

Application for Variation of Premises Licence

1.	Ayrshire Entertainments Limited	Ye Olde Forte Bar 39 South Harbour Street Ayr
Removal of the condition 2 - "There shall be no live music on the Premises"		

MEMORANDUM



Comhairle Siorrachd 'Air Deas

Tel: (01292) 618222
Email: environmental.health@south-ayrshire.gov.uk
Our Ref: RGD/PS/24/01808/SECT29
Your Ref: 24/00749/LAPREV
Date: 2 July 2024

From: Service Lead: Trading Standards & Environmental Health
5-7 River Terrace
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KA8 0BJ

To: Licensing Services
County Buildings
Wellington Square
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KA7 1DR

SUBJECT: Licensing (Scotland) Act 2005
Premises: Ye Old Fort Bar, 39 South Harbour Street Ayr, KA7 1JA

I refer to the above Section 29 application for Variation of Premises Licence submitted to this section on **22 May 2024** and can advise as follows.

The proposal to allow live music on the premises may introduce noise nuisance conditions to noise sensitive receptors in the adjacent residential properties above the venue. It will be necessary for a noise assessment to be undertaken and submitted so as to determine the likelihood of noise nuisance from the proposed live music on the noise sensitive receptors. The assessment shall be carried out by a suitably qualified acoustic consultant or other competent person, and shall include all relevant noise sources that may impact on the noise sensitive receptors using the current British Standard (or as may be amended).

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YE OLDE FORTE BAR, AYR	Document Reference: South Harbour, Ayr
NOISE IMPACT ASSESSMENT & CONTROL OPTIONS: 39 South Harbour Street, Ayr	Issue No: 1.0
	Issue date: 24 July 2024
	Originator: McIntyre Acoustics
	Client: Ayrshire Entertainments Ltd



YE OLDE FORTE BAR, AYR

**Noise impact assessment for the playing of amplified music
within Ye Olde Forte Bar, 39 South Harbour Street, Ayr**

Section 29 Application Ref: 24/00749/LAPREV

Report date: 24 July 2024

Prepared by

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Executive Summary

McIntyre Acoustics were commissioned by Ayrshire Entertainments Ltd (Applicant) to provide an assessment of noise impact from the proposed playing of amplified music at Ye Olde Forte Bar, 39 South Harbour Street, Ayr.

The premises is acoustically robust (thick sandstone walls, double glazing, and a double door entry system). It has operated as a licenced premises for decades with current management (Ayrshire Entertainments Ltd) in place for ~10 years. The bar opens daytime only (typically 10:00-19:00 Sunday to Thursday, and 10:00-22:00 Friday and Saturday) with no recent history of noise complaint.

This proposal, for the playing of low-level music in the premises, is aimed at providing a further addition to the customer experience. Low level background music will play during the day (this is inaudible at the closest residential flats), with occasional semi-acoustic sets in the afternoon and early evening. There will be no amplified music played after 9.00pm and no night-time noise impact from this premises.

McIntyre Acoustics recommend that a noise management plan incorporating the basic measures to minimise operational (and customer) noise, as described at Section 4.2, should be implemented. This will ensure current and future compliance with the target noise impact levels.

The maximum noise impact is predicted to be L_{Aeq} 46dB outside the closest residential property (first-floor windows of 37 South Harbour Street) - typical target sound levels to protect amenity during daytime is L_{Aeq} 50dB. The internal sound level is predicted to be $\sim L_{Aeq}$ 33dB (with windows open for ventilation) - typical target to protect amenity is L_{Aeq} 35dB (daytime). There are no outdoor amenity spaces likely to be impacted by this proposal.

The predicted noise impact (both inside and outside neighbouring residential properties) is below the WHO, and BS 8233, guideline values to protect amenity. The proposed development is therefore considered to be compliant with South Ayrshire Council's targets to prevent nuisance or loss of amenity.

The recommendations at Section 6 should be incorporated into the premises operational plan – namely:

- a self-closing mechanism should be fitted to the double door entry system;
- musicians playing semi-acoustic sets should be limited to 10-12W mobile practice amps; and
- music sets should be scheduled to finish by 9pm.

Summary:

This business will operate during daytime hours only. By following the specified noise management plan (described at Section 4.2), the premises can operate such that there will be no unacceptable loss of amenity to neighbouring properties (with windows open for ventilation).



1 Introduction

The premises management are keen to invest and upgrade the customer experience at Ye Olde Forte Bar, Ayr by adding low level background music and occasional semi-acoustic sets to the entertainment offering.

The owners are particularly mindful of the necessity to control noise impact as part of this proposal.

Ye Olde Forte Bar's opening hours are restricted under licence by South Ayrshire Council Licensing Board. There will be no amplified music played after 9pm.

1.1 Scope

McIntyre Acoustics were commissioned to assess the impact of noise emissions from the premises and provide practical advice on options to control noise (where appropriate).

The aim is to reduce any impact below typical licensing / planning / WHO noise criteria levels (aimed at preventing loss of amenity) and demonstrate compliance with South Ayrshire Council's noise impact target levels.

1.2 Competency of author

Jim McIntyre is a Chartered Environmental Consultant and Fellow of the Institute of Acoustics with over 29 years' experience of undertaking and assessing health & safety and environmental noise / vibration reports. Specific areas of expertise include industrial, transportation, and planning noise assessments. Jim is also a member of the influential British Standards Institute overseeing the development and publication of British and International noise standards, sits on the Scottish Government's Environmental Noise Directive project steering group, and has lectured on best practice in noise monitoring techniques at Strathclyde University.

Jim McIntyre carried out the initial site visit and prepared this report.

1.3 The effect of noise on people

The effects of noise can be divided into two broad categories; physiological damage to hearing, and annoyance. However, it is only the annoyance impacts that need to be considered in detail when addressing environmental noise impacts on the wider community. Aspects of annoyance include the immediate effects of activity interference; for example, speech interference, interference with legitimate use of property, and sleep disturbance (which can increase the risk of certain stress related health effects in the long term).



