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Stockland c/- Essence Project Management
12 June 2026

429 Albert Street, Brunswick

Acoustic Town Planning Report

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Client Stockland c/- Essence Project Management
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1. Introduction

Octave Acoustics was engaged by Stockland c/- Essence Project Management to provide a town planning stage noise impact assessment for the residential development at 429 Albert Street, Brunswick (Subject Development / Subject Site). The proposed development will consist of a 11 storey residential building containing approximately 223 apartments.

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2. Proposed Site & Development

The Subject Development will provide:

- A two-level basement incorporating underground car parking, storage, services and waste management.
- Ground floor with lobby and common area.
- Apartments from Ground level to Level 10.

The Subject Site is zoned Mixed Use Zone 1 (MUZ1) and is bounded:

- Directly to the north by multi storey residential buildings at 460 Victoria Street (zoned MUZ1) and beyond that by a Victoria Street and Reaburn Reserve (zoned PPRZ).
- To the south by Albert Street (zoned MUZ1) and beyond that Gilpin Park (zoned PPRZ) and multi storey commercial buildings (zoned INZ1) approximately 200-250 metres from the Subject Site.
- To the east by Clifton Park West (zoned PPRZ) and single storey commercial buildings at 427 Albert Street (zoned MUZ1).
- To the west by single and double storey residential buildings at 437-455 Albert Street and 40-48 Pearson Street (zoned HCTZ2).

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Figure 1 - Site Context

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3. Site Assessment

3.1. Noise Monitoring

Octave Acoustics carried out unattended noise monitoring on the Subject Site. The noise monitor was installed from Monday the 13th to Friday the 17th of April 2026 and was installed with direct line of site to Albert Street.

Additional measurements were conducted on Tuesday the 21st of April 2026 to measure a peak hour traffic noise level spectrum as well as noise levels from the two industrial zones that are within 300 metres of the Subject Site.

All measurements were conducted at a height of approximately 1.5 metres above ground

The unattended measurements were carried out using a Convergence Instruments NSRTW Mk 4 MEMS sound level meter and the attended measurements were carried out using an NTi XL2 meter which was calibrated before and after all measurements using a Brüel & Kjær 4320 calibrator. No drift in calibration was detected. The sound levels meters comply with the requirements of IEC 61672-1:2013 Sound Level Meters, and the NSRTW Mk 4 is classified as a Class 1 instrument and the XL2 is classified as a Class 2 instrument. The calibrator complies with the requirements of IEC 60942:2004 Sound Calibrators. The NSRTW Mk 4, NTi XL2 and calibrator carry current NATA certification.

3.1.1. Road Traffic Noise

The results of the attended noise monitoring of traffic on Albert Street are presented in Table 1 below.

Table 1 – Traffic Noise Level Peak Hour Data

Location	Date / Time of Measurement	Noise Descriptor	Ambient Sound Pressure Level dB(A)
Measurement Location 1	21 st of April 2025 from 4:30pm to 5:30pm	L _{Aeq}	57

The spectrum data measured during that period was then calibrated to the highest overall level for Day & Evening and Night periods obtained through unattended measurements. This data is presented in Table 2 below:

Table 2 – Traffic Noise Level Period Data

Location	Noise Descriptor	Period Average Ambient Sound Pressure Level dB(A)	
		Day & Evening 6am – 10pm	Night 10pm – 6am
Measurement Location 1	L _{Aeq} ¹	60	54

Notes: 1. The L_{Aeq} has been calculated by calibrating the measured L_z to the spectrum obtained in the attended traffic measurement.

3.2. Other Noise Measurements

Octave Acoustics attended site on the 13th of April 2026 at 12:30pm to inspect the two industrial zones that are within 300m of the Subject Site. Octave Acoustics attended site again on the 21st of April 2026 at 4:30pm to make further observations and to take attended measurements proximate to the two industrial zones. It was observed during both visits that there were no significant sources of commercial industrial noise from either industrial zone. The measurement taken at Measurement Location 2 was dominated by ambient background noise and the

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measurement taken at Measurement Location 3 was dominated by traffic noise from Victoria Street. The results of attended measurements from the nearest two industrial zones are presented in Table 3 below:

Table 3 – Industrial Zone Attended Measurements

Location	Date / Time of Measurement	Noise Descriptor	Ambient Sound Pressure Level dB
Measurement Location 2	21 st of April 2026 from 4:31pm to 4:36pm	L _{Aeq}	52
Measurement Location 3	21 st of April 2026 from 5:08pm to 5:18pm	L _{Aeq}	67

4. Criteria

4.1. Planning Scheme Clause 58.04-3

The Better Apartment Design Standards (BADS), in accordance with Standard D16 of Clause 58.04-3 – Noise Impacts, sets out noise amenity targets (as stated in Table 4 below) to protect dwelling occupants from external noise sources.

Table 4 – Internal Noise Level Criteria

Type of occupancy	Applicable period	Noise measurement metric	Internal Noise Level Criteria
Bedroom	10pm – 6am	L _{eq,8h}	≤ 35 dB(A)
Living areas	6am – 10pm	L _{eq,16h}	≤ 40 dB(A)

The noise influence areas as stated in Clause 58.04-3 are outlined in Table 5 below

Table 5 – Noise Influence Areas

Noise Source	Noise Influence Area
Zone Interface	
Industrial Zone 1,2 & 3	300m from the Industrial 1, 2 and 3 zone boundary
Road	
Freeways, tollways and other roads carrying 40,000 Annual Average Daily Traffic Volume (AADT)	300m from the nearest trafficable lane
Railway	
Railway servicing passengers in Victoria	80m from the centre of the nearest track

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Railway servicing freight outside Metropolitan Melbourne	80m from the centre of the nearest track
Railway servicing freight in Metropolitan Melbourne	135m from the centre of the nearest track

4.1.1. Noise From Industrial Zones

The Subject Development site triggers a requirement for a noise impact assessment due to the proximity of an Industrial 3 Zone (IN3Z) to the northeast of the Subject development located approximately 229 metres from the zone boundary and an Industrial 1 Zone (IN1Z) to the south of the Subject development located approximately 209 metres from the zone boundary.

4.1.2. Traffic Noise

It is noted that the Northern façade of the Subject Development is located on Albert Street which has a two-way Annual Average Daily Traffic Volume (AADT) of 7,000. As such, there is no mandatory requirement to meet the acoustic amenity criteria defined in the Apartment Design Guidelines. Nonetheless, noise levels at the façades of habitable rooms within the Subject Development have been designed to provide noise amenity with respect to traffic noise consistent with Standard D16 of Clause 58.04-3.

4.2. Noise Emissions Associated with Mechanical Plant

Noise associated with commercial building plant and services are required to comply with Part 5.3 of the Environment Protection Regulations 2021 (EPR 2021). EPA Victoria Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues Publication 1826.5 provides a protocol for determining EPR 2021 noise limits and carrying out subsequent assessment of noise impacts.

EPR 2021 is a regulation under the Environment Protection Act 2017 (EP Act) and compliance is mandatory when noise levels are assessed at noise sensitive areas which include residential properties. The applicable EPR 2021 noise limits for plant and services noise emissions have been calculated based on a neutral zoning level and are presented in Table 6 below.

Table 6 – EPR 2021 Noise Criteria for Plant Noise Emissions Based on a Neutral Zoning Level

Heading	Zoning Level, L_{Aeq}	Background Classification	Applicable Noise Limit _{4,5} L_{Aeq}
Day ₁	50	Neutral	50
Evening ₂	44	Neutral	44
Night ₃	39	Neutral	39

- Notes:
- Day period is:
 - 07:00 – 18:00 Monday – Saturday (except public holidays)
 - Evening period is:
 - 18:00 – 22:00 Monday – Saturday
 - 07:00 – 22:00 Sunday and public holidays
 - Night period is:
 - 22:00 – 07:00 Monday – Sunday
 - Where the noise source under consideration is equipment used solely in relation to emergencies (such as fire pumps, standby generators, stair pressurisation and smoke spill fans), the relevant noise limit applying to the testing or maintenance of such equipment is increased by 10dB for the day period and 5dB for the evening and night periods.
 - Based on Publication 1826.5 urban area method centred at 429 Albert Street, Brunswick

4.2.1. General Environmental Duty

Under Part 3.2 of the EP Act, a person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste [including noise] must minimise those risks, so far as reasonably practicable.

