NOISE MEASUREMENT SERVICES

Noise Assessment Report

Proposed Extensions to Mixed-Use Development
215 Lancaster Road
Ascot QLD 4007
(Lot 1 on RP130513)

Report No 8227R1 ***19th May 2026***

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Revision No	Issue Date	Revision Description	Written By	Checked By
0	14/05/2026	Report	GR	MT
1	19/05/2026	New development plans	GR	

Copy No(s)	Rev No	Destination
1 pdf	1	MB Planning
2	1	Noise Measurement Services

REPORT FOR **MB Planning** *on behalf of* **Kelnic Industries Pty Ltd Atf Kelnic Property Trust and Nictay Investments Pty Ltd Atf Nictay Property Trust**

CONTACT **Brock Acworth**

Signed

Max Thorne
Director - NMS

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Executive Summary

This Report is in response to a request from MB Planning for a noise impact assessment report on proposed extensions to the mixed use development at 215 Lancaster Road, Ascot (Lot 1 on RP130513). The site and neighbouring properties are within a CR2 Character Housing Zone. The proposal is to renovate residential areas on the First Floor; and construct new commercial facilities on the Ground Floor. The purpose of this Report is to assess noise impacts from the proposed new commercial activities onto nearby noise sensitive uses. The following Standards and policy documents are referenced:

- *Brisbane City Council City Plan 2014*
    - Small-Scale Non-Residential Uses Code
    - Multiple Dwelling Code
    - Noise Impact Assessment Planning Scheme Policy
- *Environmental Protection (Noise) Policy 2019*
- *Environmental Protection Act 1994*
- Australian Standard *AS1055:2018 – Acoustics: Description and measurement of environmental noise*

Conclusions

It is concluded that –

- Subject to the considerations as presented in this Report, it is then opinion of this consultancy that the proposed development can meet the requirements of the *Brisbane City Plan 2014*, and be otherwise compliant with relevant regulatory requirements.
- Cumulative noise emissions from the proposed new commercial activities are forecast to meet criteria at all receivers.
- The residential component can appropriately mitigate commercial noise immissions through construction in accordance with **AO21** of the Multiple Dwelling Code.
- The precise model(s) and installation of mechanical plant is yet to be determined. Detailed plant noise assessment can be conducted – if required – at the Building Approval stage once specifications have been finalised. The relative criterion is nonetheless considered readily achievable through appropriate plant selection and siting.

Recommendations

It is recommended that –

- The proposed extensions be approved for operations between 7am and 10pm, as compliant with the acoustic requirements of the *Brisbane City Plan 2014*.
- Doors to the new commercial tenancy remain generally closed except for ingress/egress.
- Ambient music (if any) be limited to background levels that do not interfere with normal conversation.
- Renovations to the residential component provide glazing that achieves acoustic performance of not less than:
    - Rw 35, where total area of glazing on the façade is greater than 1.8m^2
    - Rw 32, where total area of glazing on the façade is less than or equal to 1.8m^2
- External air conditioning plant (if any) be selected and installed to not exceed 38 dB(A) at nearby residences.

1. Introduction

This Report is in response to a request from MB Planning for a noise impact assessment report on proposed extensions to the mixed use development at 215 Lancaster Road, Ascot (Lot 1 on RP130513). The site and neighbouring properties are within a CR2 Character Housing Zone. The proposal is to renovate residential areas on the First Floor; and construct new commercial facilities on the Ground Floor. The purpose of this Report is to assess noise impacts from the proposed new commercial activities onto nearby noise sensitive uses. The following Standards and policy documents are referenced:

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- *Environmental Protection Act 1994*
- Australian Standard *AS1055:2018 – Acoustics: Description and measurement of environmental noise*

Proposed hours of operation for the commercial component are 7am to 10pm, 7 days a week. Development plans are presented in **Appendix A**, while a glossary of terms and definitions is presented in **Appendix B**

1.1 Development Site and Locale

Plate 1: Showing the development site and locale (source: Google)

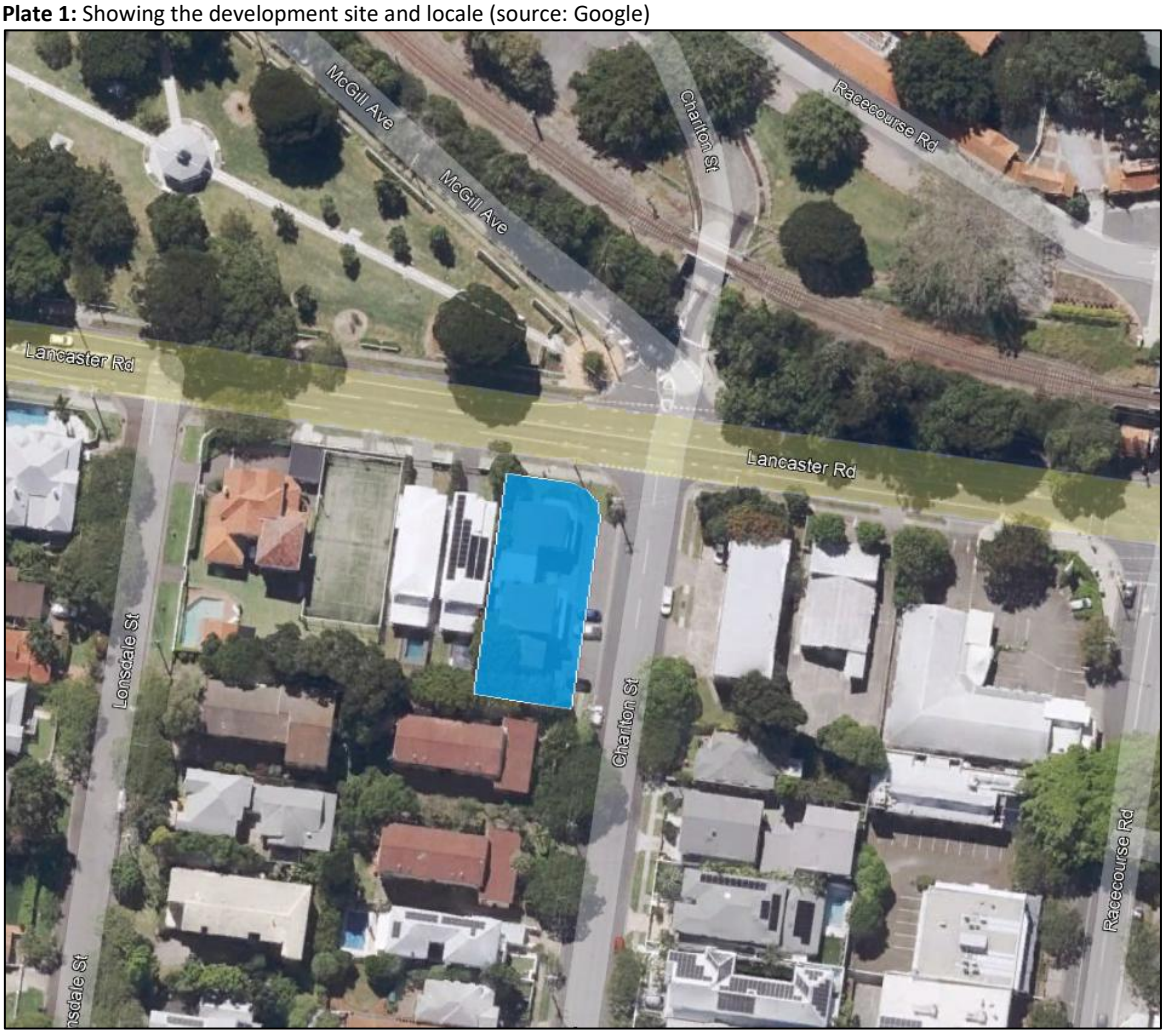


Plate 2: Showing zoning in the locale (source: Brisbane City Council)

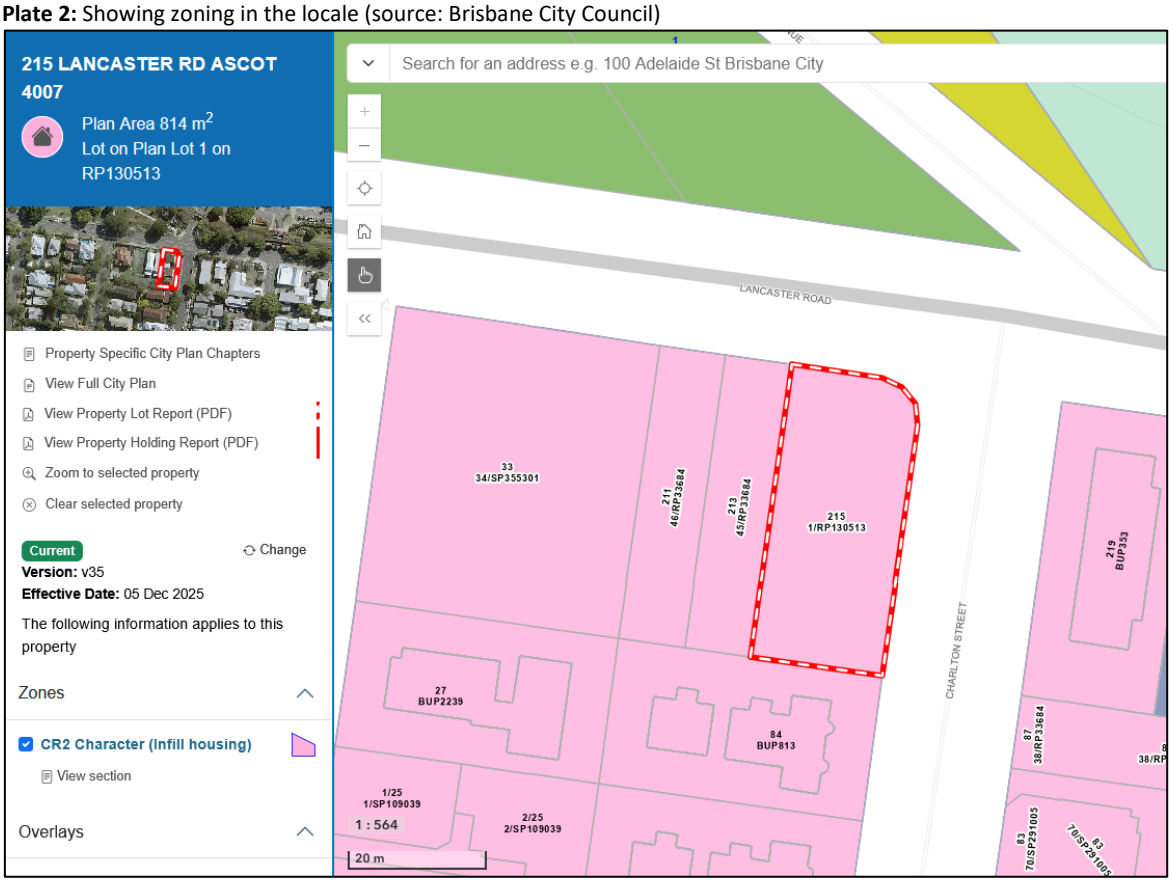
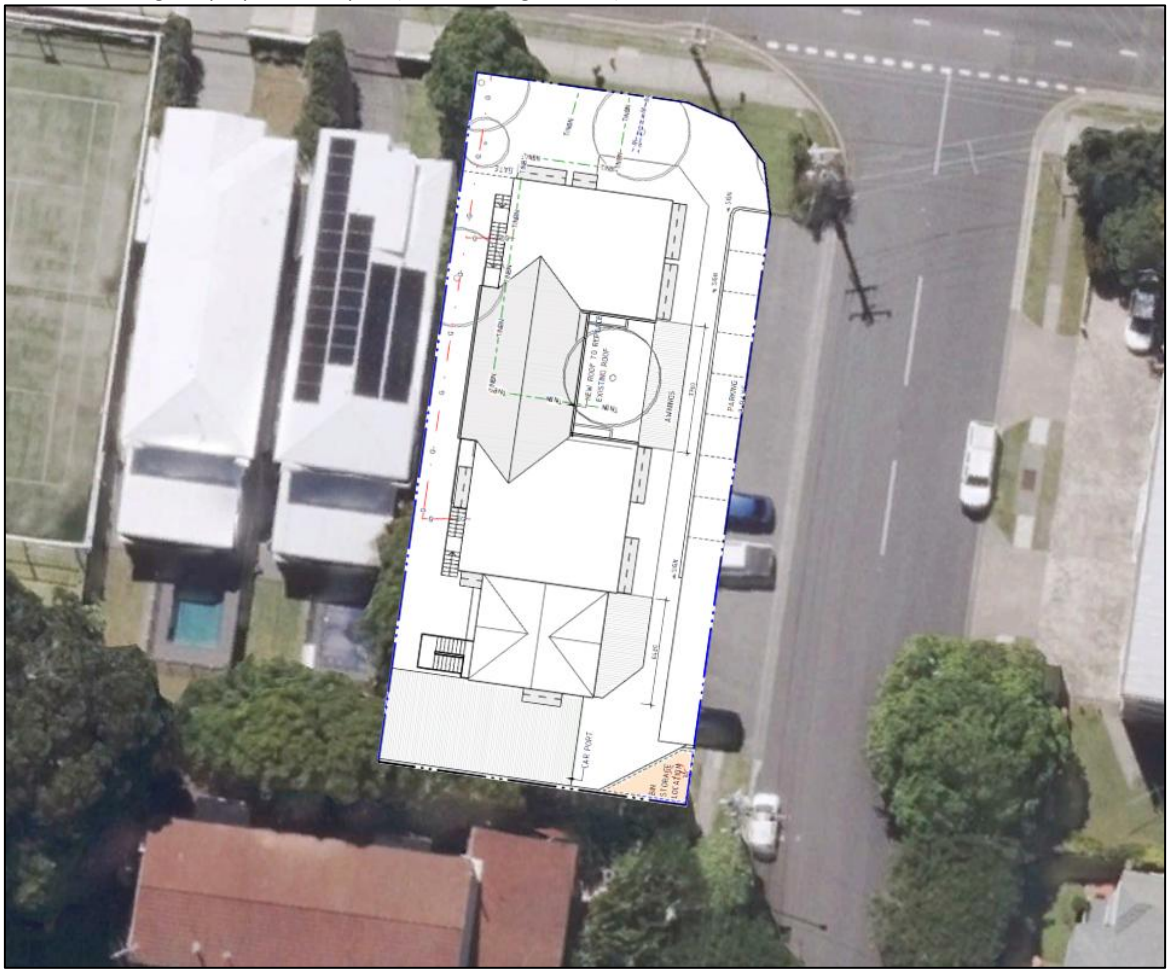


Plate 3: Showing the proposed site plan (source: Google; client)



1.2 Sensitive Receivers

The development site is located within a predominantly residential area, and nearby residences are identified as the most affected noise sensitive uses. Three receiver locations – referred to as R1 to R3 in this Report – have been assessed, representing the most exposed façades of these residential uses. The locations of R1 to R3 are presented in **Plate 4** and **Table 1** below.

Plate 4: Showing sensitive receivers R1 to R3

Table 1: Showing sensitive receivers R1 to R3 by Universal Transverse Mercator (UTM)

Receiver	Address	Coordinates		Zone
		Easting	Northing	
R1	213 Lancaster Road	506351	6965782	CR2
R2	4/84 Charlton Street	506359	6965767	CR2
R3	6/219 Lancaster Road	506397	6965783	CR2

2. Measurement of Ambient Noise Levels

2.1 Ambient Noise Survey – Measurement Procedures

In order to assess the existing acoustic environment in the locale, an ambient noise survey was conducted on site. The environmental noise logger was installed at a location 3.5m from the western boundary, and 3.5m from the southern boundary. The microphone was at a height of 1.5m in a free-field environment. Ambient noise levels at this location are considered representative of the most affected residential interface. The measurement location is referred to as ML1 in this Report, and is presented in **Plate 5** and **Photo 1** below.