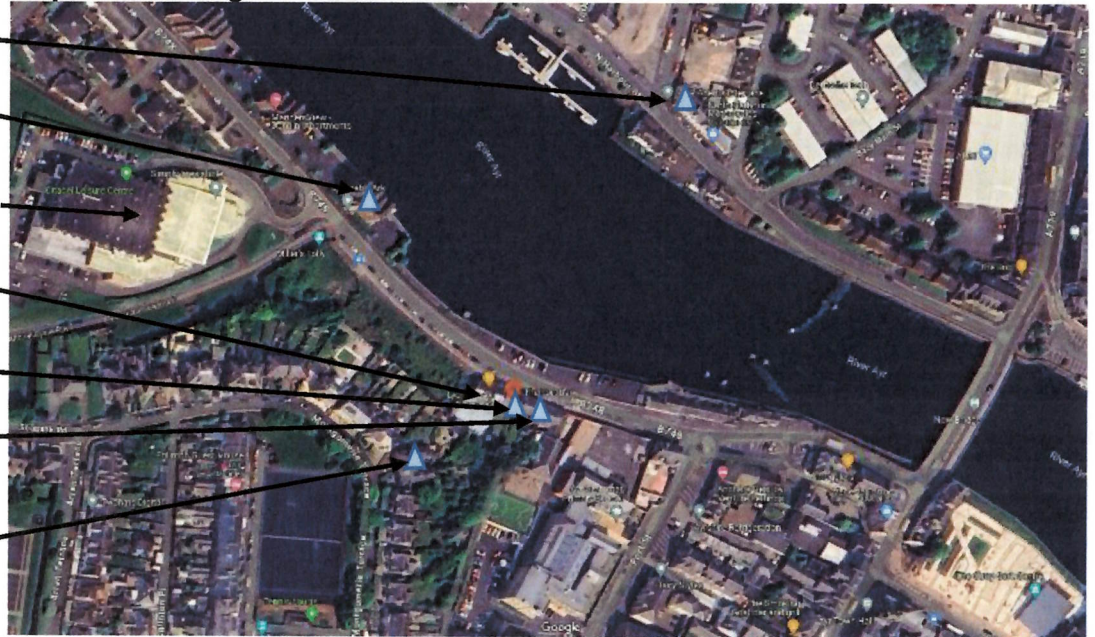
2 Site details

2.1 Description of site

The area is mixed commercial / residential in Ayr town centre. The property has been a licensed premises for decades. There is a residential flat directly above the property. To the west is a large restaurant (with storerooms above). To the east is a café (currently closed) with residential flat above.

Map 2.1 showing environs of 39 South Harbour Street

- 20 North Harbour St
- Marlborough Court
South Harbour St
- Citadel Sports Centre
- Lychees Restaurant
41 South Harbour St
- Ye Olde Forte Bar
- 33-35 South Harbour
Street
- 9A Montgomerie Ter



▲ = closest residential noise sensitive receptors

The closest residential receptor is the 1st floor flat at 37 South Harbour Street (directly above the premises). The next closest is the adjacent 1st floor flat directly above the café at 33-35 South Harbour Street.

The next closest noise sensitive receptors (see Map 2.1 above) are:

- to the north – flats at 20 North Harbour Street (~180m from site);
- to the NW – flats at Marlborough Court (~120m from site); and
- to the SW – 9A Montgomerie Terrace (~50m from site).

The closest amenity areas are the rear garden areas of properties on Montgomerie Terrace (~45m southwest of the site and significantly elevated above South Harbour Street. Music played inside Ye Olde Forte Bar will be inaudible at this location. There are no residential amenity spaces likely to be affected by this proposal.

Distances were established from Google maps measurement function and confirmed on-site.



Photo 2.1(a): view looking east along South Harbour Street (12/07/24)

Lychees Restaurant
(storeroom)

37 South Harbour
Street (1st floor flat)

Flat above 33-35
South Harbour Street

Café at 33-35 South
Harbour Street

Ayrshire Archives

Ye Olde Forte Bar 39
South Harbour Street



Photo 2.1(b): view looking west along South Harbour Street (15/07/24)

Marlborough Court
Flats at South
Harbour Street

37 South Harbour
Street (1st floor flat)

Flat above 33-35
South Harbour Street

Ye Olde Forte Bar

Café at 33-35 South
Harbour Street
(closed)





As expected in a town location, the noise climate is dominated by local road traffic on South Harbour Street (which is regular throughout the day and evening). Pedestrians on way to the citadel, beach, local facilities, and town also have an occasional impact.

Other commercial premises (restaurant, café, take away) in the vicinity generate their own noise and are unlikely to experience noise impact from the operation of this premises.

It is the adjacent 1st floor residential flats, above Ye Olde Forte Bar and the café at 33-35 South Harbour Street, that will have most exposure to sound emanating from the premises. The Olde Forte Bar, Café at 33-35, and 1st floor flat above the café are all owned by the same landlord.

The potential noise impact from Ye Olde Forte Bar has been calculated at Section 4.1.

Due to the proximity of the main residential receptors; ground and air absorption will have negligible effect on sound propagation (and have not been included in Section 4 calculations). The focus is therefore on minimising noise emissions at source (through good design) and employing best practice management control techniques to prevent excessive noise breakout.

2.2 Operational hours and amplified music

Ye Olde Forte Bar is licenced from 10:00 until 00:30. However, the bar is not open late and typical operational times are as follows:

- 10:00 – 19:00 Sunday to Thursday; and
- 10:00 – 22:00 Friday and Saturday.

The proposal is for amplified music to be permissible in the afternoon and evening. Music will not be played after 9pm (i.e. no amplified music will be played at night).

The low-level amplified sound for general background recorded music is provided by three small (6.5") 'Pulse' wall mounted speakers. These speakers are designed for low-level background music, and feed through a 'Cornelius' transformer unit which has a maximum 16W output (although the bar management limit this via a volume slider). The speakers are not large enough to generate significant energy at the lower frequencies. There have been no recorded complaints from previous operation of the installed system.

In addition, the ability to have occasional semi-acoustic music (marginally amplified by a small travelling 10W amp) is requested. The proposal is to have no amplified or background music played after 9pm.



2.3 Acoustic review of structural elements

The walls of this stone-built premises are substantial and help minimise sound breakout from the building. A double door entry system is in place and the windows are double glazed units.

