Former Park Public House, Wythenshawe

Noise Impact Assessment and Acoustic Design Report

Watson Construction Ltd

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1.0

Introduction

1.0 Introduction

1.1 Overview

Cundall has been commissioned to prepare a Noise Impact Assessment and Acoustic Design Report for Watson Construction Ltd for the proposed development at the former Park Public House, 153 Moorcroft Rd, Wythenshawe, Manchester M23 0AE.

1.2 Site Location

The Site is situated along the junction of Moorcroft Road and Sledmont Road. The surroundings comprise a predominantly residential area with retail units on the opposite side of Moorcroft Road.

The location of the development site is illustrated in Figure 1-1.

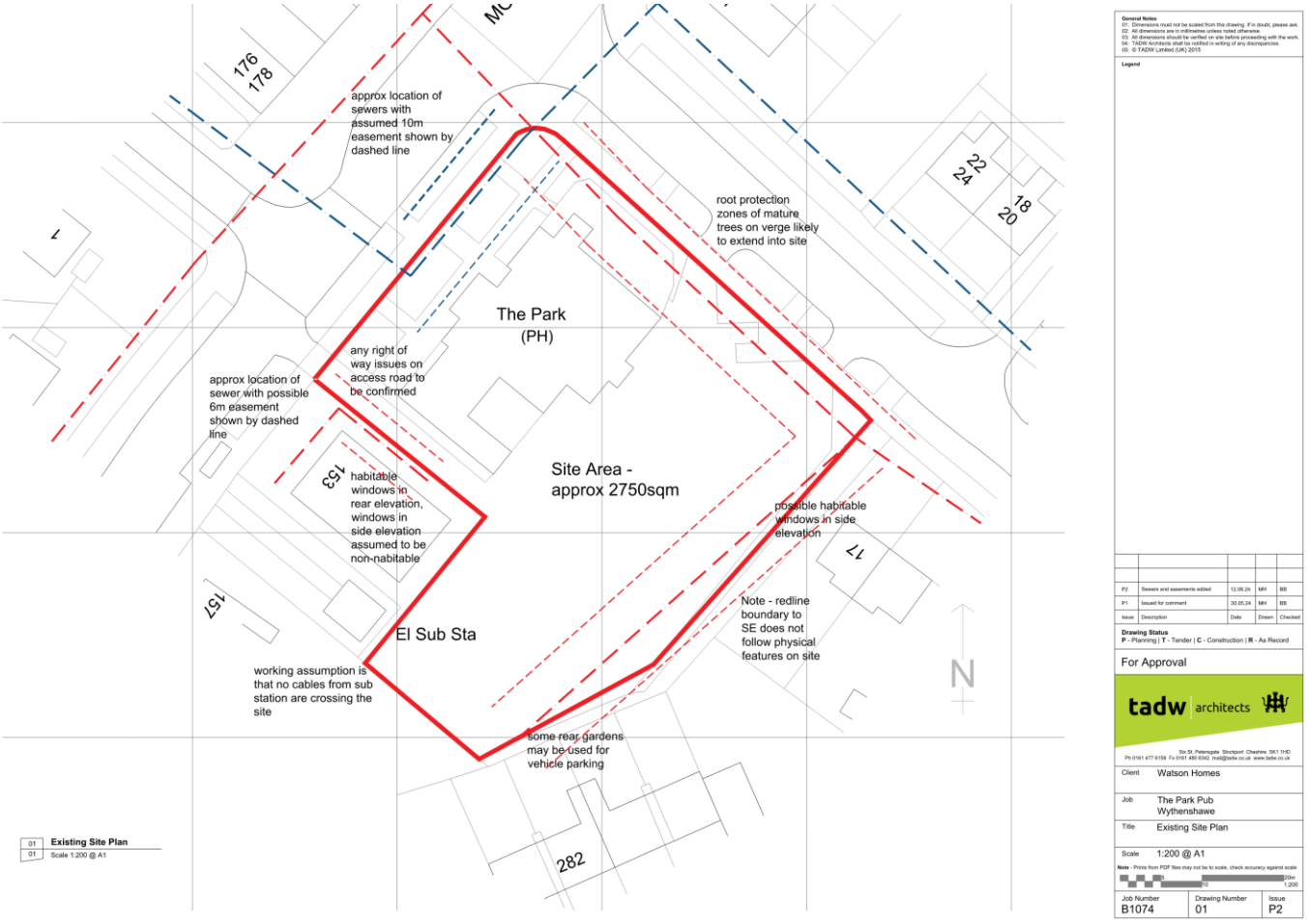


Figure 1-1: Site location (drawing B1074_01_P2)

1.3 Proposed Development

The proposed development comprises the demolition of the former Park Public House and construction of a single block of 35 apartments.



Figure 1-2: Proposed site plan (drawing 251360-TADW- 00- XX- DR- A- 0010- P- 5)

2.0

Acoustic design criteria

2.0 Acoustic design criteria

This assessment and design information presented in this report is based on the following policy, standards and guidance documents:

- The Noise Policy Statement for England (2010) (NPSE)
- The National Planning Policy Framework (2023) (NPPF)
- The Planning Practice Guidance (2016) (PPG)
- Manchester City Council's Planning & Noise: Technical Guidance (October 2022)
- BS 8233:2014 Guidance on sound insulation and noise reduction for buildings (BS 8233)
- BS 4142:2014 + A1:2019 Method for rating and assessing industrial and commercial sound (BS 4142)
- Approved Document E of the Building Regulations – Resistance to the passage of sound (ADE)
- Approved Document O of the Building Regulations – Overheating (ADO)

This section outlines the relevant requirements and guidance given in these documents.

2.1 Noise Policy Statement for England (NPSE)

The Noise Policy Statement for England (NPSE) sets out the long-term vision of Government noise policy, to:

Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.

The NPSE long term vision is supported by the following aims:

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

- Avoid significant adverse impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life; and
- Where possible, contribute to the improvement of health and quality of life.

2.2 National Planning Policy Framework (NPPF)

The National Planning Policy Framework NPPF (December 2024 with February 2025 updates) and sets out the Government's planning policies for England and how these are expected to be applied. Specifically, on the subject of noise, paragraph 198 of NPPF states:

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:

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;

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

On the general issue of amenity, paragraph 135 states that planning policies and decisions should ensure that developments:

…create places that […] promote health and well-being, with a high standard of amenity for existing and future users…

Further to this, paragraph 187 point '(e)' states that planning policies and decisions should contribute to and enhance the natural and local environment by:

…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.

2.3 Planning Practice Guidance (PPG)

The Ministry of Housing, Communities and Local Government (MHCLG) launched a planning practice guidance in March 2014 (last updated July 2019) which is a web-based resource and includes a section on Noise. This resource provides guidance on how to determine the noise impact in terms of whether a significant adverse effect is likely to occur and/or whether a good standard of amenity can be achieved.

In line with the NPSE, PPG Noise introduces the concept of:

- Significant observed adverse effect level (SOAEL): This is the level of noise exposure above which significant adverse effects on health and quality of life occur.
- Lowest observed adverse effect level (LOAEL): this is the level of noise exposure above which adverse effects on health and quality of life can be detected.
- No observed effect level (NOEL): this is the level of noise exposure below which no effect at all on health or quality of life can be detected.

Table 2-1 summarises the noise exposure hierarchy, based on the likely average response.

Perception	Examples of outcomes	Increasing effect level	Action
Not noticeable	No effect	No Observed Effect	No specific measures required
Noticeable but 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	No specific measures required
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
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 where possible
Noticeable and very disruptive	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/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

Table 2-1: PPG noise exposure hierarchy

2.4 Manchester City Council - Planning & Noise: Technical Guidance (October 2022)

Manchester City Council's Planning & Noise: Technical Guidance (October 2022) refers to guidance from BS 8223 and BS 4142. Relevant criteria are presented below.

2.4.1 Fixed mechanical services plant

With respect to noise from fixed mechanical services plant items, this document states that:

Any noise assessment needs to consider not only the overall level of noise emitted but also its particular characteristics. The noise assessment should be based on BS 4142: 2014 and any application for fixed plant, equipment or machinery must demonstrate that:

'Externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5 dB (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location'.

