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Environmental Noise Impact Assessment

Franklins Tavern



TOWN OF VICTORIA PARK Received: 25/09/2025

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Environmental Noise Impact Assessment Franklins Tavern

Studio Roam

WSP Lvl 3, Mia Yellagonga Tower 2, 5 Spring St Perth WA 6000 PO Box 7181 Cloisters Square WA 6850

Tel: +61 8 9489 9700 Fax: +61 8 9489 9777

wsp.com

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A 05/06/2025 First Issue							
		Name		Date	Signature		
Prepare	d by:						
Review	ed by:						
Approv	ed by:						

WSP acknowledges that every project we work on takes place on First Peoples lands.

We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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1 Introduction

WSP was engaged by Studio Roam to undertake an environmental noise impact assessment of noise emissions for the proposed redevelopment of Franklin's Tavern at 944-948 Albany Highway, East Victoria Park, Western Australia.

The aims of the study were to:

- Provide a description of the site location and layout.
- Identify the nearest potentially affected noise sensitive receivers.
- Provide a description of the environmental noise criteria relevant to the operation of the proposed Tavern.
- Assess the potential noise impacts of the operation on the nearest receivers.
- In the event of non-compliance recommend potential noise mitigation options.

2 Project background

2.1 Site location

Franklin's Tavern is located at 948 Albany Highway, East Victoria Park, within the City of Victoria Park local government area. The site is currently zoned as mixed-use.

The main noise generating activities from the tavern are expected to be:

- Noise from occupants of the proposed Tavern (patrons and music).
- Noise from on-site traffic movements (light vehicles).
- Noise associated with waste disposal and deliveries.
- Noise from fixed plant on site (building services).
- Potential cumulative noise impacts from all the above operational scenarios.

The redeveloped Tavern is proposed to operate under the following conditions:

- 9.30 am to 12.00 am Monday to Saturday.
- 10.00 am to 12.00 am on Sunday.

The proposed layout of the proposed site is shown in Appendix A2.

2.2 Nearest receivers

The site location and the nearest receivers are outlined in and Table 2.1 and shown in Figure 2.1.

Table 2.1 Nearest receivers

Receiver	Туре	Distance from site boundary m
939 Albany Highway	Multi-storey residential	35
940 Albany Highway	Multi-storey residential	20
949 Albany Highway	Multi-storey residential	25
950-952 Albany Highway	Childcare	0
953 Albany Highway	Mixed-use (GF Commercial, 1F/2F Residential)	30
117 Hubert Street	Multi-storey residential	45
119 Hubert Street	Multi-storey residential	35
122 Hubert Street	Residential	30
124 Hubert Street	Residential	25
126 Hubert Street	Residential	20

Receiver	Туре	Distance from site boundary m
127 Hubert Street	Multi-storey residential	30
128 Hubert Street	Residential	30
130 Hubert Street	Residential	35

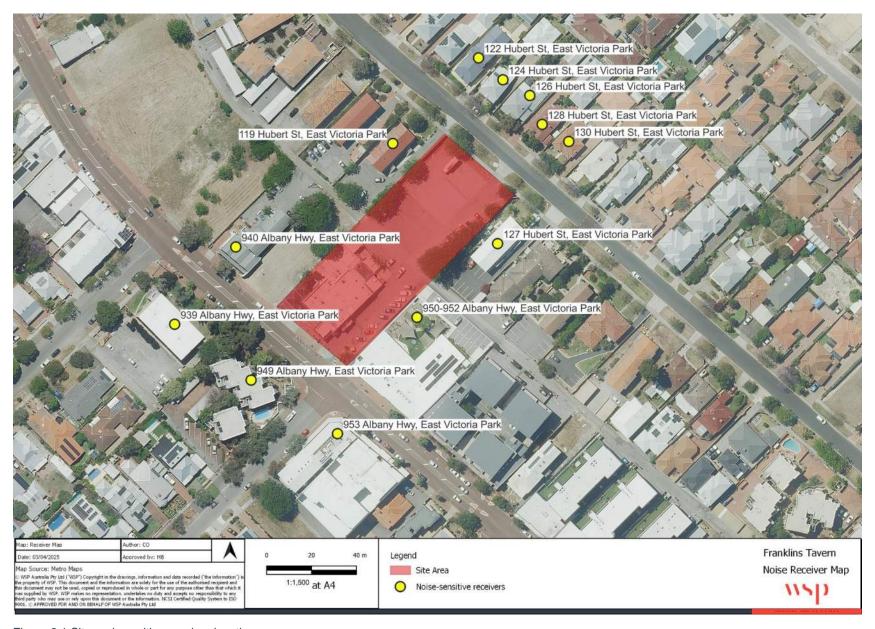


Figure 2.1 Site and sensitive receiver locations

3 Noise criteria

The applicable statutory requirements for noise emissions are contained within the *Environmental Protection Act 1986* (the Act) and the *Environmental Protection (Noise) Regulations 1997* (the Noise Regulations).

