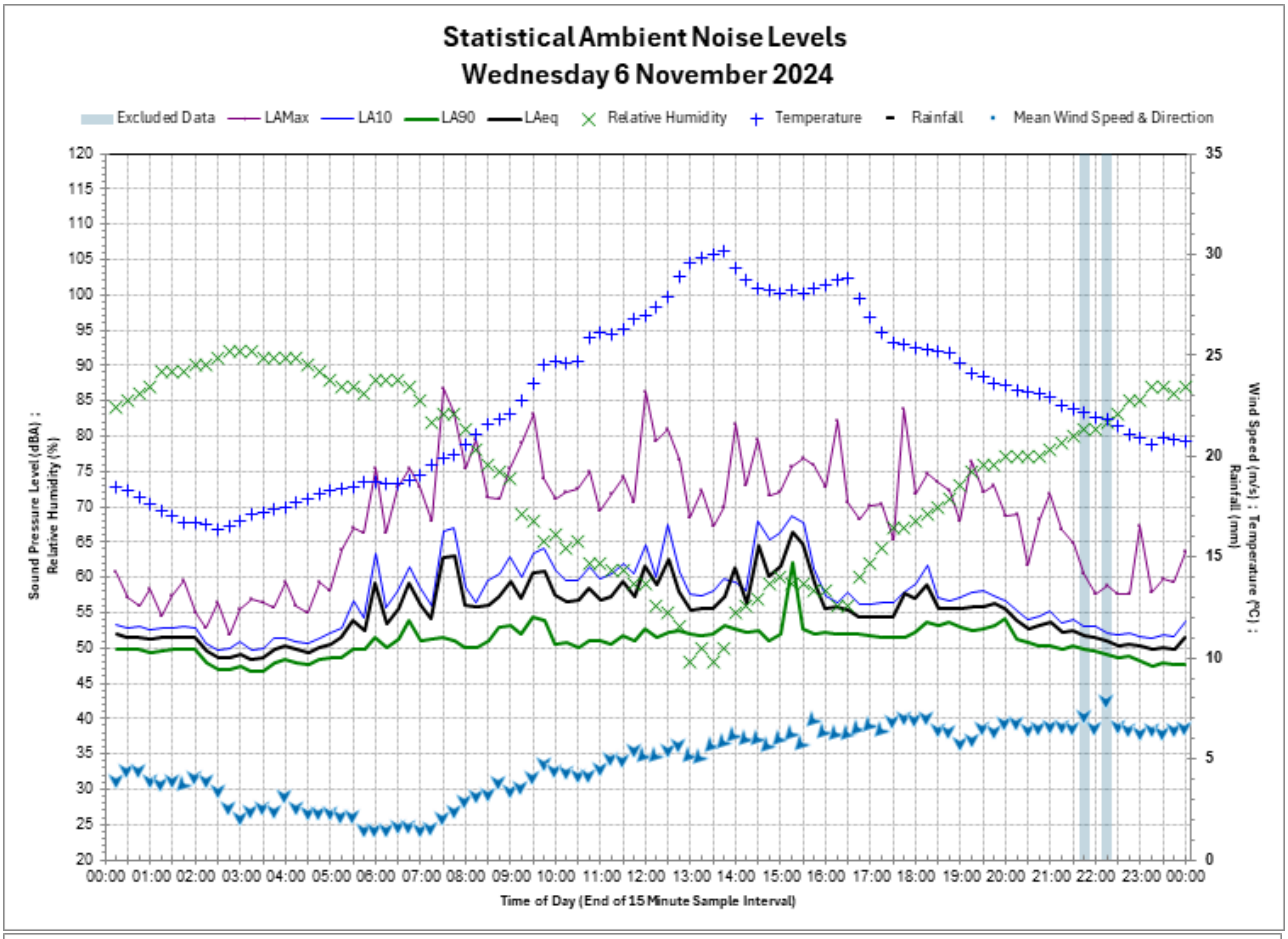

Statistical Ambient Noise Levels
Friday 1 November 2024
Excluded Data
LAMax
LA10
LA90
LAeq
Relative Humidity
Temperature
Rainfall
Mean Wind Speed & Direction
Sound Pressure Level (dBA) ; Relative Humidity (%)
Wind Speed (m/s) ; Temperature (°C) ; Rainfall (mm)
Time of Day (End of 15 Minute Sample Interval)

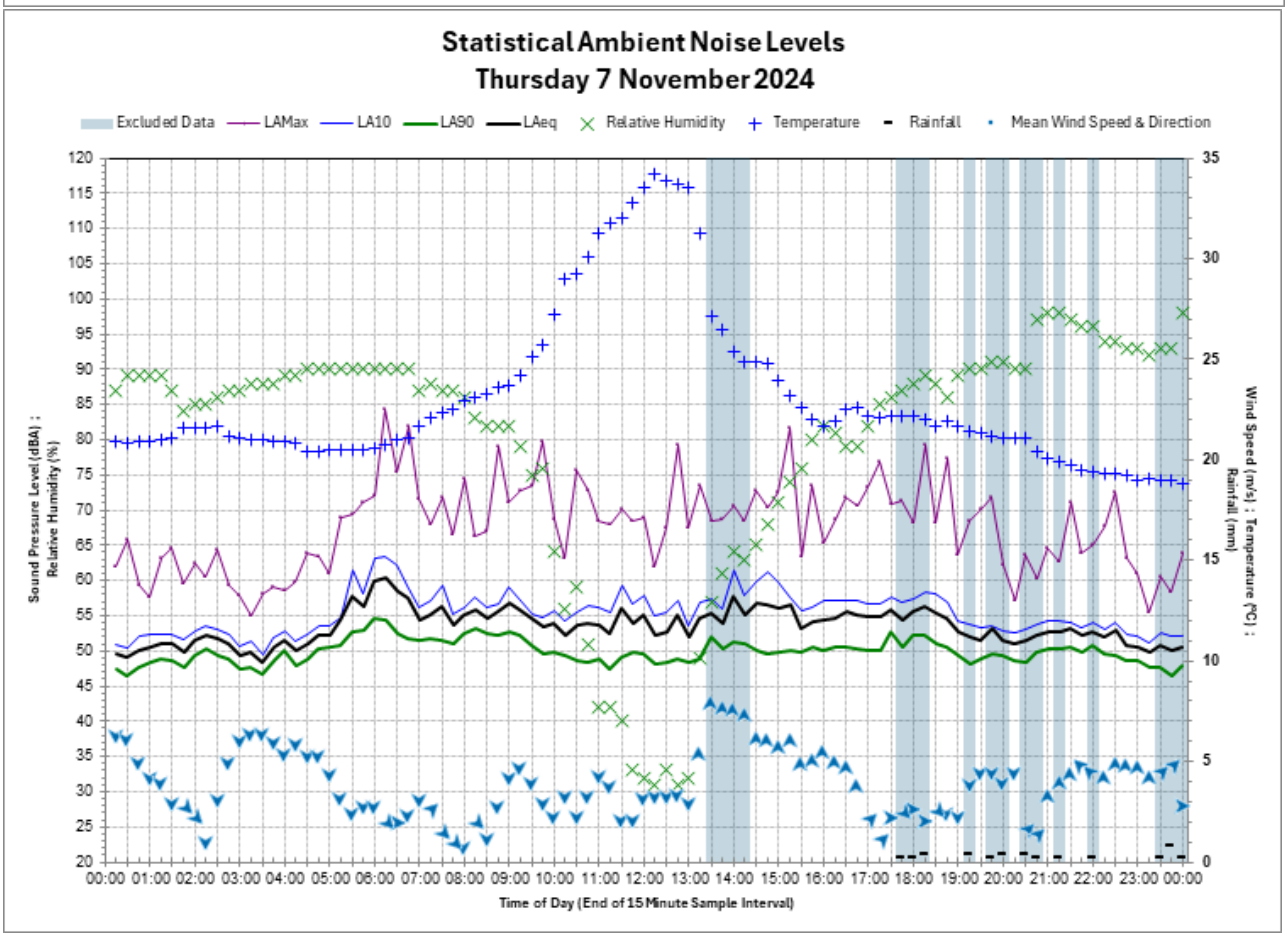

Statistical Ambient Noise Levels
Saturday 2 November 2024
Excluded Data
LAMax
LA10
LA90
LAeq
Relative Humidity
Temperature
Rainfall
Mean Wind Speed & Direction
Sound Pressure Level (dBA) ; Relative Humidity (%)
Wind Speed (m/s) ; Temperature (°C) ; Rainfall (mm)
Time of Day (End of 15 Minute Sample Interval)

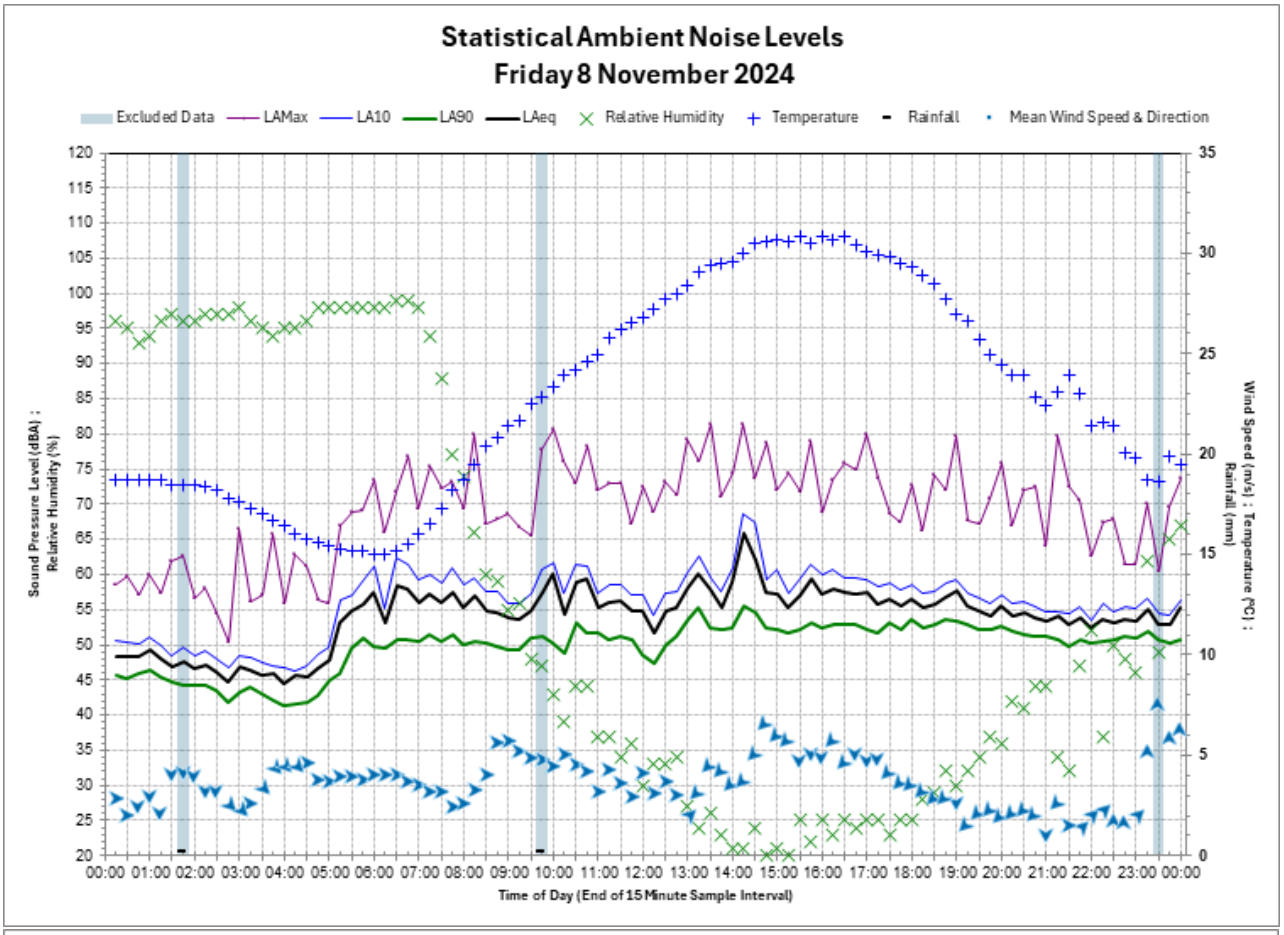

Statistical Ambient Noise Levels
Sunday 3 November 2024
Excluded Data
LAMax
LA10
LA90
LAeq
Relative Humidity
Temperature
Rainfall
Mean Wind Speed & Direction
Sound Pressure Level (dBA) ; Relative Humidity (%)
Wind Speed (m/s) ; Temperature (°C) ; Rainfall (mm)
Time of Day (End of 15 Minute Sample Interval)

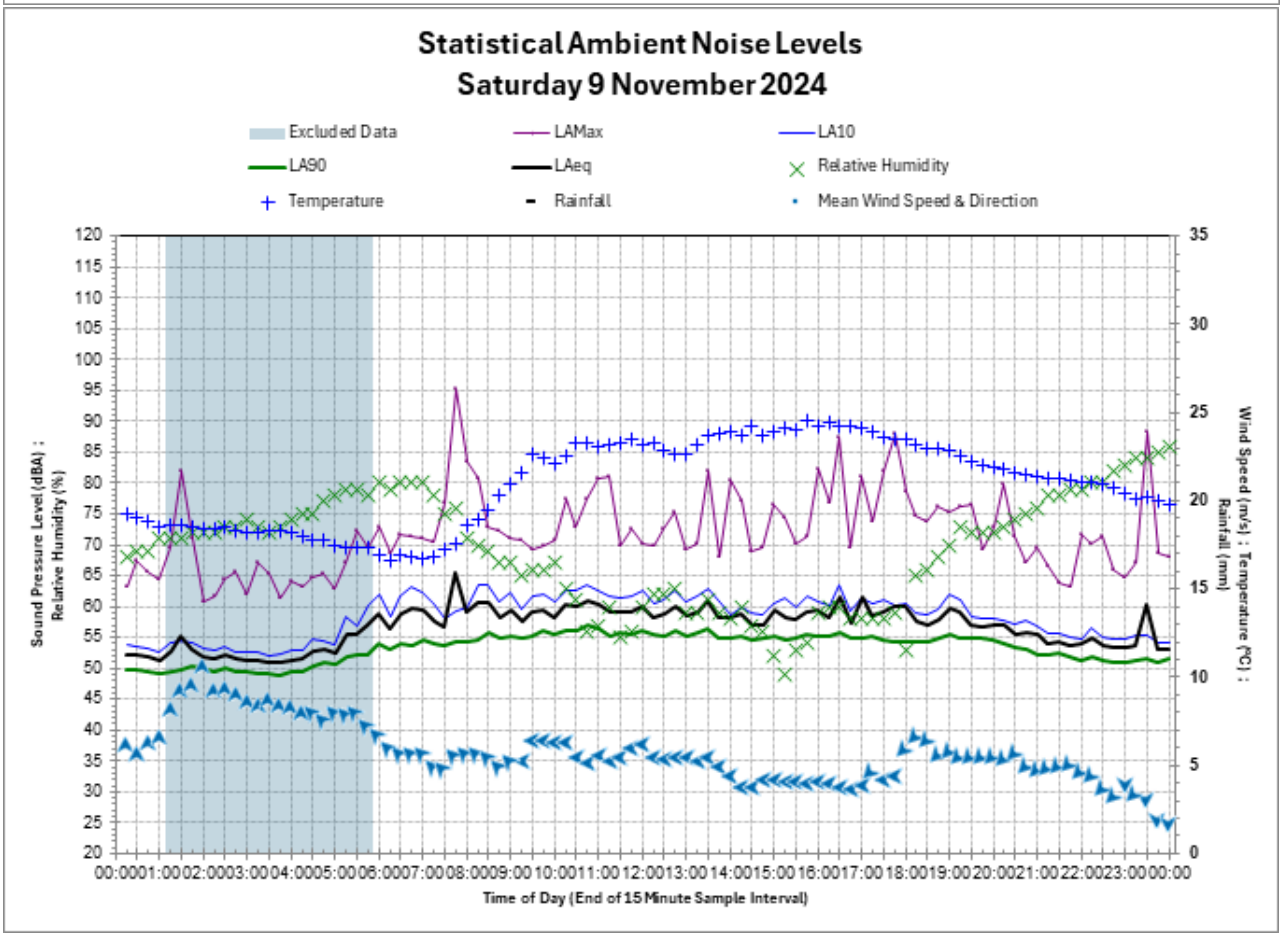

Statistical Ambient Noise Levels
Monday 4 November 2024
Excluded Data
LAMax
LA10
LA90
LAeq
Relative Humidity
Temperature
Rainfall
Mean Wind Speed & Direction
Sound Pressure Level (dBA) ; Relative Humidity (%)
Wind Speed (m/s) ; Temperature (°C) ; Rainfall (mm)
Time of Day (End of 15 Minute Sample Interval)