2.4.2 Residential developments

Section 3.7.1.1 of the document relates to internal / external ambient noise limits for residential properties and adopts the following criteria based on BS 8233 guidance:

Manchester City Council has adopted the following internal noise limits for residential properties:

- ***Bedrooms (night-time – 23.00 – 07.00) 30 dB L_{Aeq} (individual noise events should not normally exceed 45 dB $L_{Amax,F}$ by more than 15 times)***
- ***Living Rooms (daytime – 07.00 – 23.00) 35 dB L_{Aeq}***
- ***Gardens and terraces (daytime) 55 dB L_{Aeq}***

2.5 Approved Document E 2003

This section sets out the acoustic performance requirements for dwelling houses and flats, as contained within the Building Regulations 2010, Approved Document E 2003 [incorporating 2004, 2010, 2013 and 2015 amendments] (ADE).

2.5.1 Requirement E1

The following table shows the minimum performance requirements for new-build dwellings (ref. ADE, Table 0.1a):

ADE design criteria	Element	Airborne sound insulation $D_{nT,w} + C_{tr}$ dB	Impact sound transmission $L'_{nT,w}$
Rooms for residential purposes	Walls	≥ 45	-
	Floors and stairs	≥ 45	≤ 62

Table 2-2: ADE sound insulation performance requirements

The above values relate to the required in-situ performance that is verified with pre completion acoustics testing. When specifying appropriate laboratory partitions, and reviewing composite floor constructions, it is recommended that a minimum 8 dB depreciation is allowed for between laboratory and site conditions, i.e. a partition should be selected with a minimum laboratory rating of 53 dB $D_{nT,w} + C_{tr}$.

2.5.2 Doors

Acoustic doorsets capable of a minimum laboratory rating of **29 dB R_w** should be provided to entrance doors which provide direct access from circulation to dwellings.

2.5.3 Requirement E2

Requirement E2 applies to partitions within a dwelling, and these should be constructed in such a way that reasonable resistance to sound is provided, for:

- Internal walls between a bedroom or a room containing a water closet, and other rooms; and
- Internal floors.

Requirement E2 does not apply to:

- An internal wall which contains a door; or
- An internal wall which separates an en-suite toilet from the associated bedroom.

Partitions and floors to which E2 applies should provide a minimum laboratory rated sound insulation of 40 dB R_w.

2.5.4 Requirement E3

Requirement E3 specifies that *"The common internal parts of buildings which contain flats or rooms for residential purposes shall be designed and constructed in such a way as to prevent more reverberation around the common parts than is reasonable."*

Requirement E3 only applies to corridors, stairwells, hallways and entrance halls which give direct access to dwellings.

2.6 Approved Document O

Approved Document O (ADO) was published on 15 December 2021 as part of the Government's Building Regulations. It covers two overheating mitigation requirements for new residential buildings (Requirement O1):

a. Limiting unwanted solar gains in summer;
b. Providing an adequate means to remove heat from the indoor environment.

The aim of the requirements is to "*…protect the health and welfare of occupants of the building by reducing the occurrence of high indoor temperatures"*. Compliance can be demonstrated by using one of the following methods:

- The simplified method, as set out in Section 1 of the document; or
- The dynamic thermal modelling method, as set out in Section 2 of the document.

The requirement O1(2) of the document states that in meeting the requirement O1 as per above *"…account must be taken of the safety of any occupant, and their reasonable enjoyment of the residence…".* This is also relevant in regard to noise assessments.

Paragraph 3.2 to 3.4 of the document states in regard to noise and overheating assessment that:

3.2 In locations where external noise may be an issue (for example, where the local planning authority considered external noise to be an issue at the planning stage), the overheating mitigation strategy should take account of the likelihood that windows will be closed during sleeping hours (11 pm to 7 am);

3.3 Windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following limits

a. 40 dB $L_{Aeq,T,}$ averaged over 8 hours (between 11 pm and 7 am)

b. 55 dB $L_{AFmax,}$ more than 10 times a night (between 11 pm and 7 am);

3.4 Where in-situ noise measurements are used as evidence that these limits are not exceeded, measurements should be taken in accordance with the Association of Noise Consultants' Measurement of Sound Levels in Buildings with the overheating mitigation strategy in use.

The Guide to Demonstrating Compliance with the Noise Requirements of Approved Document O (v1.1 November 2024) published by Acoustic & Noise Consultants with the Institute of Acoustics sets thresholds (in paragraph 4.1.7.) for external noise levels at which detailed dynamic thermally modelling must be undertaken, as indicated below.

Parameter	Moderate risk location (i.e. outside of Greater London)
dBA $L_{eq,8h}$ averaged over 8 hours (between 11 pm and 7 am)	≥ 50 dB
dBA L_{Fmax} more than 10 times a night (between 11 pm and 7 am)	≥ 65 dB

Table 2-3: ADO thresholds for external noise levels (Copy of Table 1 from the ANC/IOA Approved Document O – Noise Guide)

The detailed thermal modelling shall be undertaken in accordance with CIBSE TM59 (using the criteria specified within ADO) during detailed design phases and, where the risk of overheating is identified, will identify a strategy for limiting solar gains (shutters, blinds, ceiling fans, etc) and removing excess heat.

Where passive means to remove heat (e.g. opening windows, ventilation louvres) conflict with acceptable internal noise levels, alternative mechanical means of cooling may need to be introduced. This analysis will be used by the design team to develop a suitable overheating strategy for the residential uses of the proposed development.

2.7 Net Zero Carbon approach

2.7.1 Why zero carbon?

To minimise the risk of catastrophic climate change, the average global temperature rise must be kept to below 1.5°C in line with the Paris Agreement. According to the Intergovernmental Panel for Climate Change (IPCC)[1], the world has to take significant action to drastically reduce Greenhouse Gas (GHG) emissions by 2030 to avoid crossing this threshold. If we do not, the effects of this global heating will be dangerous, costly and irreversible.

Around the world, government, investors, agencies and communities are calling for stronger action on climate change in all sectors. The buildings sector has a very large carbon footprint when indirect emissions are accounted for. About 9% of global energy-related CO_2 emissions result from the use of fossil fuels in buildings, another 18% come from the generation of electricity and heat used in buildings, and an additional 10% is related to the manufacturing of construction materials.[2]

2.7.2 Cundall approach

Cundall, as founding signatories of the WorldGBC Net Zero Carbon Building Commitment, is committed to advocate for, and deliver, zero carbon solutions globally. In 2021, we launched our Zero Carbon Design 2030 initiative; the main goal being that by 2030 every project we work on will be net zero carbon.

To achieve this, we will work with our clients and collaborate with project teams, to develop strategies and solutions for every building to be net zero carbon from day one.