Photo 2.3(a): front of 39 South Harbour Street (12/07/24)

Storeroom above
Lychees restaurant

1st floor flat above 33-35
South Harbour Street

1st floor flat above 39
South Harbour Street:

- Livingroom
- Bathroom
- Bedroom

Double door entry to
Ye Olde Forte Bar



Photo 2.3(b): entrance door to 39 South Harbour Street (15/07/24)

A self-closer mechanism
and door seals (fitted to
the inner doors) would
help reduce sound
breakout from premises





Photo 2.3(c): inside view looking from customer entrance (15/07/24)

Ceiling lowered ~10 years ago (to improve sound insulation – though no construction details are available).

There was no intrusive survey of the ceiling construction. However, it is likely to be a dense plasterboard layer with a plaster skim coat finish (above which will be insulation, then original lath and plaster ceiling, further insulation, joists and boards of 1st floor flat.

Proposed music performance area



There is no obvious gapping or penetrations of the ceiling in the bar or back storage areas. Noise breakout through the building fabric will therefore be minimal (see detail below).

Wall construction – the external walls of Ye Olde Forte Bar are thick sandstone blockwork. Table E.1A of BS 8233 notes solid masonry walls with an overall mass per unit area of not less than 700 kg/m², are likely to achieve a weighted sound reduction of ~R_w 54-60dB.

Ceiling – the premises has a traditional lath and plaster ceiling. A lowered ceiling was introduced to the bar area just over 10 years ago (by the previous tenant) to improve sound insulation. No details of the construction materials are available and cannot be confirmed without an intrusive survey - see Photo 2.3(d). However, as the purpose of the works was to reduce sound transmission, it is assumed that a layer of soundboard would have been added.

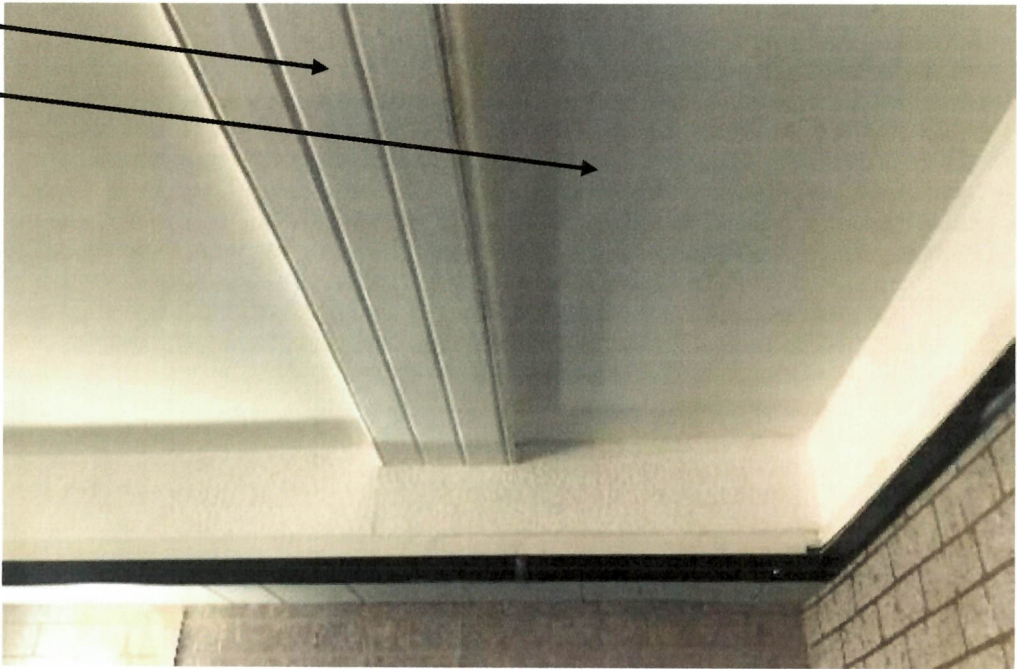
A plaster finish with ash deadening between the floor (common in properties of this age) should achieve an R_w ~45dB. The addition of a lowered ceiling can increase this by ~8 to 10dB (depending on finish) to R_w ~53 to 55dB.

Photo 2.3(d): lowered ceiling detail of main bar area (15/07/24)

1st floor support beam

Plaster skin finish

Probable underlying construction is dense plasterboard fixed to wooden batons fixed to original lath & plaster ceiling, with some form of mineral wool insulation material between wooden batons. Above original ceiling would have been floor joists, ash deadening, and boards of 1st floor flat – see schematic below).



Probable Ceiling / Upper Floor Schematic

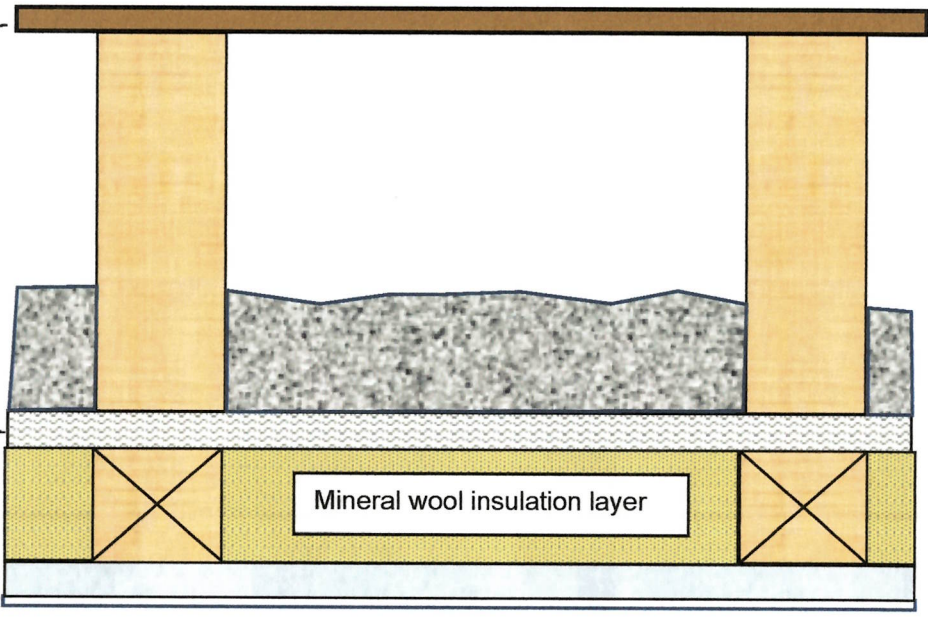
Floorboards on wooden joists

Assumed thermal insulation or ash deadening layer (typical construction for a property of this age)

Lath and plaster ceiling

Wooden batons

Soundboard (unknown depth) with plaster skim finish



**Windows and doors**

The closest residential receptors (directly above the premises) have uPVC double glazed window units. The windows of Ye Olde Forte Bar are fixed wooden frame double glazed units. The acoustic performance of this type of glazing is largely determined by the age, finishing, air gap, and glazing thickness but is generally in the region of R_w 30-32dB (4mm to 6mm glazing).