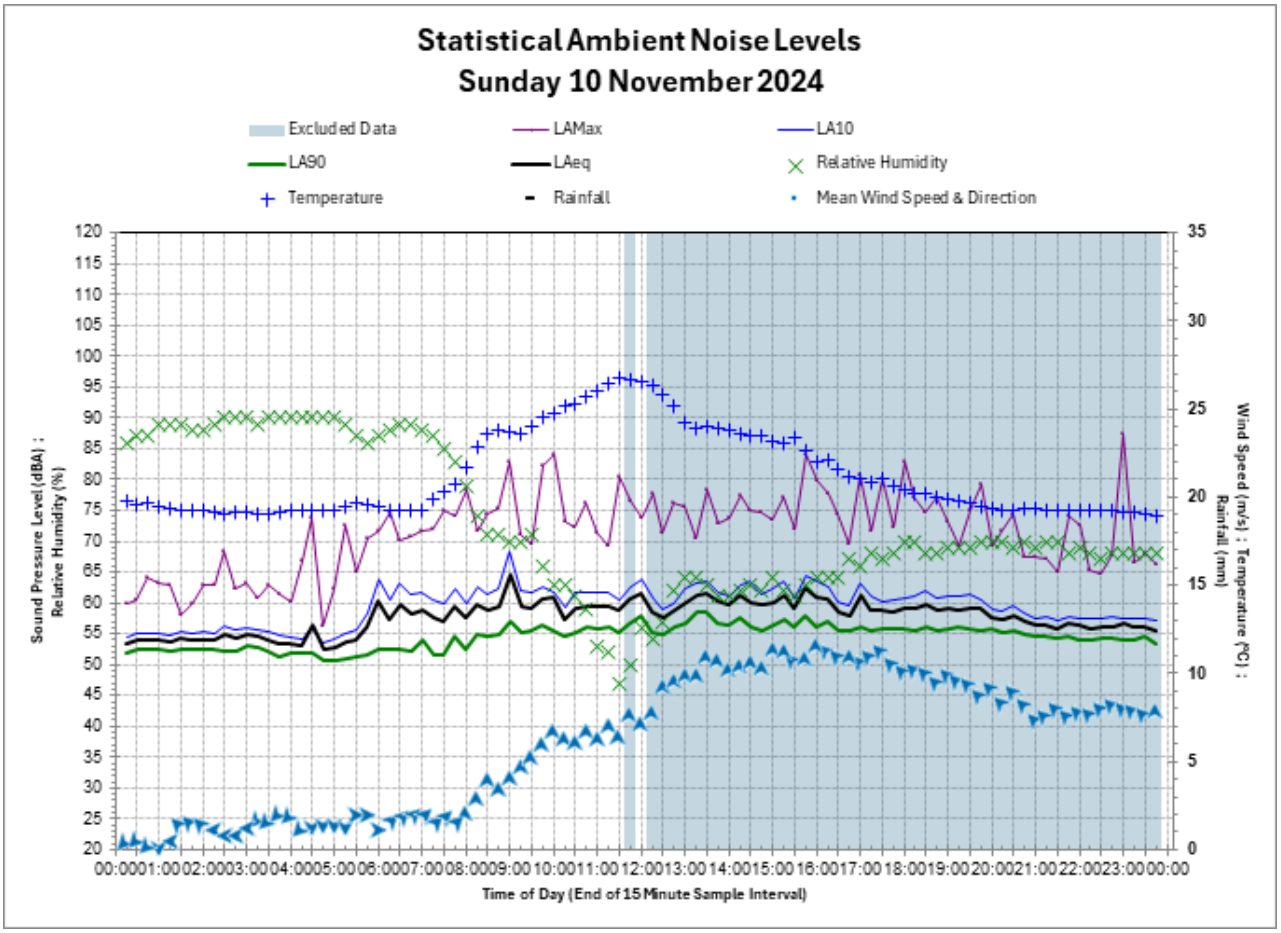

Statistical Ambient Noise Levels
Tuesday 5 November 2024
Excluded Data
LAMax
LA10
LA90
LAeq
Relative Humidity
Temperature
Rainfall
Mean Wind Speed & Direction
Sound Pressure Level (dBA) ; Relative Humidity (%)
Wind Speed (m/s) ; Temperature (°C) ; Rainfall (mm)
Time of Day (End of 15 Minute Sample Interval)


Statistical Ambient Noise Levels
Wednesday 6 November 2024
Excluded Data
LAMax
LA10
LA90
LAeq
Relative Humidity
Temperature
Rainfall
Mean Wind Speed & Direction
Sound Pressure Level (dBA) ; Relative Humidity (%)
Wind Speed (m/s) ; Temperature (°C) ; Rainfall (mm)
Time of Day (End of 15 Minute Sample Interval)


Statistical Ambient Noise Levels
Thursday 7 November 2024
Excluded Data
LAMax
LA10
LA90
LAeq
Relative Humidity
Temperature
Rainfall
Mean Wind Speed & Direction
Sound Pressure Level (dBA) ; Relative Humidity (%)
Wind Speed (m/s) ; Temperature (°C) ; Rainfall (mm)
Time of Day (End of 15 Minute Sample Interval)

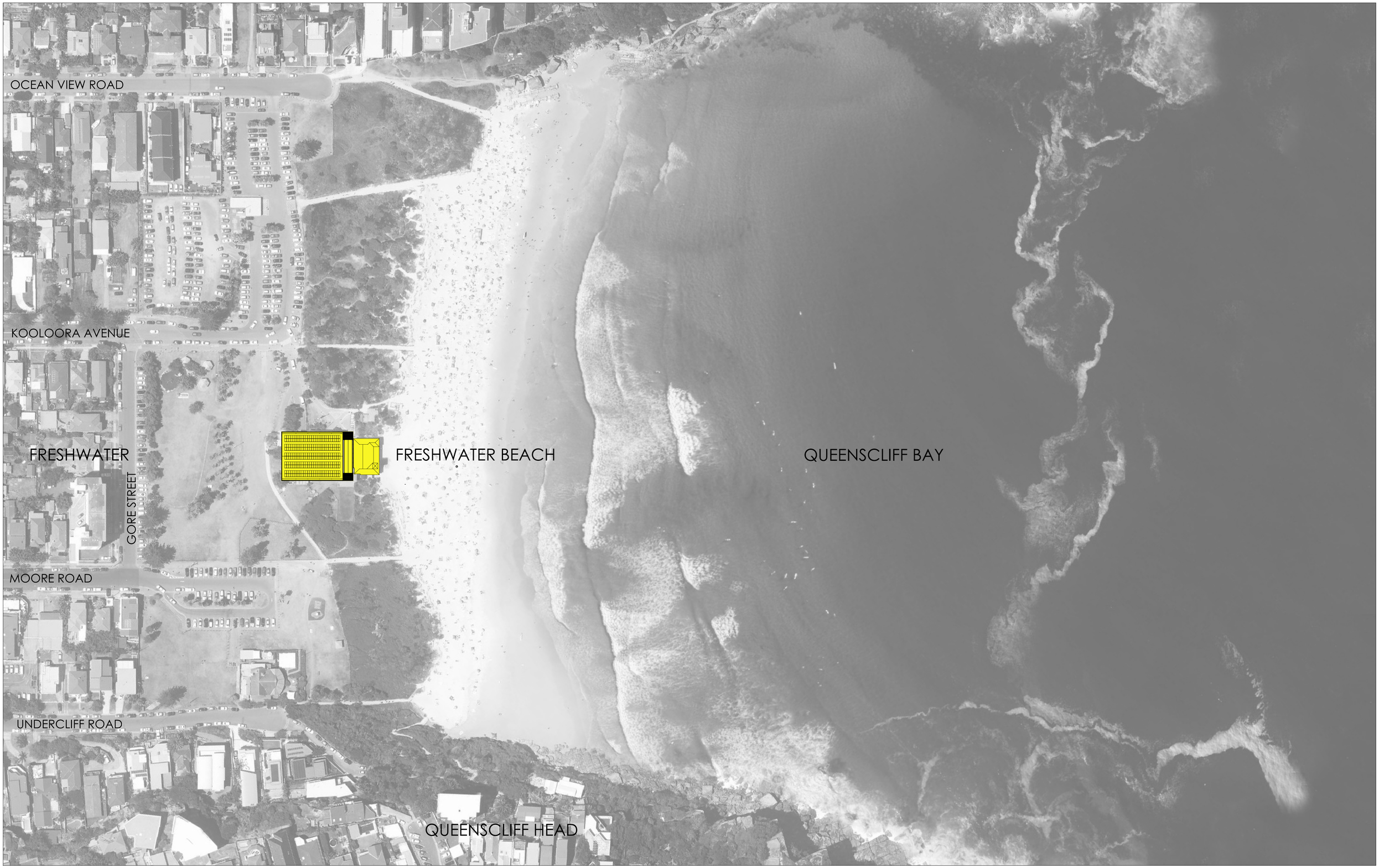

Statistical Ambient Noise Levels
Friday 8 November 2024
Excluded Data
LAMax
LA10
LA90
LAeq
Relative Humidity
Temperature
Rainfall
Mean Wind Speed & Direction
Sound Pressure Level (dBA) ; Relative Humidity (%)
Wind Speed (m/s) ; Temperature (°C) ; Rainfall (mm)
Time of Day (End of 15 Minute Sample Interval)


Statistical Ambient Noise Levels
Saturday 9 November 2024
Excluded Data
LAMax
LA10
LA90
LAeq
Relative Humidity
Temperature
Rainfall
Mean Wind Speed & Direction
Sound Pressure Level (dBA) ; Relative Humidity (%)
Wind Speed (m/s) ; Temperature (°C) ; Rainfall (mm)
Time of Day (End of 15 Minute Sample Interval)


Statistical Ambient Noise Levels
Sunday 10 November 2024
Excluded Data
LAMax
LA10
LA90
LAeq
Relative Humidity
Temperature
Rainfall
Mean Wind Speed & Direction
Sound Pressure Level (dBA) ; Relative Humidity (%)
Wind Speed (m/s) ; Temperature (°C) ; Rainfall (mm)
Time of Day (End of 15 Minute Sample Interval)

# Appendix B

## Architectural drawings




**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420



JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

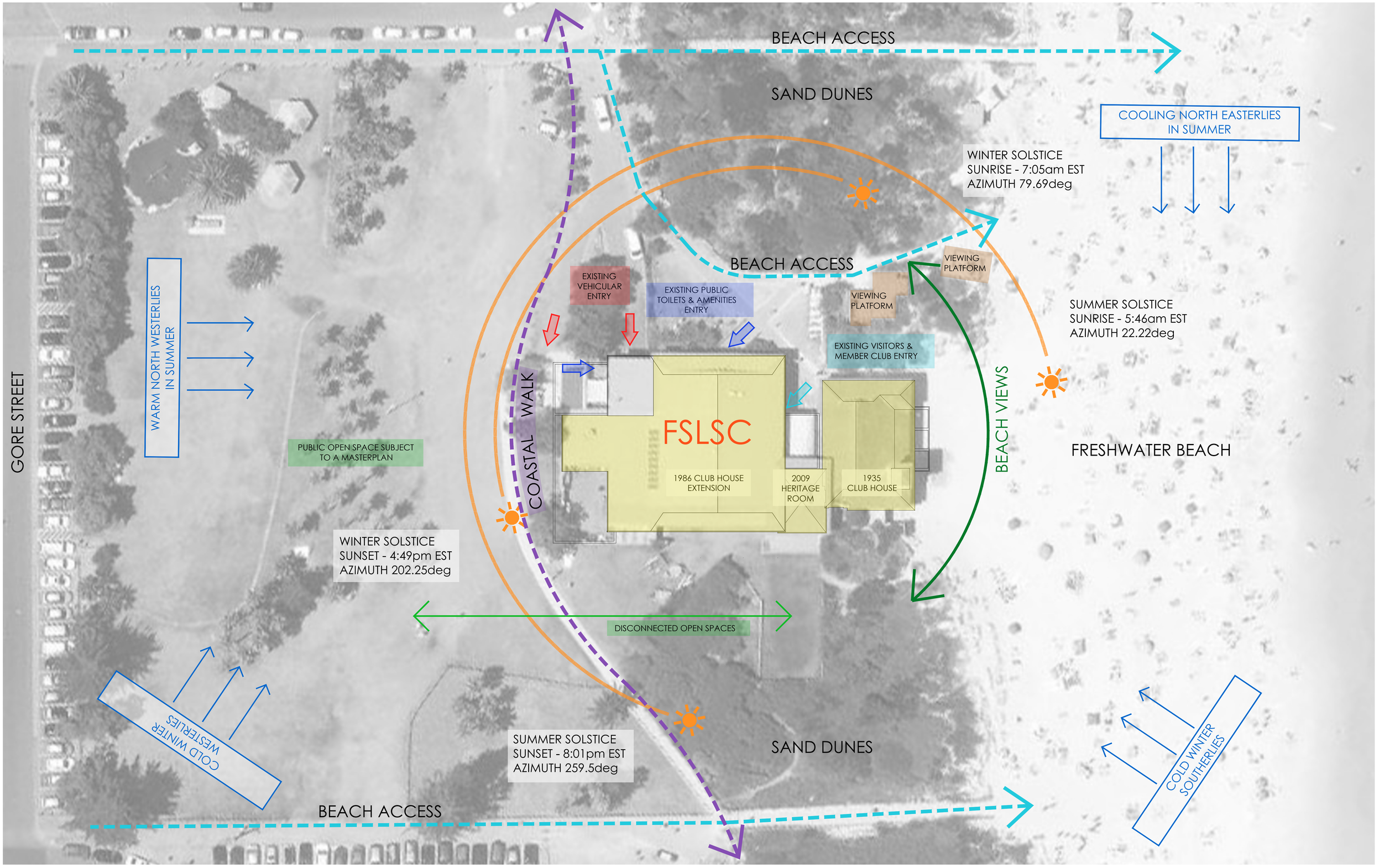
FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

N

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
LOCATION PLAN

DRAWING NO.
**DA200**
ISSUE
**B**





**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

1:250 @A1

N

0 5 10 15 20 25m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
SITE ANALYSIS PLAN