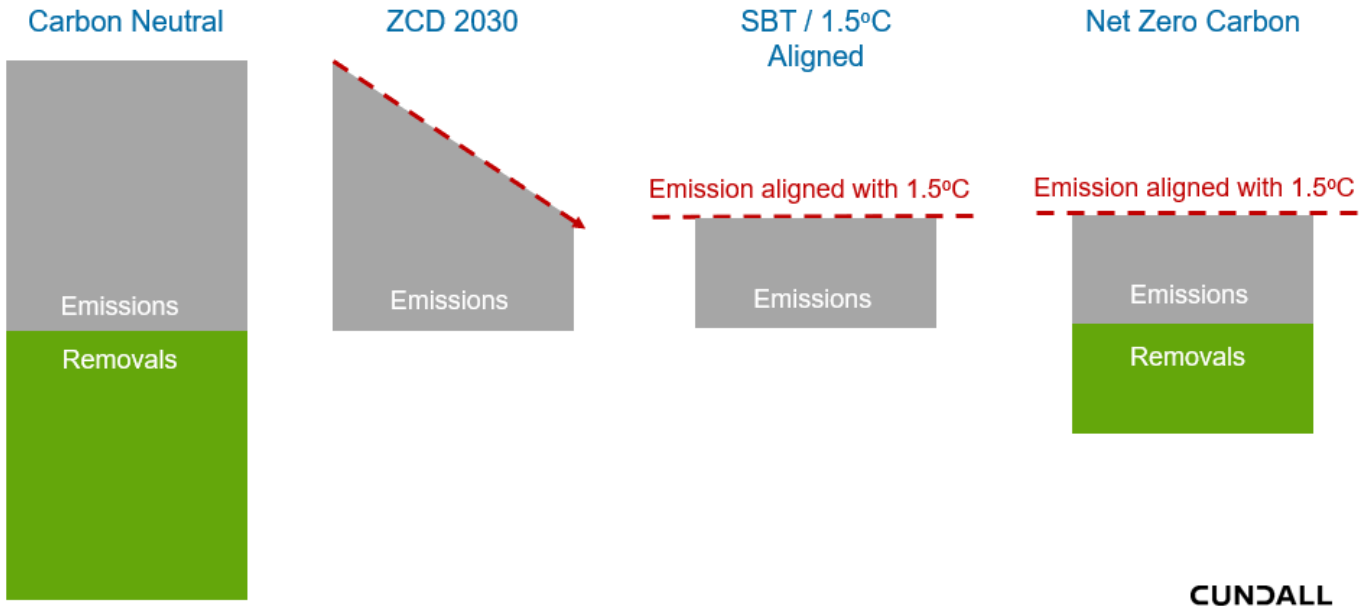


Figure 2-1: Cundall Net Zero Carbon approach

Where this is not possible, the building should have a future proofing strategy in place to ensure it can easily transition to net zero carbon in the future ('zero carbon ready').

[1] IPCC, 2021: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, https://www.ipcc.ch/assessment-report/ar6/

[2] https://www.iea.org/reports/tracking-buildings-2021

2.7.3 Carbon reduction opportunities

In light of the findings of this report, the project would require the implementation of acoustic design solutions and acoustics treatments. It is advised to consider the adoption of solutions that have a minimal carbon footprint.

One of the primary ways to achieve carbon reduction in acoustics is by minimising the upfront embodied carbon, which refers to the carbon emissions generated during the manufacturing, transport and installation of acoustic products.

In order to support our commitment to achieving net zero carbon, we have included a table below that highlights alternative approaches that could be adopted for acoustic material selection and procurement methods. These are considered carbon reduction opportunities and we suggest these options with the intention of encouraging the project team to explore and adopt more sustainable construction practices, ultimately advancing towards the net zero carbon goal.

We would be delighted to support you in exploring diverse options for achieving net-zero carbon design. Please contact us to discuss how we can accompany you on this transformative journey towards a more sustainable future.

Item	Typical approach	Alternative approach	Rationale
General product selection	▪ Source globally ▪ Selection is price driven	▪ Source from local suppliers ▪ Select products with Environmental Product Declaration and with relatively low embodied carbon	Transportation of materials contribute to the embodied carbon. Sourcing locally can reduce the fuel consumption used during transportation, reducing the carbon emitted. Review and comparing the Environmental Product Declaration for different products can help in sourcing products that have the lowest embodied carbon.
Façade design	▪ Glazing	▪ Rationalise glazing elements to suit minimum acoustic performance requirements	The production of glass has one of the highest carbon emissions compared to other common building materials. By decreasing the amount of glazing or optimizing the design to minimise the necessary glass, a substantial reduction in embodied carbon can be achieved.
Ventilation	▪ Natural or mechanical	▪ Use of detailed noise modelling to inform where a natural ventilation strategy can be used rather than a mechanical strategy ▪ Use of external screening to reduce likelihood of overheating	Reducing the requirement for mechanical ventilation and promoting passive measures for overheating control will result in lower operational carbon.

Table 2-4: Carbon reduction opportunities

3.0

Baseline conditions

3.0 Baseline conditions

3.1 Noise survey - methodology

To determine the existing noise climate at the proposed development, an environmental noise survey was undertaken from Wednesday 10 to Friday 12 September 2025.

A sound level meter was used over a two-day period to capture the baseline noise conditions at the proposed site. The sound level meter position was on the northern end of the existing building at 2 metres (m) above the existing ground level, 16m from the edge of Moorcroft Road, and with direct line-of-sight to Moorcroft Road.



Figure 3-1: Survey measurement position

The survey was undertaken following guidance from BS 7445-1:2003 and BS 4142 using a Class 1 sound level meter and peripherals as detailed below in Table 3-1. The meter was field-calibrated before and after use with no significant drift witnessed throughout the survey period. Calibration certificates for all equipment are available upon request.

Equipment	Type	Serial no.
Sound level meter	Casella 633	1211404
Pre amp	Casella 495	1180
Microphone	Casella 251	3557
Calibrator	Casella 120/1	3574169

Table 3-1: Equipment details list

All measurements were undertaken by competently trained Cundall acoustics staff.

Weather conditions during the survey were clear, mid/low wind and dry over the survey period.

3.2 Results

3.2.1 Observations

During the survey installation it was observed and noted that the dominant sound source is road traffic along Moorcroft Road and the local road network. Noise from substation located to the west of the development was not audible by attending site engineers.

3.2.2 Daytime results

A summary of the measured daytime (07:00-23:00) survey results is presented in Table 3-2 below:

Date	Ambient sound level, dB $L_{Aeq,T}$	Range of background sound levels, dB $L_{A90,15\ mins}$	Maximum sound level, dB $L_{AFMax,15\ mins}$
10/09/2025	58	52 - 67	37 - 54
11/09/2025	61	54 - 71	41 - 60
12/09/2025	58	60 - 64	46 - 53

Table 3-2: Daytime survey results

3.2.3 Night-time results

A summary of the measured night-time (23:00-07:00) survey results is presented in Table 3-3 below:

Date	Ambient sound level, dB $L_{Aeq,T}$	Range of background sound levels, dB $L_{A90,15\ mins}$	Maximum sound level, dB $L_{AFMax,15\ mins}$
10/09/2025	49	36 - 60	32 - 46
11/09/2025	50	42 - 61	36 - 45

Table 3-3: Night-time survey results

3.2.4 Summary results

A summary of the survey results, corrected to noise levels at the facades of the proposed residential building, is presented in Table 3-4 below.

Façade position	Daytime (07:00-23:00) ambient sound level, dB $L_{Aeq,10hr}$	Night-time (07:00-23:00) ambient sound level, dB $L_{Aeq,8hr}$	Night-time (07:00-23:00) 10th Highest 2-minute L_{AFMax}, dB
Facades on north/northeast boundary of site directly facing Moorcroft Road	62	51	71
Facades to rear of development facing away from Moorcroft Road (including 5 dB correction for building screening)	52	43	63

Table 3-4: Summary of daytime and night-time results at facades of proposed development

4.0

Façade sound insulation and ventilation

4.0 Façade sound insulation and ventilation

4.1 Façade sound insulation

The resultant façade noise levels (summarised in Table 3-4) have been used to determine the sound insulation requirements for the proposed development to see that suitable internal ambient noise levels can be achieved. Calculations have been undertaken in accordance with the simplified calculation methodology presented in Annex G2 of BS 8233.

Façade position	Minimum facade sound insulation
Facades on north/northeast boundary of site directly facing Moorcroft Road	27 dB $R_w + C_{tr}$
Facades to rear of development facing away from Moorcroft Road	17 dB $R_w + C_{tr}$

Table 4-1: Summary of daytime and night-time results at facades of proposed development

Standard thermal double glazing (e.g., 4 mm pane / 12 mm air gap / 6 mm pane) rated minimum 32 dB R_w / 28 dB R_w+C_{tr} is expected to be acceptable from an acoustic perspective to all residential facades

4.2 Ventilation provision

The intended ventilation strategy for the proposed development will comprise MVHR, however the impact of either passive ventilation or MVHR has been investigated.