When residential property windows are closed, they will provide a good level of sound attenuation; and the level of impact from both residual and specific sound is likely to be minimal. The greatest impact from road traffic and breakout noise from the premises is likely to occur when background sound levels drop and in circumstances where windows are open for ventilation.

Open windows are generally the weakest part (acoustically) of building envelopes, and the determining factor for noise impact (see commentary at Section 3.2, and noise impact calculations at Section 4.1). Current REHIS guidance recommends that 10dB attenuation should be used to estimate noise reduction over an open window. However, the REHIS guidance is under review (with instructions that it should not be used at present). The WHO, BSI, and BRE recommend ~15dB. As a balance, a figure of 13dB has been estimated to represent typical sound reduction across an open window.

A double door entry system is in place – see photo 2.3(b). When closed, the inner doors should provide a sound reduction of $\sim R_w$ 25-30dB. A lower estimation of R_w 25dB has been used in the calculations at Section 4.1. Currently there is no self-closing mechanism fitted to prevent unnecessary noise breakout, though this is a recommendation presented at Section 6.



3 Legislation, guidance and target noise levels

3.1 Legislation and guidance

South Ayrshire Licensing Board's Statement of Licensing Policy 2023
DEFRA Noise from Pubs and Clubs (Phase 2) Final report – May 2006
Licensing (Scotland) Act 2005
Environmental Protection Act 1990 – Part 3: Statutory Nuisance
Nuisance provisions of the Public Health etc (Scotland) Act 2008: guidance
The World Health Organisation – Environmental Noise Guidelines for the European Region 2018
The World Health Organisation – Guidelines for Community Noise 1999
BS 4142: 2014 + A1: 2019 Methods for Rating and Assessing Industrial and Commercial Sound
BS 7445: 2003 Description and Measurement of Environmental Noise
BS 8233: 2014 Guidance on Sound Insulation and Noise Reduction for Buildings
Building (Scotland) Regulations 2004
Scottish Building Standards Technical Handbook for Domestic and Non-Domestic Dwellings
REHIS briefing note: Noise Guidance for New Developments

With reference to the above legislation and guidance; this report provides a description of predicted noise impact from the playing of amplified music at Ye Olde Forte Bar, 39 South Harbour Street, Ayr.

3.2 Typical target noise levels to protect amenity

A raft of standards and guideline values for noise are available; however, ultimately each Local Authority sets its own target noise levels and can vary these according to local circumstances. The text below outlines some common issues and target values for protecting residential and commercial properties from excessive noise impact. However, all guidance documents must be seen in context of how they were developed and what they are trying to achieve. For example, most environmental noise standards are designed to protect residential properties from excess noise either outside or within the home.

The World Health Organisation set a series of community noise guideline values in 1999 (revisited and confirmed in 2018); advising that a guidance level to prevent annoyance should be $L_{Aeq16hr}$ 50-55dB for outdoor living areas, $L_{Aeq16hr}$ 35dB for indoor living areas during the day / evening, and L_{Aeq8hr} 30dB for restful sleep at night. It should also be borne in mind that these are guidance levels and Court decisions have already made clear that noise levels above the WHO guideline values do not mean that a nuisance exists.

Note: WHO levels, to protect against daytime annoyance and night-time sleep disturbance, relate to annual average impact over a 16hr day (07:00 – 23:00) or 8hr night (23:00 – 07:00) time period respectively.



Where fan noise is an issue, some regulatory authorities employ NR Curves (which rate noise over an octave frequency spectrum) as a benchmark of acceptability. NR curves are an internal standard and incorporate noise levels over a range of frequencies. In practice (provided there is no strong tonal component) an NR Curve roughly equates to the $L_{Aeq} -6\text{dB}$ (i.e. NR 25 $\approx L_{Aeq}$ 31dB). Assuming 15dB attenuation across an open window, an internal level of NR 25 equates to an external noise level of $\sim L_{Aeq}$ 46dB. Many Local Authorities look for compliance with 'NR 25' in bedrooms during the night; and 'NR 30-35' during the day in all habitable rooms, when measured within any noise sensitive property, with windows open for ventilation.

BS 4142 relates the specific 'industrial / commercial type' sound under consideration to the prevailing background sound level (measured as the L_{A90} of the residual noise) and includes character correction penalties to "rate" the level of noise impact. BS 4142 is not an appropriate standard to assess potential impacts on amenity from entertainment noise.

BS 8233 recommends a reasonable level of amenity to be provided by internal noise levels of $L_{Aeq,8hr}$ 30dB within bedrooms at night (Table 4), $L_{Aeq,16hr}$ 35-40dB within living rooms during daytime, $L_{Aeq,8hr}$ 45-50dB for open plan offices (Table 2), $L_{Aeq,8hr}$ 35-45dB for study / meeting rooms, and $L_{Aeq,8hr}$ 50-55dB for shops and cafes (Table 6).

Note, BS 8233 states that:

- *In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted (Section 7.7.3.2);*
- *levels are based on annual average data and do not have to be achieved in all circumstances (Note 3 to Table 4);*
- *where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved (Section 7.7.2, Note 7 to Table 4); and*
- *if partially open windows were relied upon for background ventilation, the insulation would be reduced to approximately 15 dB (Annex G, G1).*

Regarding ideal external noise levels in town centres; BS 8233 indicates that, at night, an internal L_{Aeq} of 35dB (30dB + 5dB relaxation) results in reasonable levels of amenity for bedrooms when living in a town centre or near a main transport route. This equates to an external façade level of 50dB(A), assuming the BS 8233 stated transmission loss of 15dB across an open window.

The +5dB relaxation for residential urban properties has been in common use for many years – see BS 8233:2014 and "Woods Practical Guide to Noise Control 1998".