DRAWING NO.
**DA201**
ISSUE
**B**



ARCHITECT
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

1:250 @A1

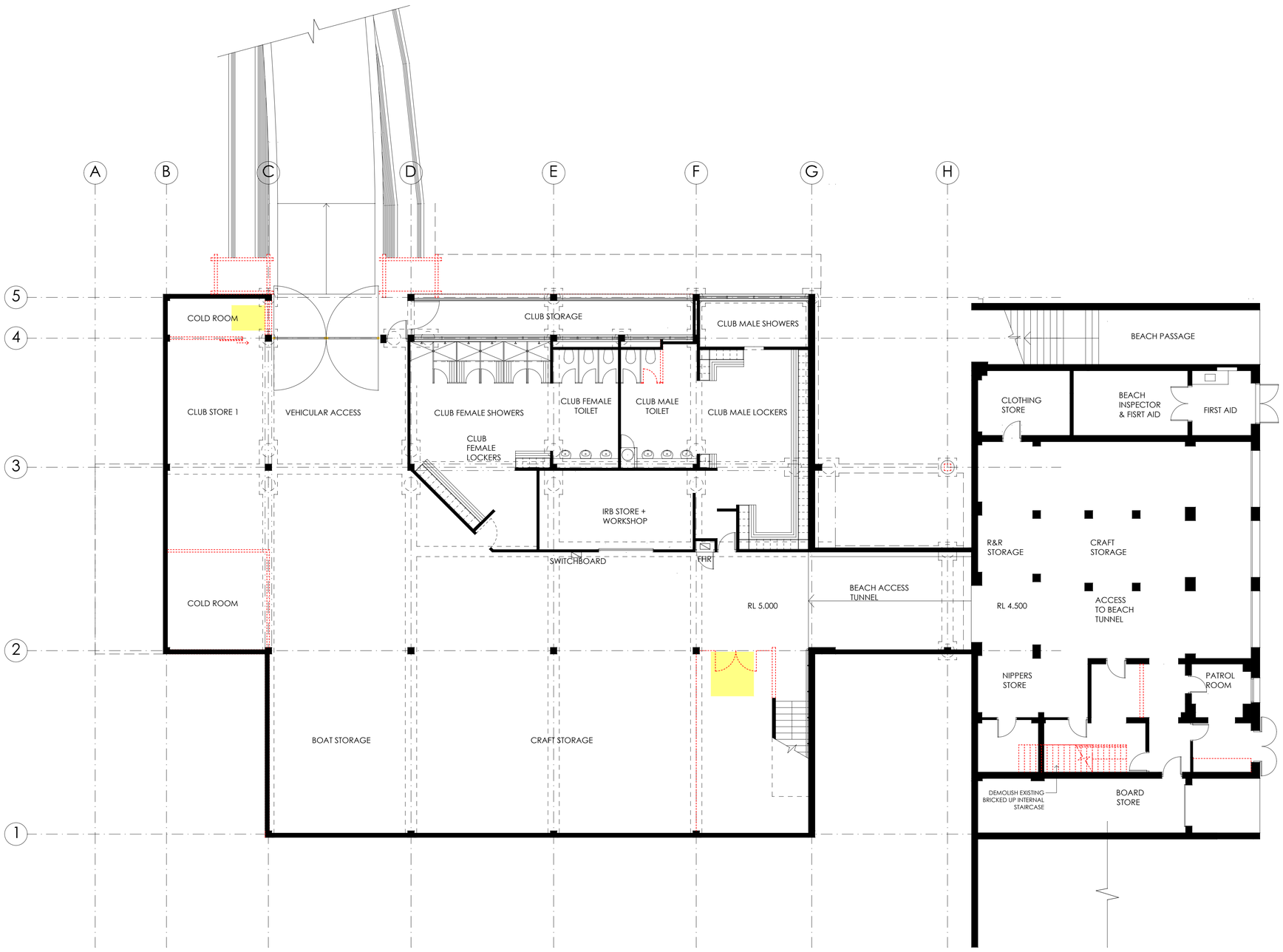
N

0 5 10 15 20 25m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 11.04.24 | REVISED DA ISSUE |
| C | 11.09.24 | REVISED DA ISSUE |
| D | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
SITE PLAN

DRAWING NO.
**DA202**
ISSUE
**D**




DEMOLISH WALLS, WINDOWS & DOORS

DEMOLISH SURFACES


**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS
ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

1:100 @A1

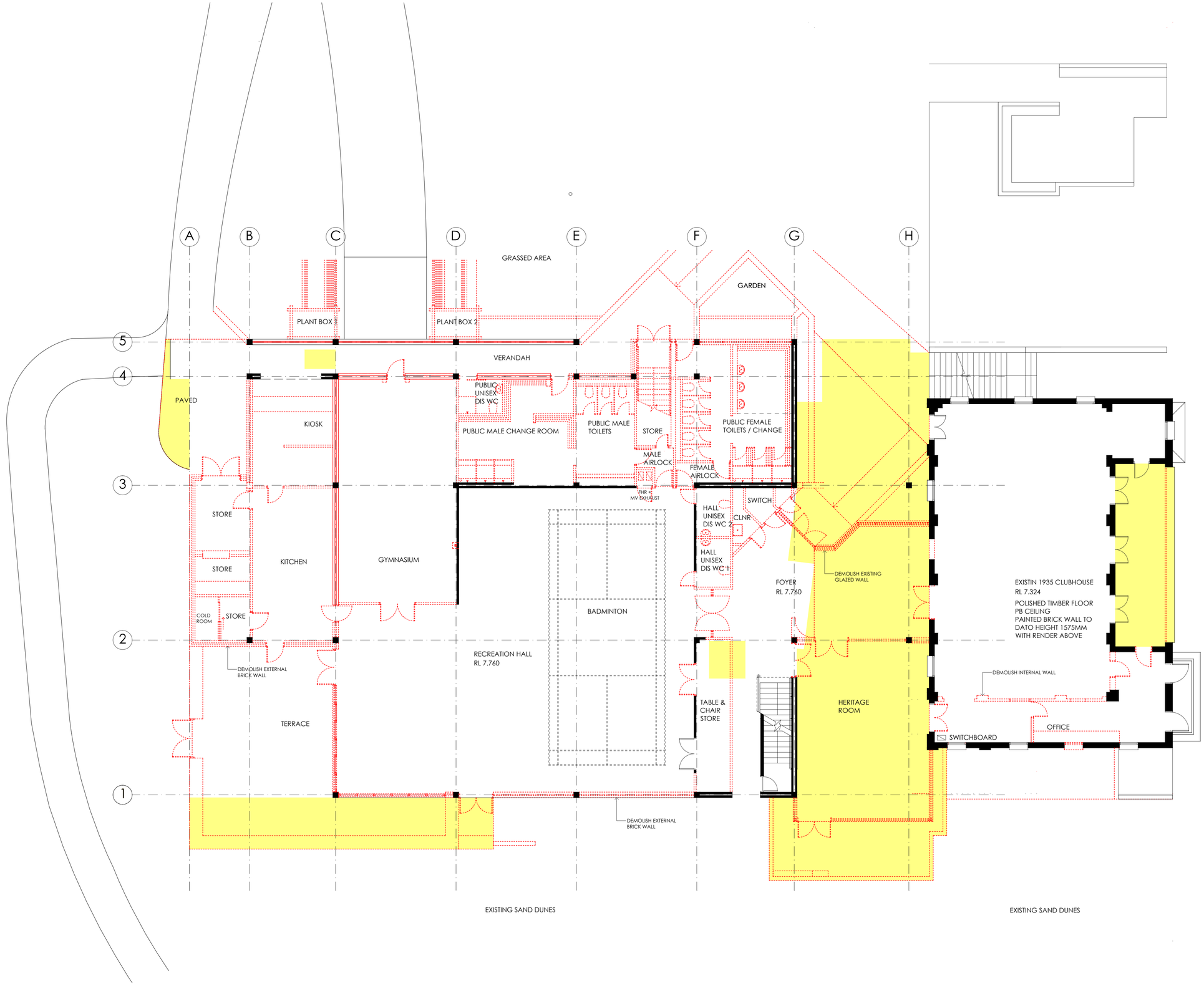
N

0 2 4 6 8 10m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 12.04.24 | REVISED DA ISSUE |
| C | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
LEVEL 1 DEMOLITION PLAN

DRAWING NO.
**DA203**
ISSUE
**C**





**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104
NOMINATED ARCHITECT
G BONUS
ARCH REG. 4034
DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

1:100 @A1

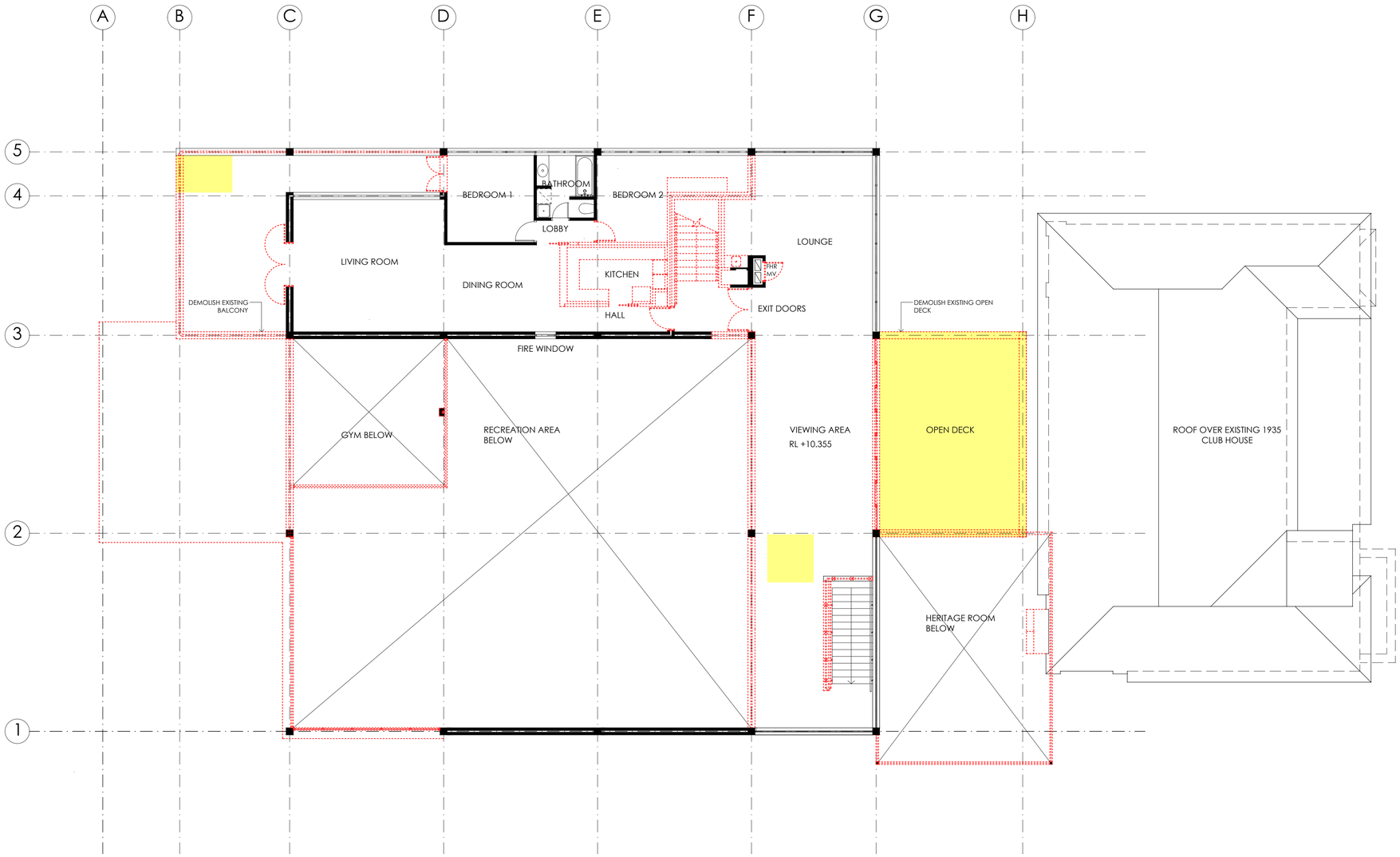
N

0 2 4 6 8 10m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 12.04.24 | REVISED DA ISSUE |
| C | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
LEVEL 2 DEMOLITION PLAN

DRAWING NO.
**DA204**
ISSUE
**C**




DEMOLISH WALLS, WINDOWS & DOORS

DEMOLISH SURFACES

**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420



JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

1:100 @A1

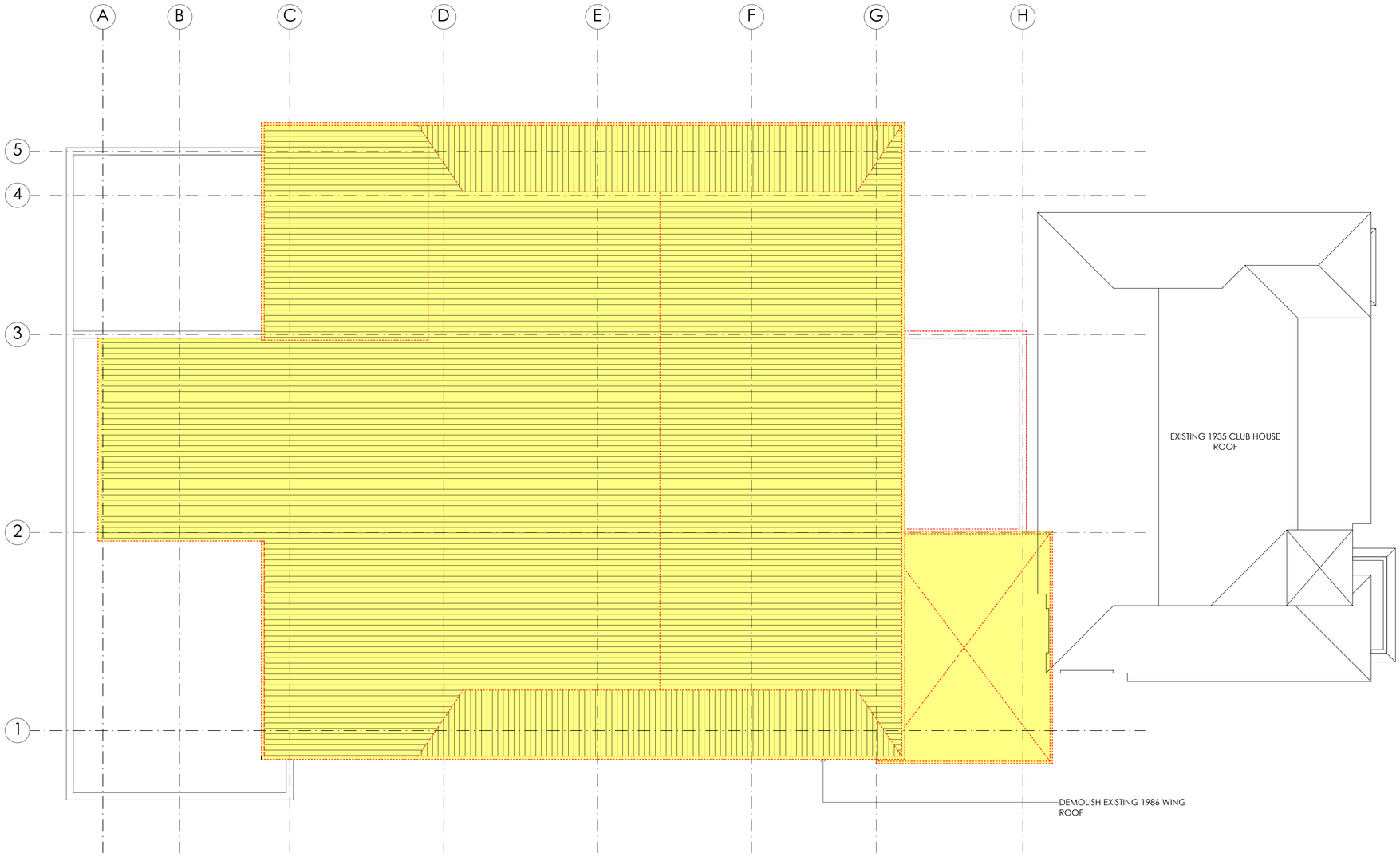
N

0 2 4 6 8 10m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 12.04.24 | REVISED DA ISSUE |
| C | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
LEVEL 3 DEMOLITION PLAN

DRAWING NO.
**DA205**
ISSUE
**C**




DEMOLISH WALLS, WINDOWS & DOORS

DEMOLISH SURFACES

**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420



JOB NO
1104

NOMINATED ARCHITECT
G BONUS
ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