With respect to noise, to determine what is (or was at a particular time) reasonably practicable in relation to the minimisation of risks of harm to human health and the environment, regard must be given to:

- The likelihood of those risks eventuating,
- The degree of harm that would result if those risks eventuated,
- What the concerned person knows, or ought reasonably to know, about the harm or risks of harm and any ways of eliminating or reducing those risks,
- The availability and suitability of ways to eliminate or reduce those risks,
- The cost of eliminating or reducing those risks.

It should be noted that the General Environmental Duty requirement applies irrespective of whether compliance with EPR 2021 noise limits is achieved.

4.3. EPA Publication 1254.2

EPA Victoria Publication 1254.2 *Noise Control Guidelines* May 2021 (Publication 1254.2) sets out best practice guidelines for management of noise associated with waste collections and deliveries. The relevant sections of Publication 1254.2 are set out below. It is important to understand that Publication 1254.2 is primarily intended to be used by municipal officers to assist in the resolution of complaints or to avert possible noise nuisance. As such, where noise sources dealt with below are also subject to EPR 2021, then requirements under the latter take precedence. For example, Publication 1254.2 states that delivery activities should be inaudible at adjacent dwellings during the night period. However, EPR 2021 also applies to delivery noise and permits up to 43 dB(A) at adjacent dwellings during the night, a level that may be audible. In this instance, the applicable criteria would be 43 dB(A) and not a requirement for inaudibility.

4.3.1.1. Deliveries

Where a residential area will be impacted by noise from deliveries, then deliveries should be inaudible in a habitable room of any residential premises (regardless of whether any door or window giving access to the room is open) outside the hours contained in the schedule.

Schedule: Deliveries to shops, supermarkets & service stations

7am – 10pm Monday to Saturday

9am – 10pm Sundays and public holidays

Note: All ancillary motors or trucks should be turned off whilst making the delivery

4.3.1.2. Truck-Mounted Refrigeration Units

Whether parked on residential or non-residential premises, the noise from the operation of a truck-mounted refrigeration unit must not be audible within a habitable room of any other residence (regardless of whether any door or window giving access to the room is open) during the hours contained in the schedule.

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Schedule: Truck mounted refrigeration units

Non-residential premises (e.g., noise from a delivery truck, whether moving or parked on the street)

10pm – 7am Monday to Saturday

10pm – 9am Sundays and public holidays

Residential premises (including a truck owner keeping their vehicle on the street outside their home)

8pm – 7am Monday to Saturday

8pm – 9am Weekends and public holidays

4.3.1.3. Domestic Refuse Collection

The main annoyance produced by domestic refuse collections occurs in the early morning (in other words, before 7 am). Therefore, if possible, routes should be selected to provide the least impact on residential areas during that time.

Collection of refuse should follow the following criteria:

- Collections occurring once a week should be restricted to the hours 6 am – 6 pm Monday to Saturday
- Collections occurring more than once a week should be restricted to the hours 7 am – 6 pm Monday to Saturday
- Compaction should only be carried out while on the move.
- Bottles should not be broken up at the point of collection.
- Routes that service entirely residential areas should be altered regularly to reduce early morning disturbance.
- Noisy verbal communication between operators should be avoided where possible.

4.3.1.4. Industrial Waste Collection

EPA Victoria state that industrial waste includes waste from commercial, industrial and trade activities (including cafes and restaurants).

It is understood that the Subject Development will include commercial tenancies on the ground floor. As such, the waste collection is considered to be industrial waste collection.

Annoyance created by industrial waste collection tends to intensify in the early morning period. To this end, early-morning collections should be restricted to non-residential areas to minimise early morning disturbances. Where a residential area is impacted by noise from the collection of refuse, then collections should be restricted to the times contained within the schedule.

- Refuse bins should be located at sites that provide minimal annoyance to residential premises.
- Compaction should be carried out while the vehicle is moving.
- Bottles should not be broken up at collection site.
- Routes which service predominantly residential areas should be altered regularly to reduce early morning disturbances.
- Noisy verbal communication between operators should be avoided where possible.

Schedule: Industrial waste collection

One collection per week

6:30am – 8pm Monday to Saturday

9am – 8pm Sundays and public holidays

Two or more collections per week

7am – 8pm Monday to Saturday

9am – 8pm Sundays and public holidays

5. Assessment

5.1. Noise Impacts Affecting the Subject Development

A 3-D noise model of the Subject Development and surroundings was developed in CadnaA software. Calculations were run implementing the ISO9613 environmental noise prediction algorithms to calculate the propagation of noise between source and receivers. This algorithm takes into account propagation effects associated with:

- Source sound power;
- Geometrical spreading;
- Atmospheric conditions;
- Air absorption;
- Ground absorption ($G=0$);
- Reflections from buildings and environment; and
- Barrier effects due to obstructions between sources and receivers.

5.2. Façade & Glazing

A 3-D CadnaA noise model was run to calculate the induced sound pressure levels across the façades from traffic and the neighbouring industrial zones. The resulting noise intrusion to apartments was then calculated using standard transmission loss algorithms.

Performance requirements for the glazing specification were developed as required for design compliance with BADS. The resulting performance requirements are presented in Table 7 below. Refer to the markup provided in Appendix B: of this report for further details on glazing requirements. Opaque sections of the façade shall be rated to 10dB higher than the associated glazing performance requirement, i.e. $(R_w) + 10\text{dB}$.

Table 7 – Minimum Performance Requirement for Façade Glazing Systems, R_w

Façade / Apartment	Performance Requirement for Glazing Assembly including Frame and Seals	Indicative Glazing:
Refer to markup in Appendix B: for extent of acoustic glazing requirements to habitable rooms	$R_w \geq 34$	Double-glazed system incorporating at least one pane of 6.38mm thick laminated glass. (e.g., 6/12/6.38 IGU).
	$R_w \geq 30$	Good quality commercial framing system fitted with an IGU consisting of two panes of 6mm float glass separated by a 12mm airgap. (e.g., 6/12/6 IGU).

Notes:

- Indicative glazing is not provided as a specification but rather to inform the Contractor as to the types of glazing that may satisfy the R_w performance requirements. It is the responsibility of the Contractor to ensure that the nominated glazing assemblies satisfy the performance requirement. This is best done by obtaining a laboratory test report from a NATA certified test facility.

5.2.1. Acoustic Seals

Acoustic seals shall be fitted by the façade contractor such that the overall system achieves a weighted reduction index (R_w) not less than that set out in Table 6 above. In general, it is expected that this will require that all:

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- Sliding doors are fitted with acoustic seals equivalent to Schlegel Q-Lon or double wool pile seals.
- Hinged doors and awning windows or similar operable elements where all seals are compressed are fitted with either Schlegel Q-Lon or EPDM type seals.

All seals shall be correctly sized and installed as required to maintain a reliable air-tight seal when the associated façade element is in the closed position.

5.3. Noise Impacts Associated with the Development

5.3.1. Noise from Mechanical Plant

It is important to note that at this early stage of the design, a full quantitative assessment of mechanical plant and equipment noise cannot be undertaken as neither a detailed mechanical design nor associated plant and equipment selections are available. Nevertheless, an indicative assessment of expected treatment has been conducted in the sections below.

5.3.1.1. Carpark and Bin Room Exhaust Fans

Noise from carpark and bin room exhaust fans can typically be treated by fitting lined duct and or attenuators to the connecting ductwork. Exhaust fans are typically located on the rooftop, and the proposed rooftop plant areas are not located near apartments either within or external to the Subject Development.

Noise from the exhaust fans will be reviewed during the design process and it is expected that noise from exhaust fans will be able to be adequately attenuated with standard acoustic mitigation measures.

5.3.1.2. Condensing Units and Heat Pumps

Condensing units (CUs) and heat pumps are to be primarily located on the rooftop of both towers.

Condensers and heat pumps require air flow for operation and are typically not able to be fitted with lined duct or attenuators. As such, a preliminary assessment has been conducted based on the following indicative quantities and sound power levels.

Table 8 – Indicative Condensing Unit and Heat Pump Sound Power Levels

Unit	Qty per tower	Overall, dB(A) (per unit)	Octave Band Centre Frequency (Hz)						
			63	125	250	500	1000	2000	4000
CUs	110	71	75	75	72	69	65	62	59
Heat Pumps	4	84	81	82	78	79	77	76	71

The CadnaA model was updated with the sound power levels as stated in the table above. Each item of plant was located on the rooftop of the respective building.

