

Noise Impact Assessment (Sound Break-in)

Mondial House, Mondial Way, Harlington, Hayes, UB3 5AR
RG Airspace Ltd

August 2026

Contents

Executive Summary.....3

Introduction 4

 Appointment & Background 4

 Site Setting 4

Policy, Standards and Guidance 8

 National Planning Policy Framework (NPPF) 8

 London Borough of Hillingdon – Planning and Building Control Policies.....8

 BS 4142: 2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound 8

 BS 8233:2014: Guidance on Sound Insulation and Noise Reduction for Buildings 9

 World Health Organisation (WHO) 1999: Guidelines for Community Noise 9

 Acoustics Ventilation and Overheating – Residential Design Guide January 2020 9

Unattended & Attended Noise & Vibration Monitoring 11

 2026 Unattended Noise Survey – Summary.....11

 2026 Attended Noise Survey (Noise Model Sense Check Noise Break-In) – Measurements.....11

 Noise Measurement Position 1.....11

 Measurement Location 2.....11

 Measurement Location 3.....11

Survey Methodology 13

 NMP1 (Unattended) – and Attended Survey Equipment.....13

 Meteorological Conditions.....13

 Measurement Results 13

Assessment 19

 Target Source Sound Levels (Mondial House) 19

 Acoustics Ventilation and Overheating – Residential Design Guide January 2020 20

 Residential Internal Sound Levels 20

Summary 23

Appendix A – Glossary of Terms / Unattended Raw Data Set.....24

 Noise.....24

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Executive Summary

Consult Sustain Ltd has been instructed to undertake a Noise Impact Assessment (NIA) for the proposed C1 development within an existing residential building in Harlington, in the London Borough of Hillingdon, near Heathrow Airport. The full address of the proposed redevelopment site is Mondial House, Mondial Way, Harlington, Hayes, UB3 5AR. The development comprises Two storey airspace extension to provide 28 apart-let units (C1 use class), associated ancillary facilities, cycle parking and refuse.

The London Borough of Hillingdon's housing target sets out a long-term plan to ensure adequate housing exists within the Borough. It is understood the Council is in favour of developments where the use of an existing vacant, or site with redevelopment potential on brown field plots are favoured, whilst adhering to the assets listed under the National Planning Policy Framework (NPPF).

The purpose of this assessment is to present the existing sound levels from the current environment, and how they can be minimised by acoustic mitigation measures, and to confirm if the existing design specification is sufficient, to ensure a comfortable and quiet habitable living space for the new residents of Mondial House to enjoy

A fixed Noise Measurement Location (NMP1) adopted during the survey was selected to determine noise levels where the prevailing existing sound level was taken from the northwest side of Mondial House, Harlington, Hayes, UB3 5AR at 1st storey height, representative of the least screened section of the proposed redevelopment of Mondial House.

It was noted that the proposed redevelopment of Mondial House is directly to the North of Heathrow Airport, and therefore, is not under the east to west take-off and landing flight paths of the aeroplanes. Bath Road was the dominant source of LAeq,T on the East, and South facades of Mondial House. The aeroplanes were the general cause of LAmax,T dB levels during the survey period. Changes in wind direction were noted during the survey period, with the North, Easterly and Westerly directions remaining very consistent in terms of measured sound level at Mondial House.

The position is representative of the prevailing LA90,T dB, LAeq,T dB, and LAmax,T dB levels of the area. Frequency spectrum data, known as Octave band data, has also been obtained, to identify any tonal sound characteristics occurring around the Mondial House, Harlington, site.

The measured octave band frequency data (Hz), recorded within the Mondial House, representative of the sound exposure on each façade, shows a flat frequency band, i.e. there are no particularly dominant frequency bands or unexpected bands that are of a higher dB level than the others (Typical of a standard urban environment by a main road and airport).

Frequencies in the above range can be mitigated in the form of enhanced glazing and therefore, will require increased glazing depth (panes and internal void between the two panes). With the glazing specified in Section 4 installed, the 45dB LAmax,T, 35dB LAeq,T daytime, and 30dB LAeq,T night-time targets are highly likely to be equalled or bettered using the clients proposed detailed design.

Taking the worst-case highest daily 16 hour and nightly 8-hour LAeq,T dB from the survey period, windows with a minimum sound reduction index of 30dB Dne,w+Ctr should be used. Double-glazing type of 6mm / 12mm / 8mm provides 30dB Dne,w+Ctr, sufficient for the proposed building development. The recommended glazing is to be combined with a suitable acoustically designed trickle ventilation system, such as Greenwood's S-series, rated to 34dB Dne,w+Ctr. It is highly recommended to provide enhanced acoustic trickle ventilation products such as the Greenwood 2500EA5000EA AC1 series, which are rated at a minimum 37dB Dne,w+Ctr,, whilst providing greater air flow characteristics, important on the higher floor heights where overheating typically occurs.

The glazing specification applies to the new 3rd and 4th floors, which have a direct view to the dominant noise sources in the area, most notably the A4 Bath Road, Heathrow airport on the South, Southwest and Southeast facades of Mondial House, and the air extraction and cooling plant servicing the Novotel audible on the North and Northwest facades of Mondial House. It is recommended that the existing glazing be upgraded, if possible, for the existing ground, 1st and 2nd floors of Mondial House.

Based on the analysis, it is considered that the resultant impact of noise associated with the prevailing ambient sound level within Mondial House, is unlikely to be detrimental to the proposed residents, forming the pre-application redevelopment, with the recommended glazing and trickle ventilation in place. The prevailing sound level during the daytime, and into the night-time periods when the Heathrow flightpath is operational, was not considered to be detrimental to the proposed residents.

The glazing specifications are satisfactory to achieve the WHO and BS8233 internal ambient sound levels, when open and closed. Purge ventilation is acceptable, with no requirement for mechanical ventilation or air conditioning.

Introduction

Appointment & Background

Consult Sustain Ltd has been instructed to undertake a Noise Impact Assessment (NIA) for the proposed C1 development within an existing residential building in Harlington, in the London Borough of Hillingdon, near Heathrow Airport. The full address of the proposed redevelopment site is Mondial House, Mondial Way, Harlington, Hayes, UB3 5AR. The existing building comprises 42 studio units arranged across three levels. The proposal seeks to provide 28 C1 apart-lets across two additional levels.

The London Borough of Hillingdon's housing target sets out a long-term plan to ensure adequate housing exists within the Borough. It is understood the Council is in favour of developments where the use of an existing vacant, or site with redevelopment potential on brown field plots are favoured, whilst adhering to the assets listed under the National Planning Policy Framework (NPPF).

The purpose of this assessment is to present the existing sound levels from the current environment, and how they can be minimised by acoustic mitigation measures, and to confirm if the existing design specification is sufficient, to ensure a comfortable and quiet habitable living space for the new residents of Mondial House to enjoy.

The assessment covers the measurement of the prevailing sound pressure levels at the proposed development, the comparison of these levels against guideline internal ambient noise criteria (adopted by the London Borough of Hillingdon), and the specification of any mitigation required to meet them.

The London Borough of Hillingdon's Environmental Health department are understood to use the World Health Organisation (WHO), and BS8233 internal residential Guidance on Sound Insulation, and Noise Reduction in Buildings criteria for new build developments, which have been used to form the basis of this Noise Impact Assessment (NIA).

This report is necessarily technical in nature, so to assist the reader, a glossary of acoustic terminology can be found in **Appendix A**.

Site Setting

Mondial House is located at 5 Mondial Way, Harlington, Hayes, UB3 5AR, within the London Borough of Hillingdon. The site lies immediately north of Heathrow Airport and just off the A4 Bath Road, within an established mixed commercial, office, hotel and airport-related employment area. The location benefits from strong strategic road connections to Heathrow, the wider west London area and central London.

The development comprises Two storey airspace extension to provide 28 apart-let units (C1 use class), associated ancillary facilities, cycle parking and refuse.

The surrounding townscape has a predominantly commercial and airport-related character, with offices and other employment premises along Mondial Way and the Bath Road corridor. Residential accommodation is also present locally, including flats within the same UB3 5AR postcode, giving the immediate area a degree of mixed use.

In transport terms, the site is approximately 1 km from Heathrow Terminals 2 & 3 station and is served by nearby bus stops on and around Bath Road, including Boltons Lane, Nene Road and New Road Harlington. The proximity of the A4 provides convenient vehicular access to Heathrow and connections towards the M4 and the wider strategic highway network.

Overall, the site occupies a well-connected urban location on the northern edge of Heathrow, characterised by medium-scale commercial development, substantial transport infrastructure and airport-associated activity. This context is likely to result in a comparatively busy environment, with notable road traffic and aircraft activity forming part of the established local character.

Outside garden amenity spaces and balconies are not in the redevelopment pre- application for Mondial House. Therefore, no outside amenity assessment is required.

FIGURE 1: SITE LOCATION



FIGURE 2: UNATTENDED MONITORING POSITION (NMP1) – LOOKING EAST TOWARDS FRONT SOUTHWEST ENTRANCE FAÇADE OF MONDIAL HOUSE



Photos taken by Consult Sustain Ltd – site visit 11th August 2026

FIGURE 3: VIEW FROM UNATTENDED MONITORING POSITION – LOOKING SOUTHWEST TOWARDS FIXED PLANT SERVING NOVOTEL



Photos taken by Consult Sustain Ltd – site visit 11th August 2026

FIGURE 4: VIEW FROM UNATTENDED MONITORING POSITION – LOOKING SOUTHWEST TOWARDS FIXED PLANT SERVICING NOVOTEL



Photos taken by Consult Sustain Ltd – site visit 11th August 2026

FIGURE 5: VIEW INSIDE EXISTING FLAT 28 – ATTENDED MONITORING POSITION TO MEASURE CURRENT INTERNAL SOUND LEVELS



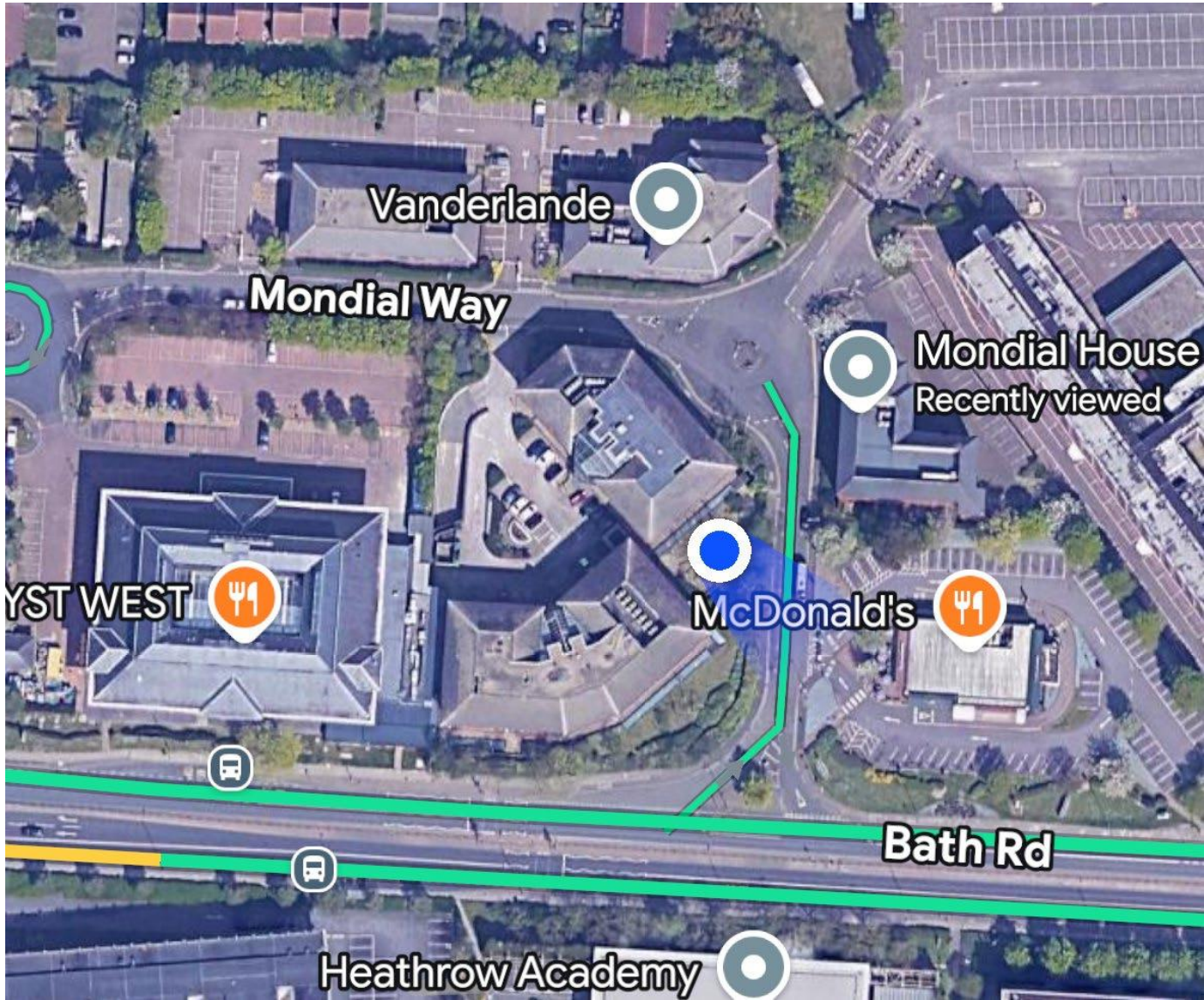
Photos taken by Consult Sustain Ltd – site visit 11th August 2026

FIGURE 6: VIEW FROM NORTHEAST FAÇADE LOOKING TOWARDS RADISSON HOTEL



Photos taken by Consult Sustain Ltd – site visit 11th August 2026

FIGURE 7: ATTENDED MONITORING POSITION WITH DIRECT LINE OF SIGHT TO BATH ROAD AND MCDONALDS DRIVE THROUGH



Policy, Standards and Guidance

National Planning Policy Framework (NPPF)

The National Planning Policy Framework, published on 17 August 2026, sets out the Government’s planning policies for England and replaces the December 2024 version.