The Noise Regulations require that noise emitted from any premises must comply with assigned noise levels when received at any other premises and be free of the intrusive characteristics of tonality, modulation and impulsiveness. In addition, the noise emissions must not "significantly contribute" to an exceedance of the assigned levels. A noise emission is generally understood to "significantly contribute" if it is higher than a level which is 5 dB below the assigned level at the point of reception.

Contribution to exceedance of assigned noise levels

The majority of nearby uses are residential in nature. There is a childcare next door to the proposed Tavern redevelopment, as well as a couple of cafes and other commercial tenancies. It is expected that the background noise levels at the nearest receivers to the site are primarily influenced by road traffic noise from the Albany Highway and/or Shepperton Road, which carries over 13,000 and 31,000 vehicles per day respectively.

Consequently, it is assumed that there is no existing exceedance of the assigned noise levels at the nearby receivers to the proposed site.

Assigned noise levels

Assigned noise levels are the levels of noise allowed to be received at a premises at a particular time of the day.

The assigned levels are specified according to the type of premises receiving the noise. There are different assigned levels for noise sensitive, commercial and industrial premises. The assigned levels for noise sensitive premises vary depending on the time of the day. The assigned noise levels always apply at the premises receiving the noise.

For noise sensitive premises, the assigned levels are adjusted by the addition of an influencing factor to account for the existing acoustic environment. The influencing factor increases with the amount of commercial and industrial premises in the vicinity of the receiver as well as the presence of any major or secondary roads. This is calculated by considering areas within 100 m and 450 m radius of the receiver location.

The table of assigned levels, shown in Table 3.1 identifies three types of assigned levels: L_{Amax}, L_{A1} and L_{A10}.

Table 3.1 Table of assigned noise levels

Type of premises receiving noise	Time of day	Assigned level dB				
		L _{A10}	L _{A1}	L _{Amax}		
Noise sensitive premises at locations within 15 m of a building directly associated with a noise sensitive use	7.00 am to 7.00 pm Monday to Saturday	45 + Influencing factor	55 + Influencing factor	65 + Influencing factor		
	9.00 am to 7.00 pm Sunday and public holidays	40 + Influencing factor	50 + Influencing factor	65 + Influencing factor		
	7.00 pm to 10.00 pm All days	40 + Influencing factor	50 + Influencing factor	55 + Influencing factor		
	10.00 pm on any day to 7.00 am Monday to Saturday and 9.00 am Sunday and public holidays	35 + Influencing factor	45 + Influencing factor	55 + Influencing factor		
Noise sensitive premises at locations further than 15 m from a building directly associated with a noise sensitive use	All hours	60	75	80		
Commercial premises	All hours	60	75	80		

The calculation of the influencing factor for noise sensitive receivers are shown in Table 3.2.

Table 3.2 Influencing factor assumptions

Туре	Description	Contribution to IF dB			
		Albany Highway	128 Hubert Street		
Industrial land	within 100 m	0%	0%		
	within 450 m	0%	0%		
Commercial land	within 100 m	46%	4%		
	within 450 m	12%	12%		
Major roads	within 100 m	N/A	N/A		
	within 450 m	Shepperton Road 31k vpd	Shepperton Road 31k vpd		
Secondary roads	within 100 m	Albany Hwy 13K vpd	N/A		
Influencing Factor (rounded to nearest dB), IF	7	3		

Table 3.3 shows the specific noise criteria applicable for the nearest noise sensitive receivers including any adjustment for the influencing factor.

Table 3.3 Specific criteria noise sensitive premises

Type of receiver	Time of day	Receiver	Assigned level dB			
			L _{A10}	L _{A1}	L _{Amax}	
Noise-sensitive premise	7.00am to 7.00pm	Albany Highway	52	62	72	
	Monday to Saturday	Hubert Street	48	58	68	
	9.00am to 7.00pm	Albany Highway	47	57	72	
ho	Sunday and public holidays	Hubert Street	43	53	68	
	7.00pm to 10.00pm All days	Albany Highway	47	57	62	
		Hubert Street	43	53	58	
	10.00pm on any day to	Albany Highway	42	52	62	
	7.00am Monday to Saturday and 9.00am Sunday and public holidays	Hubert Street	38	48	58	
Commercial premise	All hours	953 Albany Highway (GF only)	60	75	80	

Intrusive characteristics

If noise emitted from any premises when received at any other premises cannot reasonably be free of intrusive characteristics of tonality (e.g. drone or pitch), modulation (e.g. siren) or impulsiveness (e.g. bang), then a series of adjustments must be added to the emitted levels (measured or calculated) and the adjusted level must comply with the assigned level. The adjustments are detailed in Table 3.4.

Table 3.4 Table of adjustments

Adjustment where noise emission is not music these adjustments are cumulative to a maximum of 15 dB			Adjustment where noise emission is music		
Where tonality is present	Where modulation is present	Where impulsiveness is present	Where impulsiveness is not present	Where impulsiveness is present	
+5 dB	+5 dB	+10 dB	+10 dB	+15 dB	

Representative Assessment Period

The assigned levels are statistical noise levels over a Representative Assessment Period (RAP). For this assessment, a RAP of 15 minutes has been selected as an appropriate period for assessing the noise from the site.