1:100 @A1

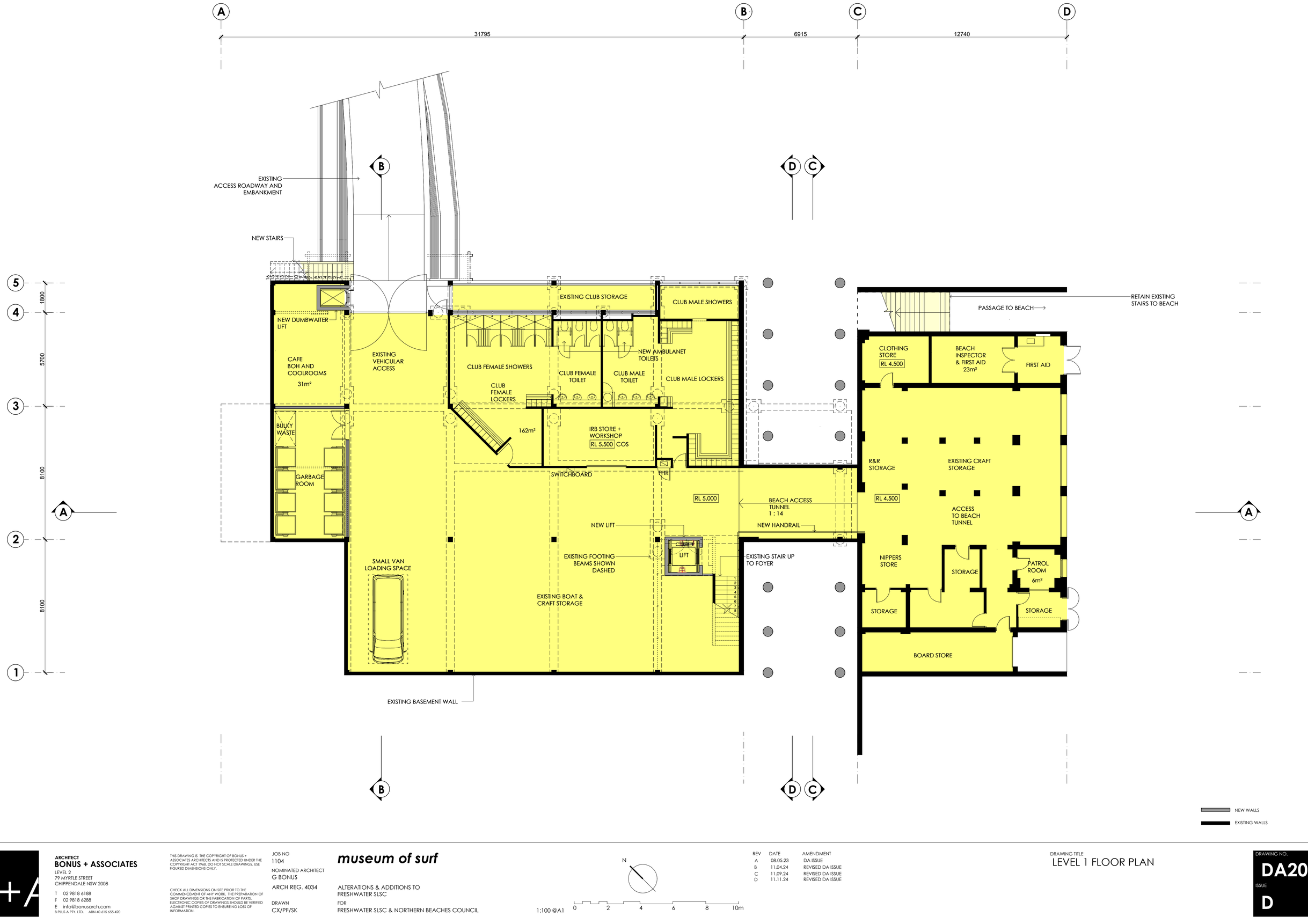
N

0 2 4 6 8 10m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
ROOF DEMOLITION PLAN

DRAWING NO.
**DA206**
ISSUE
**B**





**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008
T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS
ARCH REG. 4034

DRAWN
CX/PF/SK

# *museum of surf*

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

1:100 @A1

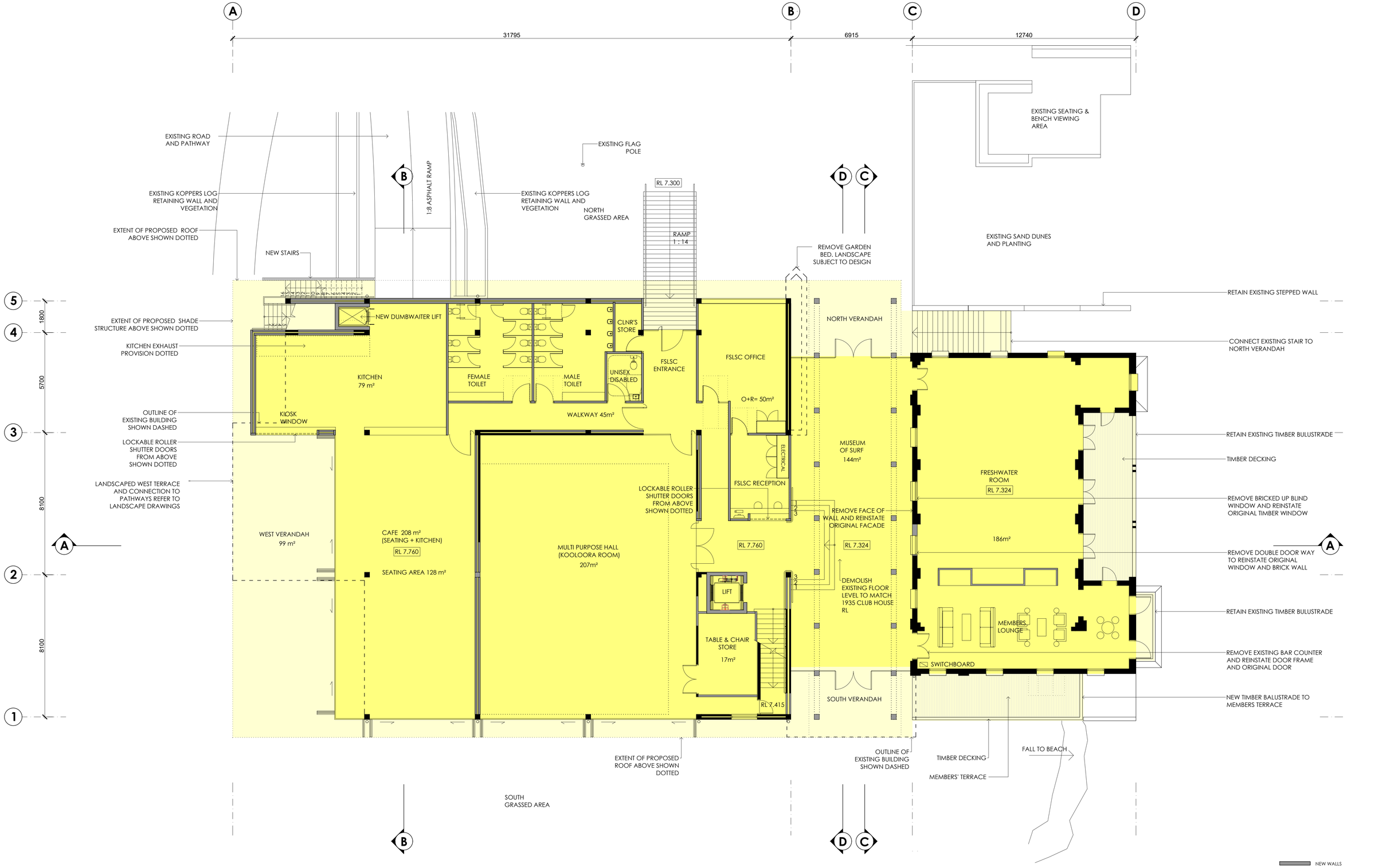
N

0 2 4 6 8 10m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 11.04.24 | REVISED DA ISSUE |
| C | 11.09.24 | REVISED DA ISSUE |
| D | 11.11.24 | REVISED DA ISSUE |

DRAWING TITLE
LEVEL 1 FLOOR PLAN

DRAWING NO.
**DA207**
ISSUE
**D**





**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS
ARCH REG. 4034

DRAWN
CX/PF/SK

# *museum of surf*

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

1:100 @A1

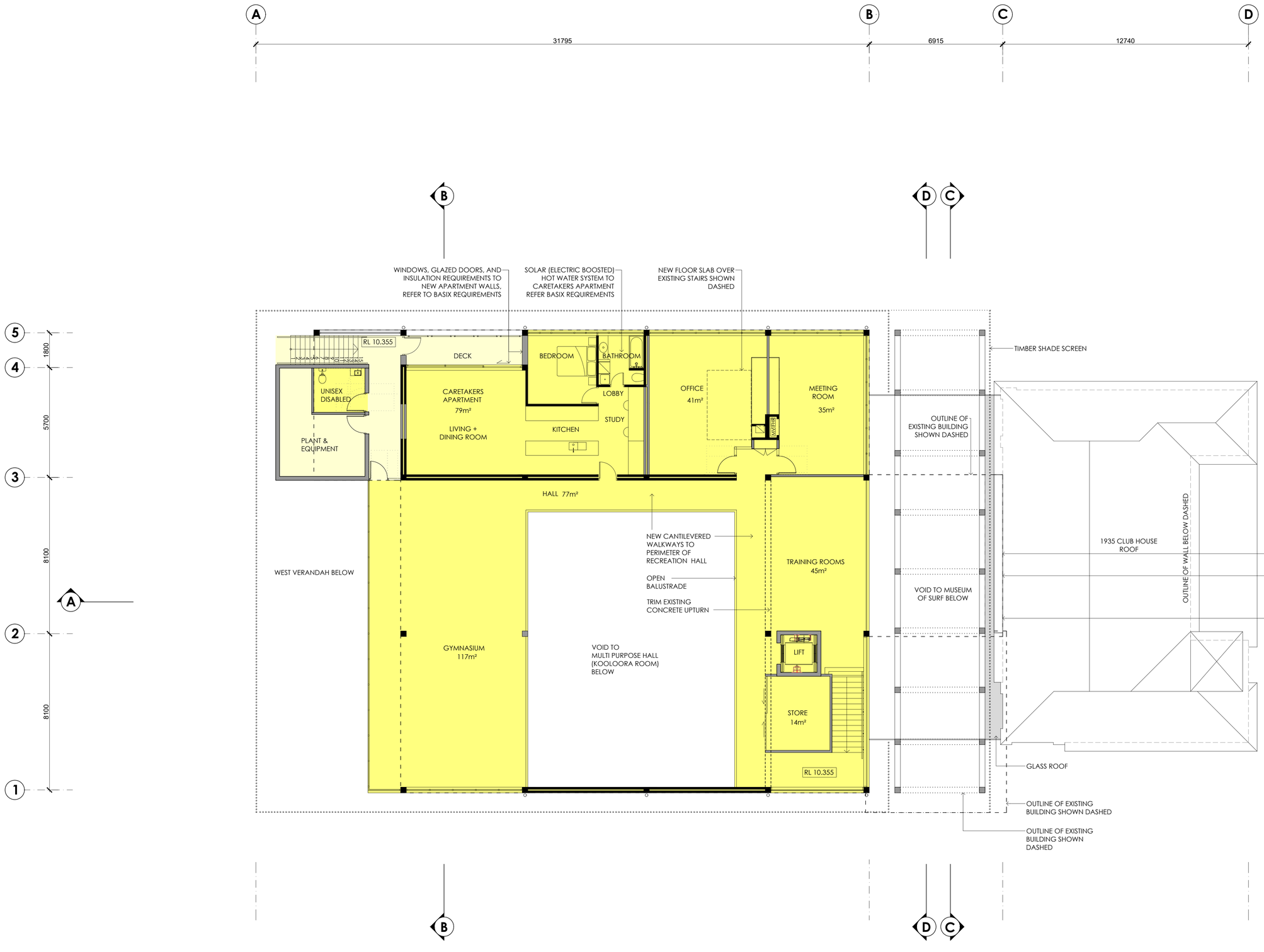
N

0 2 4 6 8 10m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 11.04.24 | REVISED DA ISSUE |
| C | 11.09.24 | REVISED DA ISSUE |
| D | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
LEVEL 2 FLOOR PLAN

DRAWING NO.
**DA208**
ISSUE
**D**




**BSA File Reference: 11671**

**Building Sustainability Assessments** Ph: (02) 4962 3439
enquiries@buildingsustainability.net.au www. buildingsustainability.net.au

## SUMMARY OF BASIX COMMITMENTS - ALTERATIONS AND ADDITIONS

*This is a summary of the BASIX Commitments as detailed in the BASIX Certificate. Refer to the CURRENT BASIX Certificate for complete details. For definitions refer to basix.nsw.gov.au*

**FIXTURES AND SYSTEMS**

**Hot Water System (if applicable)**

**Type** | n/a

**Lighting**

**A minimum of 40% of new or altered light fixtures must be fitted with fluorescent, compact fluorescent, or light-emitting-diode (LED) lamps.**

**Fixtures**

**All new or altered water fixtures (toilet cisterns, shower roses or taps) must have a minimum 3 Star water rating.**

**CONSTRUCTION**

**Insulation to be installed to all new or altered floors, walls, ceilings and roofs as described below. The recommended values are standard construction practice and will exceed or be equal to minimum BASIX requirements.**

| | | *Added R Value* | *Other Specifications* |
|---|---|---|---|
| **Floors** | | | |
| **Walls** | All | R2.0 | |
| **Ceilings** | Adjacent to roof space | R2.5 | |
| **Roofs** | Metal | Foil + R1.0 | Medium colour |

**Glazing to all new or altered windows or doors can be as described for clear or toned glazing.**
**Other glazing systems must have U and SHGC values no greater than those listed.**
**All values calculated to NFRC conditions.**

| *Glazing & frame* | *U Value* | *SHGC Value* | *Details* |
|---|---|---|---|
| Single clear in aluminium | 7.63 | 0.75 | To all windows UNO |
| | | | |
| | | | |

**Shading details (eaves, sunshades, awnings, blinds etc.) are those as drawn on the plans and elevations.**

**Skylights to be as described OR no greater than the U and SHGC values listed.**

| *Frames* | *Glazing* | *U Value* | *SHGC Value* |
|---|---|---|---|
| | | | |

**For construction in NSW the BCA Vol 1 or 2 must also be complied with, in particular the following:**
- *Thermal construction in accordance with Vol 1 Section J1.2 or Vol 2 Part 3.12.1.1*
- *Thermal breaks in accordance with Section J1.3(d) & 1.5(c) or Part 3.12.1.2(c) & 3.12.1.4(b)*
- *Compensating for loss of ceiling insulation in accordance with Section J1.3(c) or Part 3.12.1.2(e)*
- *Floor insulation in accordance with Section J1.6(c) & (d) or Part 3.12.1.5(a)(iii) or (c) & (d)*
- *Building sealing in accordance with Section J3 or Part 3.12.3.1 to 3.12.3.6.*


**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008
T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS
ARCH REG. 4034