The relevant noise policies are contained in Chapter 17, Pollution, public protection and security, principally Policy P3, Living conditions and pollution, and Policy P4, Impact of development on existing activities.

Policy P3(1) requires consideration of pollution arising from both the proposed development and existing surrounding conditions, including cumulative effects and the sensitivity of future occupants and neighbouring receptors.

Policies P3(2)(a) and (b) require acceptable living conditions and protection against unacceptable pollution impacts, incorporating mitigation where necessary. Policy P3(2)(d) specifically requires potential adverse noise impacts to be minimised through mitigation, significant observed adverse effects to be avoided, and the character of tranquil areas to be maintained.

Policy P4 applies the agent of change principle. New development should integrate with established activities without imposing unreasonable operational restrictions. Where existing activities could significantly affect the proposed development, the applicant should identify the impacts and demonstrate suitable mitigation before occupation. Both current lawful operations and permitted activities should be considered.

For Mondial House, these policies inform the assessment of existing road traffic, aircraft and commercial noise affecting the proposed accommodation, and the identification of appropriate acoustic mitigation.

Planning Practice Guidance (PPG) – Noise - 22 July 2019

A summary of the effects of noise exposure, in terms of health and quality of life associated with both noise generating developments and noise sensitive developments is presented within the PPG and reproduced in the Table below:

Perception	Examples of Outcomes	Effect Level	Action
Not noticeable	No effect	No observed effect	No specific measures required
Noticeable and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect (NOAL)	No specific measures required
Lowest Observed Adverse Effect Level (LOAEL)			
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum

Perception	Examples of Outcomes	Effect Level	Action
Significant Observed Adverse Effect Level (SOAEL)			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Noticeable and very intrusive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awaking; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

London Borough of Hillingdon – Planning and Building Control Policies

Policy EM8, Land, Water, Air and Noise, of the Hillingdon Local Plan Part 1: Strategic Policies (November 2012) requires development that generates noise, or is sensitive to noise, to demonstrate that its noise impacts can be satisfactorily controlled and mitigated. Policy DMHB 11(B) of the Local Plan Part 2: Development Management Policies (January 2020) also requires development to avoid adverse effects on neighbouring amenity.

BS 4142: 2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound

The BS 4142 Standard describes methods for rating and assessing the following:

- Sound from industrial and manufacturing processes;
- Sound from fixed installations which comprise mechanical and electrical plant and equipment;
- Sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and
- Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train movements on or around an industrial and/or commercial site.

The methods use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident. The Standard advises the purpose of the methodology includes the assessment of sound from any plant and activities associated with existing industrial and/or commercial uses at proposed residential dwellings.

If appropriate, the specific sound level of the source (LAeq,T) is corrected, by the application of one or more corrections for acoustic features such as tonal qualities and/or distinct impulses, to give a 'rating' level (LAr,Tr). The Standard effectively compares and rates the difference between the rating level of the specific sound and the typical background sound level (LA90,T) in the absence of the specific sound.

The Standard advises that the time interval ('T') of the background sound measurement should be sufficient to obtain a representative or typical value of the background sound level at the time(s) the source in question operates or is proposed to operate in the future.

Comparing the rating level with the background sound level, BS 4142 states:

"Typically, the greater this difference, the greater the magnitude of 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."

BS 8233:2014: Guidance on Sound Insulation and Noise Reduction for Buildings

This standard provides guidance for the control of noise in and around buildings. The guidance provided within the document is applicable to the design of new buildings, or refurbished buildings undergoing a change of use, but does not provide guidance on assessing the effects of changes in the external noise levels to occupants of an existing building.

The guidance provided includes appropriate internal and external noise level criteria. It is stated that it is desirable that the internal ambient noise level does not exceed the following criteria set out in Table 1:

TABLE 1: SUMMARY OF INTERNAL AMBIENT NOISE LEVELS TO BE ACHIEVED IN HABITABLE ROOMS WHEN ASSESSED IN ACCORDANCE WITH BS 8233

Activity	Location	07:00–23:00 hours Daytime	23:00–07:00 hours Night-time
Resting	Living Room	35 dB LAeq, 16 Hour	–
Dining	Dining Room/area	40 dB LAeq, 16 Hour	–
Sleeping	Bedroom	35 dB LAeq, 16 Hour	30 dB LAeq, 8 Hour; 45 dB LAm _{ax}

With respect to external amenity space such as gardens and patios it is stated that it is desirable that the noise level does not exceed 50 dB LAeq,T, with an upper guideline value of 55 dB LAeq,T which would be acceptable in noisier environments. It is then confirmed that higher external noise criteria may be appropriate under certain circumstances such as within city centres urban areas, and locations adjoining the strategic transportation network, where it may be necessary to compromise between elevated noise levels and other factors such as convenience of living, and efficient use of land resource.

World Health Organisation (WHO) 1999: Guidelines for Community Noise

The World Health Organisation (WHO) guidance: 1999: Guidelines for community noise. This document draws upon guidance from Vallet and Vernay, which states:

"For good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45 dB LAF_{max} more than 10-15 times per night"

Acoustics Ventilation and Overheating – Residential Design Guide January 2020

'This Acoustics, Ventilation and Overheating Guide ('AVO Guide') is intended to be used by acoustics practitioners as well as all those involved in the planning, development, design and commissioning of new dwellings. It recommends an approach to acoustic assessments for new residential development that take due regard of the interdependence of provisions for acoustics, ventilation, and overheating. Application of the AVO Guide is intended to demonstrate good acoustic design as described in the ProPG: Planning & Noise, May 2017 [1]('ProPG'), when considering internal noise level guidelines.' 1.7 The AVO Guide aims to assist designers to adopt an integrated approach to the acoustic design within the context of the ventilation and thermal comfort requirements.

A requirement to assess and provide mitigation against outdoor sound for a residential development may be invoked through the planning system; thus the local planning authority may be responsible for assessing and enforcing the proposed mitigation. The need for, and provision of adequate ventilation is outlined in building regulations and therefore managed through the building control system. At the time of publication of the AVO Guide in 2020, an overheating assessment to inform the design of dwellings was not mandatory under the Building Regulations. Current overheating requirements should be considered separately, where applicable. Hence, as well as being undertaken by different designers, the adequacy of the provisions for each aspect of IEQ may be assessed by different bodies and potentially based on different assumptions regarding use of the building.

The evolution of energy performance requirements under The Building Regulations has led to increased airtightness and enhanced thermal insulation. However, these changes can have unintended consequences. Internal air quality can be poor unless ventilation systems are effective, whereas the efficacy of ventilation systems in leakier buildings was of less consequence. When there is an increased capacity to retain heat, dissipation of excessive heat gains can become more problematic, with the consequential increase in overheating risk. Other factors currently contributing to overheating risk include global heating (climate change) and the urban heat island effect.

Overview of Document – 1.12 The AVO Guide Includes:

- an explanation of ventilation requirements under The Building Regulations, as described in Approved Document F – Means of Ventilation, as referenced within the 2020 AVO Guide [3] ('ADF'), along with typical ventilation strategies and associated noise considerations;
- an explanation of the overheating assessment methodology described in CIBSE 'Design methodology for the assessment of overheating risk in homes' [4] ('TM59');
- potential acoustic scale and guidance relating to different ventilation and overheating conditions, for both environmental noise ingress and building services noise; and
- a worked example of the application of the AVO Guide including indicative design constraints for different ventilation and overheating mitigation strategies.

In the case of environmental noise ingress, a two-level assessment procedure is described for the overheating condition. The first level is a site risk assessment based on external noise levels and the assumption that opening windows are the primary means of mitigating overheating. The second level assessment considers the potential for adverse effect on occupants based on internal ambient noise level.

Whole Dwelling Ventilation – Definition in ADF:

'Whole building ventilation (general ventilation) is nominally continuous ventilation of rooms or spaces at a relatively low rate to dilute and remove pollutants and water vapour not removed by

operation of extract ventilation, purge ventilation or infiltration, as well as supplying outdoor air into the building. For an individual dwelling this is referred to as “whole dwelling ventilation”

Location/reason for ventilation:

‘To provide fresh air to the building and to dilute and disperse residual water vapour not dealt with by extract ventilation as well as removing other pollutants which are released throughout the building.’

The above system could be adopted, with the use of opening windows for short term ‘purge’ ventilation, that is natural ventilation.

Purge Ventilation – Definition in ADF:

‘Purge ventilation is manually controlled ventilation of rooms or spaces at a relatively high rate to rapidly dilute pollutants and / or water vapour. Purge ventilation may be provided by natural means (e.g. an openable window) or by mechanical means (e.g. a fan).’

Location/reason for ventilation:

‘Throughout the building to aid removal of high concentrations of pollutants and water vapour released from occasional activities such as painting and decorating or accidental releases such as smoke from burnt food or spillage of water.’

Required – Occasionally

TABLE 2: ADF TEMPLATE SYSTEMS

Ventilation system	Whole dwelling ventilation	Extract ventilation	Purge ventilation
System 1: Background ventilators and intermittent extract fans	Background ventilators (trickle vents)	Intermittent extract fans	Typically provided by opening windows
System 2: Passive stack (“natural”)	Background ventilators (trickle vents) and passive stack ventilation	Continuous via passive stack	Typically provided by opening windows
System 3: Continuous mechanical extract (MEV)	Continuous mechanical extract – minimum low rate Trickle vents provide inlet air	Continuous mechanical extract – minimum high rate Trickle vents provide inlet air	Typically provided by opening windows
System 4: Continuously mechanical supply and extract with heat recovery (MVHR)	Continuous mechanical supply and extract – minimum low rate	Continuous mechanical supply and extract – minimum high rate	Typically provided by opening windows

Unattended & Attended Noise & Vibration Monitoring

2026 Unattended Noise Survey – Summary

The Unattended noise survey was undertaken from Tuesday 11th August to Sunday 16th August 2026.

Weather conditions were stable throughout the monitoring period and have been included in the assessment for both weekday, and weekend periods between 07:00- 23:00 daytime and 23:00-07:00 night-time hours. Temperatures ranged from 11 degrees centigrade at night, to 37 degrees centigrade during the daytime.

A fixed Noise Measurement Location (NMP1) adopted during the survey was selected to determine noise levels where the prevailing existing sound level was taken from the northwest side of Mondial House, Harlington, Hayes, UB3 5AR at 1st storey height, representative of the least screened section of the proposed redevelopment of Mondial House. The Northwest façade faces both the A4 Bath Road, and Heathrow Airport. It was noted that the proposed redevelopment of Mondial House is directly to the North of Heathrow Airport, and therefore, is not under the east to west take-off and landing flight paths of the aeroplanes. Bath Road was the dominant source of LAeq,T on the East, and South facades of Mondial House. The aeroplanes were the general cause of LAmax,T dB levels during the survey period. Changes in wind direction were noted during the survey period, with the North, Easterly and Westerly directions remaining very consistent in terms of measured sound level at Mondial House. A marginal increase of 2dB was noted when the prevailing South-westerly wind direction returned.

These measurements were obtained in order to quantify noise emanating from the road traffic, aeroplanes; and prevailing noise emissions from the nearby commercial (Hotel) plant sound from buildings such as the Novotel.

The position is a representative of the prevailing LA90,T dB, LAeq,T dB, and LAmax,T dB levels of the area. Frequency spectrum data, known as Octave band data, has also been obtained, to identify any tonal sound characteristics occurring around the Mondial House, Harlington, site.

NMP1 is shown in Figures 2 and 4.

2026 Attended Noise Survey (Noise Model Sense Check Noise Break-In) – Measurements

The attended noise survey was undertaken on the 11th August 2026 between 10:00- 17:00, to determine the measured sound levels at various locations around the site, to ensure accuracy with the predicted noise modelling results, and noise 'break-in' values.