Plate 5: Showing measurement location ML1 (source: Google)

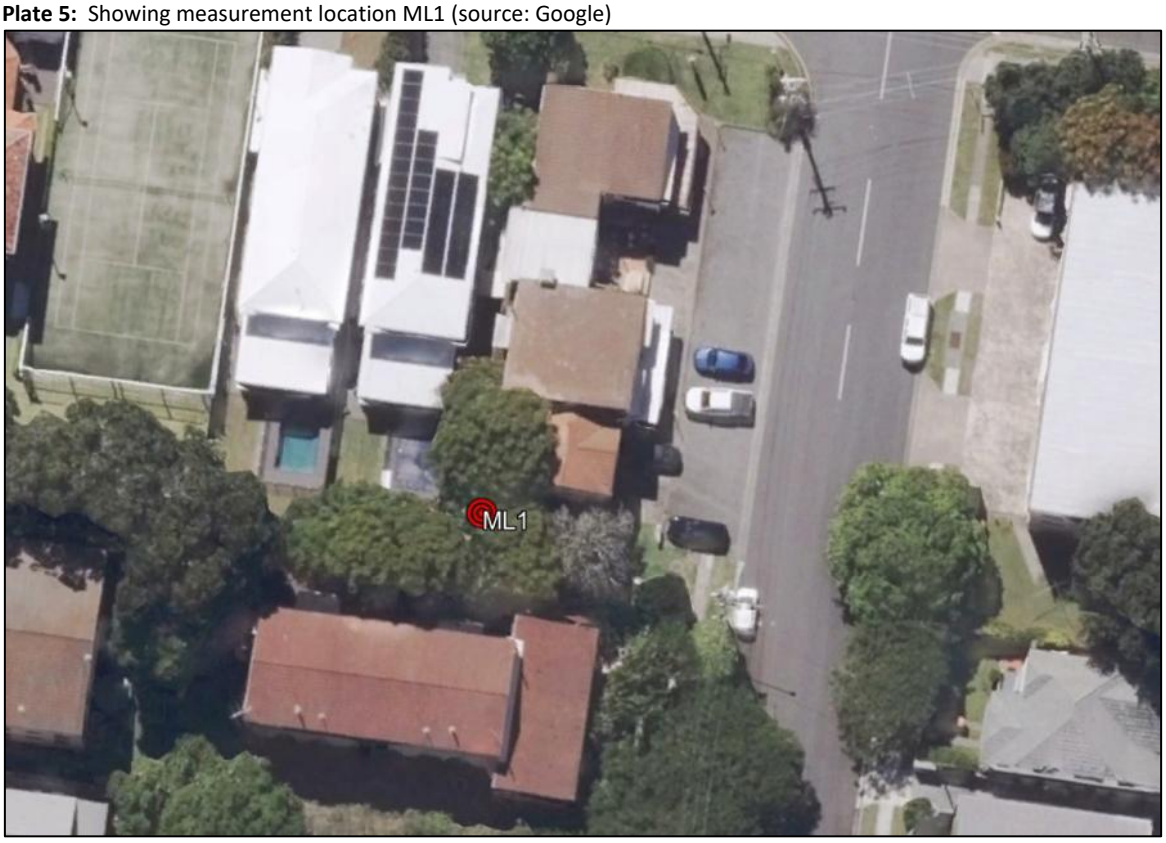


Photo 1: Showing measurement location ML1

The noise logger was field calibrated before and after each measurement session, and no significant drift was observed from the reference signal. All instrumentation used in this assessment holds a current calibration certificate from a certified NATA calibration laboratory. The following instrumentation was used:

- Rion NL21 Class 2 environmental noise logger
- Larson Davis CAL200 Class 1 acoustic calibrator

Ambient sound pressure levels were measured generally in accordance with Australian Standard *AS1055.2018 - Acoustics-Description and measurement of environmental noise*. Ambient noise levels were recorded at 15 minute intervals between the 3rd and the 8th of April 2026.

2.2 Ambient Noise Survey – Measurement Results

Table 2: Averaged measured noise levels at ML1, 3rd – 8th April 2026. Levels are in dB(A), free-field

Day	Date	Period	L_{01}	L_{10}	L_{90}	L_{eq}
Friday	3rd April	7:00am – 6:00pm	70	55	43	55
		6:00pm – 10:00pm	69	53	43	56
		10:00pm – 7:00am	58	44	37	47
Saturday	4th April	7:00am – 6:00pm	70	55	45	55
		6:00pm – 10:00pm	69	51	42	58
		10:00pm – 7:00am	62	43	37	47
Sunday	5th April	7:00am – 6:00pm	69	55	44	55
		6:00pm – 10:00pm	67	49	39	50
		10:00pm – 7:00am	59	43	37	48
Monday	6th April	7:00am – 6:00pm	69	54	43	54
		6:00pm – 10:00pm	68	49	40	50
		10:00pm – 7:00am	63	43	37	47
Tuesday	7th April	7:00am – 6:00pm	68	54	44	53
		6:00pm – 10:00pm	67	53	42	59
		10:00pm – 7:00am	62	44	37	48
Wednesday	8th April	7:00am – 6:00pm	68	55	45	55
		6:00pm – 10:00pm	68	54	44	60
		10:00pm – 7:00am	64	43	37	48
Arithmetic Average		**Day**	**69**	**55**	**44**	**54**
		Evening	**68**	**52**	**42**	**56**
		Night	**61**	**44**	**37**	**48**
Rating Background Levels		*Day*	-	-	*42*	-
		Evening	-	-	*39*	-
		Night	-	-	*35*	-

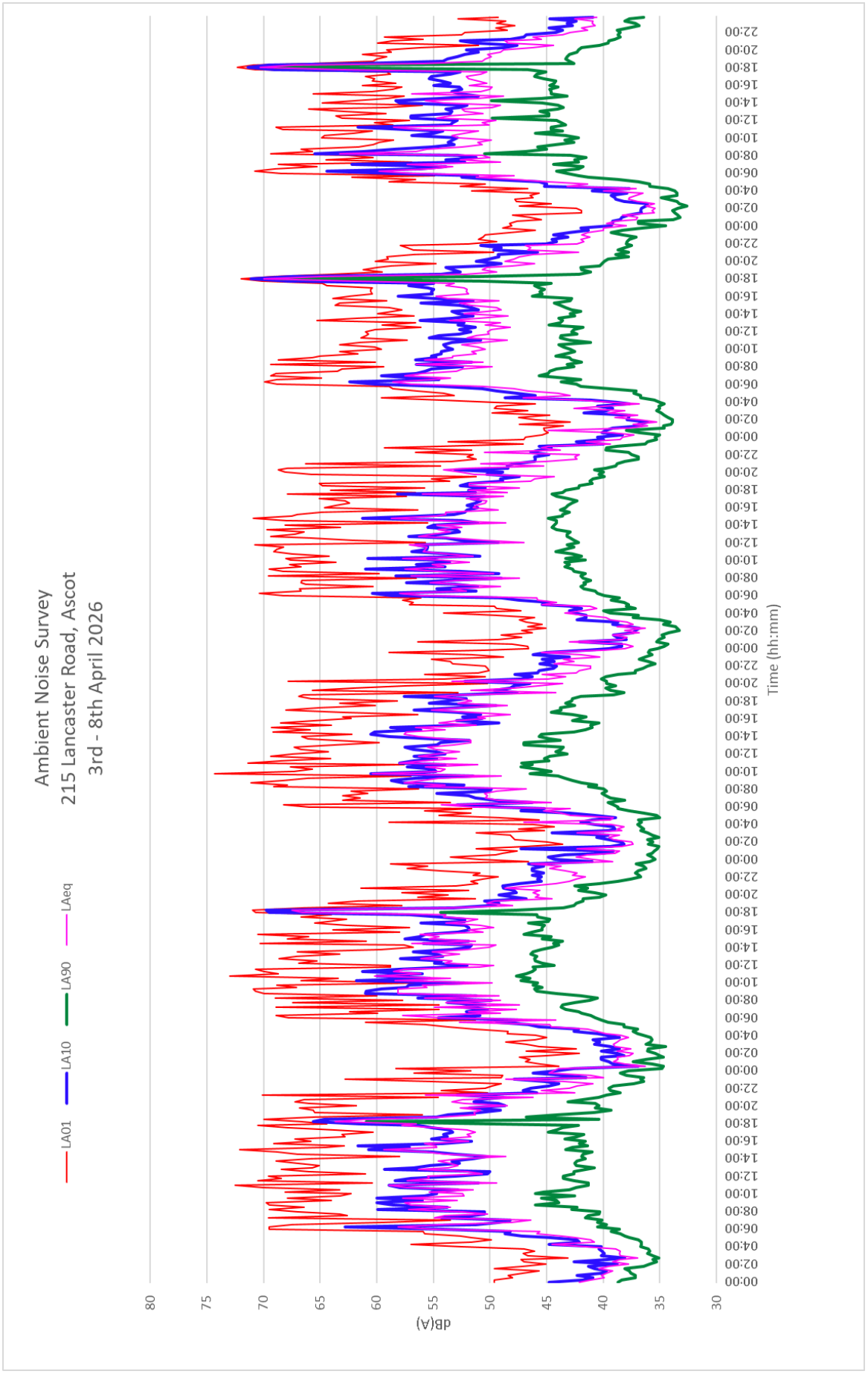


Figure 1: Ambient noise levels measured at ML1, 3rd – 8th April 2026. Levels are in dB(A) free-field

3. Noise Assessment Criteria

3.1 Brisbane City Council City Plan 2014

3.1.1 Small-Scale Non-Residential Uses Code

The *City Plan 2014* Small-Scale Non-Residential Uses Code (Part 9.3.23) provides guidance noise emission criteria to be achieved at sensitive uses. The relevant section of the Code is reproduced below.

Table 3: *Brisbane City Plan 2014* – Small-Scale Non-Residential Uses Code (in part)

Performance Outcomes	Acceptable Outcomes
PO17 Development is of a nature and scale which does not result in noise emissions that exceed the following criteria: $L_{Aeq,adj,T}$ emitted from the development is not greater than the rating background level plus 3 at the sensitive use. Where T is: • Day (7am to 6pm): 11 hr; • Evening (6pm to 10pm): 4 hr; • Night (10pm to 7am): 9hr. Where $L_{Aeq,adj,T}$ is the A-weighted equivalent continuous sound pressure level during measurement time T, adjusted for tonal and impulsive noise characteristics, determined in accordance with the methodology described in the Noise impact assessment planning scheme policy. **Note**—Rating background level is to be determined in accordance with the methodology described in the Noise impact assessment planning scheme policy. **Note**—A noise impact assessment report prepared in accordance with the methodology described in the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome.	**AO17** Development a. is conducted wholly within an enclosed building and does not involve outdoor activities; b. ensures mechanical plant or equipment is acoustically screened from adjoining sensitive uses. Note – Mechanical plant includes generators, motors, compressors and pumps such as air conditioning, refrigerator or coldroom motors.

Noise limits as per **PO17** have been calculated with reference to the Rating Background Levels measured at ML1, and presented in **Section 2** above. The 'background plus 3' methodology results therefore in noise emission limits of 45/42/38 dB(A) $L_{eq,adj,T}$ during the day/evening/night period respectively.

3.1.2 Multiple Dwelling Code

The *City Plan 2014* Multiple Dwelling Code (Part 9.3.14) provides guidance to the assessment of 'reverse amenity' impacts from residential uses exposed to commercial noise immissions. The relevant section of the Code is reproduced below.

Table 4: *Brisbane City Plan 2014* – Multiple Dwelling Code (in part)

Performance Outcomes	**Acceptable Outcomes**
PO21 Development in a zone in the centre zones category or the Mixed use zone must: a. be located, designed and constructed to protect bedrooms and other habitable rooms from exposure to noise arising from non-residential activities outside the building; b. be designed and constructed to achieve a minimum reduction in sound pressure level between the exterior of the building and bedrooms or indoor primary living areas of 30 dB(A). **Note**—A noise impact assessment report prepared in accordance with the methodology described in the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome. **Note–** Site-specific criteria will be identified in a neighbourhood plan for sites within a Special Entertainment Precinct Area or within the Transport noise corridor overlay.	**AO21** Development in a zone in the centre zones category or the Mixed use zone has a minimum acoustic performance of: a. Rw 35 for glazing (windows and doors) where total area of glazing is greater than 1.8m^2, b. Rw 32 for glazing (windows and doors) where total area of glazing is less than or equal to 1.8m^2.

Although the site is not located within a Centre or Mixed Use Zone, the existing Approval includes commercial activity that may impact the acoustic amenity of residents within the site ("on-site"). Performance Outcome **PO21** is therefore considered appropriate for the assessment of 'reverse amenity' noise impacts from commercial activity onto on-site residents.

It is further noted that the development plans show rendered finishes to the external façades, and that the wall construction is considered to provide appropriate attenuation of external noise immissions. On this basis, the glazing requirements as per **AO21** are considered a suitable methodology for achieving the Noise Reduction required under **PO21-b.**

3.2 Environmental Protection (Noise) Policy 2019

The *Environmental Protections (Noise) Policy 2019* establishes Acoustic Quality Objectives (AQO) to protect or enhance stated environmental values. The environmental values to be enhanced or protected under the policy are the qualities of the acoustic environment that are conducive to protecting the health and biodiversity of ecosystems; and the qualities of the acoustic environment that are conducive to human health and well-being, including ensuring a suitable acoustic environment for individual's to sleep, study and learn, to be involved in recreation including relaxation and conversation; and the qualities of the acoustic environment that are conducive to protecting the amenity of the community.

The acoustic quality objectives do not apply to noise from aircraft movement, noise from the ordinary use of a public road or State-controlled road and noise from the ordinary use of a busway, light rail or rail transport infrastructure. It is furthermore noted that Brisbane City Council provides specific criteria for the assessment of noise emissions from the development onto nearby sensitive uses, and that the AQO are not intended to override Council policies, where in force. Application of BCC policy is therefore considered to achieve the policy intent of the *Environmental Protection (Noise) Policy 2019*.

3.3 Environmental Protection Act 1994

It is unknown whether additional air conditioning is to be installed for the new commercial tenancy. State requirements for mechanical plant are set out under the *Environmental Protection Act 1994*; in that Act noise from air conditioning must not exceed the following noise levels when measured as the LA90 dB(A) level over a period of 15 minutes at an affected building:

- Between 10pm and 7am: 3 dB(A) above the background level
- From 7am to 10pm: 5 dB(A) above the background level

To meet both State and Council requirements, it is recommended that new air conditioning plant (if any) be selected, installed and – if necessary – screened to not exceed 38 dB(A) at neighbouring residential uses.

Detailed plant noise assessment can be conducted – if required – at the Building Approval stage, once plant specifications can be determined. The criterion is nonetheless considered readily achievable through appropriate plant selection, siting and (if necessary) screening. As the *Environmental Protection Act 1994* represents a continuing obligation, it is further recommended that plant be appropriately maintained to ensure ongoing compliance.

4. Noise Impact Assessment

The following sources of potentially intrusive noise emissions have been identified with proposed extensions:

- Dining activity at the central outdoor area
- Patron noise (talking/laughing) during arrival/departure from site
- Increased parking activity
- Breakout from activities within the new commercial tenancy
- Air conditioning and other mechanical plant

The precise model and installation of new air conditioning (if any) is not known at this stage. To meet both State and Council criteria, it is recommended that mechanical plant be selected and sited to not exceed 38 dB(A) at sensitive receivers. Detailed plant noise assessment can be conducted – if required – at the Building Approval stage once specifications can be determined. It is nonetheless concluded that the relevant criterion is readily achievable through appropriate plant selection, siting and installation. Design sound power levels for the remaining identified sources are presented in **Table 5**, with noise emission calculations presented in the **sections** following.

Table 5: Design source sound power levels. Levels are in dB(A) L_{eq}

Name			Sound Power Levels								Total in dB(A)
			63 Hz	125 Hz	250 Hz	500 Hz	1kHz	2 kHz	4 kHz	8 kHz	
Outdoor Dining (15 patrons)			68	68	74	77	74	67	61	55	**78**
Patron activity			56	56	62	65	62	57	52	46	**66**
Parking activity			60	70	58	58	64	65	65	61	**71**
Commercial Breakout	Open Doors	East	65	64	70	72	67	62	56	49	**72**
		West	58	57	63	65	60	54	49	41	**65**
	Closed Doors	East	59	64	57	55	47	46	32	21	**56**
		South	58	53	55	55	53	39	25	18	**56**
		West	56	51	53	50	44	35	26	20	**51**
	Total	East	66	67	70	72	67	62	56	49	**72**
		South	58	53	55	55	53	39	25	18	**56**
		West	60	58	63	65	60	55	49	42	**65**
Sound Pressure Levels at 1m											
Outdoor Dining			61	61	67	70	66	59	54	47	**70**
Patron activity			48	48	55	58	54	49	44	38	**59**
Parking activity			52	62	50	50	57	57	57	53	**63**
Commercial Breakout	Open Doors	East	57	56	62	64	59	54	48	41	**64**
		West	50	49	55	57	52	47	41	34	**57**
	Closed Doors	East	51	56	49	47	39	38	24	13	**48**
		South	50	45	47	47	45	31	17	10	**48**
		West	48	43	45	42	37	27	18	13	**43**
	Total	East	58	59	62	64	60	54	48	41	**65**
		South	50	45	47	47	45	31	17	10	**48**
		West	52	50	55	57	52	47	41	34	**57**

4.1 Outdoor Dining

Potential noise impacts from the outdoor dining area at the Ground Floor have been assessed assuming 15 patrons engaged in simultaneous and continuous activity throughout the entire hours of operation[1]. As a conservative design assumption, no allowance has been made for periods of reduced or minimal activity, although this is expected to typically occur. It is also assumed and recommended that ambient music – if any – be limited to background levels below that which would interfere with normal conversation. While the outdoor dining area is exposed to receivers located across Charlton Street to the east, the building envelope fully screens neighbours to the south and west, and a nominal 15 dB(A) of barrier attenuation can be assumed to receivers in that direct. Noise emission calculations are presented below.