The rooftop plant areas are not overlooked by nearby residential dwellings. As such, it is calculated that noise levels from rooftop condensing units and heat pumps will comply with EPR 2021 noise limits given the following acoustic treatments are implemented:

- A plant screen is required around the rooftop plant on both buildings as per the marked-up drawings shown in appendix C. Any plant screens are to be constructed as follows:
 - The screen shall extend at least 300mm above the top of the highest item of plant.
 - The plant screen shall be constructed using any solid (non-perforated) cladding such as fibre cement sheeting, lightweight aerated concrete or profiled metal cladding providing that the selected material (or combined skins) has a surface mass of at least 12kg/m²;
 - The screen shall have no gaps or holes in it, thus preventing noise passing through. Any gaps or penetrations shall be fully caulked with a flexible acoustic sealant;

- There may be a gap underneath the screen of no higher than 100mm for drainage purposes;
- Any doors providing access to the plant screen shall also be solid (non-perforated) and have a surface mass of at least 12kg/m². The head and jambs of the door shall overlap the rebated frame by at least 20mm. The gap between the foot of the door and the rooftop shall be no greater than 10mm.
- Rooftop condensing units should be fitted with low noise cards that reduce noise emissions from by at least 5dB(A) during the night period.

Details of the required acoustic treatment will be confirmed during the design development phase of the project.

5.3.2. Carpark Ramp & Entrance Door

Noise impacts from usage of the carpark ramp shall be minimised through the implementation of the following:

- An automated door be fitted to the ramp leading to the basement car park. The door motor, guiderails, drum and associated mechanisms should be installed using vibration isolation mounts equivalent to Embelton NRD. Where under axial load, these mounts shall be selected to achieve minimum static deflection of 8mm where installed.
- Noise from the garage door should not exceed 65dB LAmax at 2 metres from the door.
- Where possible the structural set out should minimise movement and control joints oriented perpendicular to traffic flow.
- The floor surface of the ramp and carpark should have a broom finish to avoid tyre squeal noise.
- No speed humps shall be installed.

5.3.3. Waste Collection

Noise associated with on-site waste management and waste collection activities is required to comply with EPR 2021 noise limits. It is understood that the main building's waste management and waste collection activities will occur within the basement of the Subject Development. As such it is expected that associated noise will comfortably comply with EPR 2021 noise limits at the nearest residential receivers.

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6. Conclusion

Octave Acoustics was engaged by Stockland c/- Essence Project Management to carry out a town planning stage noise impact assessment for the proposed residential development at 429 Albert Street, Brunswick.

Octave Acoustics has reviewed the proposal and carried out acoustic assessments addressing the noise related requirements of:

- Clause 58.04-3 of the Apartment Design Guidelines for Victoria for noise impacts to apartment habitable rooms.
- Part 5.3 of the Environmental Protection Regulations 2021.
- EPA 1254.2 Noise control guidelines (Publication 1254) for waste collections and deliveries.

The results of the investigations and assessments show that, with the recommendations provided in this report, the Subject Development is expected to satisfy the acoustic requirements that are described above. In summary, both noise impacts on the development and noise associated with the development, can be mitigated using standard building methods and management strategies to comply with mandatory acoustic requirements and Victorian best practice.

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Appendix A: Glossary of Terms

'A' Frequency Weighting

The 'A' frequency weighting roughly approximates to the Fletcher-Munson 40 phon equal loudness contour. The human loudness perception at various frequencies and sound pressure levels is equated to the level of 40 dB at 1 kHz. The human ear is less sensitive to low frequency sound and very high frequency sound than midrange frequency sound (i.e. 500 Hz to 6 kHz). Humans are most sensitive to midrange frequency sounds, such as a child's scream. Sound level meters have inbuilt frequency weighting networks that very roughly approximates the human loudness response at low sound levels. It should be noted that the human loudness response is not the same as the human annoyance response to sound. Here low frequency sounds can be more annoying than midrange frequency sounds even at very low loudness levels. The 'A' weighting is the most commonly used frequency weighting for occupational and environmental noise assessments. However, for environmental noise assessments, adjustments for the character of the sound will often be required.

AMBIENT NOISE

The ambient noise level at a particular location is the overall environmental noise level caused by all noise sources in the area, both near and far, including all forms of traffic, industry, lawnmowers, wind in foliage, insects, animals, etc. Usually assessed as an energy average over a set time period 'T' (LAeq,T).

AUDIBLE

Audible refers to a sound that can be heard. There are a range of audibility grades, varying from "barely audible", "just audible" to "clearly audible" and "prominent".

BACKGROUND NOISE LEVEL

Total silence does not exist in the natural or built-environments, only varying degrees of noise. The Background Noise Level is the minimum repeatable level of noise measured in the absence of the noise under investigation and any other short-term noises such as those caused by all forms of traffic, industry, lawnmowers, wind in foliage, insects, animals, etc. It is quantified by the noise level that is exceeded for 90 % of the measurement period 'T' (LA90,T). Background Noise Levels are often determined for the day, evening and night time periods where relevant. This is done by statistically analysing the range of time period (typically 15 minute) measurements over multiple days (often 7

days). For a 15-minute measurement period the Background Noise Level is set at the quietest level that occurs at 1.5 minutes.

'C' FREQUENCY WEIGHTING

The 'C' frequency weighting approximates the 100 phon equal loudness contour. The human ear frequency response is more linear at high sound levels and the 100 phon equal loudness contour attempts to represent this at various frequencies at sound levels of approximately 100 dB.

DECIBEL

The decibel (dB) is a logarithmic scale that allows a wide range of values to be compressed into a more comprehensible range, typically 0 dB to 120 dB. The decibel is ten times the logarithm of the ratio of any two quantities that relate to the flow of energy (i.e. power). When used in acoustics it is the ratio of the square of the sound pressure level to a reference sound pressure level, the ratio of the sound power level to a reference sound power level, or the ratio of the sound intensity level to a reference sound intensity level. See also Sound Pressure Level and Sound Power Level. Noise levels in decibels cannot be added arithmetically since they are logarithmic numbers. If one machine is generating a noise level of 50 dB, and another similar machine is placed beside it, the level will increase to 53 dB (from $10 \log_{10}(10^{(50/10)} + 10^{(50/10)})$) and not 100 dB. In theory, ten similar machines placed side by side will increase the sound level by 10 dB, and one hundred machines increase the sound level by 20 dB. The human ear has a vast sound-sensitivity range of over a thousand billion to one, so the logarithmic decibel scale is useful for acoustical assessments.

dB(A) – See 'A' frequency weighting

dB(C) – See 'C' frequency weighting

EQUIVALENT CONTINUOUS SOUND LEVEL, LAeq

Many sounds, such as road traffic noise or construction noise, vary repeatedly in level over a period of time. More sophisticated sound level meters have an integrating/averaging electronic device inbuilt, which will display the energy time-average (equivalent continuous sound level - LAeq) of the 'A' frequency weighted sound pressure level. Because the decibel scale is a logarithmic ratio, the higher noise levels have far more sound energy, and therefore the LAeq level tends to indicate an average which is strongly influenced by short-term, high level noise events. Many studies show that

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human reaction to level-varying sounds tends to relate closer to the LAeq noise level than any other descriptor.

'F' (FAST) TIME WEIGHTING

Sound level meter design-goal time constant which is 0.125 seconds.

FREE FIELD

In acoustics a free field is a measurement area not subject to significant reflection of acoustical energy. A free field measurement is typically not closer than 3.5 metres to any large flat object (other than the ground) such as a fence or wall or inside an anechoic chamber.

FREQUENCY

The number of oscillations or cycles of a wave motion per unit time, the SI unit is the hertz (Hz). 1 Hz is equivalent to one cycle per second. 1000 Hz is 1 kHz.

LOUDNESS

The volume to which a sound is audible to a listener is a subjective term referred to as loudness. Humans generally perceive an approximate doubling of loudness when the sound level increases by about 10 dB and an approximate halving of loudness when the sound level decreases by about 10 dB.

MAXIMUM NOISE LEVEL, LAFmax

The root-mean-square (rms) maximum sound pressure level measured with sound level meter using the 'A' frequency weighting and the 'F' (Fast) time weighting. Often used for noise assessments other than aircraft.

MAXIMUM NOISE LEVEL, LASmax

The root-mean-square (rms) maximum sound pressure level measured with sound level meter using the 'A' frequency weighting and the 'S' (Slow) time weighting. Often used for aircraft noise assessments.

NOISE

Noise is unwanted, harmful or inharmonious (discordant) sound. Sound is wave motion within matter, be it gaseous, liquid or solid. Noise usually includes vibration as well as sound.

OFFENSIVE NOISE

Reference: Dictionary of the NSW Protection of the Environment Operations Act 1997).