Noise Measurement Position 1

1st Storey, Internal to the Existing Flat 28 – in-line with proposed southwestern façade of Mondial House (Representative of Kitchen/Diner Rooms) – Windows Closed

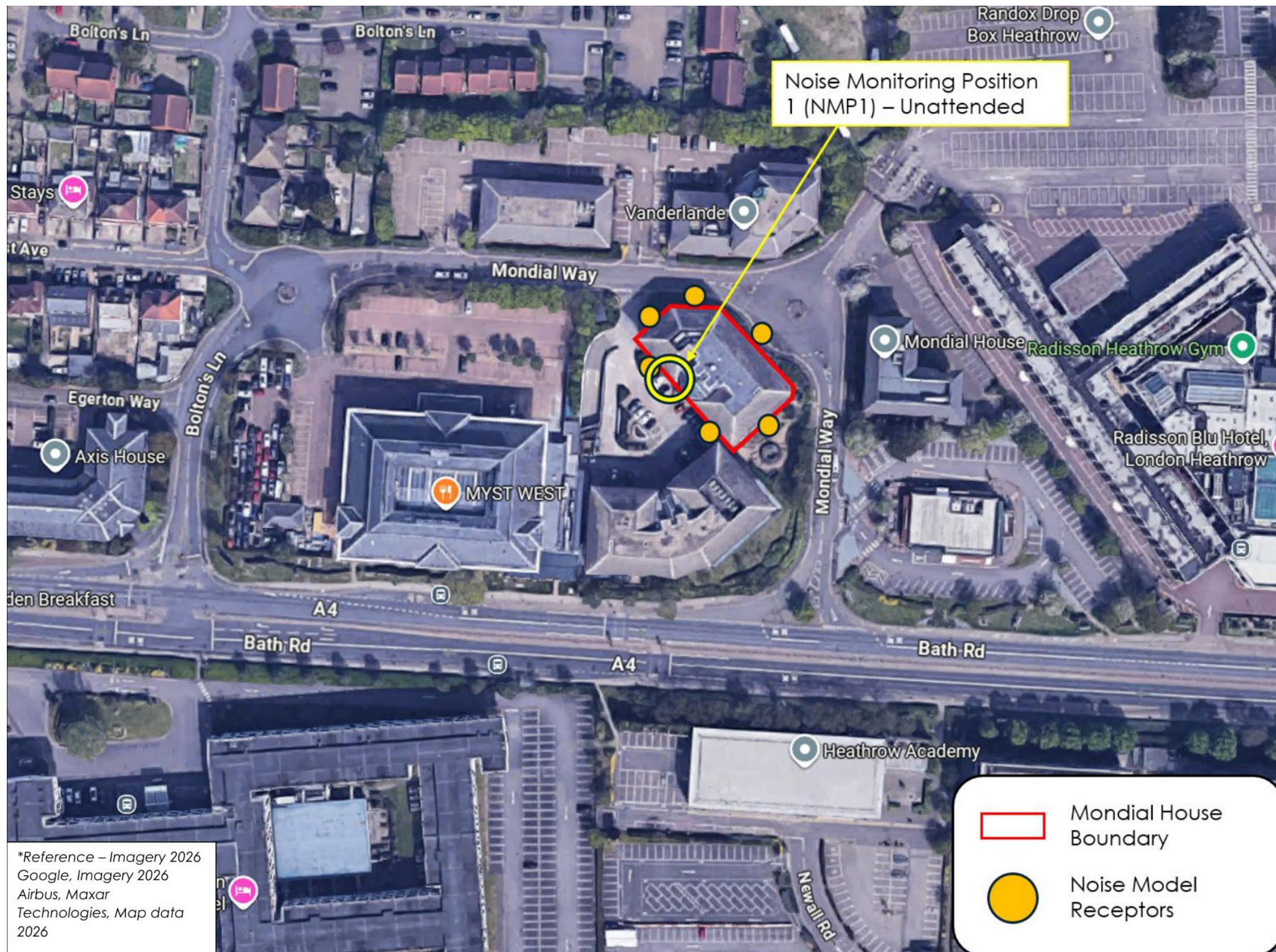
Measurement Location 2

Ground Floor, external outside measurement on northeast façade, microphone height 1.6m from floor – in-line with ground floor (Representative of kitchen diner and bedroom Spaces) – Slight screening from A4 Bath Road, Heathrow Airport, and Mcdonalds.

Measurement Location 3

Ground Floor, external outside measurement on south/southeast façade, microphone height 1.6m from floor – in-line with ground floor (Representative of kitchen diner and bedroom Spaces) – Direct line of sight to A4 Bath Road, Heathrow Airport, and McDonald's drive thru.

FIGURE 8: RECEPTOR LOCATIONS – AUGUST 2026 SURVEY



Survey Methodology

NMP1 (Unattended) – and Attended Survey Equipment

The microphone height is representative of the 1st to second storey floor heights (microphone 5.0m local ground level) at the front façade of Mondial House correlating to the worst-case sound level, as the monitor had the limited screening, and therefore is exposed to the greatest amount of potential sound propagating from the commercial buildings, Bath Road, Heathrow Airport, and McDonald's drive thru. Attended measurements have been conducted around the external perimeter of Mondial House, in order to ensure accurate internal sound levels are predicted, forming the basis of the acoustic mitigation specifications (Glazing and Trickle Ventilation).

To provide an accurate representation of the Residual (LAeq,T) and Background (LA90) sound levels, the survey has been carried out whilst normal operations resume, with no local road closures or maintenance works occurring. The unattended monitoring station 'audio listening' function was enabled, allowing Consult Sustain Ltd to sense check the measured data (identifying trends / establishing cause of LAmaxT dB levels during the survey).

The unattended and attended noise surveys were undertaken using the Class 1 specification noise measurement equipment detailed in Table 3. Equipment was calibrated using a portable calibrator immediately before and after the measurements with no significant drift in calibration observed. The sound level meters, pre-amplifiers and microphones were calibrated to traceable standards at an accredited laboratory within the 24 months prior to the measurements. The portable calibrators were calibrated within the 12 months preceding the date of the survey.

TABLE 3: NOISE MEASUREMENT EQUIPMENT – UNATTENDED & ATTENDED MONITORING SURVEYS

NMP1	Item	Make & Model	Serial Number
NMP1 (Unattended)	Sound Level Meter	Rion NL-52	00564805
NMP1 (Unattended)	Pre-amplifier	Rion	09443
NMP1 (Unattended)	Microphone	Rion	64930
Field Calibrator	Calibrator	Rion NC-75	34713323
(Attended)	Sound Level Meter	NTi XL2	A2A-19863-E0
(Attended)	Pre-amplifier	NTi	A2A-19863-PA
(Attended)	Microphone	NTi MA220	8151
Field Calibrator	Calibrator	Rion NC-75	34713323

Meteorological Conditions

From observations during visits to site and publicly available weather logging records, weather conditions remained dry with negligible winds (< 5m/s. Temperatures ranged between 11 degrees Celsius during the night and 37 degrees Celsius during the day.

The weather throughout the survey is therefore considered to have remained conducive to environmental noise measurement, for both weekday and weekend daytime and night-time periods.

Measurement Results

A summary of the measured levels from the survey is provided in Table 4.

TABLE 4: SUMMARY OF MEASURED SOUND PRESSURE LEVELS AT NMP1 (FREE-FIELD) – REPRESENTATIVE OF EXTERNAL EXISTING SOUND LEVELS OF MONDIAL HOUSE

Day	Start time	Period	Duration	LAeq,T ¹ dB	LAm _{ax} ,T ⁶ dB	LA90,T ² dB
Tuesday Daytime	11/08/2026 12:00	Daytime (07:00 – 23:00) ³	11-hours	61.6	104.4	55.2
Tuesday Night	11/08/2026 23:00	Night-time (23:00 – 07:00)	8-hours	55.4	77.8	54.0
Wednesday Daytime	12/08/2026 07:00	Daytime (07:00 – 23:00)	16-hours	60.4	98.4	55.4
Wednesday Night	12/08/2026 23:00	Night-time (23:00 – 07:00)	8-hours	55.5	77.3	53.9
Thursday Daytime	13/08/2026 07:00	Daytime (07:00 – 23:00)	16-hours	62.0	97.0	56.2
Thursday Night	13/08/2026 23:00	Night-time (23:00 – 07:00)	8-hours	55.7	75.5	54.3
Friday Daytime	14/08/2026 07:00	Daytime (07:00 – 23:00)	16-hours	59.6	98.3	55.8
Friday Night	14/08/2026 23:00	Night-time (23:00 – 07:00)	8-hours	56.1	78.7	54.4
Saturday Daytime	15/08/2026 07:00	Daytime (07:00 – 23:00)	16-hours	57.2	86.2	55.1
Saturday Night	15/08/2026 23:00	Night-time (23:00 – 07:00)	8-hours	56.0	74.3	54.3
Sunday Daytime	16/08/2026 07:00	Daytime (07:00 – 23:00)	16-hours	59.8	82.9	55.9
Sunday Night	16/08/2026 23:00	Night-time (23:00 – 07:00) ⁴	8-hours	56.0	74.4	54.3
Free-Field - Overall Daytime Summary			16-hours	60.4	94.5	55.6
Free-Field - Overall Night-time Summary			8-hours	55.8	76.3	54.2

1. Logarithmic average sound pressure levels during measurement period
2. Representative LA90, 1h and LA90, 15m value to be used following statistical analysis of LA90, 15mins during the night-time and LA90, 1h during the daytime, including minimum, maximum, mode, medium and mean. The underlying unattended monitoring survey data are provided in Appendix A, Table 13.
3. Unattended measurement - first whole 1hr daytime period started at 12:00.
4. Unattended measurement - last whole 15 minute night-time period finished at 06:15 17/08/2026.
5. Arithmetic average background noise level (LA90, 15 mins) during measurement period.
6. LAm_{ax},T events per night-time period occurred between hours of 23:00-00:30.

FIGURE 9: MEASUREMENT DATA – LAEQ,T / LAMAX,T / LA90,T dB – TIME HISTORY GRAPH

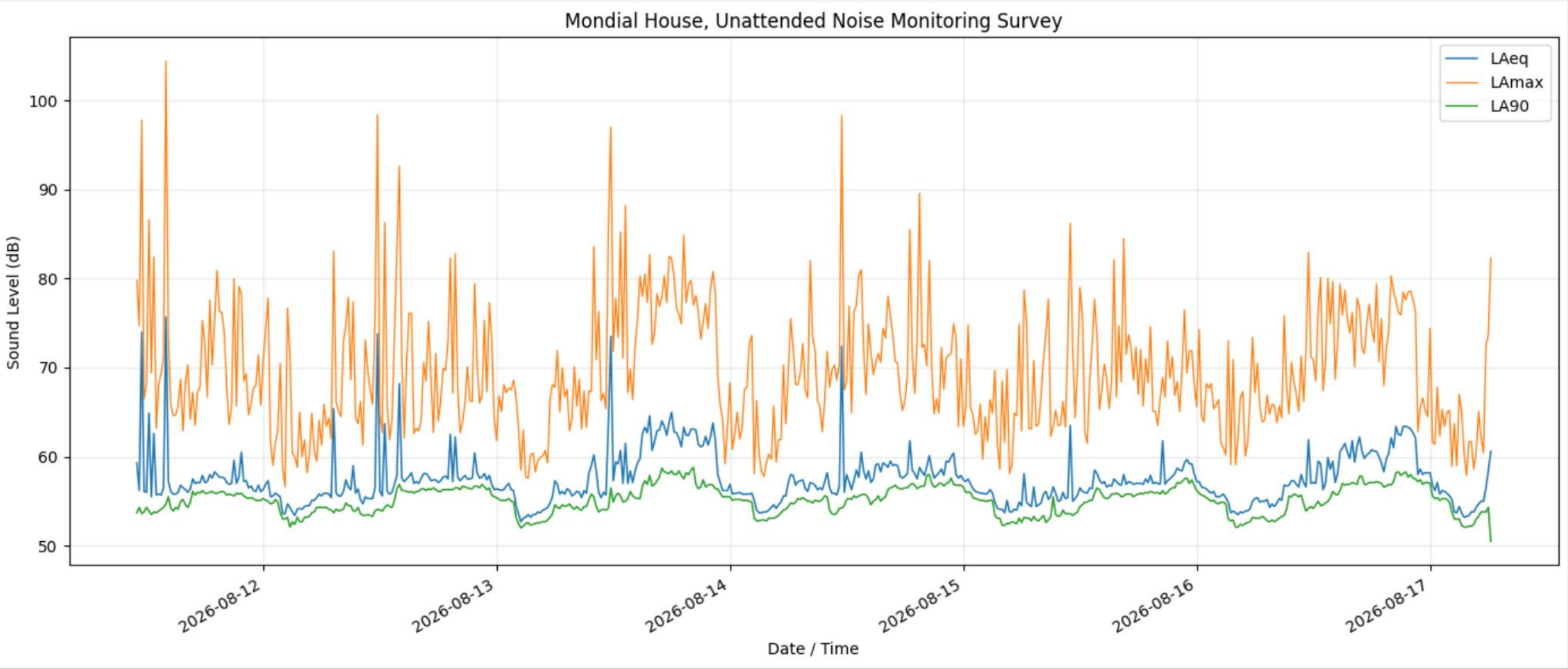


FIGURE 10: PROPOSED SOUTHWEST & SOUTHEAST ELEVATIONS



FIGURE 11: PROPOSED NORTHEAST & NORTHWEST ELEVATIONS



⊖ NORTH EAST ELEVATION



⊖ NORTH WEST ELEVATION

*Reference – 0797-WPA-
MONDIAL HOUSE-
HAYES/PRE-APP 02
(Wimshurst Pellertiti)

FIGURE 12: PROPOSED THIRD FLOOR PLAN – MONDIAL HOUSE

*Reference – 0797-WPA-
MONDIAL HOUSE-
HAYES/PRE-APP 02
(Wimshurst Pellertiti)