As most of the noise sources from the site are expected to be generally constant the $L_{\rm A10}$ criteria has been used for the assessment of the noise levels at the receivers.

4 Prediction of noise levels

4.1 Methodology

A noise model was prepared using the SoundPLAN 8.2 Industrial Module, a commercial software system developed by Braunstein and Bernt Gmbh in Germany and accepted for use by regulatory authorities in Australia.

The software allows the use of various internationally recognised noise prediction algorithms. The algorithm contained within ISO 9613:1996 Acoustics – Attenuation of sound during propagation outdoors was used in this instance.

The operational scenarios outlined in Table 4.1 were modelled as part of the environmental noise from Franklins Tavern.

Table 4.1 Scenarios modelled and relevant assumptions

Scenario	Noise sources and modelling assumptions
Car movements	 Light and medium vehicle movements modelled as a moving point source, at 0.5 m AGL.
	— Car door slams modelled as point sources at 0.5 m AGL.
	 Modelled car movements include car movements in the rear carpark, staff/bottle shop parking and the drive-thru entrance.
	Rear carpark assumed to have within the 15-minute RAP:
	— 4 movements day
	— 6 movements evening
	— 2 movements night
	 Vehicles assumed to be travelling 10 km/hr.
Deliveries	Delivery truck modelled as a moving point source at 1.0 m AGL.
	— One delivery truck travelling 10 km/hr through the project site.
	One diesel forklift operating for the full 15-minute RAP.
	Delivery events modelled for day, evening and night-time assessment
Patrons and music	 External patron activity has been modelled as area sources covering all outdoor areas on site where seating is provided. This includes the ground floor alfresco areas and first-floor roof terrace.
	 Internal patron activity has been modelled as breakout noise from the Tavern building. This includes the entrances to the back bar, front bar and pool table rooms.
	 Music has been modelled as an area source covering all external alfresco and roof top terrace patron areas.
	Patron numbers based on a percentage of the total number of seats provided:
	— 40% day
	— 60% evening
	— 50% night
	— It is assumed that 50% of patrons present are talking at any one time.

At the current stage of this project (development application), a building services design strategy has yet to be developed. Therefore, the future building services design shall be designed to comply with the Assigned Levels from the Noise Regulations.

Under Regulation 14A of the Noise Regulations – Waste Collection and other works:

Regulation 7 does not apply to noise emitted in the course of carrying out class 1 works if:

- a) The works are carried out in the quietest reasonable and practicable manner; and
- b) The equipment used to carry out the works is the quietest reasonably available; and
- c) In a case where a person have been required to prepare a noise management plan, under sub regulation (4) in relation to the works
 - *The noise management plan has been prepared and submitted in accordance with the requirement, and approved in writing by the CEO; and*
 - ii) The works are carried out in accordance with the noise management plan, excluding any ancillary measure

The waste collection on site is considered to be class 1 works as it will occur during the hours of 7.00 am to 7.00 pm from Monday to Saturday. Therefore, as long as the collection is undertaken as per Regulation 14A, then it does not need to be assessed against the assigned levels in the Regulations.

The assumptions used in the modelling were:

- Site RL's provided by Studio Roam.
- Surrounding area topography sourced from ELVIS, 5m DEM contours.
- Ground absorption was conservatively assumed to be hard (g=0) on site and for surrounding areas.
- All noise sources within a modelling scenario are operating simultaneously.
- Noise sources assumed omnidirectional.
- The sound levels referred to in this report represent the L_{A10} emission level.
- Height of receivers 1.5 m for ground level and 4.5 m for first floor receivers.

4.2 Source sound power levels

The potential for machinery to emit noise is quantified as the Sound Power Level (SWL) expressed in decibels (dB re $1x10^{-12}$ W). At the receiver, the noise is quantified as the Sound Pressure Level (SPL) expressed in decibels (dB re $20 \mu Pa$).

Details of the Sound Power Levels used in the model are shown in Appendix A3.

5 Impact assessment

The results of the predicted noise levels at the worst affected receiver in each receiver location and compliance with the established criteria are presented in Table 5.1 to Table 5.4.

The noise contour maps showing the predicted noise levels extending to the worst affected receivers are shown in Appendix A4 for each operational scenario.

Predicted exceedances of the criteria (without any intrusiveness penalty) are highlighted in red, whilst orange highlights indicate exceedances only when including an intrusiveness penalty.

5.1 Patron activity and DJ music

Predicted noise levels from the re-developed Tavern with regards to patron activity and DJ music is presented in Table 5.1.