Table 6: Outdoor dining noise emission calculations to R1

acoustar

CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Input data

Source: Outdoor Dining
Receiver: R1
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 20 m
DI of source = 3 dB

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	68.3	68.3	74.3	77.5	73.6	67.2	61.4	54.6

Output data

Octave SPL (dB(Z))

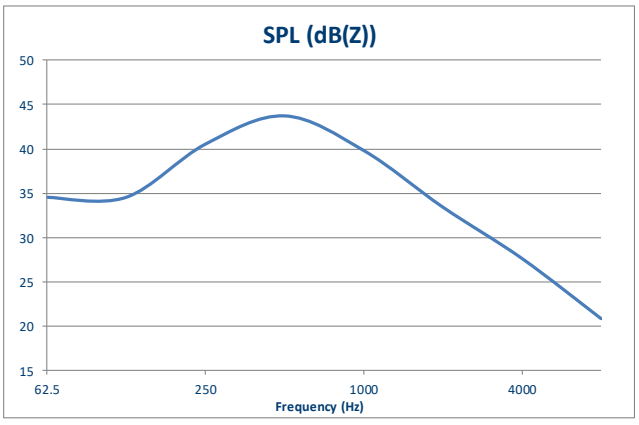
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	34.48	34.5	40.5	43.7	39.8	33.4	27.6	20.8

Linear sound pressure level
47.2 dB(Z)

Linear sound power level
81.0 dB(Z)

A-weighting sound pressure level
44.1 dB(A)

A-weighting sound power level
78.0 dB(A)



[1] Levels as per Carati et al, *"Characterization of sound power level of speech from restaurants in outdoor"*, **ICSV23**, Athens 2016, with random orientation and 'raised male voices' as per the AAAC Licensed Premises and Patron Noise Assessment Technical Guideline v3

Table 7: Outdoor dining noise emission calculations to R2

acoustar

CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Input data

Source: Outdoor Dining
Receiver: R2
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 25 m
DI of source = 3 dB

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	68.3	68.3	74.3	77.5	73.6	67.2	61.4	54.6

Output data

Octave SPL (dB(Z))

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	32.54	32.5	38.5	41.7	37.8	31.4	25.6	18.8

Linear sound pressure level
45.3 dB(Z)

Linear sound power level
81.0 dB(Z)

A-weighting sound pressure level
42.2 dB(A)

A-weighting sound power level
78.0 dB(A)

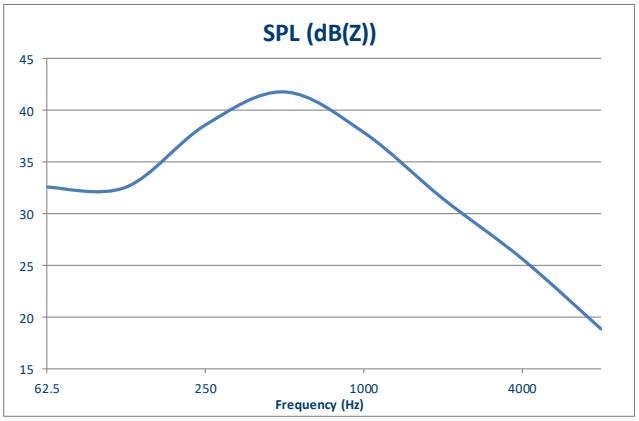


Table 8: Outdoor dining noise emission calculations to R3

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CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Input data

Source: Outdoor Dining
Receiver: R3
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 35 m
DI of source = 3 dB

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	68.3	68.3	74.3	77.5	73.6	67.2	61.4	54.6

Output data

Octave SPL (dB(Z))

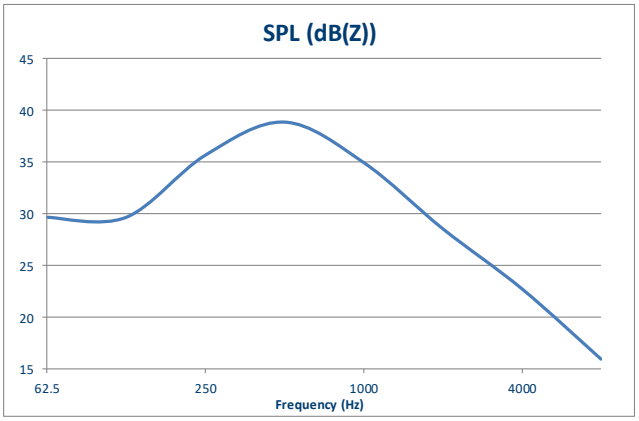
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	29.62	29.6	35.6	38.8	34.9	28.5	22.7	15.9

Linear sound pressure level
42.3 dB(Z)

Linear sound power level
81.0 dB(Z)

A-weighting sound pressure level
39.3 dB(A)

A-weighting sound power level
78.0 dB(A)



4.2 Patron Activity

Outdoor vocal activity from patrons – apart from the outdoor dining assessed in **Section 4.1** above – is expected to be minimal, and limited to patrons entering and leaving the site. This notwithstanding – and as a conservative design assumption – vocal activity from a 'raised male voice'[2] at the footpath or parking areas has been assumed to occur for five minutes every hour of the assessment period. Additionally, no allowance or reduction has been made to emissions from these patrons, who are otherwise assumed to be engaged in continuous activity within the new commercial tenancy or outdoor dining area. Calculations therefore represent a highly conservative 'double counting' of patron emissions. It is further noted that the building envelope will fully screen neighbours to the west of the site, and a nominal 15 dB(A) of barrier attenuation can be assumed to receiver R1. Noise emission calculations are presented below.

Table 9: Outdoor patron vocal activity noise emissions calculations to R1

acoustar

CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Input data

Source: Patron Socializing
Receiver: R1
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 15 m
DI of source = 3 dB

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	55.8	55.8	62.5	65.4	61.7	57.1	52.1	45.9

Output data

Octave SPL (dB(Z))

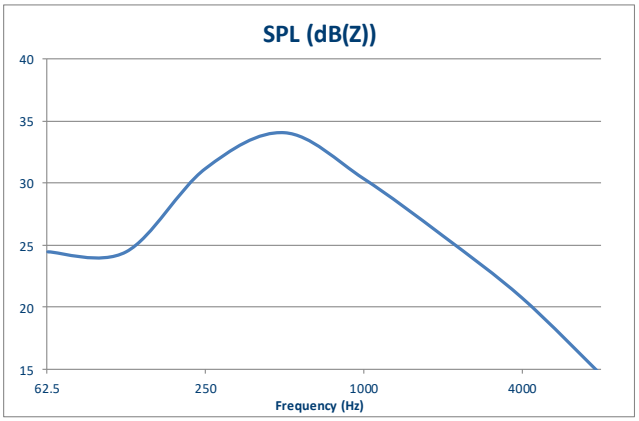
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	24.48	24.5	31.2	34.1	30.4	25.8	20.8	14.6

Linear sound pressure level
37.8 dB(Z)

Linear sound power level
69.1 dB(Z)

A-weighting sound pressure level
35.0 dB(A)

A-weighting sound power level
66.3 dB(A)



[2] As per the AAAC Licensed Premises and Patron Noise Assessment Technical Guideline v3

Table 10: Outdoor patron vocal activity noise emissions calculations to R2

acoustar

CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Input data

Source: Patron Socializing
Receiver: R2
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 15 m
DI of source = 3 dB

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	55.8	55.8	62.5	65.4	61.7	57.1	52.1	45.9

Output data

Octave SPL (dB(Z))

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	24.48	24.5	31.2	34.1	30.4	25.8	20.8	14.6

Linear sound pressure level
37.8 dB(Z)

Linear sound power level
69.1 dB(Z)

A-weighting sound pressure level
35.0 dB(A)

A-weighting sound power level
66.3 dB(A)

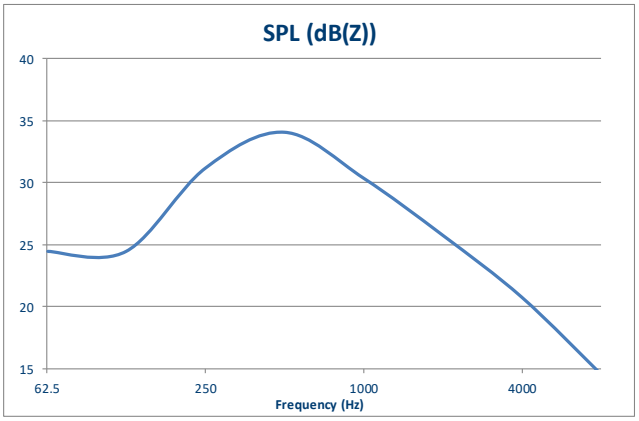


Table 11: Outdoor patron vocal activity noise emissions calculations to R3

acoustar

CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Input data

Source: Patron Socializing
Receiver: R3
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 25 m
DI of source = 3 dB

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	55.8	55.8	62.5	65.4	61.7	57.1	52.1	45.9

Output data

Octave SPL (dB(Z))

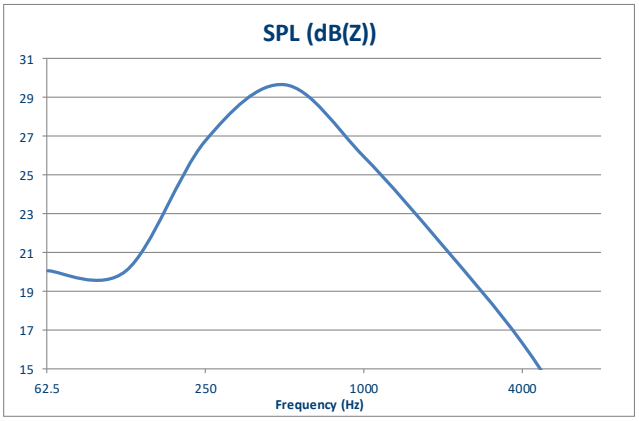
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	20.04	20	26.7	29.6	25.9	21.3	16.3	10.1

Linear sound pressure level
33.4 dB(Z)

Linear sound power level
69.1 dB(Z)

A-weighting sound pressure level
30.6 dB(A)

A-weighting sound power level
66.3 dB(A)



4.3 Parking Activity

While the proposal does not introduce additional parking areas, the new commercial tenancy may result in additional parking activity occurring at the existing spaces. To account for potential increase in parking activity, calculations assume five additional minutes of parking activity each hour[3]. As an additional conservative methodology (and to enable cumulative assessment), source levels in the $L_{01,1min}$ descriptor are assumed to be commensurate with the $L_{eq,1min}$ descriptor. It is further noted that the building envelope will fully screen neighbours to the west of the site, and a nominal 15 dB(A) of barrier attenuation can be assumed to receiver R1. Noise emission calculations are presented below.

Table 12: Parking activity noise emissions calculations to R1

acoustar

CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Input data

Source: Parking
Receiver: R1
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 20 m
DI of source = 3 dB

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	59.6	69.5	58.0	57.6	64.4	65.2	64.9	61.0

Output data

Octave SPL (dB(Z))

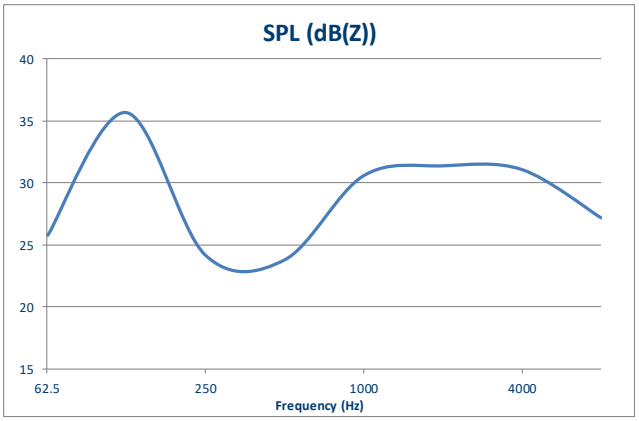
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	25.79	35.7	24.2	23.8	30.6	31.4	31.1	27.2

Linear sound pressure level
39.5 dB(Z)

Linear sound power level
73.3 dB(Z)

A-weighting sound pressure level
37.2 dB(A)

A-weighting sound power level
71.0 dB(A)



[3] Levels as per Harwood, M, *"Carrying out noise assessments for proposed supermarket developments"*, **ACOUSTICS 2008**, Geelong

Table 13: Parking activity noise emissions calculations to R2

acoustar

CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Input data

Source: Parking
Receiver: R2
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 17 m
DI of source = 3 dB

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	59.6	69.5	58.0	57.6	64.4	65.2	64.9	61.0

Output data

Octave SPL (dB(Z))

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	27.2	37.1	25.6	25.2	32	32.8	32.5	28.6

Linear sound pressure level
40.9 dB(Z)

Linear sound power level
73.3 dB(Z)

A-weighting sound pressure level
38.6 dB(A)

A-weighting sound power level
71.0 dB(A)

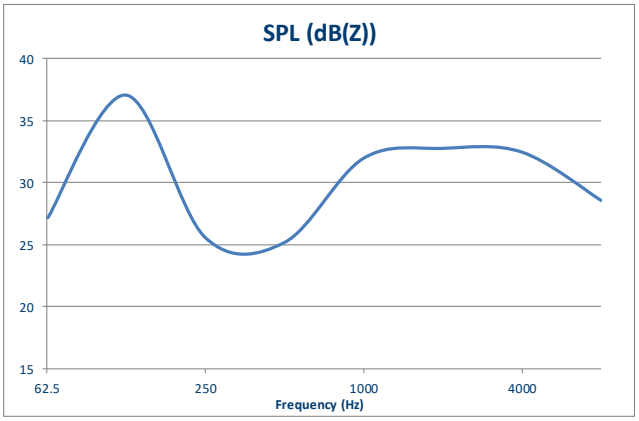


Table 14: Parking activity noise emissions calculations to R3

acoustar

CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Input data

Source: Parking
Receiver: R3
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 25 m
DI of source = 3 dB

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	59.6	69.5	58.0	57.6	64.4	65.2	64.9	61.0

Output data

Octave SPL (dB(Z))

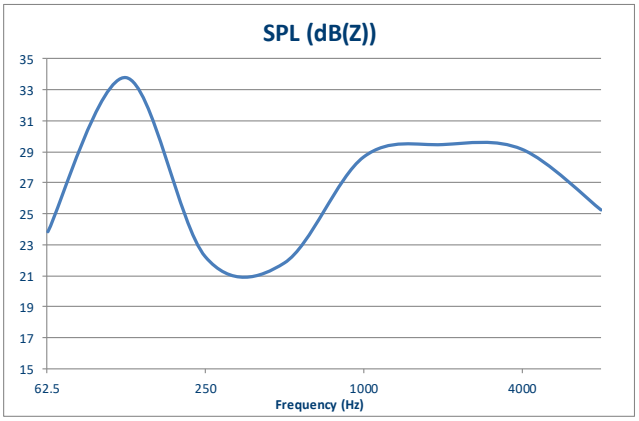
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	23.85	33.8	22.3	21.9	28.7	29.5	29.2	25.3

Linear sound pressure level
37.6 dB(Z)

Linear sound power level
73.3 dB(Z)

A-weighting sound pressure level
35.2 dB(A)

A-weighting sound power level
71.0 dB(A)



4.4 Breakout from Internal Activity

The precise occupancy of the proposed new commercial tenancy is yet to be determined. As a highly conservative design assumption, a future restaurant or café tenancy has been assumed, with capacity of 30 patrons[4] (notwithstanding that far fewer customers are expected at any one time). Internal noise level calculations[5] are presented in **Table 15** below.

Table 15: Internal noise level calculations, new commercial tenancy

INPUTS									
Noise Source									
Frequency	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**	**SUM** *(calc)*
Lw (dBZ) per source	74.0	74.0	80.7	83.6	79.9	75.3	70.3	64.1	**87.3**
Lw (dBA) per source *(calculated)*	47.8	57.9	72.1	80.4	79.9	76.5	71.3	63.0	**84.5**
Number of sources	1								
Source - receiver distance (r) m	2.5								
Room Dimensions									
Room Length in m	6								
Room Width in m	6								
Room Height in m	2.7								
CALCULATIONS									
Room Volume (V) m^3	**97.2**								
Frequency	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**	**SUM**
Overall Lw (dBZ)	**74.0**	**74.0**	**80.7**	**83.6**	**79.9**	**75.3**	**70.3**	**64.1**	**87.3**
A-weight Corrections	**-26.2**	**-16.1**	**-8.6**	**-3.2**	**0.0**	**1.2**	**1.0**	**-1.1**	
RESULTS									
Frequency	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**	**SUM**
LpZ	**71.9**	**71.0**	**76.8**	**78.8**	**74.2**	**68.7**	**62.8**	**55.7**	**82.8**
LpA	**45.7**	**54.9**	**68.2**	**75.6**	**74.2**	**69.9**	**63.8**	**54.6**	**79.2**

Detailed architectural plans for the new commercial tenancy are yet to be finalized, and breakout calculations assume the design acoustic performance of building elements as per **Table 16** below, based on calculations previously conducted by NMS.