"Offensive Noise means noise:

(a) that, by reason of its level, nature, character or quality, or the time at which it is made, or any other circumstances:

(i) is harmful to (or likely to be harmful to) a person who is outside the premise from which it is emitted, or

(ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or

(b) that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances prescribed by the regulations."

'S' (SLOW) TIME WEIGHTING

Sound level meter design-goal time constant which is 1 second.

SOUND ATTENUATION

A reduction of sound due to distance, enclosure or some other device. If an enclosure is placed around a machine, or an attenuator (muffler or silencer) is fitted to a duct, the noise emission is reduced or attenuated. An enclosure that attenuates the noise level by 20 dB reduces the sound energy by one hundred times.

SOUND EXPOSURE LEVEL (LAE)

Integration (summation) rather than an average of the sound energy over a set time period. Use to assess single noise events such as truck or train pass by or aircraft flyovers. The sound exposure level is related to the energy average (LAeq,T) by the formula $LA_{eq,T} = LAE - 10 \log_{10} T$. The abbreviation (SEL) is sometimes inconsistently used in place of the symbol (LAE).

SOUND PRESSURE

The rms sound pressure measured in pascals (Pa). A pascal is a unit equivalent to a newton per square metre (N/m²).

SOUND PRESSURE LEVEL, Lp

The level of sound measured on a sound level meter and expressed in decibels (dB). Where $L_p = 10 \log_{10}(P_a/P_o)^2$ dB (or $20 \log_{10}(P_a/P_o)$ dB) where P_a is the rms sound pressure in Pascal and P_o is a reference sound pressure conventionally chosen is 20 μ Pa (20×10^{-6} Pa) for airborne sound. L_p varies with distance from a noise source.

SOUND POWER

The rms sound power measured in watts (W). The watt is a unit defined as one joule per second. A

measures the rate of energy flow, conversion or transfer.

SOUND POWER LEVEL, L_w

The sound power level of a noise source is the inherent noise of the device. Therefore, sound power level does not vary with distance from the noise source or with a different acoustic environment. $L_w = L_p + 10 \log_{10} 'a'$ dB,

re: 1pW, (10^{-12} watts) where 'a' is the measurement noise-emission area (m^2) in a free field.

SOUND TRANSMISSION LOSS

The amount in decibels by which a random sound is reduced as it passes through a sound barrier. A method for the measurement of airborne Sound Transmission Loss of a building partition is given in Australian Standard AS1191 – 2002.

STATISTICAL NOISE LEVELS, L_n

Noise which varies in level over a specific period of time 'T' (standard measurement times are often 15-minute periods) may be quantified in terms of various statistical descriptors with some common examples:

The noise level, in decibels, exceeded for 1% of the measurement time period, when 'A' frequency weighted and 'F' time weighted is reference to as $L_{AF1,T}$. This may be used for describing short-term noise levels such as could cause sleep arousal during the night.

The noise level, in decibels, exceeded for 10% of the measurement time period, when 'A' frequency

weighted and 'F' time weighted is reference to as $L_{AF10,T}$. In most countries the $L_{AF10,T}$ is measured over periods of 15 minutes, and is used to describe the average maximum noise level.

The noise level, in decibels, exceeded for 90% of the measurement time period, when 'A' frequency weighted and 'F' time weighted is reference to as $L_{AF90,T}$. In most countries the $L_{AF90,T}$ is measured over periods of 15 minutes, and is used to describe the average minimum or background noise level.

WEIGHTED SOUND REDUCTION INDEX, R_w

This is a single number rating of the airborne sound insulation of a wall, partition or ceiling. The sound reduction is normally measured over a frequency range of 100 Hz to 3.150 kHz and averaged in accordance with ISO standard weighting curves (Refer AS/NZS 1276.1:1999). Internal partition wall R_w+C ratings are frequency weighted to simulate insulation from human voice noise. The R_w+C is similar in value to the STC rating value. External walls, doors and windows may be R_w+C_{tr} rated to simulate insulation from road traffic noise. The spectrum adaptation term C_{tr} adjustment factor takes account of low frequency noise. The weighted sound reduction index is normally similar or slightly lower number than the STC rating value.

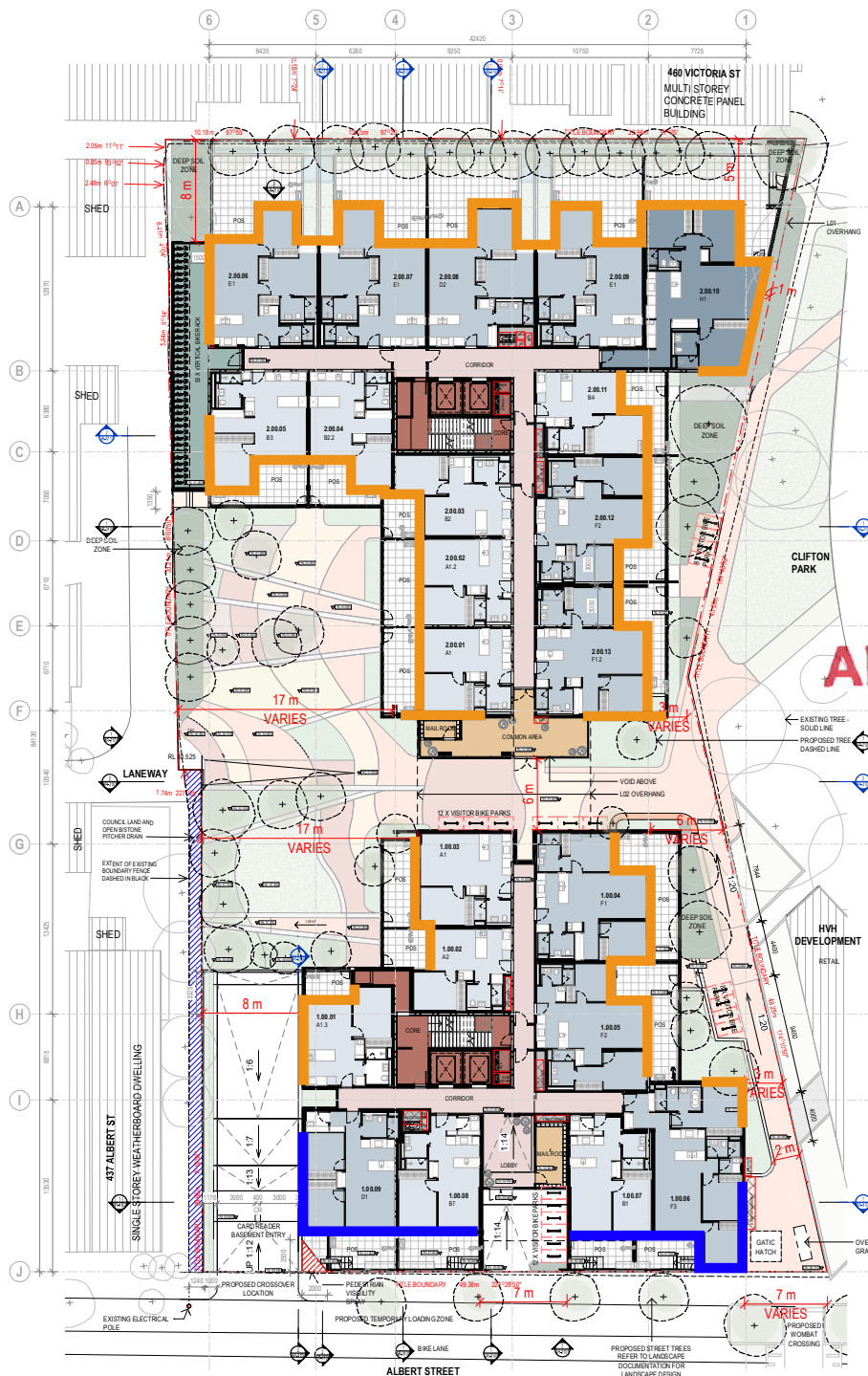
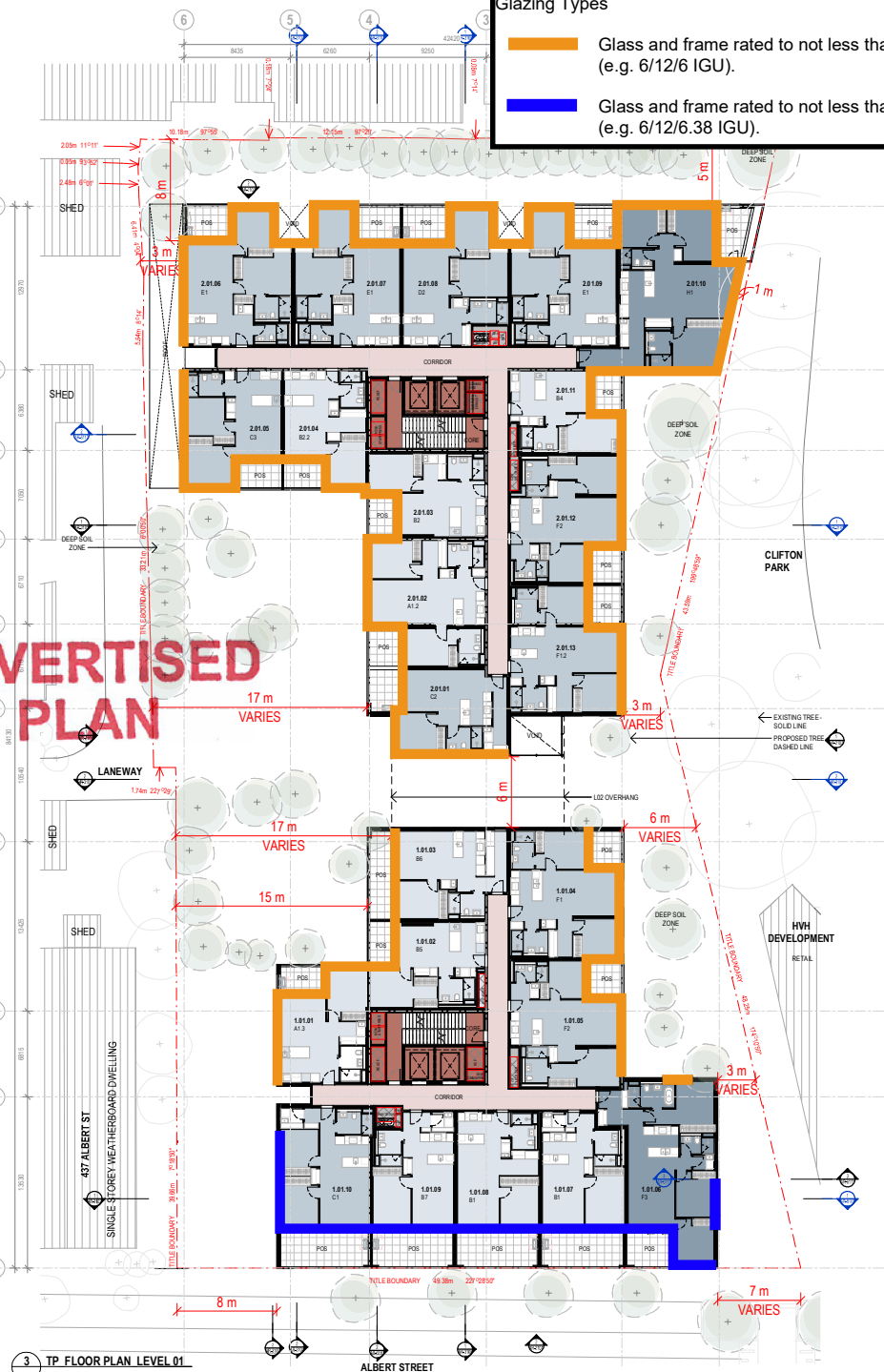
'Z' FREQUENCY WEIGHTING