4.2.1 Passive ventilation

Passive ventilation is typically provided by a trickle ventilator within a window frame or building façade element. Such ventilators will need to be acoustically designed so as not to adversely influence the overall façade sound insulation. Table 4-2 below provides the minimum ventilator acoustic requirements relative to the minimum façade sound insulation requirements discussed above:

Facade sound insulation	Trickle vent acoustic performance	Example trickle ventilation
27 dB $R_w + C_{tr}$	27 dB $D_{n,e,w} + C_{tr}$	Non-acoustic, standard trickle vent
17 dB $R_w + C_{tr}$	17 dB $D_{n,e,w} + C_{tr}$	

Table 4-2: Trickle ventilation attenuation performance

The above acoustic requirements are based on a single ventilator being included within a room. If multiple ventilators are required, then the acoustic rating will need to be increased by [10*log(N)] where N = number of ventilators per room. Note that this may necessitate the need for acoustically rated window ventilators or trickle vents.

4.2.2 MVHR ventilation

In the case of the proposed development installing MVHR style ventilation, the mechanical ventilation systems must be designed to comply with the noise limits indicated in Table 4-3, below.

Area type	Mechanical services internal noise limit, NR ($L_{eq,T}$)
Living space	30
Bedroom	25

Table 4-3: Mechanical ventilation noise limits

4.3 Thermal comfort (overheating)

If a building overheats, the normal method of providing thermal comfort (i.e. cooling a space down) is to open a window. However, when a window is opened to provide 'ventilative' cooling internal noise levels are likely to be increased. The impact this will have on the occupants of the space will depend on the following:

- Noise levels inside the space when windows are open; and
- How often windows need to be opened to provide relief from overheating.
- Where required, detailed thermal modelling shall be undertaken in accordance with CIBSE TM59 (using the criteria specified within ADO) during detailed design phases and, where the risk of overheating is identified, will identify a strategy for limiting solar gains (shutters, blinds, ceiling fans, etc) and removing excess heat.
- Where passive means to remove heat (e.g. opening windows, ventilation louvres) conflict with acceptable internal noise levels, alternative mechanical means of cooling may need to be introduced. This analysis will be used by the design team to develop a suitable overheating strategy for the residential uses of the proposed development.

Drawing FPW-CDL-XX-XX-D-AS-45001, in the Appendices of this report, indicates the noise risk (as summarised below) associated with the use of openable windows at night, in bedrooms, to alleviate overheating.

Low Risk

- This indicates that the external façade noise is at an acceptable level to leave windows partially open (a maximum open area of ~5% of the room's floor area) at night with negligible risk of internal noise levels exceeding the limits specified within ADO.
- No further noise mitigation is deemed necessary in these areas and the simplified method can be used to demonstrate compliance with ADO.

Medium Risk

- Detailed thermal modelling will need to be undertaken to demonstrate compliance with ADO and determine if and how much windows will need to be open to prevent overheating.
- Where external façade noise levels are at medium risk, openable windows may be feasible, subject to a maximum open area of circa **0.3 m^2**
- Alternatively, attenuated passive ventilation modules may be suitable subject to the airflow requirements and available façade area.

High Risk

- High Risk indicates that noise levels at the façade is too high to allow passive ventilation. Mechanical ventilation will most likely be necessary to reduce the risk of overheating.
- It is unlikely that the use of openable windows in non-bedrooms of these façade areas would be feasible as a means of providing make-up air to support a mechanical extract system.
- Detailed thermal modelling will need to be undertaken to demonstrate compliance with ADO and determine if and how much windows will need to be open to prevent overheating.

4.4 Building envelope

To control noise break-in from outside, it is considered good practice for the external wall construction to provide a sound reduction at least 10 dB above that of minimum glazing requirements.

This level of sound insulation should be comfortably achieved by the current external wall type proposals (E-WM-27).

5.0

Internal acoustics design

5.0 Internal acoustics design

Acoustic performance requirements for internal partitions, doors, and reverberation control are illustrated in drawing FPW-CDL-XX-XX-D-AS-45011, in the Appendices of this report. Note that this drawing relates to the First Floor only; the same acoustic principles will apply to other floors of the development.

The main separating wall and floor partitions between adjacent apartments and apartments to corridors need to provide the minimum sound insulation performance requirement by Building Regulations ADE.

It is noted the scheme is proposed to be registered under Robust Details (E-FC-12 and E-WM-27) which is an approved loadbearing masonry Building Regulation Combination under the Robust Details scheme.

To ensure the Development meets the three key requirements of the Robust Details scheme and avoid the need for pre-completion testing, the following must be adhered to:

1. Plots must be correctly registered
2. The building control body should be notified before works start on site
3. Construction must be in accordance with the Robust Details Handbook.

General advice on internal partitions, floors, doors, and reverberation control is provided in the following sub-sections:

5.1 Walls

5.1.1 E-WM-27 Party wall

General construction principles for the E-WM-27 party wall build-up are outlined in Figure 5-1:

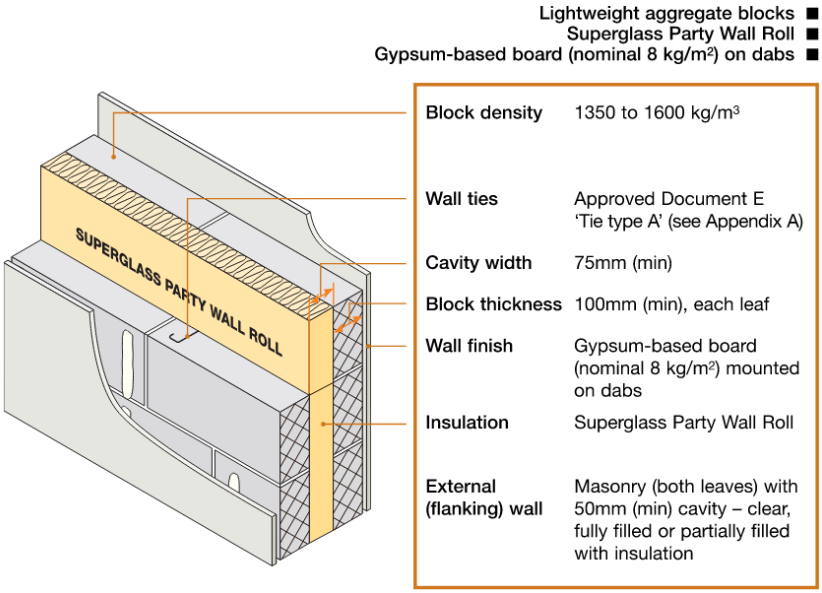


Figure 5-1: Robust Detail E-WM-27

5.1.1.1 Control of flanking sound transmission

Where E-WM-27 walls form a junction with the external façade, the a flexible cavity stop must be provided unless the external wall cavity is fully filled with built in mineral wool, as per the Robust Detail guidance reproduced in overleaf.

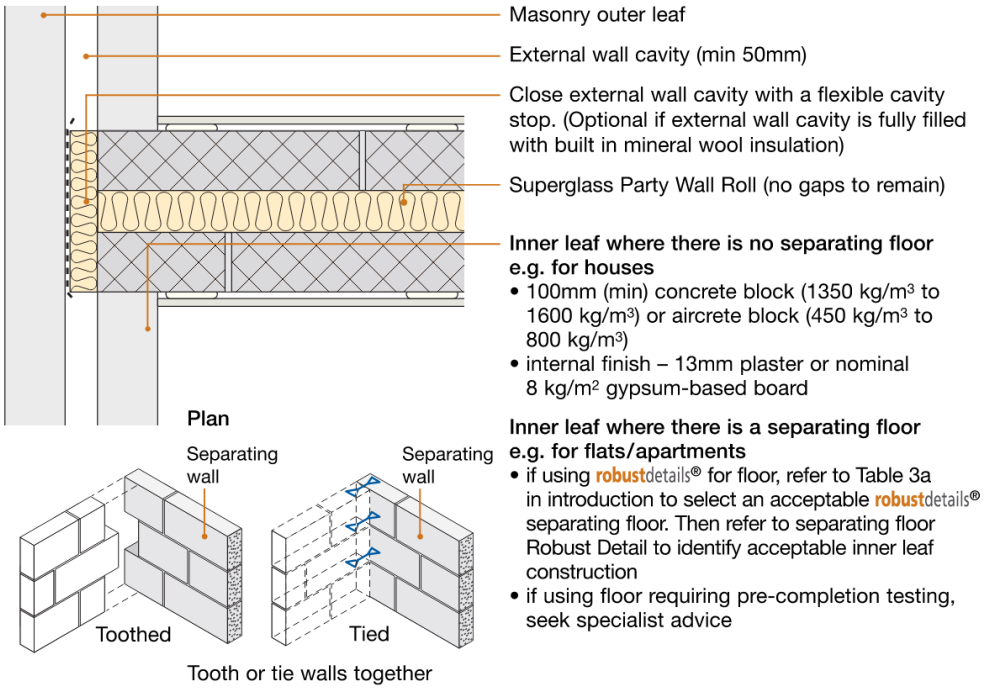


Figure 5-2: E-WM-27 Typical external junction detail -pitched roof without

5.1.1.2 Roof interface details

To achieve the required levels of sound insulation and Robust Details compliance, the junction between the separating party wall and the roof must be filled with a flexible closer, and a minimum of 100 mm of mineral wool insulation must be provided above the ceiling finish, in accordance with the Robust Detail guidance reproduced in Figure 5-3:

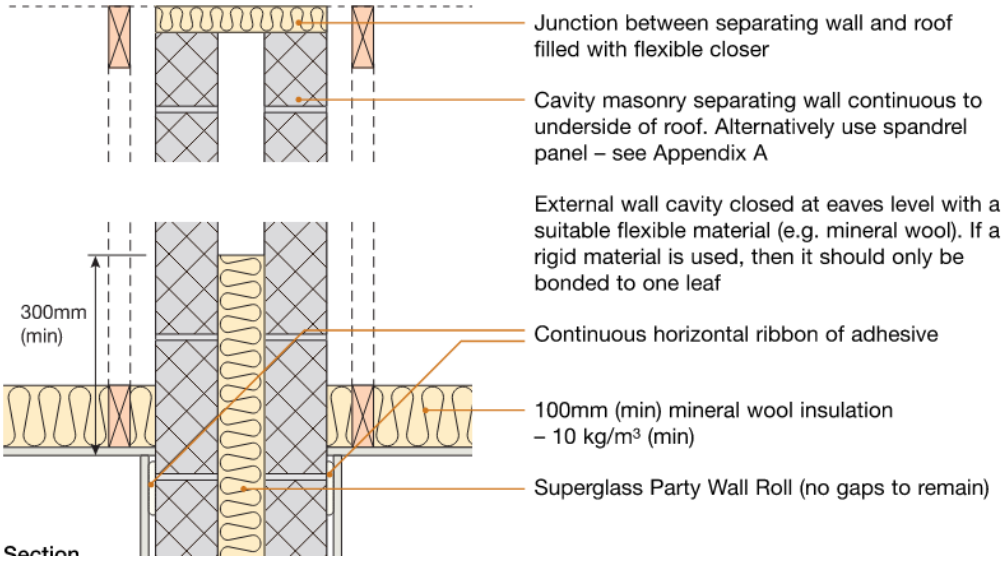


Figure 5-3: E-WM-27 roof junction – pitched roof without room-in-roof

5.1.2 Internal partitions

The internal walls within apartments are subject to a minimum lab tested performance of 40 dB R_w when they separate bedrooms or rooms containing WCs with other rooms.

An example partition construction is provided in Table 5-1, overleaf:

Wall type	Build up	Thickness	Estimated airborne sound insulation
Non-load bearing	1 layer of 12.5 mm Wallboard plasterboard on both sides + 70 mm non-loadbearing metal stud, cavity filled with mineral wool insulation	100 mm	43 dB R_w

Table 5-1: Estimated performance of internal partitions

5.1.3 Plant rooms, lift shafts, and core walls

In addition to meeting the minimum sound insulation performance requirement of the Building Regulations, partitions between plantrooms, lift shafts and cores should be designed to see that transmitted equipment noise levels are no greater than 25 dB L_{Aeq} within adjacent residential apartments.

To mitigate potential structure borne noise, no equipment should be mechanically fixed to partitions that are shared with residential apartments without suitable resilient brackets.

Where higher equipment noise levels are expected, or mechanical fixings cannot be avoided, additional drywall linings are recommended to the residential side of separating partitions to see that suitable resilience to air and structure borne sound transmission is provided. Such linings should fully encapsulate the plantrooms, lift shafts or cores where they adjoin residential dwellings, regardless of the room type within the dwelling.

5.1.4 Penetrations though walls

Services should not pass though party walls between adjacent dwellings.

Any pipes or electrical cable penetrations through corridor party walls into apartments shall be suitably detailed.

5.2 Floors

General construction principles for the E-FC-12 party floor build-up are outlined in Figure 5-4:

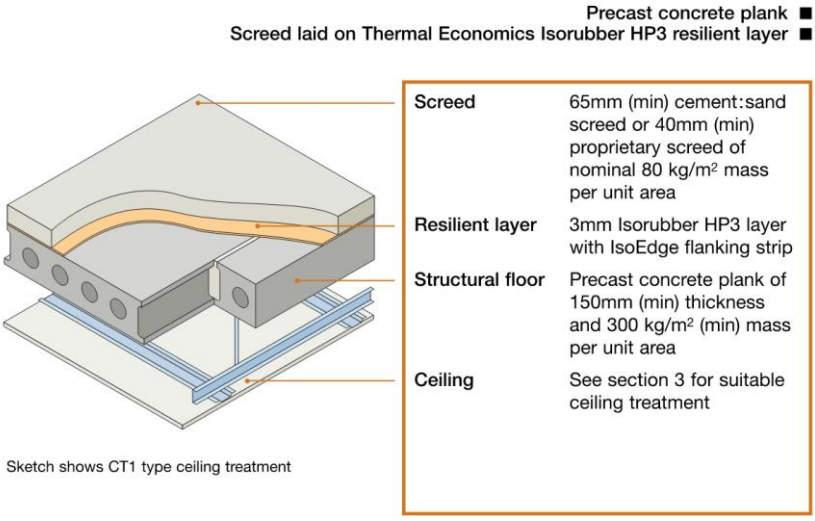
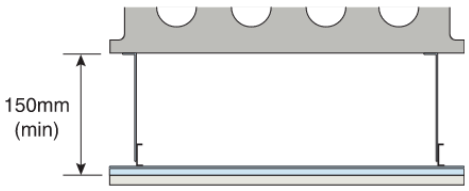


Figure 5-4: Robust Detail E-FC-12

5.2.1 Ceiling finish

Various ceiling solutions are deemed acceptable, with the most economical being Type CT0, provided that the ceiling void has a minimum depth of 150 mm, as detailed in Figure 5-5:



CT0 – Metal ceiling system - 150mm void
To be used for 150mm (min) depth concrete planks

- any metal ceiling system providing 150mm (min) ceiling void
- one layer of nominal 8 kg/m² gypsum-based board

Figure 5-5: Ceiling CT0 with minimum 150 mm ceiling void

5.2.2 Interface with wall junctions

Robust Details junction details for the interface with the E-WM-27 wall construction are reproduced in Figure 5-6 and Figure 5-7 for external wall and internal party walls, respectively.