DRAWN
CX/PF/SK

# *museum of surf*

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

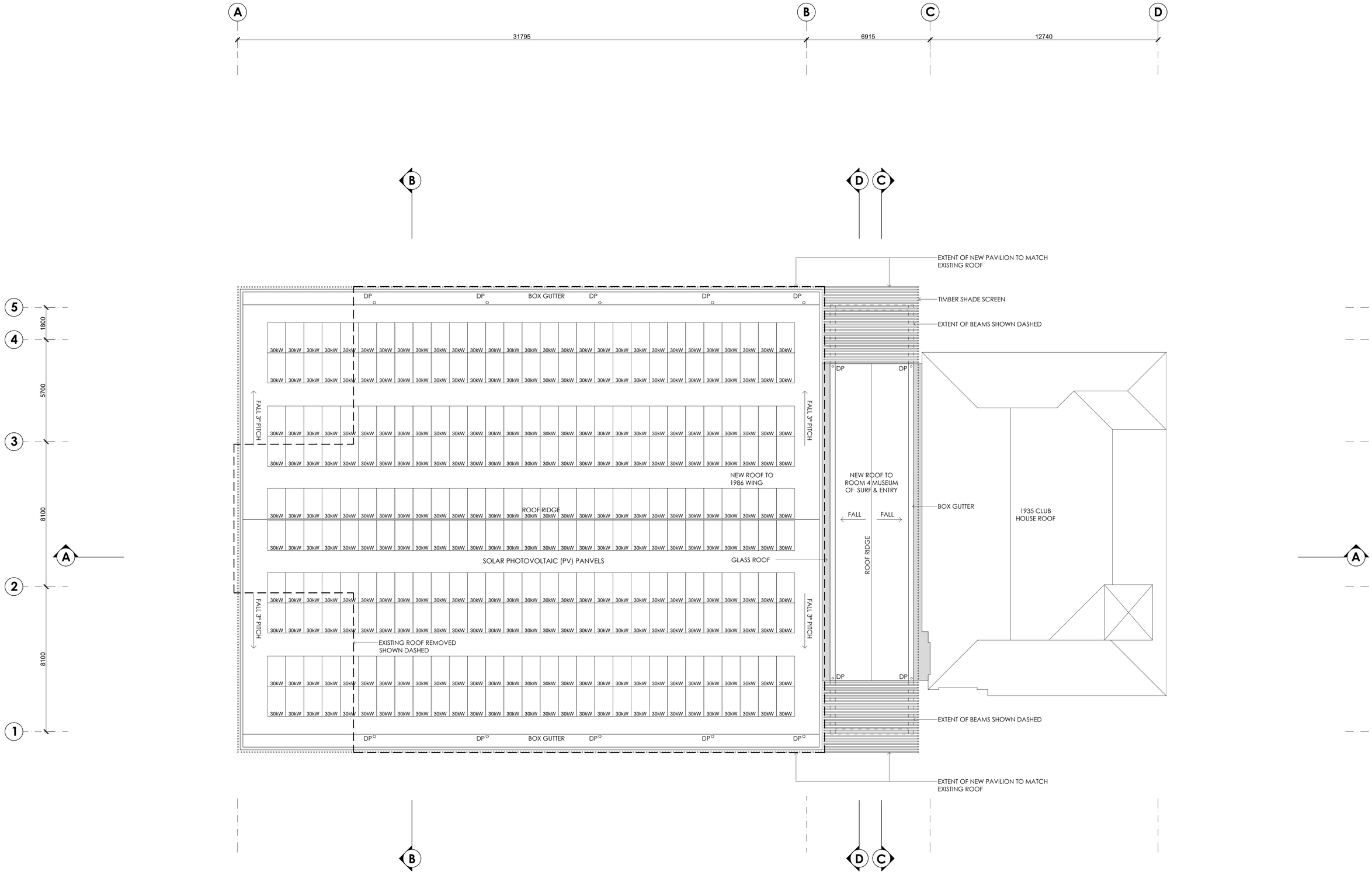
1:100 @A1

N
0 2 4 6 8 10m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 11.04.24 | REVISED DA ISSUE |
| C | 14.09.24 | REVISED DA ISSUE |
| D | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
LEVEL 3 FLOOR PLAN

DRAWING NO.
**DA209**
ISSUE
**D**





**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 613 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

# *museum of surf*

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

1:100 @A1

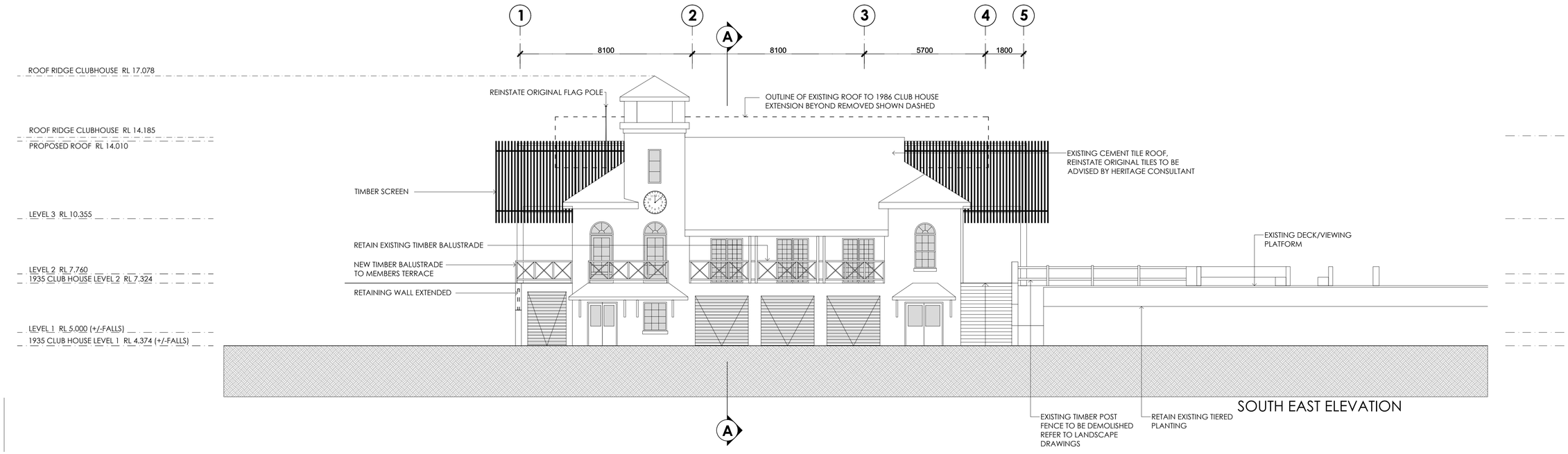
N

0 2 4 6 8 10m

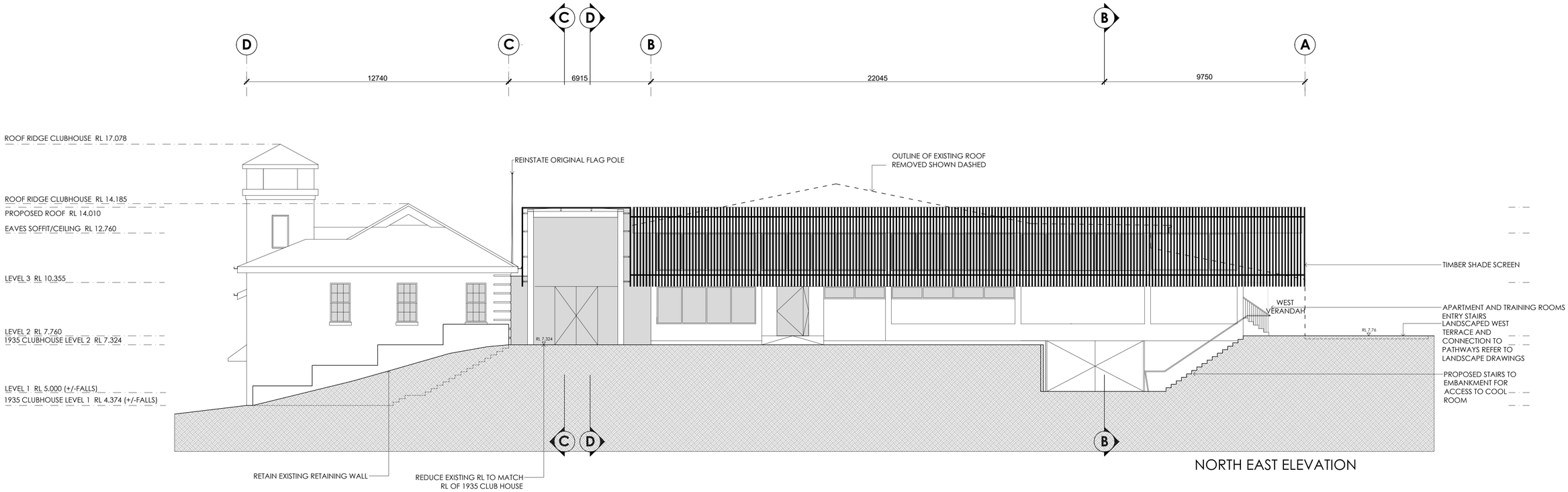
| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 11.04.24 | REVISED DA ISSUE |
| C | 11.09.24 | REVISED DA ISSUE |
| D | 11.11.24 | REVISED DA ISSUE |

DRAWING TITLE
ROOF PLAN

DRAWING NO.
**DA210**
ISSUE
**D**




## SOUTH EAST ELEVATION




## NORTH EAST ELEVATION


**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008
T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

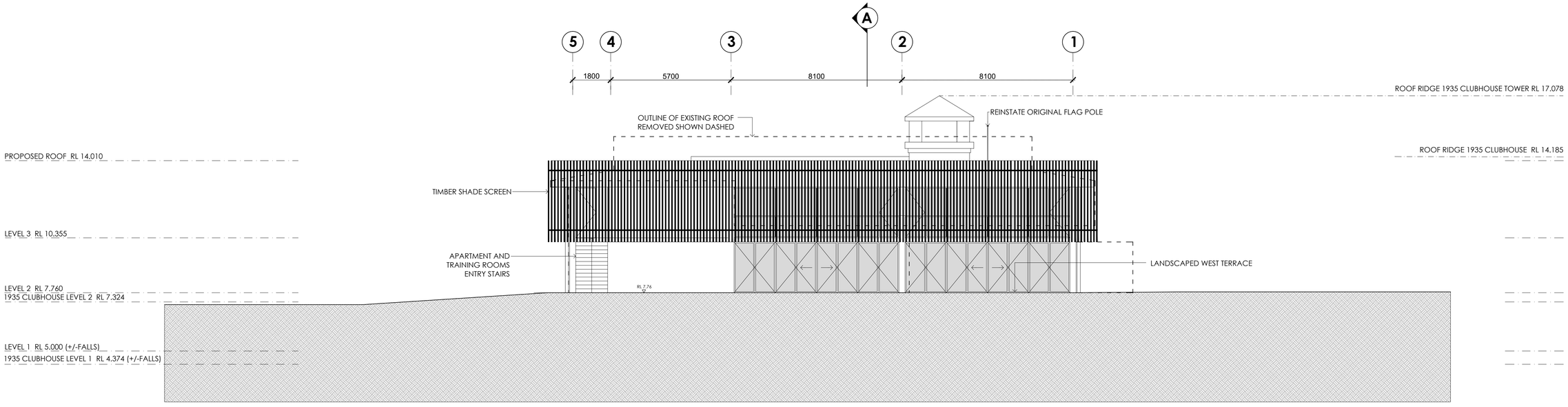
1:100 @A1

0 2 4 6 8 10m

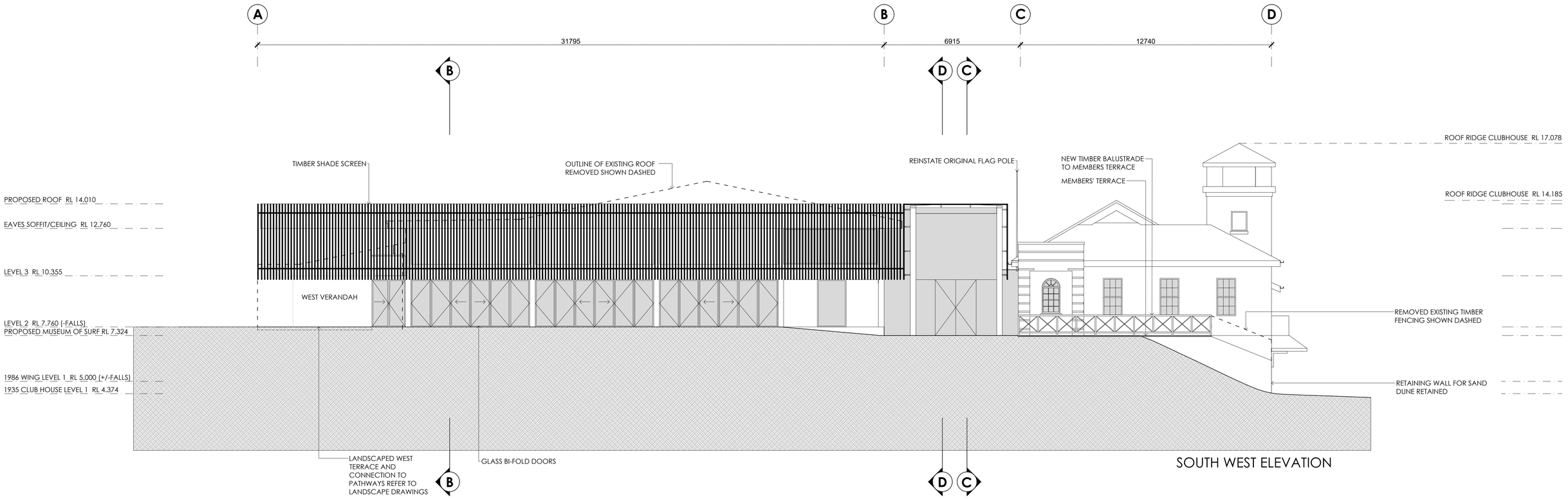
| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 15.04.24 | REVISED DA ISSUE |
| C | 11.09.24 | REVISED DA ISSUE |
| D | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
SOUTH EAST AND
NORH EAST ELEVATION

DRAWING NO.
**DA211**
ISSUE
**D**




NORTH WEST ELEVATION




SOUTH WEST ELEVATION

**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420



JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

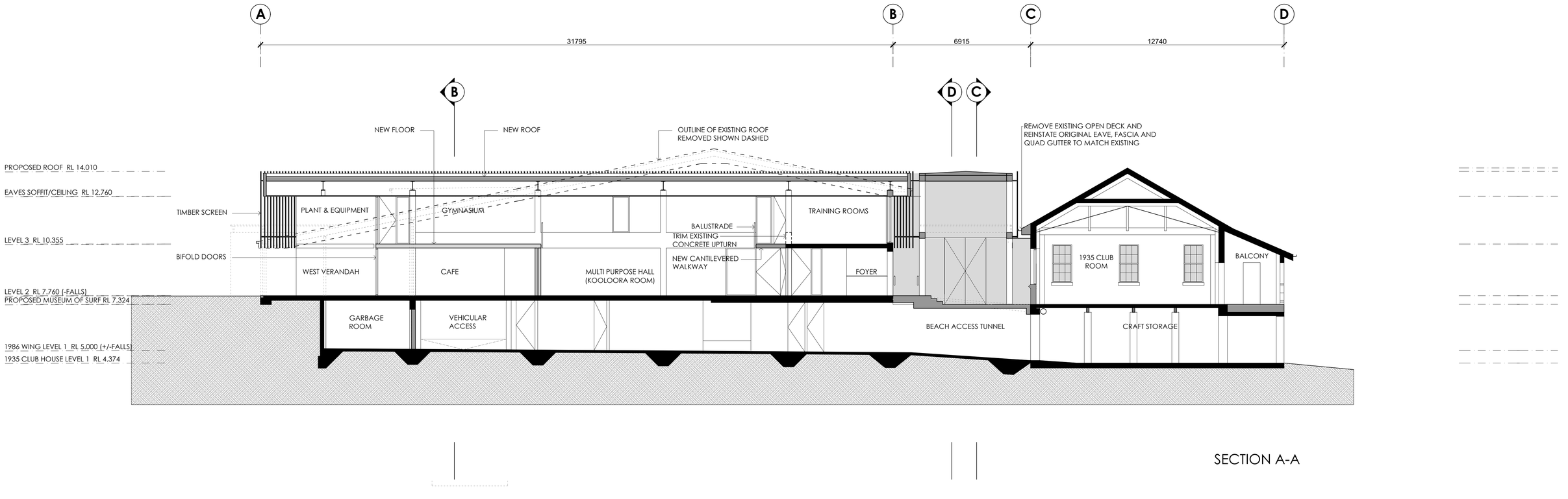
1:100 @A1

0 2 4 6 8 10m

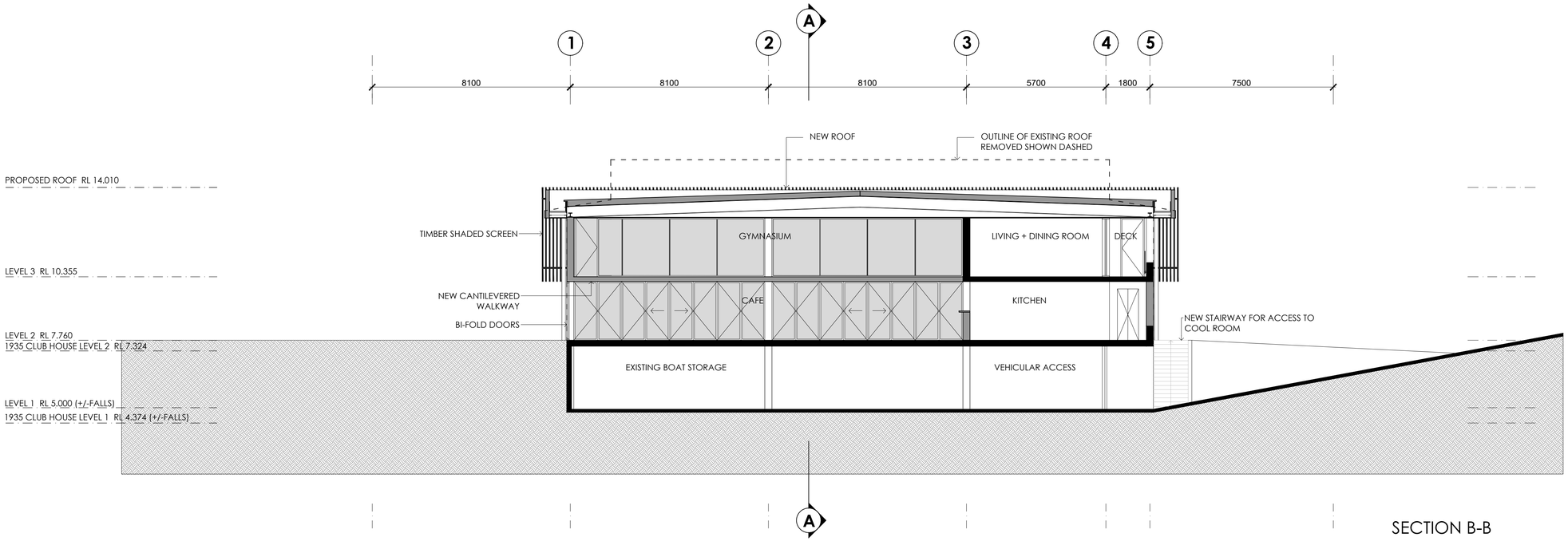
| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 12.04.24 | REVISED DA ISSUE |
| C | 11.09.24 | REVISED DA ISSUE |
| D | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
NORTH WEST AND
SOUTH WEST ELEVATION