The Royal Environmental Health Institute of Scotland (REHIS) briefing note: Noise Guidance for New Developments indicates that where road traffic is likely to be the main noise source; the target sound levels should not exceed $L_{Aeq,16hr}$ 40-45dB during daytime, and $L_{Aeq,8hr}$ 30-35dB at night (when assessed inside residential premises with windows open for ventilation). The guidance is currently under review and REHIS recommends that “it is not used as a basis for specific Policy on Planning and Noise Controls” until the review is complete. Furthermore, the REHIS guidance advises that the degree of sound reduction afforded by a partially open window should be taken as 10dB (whilst the WHO, BS 8233, DEFRA, BRE, and several other peer reviewed papers suggest ~15dB to be a reasonable estimation of noise attenuation across an open window). Where ‘open window’ estimations are made, a compromise figure of 13dB has been adopted.

We therefore have a range of criteria on which to judge the acceptability of noise impact during daytime. However, for the purposes of this discussion, typical target noise levels (Planning Advice Notes, BS8233, World Health Organisation) for reasonable amenity are taken to be:

- $L_{Aeq,16h}$ 55 dB daytime (07:00 – 23:00) outside, and $L_{Aeq,16h}$ 35dB inside (for living room and bedroom daytime resting/sleeping).

3.3 Specific target noise levels

Notwithstanding the foregoing discussion on typical noise protection levels; the correct amenity standard applicable to this proposal is that laid down in Sections 2, 6, and 7 of South Ayrshire Licensing Board’s Statement of Licensing Policy 2023. The Licence holder needs to clearly establish that they can operate without causing a noise nuisance to neighbours.

2.3 Preventing public nuisance:

- the operating plan should demonstrate how the premises will be good neighbours both to residents and other local businesses.

6.3 Consideration of premises licence applications:

- *the Board will expect a noise consultant to provide a report on the suitability of the premises and any action required to ensure no nuisance occurs.*

7.2 Noise Nuisance:

- *It is expected that licensed premises are good neighbours and do not cause “nuisance”.*
- *Entertainment noise levels should not give rise to nuisance within nearby noise sensitive properties or gardens.*
- *Consideration should be given with respect to the type and volume of music or other entertainment likely to be provided.*
- *Robust management controls are fundamental to ensure that suitable internal and external noise levels are not exceeded*



4. Noise impact assessment calculations and control options

The proposal is to allow amplified music to be played on the premises until 9pm.

4.1 Noise impact calculations

Predicted impact from the playing of amplified music

A reasonable estimation of sound source level (L_{Aeq} 78dB at 3m) has been made in good faith. Previous sound tests have noted L_{Aeq} 78dB at 3m from a 15W travel amp. The current proposal is for occasional amplified music played through a 10-12W travel amp.

Noise impact has been calculated at the closest residential receptor (37 South Harbour Street – the 1st floor flat directly above the premises). All other receptors will be subject to lower levels of noise impact.

Noise breakout through front of premises

If we assume overall worst case of occasional semi-acoustic sets with a sound level of 78dB at 3m then, by simple distance attenuation, we get at 37 South Harbour Street:

$$\begin{aligned} \text{SPL2} &= \text{SPL1} - 20 \log (D2/D1) \\ &= 78 - 20 \log (7/3) \\ &= 78 - 7 = 71\text{dB} \end{aligned}$$

Where D1 equals the distance where previous measurements have indicated L_{Aeq} 78dB (3m); and D2 equals the distance from music area to front façade outside habitable room window of 37 South Harbour Street (7m).

The closed door and double-glazed windows of the premises will provide a minimum sound level reduction of R_w 25dB (see the acoustic review of structural elements at Section 2.3). However, a self-closing mechanism should be fitted to the inner doors to ensure they provide the required level of sound attenuation.

Predicted sound level at façade of 37 South Harbour Street:

$$\text{SPL2} = \text{SPL1} - 25\text{dB} = 71\text{dB} - 25\text{dB} = 46\text{dB}$$

The impact from the breakout noise (via the front of the premises) should be ~46dB(A) at the front façade of 37 South Harbour Street; this is well below typical planning target noise levels and WHO guidance levels for noise impact during daytime (50-55dB).

Assuming 13dB noise reduction across an open window; the internal sound levels will be ~33dB at 37 South Harbour Street (again, this is below the guideline value for good amenity during daytime specified by BS 8223).

Noise breakout through the front of the premises should not result in any significant loss of amenity (or nuisance conditions).



Noise transmission through premises ceiling structure

Again, using the sound source level of 78dB, 3m from the small travel amp, we get an incident sound level of ~78dB at the ceiling.

As noted at Section 2.3 the estimated sound level reduction provided by the original (and lowered) ceiling of Ye Olde Forte Bar is ~ R_w 53 to 55dB.

Predicted sound level at façade of 37 South Harbour Street:

$$\text{SPL2} = \text{SPL1} - 25\text{dB} = 78\text{dB} - 53\text{dB} = 25\text{dB}$$

The impact from sound transmission via the building fabric should be ~25dB(A) inside 37 South Harbour Street; this is well below typical planning noise levels and BS 8233 sound levels for good resting conditions during daytime (35dB).

Noise transmission through the ceiling of the premises should not result in any significant loss of amenity (or nuisance conditions).

4.2 Best practice and options for sound reduction at source

Notwithstanding the predicted compliance with the target sound levels to minimise loss of amenity and protect against nuisance; the following section provides best practice guidance that should be employed and outlines options to further reduce noise impact if the need arises. Sound reduction at source should be the first considerations to lessen any perceived specific noise impact – it affords both the cheapest and most effective solution.

The following best practice guidance can be incorporated into an operational (noise management) plan for the premises:

- i) The installed sound system has a limited power capacity, and small directional speakers negate any potential low frequency sound transmission issues – best practice by design. Any future changes to the system should ensure similar power output and low frequency response characteristics are part of the inherent design / purchasing criteria. Speaker systems should be isolated, as far as possible, from the building structure. On no account should they be mounted directly onto, or recessed into, walls or ceilings. Wall mounted speakers should be fixed on resilient mounts to minimise sound/vibration transfer into the walls.
- ii) To ensure amplified music is not played at louder volumes, music must only be played through the installed system or single small (10-12W) travel amp. Musicians travel amps should sit on suitable thick resilient pads on the floor. This will reduce the potential transmission of sound through the ground floor to the ceiling and floors above via the framing structure of the wall.



