



NOISE ASSESSMENT

on behalf of

INFINITY (MIOC) LLP

for the site at

**MIOC, STYAL RD., WYTHENSHAW M22
5WB**

REPORT DATE: 16 SEPTEMBER 2021

REPORT NUMBER: 102602

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Summary

A noise assessment was undertaken to determine the impact of a proposed drive thru (Class E Use) at MIOC, Styal Road, Wythenshawe M22 5WB.

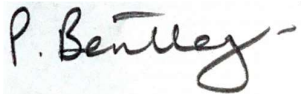
Operational sound levels from the proposed use of the site, including drive-thru and deliveries, have been assessed against background sound levels measured nearby and calculated break-in of cumulative sound levels into nearest noise sensitive properties.

The assessment concludes that during the daytime the use of the drive thru with deliveries is expected to have a low impact. During the night-time, the proposed use of the site without deliveries is also expected to result in a low impact. Deliveries during the early part and middle of the night-time period are predicted to result in significant adverse impact. Consequently, it is recommended that deliveries to the site are restricted between 6am-11pm to limit night-time impact. However, even if deliveries are restricted we would still recommend additional mitigation in the form of a 2.4m high acoustic screen with an absorbing face towards the delivery area to reduce the sound from deliveries to limit any perceptible change in the ambient noise level of the area.

Plant noise limits have been set in the absence of specific plant data for the site. These limits are based on typical measured background sound levels by Lighthouse Acoustics in December 2020. Compliance with these targets will ensure that Manchester City Council (MCC) guideline requirements are complied with.

In conclusion, with the recommended mitigation measures, the proposed development should not give rise to unacceptable noise impact on the amenity of existing nearby dwellings, and consequently the proposed development is considered suitable with regard to noise.

Record of changes

Prepared By	Paul Bentley MIOA	Reviewed By	David Sproston MIOA MCIEH
Signed		Signed	
Date	16 September 2021	Date	16 September 2021

Version	Date	Change	Initials
1	16 September 2021	Initial issue	PB

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1 Introduction

- 1.1 Miller Goodall Ltd has, on behalf of Infinity (MIOC) LLP, undertaken a noise for a proposed drive thru (Class E Use) at MIOC, Styal Road, Wythenshawe M22 5WB. The site lies within the administrative boundary of Manchester City Council (MCC).
- 1.2 Noise from use of the proposed drive thru, including deliveries has been assessed by predicting noise impacts at the nearest noise sensitive receptor (NSR). Full details (i.e. location, make, model, quantity, hours of use) of proposed plant items to be installed and operated at the site are not known at this stage and therefore cumulative plant noise rating level limits have been recommended.

2 Site Description

- 2.1 The site is located on land off Styal Road and within the grounds of the Manchester Internal Office Centre as shown outlined in red in Appendix 1. Immediately to the north and south of the development are car parking facilities. Office buildings are located top the east. The nearest and most exposed existing noise sensitive properties to the site are dwellings located to the west of the development site off Maron Road and Emerald Road with the rear elevations facing the proposed development site.

3 Proposed Development

- 3.1 The proposed development is a single storey coffee shop drive-thru restaurant (Class E use). The proposed layout is shown in Appendix 2.
- 3.2 Traffic associated with the proposed development is mostly 'pass-by' traffic vehicles that are already on a journey and present on the surrounding roads which merely pass through the site and then return to their original journey.
- 3.3 The unit is proposed to operate during both daytime and night-time hours. Potential noise emissions from the site will include the arrival and departure of customer vehicles, noise generated by the electronic ordering kiosk, the arrival and departure of servicing vehicles and the un/loading of cages to/from servicing vehicles.

4 Policy Context

4.1 Noise Policy Statement for England

- 4.1.1 The Noise Policy Statement for England (NPSE¹), published in March 2010, sets out the long-term vision of Government noise policy. The Noise Policy aims, as presented in this document, are:

¹ Noise Policy Statement for England, Defra, March 2010

“Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- avoid significant adverse effects on health and quality of life;
- mitigate and minimise adverse effects on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life.”

4.1.2 The NPSE makes reference to the concepts of NOEL (No Observed Effect Level) and LOAEL (Lowest Observed Adverse Effect Level) as used in toxicology but applied to noise impacts. It also introduces the concept of SOAEL (Significant Observed Adverse Effect Level) which is described as the level above which significant adverse effects on health and the quality of life occur.

4.1.3 The first aim of the NPSE is to avoid significant adverse effects, taking into account the guiding principles of sustainable development (as referenced in Section 1.8 of the Statement). The second aim seeks to provide guidance on the situation that exists when the potential noise impact falls between the LOAEL and the SOAEL, in which case:

“...all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development”.

4.1.4 Importantly, the NPSE goes on to state:

“This does not mean that such adverse effects cannot occur”.

4.1.5 The Statement does not provide a noise-based measure to define SOAEL, acknowledging that the SOAEL is likely to vary depending on the noise source, the receptor and the time in question. NPSE advises that:

“Not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available”

4.1.6 It is therefore likely that other guidance will need to be referenced when applying objective standards for the assessment of noise, particularly in reference to the SOAEL, whilst also taking into account the specific circumstances of a proposed development.

4.2 National Planning Policy Framework

4.2.1 The National Planning Policy Framework (NPPF²) initially published in March 2012, was updated in July 2021. One of the documents that the NPPF replaces is Planning Policy Guidance Note 24 (PPG 24) “Planning and Noise”³.

4.2.2 The revised NPPF advises that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives). One of these is an environmental objective which is described in par. 8 (c):

² National Planning Policy Framework, Ministry of Housing, Communities and Local Government, June 2019

³ Planning Policy Guidance 24: Planning and Noise, DCLG, September 1994

“to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.”

4.2.3 At par. 174 we are advised that:

“Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.”

4.2.4 Par. 185 goes on to state:

“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

4.2.5 Par. 187 seeks to ensure that any development does not prejudice the legally permitted operations and activities of other, existing non-residential uses, stating:

“Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.”

4.3 Planning Practice Guidance – Noise

4.3.1 As of March 2014, a Planning Practice Guidance⁴ for noise was issued which provides additional guidance and elaboration on the NPPF, the guidance was updated in July 2019. It advises that when plan-making and decision-taking, the Local Planning Authority should consider the acoustic environment in relation to:

- Whether or not a significant adverse effect is occurring or likely to occur;
- Whether or not an adverse effect is occurring or likely to occur; and

⁴ Planning Practice Guidance – Noise, <https://www.gov.uk/guidance/noise--2> 22nd July 2019.