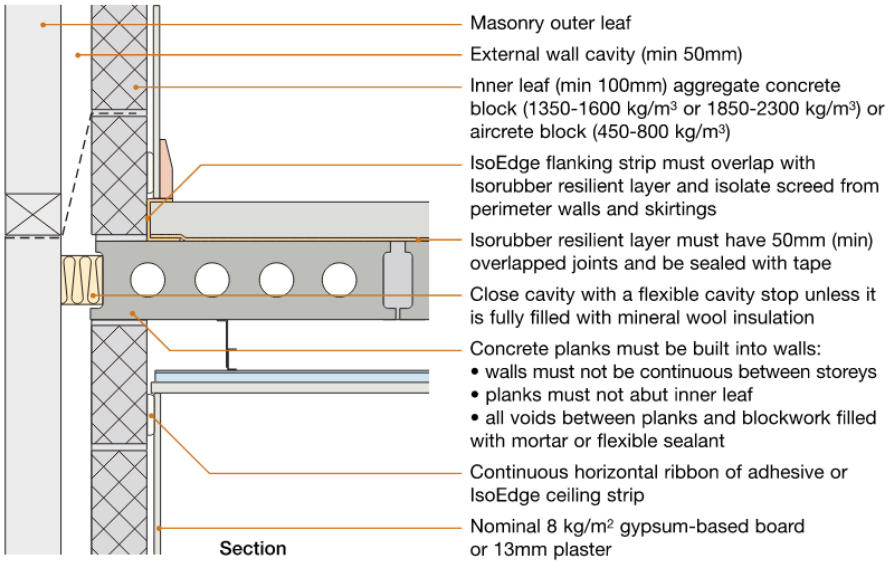


Figure 5-6: E-FC-12 External (flanking) wall junction)

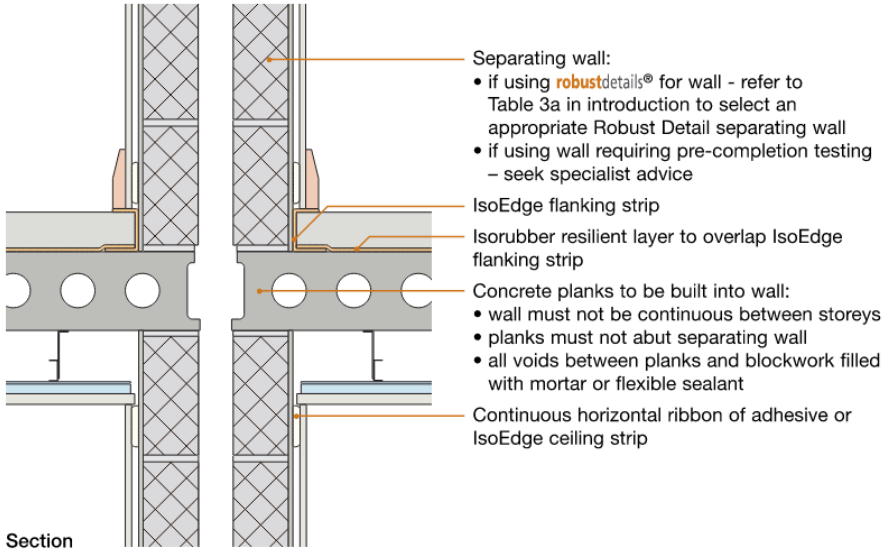


Figure 5-7: E-FC-12 Separating wall junction

5.2.3 Penetrations though floor

Any pipes and ducts that penetrate party floors shall be appropriately detailed. Guidance for E-FC-12 service pipe penetration though a separating floor is reproduced in Figure 5-8.

Any fire stopping shall be flexible and prevent rigid contact between the service and floor construction.

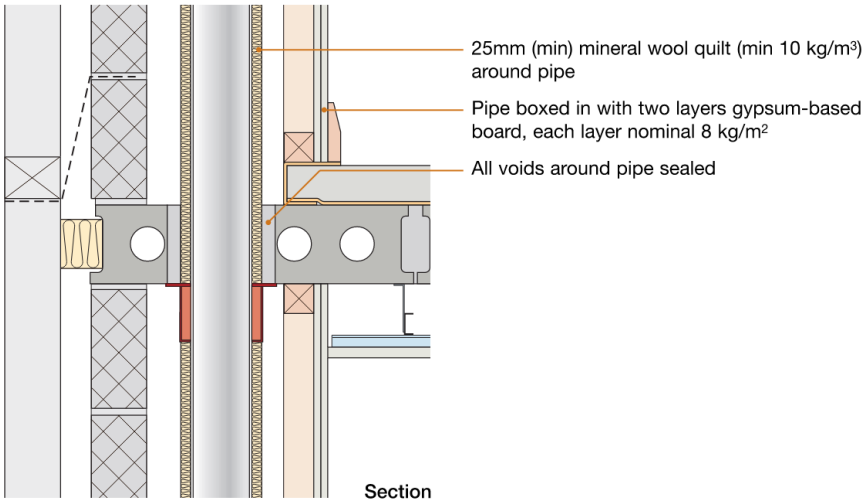


Figure 5-8: E-FC-12 typical detail for service pipes though separating floor

5.3 MVHR cupboards

MVHR cupboards within residential apartments should provide a minimum sound reduction index of 40 dB R_w, with doors of minimum 29 dB R_w.

MVHR cupboards should not be located in such a way that they open into bedrooms.

Where MVHR cupboards are located adjacent to a living room or bedroom, the MVHR unit itself must not be fixed to the common partition.

5.4 Doors

ADE specifies that doors to residential dwellings should be deigned to achieve a minimum mass of 25 kg/m^2 or a lab rated sound insulation of 29 dB R_w.

In order to maintain their acoustic integrity, acoustically rated doorsets should not be undercut or have grilles for ventilation or any other purpose.

All acoustic doorsets should be of proprietary type, by a specialist manufacturer. The acoustic rating of the doorset should include the door, frame, seals, hinges, any furniture, and any required glazing or vision panels.

Gaps between the door frame and the surrounding building elements should be packed in accordance with partition manufacturer's requirements and sealed prior to fitting architrave, to ensure that the overall sound insulation performance is not degraded.

5.5 Reverberation control

It is a requirement (Requirement E3) of the Building Regulations that reverberation is controlled in common areas of multi-residential buildings including entrance halls, corridors and stairwells.

Corridor area where Requirement E3 is applicable are identified in the Acoustic strategy drawings.

Two methods are described to satisfy Requirement E3:

5.5.1 Method A

For entrance halls, corridors or hallways, that cover an area equal to or greater than the floor area, with a Class C absorber or better. It will normally be convenient to cover the ceiling area with the additional absorption.

Method A can generally be satisfied using proprietary acoustic ceilings. However, the absorptive material can be applied to any surface that faces into the space.

5.5.2 Method B

In comparison with Method A, Method B takes account of the existing absorption provided by all surfaces. In some cases, Method B should allow greater flexibility in meeting Requirement E3 and require less additional absorption than Method A.

- For an absorptive material of surface area, S in m^2, and sound absorption coefficient, α, the absorption area A is equal to the product of S and α.
- The total absorption area, A_T, in square metres is defined as the hypothetical area of a totally absorbing surface, which if it were the only absorbing element in the space would give the same reverberation times as the space under consideration.
- For entrance halls, provide a minimum of 0.20 m^2 total absorption area per cubic metre of the volume. The additional absorptive material should be distributed over the available surfaces.
- For corridors or hallways, provide a minimum of 0.25 m^2 total absorption area per cubic metre of the volume. The additional absorptive material should be distributed over one or more of the surfaces.

6.0

Plant noise emissions

6.0 Plant noise emissions

6.1 Overview

Proposed external plant specifications have not yet been provided; however, if any plant is introduced, the noise emissions at the nearest noise sensitive receptors must be considered and assessed.

In accordance with the standard approach taken by Manchester City Council for assessing noise from fixed plant, appropriate noise limits are discussed herein that have been derived in accordance with BS 4142.

6.2 Background sound levels

The BS 4142 approach to background sound is that the representative background sound level is used as a baseline when considering and assessing new noise sources in relation to proposed developments. Accordingly, the figure below presents a histogram of the measured L_{A90} background sound levels over the duration of the survey, where the 'representative' level is typically the lowest, most regularly occurring value.