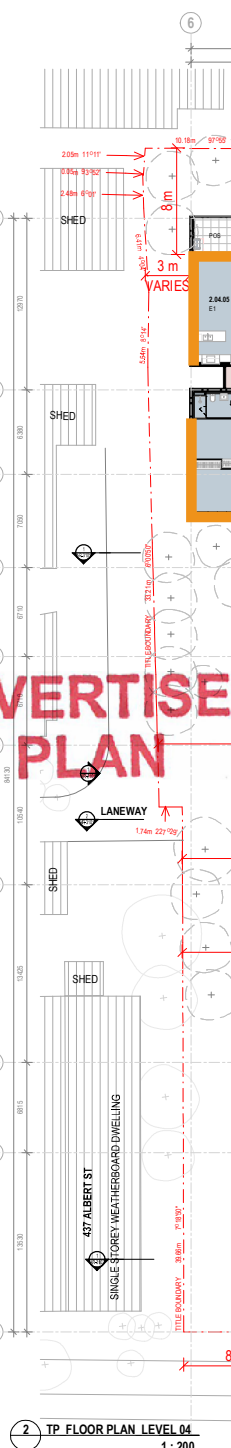
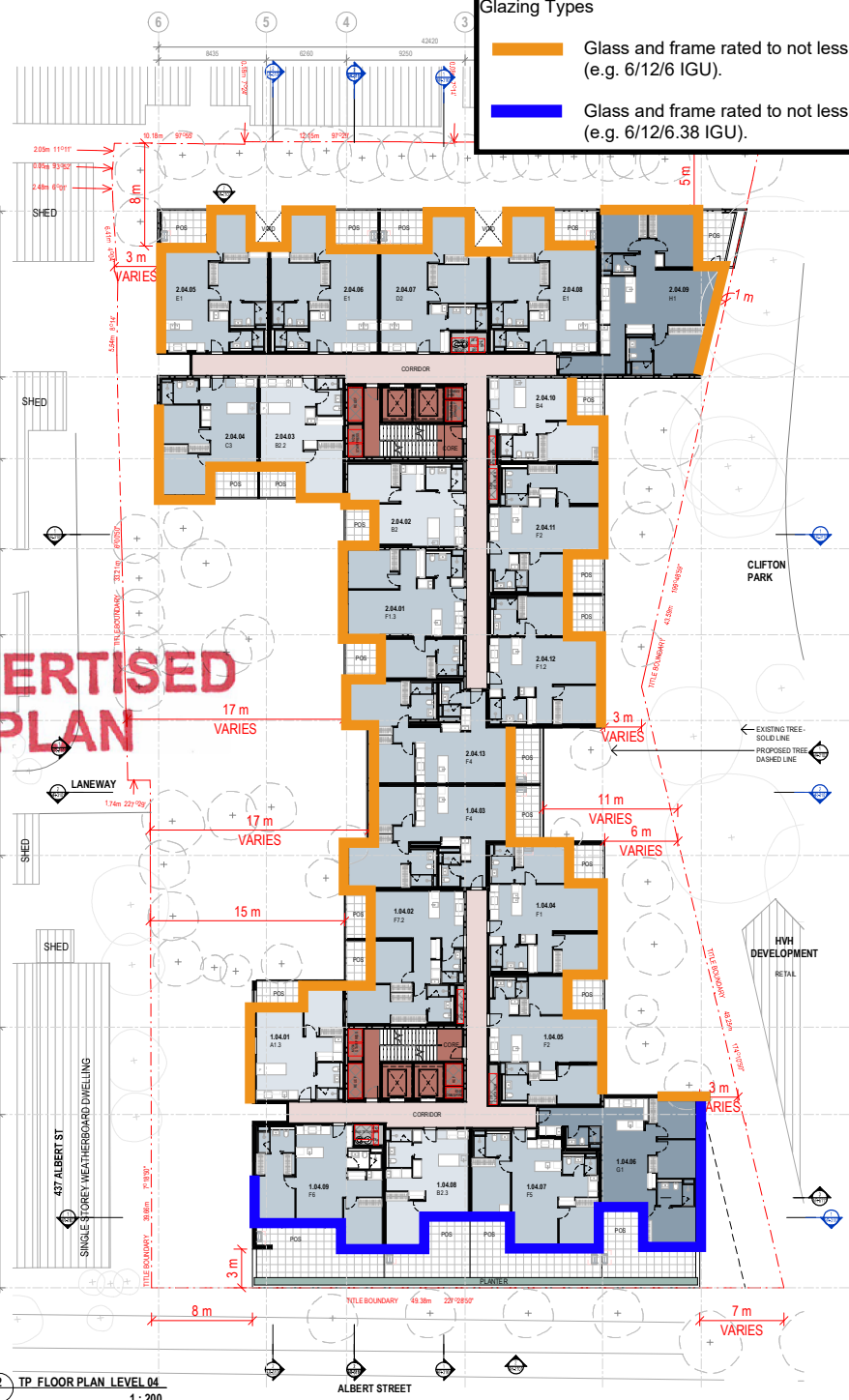
The 'Z' (Zero) frequency weighting is 0 dB within the nominal 1/3 octave band frequency range centred on 10 Hz to 20 kHz. This is within the tolerance limits given in AS IEC 61672.1-2004: 'Electroacoustics – Sound level meters – Specifications'.