Table 16: Design acoustic performance of building elements, new commercial tenancy. Levels are in dB(Z)

Element	1/1 Octave							
	63 Hz	**125 Hz**	**250 Hz**	**500 Hz**	**1 kHz**	**2 kHz**	**4 kHz**	**8 kHz**
Rendered Wall	28	32	36	38	35	44	52	52
6.38mm Glazing	17	11	24	28	32	27	35	39
Solid hardwood door	13	17	21	26	29	31	34	32

Noise breakout calculations are presented in the **tables** below[6]. The "open door" scenario assumes and recommends doors to be generally closed except for ingress/egress, conservatively assumed to be five minutes per hour. Noise propagation calculations are presented in the **tables** following.

[4] Levels as per Carati et al, *"Characterization of sound power level of speech from restaurants in outdoor"*, **ICSV23**, Athens 2016
[5] As per Zeng, W B "New empirical equations for calculating sound pressure levels in rooms" **University of Nevada**, Las Vegas 1994
[6] Calculations as per Thumann, A "Secrets of Noise Control" 1974, p129

Table 17: Showing noise breakout calculation, eastern façade, closed door scenario

acoustar

Project:	8227
Date :	13/05/2026
Descriptor :	Leq
Façade :	East

SPL (sound level) inside room (dBZ)	**dBZ**	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
	82.8	72	71	77	79	74	69	63	56
Façade Element 1	Dimensions:	2.0	m,	3.0	m				
Wall	Area =	6.0	m^2						
	dBZ	63	125	250	500	1000	2000	4000	8000
Sound Transmission Loss =		28	32	36	38	35	44	52	52
Equivalent Sound Power Level of Element (dBZ) =	**49.7**	46	41	42	42	41	26	12	5
Façade Element 2	Dimensions:	2.1	m,	4.8	m				
Sliding Doors	Area =	10.1	m^2						
	dBZ	63	125	250	500	1000	2000	4000	8000
Sound Transmission Loss =		17	11	24	28	32	27	35	39
Equivalent Sound Power Level of Element (dBZ) =	**66.0**	59	64	57	55	46	46	32	21
COMBINED L_w of Façade Elements =	**dB**	63	125	250	500	1000	2000	4000	8000
Z-Weighted	**66.1**	59.0	63.9	56.8	54.9	47.2	45.6	31.7	20.7
A-Weighted	**55.8**	32.8	47.8	48.2	51.7	47.2	46.8	32.7	19.6

Table 18: Showing noise breakout calculation, eastern façade, open door scenario

acoustar

Project:	8227
Date :	13/05/2026
Descriptor :	Leq
Façade :	East

SPL (sound level) inside room (dBZ)	**dBZ**	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
	82.8	72	71	77	79	74	69	63	56
Façade Element 1	Dimensions:	2.0	m,	3.0	m				
Wall	Area =	6.0	m^2						
	dBZ	63	125	250	500	1000	2000	4000	8000
Sound Transmission Loss =		28	32	36	38	35	44	52	52
Equivalent Sound Power Level of Element (dBZ) =	**49.7**	46	41	42	42	41	26	12	5
Façade Element 2	Dimensions:	2.1	m,	4.8	m				
Open Sliding Doors	Area =	10.1	m^2						
	dBZ	63	125	250	500	1000	2000	4000	8000
Sound Transmission Loss =		0	0	0	0	0	0	0	0
Equivalent Sound Power Level of Element (dBZ) =	**86.6**	76	75	81	83	78	73	67	60
COMBINED L_w of Façade Elements =	**dB**	63	125	250	500	1000	2000	4000	8000
Z-Weighted	**86.6**	75.8	74.9	80.7	82.7	78.1	72.6	66.7	59.5
A-Weighted	**83.0**	49.6	58.8	72.1	79.5	78.1	73.8	67.7	58.4

Table 19: Showing noise breakout calculation, southern façade

acoustar

Project:	8227
Date :	13/05/2026
Descriptor :	Leq
Façade :	South

SPL (sound level) inside room (dBZ)	**dBZ**	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
	82.8	72	71	77	79	74	69	63	56
Façade Element 1	Dimensions:	20.0	m,		5.0	m			
Wall	Area =	100.0	m^2						
	dBZ	63	125	250	500	1000	2000	4000	8000
Sound Transmission Loss =		28	32	36	38	35	44	52	52
Equivalent Sound Power Level of Element (dBZ) =	**62.0**	58	53	55	55	53	39	25	18
COMBINED L_w of Façade Elements =	**dB**	63	125	250	500	1000	2000	4000	8000
Z-Weighted	**62.0**	57.7	52.8	54.6	54.6	53.0	38.5	24.6	17.5
A-Weighted	**56.0**	31.5	36.7	46.0	51.4	53.0	39.7	25.6	16.4

Table 20: Showing noise breakout calculation, western façade, closed door scenario

acoustar

Project:	8227
Date :	13/05/2026
Descriptor :	Leq
Façade :	West

SPL (sound level) inside room (dBZ)	**dBZ**	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
	82.8	72	71	77	79	74	69	63	56
Façade Element 1	Dimensions:	2.0	m,		3.0	m			
Wall	Area =	6.0	m^2						
	dBZ	63	125	250	500	1000	2000	4000	8000
Sound Transmission Loss =		28	32	36	38	35	44	52	52
Equivalent Sound Power Level of Element (dBZ) =	**49.7**	46	41	42	42	41	26	12	5
Façade Element 2	Dimensions:	2.1	m,		0.9	m			
Door	Area =	1.9	m^2						
	dBZ	63	125	250	500	1000	2000	4000	8000
Sound Transmission Loss =		13	17	21	26	29	31	34	32
Equivalent Sound Power Level of Element (dBZ) =	**58.7**	55	51	52	49	42	34	25	20
COMBINED L_w of Façade Elements =	**dB**	63	125	250	500	1000	2000	4000	8000
Z-Weighted	**59.3**	55.9	51.0	52.8	50.2	44.3	34.9	25.6	20.4
A-Weighted	**50.5**	29.7	34.9	44.2	47.0	44.3	36.1	26.6	19.3

Table 21: Showing noise breakout calculation, western façade, open door scenario

acoustar

Project:	8227
Date :	13/05/2026
Descriptor :	Leq
Façade :	West

SPL (sound level) inside room (dBZ)	**dBZ**	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
	82.8	72	71	77	79	74	69	63	56

Façade Element 1	Dimensions:	2.0	m,	3.0	m				
Wall		Area =	6.0	m^2					
	dBZ	63	125	250	500	1000	2000	4000	8000
Sound Transmission Loss =		28	32	36	38	35	44	52	52
Equivalent Sound Power Level of Element (dBZ) =	**49.7**	46	41	42	42	41	26	12	5

Façade Element 2	Dimensions:	2.1	m,	0.9	m				
Door		Area =	1.9	m^2					
	dBZ	63	125	250	500	1000	2000	4000	8000
Sound Transmission Loss =		0	0	0	0	0	0	0	0
Equivalent Sound Power Level of Element (dBZ) =	**79.3**	68	68	73	75	71	65	59	52

COMBINED L_w of Façade Elements =	**dB**	63	125	250	500	1000	2000	4000	8000
Z-Weighted	**79.3**	68.5	67.6	73.4	75.4	70.8	65.3	59.4	52.3
A-Weighted	**75.7**	42.3	51.5	64.8	72.2	70.8	66.5	60.4	51.2

Table 22: Breakout noise emissions calculations to R1

acoustar

CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Input data

Source: Breakout
Receiver: R1
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 9 m
DI of source = 3 dB

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	59.9	57.8	63.0	64.7	60.1	54.5	48.6	41.5

Output data

Octave SPL (dB(Z))

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	33.04	30.9	36.2	37.9	33.2	27.7	21.7	14.6

Linear sound pressure level
42.1 dB(Z)

Linear sound power level
69.0 dB(Z)

A-weighting sound pressure level
38.2 dB(A)

A-weighting sound power level
65.1 dB(A)

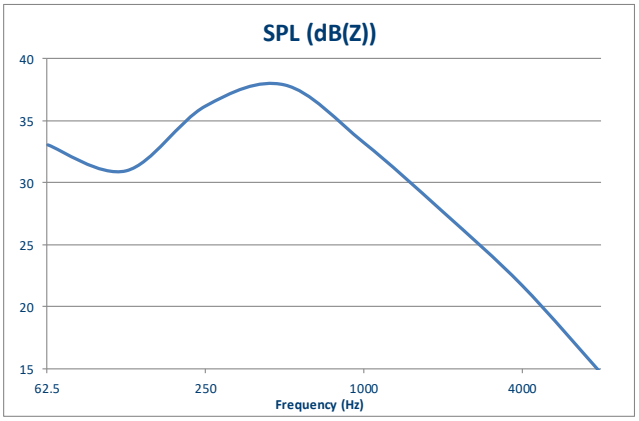


Table 23: Breakout noise emissions calculations to R2

acoustar

CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Input data

Source: Breakout
Receiver: R2
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 9 m
DI of source = 3 dB

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	57.7	52.8	54.6	54.6	53.0	38.5	24.6	17.5

Output data

Octave SPL (dB(Z))

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	30.85	26	27.8	27.8	26.1	11.6	-2.26	-9.36

Linear sound pressure level
35.1 dB(Z)

Linear sound power level
62.0 dB(Z)

A-weighting sound pressure level
29.1 dB(A)

A-weighting sound power level
56.0 dB(A)

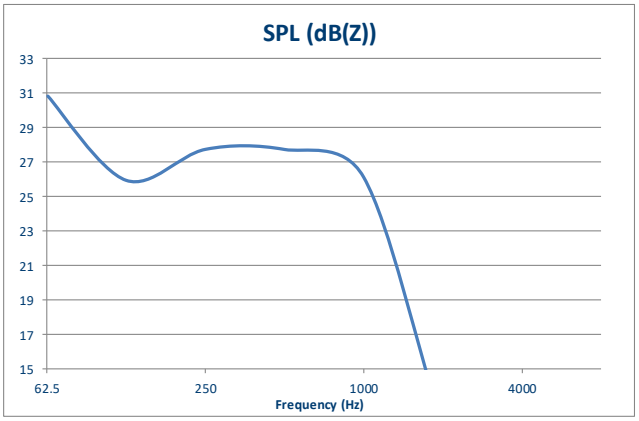


Table 24: Breakout noise emissions calculations to R3

acoustar

CONVERSION OF SOUND POWER LEVEL AND SOUND PRESSURE LEVEL OF A POINT SOURCE

$SWL = SPL + 20\log_{10}R - DI + 10.79$

SWL = Sound power level (dB)
SPL = Sound pressure level (dB)
DI = Directivity Index of source (dB)
R = Distance from receiver to source (m)

Note: only valid in far-field

Input data

Source: Breakout
Receiver: R3
Conversion type : SWL to SPL
Input data weighting : dB(Z) (Lin)
Input data bands : Octave
Distance from mic to source = 35 m
DI of source = 3 dB

Note: DI = 0 dB for whole space(eg. noise source suspended in mid-air)
DI = 3 dB for half space(eg. noise source operating on flat surface)
DI = 6 dB for quarter space (eg. source operating at the junction of 2 surfaces)
DI = 9 dB for eighth space (eg. source operating at the junction of 3 surfaces)

Octave sound power level in dB(Z) (Lin)

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SWL	65.9	67.0	70.1	71.9	67.3	61.9	55.9	48.8

Output data

Octave SPL (dB(Z))

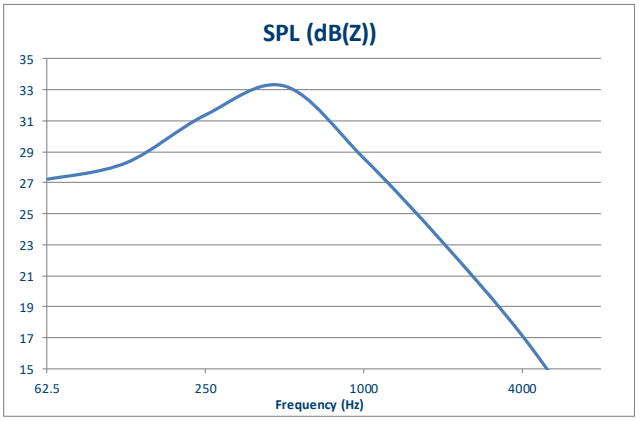
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
SPL (dB(Z))	27.26	28.3	31.4	33.3	28.6	23.2	17.2	10.1

Linear sound pressure level
37.6 dB(Z)

Linear sound power level
76.2 dB(Z)

A-weighting sound pressure level
33.6 dB(A)

A-weighting sound power level
72.3 dB(A)



4.5 Cumulative Noise Emissions

Cumulative noise emission calculations are presented in **Table 25** below, with assessment to criteria presented in **Table 26** following.

Table 25: Showing cumulative noise emission calculations. Levels are in dB(A) $L_{eq,adj,T}$

Receiver	Forecast				Total
	Outdoor Dining	Patron Activity	Parking	Breakout	
R1	29*	20*	22*	38	39
R2	27*	35	39	29	41
R3	39	31	32	34	41

* Includes 15 dB(A) of barrier attenuation from the building envelope

Table 26: Cumulative noise emissions and criteria. Levels are in dB(A) $L_{eq,adj,T}$

Receiver	Forecast	Criteria			Assessment
		Day	Evening	Night	
R1	39	45	42	N/A	Compliant with noise criteria
R2	41	45	42	N/A	Compliant with noise criteria
R3	41	45	42	N/A	Compliant with noise criteria

As shown above, cumulative noise emissions are forecast to meet criteria at all receivers, under highly conservative calculation scenarios. On this basis, it is concluded that the proposed extensions can meet the requirements of the *Brisbane City Plan 2014* with regards to noise impacts onto neighbouring properties, and be otherwise compliant with relevant regulatory obligations.

4.6 Reverse Amenity

As discussed in **Section 3.1.2**, although the site is not located within a Centre or Mixed Use Zone, Performance Outcome **PO21** of the Multiple Dwelling Code is considered an appropriate methodology for 'reverse amenity' considerations regarding noise impacts from commercial activity onto the residential component on-site. It is further considered that the rendered brick or block external wall construction shown on development plans represents suitable noise mitigation through the wall construction, and that glazing is the design driver for commercial noise immissions.

On this basis, it is recommended that renovations to the residential component of the development provide glazing that achieves not less than the acceptable outcomes related to PO21 (i.e. AO21):

- Rw 35, where total area of glazing on the façade is greater than 1.8m^2
- Rw 32, where total area of glazing on the façade is less than or equal to 1.8m^2

Subject to construction in accordance with these glazing requirements, it is concluded that the proposed renovations to the residential component can appropriately mitigate commercial noise immissions, and satisfy the 'reverse amenity' requirements of the *Brisbane City Plan 2014*.

5. Conclusions and recommendations

Conclusions

It is concluded that –

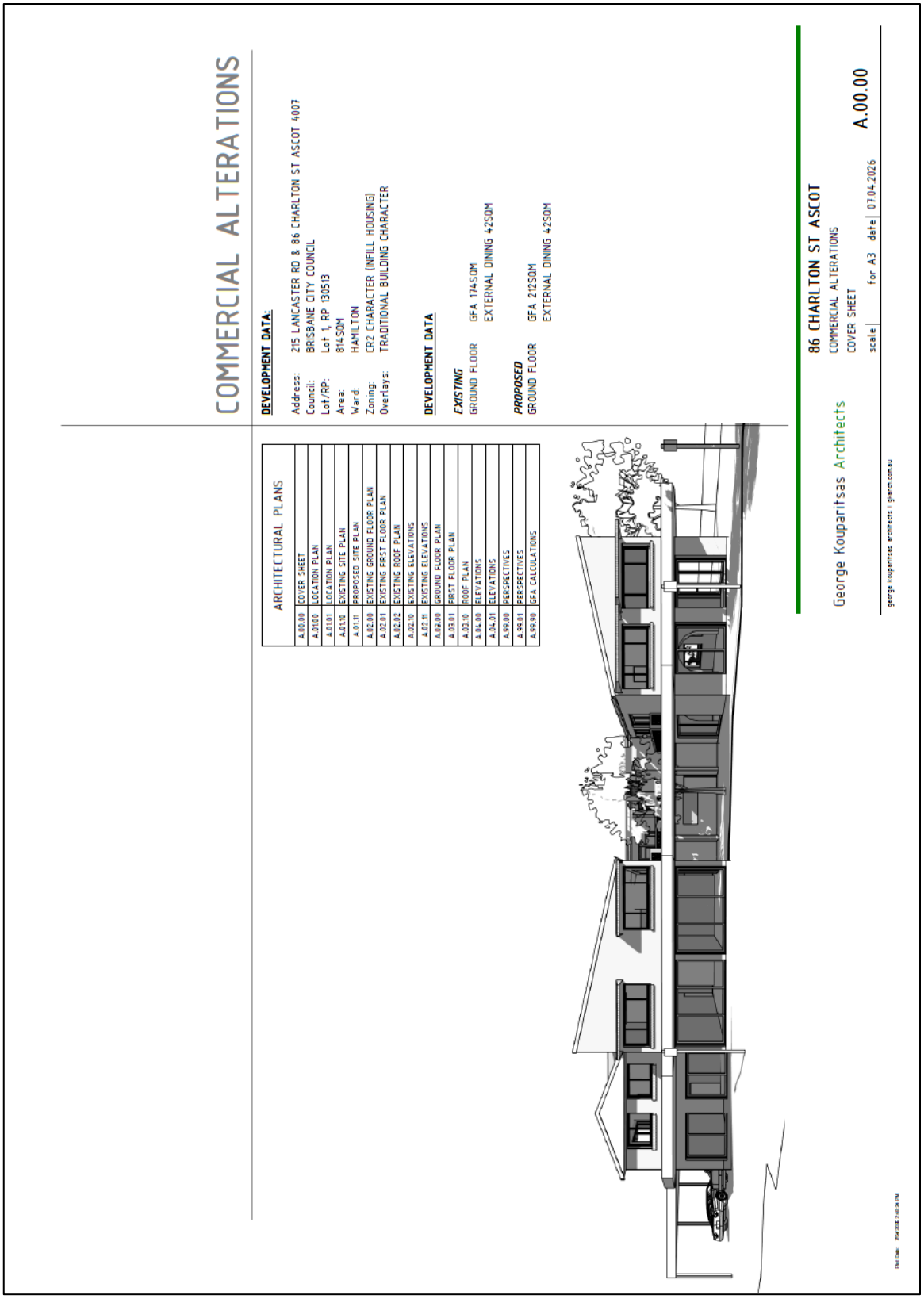
- Subject to the considerations as presented in this Report, it is then opinion of this consultancy that the proposed development can meet the requirements of the *Brisbane City Plan 2014*, and be otherwise compliant with relevant regulatory requirements.
- Cumulative noise emissions from the proposed new commercial activities are forecast to meet criteria at all receivers.
- The residential component can appropriately mitigate commercial noise immissions through construction in accordance with **AO21** of the Multiple Dwelling Code.
- The precise model(s) and installation of mechanical plant is yet to be determined. Detailed plant noise assessment can be conducted – if required – at the Building Approval stage once specifications have been finalised. The relative criterion is nonetheless considered readily achievable through appropriate plant selection and siting.

