APPENDIX C

Our Reference: NIA/1276/24/335/v2.0/NYK, 106 Burley Road, Leeds

[redacted]

3rd December 2024

[redacted]

Dear Sirs

NOISE IMPACT AND ODOUR IMPACT ASSESSMENT
PROPOSED EXTENSION OF OPENING TO 0200 HOURS
NYK, 106 BURLEY ROAD, LEEDS, LS3 1JP

1.00 INTRODUCTION

1.01 RP Acoustics Limited has been commissioned by 363 Architecture to carry out a noise impact and odour risk assessment for a proposed extension of opening to 0200 hours at NYK, 106 Burley Road, Leeds, LS3 1JP (hereafter referred to as the site).

1.02 The scope of the noise impact and odour risk assessment is as follows:

- Determine ambient and background noise levels at the site
- Assess the noise associated with the kitchen extraction system (with the flue boxed out)
- Assess the noise impact in accordance with relevant guidelines

- Determine the odour potential associated with the kitchen extraction system
- Determine the odour risk assessment
- Provide recommendations for odour control requirements

1.03 This report sets out the methodology and findings of the assessments. It has been prepared on behalf of for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult 363 Architecture and RP Acoustics Limited as to the extent to which the findings may be appropriate for their use.

1.04 A glossary of acoustic terms is contained in Appendix 1 for reference.

2.00 SITE SETTING

2.01 The application site comprises 106 Burley Road, Leeds, LS3 1JP. An aerial image of the site setting is shown in Appendix 2. The site is located in a mixed use residential and commercial setting in Woodhouse to the north west of Leeds city centre.

2.02 The nearest non-associated residential uses with a line of sight to the kitchen extraction system (fan and flue) are the dwelling flats located to the north of the site (see Appendix 2).

2.03 There are numerous hot food takeaways in the locality of the site.

2.04 For reference the NYK kitchen extract flue has been boxed out for full height in order to reduce the noise levels associated with the extraction system (see Appendix 2). The extraction fan is variable speed and is operated at low (24), medium (30) and high/full (36). It is typically operated at medium speed (30) but is occasionally operated at high/full (36) for short periods to remove excessive heat within the kitchen.

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3.00 NOISE VALIDATION SURVEY

3.01 Following the boxing out of the kitchen extract flue to reduce the noise levels associated with the extraction system, a noise validation survey in the late evening of Friday 30th August 2024.

3.02 For the purpose of the noise validation survey at single noise monitoring position was adopted in a reflective field environment at 1 metre from the façade of the nearest residential dwelling flats (see Appendix 2).

3.03 Noise measurements were undertaken using an NTi Audio XL2 Type 1 integrating sound level meters. A 90 mm windshield was fitted for all measurements. The measurement system calibration was verified immediately before and after measurement sessions with no drift in calibration level was noted (calibration certificates reproduced in Appendix 3 for reference).

3.04 Measurements consisted of A–weighted broadband parameters, together with linear third octave band L_{eq} levels, with a logging interval of 1 second. The following table contains a summary of the relevant measurement data rounded to the nearest decibel (with a – 3 dB façade enhancement correction applied in order to ascertain free field noise levels).

Table 3.1 – Baseline Noise Measurement Data

Time	LAeq (dB)	LA90 (dB)	LA99.8* (dB)	LA10 (dB)	LA1 (dB)	Comments
2346–2351	46	42	41.1	48	51	Burley Road; extract fan high/full (36), barely perceptible
2351–2356	47	42	41.0	48	54	Burley Road; extract fan high/full (36), barely perceptible
0022–0027	47	42	40.1	48	51	Burley Road traffic, extract fan OFF
0200–0300	46	40	39.1	47	50	Burley Road traffic, extract fan OFF

* The $L_{A99.8\ (5\ minutes)}$ is defined as the underlying level as per the Noise Act 1996

3.05 The ambient noise level (L_{Aeq}) is dominated by Burley Road traffic and not the kitchen extraction system.

3.06 With the kitchen extraction system at medium (30), it was wholly inaudible outside the nearest residential dwelling flats.

3.07 With the kitchen extraction system at high/full (36), it was barely perceptible outside the nearest residential dwelling flats. Based on experience, it is considered it would be inaudible inside the nearest residential dwelling flats with a partially open window.