- Whether or not a good standard of amenity can be achieved.

4.3.2 In line with the Explanatory Note of the NPSE, the PPG goes on to reference the LOAEL and SOAEL in relation to noise impact. It also provides examples of outcomes that could be expected for a given perception level of noise, plus actions that may be required to bring about a desired outcome. However, in line with the NPSE, no objective noise levels are provided for LOAEL or SOAEL although the PPG acknowledges that:

“...the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation”.

4.3.3 Examples of these factors include:

- The source and absolute noise level of the source along with the time of day that it occurs;
- Where the noise is non-continuous, the number of noise events and pattern of occurrence;
- The frequency content and acoustic characteristics of the noise;
- The effect of noise on wildlife;
- The acoustic environment of external amenity areas provided as an intrinsic part of the overall design;
- The impact of noise from certain commercial developments such as night clubs and pubs where activities are often at their peak during the evening and night.

4.3.4 The PPG also provides general advice on the typical options available for mitigating noise. It goes on to suggest that Local Plans may include noise standards applicable to proposed developments within the Local Authority's administrative boundary, although it states that:

“Care should be taken, however, to avoid these being implemented as fixed thresholds as specific circumstances may justify some variation being allowed”.

4.3.5 The PPG was amended in December 2014 to clarify guidance on the potential effect of noise from existing businesses on proposed new residential accommodation. Even if existing noise levels are intermittent (for example, from a live music venue), noise will need to be carefully considered and appropriate mitigation measures employed to control noise at the proposed accommodation.

4.4 Manchester City Council Noise Policy

4.4.1 Manchester City Council's (MCC's) Planning and Noise Technical Guidance states the following in '3.6.1.5 Industrial/Commercial Developments':

“BS 4142 should be used to assess the likely impact of noise from industrial and commercial sources at noise sensitive premises (section 3.5) One of the indications of the impact of a BS 4142 assessment is the lower the rating level is relative to the measured background sound level the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source have a low impact, depending on the context.

The council consider that new developments should contribute and enhanced the area in which they are located and where possible, contribute to the improvement of people's health and quality of life as per the NPSE. With this in mind the design objective should be:

‘The development should be designed so as to achieve a rating of 5 dB (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location.’

Where this criterion cannot be achieved, the various noise control measures considered as part of the assessment should be fully explained (i.e. relocation of noise sources, use of quieter equipment, enclosures, screening, restriction of the hours of operation) and the achievable noise level should be identified. This information will allow us to make a judgement concerning the application and its likely impact on the surrounding area.

In addition to the above, maximum noise levels should also be adequately controlled. Where uses generate high noise levels of a short duration (e.g. loud bangs) on a regular basis, these should aim to be controlled so as not to exceed 60 dB (L_{Amax}) at the façade of noise sensitive premises nearby in accordance with the recommendations of the World Health Organisation.

Deliveries and collections are usually controlled by restricting operational hours but depending on the extent of these activities a Noise Management Plan (NMP) may be requested, which would include an assessment of noise. This would usually involve assessing the noise upon arrival, loading/unloading period and then departure.

The NMP may also need to include controls such as acoustically sealed delivery bays, and restrictions on vehicle mounted refrigeration units and audible alarm systems. Where applicable, the noise assessment will take account of multiple noise sources operating simultaneously and state the cumulative level of these.”

5 Acoustic Standards and Guidance

5.1 BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’

- 5.1.1 BS 4142:2014+A1:2019⁵ provides guidance on the assessment of the likelihood of complaints relating to noise from industrial sources. It replaced the 1997 edition of the Standard in October 2014 and was amended in June 2019. The amended version corrected a number of printing errors and further clarified that the standard is used to assess external noise levels, and not internal noise levels (although this can form part of the discussion regarding context). The key aspects of the Standard are summarised below.
- 5.1.2 The standard presents a method of assessing potential noise impact by comparing the noise level due to industrial sources (the Rating Level) with that of the existing background noise level at the nearest noise sensitive receiver in the absence of the source (the Background Sound Level).
- 5.1.3 The Specific Noise Level - the noise level produced by the source in question at the assessment location - is determined and a correction applied for certain undesirable acoustic features such as tonality, impulsivity or intermittency. The corrected Specific Noise Level is referred to as the Rating Level.

⁵ BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound

5.1.4 In order to assess the noise impact, the Background Sound Level is arithmetically subtracted from the Rating Level. The standard states the following:

- *“Typically, the greater this difference, the greater the magnitude of the impact,*
- *A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context,*
- *A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context,*
- *The lower the Rating Level is relative to the measured Background Sound Level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the Rating Level does not exceed the Background Sound Level, this is an indication of the specific sound source having a low impact, depending on the context.”*

5.1.5 In addition to the margin by which the Rating Level of the specific sound source exceeds the Background Sound Level, the 2014+A1:2019 edition places emphasis upon an appreciation of the context, as follows:

“An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.”

5.1.6 The 2014 edition of BS 4142 also introduced a requirement to consider and report the uncertainty in the data and associated calculations and to take reasonably practicable steps to reduce the level of uncertainty.

6 Impact of Noise from the Proposed Development

6.1 Drive Thru & Deliveries

6.1.1 Prediction of potential future noise levels at sensitive receptors from the proposed development has been carried out using CadnaA software package.

6.1.2 The general arrangement plan information of the area surrounding and including the proposed development site was imported from Google Earth. This was used to determine road positions, building footprint areas and relative locations.

6.1.3 The following parameters were assigned to the model:

- Propagation model: ISO 9613⁶
- Default ground absorption: 0.3 (predominantly hard ground, with some soft ground i.e. 70% hard, 30% soft)
- Two orders of reflection
- Buildings are reflecting (smooth, non-structured facade)

⁶ ISO 9613-2: 1996 Acoustics - Attenuation of sound during propagation outdoors – Part 2: General method of calculation

6.1.4 The following noise sources have been modelled for the site;

- Forty car arrivals and departures for a reasonable worst-case 1hr period⁷ during the daytime (07:00-23:00hrs). This includes arrival, traversing the drive thru from order to pickup and departing. The speed for the three phases are set as 30kph, 5kph and 20kph respectively.
- Twelve car arrivals and departures for a reasonable worst-case 15min period⁸ during the night-time (23:00-07:00hrs). This includes arrival, traversing the drive thru from order to pickup and departing. The speed for the three phases are set as 30kph, 5kph and 20kph respectively.
- An order point for the drive-through and order pick-up window with talking for 50% of the time for ordering and 10% on-time at the pick-up window⁹.
- One delivery for a reasonable worst-case daytime 1hr assessment period to the proposed western delivery bay which includes use of delivery cages/refrigerated plant on vehicle with 40% on-time i.e. 24min total delivery time so on-time correction of -4dB applied.
- One delivery for a reasonable worst-case night-time 15min assessment period to western delivery bay which includes use of delivery cages/refrigerated plant on vehicle with 100% on-time i.e. total delivery time is 24min so no correction for assessment period.