Recommendations

It is recommended that –

- The proposed extensions be approved for operations between 7am and 10pm, as compliant with the acoustic requirements of the *Brisbane City Plan 2014*.
- Doors to the new commercial tenancy remain generally closed except for ingress/egress.
- Ambient music (if any) be limited to background levels that do not interfere with normal conversation.
- Renovations to the residential component provide glazing that achieves acoustic performance of not less than:
    - Rw 35, where total area of glazing on the façade is greater than 1.8m^2
    - Rw 32, where total area of glazing on the façade is less than or equal to 1.8m^2
- External air conditioning plant (if any) be selected and installed to not exceed 38 dB(A) at nearby residences.

Appendix A: Development Plans



COMMERCIAL ALTERATIONS

DEVELOPMENT DATA:

Address: 215 LANCASTER RD & 86 CHARLTON ST ASCOT 4007
Council: BRISBANE CITY COUNCIL
Lot/RP: Lot 1, RP 130513
Area: 814SQM
Ward: HAMILTON
Zoning: CR2 CHARACTER (INFILL HOUSING)
Overlays: TRADITIONAL BUILDING CHARACTER

DEVELOPMENT DATA

EXISTING
GROUND FLOOR GFA 174SQM
EXTERNAL DINING 42SQM

PROPOSED
GROUND FLOOR GFA 212SQM
EXTERNAL DINING 42SQM

ARCHITECTURAL PLANS

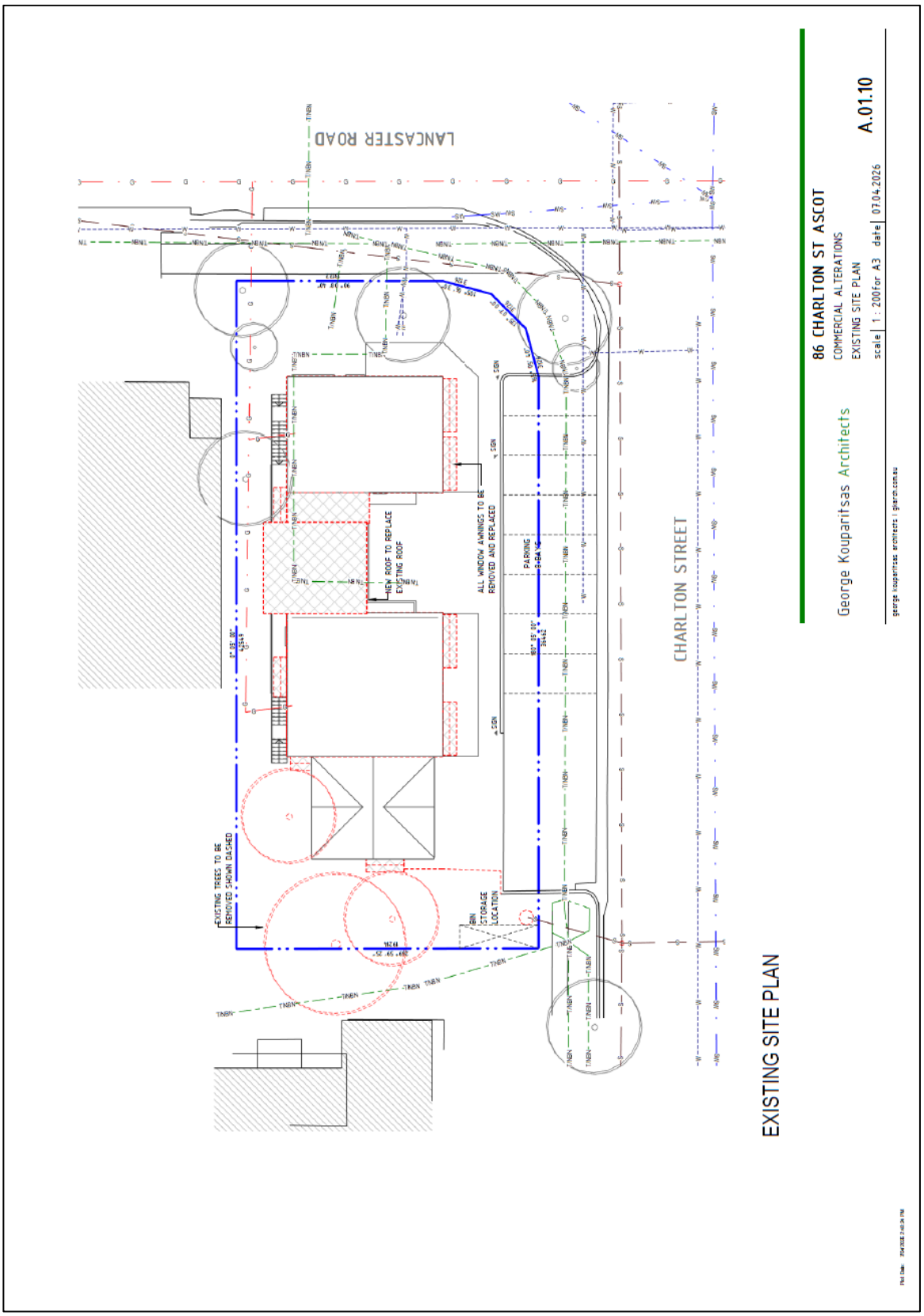
A.00.00	COVER SHEET
A.0100	LOCATION PLAN
A.0101	LOCATION PLAN
A.0110	EXISTING SITE PLAN
A.0111	PROPOSED SITE PLAN
A.02.00	EXISTING GROUND FLOOR PLAN
A.02.01	EXISTING FIRST FLOOR PLAN
A.02.02	EXISTING ROOF PLAN
A.02.10	EXISTING ELEVATIONS
A.02.11	EXISTING ELEVATIONS
A.03.00	GROUND FLOOR PLAN
A.03.01	FIRST FLOOR PLAN
A.03.10	ROOF PLAN
A.04.00	ELEVATIONS
A.04.01	ELEVATIONS
A.99.00	PERSPECTIVES
A.99.01	PERSPECTIVES
A.99.90	GFA CALCULATIONS

86 CHARLTON ST ASCOT
COMMERCIAL ALTERATIONS
COVER SHEET
A.00.00
scale | for A3 date | 07.04.2026

George Kouparitsas Architects


PROPOSED PROJECT
215 LANCASTER RD, ASCOT
Nearmap
PROPOSED PROJECT
215 LANCASTER RD, ASCOT
Nearmap
86 CHARLTON ST ASCOT
COMMERCIAL ALTERATIONS
LOCATION PLAN
A.01.00
George Kouparitsas Architects
scale | for A3 date | 07.04.2026


AERIAL VIEW – 1946 (SUPPLIED FROM BCC)
AERIAL VIEW – CONTOURS AND FLOODING (SUPPLIED FROM BCC)
AERIAL VIEW – 2021 (SUPPLIED FROM BCC)
AERIAL VIEW – ZONES (SUPPLIED FROM BCC)
AERIAL VIEW – TBC ZONES (SUPPLIED FROM BCC)
86 CHARLTON ST ASCOT
COMMERCIAL ALTERATIONS
LOCATION PLAN
A.01.01
George Kouparitsas Architects
scale | for A3 date | 07.04.2026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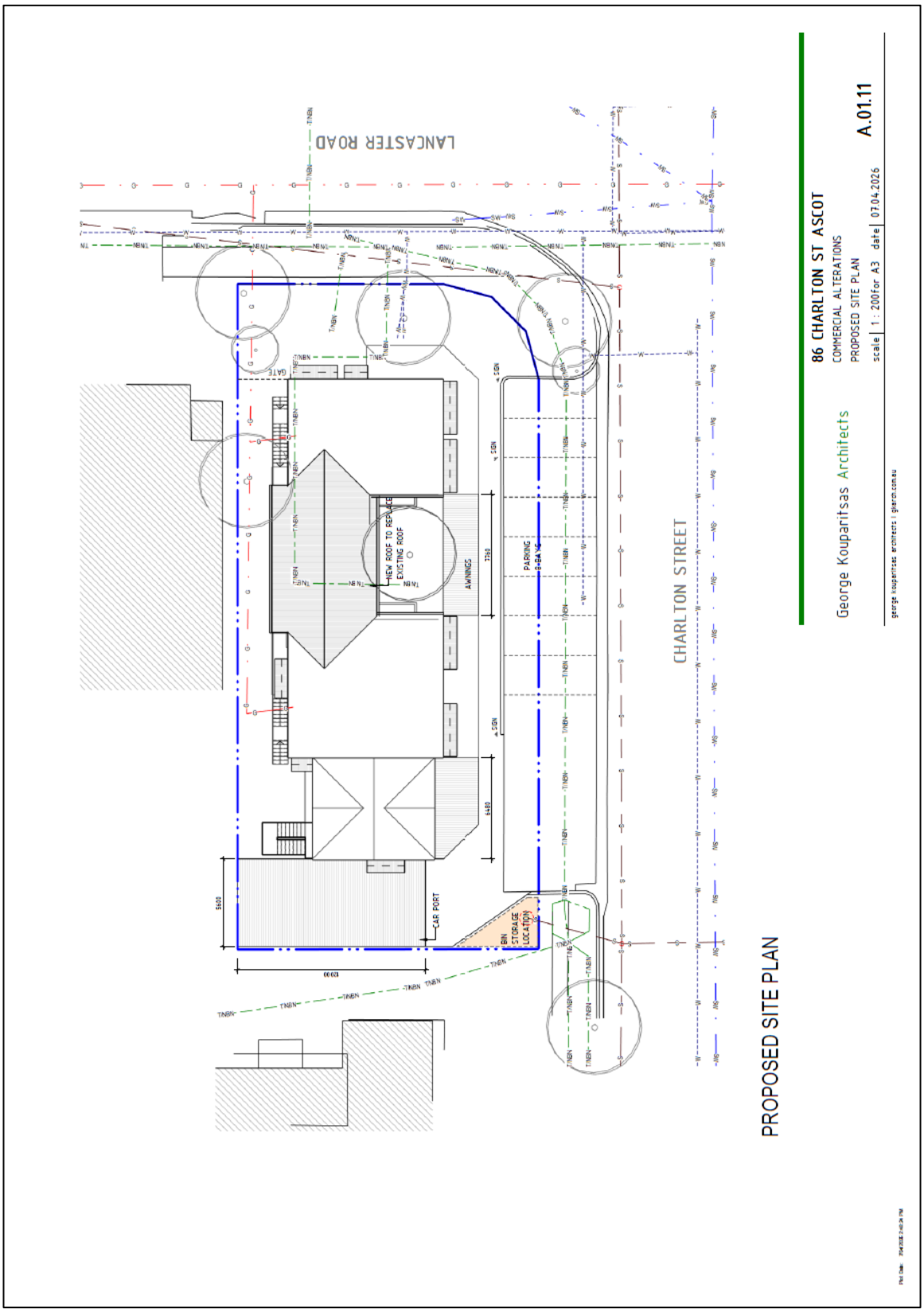
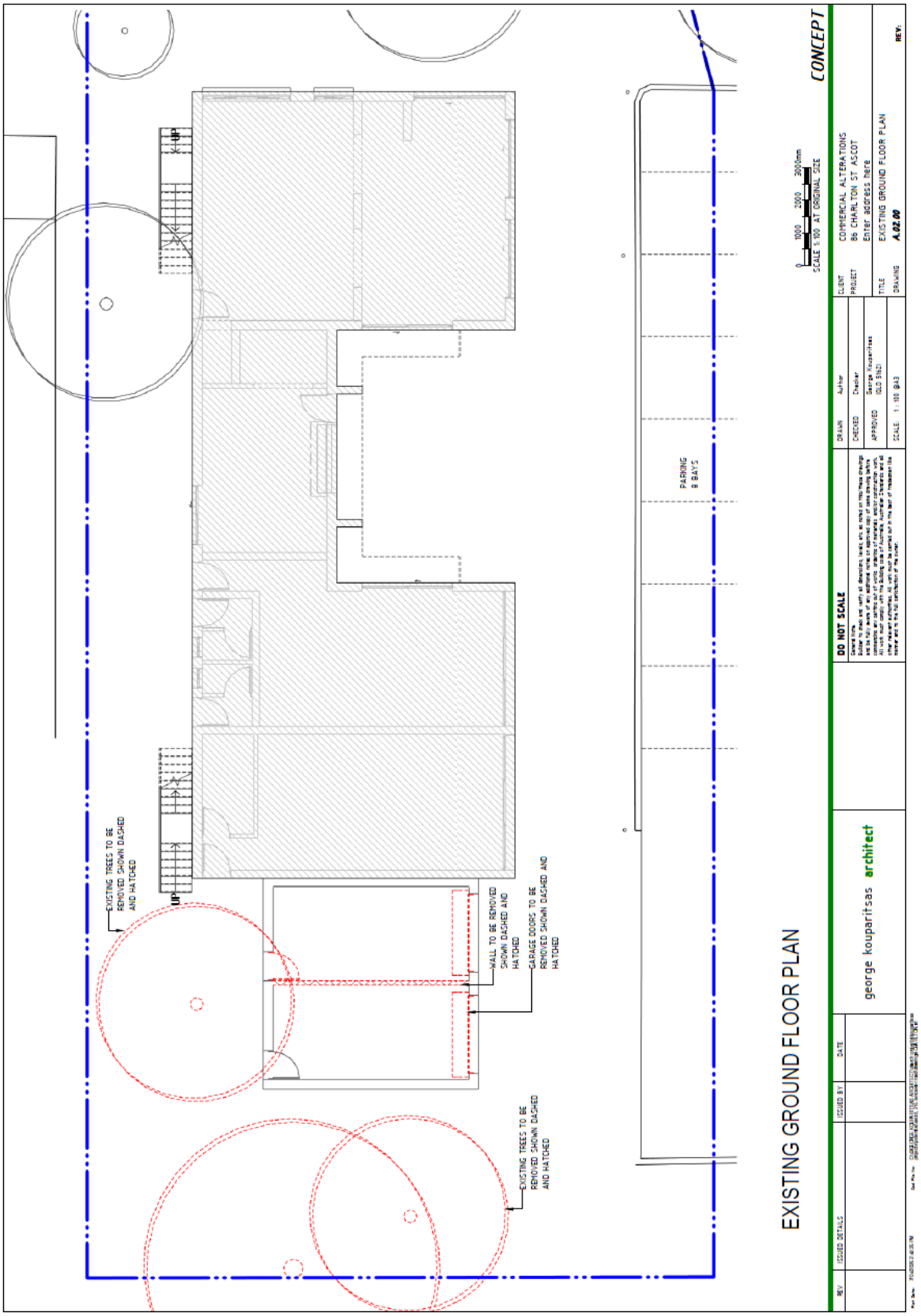
CHARLTON STREET
NEW ROOF TO REPLACE EXISTING ROOF
ALL WINDOW AWNINGS TO BE REMOVED AND REPLACED
PARKING
EXISTING TREES TO BE REMOVED SHOWN DASHED
BIN STORAGE LOCATION
EXISTING SITE PLAN
86 CHARLTON ST ASCOT
COMMERCIAL ALTERATIONS
EXISTING SITE PLAN
A.01.10
scale 1 : 200for A3 date 07.04.2026
George Kouparitsas Architects