Table 5.1 Noise impact assessment – Patron activity and DJ music

Noise sensitive receiver	Predicted L _{A10} c (with 10dB mus	IB ic impulsive pena	alty)	Assigned level L _{A10} dB			Compliance
	Day	Evening	Night	Day	Evening	Night	
117 Hubert St	30 (40)	32 (42)	30 (40)				No
119 Hubert St ¹	35 (45)	36 (46)	34 (44)				No
122 Hubert St	23 (33)	25 (35)	24 (34)				Yes
124 Hubert St	24 (34)	26 (36)	25 (35)				Yes
126 Hubert St	22 (32)	24 (34)	23 (33)	43	43	38	Yes
127 Hubert St ¹	27 (37)	28 (38)	28 (38)				Yes
128 Hubert St	21 (31)	23 (33)	22 (32)				Yes
129 Hubert St	24 (34)	25 (35)	25 (35)				Yes
130 Hubert St	20 (30)	22 (32)	22 (32)				Yes
939 Albany Hwy ¹	32 (42)	34 (44)	33 (43)				No
940 Albany Hwy ¹	41 (51)	43 (53)	40 (50)	47	47	42	No
949 Albany Hwy ¹	32 (42)	33 (43)	33 (43)				No

Noise sensitive receiver	Predicted L _{A10} dB (with 10dB music impulsive penalty)			Assigned level L _{A10} dB			Compliance
	Day	Evening	Night	Day	Evening	Night	
950-952 Albany Hwy	24 (34)	25 (35)	25 (35)	47	n/a	n/a	Yes
052 Albana Hana	24 (34)	26 (36)	26 (36)	Commerc	cial 60		Yes
953 Albany Hwy	28 (38)1	29 (39) 1	29 (39) 1	47	47	42	Yes

¹ First/second floor predicted noise level

The predicted noise levels were found to exceed at the following receivers during specific time periods:

- 117 Hubert Street during the Night by up to 2dB.
- 119 Hubert Street during the Day, Evening and Night by up to 2, 3 and 6 dB.
 - Exceedances are at first floor, all periods.
 - Ground floor compliant during the day and evening.
- 939 Albany Highway during the Night by up to 1dB.
 - Exceedance at second floor only.
 - Ground and first floor compliant, all periods.
- 940 Albany Highway during the Day, Evening and Night by up to 4, 5 and 8dB.
 - Exceedances first floor only.
 - Ground floor compliant, all periods.
- 949 Albany Highway during the Night by up to 1dB.
 - Exceedances second floor only.
 - Ground floor compliant, all periods.

Exceedances are (for the most part) predicted at first and second floor receivers in the vicinity of the Tavern.

5.2 Car movements

Predicted noise levels from the re-developed Tavern with regards to car movements is presented in Table 5.2.

Table 5.2 Noise impact assessment – Car movements

	Predicted L _{A10} dB			Assign	ed level LA	Compliance	
receiver	Day	Evening	Night	Day	Evening	Night	
117 Hubert St	22	24	20				Yes
119 Hubert St ¹	38	39	35				Yes
122 Hubert St	29	31	27				Yes
124 Hubert St	31	33	29				Yes
126 Hubert St	31	33	29	43	43	38	Yes
127 Hubert St ¹	38	40	36				Yes
128 Hubert St	30	32	29				Yes
129 Hubert St	23	25	22				Yes
130 Hubert St	29	30	27				Yes
939 Albany Hwy¹	23	24	22			42	Yes
940 Albany Hwy ¹	27	29	25	47	47		Yes
949 Albany Hwy ¹	28	29	28				Yes
950-952 Albany Hwy	30	31	29	47	n/a	n/a	Yes
052 Albeny U	22	22	21	Commo	Commercial 60		Yes
953 Albany Hwy	26¹	261	251	47	47	42	Yes

First/second floor predicted noise level

The predicted noise levels are within the noise criteria at all the worst affected receivers.

5.3 Deliveries

Predicted noise levels from the re-developed Tavern with regards to deliveries is presented in Table 5.3.

Table 5.3 Noise impact assessment - Deliveries

Noise sensitive receiver	Predicted L _{A10} dB (with 5dB tonality penalty)	Assigne	d level L	Compliance		
receivei	Day/Evening/Night	Day	Evening	Night	-	
117 Hubert St	15 (20)				Yes	
119 Hubert St ¹	26 (31)		43		Yes	
122 Hubert St	22 (27)				Yes	
124 Hubert St	23 (28)				Yes	
126 Hubert St	24 (29)	43		38	Yes	
127 Hubert St ¹	33 (38)				Yes	
128 Hubert St	24 (29)				Yes	
129 Hubert St	23 (28)				Yes	
130 Hubert St	26 (31)				Yes	
939 Albany Hwy ¹	16 (21)				Yes	
940 Albany Hwy ¹	20 (25)	47	47	42	Yes	
949 Albany Hwy ¹	30 (35)				Yes	
	30 (35)	47	n/a	n/a		
950-952 Albany Hwy					Yes	
953 Albany Hwy	25 (30)	Commercial 60			Yes	
	28 (33)1	47	47	42	Yes	

First/second floor predicted noise level

The predicted noise levels are within the noise criteria at all the worst affected receivers.

5.4 Cumulative

The cumulative predicted noise levels from the re-developed Tavern considering operational scenarios likely to occur at the same time (car movements, patron activity and DJ music) combined is presented in Table 5.4.