3.08 In order to ascertain the noise level of the kitchen extraction system at high/full (36) outside the nearest residential dwellings flats, reference is made to the underlying noise level ($L_{A99.8,\ 5\ minutes}$) as defined by the Noise Act 1996. As the fan was running continuously at high/full (36) during the measurement period before midnight, as Burley Road traffic is dominant, the fan noise level is calculated as follows:

- Underlying Noise Level Traffic + Fan (36) — 41.0 dB $L_{A99.8\ (2351–2356)}$
- Underlying Noise Level Traffic — 40.1 dB $L_{A99.8\ (0022–0027)}$

- Fan Noise Level — 33.7 dB (41.0 – 40.1 logarithmically)
  6 dB below background 0200–0300
  Barely perceptible = no impact

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4.00 ODOUR RISK ASSESSMENT

4.01 The following 'Risk Assessment for Odour' has been derived from criteria outlined by DEFRA 2005, Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems Appendix C. The assessment is carried to accurately score the site according to DEFRA standards. Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach.

Table 4.1 – Risk Assessment for Odour for Proposed Restaurant

Criteria	Rating	Score	Details
Dispersion	Very Poor	20	Low level discharge, discharge into courtyard or restriction on stack
	Poor	15	Not low level but below eaves, or discharge at below 10 m/s
	Moderate	10	Discharging 1m above eaves at 10 to 15 m/s
	Good	5	Discharging 1m above ridge at 15 m/s
Proximity of Receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge
	Medium	5	Closest sensitive receptor between 20 and 100m from kitchen discharge
	Far	1	Closest sensitive receptor over 100m from kitchen discharge
Size of Kitchen	Large	5	More than 100 covers or large sized take away
	Medium	3	Between 30 and 100 covers or medium sized take away
	Small	1	Less than 30 covers or small sized take away
Cooking Type (Odour / Grease Loading)	Very High	10	Pub (high level of fried food), fried chicken, burgers or fish and chips
	High	7	Vietnamese, Thai or Indian
	Medium	4	Cantonese, Japanese or Chinese
	Low	1	Most Pubs, Italian, French, Pizza or Steakhouse
Overall Score = 31 = High Level of Odour Control			

Impact Risk	Odour Control Level Requirement	Significance Score
Low / Medium	Low Level Odour Control	Less than 20
High	High Level Odour Control	20 to 35
Very High	Very High Level Odour Control	More than 35

4.02 High level odour control requires pre-filters and carbon filters to achieve a 0.2 to 0.4 second residence time. This is in line with the installed odour control system (see Appendix 4).

5.00 CONCLUSION

5.01 A noise impact and odour risk assessment for a proposed extension of opening to 0200 hours at NYK, 106 Burley Road, Leeds, LS3 1JP.

5.02 In accordance BS 4142, the noise associated with the installed kitchen extraction system has no impact on the nearest non-associated residential dwellings flats with a line of sight to the (now boxed out) kitchen extraction system (fan and flue). This is wholly consistent with subjective aural observations during the course of the noise validation survey.

5.03 A scheme of odour abatement has been installed in accordance with good practice in order to protect residential amenity.

5.04 In conclusion, noise and odour do not pose a constraint to an extension of hours to 0200.

If we can be of any further assistance, please do not hesitate to contact us.

Yours sincerely

[redacted]
MEng(Hons), AMIOA, Diploma in Acoustics and Noise Control
For [redacted]

APPENDIX 1
GLOSSARY OF ACOUSTIC TERMS

Sound Pressure Level (L_p)

The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 µPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$L_p = 20 \log_{10}(p/p_0)$ where

L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_0 = reference sound pressure (20 µPa).

A-weighting Network

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$

The value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T, has the same mean-square sound pressure as a sound that varies with time. $L_{Aeq, 16h}$ (07:00 to 23:00 hours) and $L_{Aeq, 8h}$ (23:00 to 07:00 hours) are used to qualify daytime and night time noise levels.

$L_{A10, T}$

The A-weighted sound pressure level in decibels exceeded for 10% of the measurement period, T. $L_{A10, 18h}$ is the arithmetic mean of the 18 hourly values from 06:00 to 24:00 hours.

$L_{A90, T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T. L_{A90} is typically taken as representative of background noise.