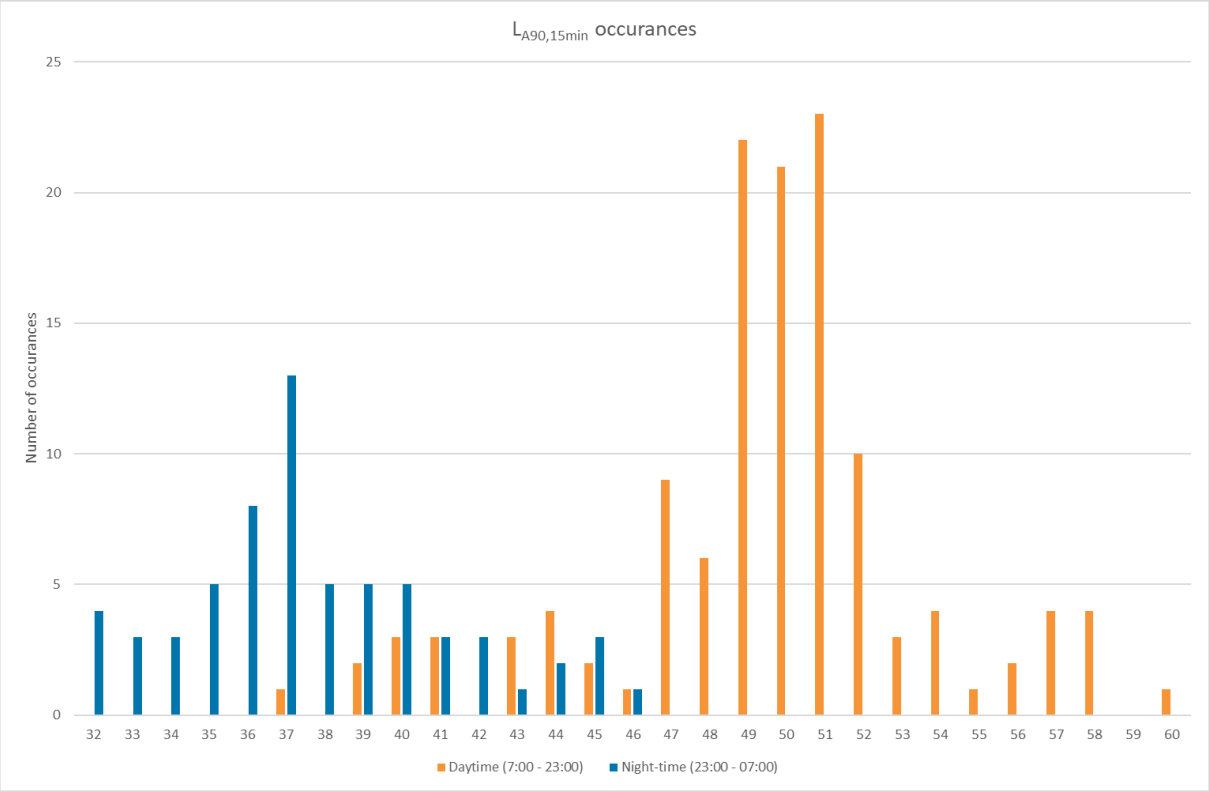


Figure 6-1: $L_{A90,15\,mins}$ histogram, orange = Daytime (07:00-23:00), blue = Night-time (23:00-07:00)

The measured data indicates that:

- The $L_{A90,15min}$ daytime levels range between 37 dB to 60 dB, with the most occurring noise level being 49 to 51 dB.
- The $L_{A90,15min}$ night-time levels range between 32 dB and 46 dB, with the most occurring noise levels being 37 dB.

Considering the above, the representative background noise values are selected to be:

- Daytime (07:00-23:00) 49 dB $L_{A90,15min}$
- Night-time (23:00-07:00) 37 dB $L_{A90,15min}$

These are considered representative of the existing NSRs around the development site, identified in Section 6.3.

6.3 Nearest noise sensitive receptors

Noise sensitive receptors (NSRs) are locations or dwellings where noise levels could potentially have a significant impact on the comfort, health or well-being of the occupants.

The nearest noise sensitive receptors (NSR) to the site are illustrated in Figure 6-2 and summarised in Table 6-1.

Reference	Description	Distance from footprint of proposed building
NSR1	Residential units (above retail units) to northwest on opposite side of Moorcroft Road	~30 m
NSR2	Residential units (above retail units) to directly to the southwest of the site	~6 m
NSR3	Residential units to northeast on corner of Moorcroft Road and Sledmoor Road	~25 m
NSR4	Residential units to southeast along Sledmoor Road	~15 m

Table 6-1: Noise sensitive receptor summary

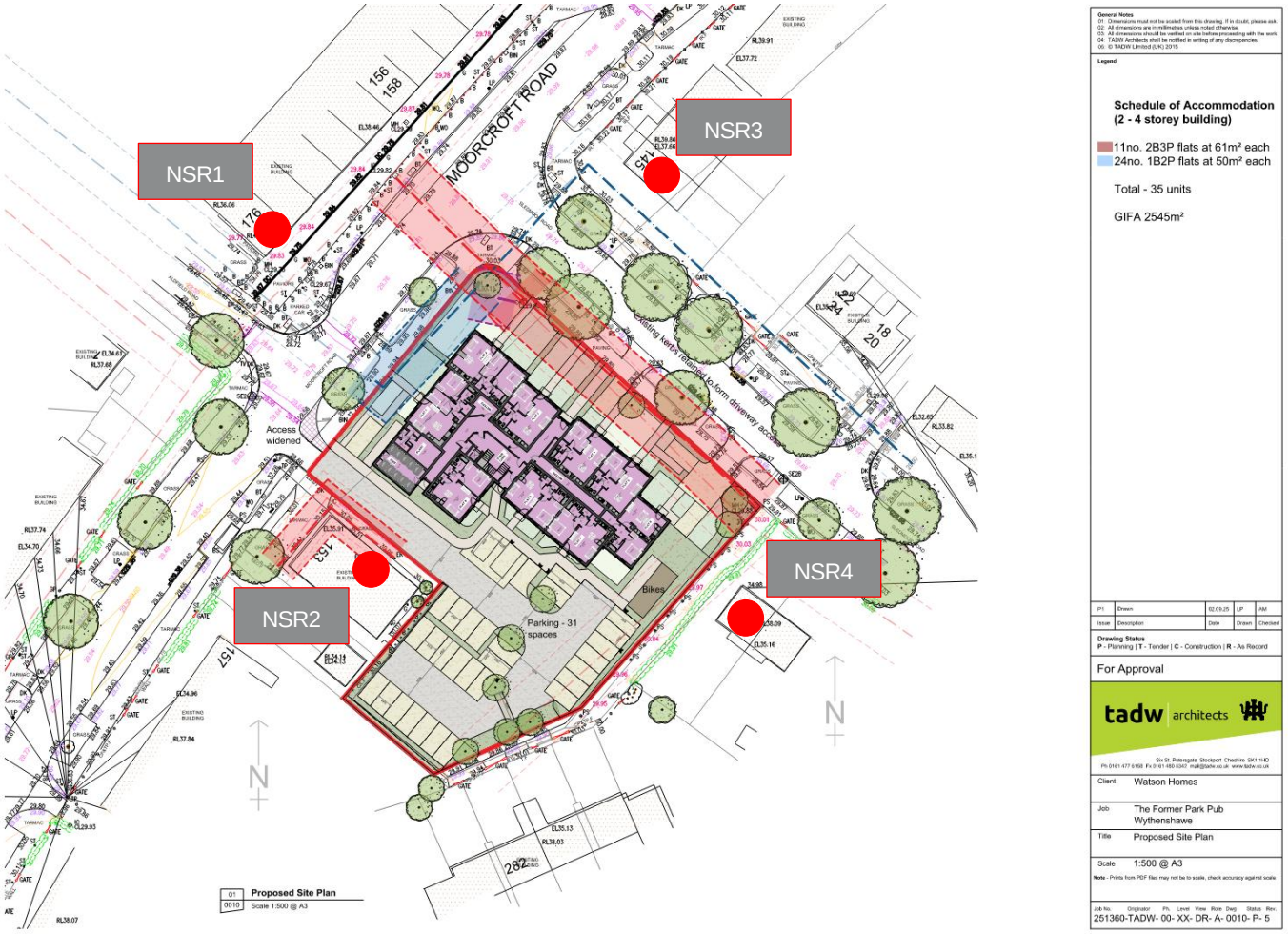


Figure 6-2: Proposed site plan (drawing 251360-TADW- 00- XX- DR- A- 0010- P- 5)

6.4 Plant emission limits

Based on the Manchester City Council requirement for plant emission limits to be 5 dB below the representative background sound level, Table 6-2, below summarises the relevant plant noise emission limits for the proposed development.