Table 5.4 Noise impact assessment - Cumulative noise

Noise sensitive receiver		dB sic impulsive p	enalty)	Assign	ned level L _A	Compliance		
	Day	Evening	Night	Day	Evening	Night		
117 Hubert St	30 (40)	32 (42)	30 (40)				No	
119 Hubert St ¹	35 (45)	37 (47)	35 (45)				No	
122 Hubert St	25 (35)	27 (37)	24 (34)				Yes	
124 Hubert St	26 (36)	28 (38)	26 (36)			38	Yes	
126 Hubert St	25 (35)	27 (37)	25 (35)	43	43		Yes	
127 Hubert St ¹	30 (40)	32 (42)	30 (40)				No	
128 Hubert St	24 (34)	26 (36)	24 (34)				Yes	
129 Hubert St	24 (34)	26 (36)	25 (35)				Yes	
130 Hubert St	23 (33)	24 (34)	23 (33)				Yes	
939 Albany Hwy ¹	32 (42)	34 (44)	33 (43)			42	No	
940 Albany Hwy ¹	41 (51)	43 (53)	40 (50)	47	47		No	
949 Albany Hwy ¹	32 (42)	33 (43)	33 (43)				No	
950-952 Albany Hwy	25 (35)	26 (36)	25 (35)	47	n/a	n/a	Yes	
953 Albany Hwy	25 (35)	26 (36)	26 (36)	Commo	Commercial 60		Yes	
	28 (381)	29 (39¹)	29 (391)	47	47	42	Yes	

First/second floor predicted noise level

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The predicted noise levels were found to exceed at the following receivers during specific time periods:

- 117 Hubert Street during the Night by up to 2dB.
- 119 Hubert Street during the Day, Evening and Night by up to 2, 4 and 7 dB.
 - Exceedances first and second floors all periods.
 - Ground floor compliant during the day and evening.
- 127 Hubert Street during the Night by up to 2dB.
- 939 Albany Highway during the Night by up to 1dB.
 - Exceedance at second floor only.
 - Ground and first floor compliant, all periods.
- 940 Albany Highway during the Day, Evening and Night by up to 4, 6 and 8dB.
 - Exceedances first floor only.
 - Ground floor compliant, all periods.
- 949 Albany Highway during the Night by up to 1dB.
 - Exceedances second floor only.
 - Ground floor compliant, all periods.

Exceedances are (for the most part) predicted at first and second floor receivers in the vicinity of the Tavern.

6 Noise management

Exceedances are predicted at multiple nearby noise-sensitive receivers, primarily at first and second floor receivers. To this end, noise mitigation and/or management measures will be required to meet the assigned levels from the Noise Regulations.

The following noise management and mitigation strategies should be considered as part of the re-developed Tavern operations:

- Development of a noise management plan, which should consider controls and management strategies such as
 - Live music conducted indoors only, not in the external alfresco or rooftop terrace areas.
 - Cap patron numbers in the external alfresco and rooftop terrace areas past 7.00 pm every day of the week.
 - External alfresco and roof top terrace areas should be closed past 10.00 pm every day of the week.
 - Music from external alfresco and rooftop terrace speakers must not exceed 75dB at 3 m.
- Barriers between external alfresco areas and nearby noise-sensitive receivers.
 - It is noted there is limited effective of such a control, given the vast majority of receivers are only exceeding at first and second floors.
- Deliveries should only take place during the day and evening-times as defined in the Noise Regulations to limit noise impact on nearby receivers.
- Instructing delivery drivers and tavern staff to be keep noise levels to a minimum by not shouting, banging pallets, idling engines and no loud stereos.
- Signage advising patrons that tavern is committed to maintaining a peaceful and enjoyable environment for everyone and kindly asking to be mindful of the noise levels, especially during late hours.
- Future building services design is to be developed and will be designed to comply with the Assigned levels from the Noise Regulations.

With the recommended noise management and mitigation strategies in place, it is expected that the Assigned levels from the Noise Regulations will be met for all operational scenarios.

7 Conclusion

WSP was engaged by Studio Roam to undertake an environmental noise impact assessment of noise emissions for the redeveloped Franklin's Tavern. The acoustic assessment has been conducted in accordance with the requirements of Western Australia Environmental Protection (Noise) Regulations 1997.

Noise levels associated with the facility were assessed against the assigned levels within the Noise Regulations at the nearest receivers for all operational scenarios, with the following summary of results:

- Patron activity and DJ music were predicted to exceed at multiple nearby noise-sensitive receivers.
- Car movements were predicted to be compliant at nearby noise-sensitive receivers.
- Deliveries were predicted to be compliant at nearby noise-sensitive receivers.
- Cumulative noise impacts from all three operational scenarios were predicted to exceed at some nearby noisesensitive receivers.

To this end, noise management measures and strategies as per Section 6 are to be implemented in order to meet the assigned levels from the Noise Regulations.

A1 Acoustic terminology

SOUND PRESSURE LEVEL (SPL)

The basic unit of sound measurement is the sound pressure level. The pressures are converted to a logarithmic scale and expressed in decibels (dB).

SOUND POWER LEVEL (SWL)

The Sound Power of a source is the rate at which it emits acoustic energy. As with Sound Pressure Levels, Sound Power Levels are expressed in decibel units (dB or dBA), but may be identified by the symbols SWL or LW, or by the reference unit 10⁻¹² W.

The relationship between Sound Power and Sound Pressure may be likened to an electric radiator, which is characterised by a power rating, but influences the surrounding environment that can be measured in terms of a different parameter, temperature.