6.1.5 Table 1 presents the source sound power data for each of the sources listed above.

Table 1: CadnaA source sound power levels

Description	L_w Sound Power Level, dB in Octave Band Centre Frequency, Hz								L_{wA}
	63	125	250	500	1k	2k	4k	8k	
Car pass-by event (exhaust)	77	74	67	65	62	61	59	63	69
Normal voice	-	59	65	68	62	57	52	47	68
Engine/fridge plant	90	86	85	90	92	87	80	72	95
Delivery cages	95	94	89	84	81	78	75	73	87

6.1.6 Appendix 3 presents the predicted free-field specific sound levels as $L_{Aeq,1hr}$ and $L_{Aeq,15min}$ based on the above scenarios. The worst case predicted $L_{Aeq,1hr}$ and $L_{Aeq,15min}$ sound level in the daytime and night-time periods was 51dB and 52dB respectively.

6.1.7 The predicted sound levels have been compared to a background sound level measured by Lighthouse Acoustics¹⁰ that were measured on the 9th December 2020 for 24hrs at a position on the corner of Trenchard

⁷ Equates to 1 car every 1:30min using the drive-thru

⁸ Equates to 1 car every 1:30min using the drive-thru

⁹ 50% on-time equates to -3dB correction and a 10% on-time equates to 10dB correction to the specific source noise level.

¹⁰ Lighthouse Acoustics 15 February 2021 ref: 0778/APR1 Revision 1

Drive and Ringway Road for a proposed new hotel¹¹. The monitoring position is approximately 100m to the east of the nearest residential property as shown in Appendix 4.

6.1.8 This position is considered to be representative of the background sound levels in the area, and of the nearest existing noise sensitive receptors to the site. It should be noted that the background sound levels would likely be higher once road traffic and aircraft flights from Manchester International Airport increase in frequency as this survey was completed during travel restrictions put in place by the United Kingdom Government for the Coronavirus pandemic.

6.1.9 The measured lowest typical background $L_{A90,t}$ sound levels at the position are presented in Table 2.

Table 2: Lighthouse Acoustics noise survey data

Position	Date	Lowest Representative Background Sound Level $L_{A90,15min}$ (dB)
MP1	Daytime (07:00-23:00hrs)	53
	Night-time (23:00-07:00hrs)	32

6.1.10 Table 3 below presents the comparison with BS4142:2014 assessment at the nearest noise-sensitive properties comparing the rating level with the measured background sound levels by Lighthouse Acoustics. Acoustic features have not been included given the that the specific sound levels are comparable with the sounds that make up the existing residual noise climate.

Table 3: BS 4142 Assessment of night-time noise impacts with deliveries

Period	Predicted Specific Sound Level (dB)	Acoustic Feature Correction (dB)	Rating Level (dB)	Background Sound Level ($L_{AF90,t}$ dB)	Excess of Rating Level over Background Sound Level (dB)	Initial Estimate of Noise Impact
Daytime (07:00-23:00)	51	0	51	53	-2	Low impact
Night-time (23:00-07:00)	52	0	52	32	+20	Potential significant adverse impact

6.1.11 Based on the assessment in Table 3, the outcome of the initial assessment shows that potential worst-case noise from the site will result in a low impact during the daytime, and a significant adverse impact during the night-time.

¹¹ See Appendix 4 for site survey location and survey results by Lighthouse Acoustics

6.1.12 A review of the noise calculations show that the most significant contributing noise source is delivery vehicles serving the site. The predicted worst case $L_{Aeq,15min}$ sound level from the use of the drive-thru only (i.e. in the absence of noise from deliveries to the site) in the night-time period is 20dB¹². Table 4 below presents the comparison with BS4142:2014 assessment comparing the rating level with the measured background sound levels by Lighthouse Acoustics. Acoustic features have not been included given the absolute level of the predicted specific sound level when compared to the existing residual sound levels.

Table 4: BS 4142 Assessment of night-time noise impacts with no deliveries

Period	Predicted Specific Sound Level (dB)	Acoustic Feature Correction (dB)	Rating Level (dB)	Background Sound Level ($L_{AF90,5min}$, dB)	Excess of Rating Level over Background Sound Level (dB)	Initial Estimate of Noise Impact
Night-time (23:00-07:00)	20	0	18	32	-12	Low impact

6.1.13 From just the use of the drive-thru in the night-time period with no deliveries between 11pm-7am the impact is predicted to be low.

6.1.14 Further assessment of the survey data from Lighthouse Acoustics for the 6am-7am period and 11pm-12am period shows that the typical background sound level is 49dB $L_{A90,t}$ and 37dB $L_{A90,t}$ respectively. Assessment of deliveries between the same periods has been undertaken. Figure A3.3 in Appendix 3 presents the predicted $L_{Aeq,15min}$ sound level with a 2.4m absorbing face barrier to reduce sound levels from deliveries taking place.

6.1.15 The worst case predicted $L_{Aeq,15min}$ with the 2.4m absorbing barrier in the night-time period from the use of the drive thru and one delivery taking place is 47dB. Table 5 below presents the comparison with BS4142:2014 assessment comparing the rating level with the measured background sound levels by Lighthouse Acoustics for the two time periods. Acoustic features have not been included given the absolute level of the predicted specific sound level when compared to the existing residual sound levels.