LANCASTER ROAD
CHARLTON STREET
NEW ROOF TO REPLACE EXISTING ROOF
AWNINGS
PARKING
CAR PORT
BIN STORAGE LOCATION
GATE
PROPOSED SITE PLAN
86 CHARLTON ST ASCOT
COMMERCIAL ALTERATIONS
PROPOSED SITE PLAN
A.01.11
George Kouparitsas Architects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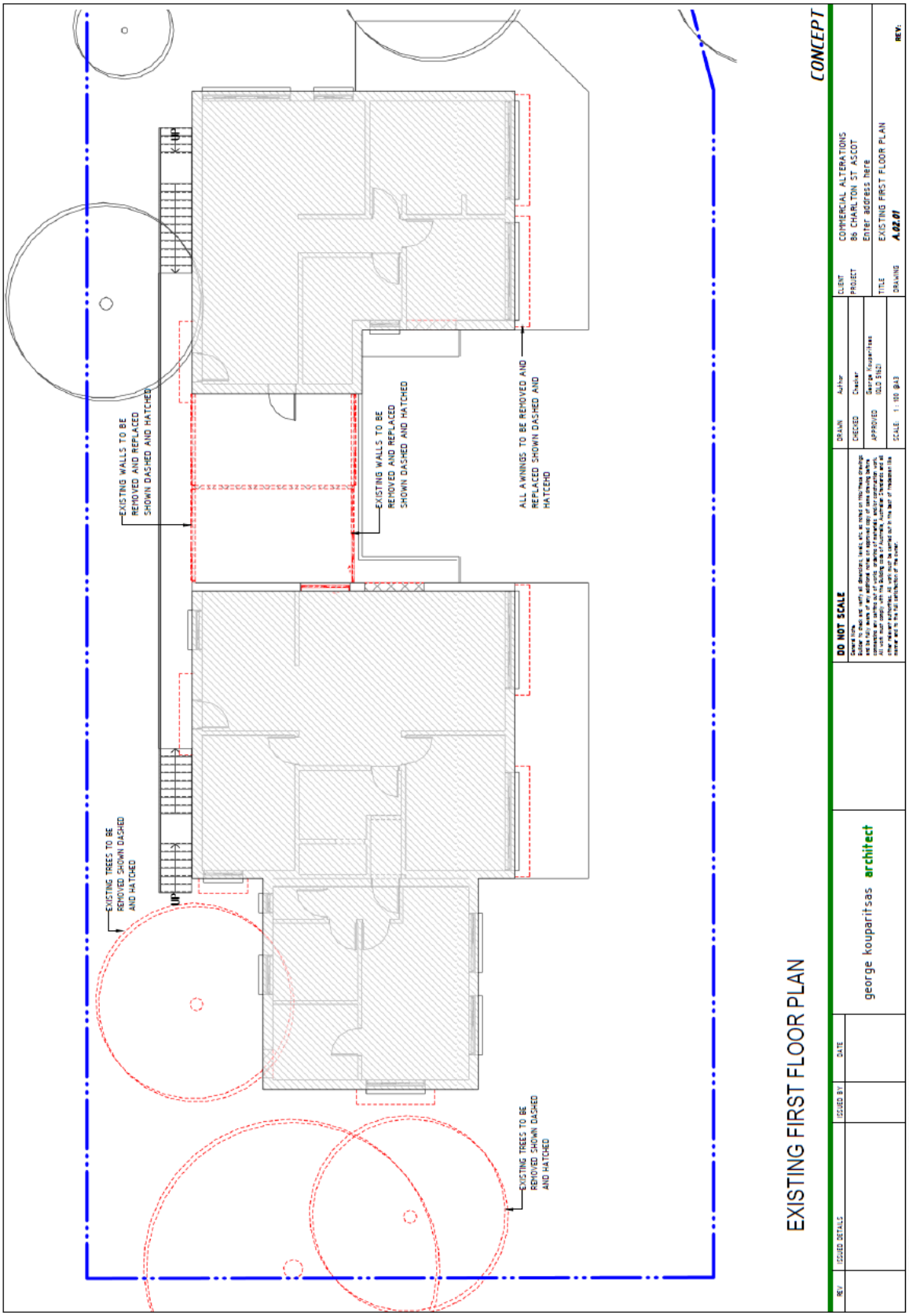
CONCEPT
PARKING
8 BAYS
EXISTING TREES TO BE REMOVED SHOWN DASHED AND HATCHED
WALL TO BE REMOVED SHOWN DASHED AND HATCHED
GARAGE DOORS TO BE REMOVED SHOWN DASHED AND HATCHED
EXISTING TREES TO BE REMOVED SHOWN DASHED AND HATCHED
DO NOT SCALE
george kouparitsas architect
COMMERCIAL ALTERATIONS
86 CHARLTON ST ASCOT
Enter address here
EXISTING GROUND FLOOR PLAN
A02.00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EXISTING FIRST FLOOR PLAN
EXISTING WALLS TO BE REMOVED AND REPLACED SHOWN DASHED AND HATCHED
EXISTING WALLS TO BE REMOVED AND REPLACED SHOWN DASHED AND HATCHED
ALL AWNINGS TO BE REMOVED AND REPLACED SHOWN DASHED AND HATCEHD
EXISTING TREES TO BE REMOVED SHOWN DASHED AND HATCHED
EXISTING TREES TO BE REMOVED SHOWN DASHED AND HATCHED
UP
UP
DO NOT SCALE
george kouparitsas architect
COMMERCIAL ALTERATIONS
86 CHARLTON ST ASCOT
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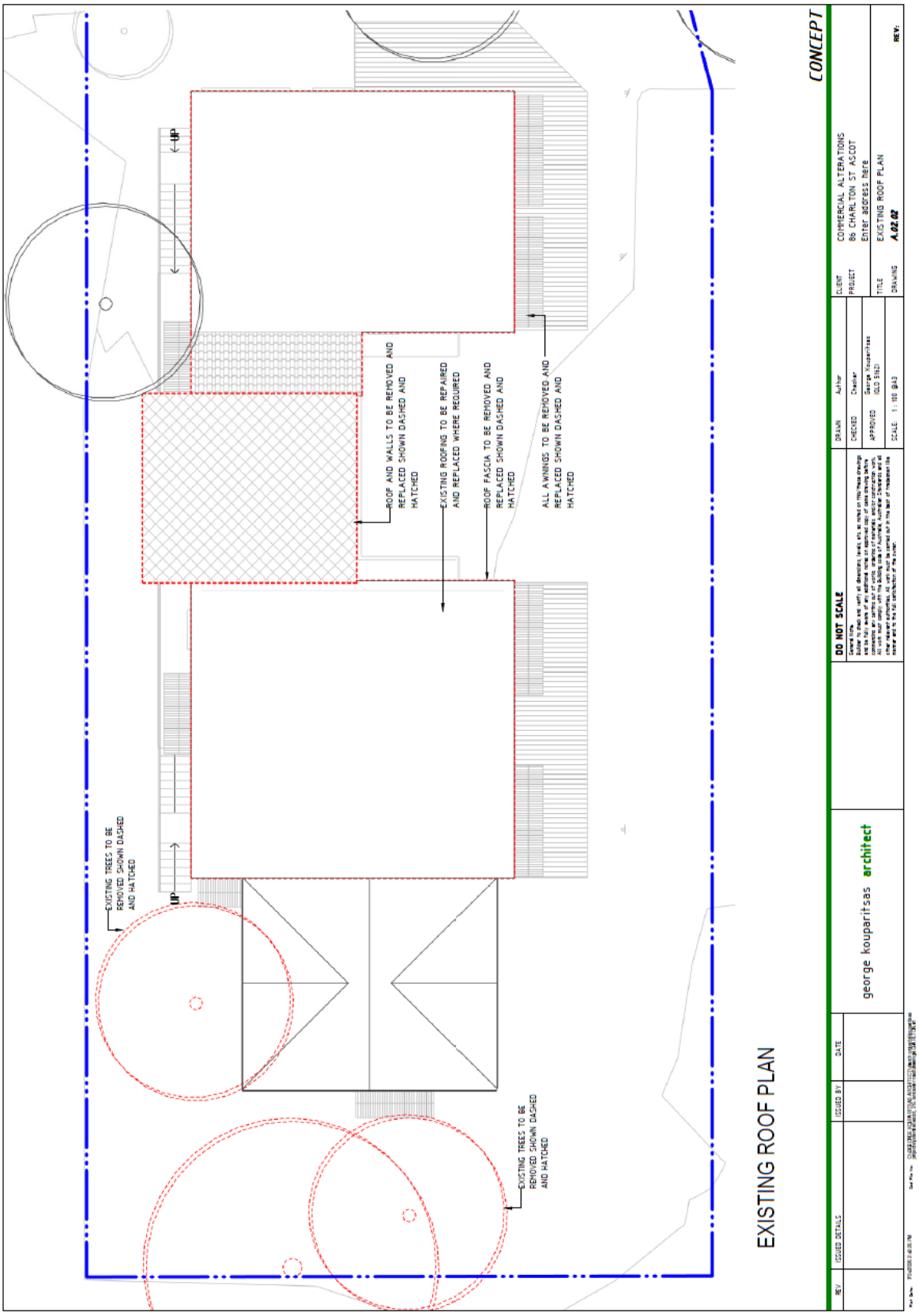
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EXISTING ROOF PLAN
ROOF AND WALLS TO BE REMOVED AND REPLACED SHOWN DASHED AND HATCHED
EXISTING ROOFING TO BE REPAIRED AND REPLACED WHERE REQUIRED
ROOF FASCIA TO BE REMOVED AND REPLACED SHOWN DASHED AND HATCHED
ALL AWNINGS TO BE REMOVED AND REPLACED SHOWN DASHED AND HATCHED
EXISTING TREES TO BE REMOVED SHOWN DASHED AND HATCHED
EXISTING TREES TO BE REMOVED SHOWN DASHED AND HATCHED
UP
UP
DO NOT SCALE
george kouparitsas architect
COMMERCIAL ALTERATIONS
86 CHARLTON ST ASCOT
Enter address here
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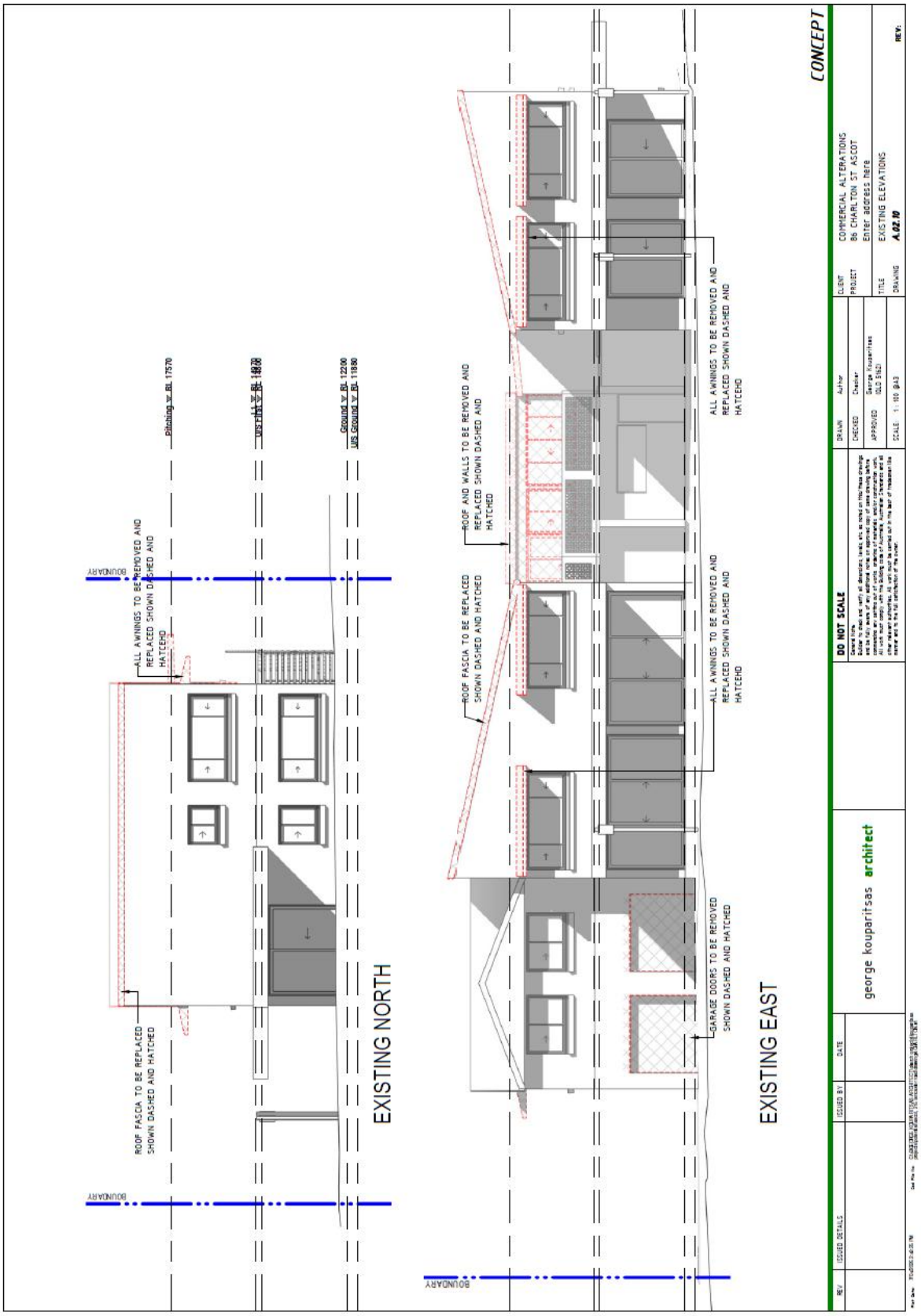
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EXISTING NORTH
EXISTING EAST
ALL AWNINGS TO BE REMOVED AND REPLACED SHOWN DASHED AND HATCHED
ROOF FASCIA TO BE REPLACED SHOWN DASHED AND HATCHED
ROOF AND WALLS TO BE REMOVED AND REPLACED SHOWN DASHED AND HATCHED
GARAGE DOORS TO BE REMOVED SHOWN DASHED AND HATCHED
BOUNDARY
DO NOT SCALE
george kouparitsas architect
COMMERCIAL ALTERATIONS
86 CHARLTON ST ASCOT
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EXISTING ELEVATIONS
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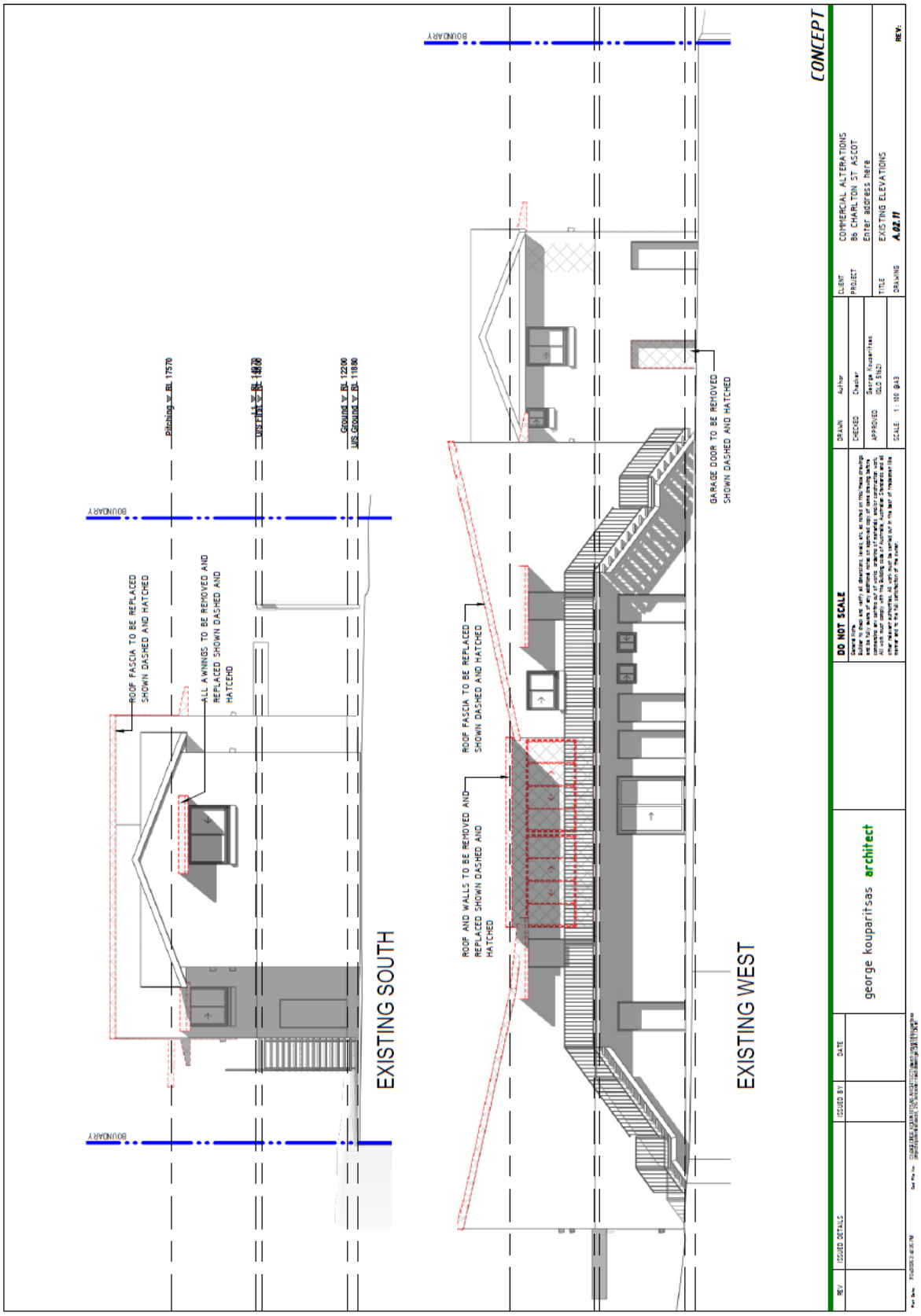
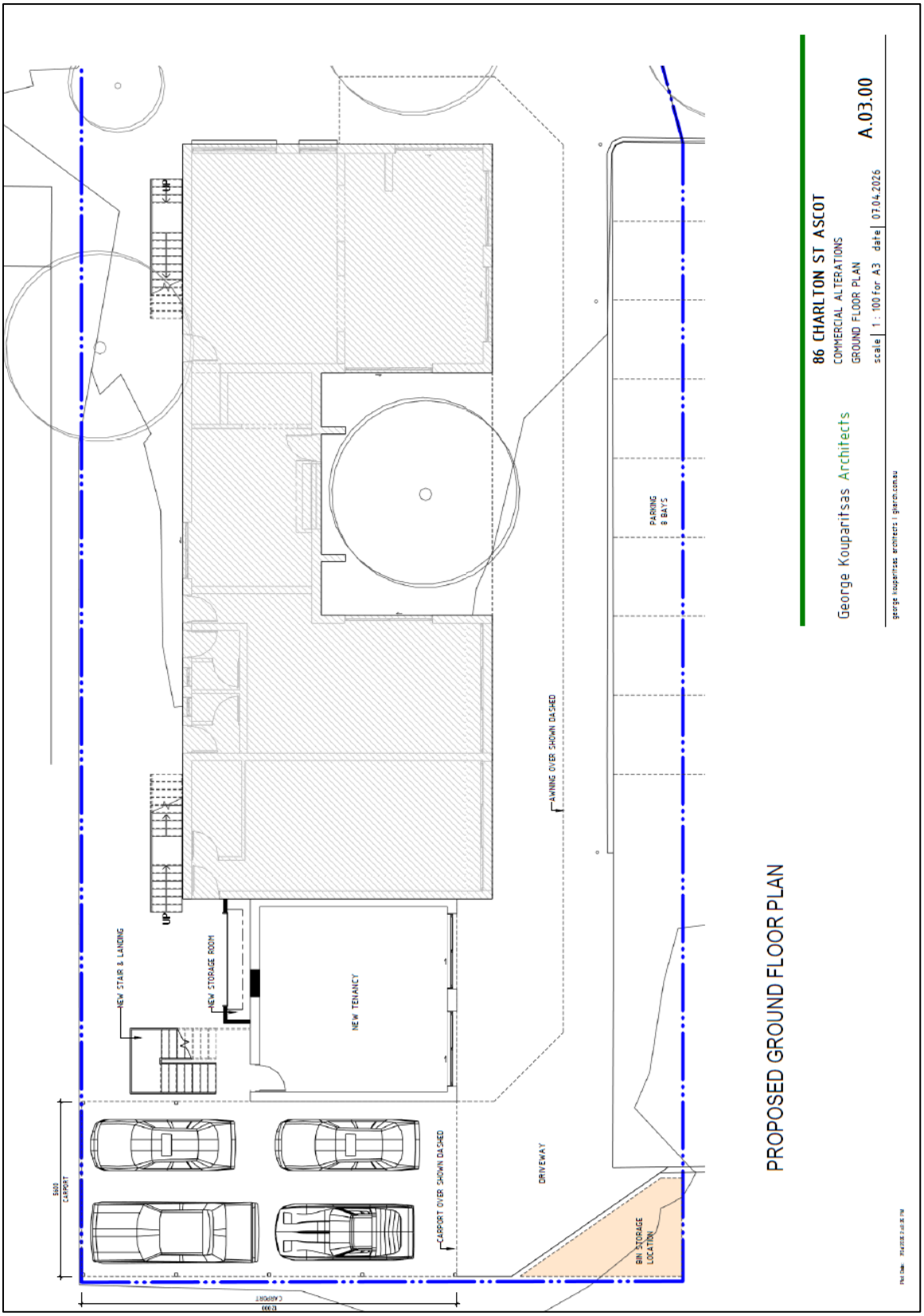
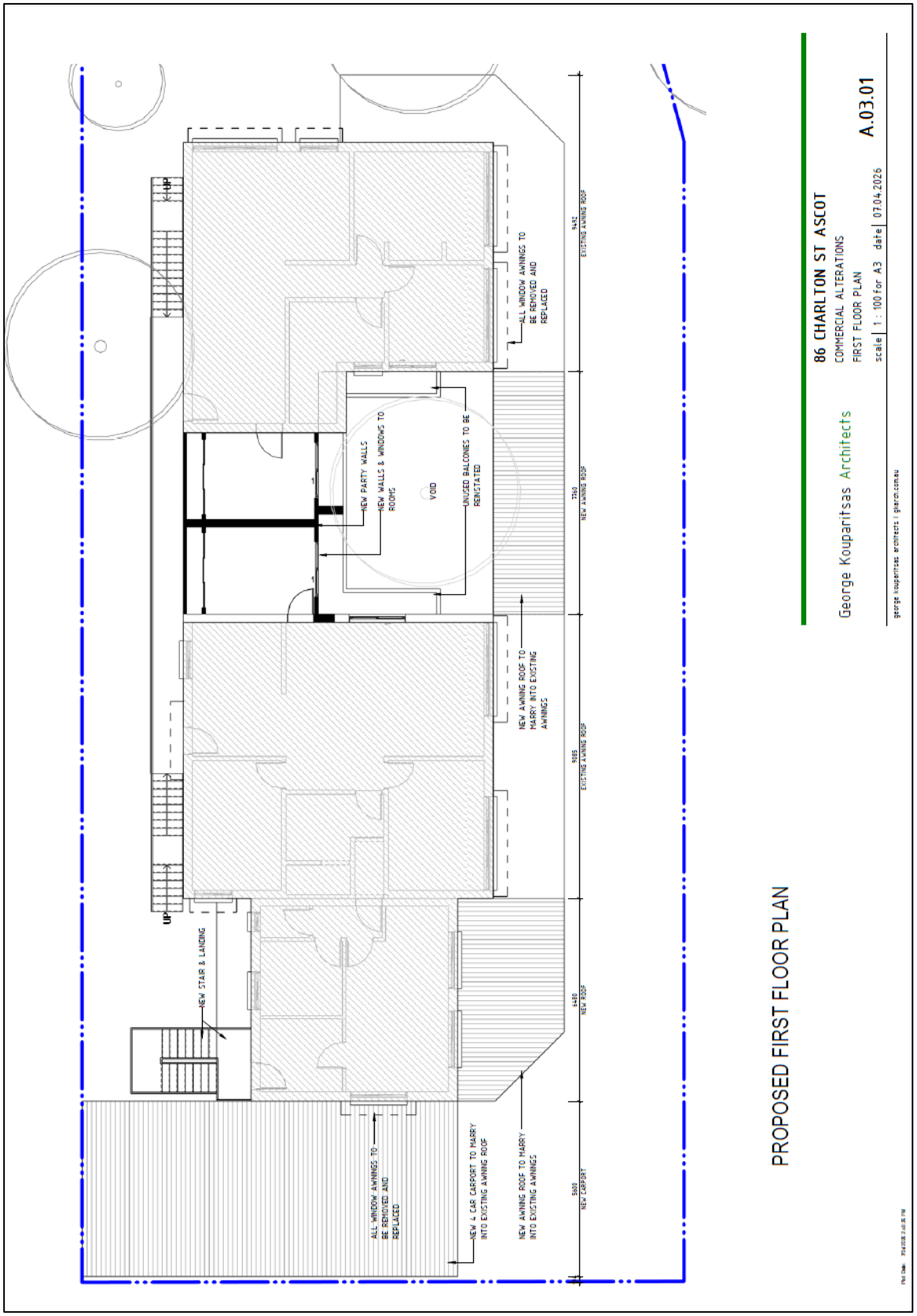