A-WEIGHTING

A frequency weighting devised to attempt to consider the fact that human response to sound is not equally sensitive to all frequencies; it consists of an electronic filter in a sound level meter, which attempts to build in this variability into the indicated noise level reading so that it will correlate, approximately, with human response.

STATISTICAL NOISE LEVELS

Sounds that vary in level over time, such as road traffic noise and most community noise, are commonly described in terms of the statistical exceedance levels LAN, where LAN is the A-weighted sound pressure level exceeded for N% of a given measurement period. For example, the L_{A1} is the noise level exceeded for 1% of the time, L_{A10} the noise exceeded for 10% of the time, and so on.

Of particular relevance, are:

 L_{A1} - The noise level exceeded for 1% of the 15 minute interval.

 L_{A10} - The noise level exceeded for 10% of the 15 minute interval. This is commonly referred to as the average maximum noise level.

 L_{A90} - The noise level exceeded for 90% of the sample period. This noise level is described as the average minimum background sound level (in the absence of the source under consideration), or simply the background level.

 L_{Aeq} - The A-weighted equivalent noise level (basically the average noise level). It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.

MODULATION

A modulating noise is characterised by a variation in the emission that is regular, cyclic and audible.

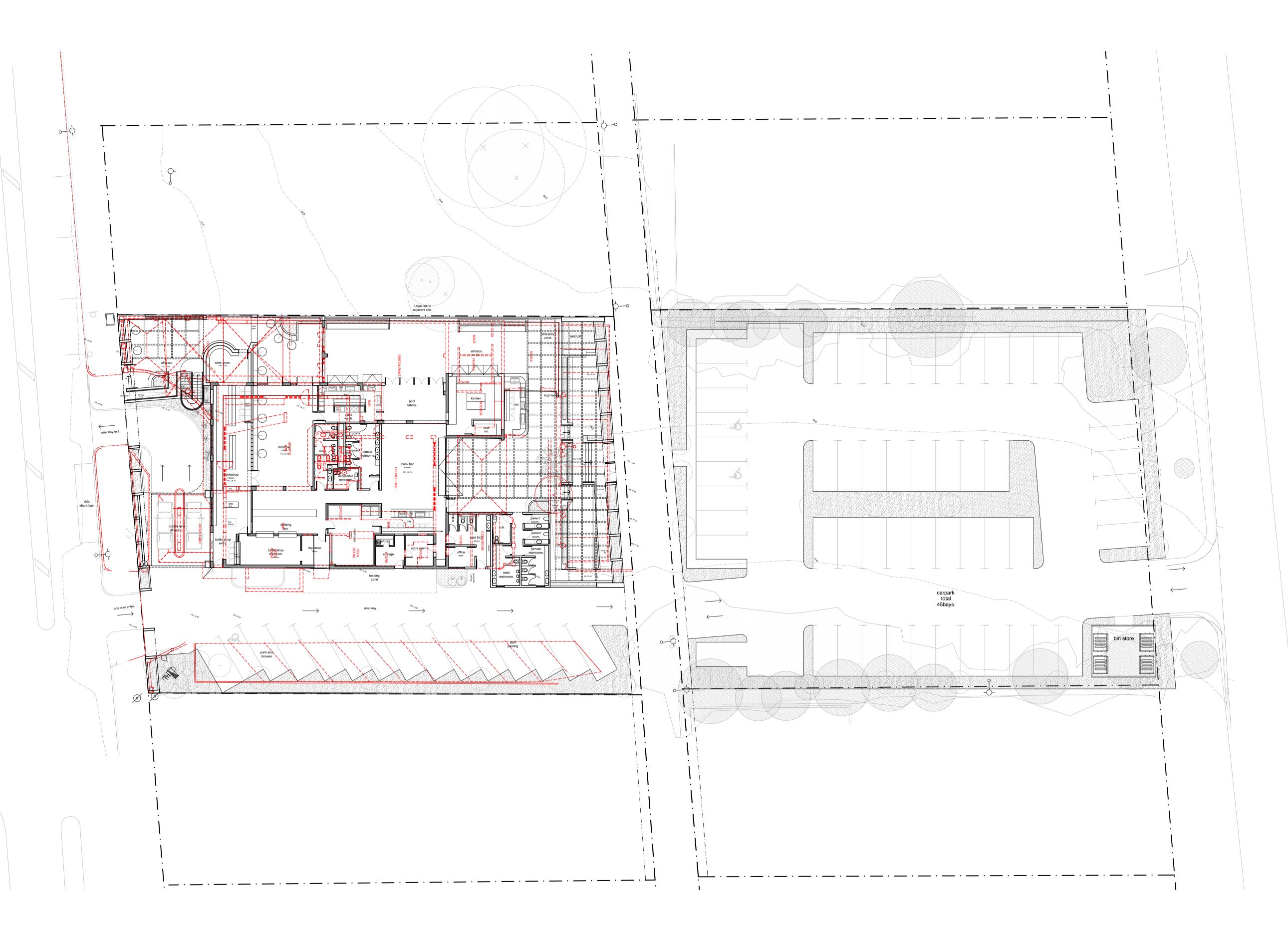
TONALITY

Tonal noise contains one or more prominent tones (i.e. distinct frequency components), and is normally regarded as more offensive than "broad band" noise.