Table 5: BS 4142 Assessment of night-time noise impacts including deliveries

Period	Predicted Specific Sound Level (dB)	Acoustic Feature Correction (dB)	Rating Level (dB)	Background Sound Level ($L_{AF90,5min}$, dB)	Excess of Rating Level over Background Sound Level (dB)	Initial Estimate of Noise Impact
Night-time (23:00-00:00)	47	0	47	37	+10	Potential for significant adverse impact
Night-time (06:00-07:00)	47	0	47	49	-2	Low impact

¹² See Figure A3.4

- 6.1.16 For the night-time assessment including deliveries, significant adverse impact is predicted for the 11pm-12pm period but low impact is predicted for the 6am-7am period. This is due to the fluctuation of the background sound level through-out the night-time period. We would therefore only recommend deliveries between 6am-11pm for the site.
- 6.1.17 To add context, in line with BS 4142:2014, the impact has been assessed using a calculation to determine the uplift/increase in ambient noise level and then undertaking a simple calculation of noise break-in at the nearest noise-sensitive (residential) receptors.
- 6.1.18 For the daytime period, the expected external sound level accounting for existing and predicted sound levels is 62dB $L_{Aeq,t}$ ¹³. The predicted sound level is 10dB less than the existing ambient $L_{Aeq,t}$ in the daytime and it therefore should not increase the ingress of sound into the residential properties. We would expect reasonable sound insulation measures to be included in all residential properties given the proximity to the airport. Assuming a reduction of 35dB from the façade with windows closed the expected internal sound level would be between 30-35dB $L_{Aeq,t}$ during the daytime. This is considered to be an acceptable level based on the guidance in BS8233:2014.
- 6.1.19 For the night-time period, the expected external sound level accounting for existing and predicted sound levels is 56dB $L_{Aeq,t}$ with no mitigation and 54dB $L_{Aeq,t}$ with mitigation¹⁴. The predicted sound level is calculated to increase the night-time ambient $L_{Aeq,t}$ of 53dB by 3dB with no mitigation, which is at the point where the average person are likely to notice a change in noise level and by 1dB with mitigation, which is not likely to be noticed by the average person.
- 6.1.20 Again assuming for a reduction of 35dB the expected internal level in the bedroom spaces during the night-time would be 25-30dB $L_{Aeq,t}$. This is considered to be an acceptable level based on the guidance in BS8233:2014. However, given the sensitivity to noise in the area at night due to the airport it is considered that any perceptible change should be avoided.
- 6.1.21 We would therefore recommend that restrictions are applied to night-time deliveries to limit these to 6am-11pm. Mitigation will be required however in the form of a 2.4m high screen fence with an absorbing face to the drive-thru side. If it is agreed deliveries can be restricted from 7am-11pm then no mitigation is required.

6.2 Plant Items

- 6.2.1 Full details of plant items are not currently available and therefore noise rating level limits will need to be specified
- 6.2.2 The survey conducted by Lighthouse Acoustics has been used to set plant noise limits that can be incorporated into a planning condition to ensure no noise impact occurs.
- 6.2.3 Based on the background sound level the following plant noise limits are recommended to ensure that MCC's standard plant noise criterion will be achieved.
- Daytime 48dB $L_{Afr,1hr}$ measured or predicted at the nearest sensitive receptor.

¹³ 62dB $L_{Aeq,t}$ measured by Lighthouse Acoustics and 51dB $L_{Aeq,1hr}$ predicted from drive thru use and deliveries

¹⁴ 53dB $L_{Aeq,t}$ measured by Lighthouse Acoustics and 52dB $L_{Aeq,15min}$ (no mitigation) and 47dB $L_{Aeq,15min}$ (with mitigation) predicted from drive thru use and deliveries

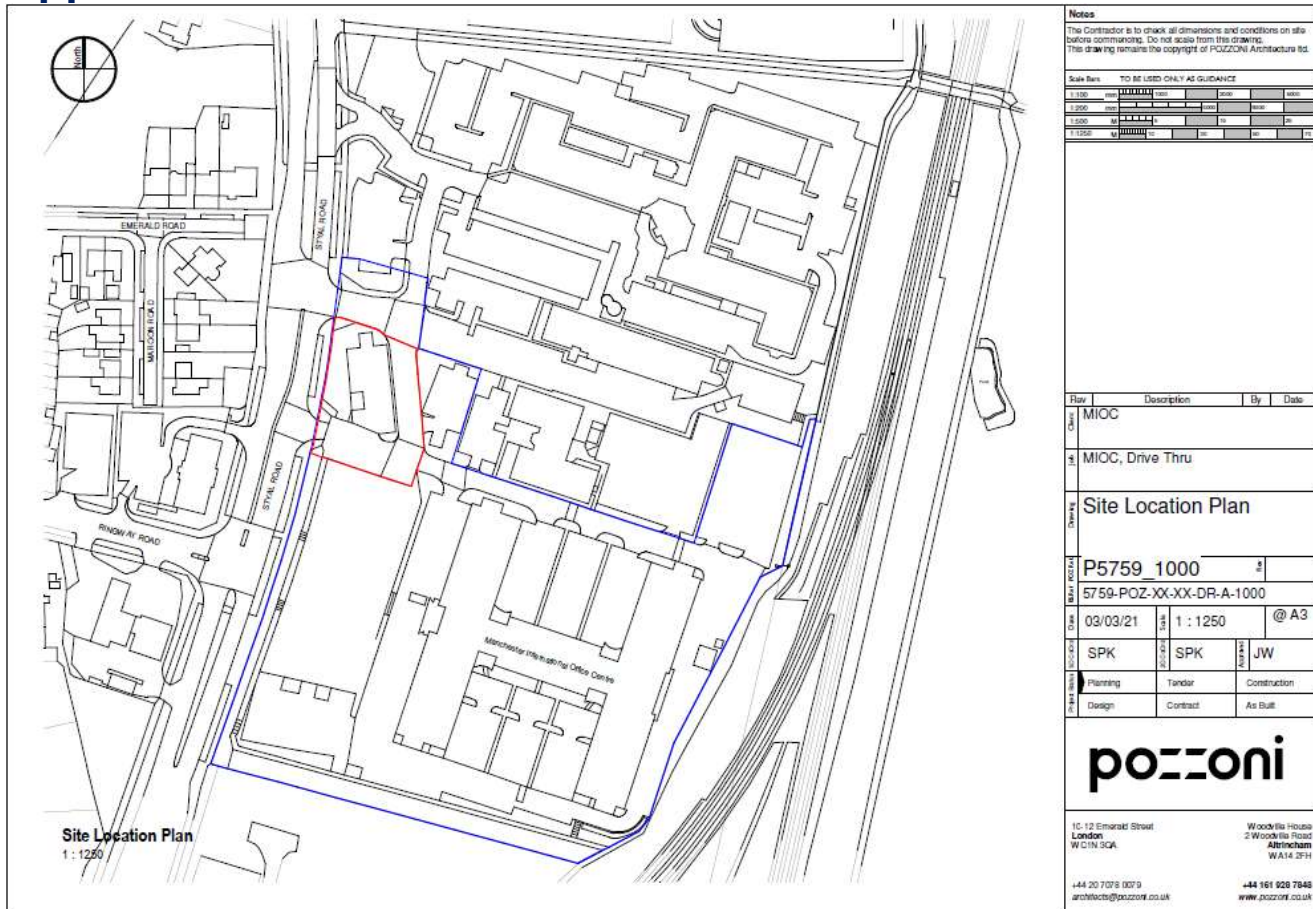
- Night-time 27dB $L_{Ar,15min}$ measured or predicted at the nearest sensitive receptor.