- iii) Volume should be kept to the minimum level required to allow reasonable enjoyment of the licensed premises and nearby residential properties. In addition to overall volume, the type and frequency content of music can affect perceived annoyance. Low frequency sound tends to penetrate building materials more effectively than mid-high range frequencies. Therefore, the use of a graphic equalizer to preferentially reduce low frequency sound can significantly lessen the subjective impact of any transmitted sound without necessarily affecting the enjoyment of those listening within the main bar area. The reduction in music volume and low frequency sound at source is a major factor in reducing noise impact at neighbouring properties through sound transmission.
- iv) Time restriction of certain activities: amplified music should not be played after 9pm. Our experience shows that neighbours' tolerance levels drop sharply if noise occurs after a publicised finishing time.
- v) Doors should be fitted with a self-closing mechanism (and brush or rubber seals) to ensure they close tightly when amplified music is being played.
- vi) Often performers will bring in their own sound equipment. It is therefore important to be clear that Bar Management are in ultimate control of noise levels during performances.
- vii) Finally, adjacent neighbours should have the contact number for Bar Management, and procedure should be in place to deal with any noise issues (including complaints) that may arise. Someone in authority to quickly respond to any public complaints is essential in maintaining good neighbour relations.



4.3 Additional options for sound reduction

The following additional options are not currently recommended (due to the predicted compliant levels of impact). However, they are available should the need arise to further reduce noise levels in future.

Noise Limiter Systems

Electronic noise limiters are effective, relatively inexpensive and in common usage for controlling amplified noise levels within licensed premises in the UK. There are two common types of system:

1. microphone controlled - these units continually monitor the sound level in the premises via a microphone and either trigger a warning light or cut the power supply to the sound systems if a pre-set level is exceeded. They have the advantage of working on any sound system brought into the premises, provided it is connected to the electrical circuit under the control of the limiter. However, some units are prone to damage or unnecessary activation by patrons shouting in to the microphone. Many performers do not like these systems as once they activate all sound output is temporarily lost until the system re-sets. Additionally, these systems can be easily overridden by most performers with a basic knowledge of how they operate; and
2. electronic in circuit devices - these units are incorporated into a fixed on-site sound system and operate by monitoring the electrical power output of the amplifiers. If the pre-set amplifier output threshold is exceeded, i.e. it gets too noisy, the device automatically attenuates the power output of the amplifier so that noise levels are reduced to below the threshold limit. These systems are difficult to circumvent, provide unobtrusive sound level control as it is virtually impossible to detect when attenuation is being applied; so customers, bands, performers are rarely aware of their operation. The disadvantage is the cost outlay of not only the limiter but also a permanently installed in-house sound system is needed for best results. These devices also need to be re calibrated by a specialist engineer if speakers on the sound system are replaced.

The correct installation and use of noise limiters can be effective. However, at this site it is my opinion that a noise limiter would result in unnecessary complication to the basic level of control required to address noise breakout issues. At this stage, it would also result in unnecessary expense in the form of purchasing, installation, training, and maintenance. I would only recommend a noise limiter system at this premises in the unlikely event that the application of other recommendations fails to prevent a noise nuisance.

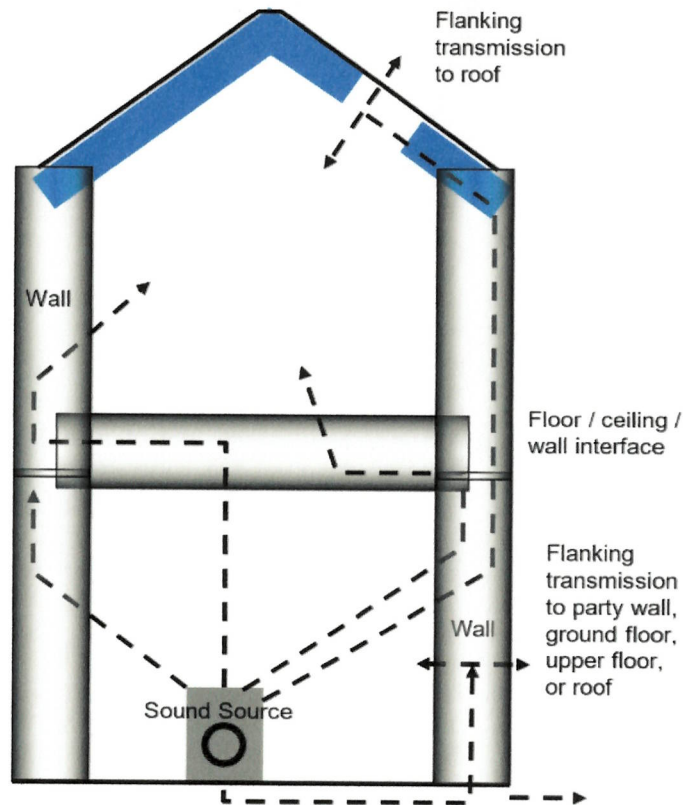
Ceiling & wall upgrade options – see Appendix B

These options are not proposed at present, they are suggested as upgrade options only if the previously lowered ceiling (of unknown construction) is not providing adequate sound insulation.



5. **Flanking transmission**

Should flanking transmission be a significant pathway then further investigation of the wall, ceiling and floor structures may be required. Options for improvement to walls, ceiling, and the structure of the ceiling/floor/walls junctions would also need to be assessed in detail.



INC TO OP PLANS

6.

Recommendations

The operational plan should incorporate the following measures to minimise the potential for noise nuisance outwith the premises:

- musicians will not play amplified music after 9pm in the evening;
- musicians shall be limited to 10-12W travel amps;
- musicians to be informed that bar management are in ultimate control of playing volume and (low) frequency content;
- a self-closing mechanism shall be fitted to the double door entry system;
- neighbours shall be notified of music finish times and be issued with a telephone number for the bar management (in case any issues arise).

In the unlikely event that noise becomes an issue for adjacent neighbours in future; semi-acoustic sets could be required to play through the installed transformer and speaker system. This is not recommended at present as the maximum impact from standard small (10-12W) travel amps is highly unlikely to result in any nuisance impact.