DRAWING NO.
**DA212**
ISSUE
**D**




SECTION A-A




SECTION B-B


ARCHITECT
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008
T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

# *museum of surf*

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

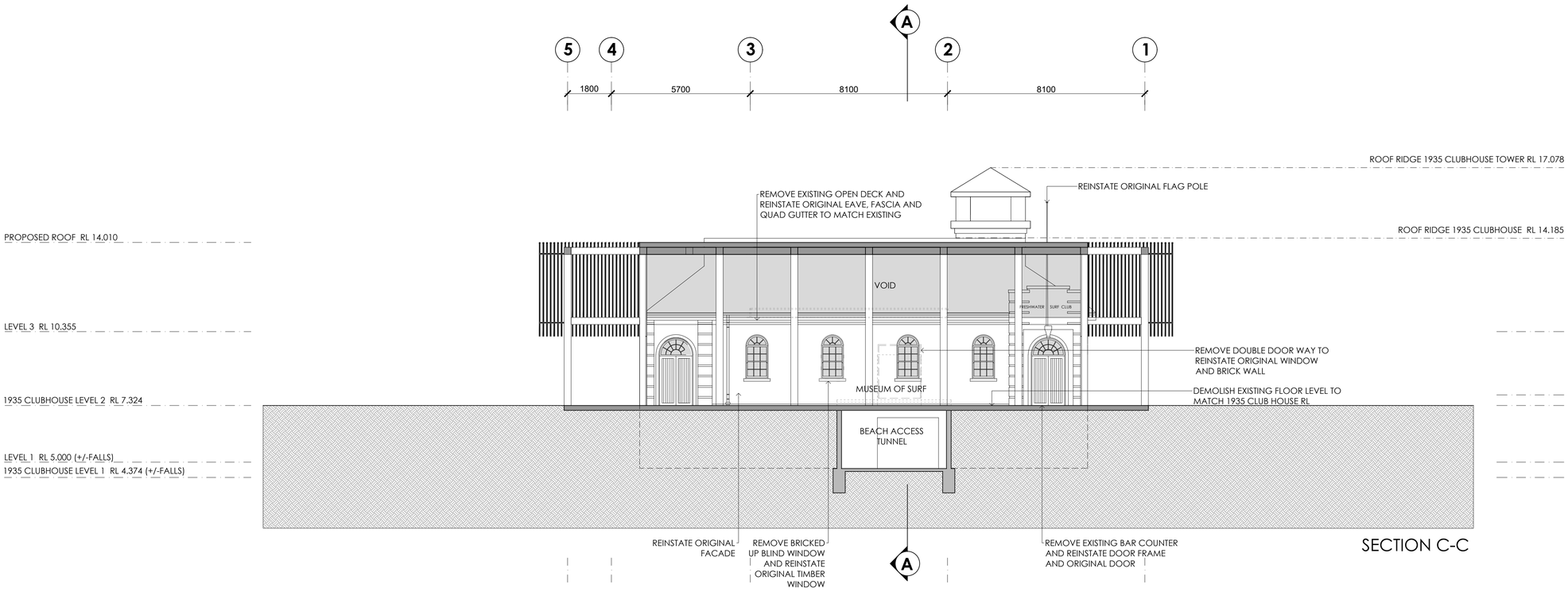
1:100 @A1

0 2 4 6 8 10m

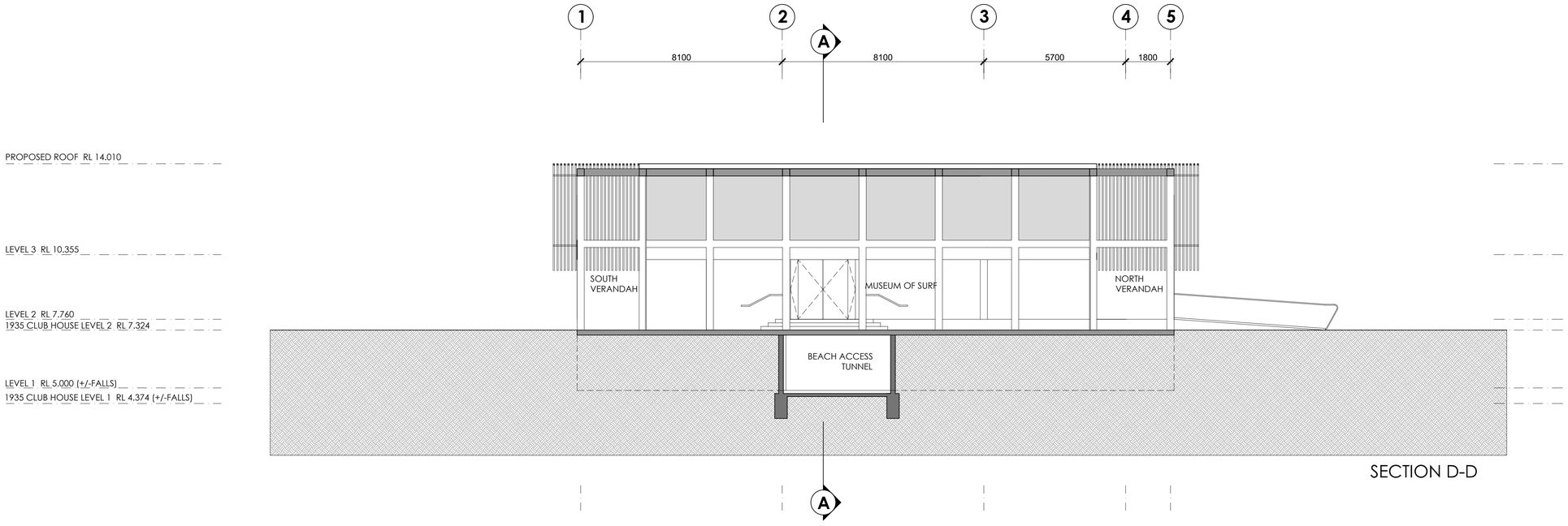
| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 11.04.24 | REVISED DA ISSUE |
| C | 11.09.24 | REVISED DA ISSUE |
| D | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
SECTION A-A AND B-B

DRAWING NO.
**DA213**
ISSUE
**D**




SECTION C-C




SECTION D-D


**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

# *museum of surf*

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

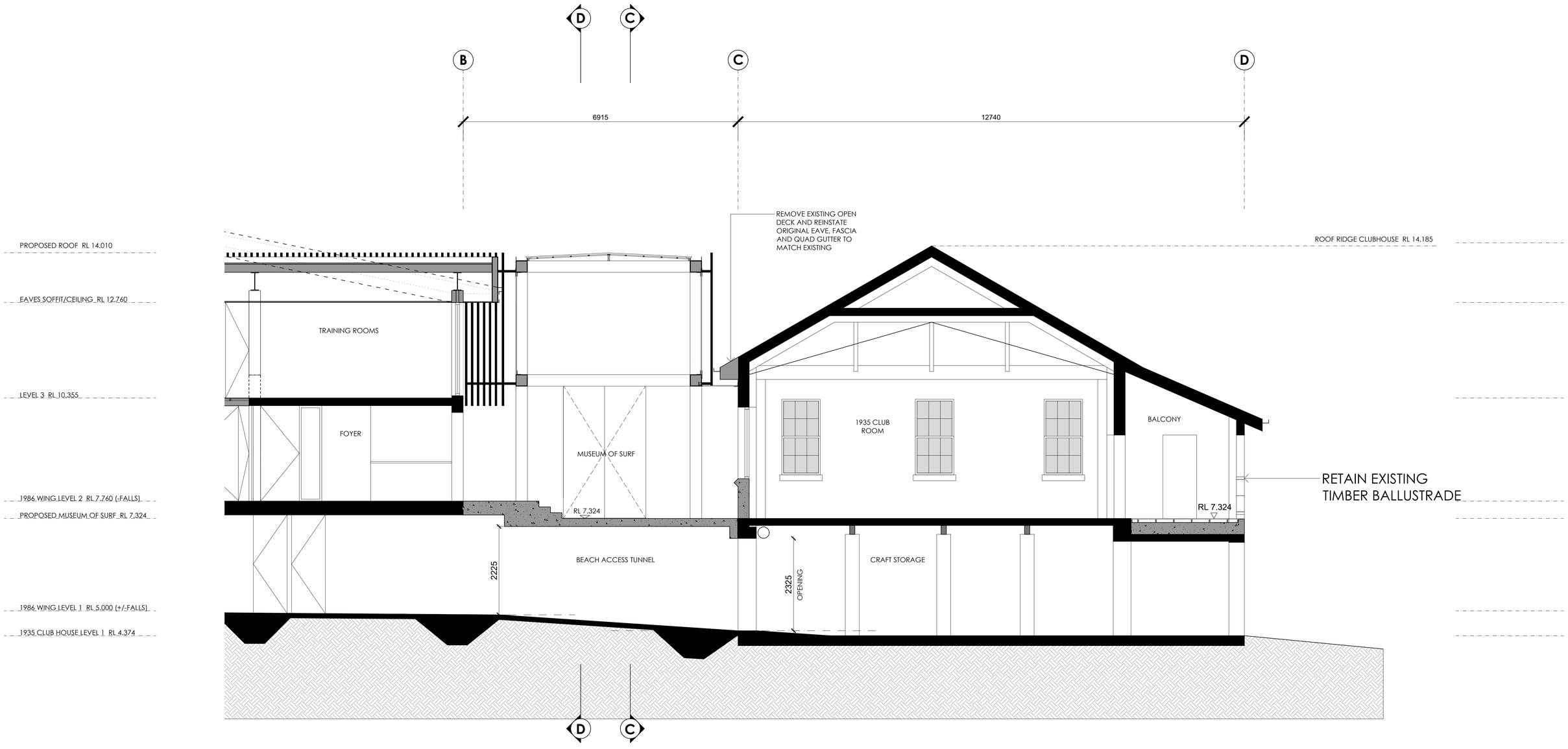
1:100 @A1

0 2 4 6 8 10m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 11.04.24 | REVISED DA ISSUE |
| C | 11.09.24 | REVISED DA ISSUE |
| D | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
SECTION C-C AND D-D

DRAWING NO.
**DA214**
ISSUE
**D**





ARCHITECT
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008
T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104
NOMINATED ARCHITECT
G BONUS
ARCH REG. 4034
DRAWN
CX/PF/SK

# *museum of surf*

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC
FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

1:50@A1

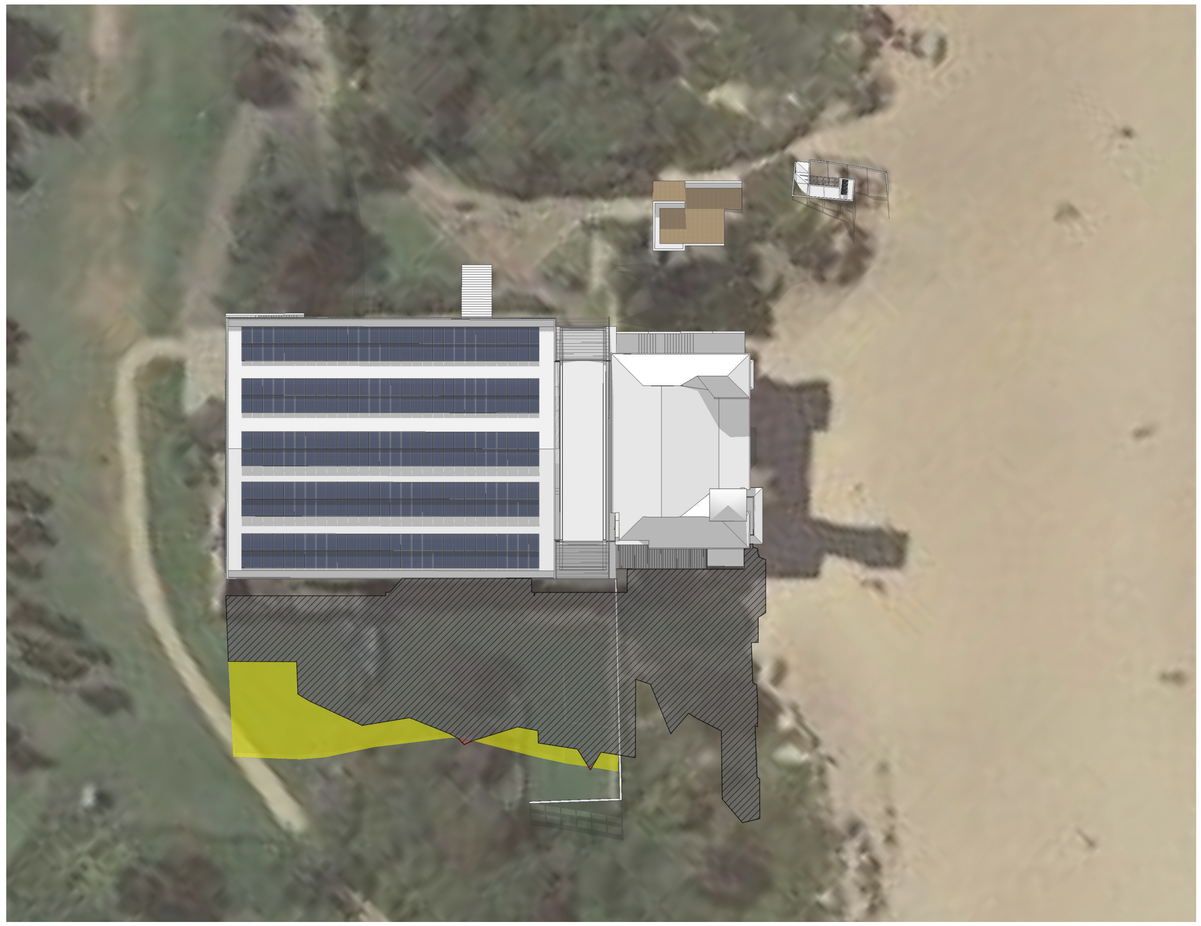
0 1 2 3 4 5m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 11.04.24 | REVISED DA ISSUE |
| C | 11.09.24 | REVISED DA ISSUE |
| D | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
DETAILED SECTION A-A