7 Conclusions

- 7.1 A noise assessment was undertaken to determine the impact of a proposed drive thru e to units (Class E Use) at MIOC, Styal Road, Wythenshawe M22 5RB.
- 7.2 Predictions of the impact from vehicles arriving, ordering, collecting their order, departing and deliveries have been undertaken.
- 7.3 The impact during the daytime is expected to be low from the use of the site. The night-time impact if no deliveries take place between 11pm-7am is also expected to be low. Deliveries can take place between 6am-7am without resulting in an adverse or significant adverse impact with the inclusion of a 2.4m high acoustic absorbing barrier. Outside of these hours even with the barrier the impact is considered to be significant.
- 7.4 We would therefore recommend that the use of the drive-thru for the servicing of customer can take place 24hrs a day, but deliveries will need to be restricted between 6am-11pm.
- 7.5 Plant items are yet to be specified and as such cumulative plant noise rating level limits attribute to new plant at the site have been recommended to ensure that the sound emissions from the plant items when considered in conjunction with the contribution from vehicles using the drive-thru and deliveries will not exceed MCC criteria of 5dB below the measured typical background sound level.

APPENDICES

Appendix 1: Site Location Plan



Appendix 2: Proposed Layout

XX-Site - Proposed
1 : 200

Notes									
The Contractor is to check all dimensions and conditions on the site before commencing. Do not scale from this drawing. This drawing remains the copyright of POZZONI Architecture & Interiors.									
Scale bar TO BE USED ONLY AS GUIDANCE									
1:500	mm	0	1	2	3	4	5	6	7
1:200	mm	0	1	2	3	4	5	6	7
1:100	mm	0	1	2	3	4	5	6	7
1:50	mm	0	1	2	3	4	5	6	7

KEYPLAN

4	Amended to suit Highways comments	JW	28.05.21
3	Amended to suit Topographical survey and Tenant feedback	JW	25.05.21
2	Starbucks Layout indicated	JW	13.05.21
1	Layout amended to suit Highways comments	JW	26.04.21
Rev	Description	By	Time

File	Description	Qty	Unit
Class	Infinity (MIOC) LLP		

1	Proposed Drive Thru, MIOC
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[illegible]

Planning - Proposed GA Site Plan

2	B5350 1200	8	4
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5759-POZ-XX-ZZ-DR-A-1200

April 2021 1 : 200 © A1

SPK	SPK	JW
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Planning	Tender	Construction
Execution	Closeout	Post-Project