CONCEPT
EXISTING SOUTH
EXISTING WEST
BOUNDARY
ROOF FASCIA TO BE REPLACED SHOWN DASHED AND HATCHED
ALL AWNINGS TO BE REMOVED AND REPLACED SHOWN DASHED AND HATCHED
ROOF AND WALLS TO BE REMOVED AND REPLACED SHOWN DASHED AND HATCHED
GARAGE DOOR TO BE REMOVED SHOWN DASHED AND HATCHED
DO NOT SCALE
george kouparitsas architect
COMMERCIAL ALTERATIONS
86 CHARLTON ST ASCOT
EXISTING ELEVATIONS
A.02.11


PROPOSED GROUND FLOOR PLAN
86 CHARLTON ST ASCOT
COMMERCIAL ALTERATIONS
GROUND FLOOR PLAN
A.03.00
George Kouparitsas Architects
scale | 1 : 100 for A3 date | 07.04.2026
NEW TENANCY
NEW STORAGE ROOM
NEW STAIR & LANDING
UP
UP
PARKING 6 BAYS
AWNING OVER SHOWN DASHED
CARPORT OVER SHOWN DASHED
DRIVEWAY
BIN STORAGE LOCATION
CARPORT


PROPOSED FIRST FLOOR PLAN
86 CHARLTON ST ASCOT
COMMERCIAL ALTERATIONS
FIRST FLOOR PLAN
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George Kouparitsas Architects
ALL WINDOW AWNINGS TO BE REMOVED AND REPLACED
NEW PARTY WALLS
NEW WALLS & WINDOWS TO ROOMS
VOID
UNUSED BALCONIES TO BE REINSTATED
NEW AWNING ROOF TO MARRY INTO EXISTING AWNINGS
NEW STAIR & LANDING
NEW 4 CAR CARPORT TO MARRY INTO EXISTING AWNING ROOF
NEW AWNING ROOF TO MARRY INTO EXISTING AWNINGS
ALL WINDOW AWNINGS TO BE REMOVED AND REPLACED
UP
UP
9442 EXISTING AWNING ROOF
7760 NEW AWNING ROOF
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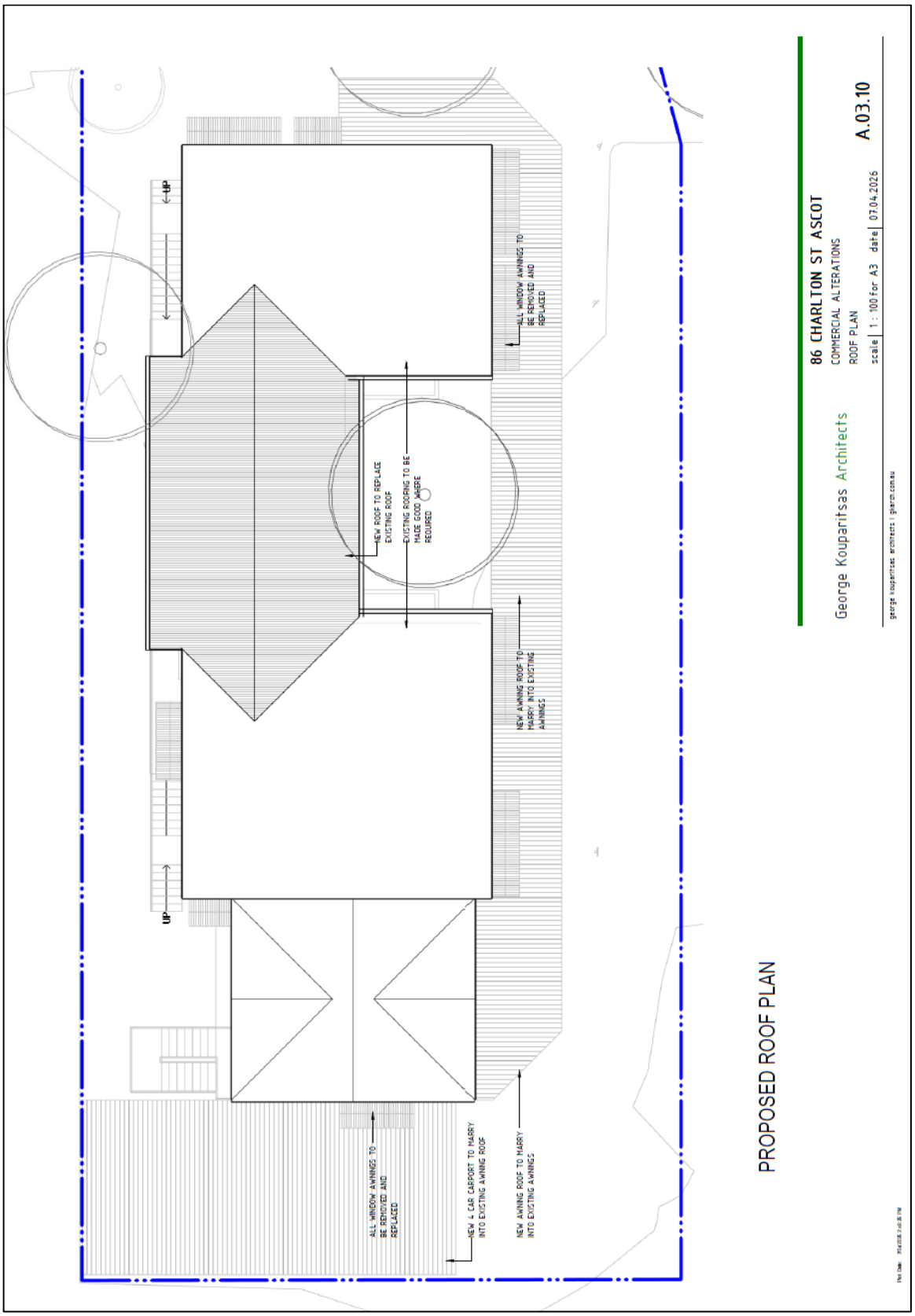
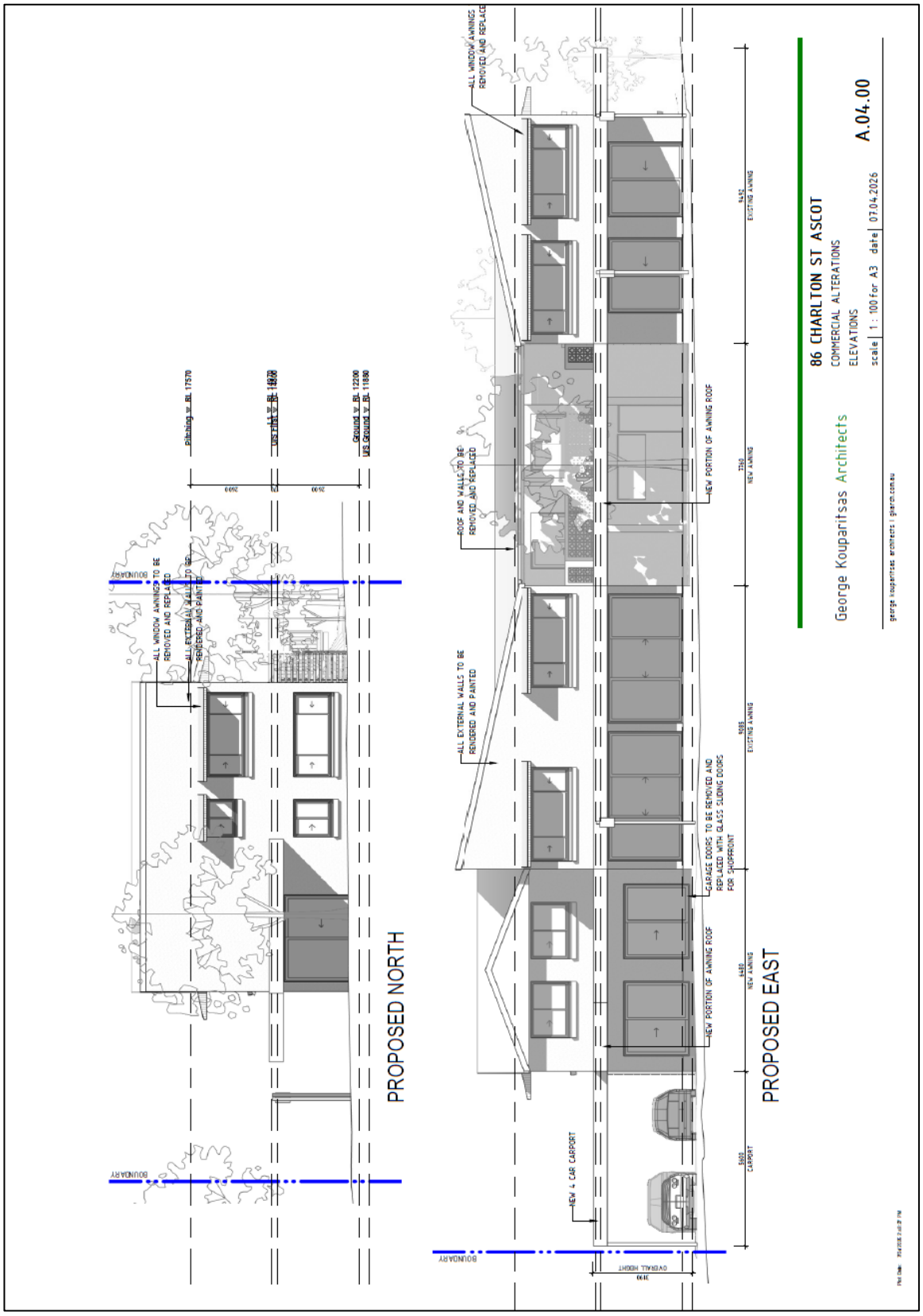
6480 NEW ROOF
5400 NEW CARPORT