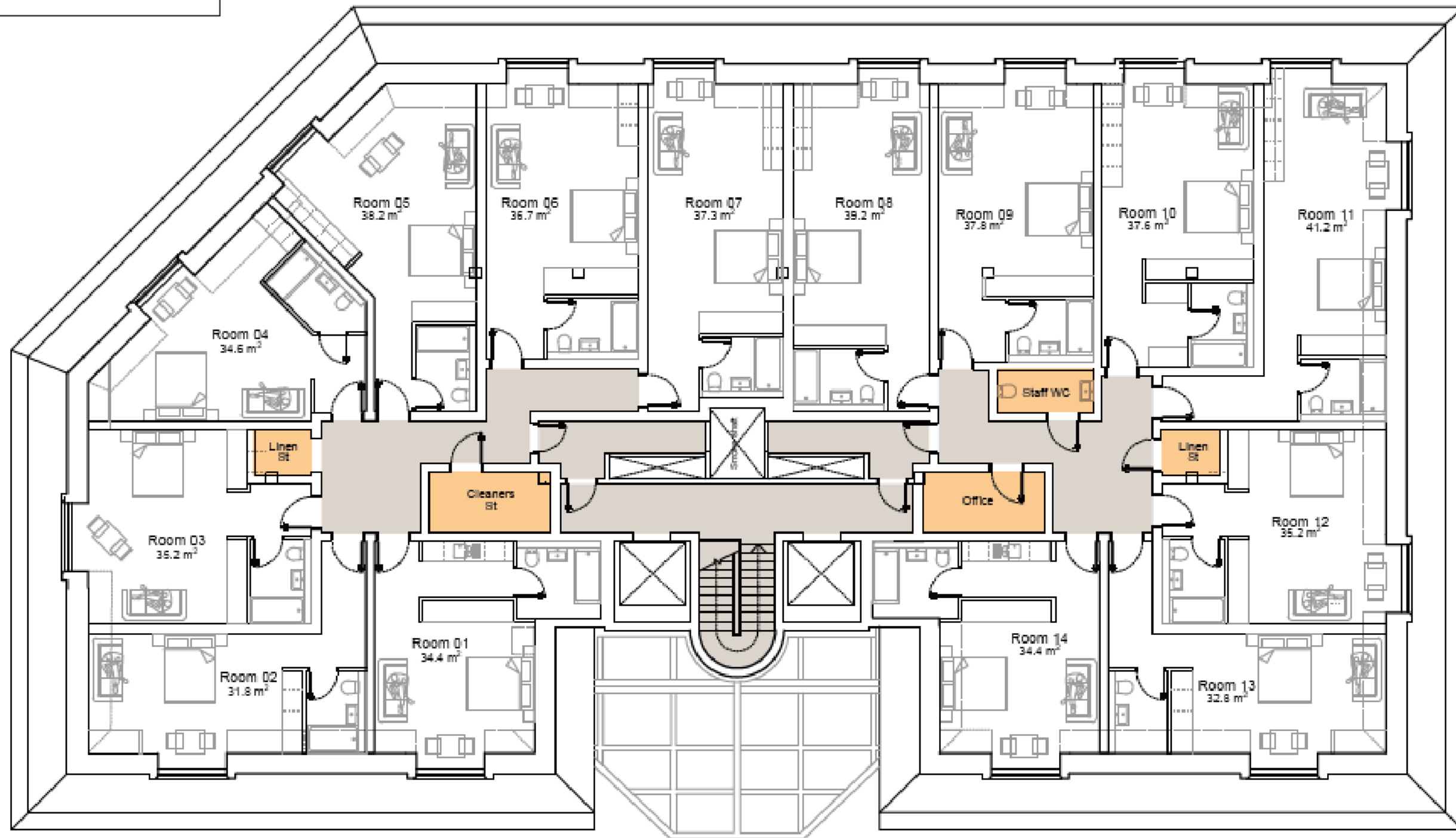


FIGURE 13: PROPOSED FOURTH FLOOR PLAN – MONDIAL HOUSE

*Reference – 0797-WPA-
MONDIAL HOUSE-
HAYES/PRE-APP 02
(Wimshurst Pellertiti)

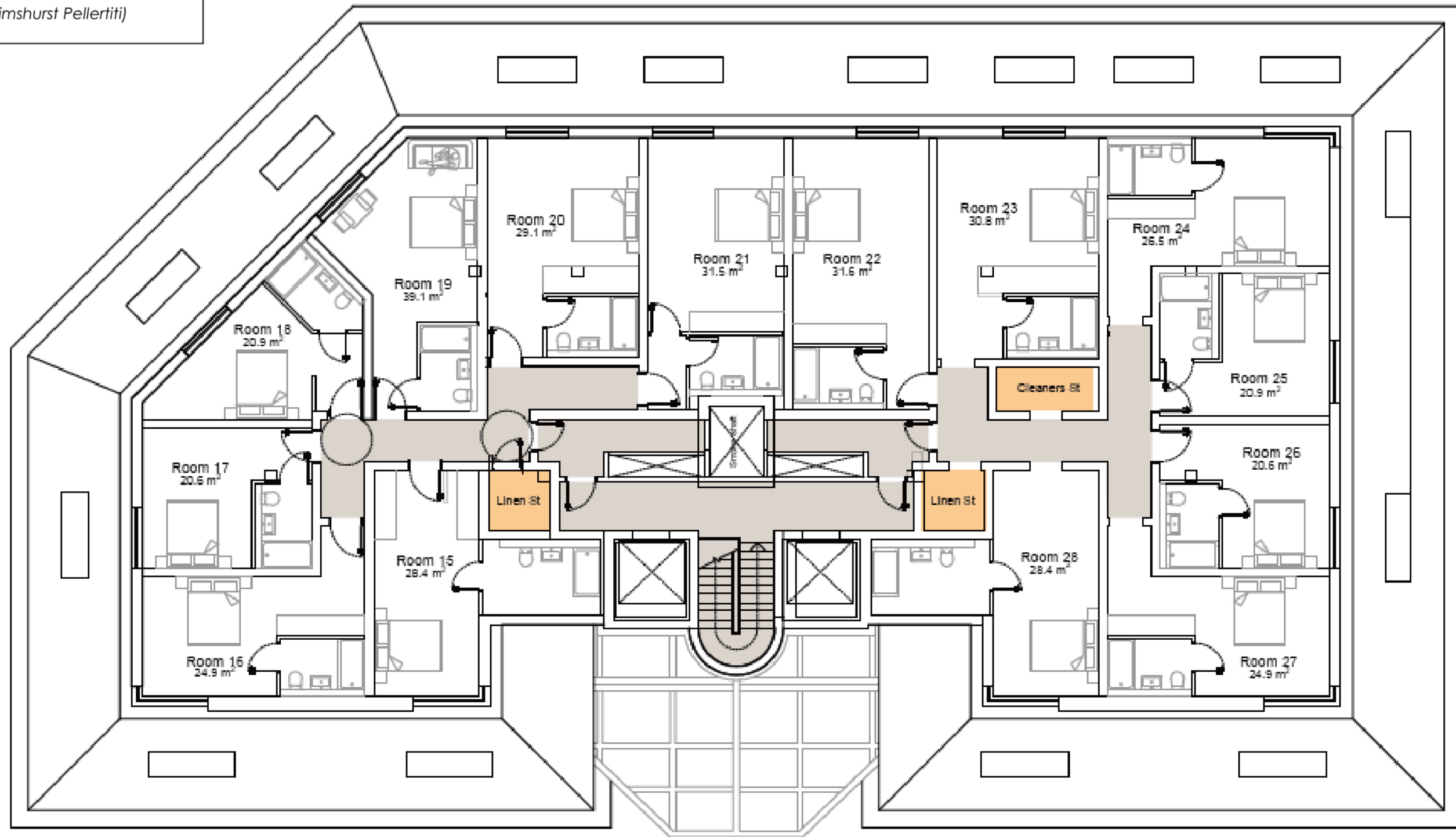


TABLE 5: SUMMARY OF MEASURED SOUND PRESSURE OCTAVE BAND LEVELS (dBA) - (FREE- FIELD) – WORST-CASE FOR DAYTIME AND NIGHT-TIME

Unattended summary

Octave Band Sound Pressure Levels (LAeq dB)	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
South & Southwestern Façades – A4 and Heathrow Airport Side								
Worst-case forming Glazing and Ventilation strategy	37	43	48	52	53	49	42	36

The measured octave band frequency data (Hz), recorded within the Mondial House, representative of the sound exposure on each façade, shows a flat frequency band, i.e. there are no particularly dominant frequency bands or unexpected bands that are of a higher dB level than the others (Typical of a standard urban environment by a main road and airport).

Frequencies in the above range can be mitigated in the form of enhanced glazing and therefore, will require increased glazing depth (panes and internal void between the two panes). With the glazing specified in Section 4 installed, the 45dB LAmax,T, 35dB LAeq,T daytime, and 30dB LAeq,T night-time targets are highly likely to be equalled or bettered using the clients proposed detailed design.

Assessment

To predict the noise levels and provide mitigation advice from the proposed development site at NSRs for the proposed Mondial House residential redevelopment, a detailed acoustic model of the site has been generated applying the following prediction methodology:

- For plant noise sources (if applicable), the calculations were set to apply the noise prediction methodology set out in ISO 9613-2: Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation;
- Mapping of the Site and the surrounding area was calibrated into the calculations based on known Ordinance Survey grid reference points;
- Indicative ground topography was approximated using Lidar data at 1m. The final floor heights have been sited on the existing topography;
- Buildings which would provide screening to the Site have been incorporated as reflective façades including boundary fencing;
- To reflect the local ground cover with the proposed development in place, ground absorption was set to G = 0.25 (25% acoustically absorptive ground, a mixture of concrete / tarmac and minor garden grassy areas);
- The model was set to include second order reflected noise from solid structures; and,
- Receptor heights have been calculated at 1st to 5th floor to represent a worst- case scenario, with a direct line of sight chosen as these receptors are likely to experience higher sound levels than properties that are screened from the proposed site. Ground level properties have been assessed also.

The daytime noise levels are based on a 1-hour assessment period and the night-time noise levels are based on a 15m assessment period, in accordance with BS4142 and BS8233. This is reflected in the on-time for each operation and the resultant LAeq,T dB noise level. LAmax,T dB levels have been assessed.

The predicted noise levels at the Noise Sensitive Receptors (NSRs) have been assessed in accordance with BS 4142:2014+A1:2019, BS8233, and ISO 9613-2 Acoustics – Part 2.

The prevailing existing real-world sound level has been assessed and compared with the acoustic calculations, with suitable mitigation measures chosen, to meet the LAeq,T and LAmax,T internal dB levels for the proposed receptors of Mondial House.

Target Source Sound Levels (Mondial House)

TABLE 6: DESIRABLE INTERNAL AMBIENT NOISE LEVELS FOR RESIDENTIAL ACCOMMODATION

Activity	Location	07:00–23:00 hours Daytime	23:00–07:00 hours Night-time
Resting	Living Room	35 dB LAeq, 16 Hour	–
Dining	Dining Room/area	40 dB LAeq, 16 Hour	–
Sleeping (daytime resting)	Bedroom	35 dB LAeq, 16 Hour	30 dB LAeq, 8 Hour; 45 dB LAmax

The guideline values are issued by the World Health Organisation (WHO) and assume normal diurnal fluctuations in external noise. They are expected to be achieved based on normal annual data and not in all circumstances, e.g. it is normal to exclude occasional events such as fireworks night or New Year's Eve.

If relying on closed windows to achieve the guideline values, there needs to be an appropriate alternative ventilation scheme that does not compromise the façade sound insulation or the resulting noise level. The Mondial House will not require alternative ventilation, as standard purge ventilation by opening windows combined with acoustic Trickle Ventilation is acceptable, as the prevailing ambient noise level is such to not have a negative effect on the proposed residents and meets the guidance target levels shown in **Table 6**.

Acoustics Ventilation and Overheating – Residential Design Guide January 2020

To achieve a comfortable living and sleeping environment for the proposed Mondial House residents, the following ventilation and overheating strategies are acceptable, to ensure excellent air flow whilst adhering to the sound break-in criteria shown in Table 6 above.

Purge Ventilation – Definition in ADF:

‘Purge ventilation is manually controlled ventilation of rooms or spaces at a relatively high rate to rapidly dilute pollutants and / or water vapour. Purge ventilation may be provided by natural means (e.g. an openable window) or by mechanical means (e.g. a fan).’ (openable windows applicable to this development when combined with Acoustic Trickle Ventilation).

Location/reason for ventilation:

‘Throughout the building to aid removal of high concentrations of pollutants and water vapour released from occasional activities such as painting and decorating or accidental releases such as smoke from burnt food or spillage of water.’

TABLE 7: ADF TEMPLATE SYSTEMS – NO PROVISION OF MECHANICAL VENTILATION REQUIRED – PURGE VENTILATION WITHOUT FURTHER SYSTEM SPECIFICATIONS ADEQUATE – WITH TRICKLE VENTILATION IN PLACE

Ventilation system	Whole dwelling ventilation	Extract ventilation	Purge ventilation
System 1: Background ventilators and intermittent extract fans	Background ventilators (trickle vents)	Intermittent extract fans	Typically provided by opening windows
System 2: Passive stack (“natural”)	Background ventilators (trickle vents) and passive stack ventilation	Continuous via passive stack	Typically provided by opening windows
System 3: Continuous mechanical extract (MEV)	Continuous mechanical extract – minimum low rate Trickle vents provide inlet air	Continuous mechanical extract – minimum high rate Trickle vents provide inlet air	Typically provided by opening windows
System 4: Continuously mechanical supply and extract with heat recovery (MVHR)	Continuous mechanical supply and extract – minimum low rate	Continuous mechanical supply and extract – minimum high rate	Typically provided by opening windows

Residential Internal Sound Levels

The assessed ambient noise levels incident on the façades surrounding the Mondial House Site (worst-case dB exposure chosen), and reflections from the surrounding buildings have been used. The noise break-in assessment includes the expected dB reduction due to the design of the proposed redevelopment and addition of the third and fourth floors.