z	Design	Contract	As built

po-oni

розробити

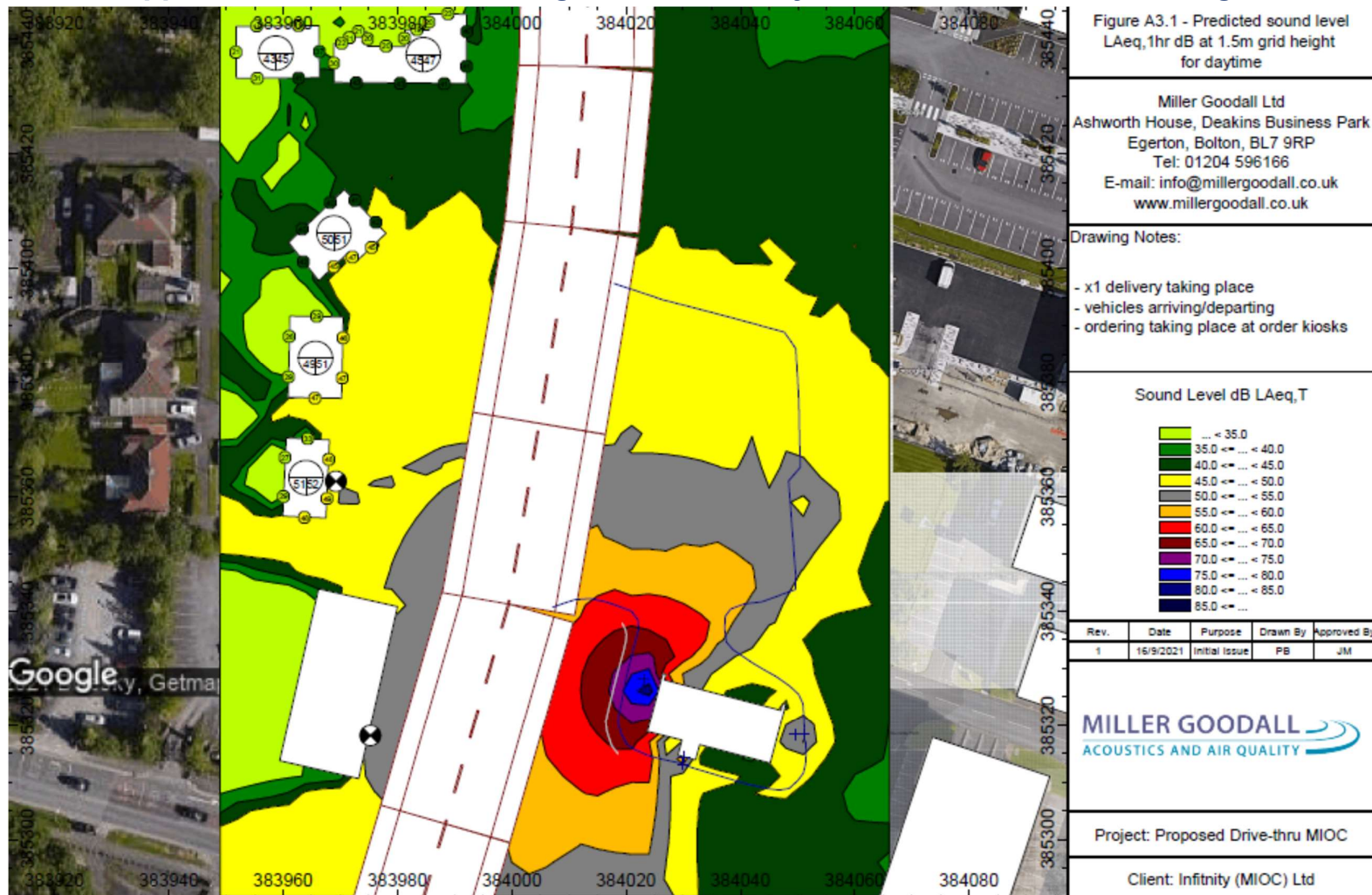
10-12 Emaraki Street
London

FOR COMMENT

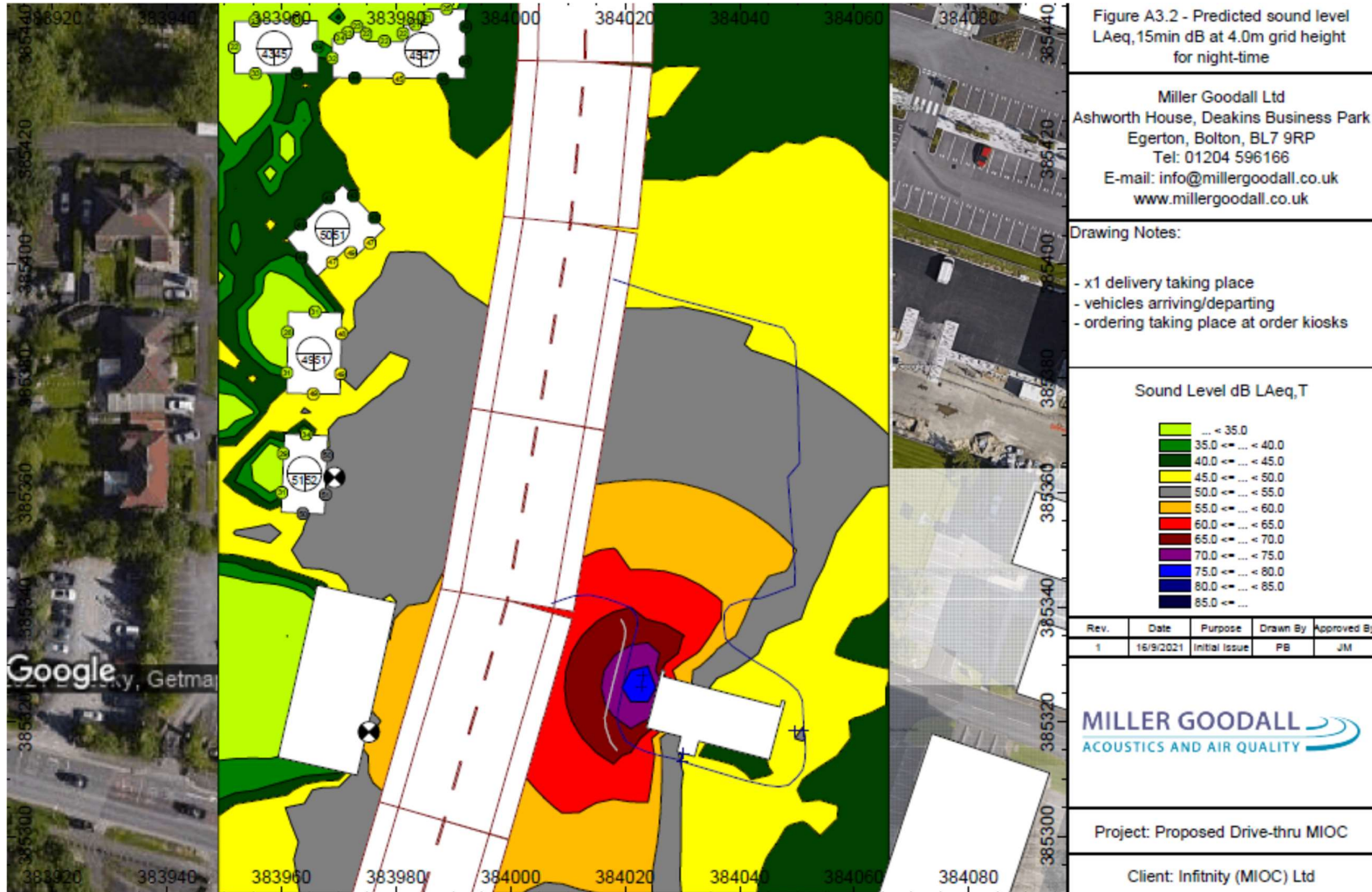
MATERIALS / FINISHES

 Hard Landscaping - Road
 Hard Landscaping - Tarmac Footpath
 Hard Landscaping - Paving
 Soft Landscaping - Allotment
 Soft Landscaping - Burdock
 Site Boundary
 Exst to be demolished