Include in operating plans CW



7. Conclusions

The existing building structure is substantial and should deliver a good level of acoustic attenuation (typical for a property of this age and further augmented by unspecified 'sound attenuation' works [lowered ceiling] installed ~10 years ago).

The premises inherent sound attenuation properties, combined with the maximum power output of a small practice travel amp, and a standard element of good management control, should ensure there is no significant adverse impact on neighbouring residential properties.

Section 4 of this report demonstrates that South Ayrshire Council's target 'to prevent noise nuisance' can be achieved.

The maximum noise impact from this development is predicted to be L_{Aeq} 46dB outside the closest residential property (1st floor flat at 37 South Harbour Street, Ayr) during daytime, and L_{Aeq} 33dB inside the property (with windows open for ventilation).

The premises does not play amplified music at night.

8. Context, uncertainty, and caveats

The context of the area is that of a town centre location with few residential premises nearby. People living in town centres do not expect a particularly quiet ambient noise climate. In addition, the installed speaker system is not capable of large volume sound output or significant low frequency emissions (by design) and it will not operate at night. McIntyre Acoustics are therefore confident that the aforementioned site design and management procedures will ensure compliance with SAC's stipulated noise impact requirements.

As access to residential premises was not available; estimations of sound transmission (based on documented sound reduction properties of building elements typical for this age of property) have been made. This is standard practice (and utilises ~30 years of field experience) but does introduce some uncertainty.

A reasonable estimation of sound source level (L_{Aeq} 78dB) has been made in good faith, but there is an element of reliance on previous experience with music from small travel amps to estimate this level. Previous sound tests have noted L_{Aeq} 78dB at 3m from a 15W travel amp. The current proposal is for occasional amplified music played through a 10-12W travel amp.

Due to the predicted low sound levels and subjective characterisation of the noise at the nearby housing; the implications of stated uncertainty are not considered to materially affect the conclusions that a nuisance is unlikely.

**Caveats**

McIntyre Acoustics advice is limited by the fact that we make no guarantee on the quality of the existing structures / finishes, the quality of new structures / finishes, or the possibility of significant flanking transmissions between structural components. If structural flanking transmissions are found to be a significant contributor to the reduced sound insulation performance (after initial treatment) then further investigatory work will be required and McIntyre Acoustics will accept no liability for any losses incurred.

Any proposed building alterations must be checked by a suitably competent builder to ensure that the supporting structures can accommodate any additional loading and that compliance with ventilation, fire and building standards and regulations are adhered to.



APPENDIX A

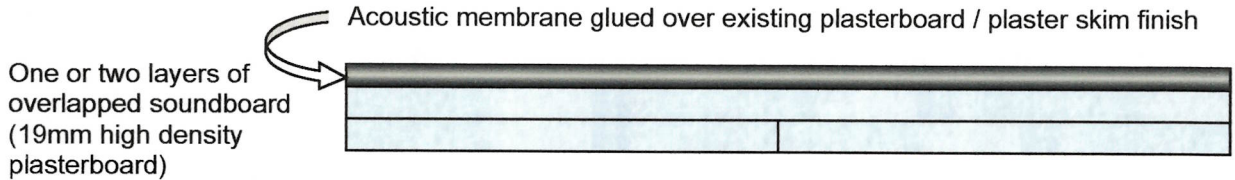
ACOUSTIC TERMINOLOGY

Ambient Noise Levels	The total encompassing noise in a given situation at a given time; it is usually composed of noise from many sources, near and far.
A-Weighting.	A frequency weighting devised to attempt to take into account the fact that the human response to sound is not equally sensitive to all frequencies. The A weighting filter in a sound level meter attempts to build in this variability into the indicated noise level reading so that it will correlate, approximately, with the human response.
Background Noise Level ($L_{A,90}$)	Defined in BS4142, $L_{A,90}$ is the sound pressure level in dB(A) which is exceeded for 90% of the time interval T. During daytime T = 60 mins. During night-time T = 5 mins.
Decibel (dB)	The logarithmic ratio of the size of pressure fluctuations caused by a sound relative to the threshold of hearing (2×10^{-5} Pa). The decibel range represents this scale in a more manageable form, for example 0–140dB.
$L_{Aeq,T}$	The A-weighted continuous noise level over time period T. It is the steady sound level over the period of time under consideration which contains the same amount of energy as the time-varying noise, over the same time period.
$L_{A,max}$	The maximum sound pressure level in dB(A).
Residual Noise	The ambient noise remaining when the specific noise is suppressed, defined in BS4142.
Specific Noise	The particular component of the ambient noise which is under investigation.
Weighted sound reduction index (R_w)	Single number quantity which characterises the airborne sound insulation properties of a building element over a range of frequencies

APPENDIX B

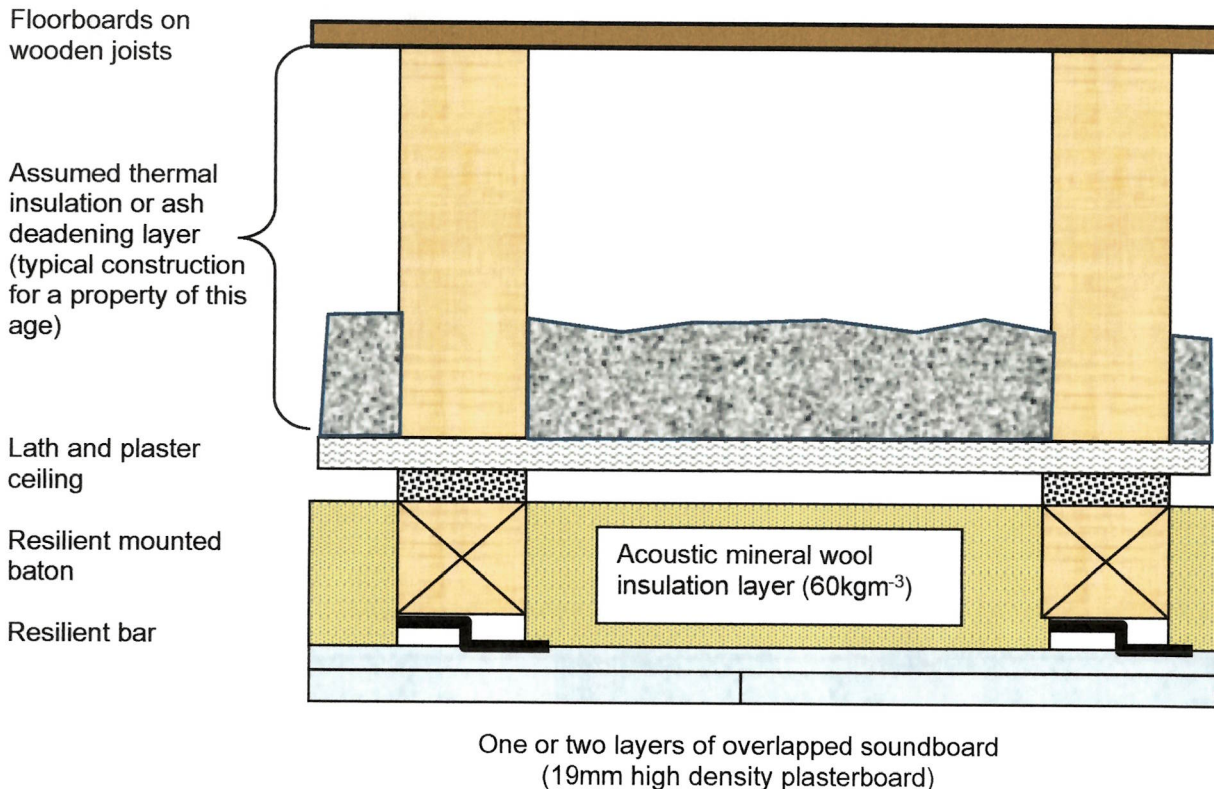
CEILING & WALL POTENTIAL UPGRADE SCHEMATICS