PROPOSED ROOF PLAN
86 CHARLTON ST ASCOT
COMMERCIAL ALTERATIONS
ROOF PLAN
A.03.10
George Kouparitsas Architects
scale | 1 : 100 for A3 date | 07.04.2026
UP
UP
NEW ROOF TO REPLACE EXISTING ROOF
EXISTING ROOFING TO BE MADE GOOD WHERE REQUIRED
ALL WINDOW AWNINGS TO BE REMOVED AND REPLACED
NEW AWNING ROOF TO MARRY INTO EXISTING AWNINGS
ALL WINDOW AWNINGS TO BE REMOVED AND REPLACED
NEW 4 CAR CARPORT TO MARRY INTO EXISTING AWNING ROOF
NEW AWNING ROOF TO MARRY INTO EXISTING AWNINGS


PROPOSED NORTH
PROPOSED EAST
BOUNDARY
ALL WINDOW AWNINGS TO BE REMOVED AND REPLACED
ALL EXTERNAL WALLS TO BE RENDERED AND PAINTED
ROOF AND WALLS TO BE REMOVED AND REPLACED
NEW PORTION OF AWNING ROOF
GARAGE DOORS TO BE REMOVED AND REPLACED WITH GLASS SLIDING DOORS FOR SHOPFRONT
NEW 4 CAR CARPORT
EXISTING AWNING
NEW AWNING
CARPORT
OVERALL HEIGHT
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COMMERCIAL ALTERATIONS
ELEVATIONS
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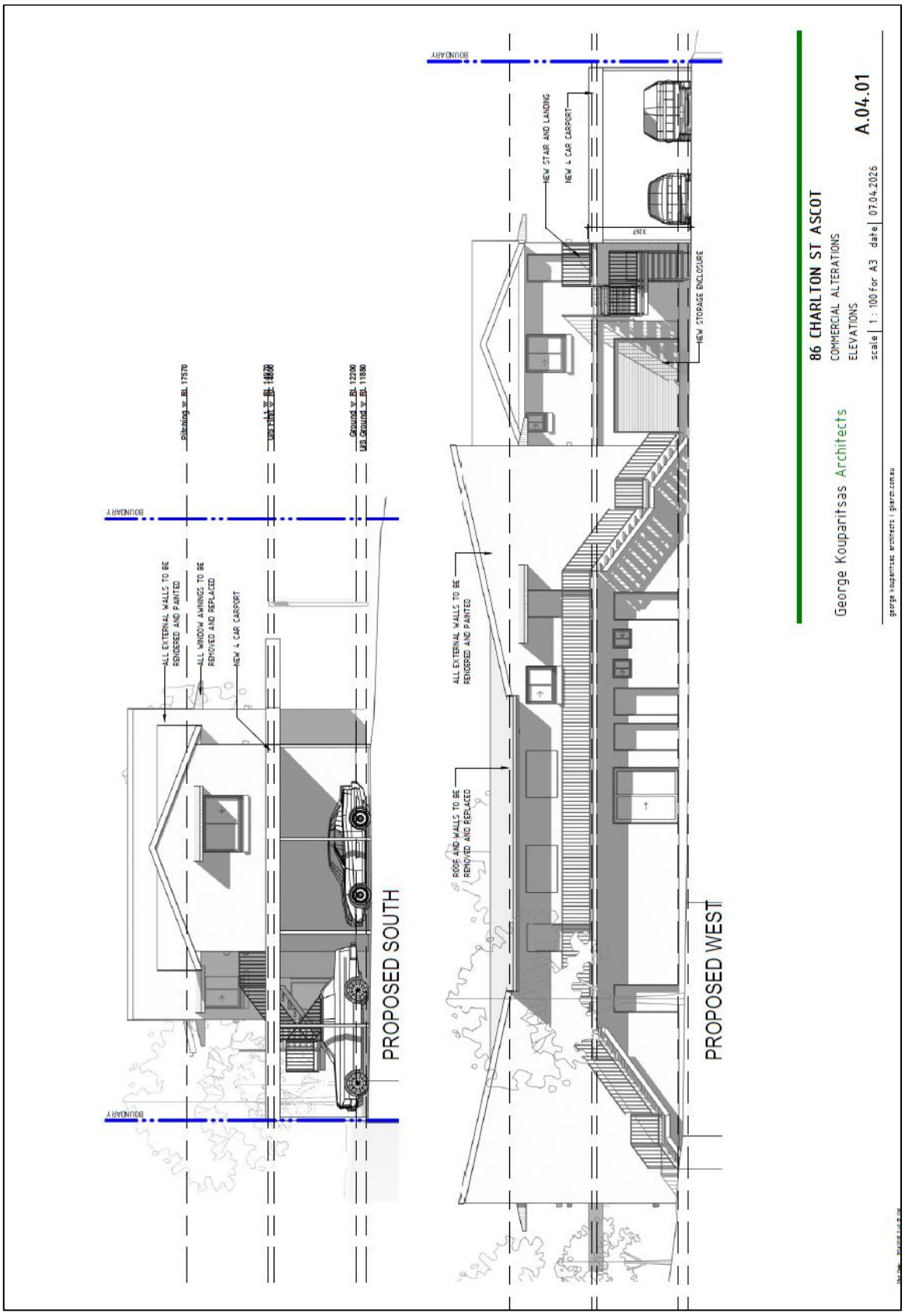
PROPOSED SOUTH
PROPOSED WEST
BOUNDARY
ALL EXTERNAL WALLS TO BE RENDERED AND PAINTED
ALL WINDOW AWNINGS TO BE REMOVED AND REPLACED
NEW 4 CAR CARPORT
ROOF AND WALLS TO BE REMOVED AND REPLACED
NEW STAIR AND LANDING
NEW 4 CAR CARPORT
NEW STORAGE ENCLOSURE
86 CHARLTON ST ASCOT
COMMERCIAL ALTERATIONS
ELEVATIONS
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George Kouparitsas Architects
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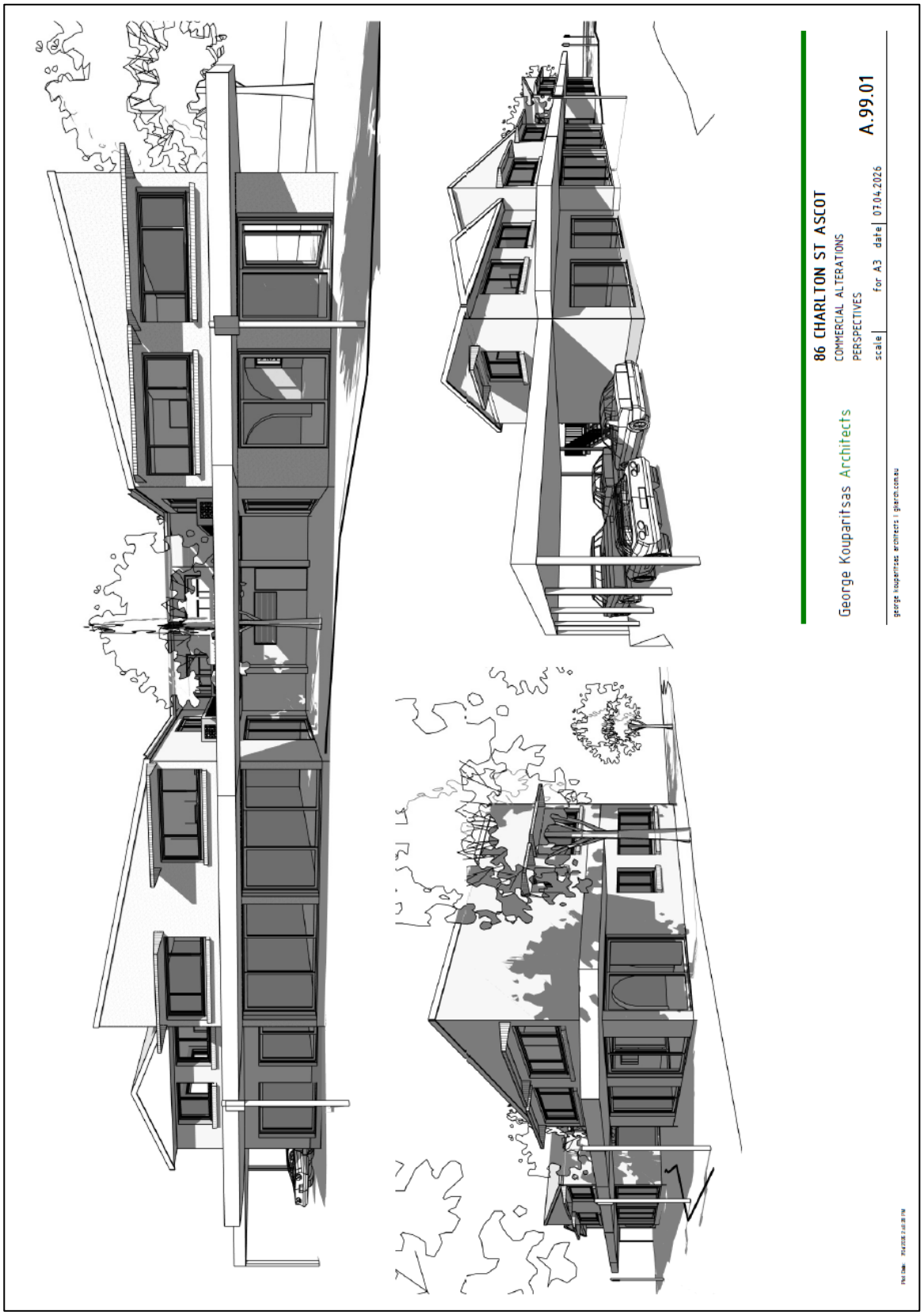
86 CHARLTON ST ASCOT
COMMERCIAL ALTERATIONS
PERSPECTIVES
A.99.00
George Kouparitsas Architects
scale | for A3 date | 07.04.2026
COLWILL PLACE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PERSPECTIVES
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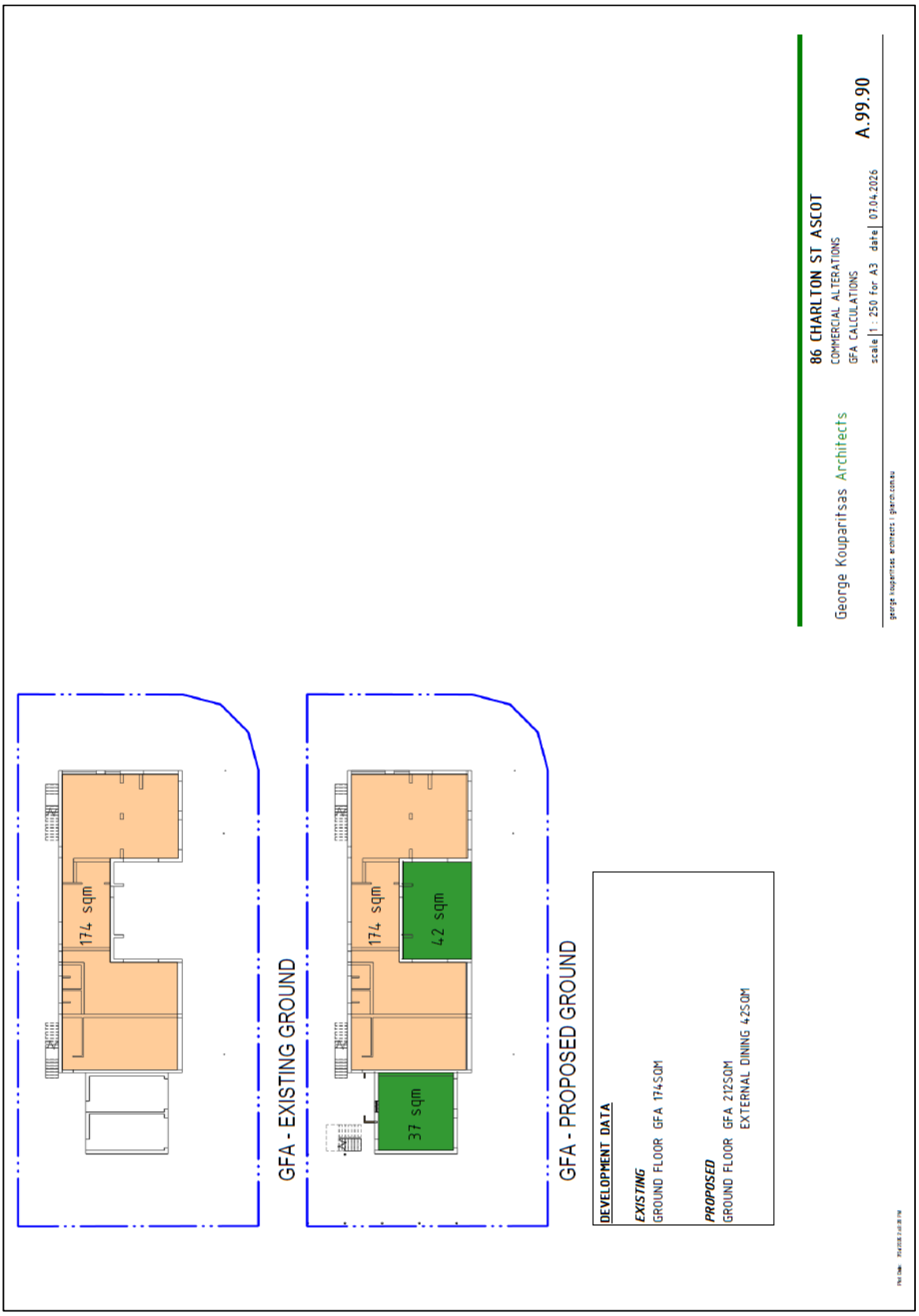
scale
for A3 date 07.04.2026
George Kouparitsas Architects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COMMERCIAL ALTERATIONS
GFA CALCULATIONS
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George Kouparitsas Architects
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GFA - EXISTING GROUND
174 sqm
GFA - PROPOSED GROUND
174 sqm
42 sqm
37 sqm
DEVELOPMENT DATA
EXISTING
GROUND FLOOR GFA 174SQM
PROPOSED
GROUND FLOOR GFA 212SQM
EXTERNAL DINING 42SQM

Appendix B: Glossary

Ambient sound

All sounds in a locality or "soundscape" from distant and nearby sources or activity including traffic, bird song, vegetation movement in the breeze, and so on.

Assessment Background Level (ABL)

The Assessment Background Level is the single figure background level representing each assessment period (day, evening and night) for each day. It is determined by calculating the 10th percentile (lowest 10th percent) background level (LA90) for each period.

Background sound pressure level (LA90,T), L90

Commonly called the "L90" or "background" level and is an indicator of the quietest times of day, evening or night. The L90 level is calculated as the noise level equalled and exceeded for 90% the measurement time. The level is recorded in the absence of any noise under investigation. The level is not adjusted for tonality or impulsiveness. Also known as the background "noise" level.

Character of the environment

The *character of the environment* is often assessed by third-octave or narrow band analysis of the ambient sound. Sounds may be characterised, for example, as "bangs", "hum noise", "plant sounds", and "high frequency sounds". The assessment is required to determine intrusive noise, tonality or annoying character.

Equivalent Continuous or time average sound pressure level (LAeq,T), Leq

Commonly called the "Leq" level it is the logarithmic average noise level from all sources far and near and is referenced to a specific measurement time interval; e.g. 15-minutes or 1-hour. The level can be adjusted for tonality.

Immission

The sound energy received at a receptor location. Distinguished from emission, which relates to noise emitted from a location.

LA10

The LA10 level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the LA10 level for 90% of the time. The LA10 is a common noise descriptor for environmental noise and road traffic noise.

NMS

Noise Measurement Services Pty Ltd

Rating Background Level (RBL)

The overall, single-figure, background level representing each assessment period (day/evening/night) over the whole monitoring period (as opposed to over each 24-hout period used for the assessment of background level. This is defined as the median value of all the day evening or night assessment background levels.