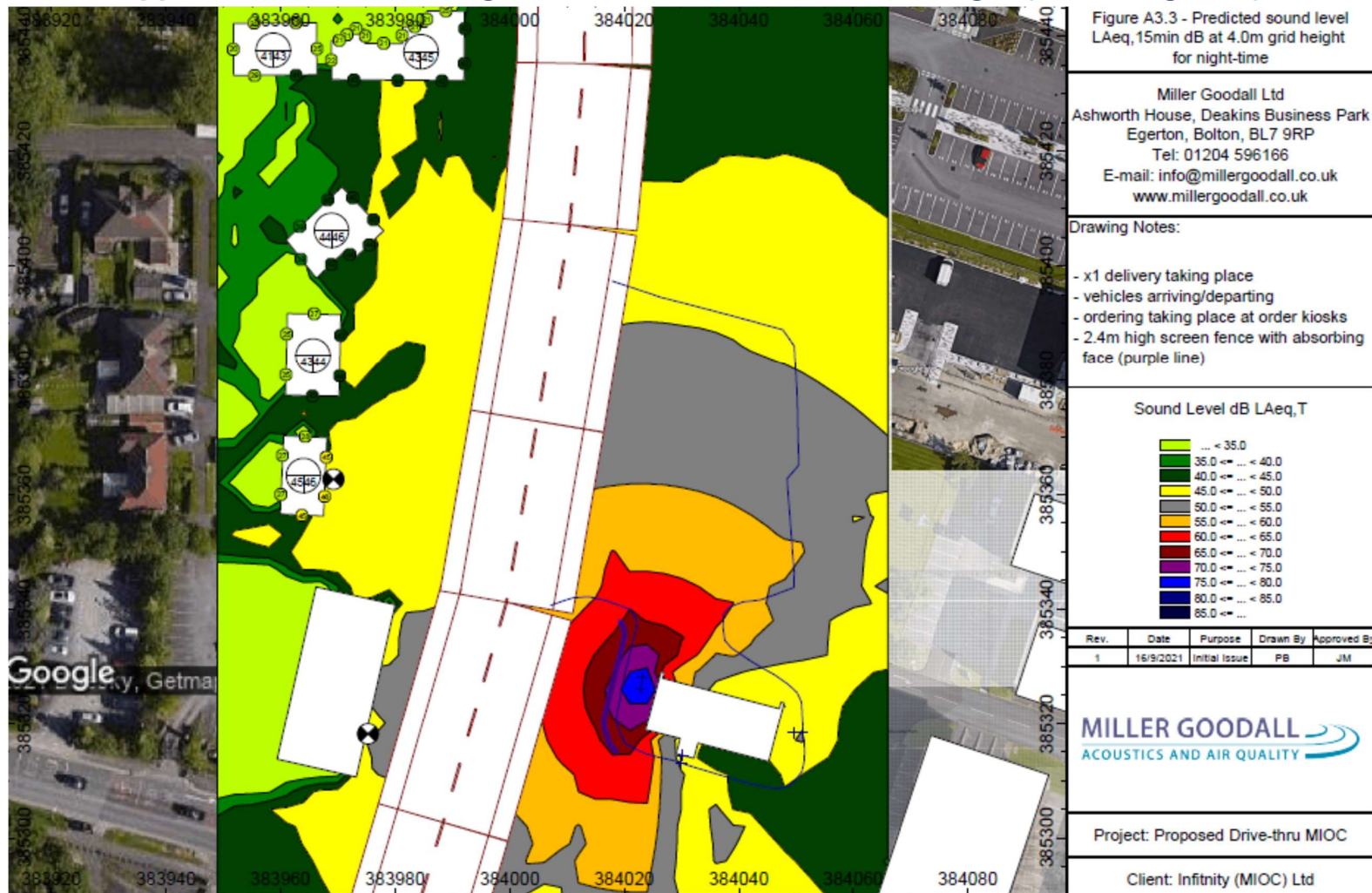
Appendix 3: CadnaA Modelling – Predicted Daytime $L_{Aeq,1hr}$ at 1.5m Grid Height



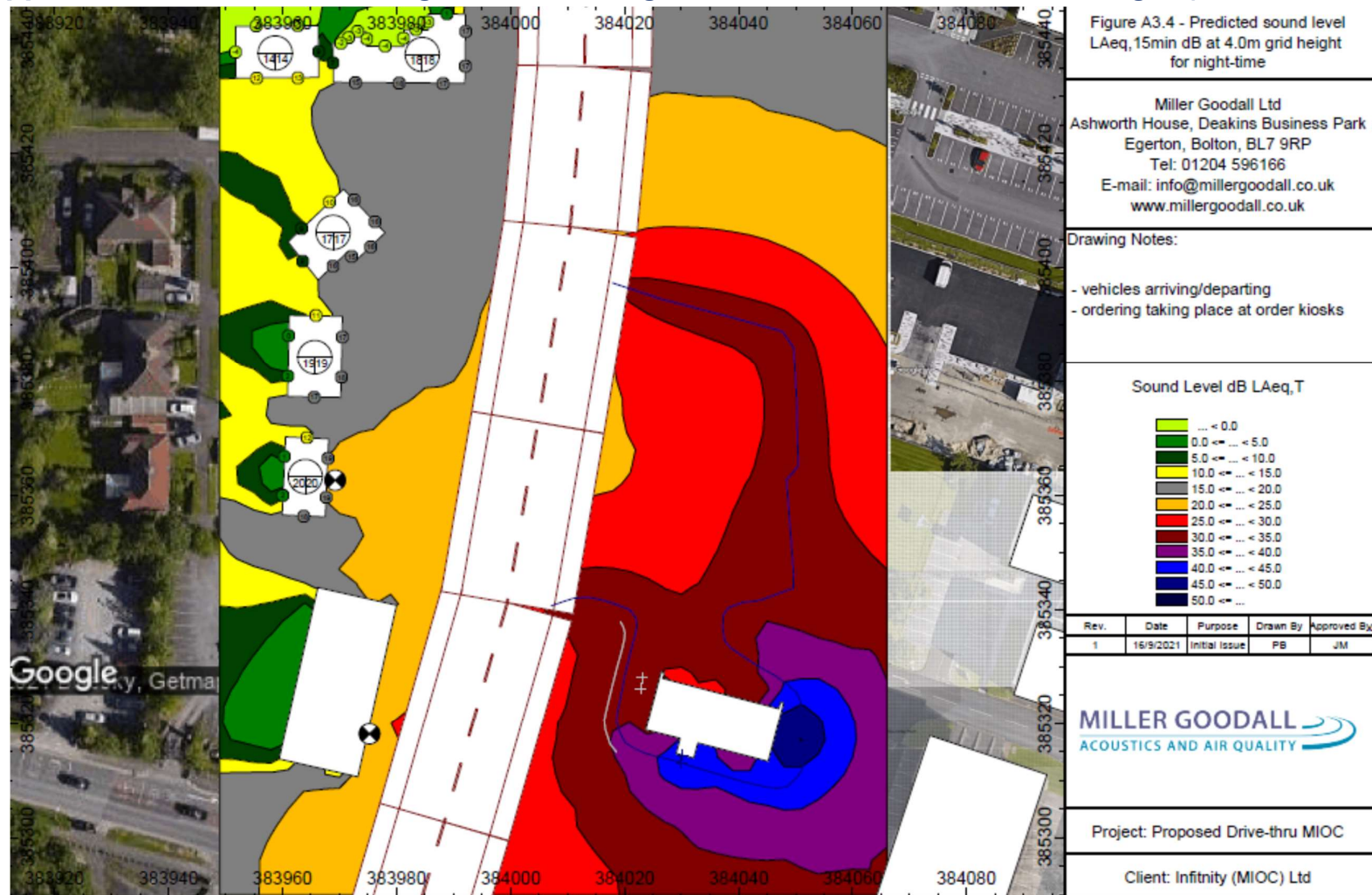
Appendix 3: CadnaA Modelling – Predicted Night-time $L_{Aeq,15min}$ at 4.0m Grid Height (No Mitigation)