The area of glazing and method of ventilation in any particular room, along with the room size and room acoustic conditions, affect the degree of reduction in noise transmission from outside to inside. An

assessment using some generic assumptions has been carried out using the original architectural drawings of the proposed change-of- use development.

The following assumptions have been used for the assessment of the sound insulation requirements of the building envelope:

Predictions made using the general method set out in BS EN 12354-3:2000.

Sound insulation data has been based on both library data and specific manufacturers’ data. It has been assumed that the on-site performance will be comparable with manufacturer’s claimed performance.

The predictions assume good quality workmanship, for example that windows, doors and opening lights are well sealed. Poor workmanship or low-quality seals may result in predicted internal noise levels being exceeded.

The sound insulation requirements of the glazing are applicable to the window system, including frames, mullions and panels. They are based on BS EN ISO 140-3: 1995 “Laboratory measurement of airborne sound insulation of building elements and rated in accordance with BS EN ISO 717-1:2013 Acoustics – Rating of sound insulation in buildings and of building elements Part 1. Airborne sound insulation”.

Taking the worst-case highest daily 16 hour and nightly 8-hour LAeq,T dB from the survey period, windows with a minimum sound reduction index of 30dB Dne,w+Ctr should be used. Double-glazing type of 6mm / 12mm / 8mm provides 30dB Dne,w+Ctr,, sufficient for the proposed building development. The recommended glazing is to be combined with a suitable acoustically designed trickle ventilation system, such as Greenwood’s S-series, rated to 34dB Dne,w+Ctr. It is highly recommended to provide enhanced acoustic trickle ventilation products such as the Greenwood 2500EA5000EA AC1 series, which are rated at a minimum 37dB Dne,w+Ctr,, whilst providing greater air flow characteristics, important on the higher floor heights where overheating typically occurs.

The glazing specification applies to the new 3rd and 4th floors, which have a direct view to the dominant noise sources in the area, most notably the A4 Bath Road, Heathrow airport on the South, Southwest and Southeast facades of Mondial House, and the air extraction and cooling plant servicing the Novotel audible on the North and Northwest facades of Mondial House. It is recommended that the existing glazing be upgraded, if possible, for the existing ground, 1st and 2nd floors of Mondial House.

Opening the windows fully, provides a standard acoustic mitigation value of 15dB in modern buildings, meaning that a contingency can be expected, when residents are using the open windows as a method of cooling and purge ventilation.

TABLE 8: REQUIRED ACOUSTIC MITIGATION, BASED ON ENHANCED DOUBLE-GLAZED WINDOWS (FRAMES AND GLAZING – COMBINED WITH TRICKEL VENTILATION

Location – Building Façade Orientation	Time Period	Required Sound Reduction (Glazing / Trickle Ventilation)
South & Southeast & Southwest Façade		
Bedrooms	23:00-07:00	Glazing - 34dB Rw + Ctr (30dB Dne,w+Ctr) Trickle Ventilation – Such as Greenwood 2500EA/5000EA AC1 Series
Living Rooms	07:00-23:00	Glazing - 34dB Rw + Ctr (30dB Dne,w+Ctr) Trickle Ventilation – Such as Greenwood 2500EA/5000EA AC1 Series
North East / North Façade		
Bedrooms	23:00-07:00	Glazing - 34dB Rw + Ctr (30dB Dne,w+Ctr)
Living Rooms	07:00-23:00	Trickle Ventilation – Such as Greenwood 2500EA/5000EA AC1 Series
Northwest Façade		
Bedrooms	23:00-07:00	Glazing - 34dB Rw + Ctr (30dB Dne,w+Ctr) Trickle Ventilation – Such as Greenwood 2500EA/5000EA AC1 Series
Living Rooms	07:00-23:00	Glazing - 34dB Rw + Ctr (30dB Dne,w+Ctr) Trickle Ventilation – Such as Greenwood 2500EA/5000EA AC1 Series

The glazing performance is shown as the single figure Rw + Ctr, including the measured sound level corrected weighted sound reduction index, with the whole system for corrected element normalised level difference Dne,w+Ctr.

TABLE 9: GLAZING SPECIFICATIONS TO ACHIEVE DESIRABLE INTERNAL SOUND LEVELS

Location – Building Façade Orientation	Time Period	Glazing Specification
South & Southeast & Southwest Façade		
Bedrooms	23:00-07:00	6mm / 12mm / 8mm
Living Rooms	07:00-23:00	6mm / 12mm / 8mm
North / Northeast Façade		
Bedrooms	23:00-07:00	6mm / 12mm / 8mm
Living Rooms	07:00-23:00	6mm / 12mm / 8mm
Northwest Façade		
Bedrooms	23:00-07:00	6mm / 12mm / 8mm
Living Rooms	07:00-23:00	6mm / 12mm / 8mm

TABLE 9 (CONTINUED): GLAZING / TRICKLE VENTILATION SPECIFICATION — OCTAVE BAND SOUND PRESSURE LEVELS (LAEQ dB)

Specification / ideal dB reduction	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Glazing Specification to Achieve – 34dB Rw + Ctr (30dB Dne,w+Ctr)								
Ideal dB Reduction	17	23	23	30	39	36	43	37
Trickle Ventilation Specification to Achieve – 34dB Rw + Ctr (34dB Dne,w+Ctr)								
Ideal dB Reduction	41	41	38	34	33	33	33	33

The recommended glazing and ventilation strategy should be checked by a suitably qualified person that the system meets the requirements of Approved Document F. Purge ventilation is deemed acceptable for comfortable internal habitable and resting spaces, as per BS8233 and WHO guidelines.

Based on the above, it is considered that the recommended mitigation provides sufficient attenuation, to achieve the desired 45dB LAFmax,T WHO guidance: 1999: Guidelines for community noise. Along with the daytime and night-time LAeq,T dB levels shown in Table 6.

“For good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45 dB LAFmax more than 10-15 times per night”

The predicted internal sound levels for the redevelopment of Mondial House are shown in Tables 10 and 11. This includes the enhanced glazing and trickle ventilation to achieve the recommended acoustic mitigation.

TABLE 10: INTERNAL NOISE LEVELS, dB FOR PROPOSED PRE-APPLICATION REDEVELOPMENT OF MONDIAL HOUSE, WINDOWS CLOSED WITH ENHANCED GLAZING AND TRICKLE VENTILATION – DAYTIME

Mondial House Receptor	Parameter Daytime- Time	Rating Level Lar,T	Required Closed Window dB Reduction Dne,w+Ctr	Criterion	Level vs Criterion dB
South Façade	LAeq,16h	62	-30dB	35dB	-3dB - Pass
Southeast Facade	LAeq,16h	63	-30dB	35dB	-2dB – Pass
Southwest Façade	LAeq, 16h	61	-30dB	35dB	-4dB - Pass
North Façade	LAeq, 16h	58	-30dB	35dB	-7dB - Pass
Northeast Facade	LAeq, 16h	59	-30dB	35dB	-6dB - Pass
Northwest Façade	LAeq, 16h	58	-30dB	35dB	-7dB - Pass

TABLE 11: INTERNAL NOISE LEVELS, dB FOR PROPOSED PRE-APPLICATION REDEVELOPMENT OF MONDIAL HOUSE, WINDOWS CLOSED WITH ENHANCED GLAZING AND TRICKLE VENTILATION – NIGHTTIME

Mondial House Receptor	Parameter Daytime- Time	Rating Level Lar,T	Required Closed Window dB Reduction Dne,w+Ctr	Criterion	Level vs Criterion dB
South Façade	LAeq,8h	57	-30dB	30dB	-3dB - Pass
Southeast Facade	LAeq,8h	58	-30dB	30dB	-2dB – Pass
Southwest Façade	LAeq, 8h	56	-30dB	30dB	-4dB - Pass
North Façade	LAeq, 8h	53	-30dB	30dB	-7dB - Pass
Northeast Facade	LAeq, 8h	54	-30dB	30dB	-6dB - Pass
Northwest Façade	LAeq, 8h	53	-30dB	30dB	-7dB - Pass

Based on the results above, it is considered that the resultant impact of noise associated with the prevailing ambient sound level within Mondial House, is unlikely to be detrimental to the proposed residents, forming the pre-application redevelopment, with the recommended glazing and trickle ventilation in place. The prevailing sound level during the daytime, and into the night-time periods when the Heathrow flightpath is operational, was not considered to be detrimental to the proposed residents.

The glazing specifications are satisfactory to achieve the WHO and BS8233 internal ambient sound levels when windows are closed. Purge ventilation is acceptable, with no requirement for mechanical ventilation or air conditioning.

Summary

Consult Sustain Ltd was instructed by the client, to undertake a Noise Impact Assessment (NIA) for the proposed C1 development within an existing residential building in Harlington, in the London Borough of Hillingdon, near Heathrow Airport. The full address of the proposed redevelopment site is Mondial House, Mondial Way, Harlington, Hayes, UB3 5AR. The existing building comprises 42 studio units arranged across three levels. The proposal seeks to provide 28 C1 apart-lets across two additional levels.

The London Borough of Hillingdon's housing target sets out a long-term plan to ensure adequate housing exists within the Borough. It is understood the Council is in favour of developments where the use of an existing vacant, or site with redevelopment potential on brown field plots are favoured, whilst adhering to the assets listed under the National Planning Policy Framework (NPPF).

The purpose of this assessment is to present the existing sound levels from the current environment, and how they can be minimised by acoustic mitigation measures, and to confirm if the existing design specification is sufficient, to ensure a comfortable and quiet habitable living space for the new residents of Mondial House to enjoy

A fixed Noise Measurement Location (NMP1) adopted during the survey was selected to determine noise levels where the prevailing existing sound level was taken from the northwest side of Mondial House, Harlington, Hayes, UB3 5AR at 1st storey height, representative of the least screened section of the proposed redevelopment of Mondial House.

It was noted that the proposed redevelopment of Mondial House is directly to the North of Heathrow Airport, and therefore, is not under the east to west take-off and landing flight paths of the aeroplanes. Bath Road was the dominant source of LAeq,T on the East, and South facades of Mondial House. The aeroplanes were the general cause of LAmax,T dB levels during the survey period. Changes in wind direction were noted during the survey period, with the North, Easterly and Westerly directions remaining very consistent in terms of measured sound level at Mondial House.

The position is a representative of the prevailing LA90,T dB, LAeq,T dB, and LAmax,T dB levels of the area. Frequency spectrum data, known as Octave band data, has also been obtained, to identify any tonal sound characteristics occurring around the Mondial House, Harlington, site.

The measured octave band frequency data (Hz), recorded within the Mondial House, representative of the sound exposure on each façade, shows a flat frequency band, i.e. there are no particularly dominant frequency bands or unexpected bands that are of a higher dB level than the others (Typical of a standard urban environment by a main road and airport).

Frequencies in the above range can be mitigated in the form of enhanced glazing and therefore, will require increased glazing depth (panes and internal void between the two panes). With the glazing specified in Section 4 installed, the 45dB LAmax,T, 35dB LAeq,T daytime, and 30dB LAeq,T night-time targets are highly likely to be equalled or bettered using the clients proposed detailed design.

Taking the worst-case highest daily 16 hour and nightly 8-hour LAeq,T dB from the survey period, windows with a minimum sound reduction index of 30dB Dne,w+Ctr should be used. Double-glazing type of 6mm / 12mm / 8mm provides 30dB Dne,w+Ctr,, sufficient for the proposed building development. The recommended glazing is to be combined with a suitable acoustically designed trickle ventilation system, such as Greenwood's S-series, rated to 34dB Dne,w+Ctr. It is highly recommended to provide enhanced acoustic trickle ventilation products such as the Greenwood 2500EA5000EA AC1 series, which are rated at a minimum 37dB Dne,w+Ctr,, whilst providing greater air flow characteristics, important on the higher floor heights where overheating typically occurs.

The glazing specification applies to the new 3rd and 4th floors, which have a direct view to the dominant noise sources in the area, most notably the A4 Bath Road, Heathrow airport on the South, Southwest and Southeast facades of Mondial House, and the air extraction and cooling plant servicing the Novotel audible on the North and Northwest facades of Mondial House. It is recommended that the existing glazing be upgraded, if possible, for the existing ground, 1st and 2nd floors of Mondial House.

Based on the analysis, it is considered that the resultant impact of noise associated with the prevailing ambient sound level within Mondial House, is unlikely to be detrimental to the proposed residents, forming the pre-application redevelopment, with the recommended glazing and trickle ventilation in place. The prevailing sound level during the daytime, and into the night-time periods when the Heathrow flightpath is operational, was not considered to be detrimental to the proposed residents.

The glazing specifications are satisfactory to achieve the WHO and BS8233 internal ambient sound levels, when open and closed. Purge ventilation is acceptable, with no requirement for mechanical ventilation or air conditioning.