IMPULSIVENESS

An impulsive noise is characterised by one or more short sharp peaks in the time domain, such as occurs during hammering.

A2 Site plan



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project title: FRANKLINS TAVERN

project no: 2308 project address: 948 ALBANY HWY, EAST VICTORIA PARK

URBAN CAPITAL GROUP

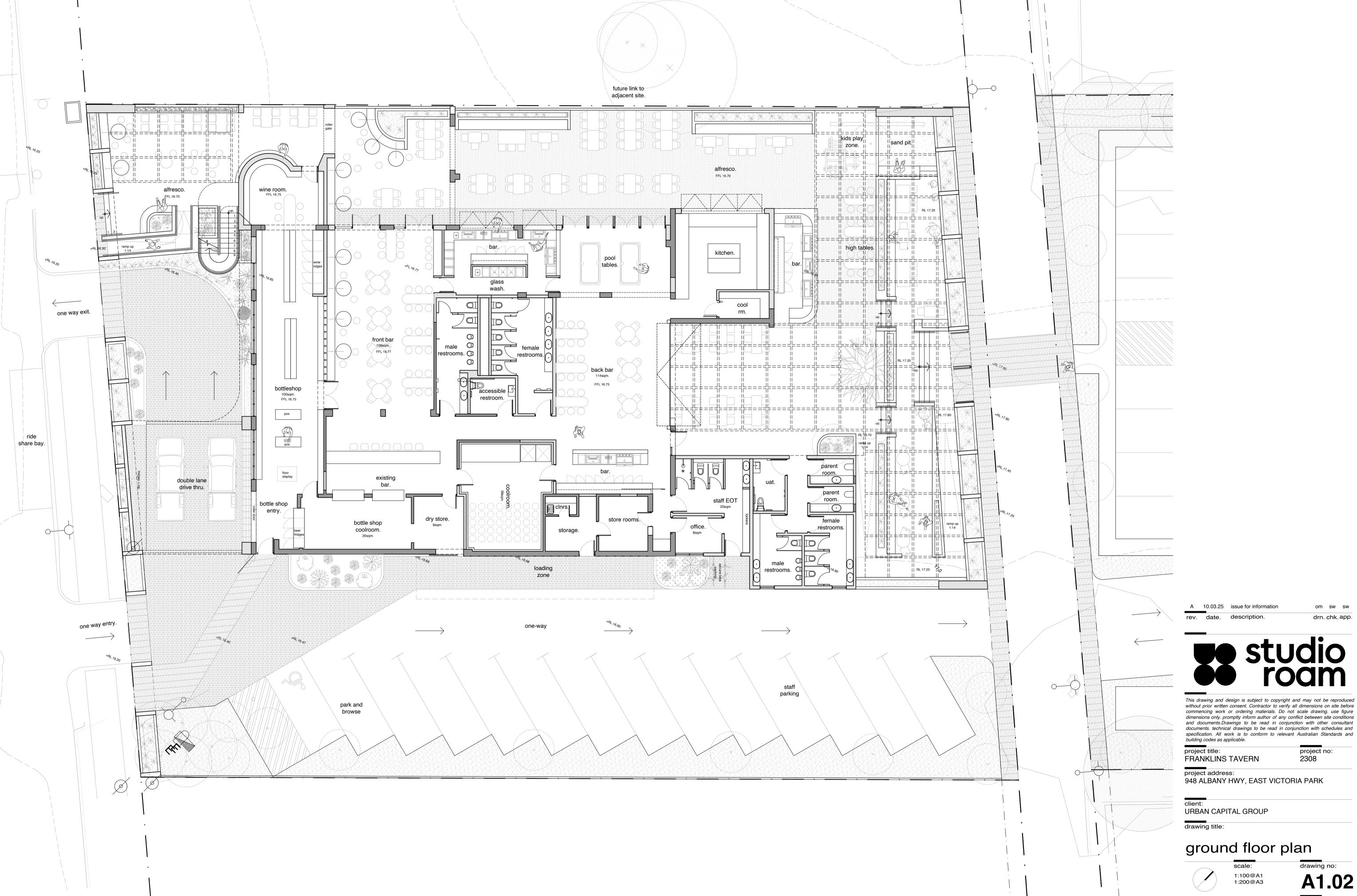
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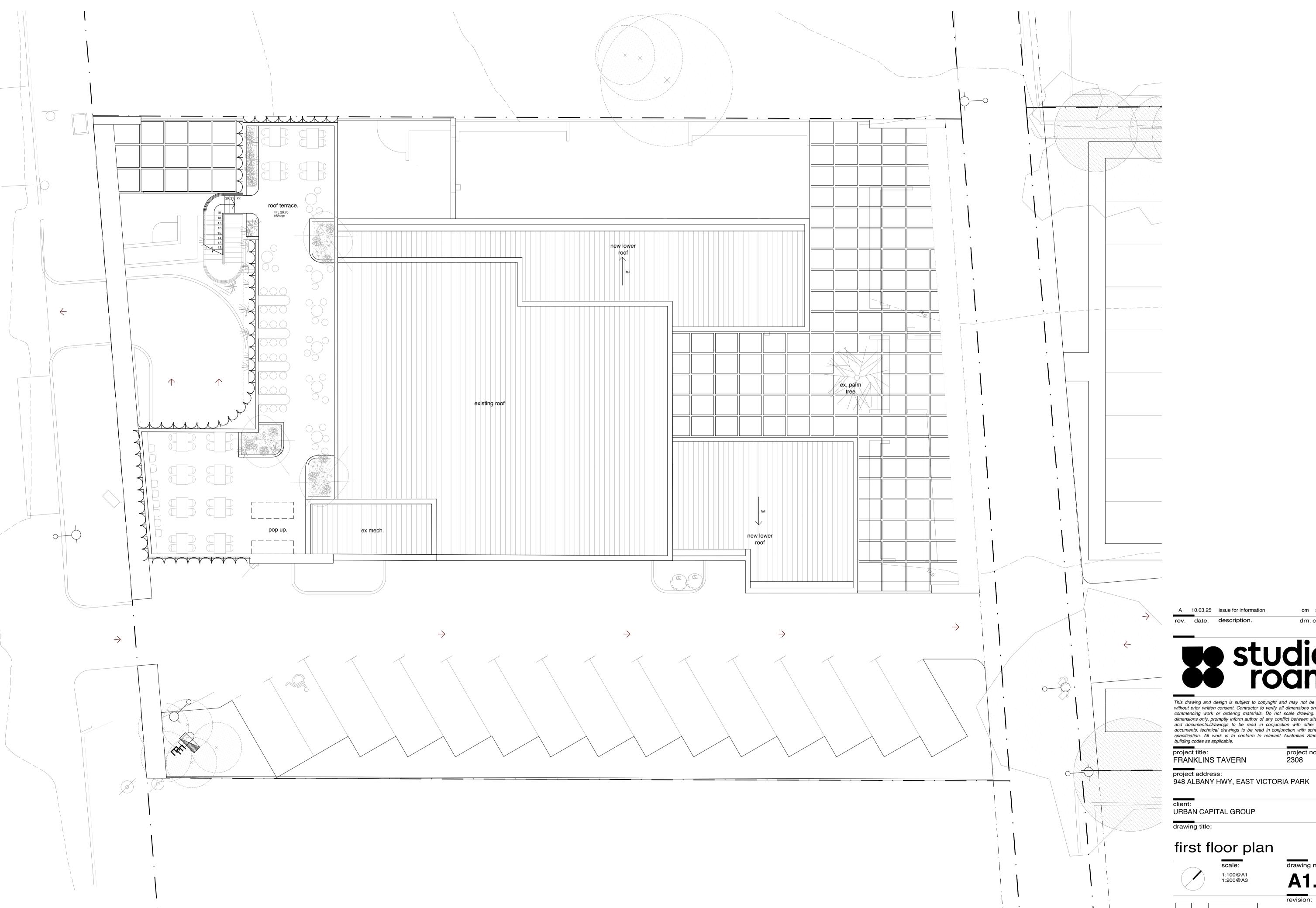
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A3 Source SWL's