DRAWING NO.
**DA215**
ISSUE
**D**

[EXISTING] 9AM 21st JUNE



[PROPOSED] 9AM 21st JUNE

SHADOWS CAST BY EXISTING

SHADOWS CAST BY PROPOSAL

SHADOWS REMOVED


ARCHITECT
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS
ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

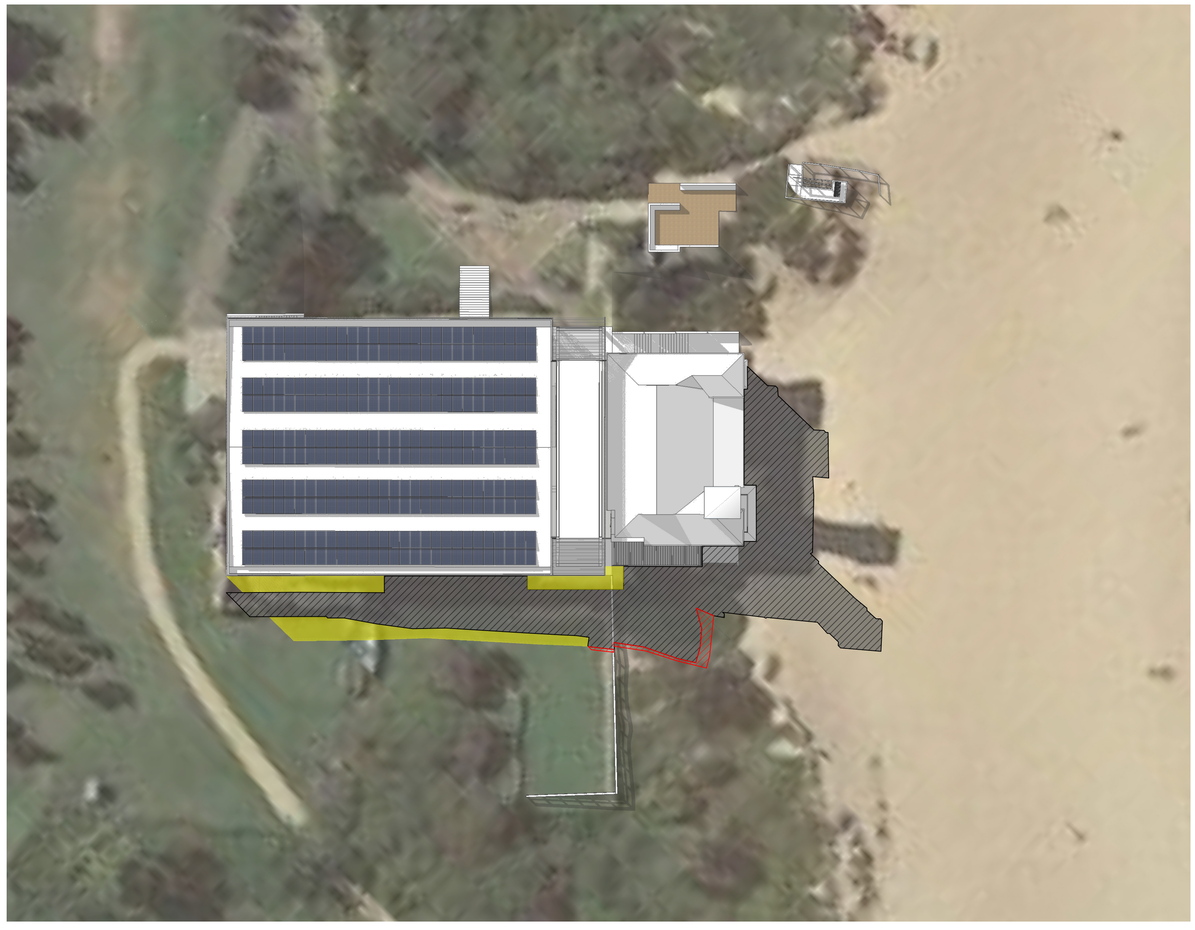
N

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
SHADOW DIAGRAMS 9AM

DRAWING NO.
**DA216**
ISSUE
**B**

[EXISTING] 12PM 21st JUNE



[PROPOSED] 12PM 21st JUNE

SHADOWS CAST BY EXISTING

SHADOWS CAST BY PROPOSAL

SHADOWS REMOVED


**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

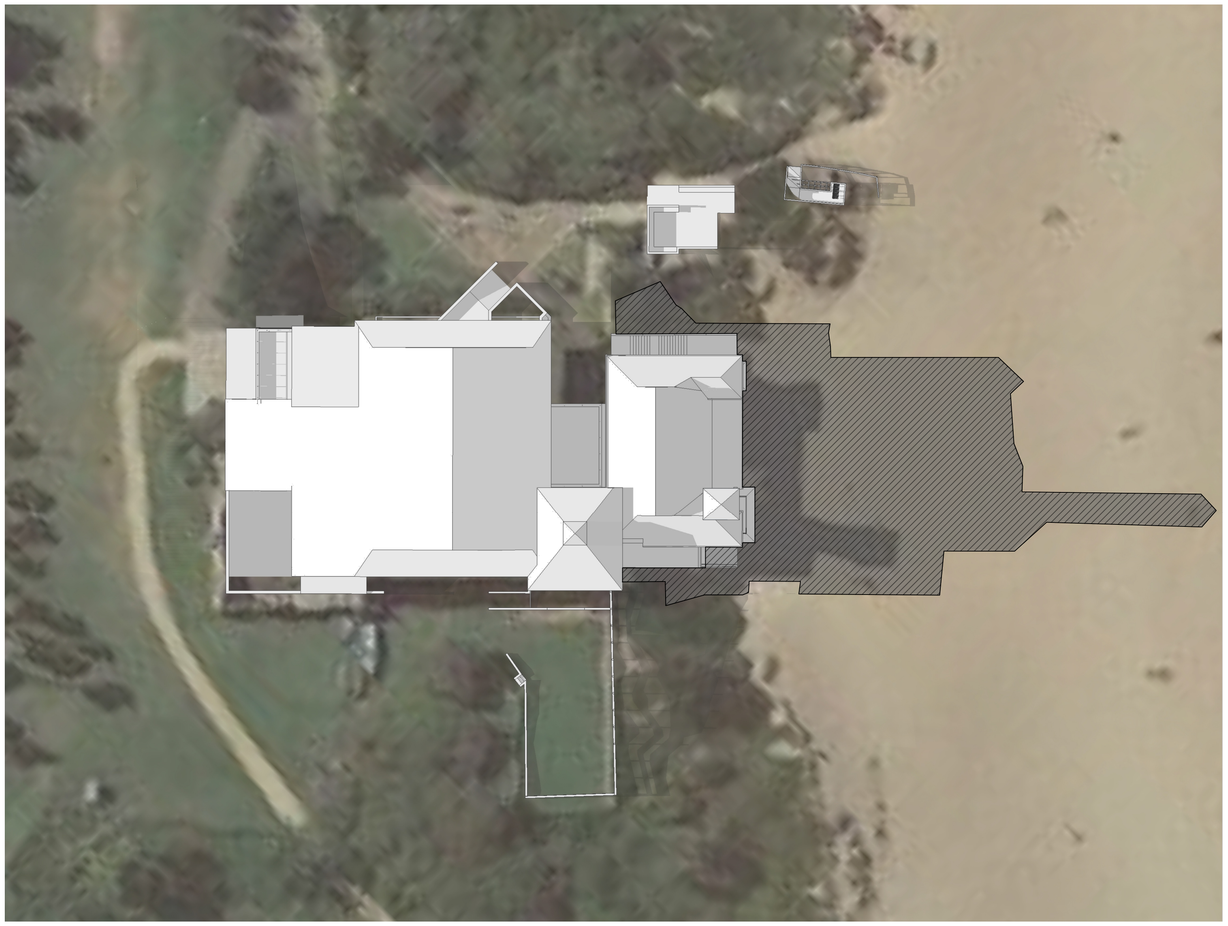
FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

N

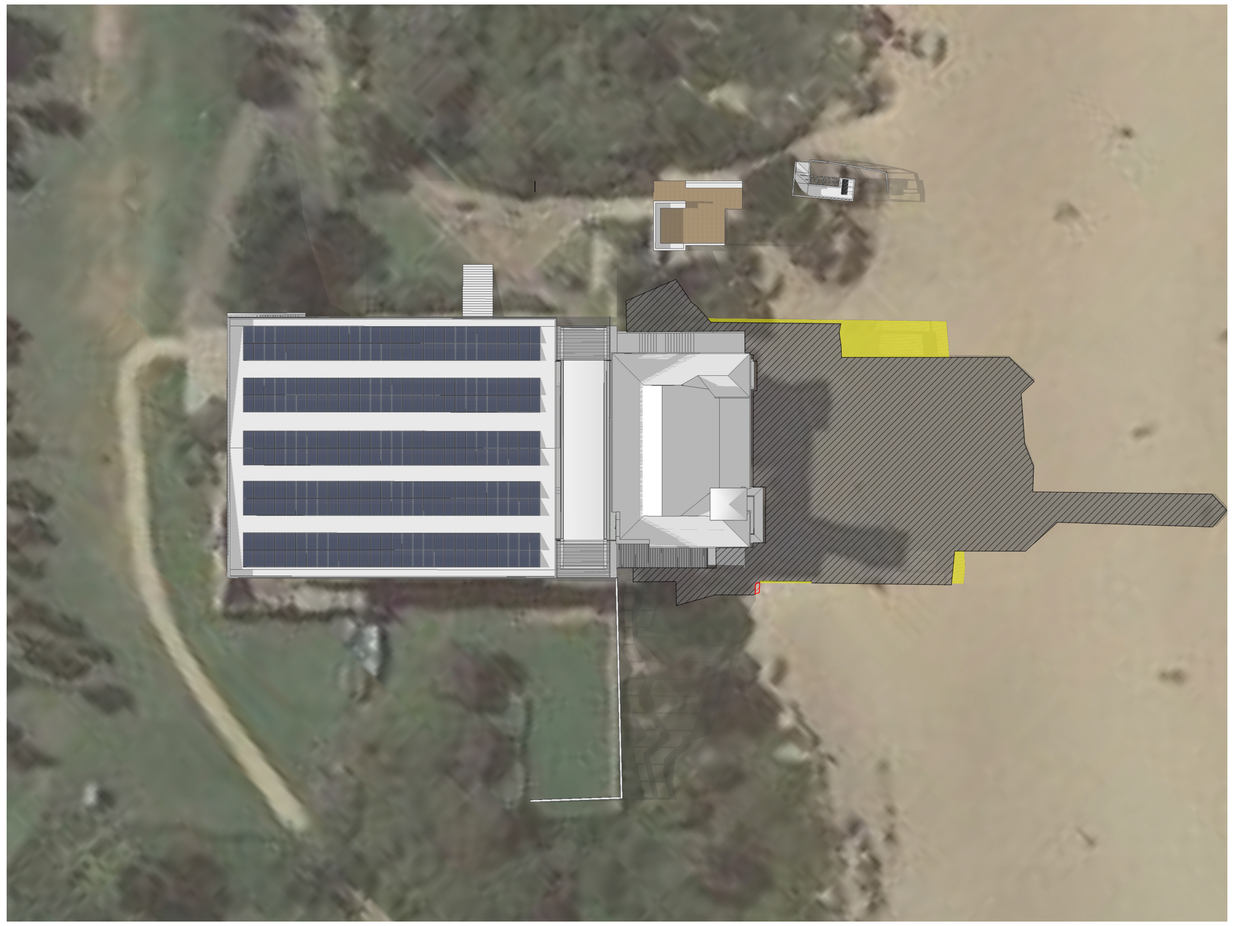
| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 14.11.24 | DA ISSUE |

DRAWING TITLE
SHADOW DIAGRAMS 12PM

DRAWING NO.
**DA217**
ISSUE
**B**



[EXISTING] 3PM 21st JUNE



[PROPOSED] 3PM 21st JUNE

SHADOWS CAST BY EXISTING

SHADOWS CAST BY PROPOSAL

SHADOWS REMOVED


ARCHITECT
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420




JOB NO
1104

NOMINATED ARCHITECT
G BONUS
ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

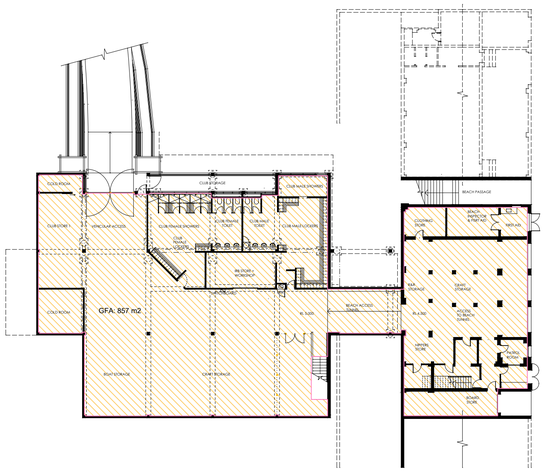
FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

N

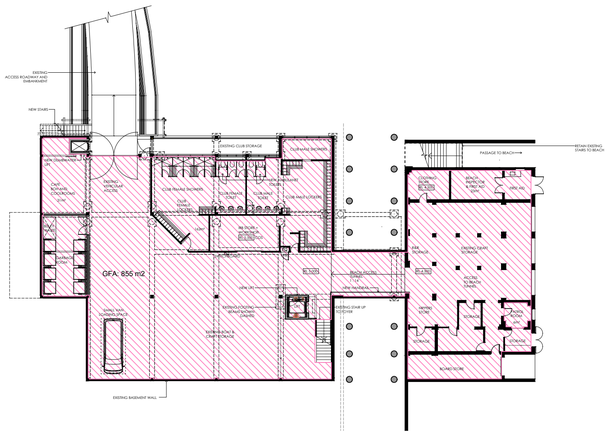
| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
SHADOW DIAGRAMS 3PM

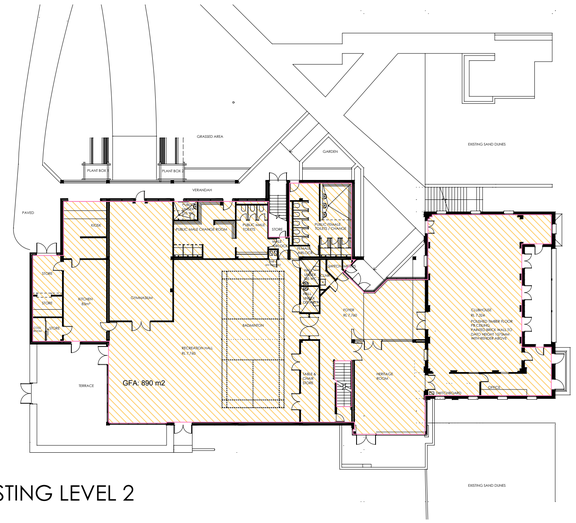
DRAWING NO.
**DA218**
ISSUE
**B**



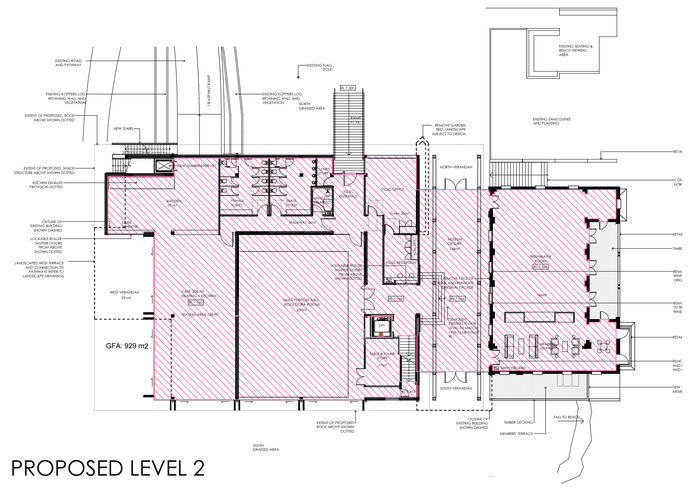

EXISTING LEVEL 1



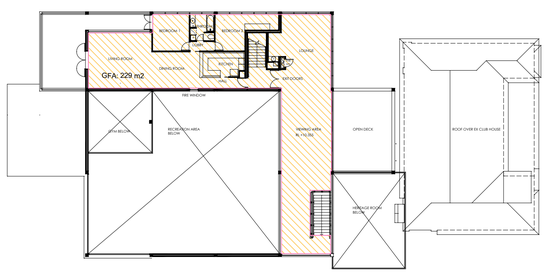

PROPOSED LEVEL 1



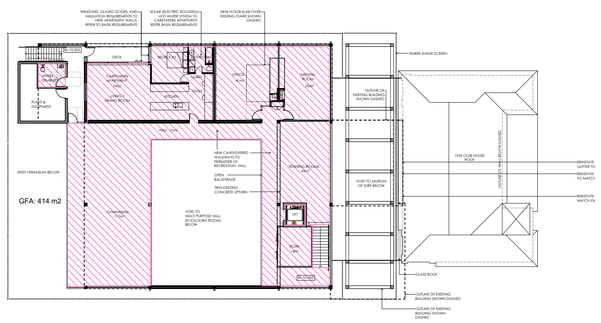

EXISTING LEVEL 2




PROPOSED LEVEL 2




EXISTING LEVEL 3




PROPOSED LEVEL 3

**LEVEL 1 GFA SCHEDULE**

| EXISTING | GFA |
|---|---|
| STORAGE | |
| CLUB LOCKERS & FACILITIES | |
| CAFE BOH | |
| FIRST AID & PATROL | |
| **TOTAL GFA** | 857 m² |