Appendix A – Glossary of Terms / Unattended Raw Data Set

Noise

Noise is defined as unwanted sound. Human ears are able to respond to sound in the frequency range 20 Hz (deep bass) to 20,000 Hz (high treble) and over the audible range of 0 dB (the threshold of perception) to 140 dB (the threshold of pain). The ear does not respond equally to different frequencies of the same magnitude but is more responsive to mid- frequencies than to lower or higher frequencies. To quantify noise in a manner that approximates the response of the human ear, a weighting mechanism is used. This reduces the importance of lower and higher frequencies, in a similar manner to the human ear.

Furthermore, the perception of noise may be determined by a number of other factors, which may not necessarily be acoustic. In general, the impact of noise depends upon its level, the margin by which it exceeds the background level, its character and its variation over a given period of time. In some cases, the time of day and other acoustic features such as tonality or impulsiveness may be important, as may the disposition of the affected individual. Any assessment of noise should give due consideration to all of these factors when assessing the significance of a noise source.

The most widely used weighting mechanism that best corresponds to the response of the human ear is the 'A'-weighting scale. This is widely used for environmental noise measurement, and the levels are denoted as dB(A) or LAeq, LA90 etc., according to the parameter being measured.

The decibel scale is logarithmic rather than linear, and hence a 3 dB increase in sound level represents a doubling of the sound energy present. Judgement of sound is subjective, but as a general guide a 10 dB(A) increase can be taken to represent a doubling of loudness, whilst an increase in the order of 3 dB(A) is generally regarded as the minimum difference needed to perceive a change under normal listening conditions.

TABLE 12: ACOUSTIC TERMINOLOGY

Term	Description
dB (decibel)	The scale on which sound pressure level is expressed. Sound pressure level is defined as 20 times the logarithm of the ratio between the root-mean- square pressure of the sound field and a reference pressure (2x10-5Pa).
dB(A)	A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' - weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
LAeq,T	LAeq is defined as the notional steady sound level which, over a stated period of time (T), would contain the same amount of acoustical energy as the A - weighted fluctuating sound measured over that period.
LAmix	LAmix is the maximum A - weighted sound pressure level recorded over the period stated. LAmix is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall Leq noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.

Term	Description
L10 and L90	If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The Ln indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence L10 is the level exceeded for 10% of the time, and the L90 is the level exceeded for 90% of the time.
Free-field Level	A sound field determined at a point away from reflective surfaces other than the ground with no significant contributions due to sound from other reflective surfaces. Generally as measured outside and away from buildings.
Façade Level	A sound field determined at a distance of 1m in front of a large sound reflecting object such as a building façade.

TABLE 13: UNATTENDED MONITORING SURVEY DATA

Address	Date	Time	LAeq,T dB	LAmix,T dB	LA90,T dB
1	11/08/2026	11:00:03	59.3	79.8	53.7
2	11/08/2026	11:15:03	56.2	74.7	54.3
3	11/08/2026	11:30:03	74	97.8	53.6
4	11/08/2026	11:45:03	56.1	66.5	53.8
5	11/08/2026	12:00:03	56	68.2	54.3
6	11/08/2026	12:15:03	64.9	86.6	53.9
7	11/08/2026	12:30:03	55.5	69.4	53.5
8	11/08/2026	12:45:03	62.6	82.4	53.8
9	11/08/2026	13:00:03	55.7	63.2	53.7
10	11/08/2026	13:15:03	55.8	68.2	53.9
11	11/08/2026	13:30:03	55.7	69.3	54.1
12	11/08/2026	13:45:03	56.5	71.2	54.3
13	11/08/2026	14:00:03	75.7	104.4	54.7
14	11/08/2026	14:15:03	57.2	73.2	55.5
15	11/08/2026	14:30:03	56.1	65.7	54.2
16	11/08/2026	14:45:03	55.8	64.6	53.9
17	11/08/2026	15:00:03	55.8	64.7	54.3
18	11/08/2026	15:15:03	56	65.7	54.1
19	11/08/2026	15:30:03	56.8	68.7	55
20	11/08/2026	15:45:03	56.5	62.9	55.2
21	11/08/2026	16:00:03	56.3	68.4	54.6
22	11/08/2026	16:15:03	56	70.3	54.3
23	11/08/2026	16:30:03	56.4	64.2	54.9
24	11/08/2026	16:45:03	57.5	67.2	56.1
25	11/08/2026	17:00:03	57	63.5	55.7
26	11/08/2026	17:15:03	57.1	67.3	56
27	11/08/2026	17:30:03	57.1	67.8	55.9
28	11/08/2026	17:45:03	57.9	75.3	56.2
29	11/08/2026	18:00:03	57.1	72.6	55.9
30	11/08/2026	18:15:03	57.2	66.7	55.9

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
31	11/08/2026	18:30:03	58	77.6	56
32	11/08/2026	18:45:03	57.6	70.3	56.1
33	11/08/2026	19:00:03	58.3	75.3	55.9
34	11/08/2026	19:15:03	58	80.9	55.9
35	11/08/2026	19:30:03	57.7	76.3	56
36	11/08/2026	19:45:03	57.7	76.2	56.1
37	11/08/2026	20:00:03	57.6	73.8	56
38	11/08/2026	20:15:03	57.1	67.6	55.7
39	11/08/2026	20:30:03	56.9	63.6	55.8
40	11/08/2026	20:45:03	57	65.7	55.7
41	11/08/2026	21:00:03	59.6	80	55.6
42	11/08/2026	21:15:03	57	65.7	55.9
43	11/08/2026	21:30:03	57.7	79.1	55.8
44	11/08/2026	21:45:03	60.5	78.3	55.9
45	11/08/2026	22:00:03	57.2	68.5	55.6
46	11/08/2026	22:15:03	57.3	69.3	55.4
47	11/08/2026	22:30:03	56.5	64.7	55.3
48	11/08/2026	22:45:03	56.7	66	55.4
49	11/08/2026	23:00:03	56.2	67.7	55.3
50	11/08/2026	23:15:03	56.1	68	55.1
51	11/08/2026	23:30:03	56.8	71.4	55.1
52	11/08/2026	23:45:03	56.1	65.8	55.1
53	12/08/2026	00:00:03	56.3	70.7	55.3
54	12/08/2026	00:15:03	56.9	74.3	55.1
55	12/08/2026	00:30:03	57.3	77.8	55
56	12/08/2026	00:45:03	55.5	61.7	54.7
57	12/08/2026	01:00:03	55.6	59	54.8
58	12/08/2026	01:15:03	55.9	61.6	55.2
59	12/08/2026	01:30:03	55.7	62.9	54.9
60	12/08/2026	01:45:03	55.5	70.5	53.7
61	12/08/2026	02:00:03	53.6	58.7	53
62	12/08/2026	02:15:03	53.6	56.6	53
63	12/08/2026	02:30:03	54.7	76.7	53.2
64	12/08/2026	02:45:03	54.3	71.4	52.1
65	12/08/2026	03:00:03	53.8	60.4	52.7
66	12/08/2026	03:15:03	53.4	60	52.4
67	12/08/2026	03:30:03	54.1	58.8	53.2
68	12/08/2026	03:45:03	54.2	65	52.7
69	12/08/2026	04:00:03	54.1	60	52.7
70	12/08/2026	04:15:03	54.4	61.9	53.2
71	12/08/2026	04:30:03	54.5	58.2	53.2

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
72	12/08/2026	04:45:03	54.5	60.2	53.3
73	12/08/2026	05:00:03	55.1	64.9	53.7
74	12/08/2026	05:15:03	55.1	60.7	53.8
75	12/08/2026	05:30:03	55.4	59.5	54.3
76	12/08/2026	05:45:03	55.8	64.1	54.3
77	12/08/2026	06:00:03	55.6	61.3	54.3
78	12/08/2026	06:15:03	55.9	65.9	54.3
79	12/08/2026	06:30:03	55.9	63.4	54.3
80	12/08/2026	06:45:03	55.8	64.3	54.1
81	12/08/2026	07:00:03	55.4	62	54
82	12/08/2026	07:15:03	65.4	83.1	53.7
83	12/08/2026	07:30:03	55.9	66.1	54.1
84	12/08/2026	07:45:03	55.6	65.1	53.9
85	12/08/2026	08:00:03	55.6	64.5	54
86	12/08/2026	08:15:03	56.1	73	54.1
87	12/08/2026	08:30:03	57.4	74.7	54.8
88	12/08/2026	08:45:03	56.6	77.9	54.5
89	12/08/2026	09:00:03	56.3	68.6	54.5
90	12/08/2026	09:15:03	59	77.4	53.9
91	12/08/2026	09:30:03	55.9	64.4	53.9
92	12/08/2026	09:45:03	56.4	63.7	54.3
93	12/08/2026	10:00:03	55.2	66.2	53.6
94	12/08/2026	10:15:03	54.7	61.3	53.4
95	12/08/2026	10:30:03	55.5	73.1	53.4
96	12/08/2026	10:45:03	55.3	69.6	53.5
97	12/08/2026	11:00:03	55.3	67.5	53.4
98	12/08/2026	11:15:03	55.3	65.9	53.3
99	12/08/2026	11:30:03	56.5	75.4	53.9
100	12/08/2026	11:45:03	73.8	98.4	54.1
101	12/08/2026	12:00:03	56.1	64.8	54
102	12/08/2026	12:15:03	55.6	62.7	53.9
103	12/08/2026	12:30:03	63.7	86.3	54.3
104	12/08/2026	12:45:03	56.1	65.6	54.6
105	12/08/2026	13:00:03	55.8	61.9	54.4
106	12/08/2026	13:15:03	56	64.3	54.3
107	12/08/2026	13:30:03	56.9	73.7	55.1
108	12/08/2026	13:45:03	57.9	83	56.4
109	12/08/2026	14:00:03	68.2	92.6	56.9
110	12/08/2026	14:15:03	57.6	71.1	56.2
111	12/08/2026	14:30:03	57.2	62.1	56.2
112	12/08/2026	14:45:03	57.5	70.6	56.1

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
113	12/08/2026	15:00:03	57.8	76.1	56
114	12/08/2026	15:15:03	58.2	76.1	56.1
115	12/08/2026	15:30:03	57	62.6	55.9
116	12/08/2026	15:45:03	57.2	63.2	56.1
117	12/08/2026	16:00:03	57	62.9	56.1
118	12/08/2026	16:15:03	57.6	64.1	56.4
119	12/08/2026	16:30:03	58.1	70.6	56.4
120	12/08/2026	16:45:03	58.1	68.5	56.2
121	12/08/2026	17:00:03	57.8	75.2	56.4
122	12/08/2026	17:15:03	57.3	68.9	56.3
123	12/08/2026	17:30:03	57.4	62.7	56.5
124	12/08/2026	17:45:03	57.4	71.6	56.3
125	12/08/2026	18:00:03	57.1	64	56.1
126	12/08/2026	18:15:03	57.3	66.2	56.1
127	12/08/2026	18:30:03	57.7	69.9	56.3
128	12/08/2026	18:45:03	57.8	69.7	56.3
129	12/08/2026	19:00:03	57.5	72.8	56.3
130	12/08/2026	19:15:03	62.5	82.3	56.3
131	12/08/2026	19:30:03	57.2	67.1	56.3
132	12/08/2026	19:45:03	62.2	82.8	56.5
133	12/08/2026	20:00:03	57.7	67.8	56.5
134	12/08/2026	20:15:03	57.3	62.7	56.3
135	12/08/2026	20:30:03	57.6	63.9	56.7
136	12/08/2026	20:45:03	57.9	66	56.6
137	12/08/2026	21:00:03	57.5	70.1	56.5
138	12/08/2026	21:15:03	57.5	66.3	56.4
139	12/08/2026	21:30:03	57.6	66.2	56.4
140	12/08/2026	21:45:03	60.4	79.4	56.7
141	12/08/2026	22:00:03	58.2	70.5	56.7
142	12/08/2026	22:15:03	57.6	66	56.5
143	12/08/2026	22:30:03	57.7	66.8	56.9
144	12/08/2026	22:45:03	58.1	75.3	56.6
145	12/08/2026	23:00:03	57.4	67.3	56.3
146	12/08/2026	23:15:03	57.9	77.3	56.5
147	12/08/2026	23:30:03	56.9	73.2	55.7
148	12/08/2026	23:45:03	56.3	64.4	55.5
149	13/08/2026	00:00:03	56.4	61.8	55.4
150	13/08/2026	00:15:03	56.3	66.8	55.2
151	13/08/2026	00:30:03	56.2	65.1	55.1
152	13/08/2026	00:45:03	56.3	68.1	55.1
153	13/08/2026	01:00:03	56.7	67.2	55.1