**ADVERTISED
PLAN**

Appendix B: Glazing Markup

**ADVERTISED
PLAN**



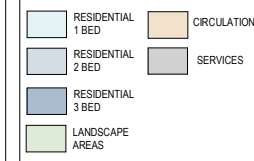


Glazing Types

- | | |
|---|--|
|  | Glass and frame rated to not less than Rw 30 (e.g. 6/12/6 IGU). |
|  | Glass and frame rated to not less than Rw 34 (e.g. 6/12/6.38 IGU). |

READ IN CONJUNCTION WITH ALL RELEVANT
PLANS AND DRAWINGS.
THE WORK IS VESTED IN THE ARCHITECTS.
ALL DIMENSIONS ARE IN METRES.
UNLESS OTHERWISE SPECIFIED.
CHECK AND VERIFY ALL DIMENSIONS
BEFORE WORK.

PROGRAM



REV	DATE	DESCRIPTION
0	15.12.2025	FOR INFORMATION
1	18.12.2025	FOR INFORMATION
2	16.01.2026	FOR INFORMATION
3	21.01.2026	FOR INFORMATION
4	28.01.2026	FOR INFORMATION
5	04.02.2026	FOR INFORMATION
6	11.02.2026	FOR INFORMATION
7	18.02.2026	DRAFT TOWN PLANNING
8	25.02.2026	FOR INFORMATION
9	27.02.2026	80% TOWN PLANNING
10	02.03.2026	80% TOWN PLANNING
11		STRUCTURE-INTERNAL REVIEW
		INTERNAL REVIEW
12	05.06.2026	100% DTP SUBMISSION

CLIENT
STOCKLAND

PROJECT
429 ALBERT ST
429 ALBERT STREET BRUNSWICK
3056

DRAWING TITLE
PROPOSED FLOOR PLAN_LEVEL
02-04

CHECKED	APPROVED	
ML	AC	

SCALE
1 : 200
@A1

A horizontal scale bar with markings at 0, 1, 2, 4, 6, and 10m. The segments between 0-1, 1-2, 2-4, and 4-6 are of equal length, while the segment from 6 to 10 is longer.

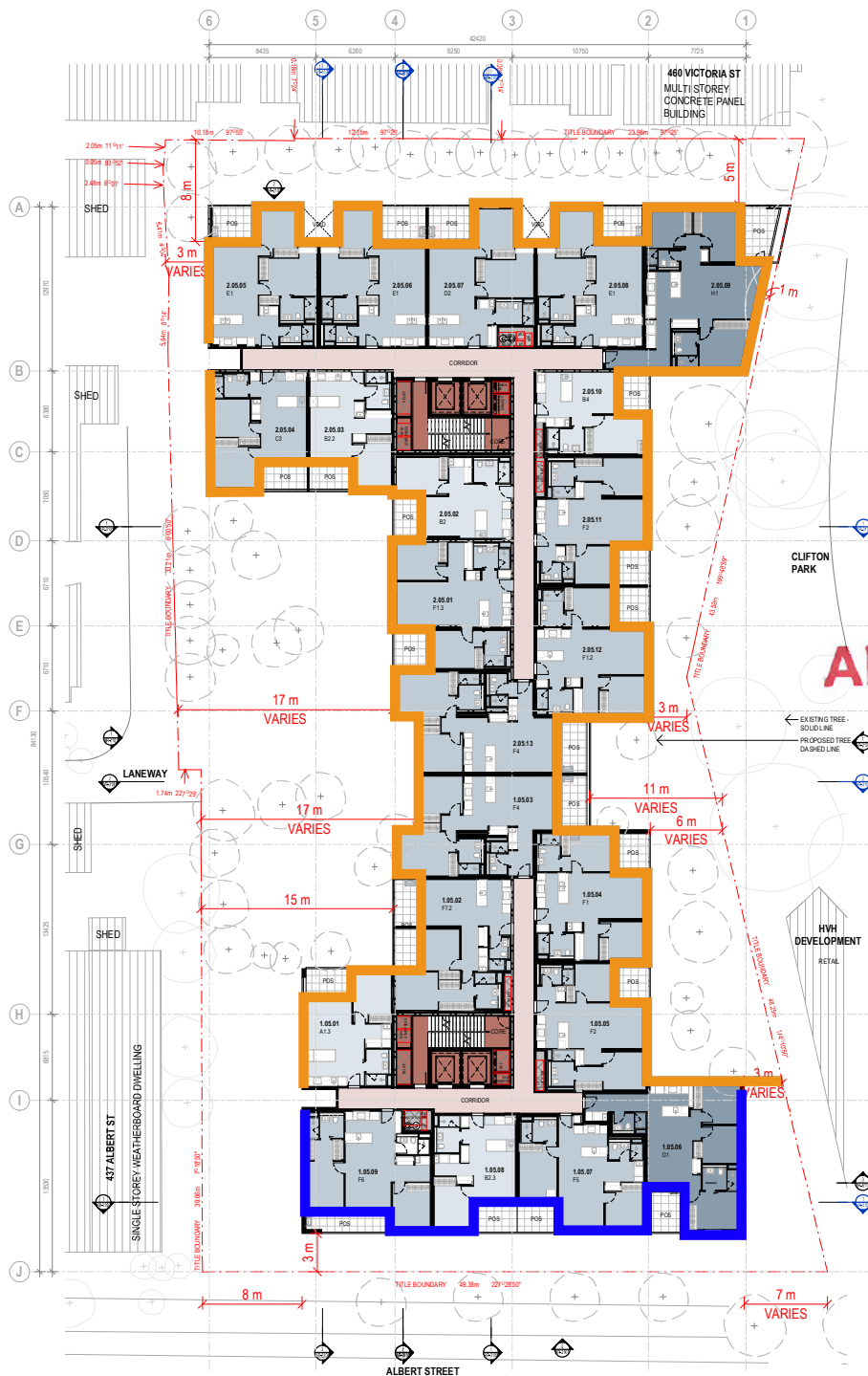
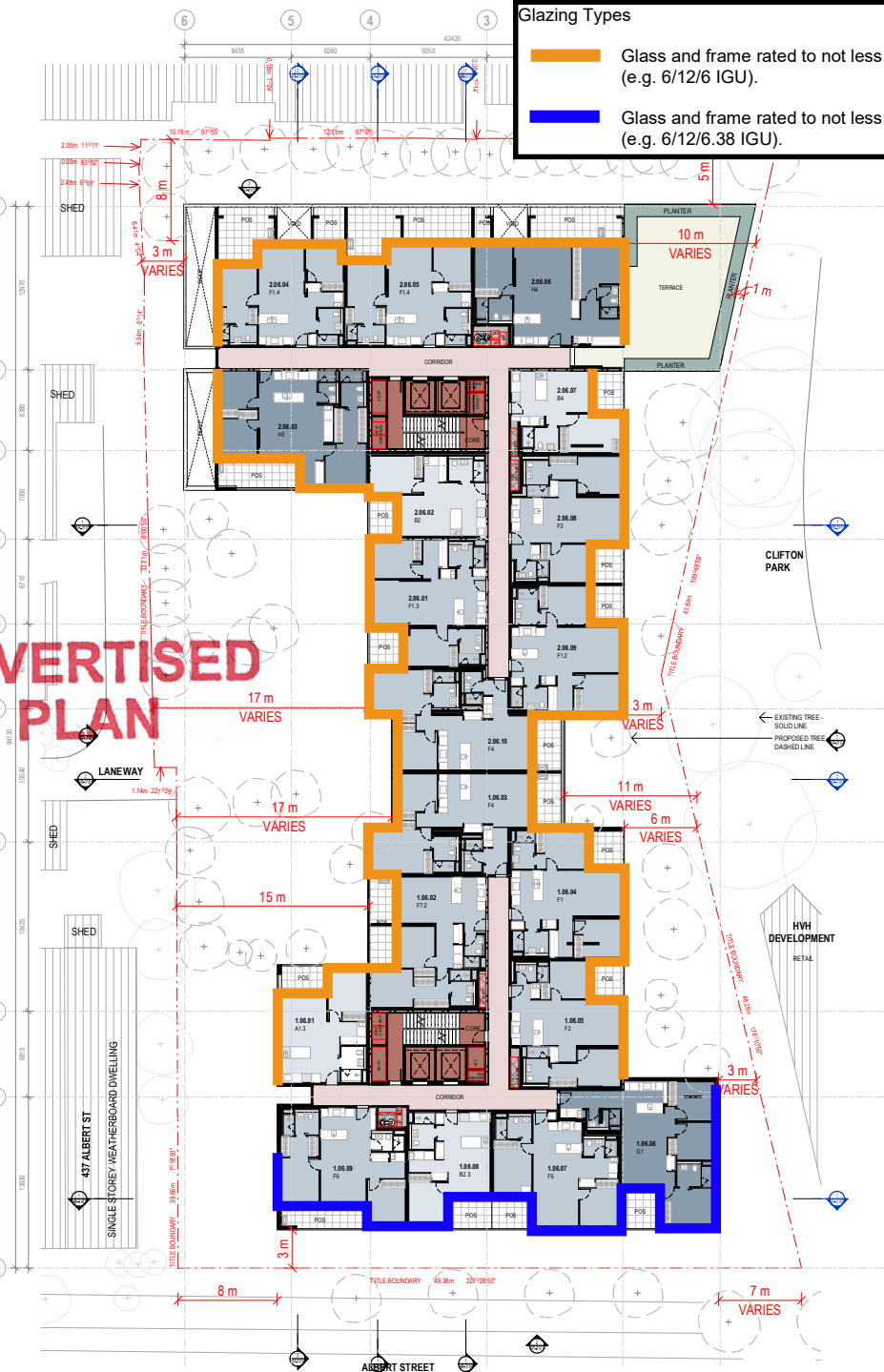
STATUS	PROJECT
TOWN PLANNING	25-01