Ceiling / Wall Schematic (Option 1)



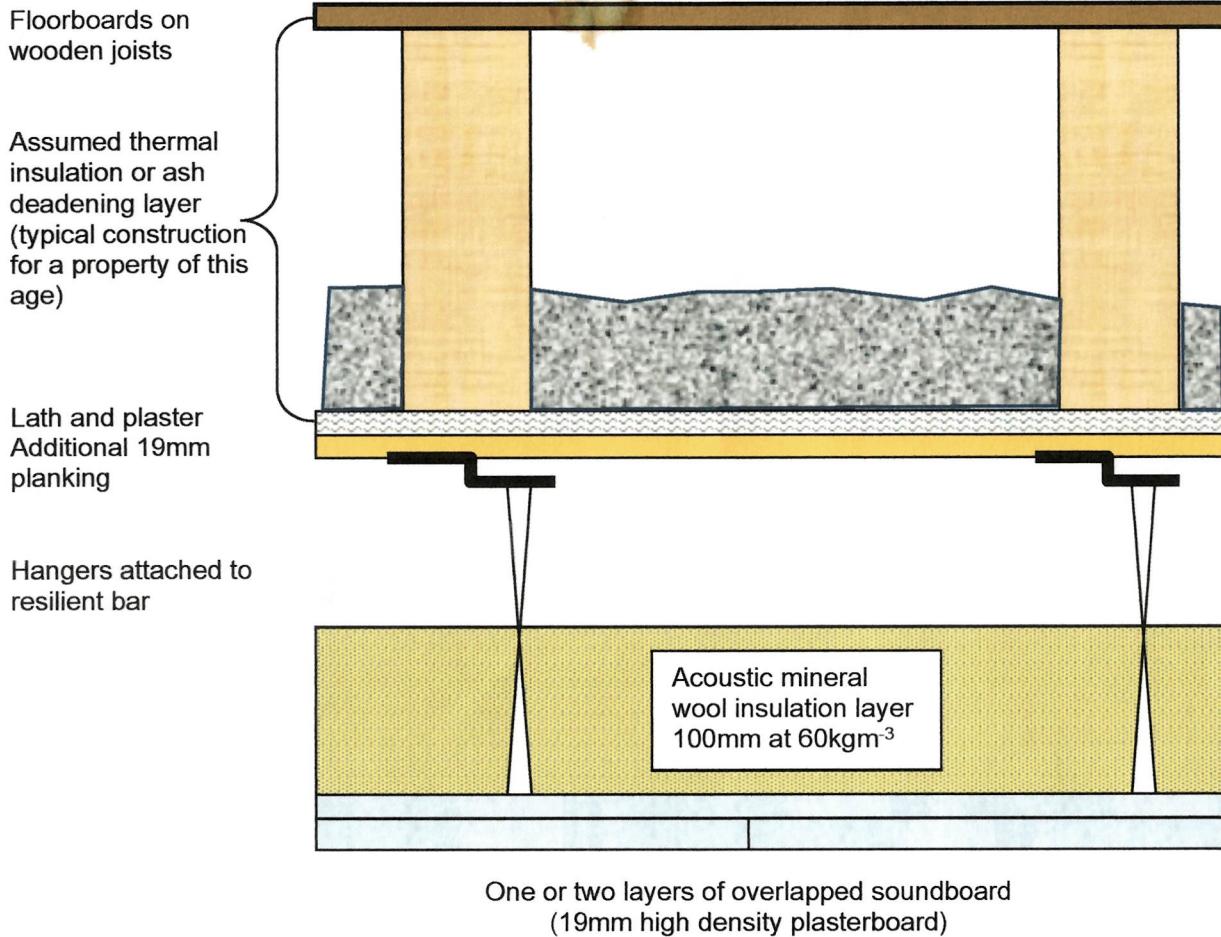
The options below require removal of the existing lowered ceiling (of unknown construction) and replacement with an acoustically specified construction. These options are not proposed at present and are suggested as upgrades only if the previously lowered ceiling is not providing adequate sound insulation.

Ceiling / Upper Floor Schematic (Option 2)



APPENDIX B (cont.)

Suspended Ceiling Schematic (Option 3)



EHS response to Ye Olde Forte Bar acoustic report.

The content of the report appears, in general, to be satisfactory.

However, there are some unknowns, particularly pertaining to the construction of the premises and particularly with reference to the mitigation properties of the ceiling space to the flat above.

This could result in noise nuisance conditions existing, even if the noise management procedures within the report are followed, once music entertainment commences. While this service welcomes that there will be no amplified music after 9pm, the applicant should be aware that nuisance conditions can still occur prior to this time.

In view of this, Environmental Health would be duty bound to investigate further, should this situation arise.

Grant Douglas, Environmental Health Officer