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
154	13/08/2026	01:15:03	57	67.7	55.3
155	13/08/2026	01:30:03	56.3	67.5	55
156	13/08/2026	01:45:03	56.2	68.6	54.9
157	13/08/2026	02:00:03	54.5	66.7	53.2
158	13/08/2026	02:15:03	53.6	63.4	52.5
159	13/08/2026	02:30:03	52.7	58.5	52
160	13/08/2026	02:45:03	53.1	63	52.2
161	13/08/2026	03:00:03	53.2	57.7	52.5
162	13/08/2026	03:15:03	53.5	57.6	52.6
163	13/08/2026	03:30:03	53.2	60.2	52.3
164	13/08/2026	03:45:03	53.5	60.4	52.4
165	13/08/2026	04:00:03	53.5	58.3	52.5
166	13/08/2026	04:15:03	53.8	59.6	52.6
167	13/08/2026	04:30:03	53.7	59.9	52.6
168	13/08/2026	04:45:03	54	60.1	52.7
169	13/08/2026	05:00:03	54.1	60.7	52.7
170	13/08/2026	05:15:03	54.3	59.3	52.9
171	13/08/2026	05:30:03	54.8	66.5	53.2
172	13/08/2026	05:45:03	55.5	68.1	53.6
173	13/08/2026	06:00:03	57.3	67.8	54.6
174	13/08/2026	06:15:03	56.9	71.9	54.3
175	13/08/2026	06:30:03	55.8	65	54.2
176	13/08/2026	06:45:03	56.1	70	54.6
177	13/08/2026	07:00:03	55.8	66.7	54.4
178	13/08/2026	07:15:03	56.4	67.6	54.5
179	13/08/2026	07:30:03	56.2	62.9	54.7
180	13/08/2026	07:45:03	55.6	64.2	54.3
181	13/08/2026	08:00:03	55.8	70.1	54.1
182	13/08/2026	08:15:03	56.1	65.7	54.4
183	13/08/2026	08:30:03	56	68.7	54.1
184	13/08/2026	08:45:03	55.4	63.1	54
185	13/08/2026	09:00:03	56.2	67.4	54.4
186	13/08/2026	09:15:03	55.9	63.3	54.4
187	13/08/2026	09:30:03	58.2	67.4	55.2
188	13/08/2026	09:45:03	59	67.3	55.8
189	13/08/2026	10:00:03	60.2	83.6	55.5
190	13/08/2026	10:15:03	58.4	70.9	54.4
191	13/08/2026	10:30:03	56	76.3	53.8
192	13/08/2026	10:45:03	55.4	66.3	54
193	13/08/2026	11:00:03	56	67.1	54.1
194	13/08/2026	11:15:03	55.7	65.4	54

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
195	13/08/2026	11:30:03	63.7	85.6	54.2
196	13/08/2026	11:45:03	73.5	97	56.5
197	13/08/2026	12:00:03	57.3	71.8	54.9
198	13/08/2026	12:15:03	59.4	77.8	55.6
199	13/08/2026	12:30:03	59.2	73.4	55.9
200	13/08/2026	12:45:03	60.7	85.2	55.6
201	13/08/2026	13:00:03	57	71.1	54.9
202	13/08/2026	13:15:03	61.5	88.2	55
203	13/08/2026	13:30:03	57	67.2	55.3
204	13/08/2026	13:45:03	58.4	69.8	56.1
205	13/08/2026	14:00:03	57.1	66.4	55.6
206	13/08/2026	14:15:03	58.4	72.5	55.4
207	13/08/2026	14:30:03	59.3	75.5	55.3
208	13/08/2026	14:45:03	59.8	80.3	55.3
209	13/08/2026	15:00:03	62.6	78	56.7
210	13/08/2026	15:15:03	63.3	80.5	57.3
211	13/08/2026	15:30:03	62.7	77.3	56.9
212	13/08/2026	15:45:03	64.6	82.7	57.9
213	13/08/2026	16:00:03	60.7	72.6	56.7
214	13/08/2026	16:15:03	61.7	74	56.9
215	13/08/2026	16:30:03	62.9	78.3	57.3
216	13/08/2026	16:45:03	63	76.9	57.7
217	13/08/2026	17:00:03	64	77.9	58.7
218	13/08/2026	17:15:03	63.4	80.3	58.3
219	13/08/2026	17:30:03	62.4	77.3	58.2
220	13/08/2026	17:45:03	63.9	82.5	58.1
221	13/08/2026	18:00:03	65	82.3	58.4
222	13/08/2026	18:15:03	62.8	80.2	58
223	13/08/2026	18:30:03	62.7	76.7	58
224	13/08/2026	18:45:03	62.1	76	58.4
225	13/08/2026	19:00:03	61.1	74.9	57.9
226	13/08/2026	19:15:03	63.3	84.9	57.5
227	13/08/2026	19:30:03	62.4	77.3	58.2
228	13/08/2026	19:45:03	62.4	79.3	58
229	13/08/2026	20:00:03	63.1	79.8	58.5
230	13/08/2026	20:15:03	63.1	77	58.8
231	13/08/2026	20:30:03	63	78.1	56.9
232	13/08/2026	20:45:03	61.4	76.2	56.4
233	13/08/2026	21:00:03	61.1	73.2	56.6
234	13/08/2026	21:15:03	61.3	75.1	57.4
235	13/08/2026	21:30:03	62.3	77.2	56.6

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
236	13/08/2026	21:45:03	61.3	74.4	56.8
237	13/08/2026	22:00:03	62.2	78.8	56.9
238	13/08/2026	22:15:03	63.8	80.8	56.8
239	13/08/2026	22:30:03	61.8	78.4	56.4
240	13/08/2026	22:45:03	58	69	56.4
241	13/08/2026	23:00:03	57.1	65.8	55.9
242	13/08/2026	23:15:03	56.2	64.2	55.5
243	13/08/2026	23:30:03	56.2	59.2	55.5
244	13/08/2026	23:45:03	56.2	63.3	55.5
245	14/08/2026	00:00:03	56.9	68.3	55.5
246	14/08/2026	00:15:03	55.8	60.8	55.1
247	14/08/2026	00:30:03	55.9	62.6	55.2
248	14/08/2026	00:45:03	55.9	65	55.2
249	14/08/2026	01:00:03	56	62	55.2
250	14/08/2026	01:15:03	55.8	63.2	55.1
251	14/08/2026	01:30:03	55.8	67.6	55.1
252	14/08/2026	01:45:03	55.8	67.8	55.1
253	14/08/2026	02:00:03	55.8	72.8	55
254	14/08/2026	02:15:03	55.9	73.6	54.9
255	14/08/2026	02:30:03	55.1	58.1	53.1
256	14/08/2026	02:45:03	54	66.3	52.8
257	14/08/2026	03:00:03	53.7	60.2	52.8
258	14/08/2026	03:15:03	53.7	58.3	52.9
259	14/08/2026	03:30:03	53.8	57.8	52.9
260	14/08/2026	03:45:03	53.8	59.3	52.8
261	14/08/2026	04:00:03	54	60.3	53.1
262	14/08/2026	04:15:03	54.3	59.7	53.1
263	14/08/2026	04:30:03	54.6	65.7	53.1
264	14/08/2026	04:45:03	54.2	59.4	53.2
265	14/08/2026	05:00:03	54.6	61.9	53.4
266	14/08/2026	05:15:03	54.9	61.9	53.7
267	14/08/2026	05:30:03	55.6	70.3	54
268	14/08/2026	05:45:03	55.6	63.7	54.1
269	14/08/2026	06:00:03	57.1	69.4	54.4
270	14/08/2026	06:15:03	58	75.5	54.8
271	14/08/2026	06:30:03	57.9	72.2	54.7
272	14/08/2026	06:45:03	56.8	68.1	54.9
273	14/08/2026	07:00:03	57.2	68.1	55.3
274	14/08/2026	07:15:03	57.3	69.4	55.2
275	14/08/2026	07:30:03	57.4	72.7	55.4
276	14/08/2026	07:45:03	56.4	67.5	55.2

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
277	14/08/2026	08:00:03	56.1	66.6	55
278	14/08/2026	08:15:03	57.1	82	55
279	14/08/2026	08:30:03	57	73.5	54.8
280	14/08/2026	08:45:03	56.8	72	55.1
281	14/08/2026	09:00:03	56.3	66.3	55
282	14/08/2026	09:15:03	56.5	65.6	55
283	14/08/2026	09:30:03	56.3	62.8	55.2
284	14/08/2026	09:45:03	57.2	66.4	55.6
285	14/08/2026	10:00:03	58.2	71.8	55.5
286	14/08/2026	10:15:03	56.5	67.8	54
287	14/08/2026	10:30:03	55.9	69.7	53.6
288	14/08/2026	10:45:03	55.9	70.3	53.5
289	14/08/2026	11:00:03	55.7	68.6	53.7
290	14/08/2026	11:15:03	56.7	70.3	54.2
291	14/08/2026	11:30:03	72.4	98.3	54.2
292	14/08/2026	11:45:03	56	67.5	54.5
293	14/08/2026	12:00:03	58	68.4	55.2
294	14/08/2026	12:15:03	57.2	76.9	55.3
295	14/08/2026	12:30:03	56.3	64.9	55.2
296	14/08/2026	12:45:03	57.3	76.3	55.6
297	14/08/2026	13:00:03	58.5	77	55.4
298	14/08/2026	13:15:03	57.7	80.3	55.6
299	14/08/2026	13:30:03	60.5	81	55.7
300	14/08/2026	13:45:03	58.4	72	55.8
301	14/08/2026	14:00:03	57.5	67	55.7
302	14/08/2026	14:15:03	58.4	74.9	55.3
303	14/08/2026	14:30:03	57.1	71.7	54.6
304	14/08/2026	14:45:03	57.5	69.2	55
305	14/08/2026	15:00:03	59.1	70.5	55.2
306	14/08/2026	15:15:03	59.2	71.6	55.6
307	14/08/2026	15:30:03	58.3	70.6	55
308	14/08/2026	15:45:03	59.3	74.4	55.3
309	14/08/2026	16:00:03	59.1	73.3	55.5
310	14/08/2026	16:15:03	58.8	78	56.3
311	14/08/2026	16:30:03	59.5	75.9	56.5
312	14/08/2026	16:45:03	59	73.7	56.6
313	14/08/2026	17:00:03	59.1	70.7	56.8
314	14/08/2026	17:15:03	59	70.5	56.5
315	14/08/2026	17:30:03	57.8	67	56.4
316	14/08/2026	17:45:03	57.6	65.2	56.4
317	14/08/2026	18:00:03	57.8	66.3	56.5

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
318	14/08/2026	18:15:03	58.1	69.1	56.5
319	14/08/2026	18:30:03	61.8	85.5	56.8
320	14/08/2026	18:45:03	58.5	71.5	57
321	14/08/2026	19:00:03	58.1	67.1	56.8
322	14/08/2026	19:15:03	57.5	73.1	56.4
323	14/08/2026	19:30:03	58.8	89.6	56.6
324	14/08/2026	19:45:03	58.3	72.3	56.7
325	14/08/2026	20:00:03	57.9	72.6	56.7
326	14/08/2026	20:15:03	58.9	70.2	57.9
327	14/08/2026	20:30:03	60.1	82	58
328	14/08/2026	20:45:03	58.6	70.1	57
329	14/08/2026	21:00:03	57.6	64.8	56.6
330	14/08/2026	21:15:03	57.9	66.5	56.7
331	14/08/2026	21:30:03	58.2	64.9	57
332	14/08/2026	21:45:03	58.6	72.3	57
333	14/08/2026	22:00:03	57.9	67.6	56.7
334	14/08/2026	22:15:03	59.5	71.1	57
335	14/08/2026	22:30:03	59.4	71.4	57.1
336	14/08/2026	22:45:03	60	71.6	57.6
337	14/08/2026	23:00:03	60.4	74.9	56.9
338	14/08/2026	23:15:03	58	73.4	56.8
339	14/08/2026	23:30:03	57.6	63.4	56.8
340	14/08/2026	23:45:03	57.9	71	56.8
341	15/08/2026	00:00:03	57.4	63.4	56.6
342	15/08/2026	00:15:03	57.2	65.4	56
343	15/08/2026	00:30:03	57.5	74.8	56
344	15/08/2026	00:45:03	56.9	65.5	56
345	15/08/2026	01:00:03	56.4	64.7	55.4
346	15/08/2026	01:15:03	56.1	62.5	55.3
347	15/08/2026	01:30:03	56	63	55.2
348	15/08/2026	01:45:03	55.9	65.9	55.1
349	15/08/2026	02:00:03	55.9	59.7	55.1
350	15/08/2026	02:15:03	55.8	64.5	55
351	15/08/2026	02:30:03	55.9	61.7	55
352	15/08/2026	02:45:03	56.3	66.4	55.1
353	15/08/2026	03:00:03	55.9	64.9	55.1
354	15/08/2026	03:15:03	54.9	69.7	53.4
355	15/08/2026	03:30:03	54.2	61.5	53.1
356	15/08/2026	03:45:03	54.1	58.6	53.1
357	15/08/2026	04:00:03	54.1	68.5	52.3
358	15/08/2026	04:15:03	53.7	61.6	52.3