DRAWING NUMBER	REVISION
AR-1103	12



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Glazing Types

- Glass and frame rated to not less than Rw 30 (e.g. 6/12/6 IGU).
- Glass and frame rated to not less than Rw 34 (e.g. 6/12/6.38 IGU).

LEGEND

- RESIDENTIAL 1 BED
- RESIDENTIAL 2 BED
- RESIDENTIAL 3 BED
- LANDSCAPE AREAS
- CIRCULATION
- SERVICES

REV	DATE	DESCRIPTION
1	15.12.2023	FOR INFORMATION
2	15.12.2023	FOR INFORMATION
3	21.01.2024	FOR INFORMATION
4	28.05.2024	FOR INFORMATION
5	04.02.2024	FOR INFORMATION
6	11.02.2024	FOR INFORMATION
7	15.02.2024	DRAFT TOWN PLANNING
8	25.02.2024	FOR INFORMATION
9	27.02.2024	80% TOWN PLANNING
10	02.03.2024	80% TOWN PLANNING
11	02.03.2024	STRUCTURE INTERNAL REVIEW
12	05.06.2024	100% DTP SUBMISSION

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PROJECT
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429 ALBERT STREET BRUNSWICK
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DRAWING TITLE
PROPOSED FLOOR PLAN LEVEL
05-06

CHECKED ML **APPROVED** AC

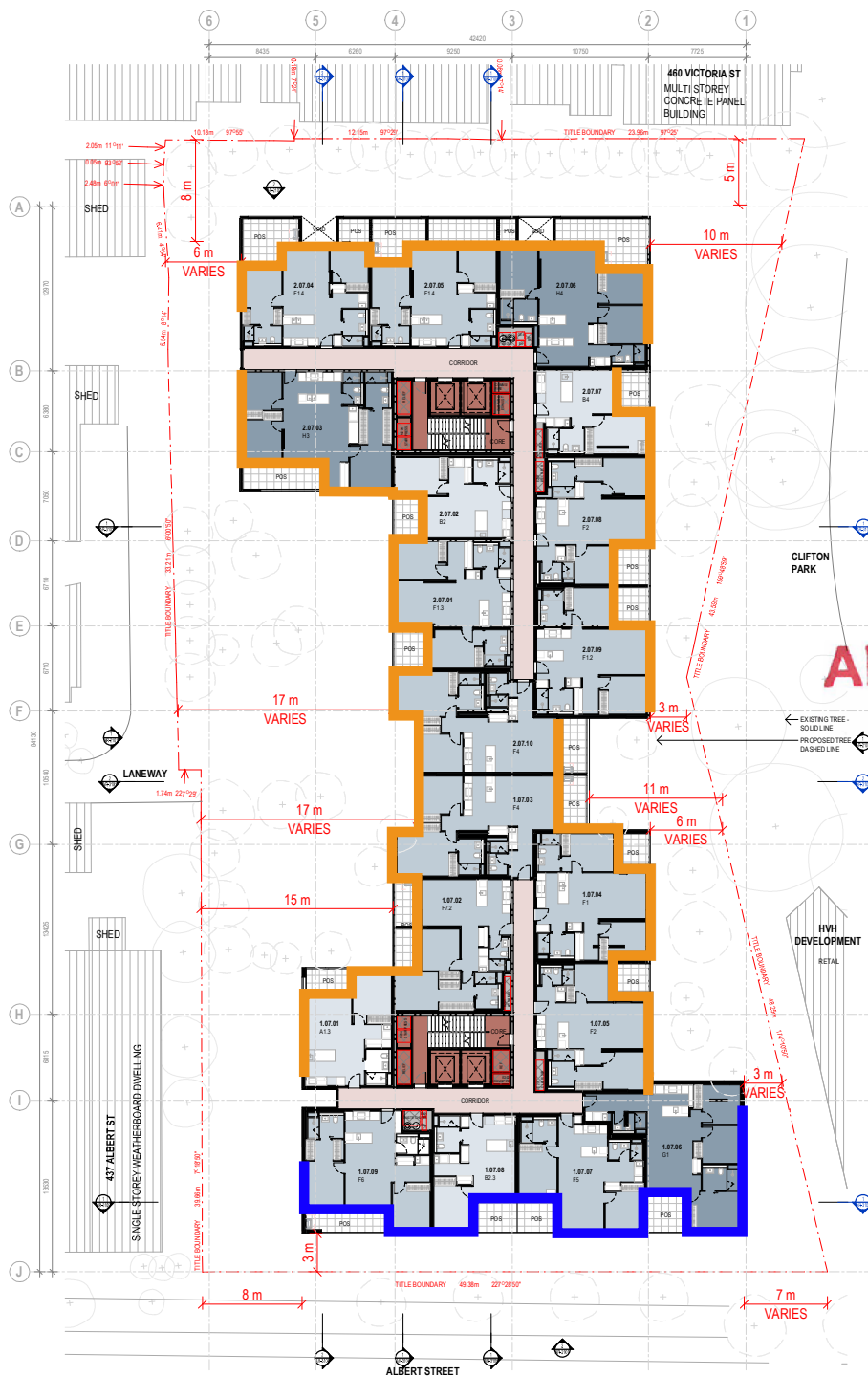
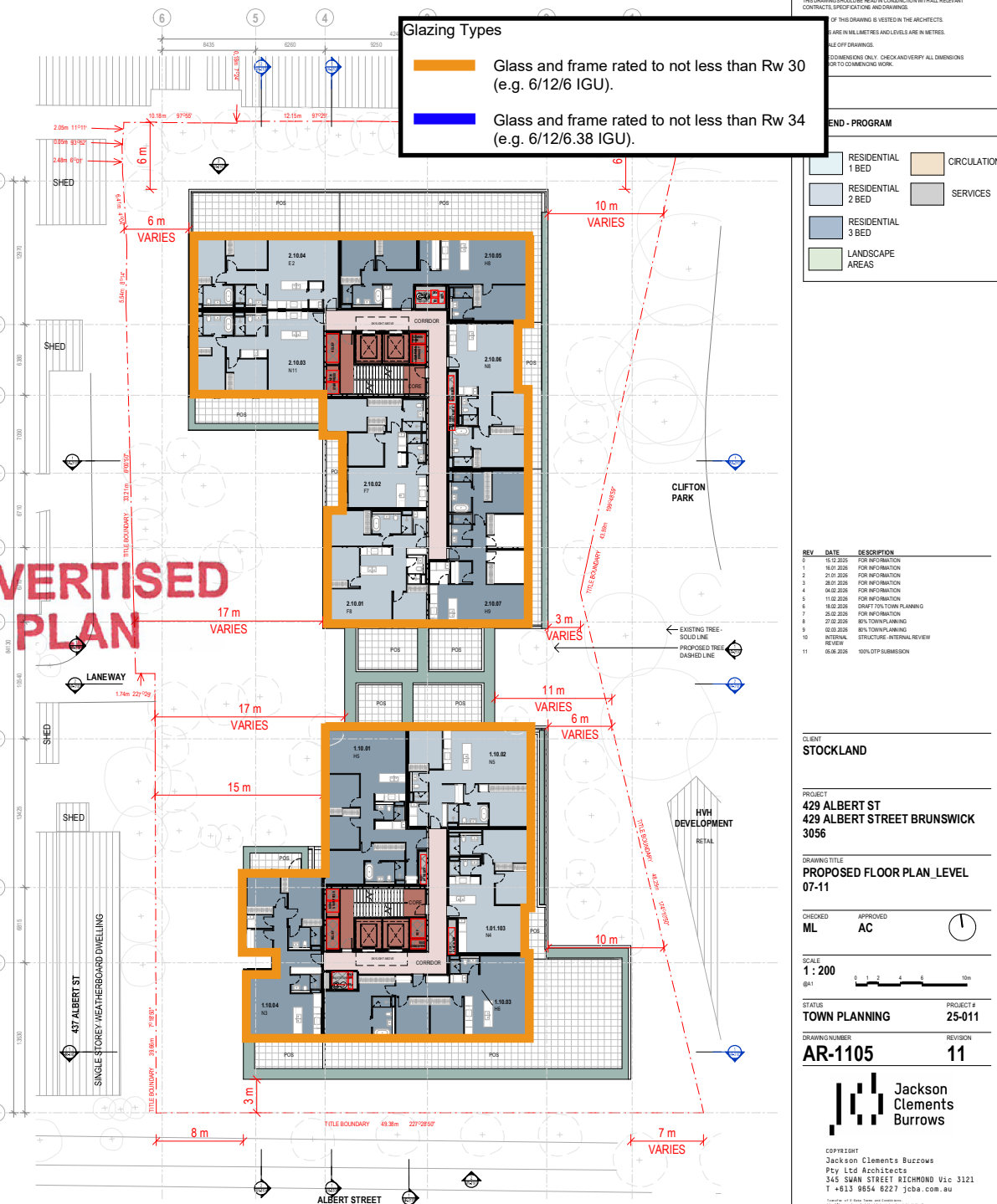
SCALE
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TOWN PLANNING PROJECT # 25-011