$L_{AF\ max}$

The maximum A-weighted noise level recorded during the measurement period. The subscript ‘F’ denotes fast time weighting, slow time weighting ‘S’ is also used.

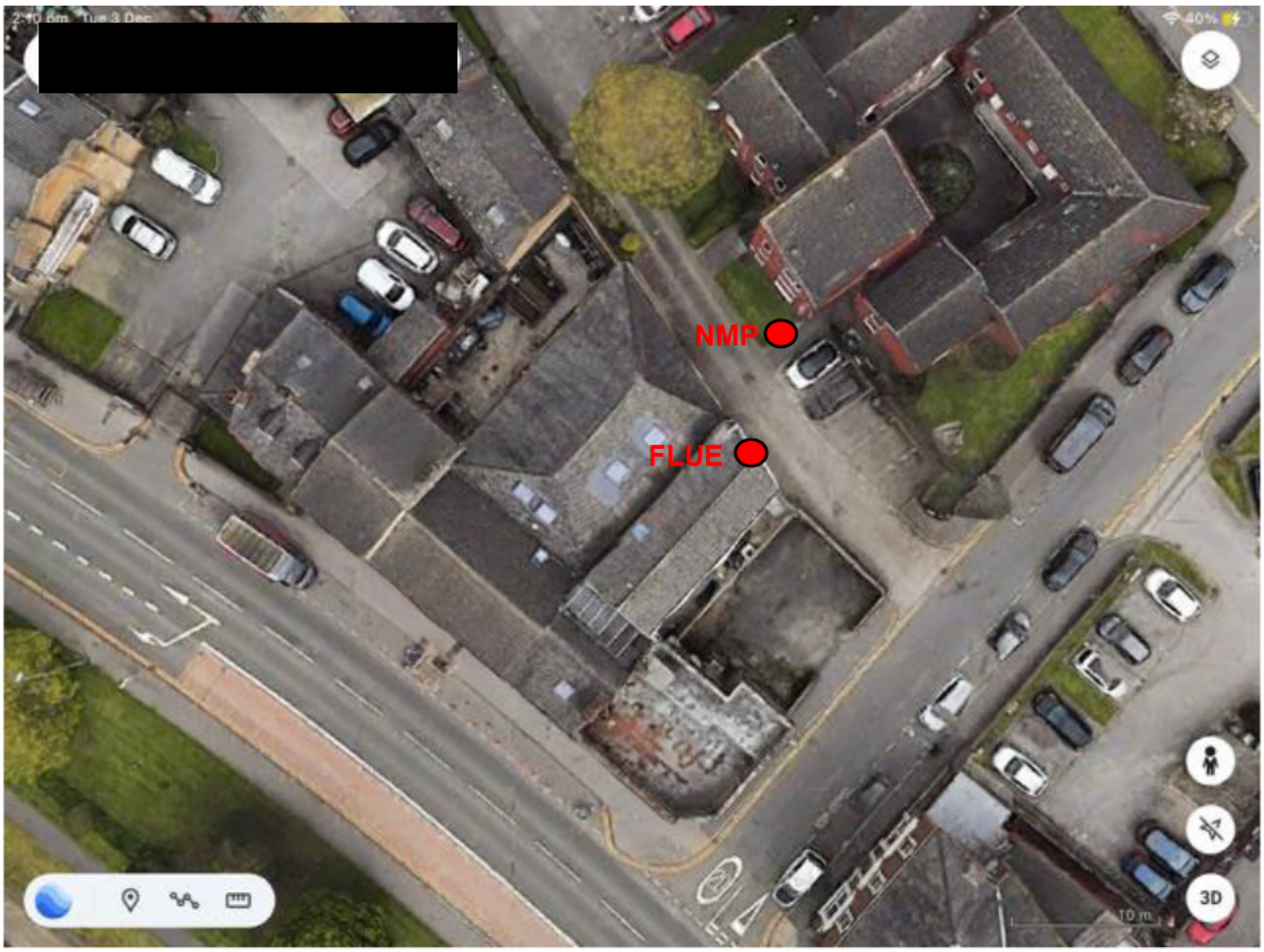
Sound Exposure Level (SEL or L_{AE})

The energy produced by a discrete noise event averaged over one second, no matter how long the event actually took. This allows for comparison between different noise events that occur over different lengths of time.