Appendix 3: Predicted Night-time $L_{Aeq,15min}$ at 4.0m Grid Height (With Mitigation)



Appendix 3: CadnaA Modelling - Predicted Night-time $L_{Aeq,15min}$ at 4.0m Grid Height (No Deliveries)



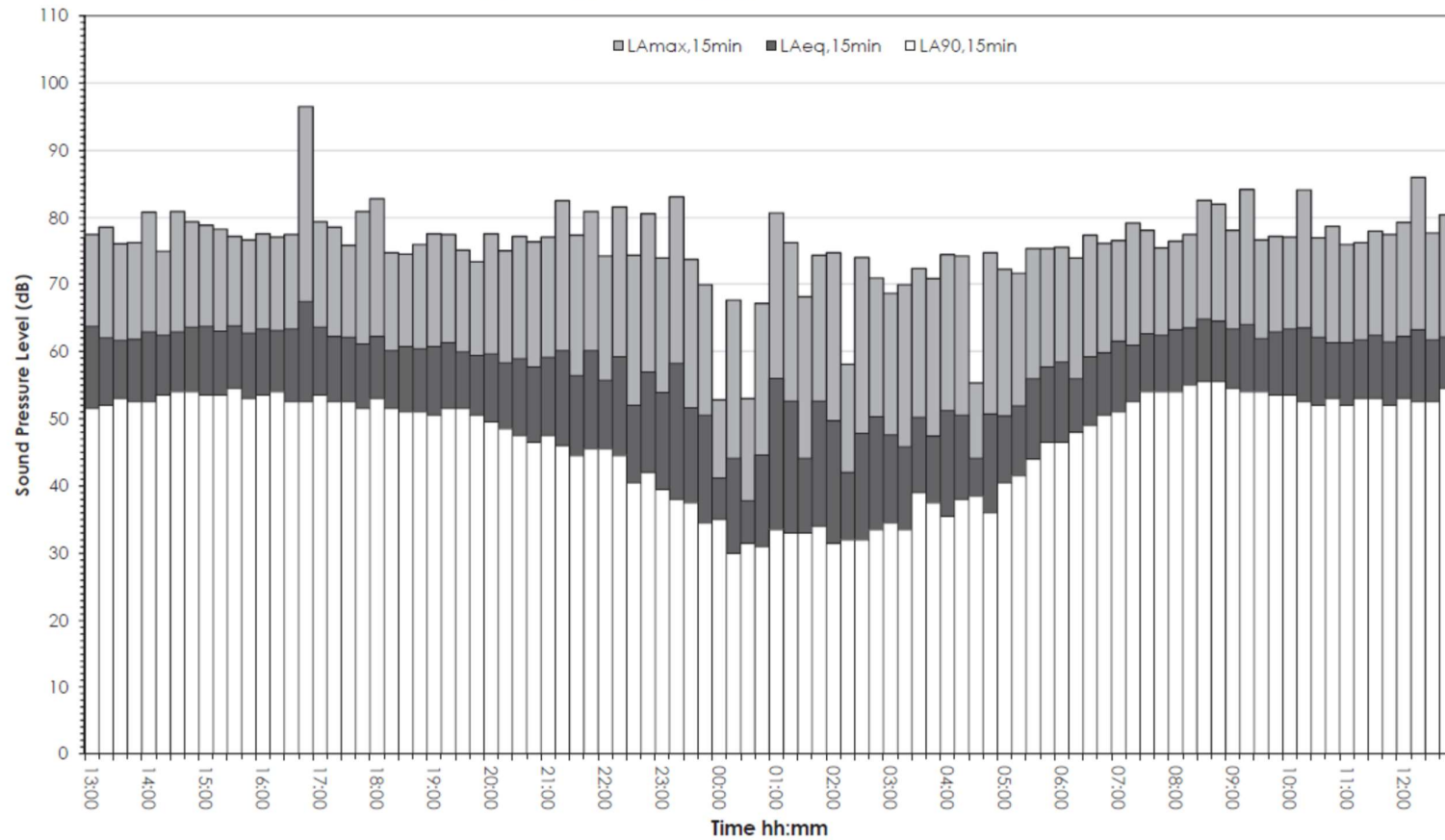
Appendix 4: Lighthouse Acoustics Survey Location Plan



Appendix 4: Lighthouse Acoustics Survey Data

0778/THG1

Moss Nook Hotel, 2 Trenchard Drive, Manchester
Time History Graph - Wednesday 9 December 2020 to Thursday 10 December 2020
 $L_{Amax,15min}$, $L_{Aeq,15min}$ & $L_{A90,15min}$ Noise Levels at Position A



Glossary of Terms

Decibel (dB) The unit used to quantify sound pressure levels; it is derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is 20 μPa , the threshold of normal hearing is in the region of 0 dB, and 140 dB is the threshold of pain. A change of 1 dB is usually only perceptible under controlled conditions.

dB L_A Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB L_A broadly agree with an individual's assessment of loudness. A change of 3 dB L_A is the minimum perceptible under normal conditions, and a change of 10 dB L_A corresponds roughly to halving or doubling the loudness of a sound. The background noise level in a living room may be about 30 dB L_A ; normal conversation about 60 dB L_A at 1 meter; heavy road traffic about 80 dB L_A at 10 meters; the level near a pneumatic drill about 100 dB L_A .

$L_{A90,T}$ The A weighted noise level exceeded for 90% of the specified measurement period (T). In BS 4142: 2014+A1:2019 it is used to define background noise level.

$L_{Aeq,T}$ The equivalent continuous sound level. The sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period (T). $L_{Aeq,T}$ is used to describe many types of noise and can be measured directly with an integrating sound level meter.

L_{Amax} The highest A weighted noise level recorded during the time period. It is usually used to describe the highest noise level that occurred during the event.