DRAWING NUMBER AR-1104 **REVISION** 12

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ALL DIMENSIONS ONLY. CHECK AND VERIFY ALL DIMENSIONS PRIOR TO COMMENCING WORK.

END - PROGRAM

RESIDENTIAL 1 BED	CIRCULATION
RESIDENTIAL 2 BED	SERVICES
RESIDENTIAL 3 BED	
LANDSCAPE AREAS	

REV	DATE	DESCRIPTION
1	15.12.2023	FOR INFORMATION
2	16.01.2024	FOR INFORMATION
3	27.01.2024	FOR INFORMATION
4	26.01.2024	FOR INFORMATION
5	04.02.2024	FOR INFORMATION
6	11.02.2024	FOR INFORMATION
7	16.02.2024	DRAFT TOWN PLANNING
8	25.02.2024	FOR INFORMATION
9	27.02.2024	8% TOWN PLANNING
10	02.03.2024	8% TOWN PLANNING
11	05.03.2024	100% DTP SUBMISSION

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PROJECT
**429 ALBERT ST
429 ALBERT STREET BRUNSWICK
3056**

DRAWING TITLE
**PROPOSED FLOOR PLAN LEVEL
07-11**

CHECKED
ML

APPROVED
AC

SCALE
1:200

STATUS
TOWN PLANNING

PROJECT #
25-011

DRAWING NUMBER
AR-1105

REVISION
11

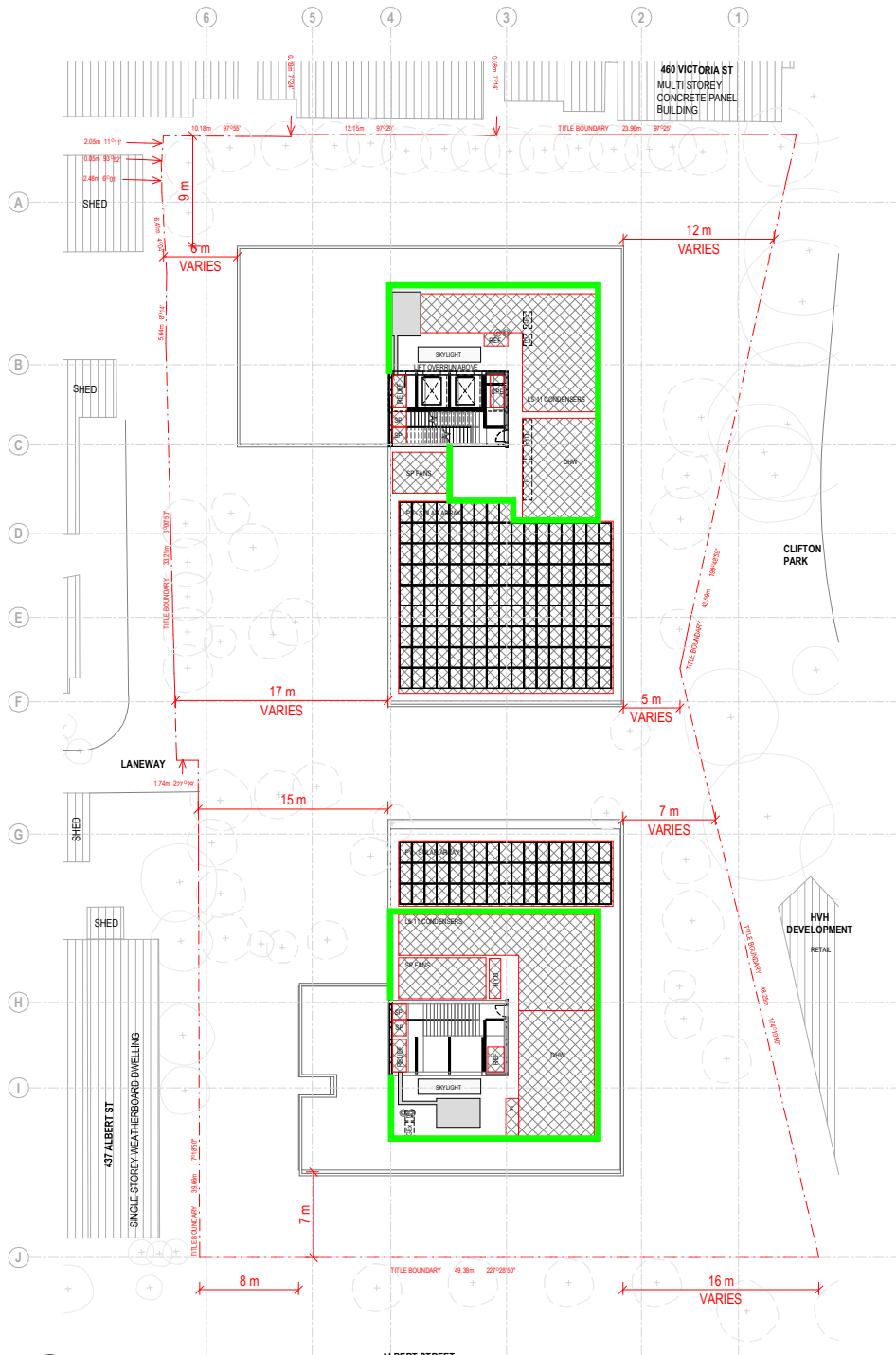
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Appendix C: Plant Screen Markup

**ADVERTISED
PLAN**



Plant Screen

2m high plant screen as specified in Section 5.3 of the Acoustic Report

ADVERTISED PLAN

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USE FIGURES/DIMENSIONS ONLY. CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCED WORK.

REV	DATE	DESCRIPTION
1	15.12.2023	FOR INFORMATION
2	21.01.2024	FOR INFORMATION
3	20.03.2024	FOR INFORMATION
4	04.02.2024	FOR INFORMATION
5	11.02.2024	FOR INFORMATION
6	18.02.2024	DRAFT TOWN PLANNING
7	25.02.2024	FOR INFORMATION
8	27.02.2024	80% TOWN PLANNING
9	02.03.2024	80% TOWN PLANNING
10	05.03.2024	100% DTP SUBMISSION

CLIENT
STOCKLAND

PROJECT
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429 ALBERT STREET BRUNSWICK
3056**

DRAWING TITLE
PROPOSED FLOOR PLAN ROOF

CHECKED
ML

APPROVED
AC

SCALE
1:200

0 1 2 3 4 5 6 7 8 9 10m

STATUS
TOWN PLANNING

PROJECT #
25-011

DRAWING NUMBER
AR-1106

REVISION
9

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