Building Regulations ADE 2003 Standard ($D_{nT,w} + C_{tr}$)

A single-number quantity which characterises the airborne sound insulation between rooms using noise spectrum No. 2 as defined in BS EN ISO 717–1:1997.

APPENDIX 2
AERIAL IMAGE OF SITE AND NOISE MONITORING POSITION AND PHOTOGRAPHS OF NOW BOXED OUT EXTRACT FAN AND FLUE



APPENDIX 3
CALIBRATION CERTIFICATE FOR SOUND LEVEL METER (CALIBRATION EVERY 2 YEARS)

[redacted]

Certificate of Calibration and Conformance

Certificate number: **U46717**

Test Object: **Sound Level Meter, BS EN IEC 61672-1:2013 Class 1**
Associated Frequency Analyser to BS EN IEC 61260:1996 Class 1

Producer: [redacted]
Type: XL2-TA
Serial number: A2A-17283-E0
Customer: [redacted]
Address:

Contact Person:
Order No: RPA/24/CAL/01

Introduction:
Calibration has been performed as set out in CA Technical Procedures which are based on the procedures for periodic verification of sound level meters as per the **Test Object** listed above. Results and conformance statement are overleaf and detailed results, where appropriate, are provided in the attached Measurement Report.

Tested:	*Producer*	*Type*	*Serial No*	*Certificate No*
Microphone	NTi Audio	MC230A	A23655	46716
Calibrator*	Larson Davis	CAL200	17115	U46700
Preamplifier	NTi Audio	MA220	11174	Included

* The calibrator was complete with any required coupler for the microphone specified.

Additional items that have also been submitted for verification:

Wind shield	N/A
Attenuator	N/A
Extension cable	N/A

These items have been taken into account wherever appropriate.

Instruction Manual: NTi-Audio XL2 Operating Manual v3.11.02 August 2016 Firmware Version: V4.71 The test object is a single channel instrument.

Conditions	*Pressure kPa*	*Temperature °C*	*Humidity %RH*
Reference conditions	101.325	23	50
Measurement conditions	97.15 ±0.02	22.30 ±0.4	43.48 ±0.65

Calibration Dates:

Received date:	23/01/2024	Reviewed date:	09/02/2024
Calibration date:	09/02/2024	Issued date:	09/02/2024

Technicians: (Electronic certificate)

Calibrated by: [redacted]

Reviewed by:

APPENDIX 3
CALIBRATION CERTIFICATE FOR SOUND CALIBRATOR (CALIBRATION EVERY YEAR)

[redacted]

0789

Certificate of Calibration and Conformance

Certificate number: U46700

Test Object: Sound Calibrator

Producer: [redacted]
Type: CAL200
Serial number: 17115
Customer:
Address: [redacted]

Contact Person:
Order No:

Measurement Results	Level dB	Frequency Hz	Distortion %
Measurement 1	114.11	1000.36	0.37
Measurement 2	114.11	1000.36	0.37
Measurement 3	114.12	1000.37	0.37
Result (Average):	**114.11**	**1000.36**	**0.37**
Expanded Uncertainty:	0.1	1	0.3
Degree of Freedom:	>100	>100	>100
Coverage Factor:	2	2	2

The stated level is relative to 20µPa. The level is traceable to National Standards.
The stated level is valid at measurement conditions

Conditions	*Pressure kPa*	*Temperature °C*	*Humidity %RH*
Reference conditions	101.325	23	50
Measurement conditions	98.28 ±0.01	21.63 ±0.35	45.58 ±1.8

Calibration Statement
The reported expanded uncertainty of measurements is based on a standard uncertainty multiplied by the coverage factor of k=2, providing a level of confidence of approximately 95%. Where the degrees of freedom are insufficient to maintain this confidence level, the coverage factor is increased to maintain this confidence level. The uncertainty has been determined in accordance with UKAS requirements.

Multi Level Multi Frequency
Refer to page 3 for details of additional levels and frequencies calibrated.

Calibration Dates:

Received date:	23/01/2024	Reviewed date:	09/02/2024
Calibration date:	08/02/2024	Issued date:	09/02/2024

Technicians: (Electronic certificate)
Calibrated by: [redacted]
Reviewed by:

APPENDIX 4
INSTALLED KITCHEN EXTRACTION SYSTEM