**LEVEL 1 GFA SCHEDULE**

| PROPOSED | GFA |
|---|---|
| STORAGE | |
| CLUB LOCKERS & FACILITIES | |
| CAFE BOH | |
| FIRST AID & PATROL | |
| **TOTAL GFA PROPOSED** | 855 m² |

**LEVEL 2 GFA SCHEDULE**

| EXISTING | GFA |
|---|---|
| MUSEUM OF SURF & ENTRANCE | |
| OFFICE & RECEPTION | |
| GYMNASIUM | 78 m² |
| RECREATION HALL | |
| CLUB ROOM & LOUNGE | |
| CAFE | 83 m² |
| TOILETS | |
| STORAGE | |
| **TOTAL GFA** | 890 m² |

**LEVEL 2 GFA SCHEDULE**

| PROPOSED | GFA |
|---|---|
| MUSEUM OF SURF | |
| FSLSC ENTRANCE | |
| MULTI PURPOSE HALL | 207 m² |
| OFFICE & RECEPTION | |
| CLUB ROOM & LOUNGE | |
| CAFE | 208 m² |
| TOILETS | |
| STORAGE | |
| **TOTAL GFA PROPOSED** | 929 m² |

NEW FACILITIES ARE PROVIDED TO LEVEL 2

**LEVEL 3 GFA SCHEDULE**

| EXISTING | GFA |
|---|---|
| CLUB STAFF FACILITIES | |
| CARETAKER'S APARTMENT | |
| GYMNASIUM | 0 m² |
| HALL & WALKWAY | |
| **TOTAL GFA** | 229 m² |

**LEVEL 3 GFA SCHEDULE**

| PROPOSED | GFA |
|---|---|
| CLUB STAFF FACILITIES | |
| CARETAKER'S APARTMENT | 79 m² |
| GYMNASIUM | 117 m² |
| HALL & WALKWAY | |
| **TOTAL GFA PROPOSED** | 414 m² |

NEW FACILITIES ARE PROVIDED TO LEVEL 3

**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420



JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

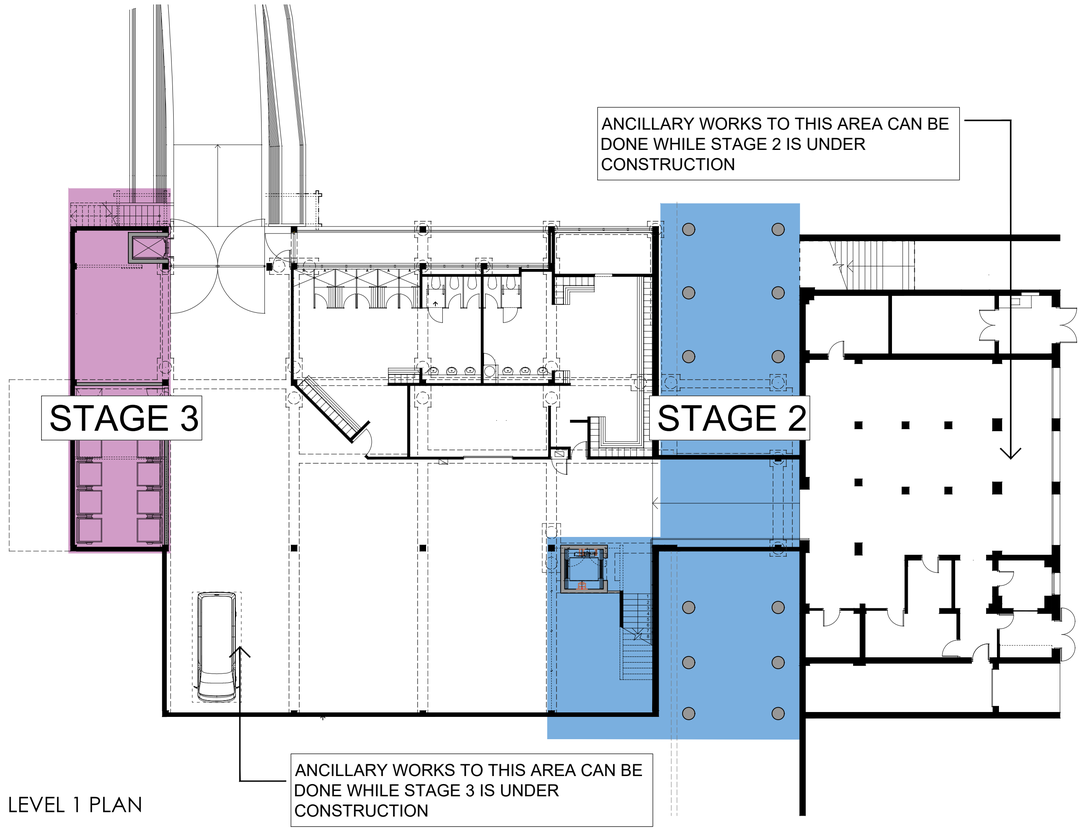
ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

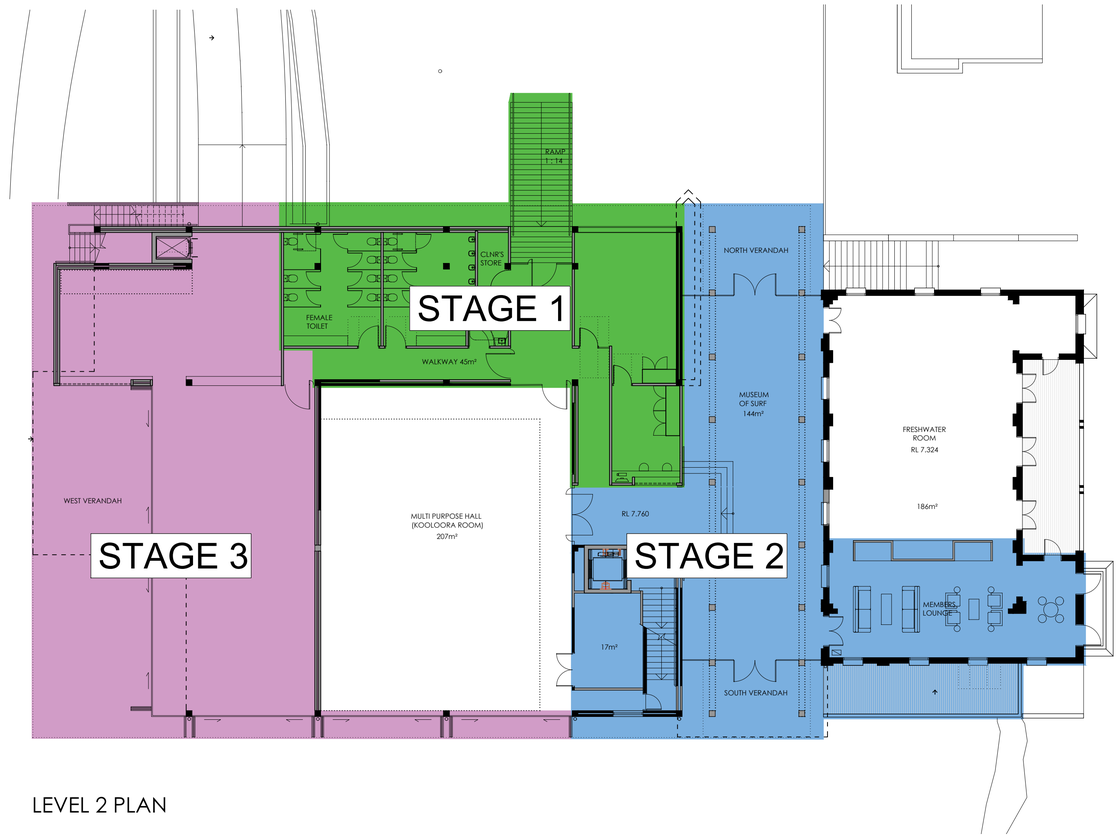
| REV | DATE | AMENDMENT |
|---|---|---|
| A | 08.05.23 | DA ISSUE |
| B | 15.04.24 | REVISED DA ISSUE |
| C | 14.11.24 | REVISED DA ISSUE |

DRAWING TITLE
GFA PLANS & SCHEDULE
EXISTING & PROPOSED

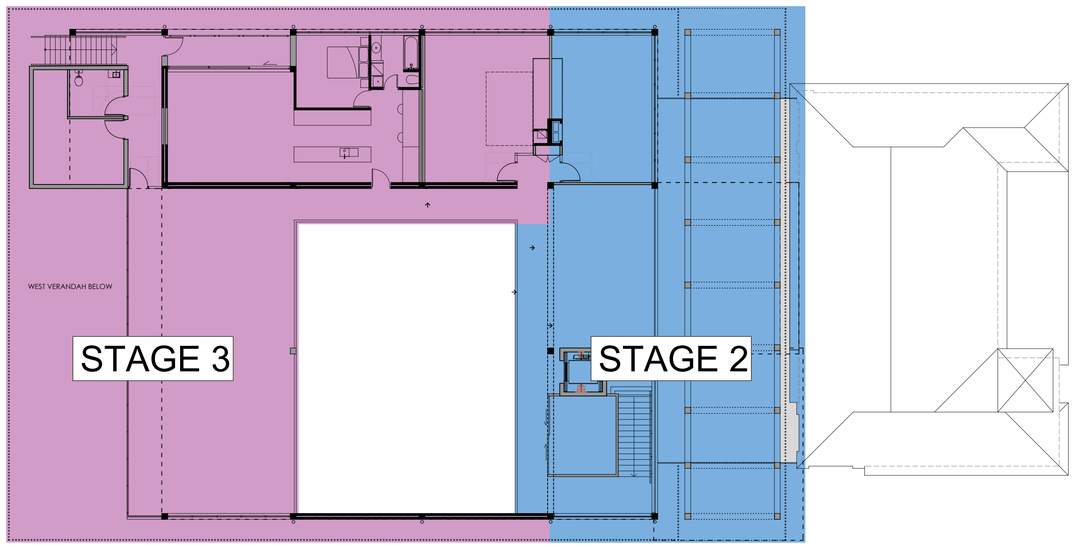
DRAWING NO.
**DA219**
ISSUE
**C**




LEVEL 1 PLAN




LEVEL 2 PLAN




LEVEL 3 PLAN

**STAGE**

0 NEW TOILETS CONSTRUCTED BY COUNCIL, & DECOMMISSION OLD TOILETS

1 DEMOLISH OLD TOILETS, & BUILD NEW OFFICE, STORE, ENTRANCE, NEW TOILETS (NOTE: TEMPORARY ACCESS TO CARETAKER APARTMENT)

2 DEMOLISH OLD BALCONY, HERITAGE ROOM, OLD BAR, OLD OFFICE, FOYER & BUILD NEW PAVILION WITH LIFT TO MEZZANINE PLUS NEW MEMBERS LOUNGE AND MEZZANINE TRAINING ROOMS.

3 DEMOLISH BACK OF BUILDING & BUILD NEW HOSPITALITY VENUE PLUS GYM ON MEZZANINE PLUS RENOVATE CARETAKERS APARTMENT.

NOTES:

- GYM CAN BE TEMPORARILY LOCATED IN THE HALL DURING STAGE 3.
- STAGE 1 CAN BE BUILT OVER SUMMER.
- STAGE 2 MUST START WHEN LAST PATROL FINISHES & HAS TO BE OPEN FOR FOR THE FOLLOWING SEASON 5 MTHS FOR STRUCTURE TO COMPLETE.
- THE KIOSK CLOSES FOR STAGE 3 ONLY.
- ALL MINOR ANCILLARY WORKS ARE COORDINATED WITH VARIOUS STAGES.

**ARCHITECT**
**BONUS + ASSOCIATES**
LEVEL 2
79 MYRTLE STREET
CHIPPENDALE NSW 2008

T 02 9818 6188
F 02 9818 6288
E info@bonusarch.com
B PLUS A PTY. LTD. ABN 40 615 655 420



JOB NO
1104

NOMINATED ARCHITECT
G BONUS

ARCH REG. 4034

DRAWN
CX/PF/SK

***museum of surf***

ALTERATIONS & ADDITIONS TO
FRESHWATER SLSC

FOR
FRESHWATER SLSC & NORTHERN BEACHES COUNCIL

1:150 @A1

N

0 1 2 3 6 9 15m

| REV | DATE | AMENDMENT |
|---|---|---|
| A | 14.11.24 | DA REVISED ISSUE |

DRAWING TITLE
STAGING PLAN

DRAWING NO.
**DA220**
ISSUE
**A**

# Appendix C

## Cumulative octave band noise levels – patron noise and gym noise

| Receiver ID | Octave band [Hz] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **31.5** | **63** | **125** | **250** | **500** | **1000** | **2000** | **4000** | **8000** |
| **Evening period** | **25** | **23** | **34** | **42** | **48** | **50** | **50** | **43** | **32** |
| R01 | 3 | 3 | 8 | 21 | 34 | 38 | 32 | 27 | 8 |
| R03 | 3 | 3 | 11 | 27 | 40 | 44 | 37 | 29 | 8 |
| R04 | 3 | 3 | 7 | 22 | 34 | 35 | 29 | 22 | 5 |
| R05 | 3 | 3 | 6 | 22 | 34 | 36 | 30 | 25 | 6 |
| R06 | 3 | 3 | 10 | 23 | 36 | 40 | 34 | 27 | 5 |
| R07 | 3 | 3 | 10 | 23 | 36 | 40 | 34 | 26 | 4 |
| R08 | 3 | 3 | 9 | 22 | 36 | 39 | 33 | 27 | 9 |
| R09 | 3 | 3 | 10 | 25 | 38 | 41 | 36 | 30 | 13 |
| R10 | 3 | 3 | 12 | 27 | 40 | 44 | 38 | 32 | 15 |
| R11 | 3 | 3 | 14 | 28 | 41 | 45 | 38 | 30 | 12 |
| R12 | 3 | 3 | 13 | 27 | 40 | 44 | 38 | 28 | 9 |
| R13 | 3 | 3 | 10 | 27 | 40 | 43 | 37 | 28 | 9 |
| R14 | 3 | 3 | 13 | 27 | 40 | 43 | 37 | 28 | 9 |
| R15 | 3 | 3 | 11 | 26 | 39 | 43 | 37 | 27 | 8 |
| R16 | 3 | 3 | 9 | 24 | 37 | 41 | 34 | 24 | 4 |
| R17 | 3 | 3 | 7 | 22 | 36 | 39 | 33 | 22 | 3 |
| R18 | 3 | 3 | 8 | 21 | 34 | 38 | 31 | 20 | 3 |
| R19 | 3 | 3 | 6 | 19 | 31 | 35 | 27 | 16 | 3 |
| R21 | 3 | 3 | 5 | 17 | 29 | 33 | 26 | 15 | 3 |

ghd.com

The Power of Commitment