Noise Source	Octave Band Centre Frequency, Hz									Total, dBA	Reference
	31.5	63	125	250	500	1k	2k	4k	8k		
Delivery Truck	-	100	94	93	91	93	90	87	-	97	WSP Database
Car Movement (Toyota Hilux)	115	112	106	98	94	93	92	89	86	100	WSP Database
Diesel Forklift, moving	-	70	64	60	58	58	54	50	47	62/m	SP Database
DJ Background Music	-	62	65	60	63	61	57	51	-	65	WSP Database
2 Patrons Talking	-	-	66	72	74	71	64	59	52	75	AAAC Guideline
6 Patrons Talking	-	-	71	77	79	76	69	63	57	80	AAAC Guideline
8 Patrons Talking	-	-	72	78	80	77	70	65	58	81	AAAC Guideline
9 Patrons Talking	-	-	72	79	81	78	71	65	59	82	AAAC Guideline
10 Patrons Talking	-	-	73	79	81	78	71	66	59	82	AAAC Guideline

12 Patrons Talking		74	80	82	79	72	66	60	83	AAAC Guideline
15 Patrons Talking	-	75	81	83	80	73	67	61	84	AAAC Guideline
18 Patrons Talking	-	75	82	84	81	74	68	62	85	AAAC Guideline
21 Patrons Talking	-	76	82	85	81	75	69	62	86	AAAC Guideline
27 Patrons Talking		77	83	86	83	76	70	63	87	AAAC Guideline
32 Patrons Talking		78	84	86	83	76	71	64	87	AAAC Guideline
40 Patrons Talking		79	85	87	84	77	72	65	88	AAAC Guideline
50 Patrons Talking		80	86	88	85	78	73	66	89	AAAC Guideline
60 Patrons Talking		81	87	89	86	79	73	67	90	AAAC Guideline

A4 Noise contour maps