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
359	15/08/2026	04:30:03	55.1	69.8	52.5
360	15/08/2026	04:45:03	53.8	58.1	52.5
361	15/08/2026	05:00:03	53.8	59.1	52.7
362	15/08/2026	05:15:03	54.1	64.9	52.6
363	15/08/2026	05:30:03	54	64.6	52.5
364	15/08/2026	05:45:03	54.9	74.9	53.1
365	15/08/2026	06:00:03	54.5	62.9	52.6
366	15/08/2026	06:15:03	58.1	78.7	53.2
367	15/08/2026	06:30:03	54.9	75.2	53.1
368	15/08/2026	06:45:03	54.6	63.2	53.1
369	15/08/2026	07:00:03	54.4	63.1	52.8
370	15/08/2026	07:15:03	56.6	70.8	53.3
371	15/08/2026	07:30:03	54.4	63.4	52.9
372	15/08/2026	07:45:03	54.6	63.7	52.8
373	15/08/2026	08:00:03	54.8	66.8	53.1
374	15/08/2026	08:15:03	55.8	71	53.4
375	15/08/2026	08:30:03	56.1	73.8	52.6
376	15/08/2026	08:45:03	55.2	77.7	52.9
377	15/08/2026	09:00:03	55.6	62.3	53.3
378	15/08/2026	09:15:03	56.6	63.4	55.5
379	15/08/2026	09:30:03	55.9	65.2	53.5
380	15/08/2026	09:45:03	55	63.5	53.3
381	15/08/2026	10:00:03	55.1	63.6	53.4
382	15/08/2026	10:15:03	56	66.2	54
383	15/08/2026	10:30:03	55.3	63.3	53.6
384	15/08/2026	10:45:03	55.4	73	53.6
385	15/08/2026	11:00:03	63.5	86.2	53.6
386	15/08/2026	11:15:03	55	72.3	53.4
387	15/08/2026	11:30:03	55.3	64.4	53.6
388	15/08/2026	11:45:03	55.7	70	53.8
389	15/08/2026	12:00:03	56.5	79	54.4
390	15/08/2026	12:15:03	56.1	75.9	54.6
391	15/08/2026	12:30:03	56	62.8	54.9
392	15/08/2026	12:45:03	55.9	61.5	54.9
393	15/08/2026	13:00:03	56.5	68.5	55.1
394	15/08/2026	13:15:03	56.4	72.5	55.1
395	15/08/2026	13:30:03	58.5	77.7	55.9
396	15/08/2026	13:45:03	58.1	73.6	56.5
397	15/08/2026	14:00:03	57.4	65.3	56.3
398	15/08/2026	14:15:03	57	67.5	55.8
399	15/08/2026	14:30:03	57.2	70.4	55.4

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
400	15/08/2026	14:45:03	56.6	68.8	55.3
401	15/08/2026	15:00:03	56.8	65.4	55.4
402	15/08/2026	15:15:03	56.7	68.6	55.8
403	15/08/2026	15:30:03	57.5	82.1	55.8
404	15/08/2026	15:45:03	57.2	66.7	55.9
405	15/08/2026	16:00:03	56.9	74.7	55.8
406	15/08/2026	16:15:03	56.8	68.4	55.5
407	15/08/2026	16:30:03	58	84.5	55.6
408	15/08/2026	16:45:03	56.9	71.5	55.8
409	15/08/2026	17:00:03	57.2	73.7	55.8
410	15/08/2026	17:15:03	57.1	72.3	55.8
411	15/08/2026	17:30:03	56.9	68.6	55.5
412	15/08/2026	17:45:03	57	72.3	55.7
413	15/08/2026	18:00:03	57	67	55.8
414	15/08/2026	18:15:03	57	72	55.9
415	15/08/2026	18:30:03	56.9	65.7	55.8
416	15/08/2026	18:45:03	57.5	71	56
417	15/08/2026	19:00:03	57.1	68.3	55.9
418	15/08/2026	19:15:03	57.9	74.6	56.1
419	15/08/2026	19:30:03	57	65.1	56
420	15/08/2026	19:45:03	57.1	65.1	55.9
421	15/08/2026	20:00:03	57	63.5	56
422	15/08/2026	20:15:03	56.9	66.6	55.8
423	15/08/2026	20:30:03	61.8	68.9	56.2
424	15/08/2026	20:45:03	56.9	66.7	55.8
425	15/08/2026	21:00:03	57.3	73	56
426	15/08/2026	21:15:03	57.5	68.8	56.3
427	15/08/2026	21:30:03	57.8	71.2	56.5
428	15/08/2026	21:45:03	58.1	66.9	56.5
429	15/08/2026	22:00:03	58.7	68.4	57.1
430	15/08/2026	22:15:03	58.5	65.1	57
431	15/08/2026	22:30:03	58.4	69.8	57.2
432	15/08/2026	22:45:03	59.3	76.5	57.5
433	15/08/2026	23:00:03	59.7	69.4	57.6
434	15/08/2026	23:15:03	59.2	71.9	57
435	15/08/2026	23:30:03	59.2	71.9	57.4
436	15/08/2026	23:45:03	58.1	68.2	56.8
437	16/08/2026	00:00:03	57.2	65.6	56.2
438	16/08/2026	00:15:03	57.2	74.3	55.9
439	16/08/2026	00:30:03	56.6	64.5	55.7
440	16/08/2026	00:45:03	56.5	63.9	55.6

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
441	16/08/2026	01:00:03	56.4	68.2	55.4
442	16/08/2026	01:15:03	56.1	67.7	55.2
443	16/08/2026	01:30:03	55.9	68.2	55
444	16/08/2026	01:45:03	56.1	65.4	55.1
445	16/08/2026	02:00:03	55.5	65.8	54.8
446	16/08/2026	02:15:03	55.5	66.4	54.7
447	16/08/2026	02:30:03	55.6	61.5	54.9
448	16/08/2026	02:45:03	55.8	61	54.9
449	16/08/2026	03:00:03	55.4	60.2	54.7
450	16/08/2026	03:15:03	54.9	73	53
451	16/08/2026	03:30:03	53.7	59.1	52.8
452	16/08/2026	03:45:03	53.9	70.9	52.9
453	16/08/2026	04:00:03	53.7	59.1	52.1
454	16/08/2026	04:15:03	53.5	62.1	52.1
455	16/08/2026	04:30:03	53.8	66.7	52.4
456	16/08/2026	04:45:03	53.7	67.3	52.3
457	16/08/2026	05:00:03	53.9	60.1	52.5
458	16/08/2026	05:15:03	53.9	61.5	52.6
459	16/08/2026	05:30:03	54.2	66.6	52.7
460	16/08/2026	05:45:03	55	73.4	53.2
461	16/08/2026	06:00:03	55.3	67.2	53.1
462	16/08/2026	06:15:03	55.4	70.5	53.1
463	16/08/2026	06:30:03	54.9	65.5	53.1
464	16/08/2026	06:45:03	55	63.9	53.3
465	16/08/2026	07:00:03	55	64.1	53.1
466	16/08/2026	07:15:03	55.2	66.9	52.8
467	16/08/2026	07:30:03	54.3	64.8	52.7
468	16/08/2026	07:45:03	54.7	65.9	52.9
469	16/08/2026	08:00:03	54.4	65.7	52.7
470	16/08/2026	08:15:03	54.8	63.8	52.9
471	16/08/2026	08:30:03	55.3	65.7	53.1
472	16/08/2026	08:45:03	55.1	64.4	53.3
473	16/08/2026	09:00:03	56.8	75.8	53.4
474	16/08/2026	09:15:03	56.7	67.9	54.1
475	16/08/2026	09:30:03	56.8	64.8	55.6
476	16/08/2026	09:45:03	57.3	70.6	55.5
477	16/08/2026	10:00:03	57.3	68.4	55.8
478	16/08/2026	10:15:03	56.9	67	55.7
479	16/08/2026	10:30:03	56.6	65.1	55.5
480	16/08/2026	10:45:03	58	71.3	55.7
481	16/08/2026	11:00:03	57.1	66.2	54.7

Address	Date	Time	LAeq,T dB	LAmax,T dB	LA90,T dB
482	16/08/2026	11:15:03	56.6	72.2	53.9
483	16/08/2026	11:30:03	61.9	82.9	54.2
484	16/08/2026	11:45:03	57	71.2	54.4
485	16/08/2026	12:00:03	57.1	70.9	54.2
486	16/08/2026	12:15:03	57	68.5	54.6
487	16/08/2026	12:30:03	59.5	76.6	55
488	16/08/2026	12:45:03	59.2	80.1	54.5
489	16/08/2026	13:00:03	56.3	67.4	54.6
490	16/08/2026	13:15:03	57	70.6	54.8
491	16/08/2026	13:30:03	59.9	80	55
492	16/08/2026	13:45:03	58.6	74.9	55.4
493	16/08/2026	14:00:03	59.5	79.7	56.1
494	16/08/2026	14:15:03	57.1	68.7	55.8
495	16/08/2026	14:30:03	58.1	72.9	55.7
496	16/08/2026	14:45:03	60.6	79.4	56.2
497	16/08/2026	15:00:03	61	75.9	57
498	16/08/2026	15:15:03	61.5	78.7	56.8
499	16/08/2026	15:30:03	60.5	75.4	56.9
500	16/08/2026	15:45:03	59.8	73.9	56.9
501	16/08/2026	16:00:03	61.8	76.2	57.1
502	16/08/2026	16:15:03	59.4	70.1	57
503	16/08/2026	16:30:03	61.2	77.8	56.9
504	16/08/2026	16:45:03	62.2	76.7	57.8
505	16/08/2026	17:00:03	60.6	72.2	57.8
506	16/08/2026	17:15:03	59.8	71.6	56.9
507	16/08/2026	17:30:03	60.2	75	56.9
508	16/08/2026	17:45:03	60.4	77.1	57.1
509	16/08/2026	18:00:03	60.8	74.4	57.1
510	16/08/2026	18:15:03	60.6	72.9	57.1
511	16/08/2026	18:30:03	60.6	79.4	57.2
512	16/08/2026	18:45:03	60	70.7	57.1
513	16/08/2026	19:00:03	59.3	75.5	57
514	16/08/2026	19:15:03	58.3	68	56.6
515	16/08/2026	19:30:03	59.7	72	56.7
516	16/08/2026	19:45:03	60.4	74.1	56.9
517	16/08/2026	20:00:03	62.1	80.3	56.8
518	16/08/2026	20:15:03	61	78.6	57.2
519	16/08/2026	20:30:03	63.4	77.5	58.2
520	16/08/2026	20:45:03	62.5	76.2	58.3
521	16/08/2026	21:00:03	62.4	75.9	57.9
522	16/08/2026	21:15:03	63.4	78.5	58.1

Address	Date	Time	LAeq,T dB	LAmix,T dB	LA90,T dB
523	16/08/2026	21:30:03	63.4	77.6	58.3
524	16/08/2026	21:45:03	63.3	78.5	57.7
525	16/08/2026	22:00:03	63.1	78.6	58
526	16/08/2026	22:15:03	62.7	77.6	57.6
527	16/08/2026	22:30:03	62.1	76.4	57.5
528	16/08/2026	22:45:03	58	62.8	57.2
529	16/08/2026	23:00:03	58.6	65.5	57.4
530	16/08/2026	23:15:03	58	66.6	56.9
531	16/08/2026	23:30:03	58.2	65.2	57.1
532	16/08/2026	23:45:03	58.2	64.5	57.1
533	17/08/2026	00:00:03	58.2	74.4	57
534	17/08/2026	00:15:03	56.8	61.6	55.6
535	17/08/2026	00:30:03	56.2	61.4	55.3
536	17/08/2026	00:45:03	57.1	67.8	55.4
537	17/08/2026	01:00:03	55.8	62.3	55.1
538	17/08/2026	01:15:03	56.2	65.3	55.3
539	17/08/2026	01:30:03	56.1	63.4	55.3
540	17/08/2026	01:45:03	55.9	65	55.2
541	17/08/2026	02:00:03	55.6	65.2	54.9
542	17/08/2026	02:15:03	55.2	58.9	53.8
543	17/08/2026	02:30:03	53.8	63.7	53
544	17/08/2026	02:45:03	53.7	59	53
545	17/08/2026	03:00:03	54.4	67	53
546	17/08/2026	03:15:03	53.7	65.1	52.3
547	17/08/2026	03:30:03	53.2	60.5	52.1
548	17/08/2026	03:45:03	53.3	57.9	52.1
549	17/08/2026	04:00:03	53.4	61.7	52.2
550	17/08/2026	04:15:03	53.8	61.7	52.2
551	17/08/2026	04:30:03	53.8	58.6	52.4
552	17/08/2026	04:45:03	54.3	60.5	53
553	17/08/2026	05:00:03	54.7	65.1	53.3
554	17/08/2026	05:15:03	55	62.2	53.8
555	17/08/2026	05:30:03	55	60.4	53.8
556	17/08/2026	05:45:03	56.5	72.5	53.8
557	17/08/2026	06:00:03	58.4	73.7	54.3
558	17/08/2026	06:15:03	60.6	82.3	50.5

TABLE 14: EXAMPLE GREENWOOD 2500-5000EAW AC1 & AC2 RANGE OF ACOUSTIC TRICKLE VENTILATION SPECIFICATIONS

Models, control options and key data

Product code	Description	Controls	Acoustic performance			Equivalent area mm ²	Colour
			Dn,e,w	Dn,e,w (C)	Dn,e,w (Ctr)		
2500EAW.AC1 *	Vent + 1 Acoustic External Module	Front	42dB(A)	41dB	40dB	2670	White
2500EAW.AC2 *	Vent + 2 Acoustic Modules	Front	45dB(A)	43dB	42dB	2670	White
5000EAW.AC1 *	Vent + 1 Acoustic External Module	Front	39dB(A)	38dB	37dB	5350	White
5000EAW.AC2 *	Vent + 2 Acoustic Modules	Front	42dB(A)	40dB	38dB	5350	White

* Pricing is variable depending on quantity ordered - please call for details



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