Assessment stage	Daytime (07:00-23:00)	Night-time (23:00-07:00)
Representative background sound level, dB $L_{A90,15\ mins}$	49	37
Noise rating level limit at 1 metre from NSR(s) façade, dB $L_{Ar,Tr}$	44	32

Table 6-2: Plant noise limits

The above limits are applicable to the cumulative noise level from all new items of plant when running under normal operation. Where applicable, acoustic feature corrections per guidance from BS 4142 should be applied to the specific plant noise level to account for any distinguishable acoustic characteristics (e.g. tonality, impulsivity, intermittency).

7.0

Conclusions

7.0 Conclusions

Cundall has been commissioned to prepare a Noise Impact Assessment and Acoustic Design Report for Watson Construction Ltd for the proposed development at the former Park Public House, Wythenshawe.

Environmental noise surveys were carried out in September 2025 to determine existing noise levels at the site and nearby noise sensitive receptors.

Based upon results of the noise survey, the noise impact on the proposed residential plots, in relation to the recommendations of NPPF, Manchester City Council noise policy, and Building Regulation requirements have been undertaken. Recommendations have been provided for façade, glazing and ventilation sound insulation requirements, to enable internal noise levels to meet relevant criteria.

Acoustic implications associated with proposed ventilation strategies and the control of overheating have been reviewed for compliance with Part O of the Building Regulations.

It is noted the scheme is proposed to be registered under Robust Details. Advice on internal partitions, doors, and reverberation control has been provided to provide the minimum sound insulation performance requirement by Building Regulations ADE.

Limiting levels for plant noise emissions to neighbouring noise sensitive receptors have been advised in accordance with the requirements of BS 4142 and Manchester City Council Noise Policy Guidance.

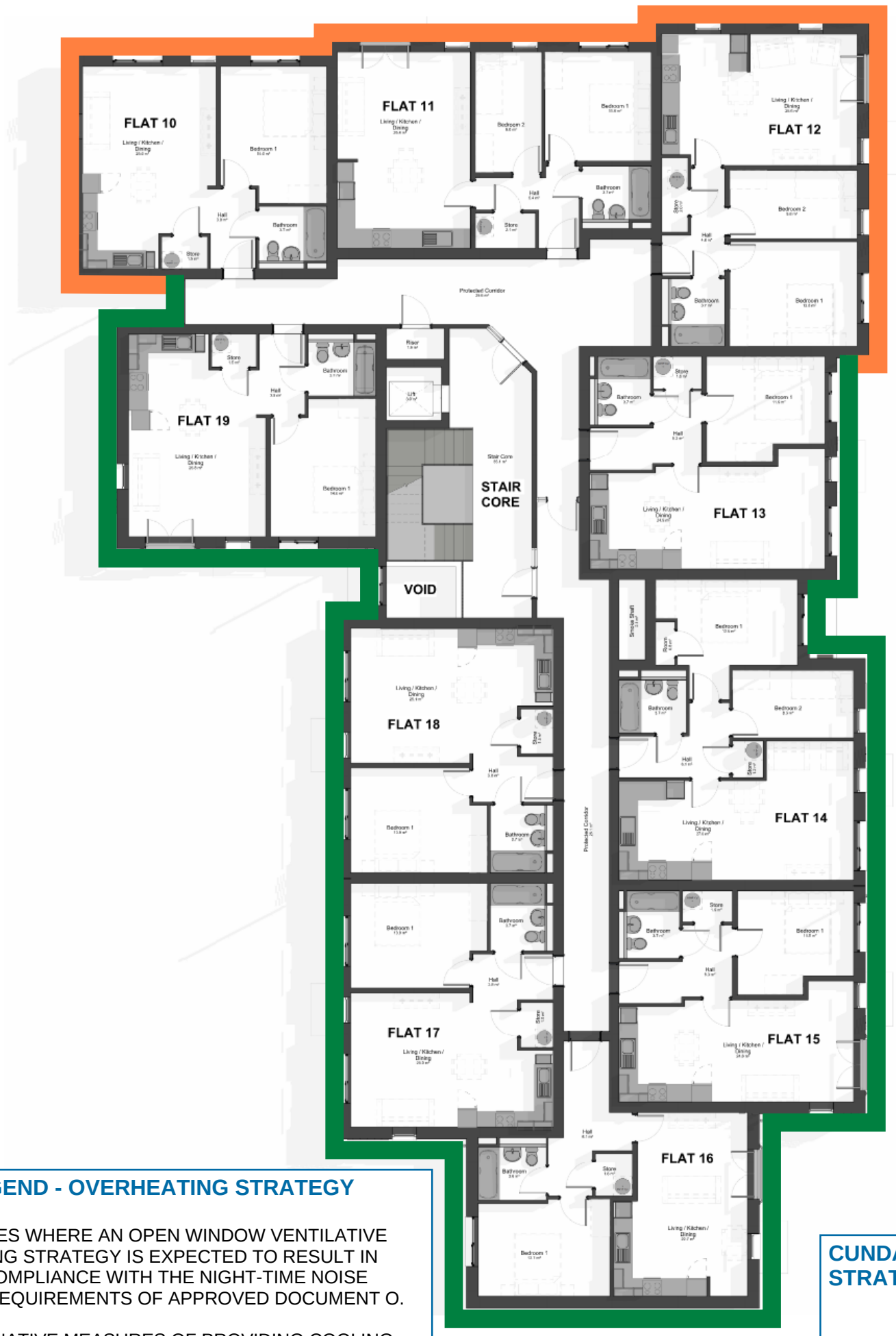
Appendices

Appendices

Appendix A FPW-CDL-XX-XX-D-AS-45001 – Open window ventilative cooling and glazing assessment

1046253	A3

THIS DRAWING MAY INDICATE ELEMENTS RELATED TO FIRE SYSTEMS. THESE ARE INDICATIVE ONLY AND FINAL NUMBER, POSITIONING AND PERFORMANCE MUST BE ESTABLISHED AS PART OF THE CDP WORKS TO MAINTAIN THE INTENT OF THE DESIGN FIRE STRATEGY



CUNDALL LEGEND - OVERHEATING STRATEGY

FACADES WHERE AN OPEN WINDOW VENTILATIVE COOLING STRATEGY IS EXPECTED TO RESULT IN NON-COMPLIANCE WITH THE NIGHT-TIME NOISE LIMIT REQUIREMENTS OF APPROVED DOCUMENT O.

ALTERNATIVE MEASURES OF PROVIDING COOLING WHICH DO NOT RELY ON OPENING WINDOWS TO HABITABLE ROOMS ARE ADVISED FOR NIGHT-TIME PERIODS.

FACADES WHERE AN OPEN WINDOW VENTILATIVE COOLING STRATEGY MAY BE FEASIBLE SUBJECT TO MAXIMUM OPEN AREA 0.3 m^2.

ALTERNATIVELY, ATTENUATED PASSIVE VENTILATION MODULES MAY BE SUITABLE SUBHECT TO AIRFLOW AND AVAILABLE FACADE AREA.

FACADES WHERE AN OPEN WINDOW VENTILATIVE COOLING STRATEGY IS EXPECTED COMPLY WITH THE NIGHT-TIME NOISE LIMIT REQUIREMENTS OF APPROVED DOCUMENT O.

CUNDALL LEGEND - GLAZING STRATEGY

(*unmarked*) STANDARD THERMAL DOUBLE GLAZING (e.g., 4 mm PANE / 12 mm AIR GAP / 6 mm PANE) RATED MINIMUM 28 dB Rw+Ctr IS EXPECTED TO BE ACCEPTABLE FROM AN ACOUSTIC PERSPECTIVE TO ALL RESIDENTIAL FACADES

Issue	Date	Description	By	Chkd	Verfd
P02	06/10/25	SECOND ISSUE	CO	NB	CO
P01	17/09/25	FIRST ISSUE	AH	MP	CO

Project
THE PARK PUB, WYTHENSHAWE

Client
WATSON GROUP

Status
S2 - FOR INFORMATION

Title
OPEN WINDOW VENTILATIVE COOLING AND GLAZING ASSESSMENT

Project No.
1046253

Scale
NTS

Drawing Number
FPW-CDL-XX-XX-D-AS-45001

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Website: www.cundall.com

Appendix B FPW-CDL-XX-00-D-AS-45011 – Acoustic performance requirements first floor (typical for all other floors)



1046253 | A0

Based on.

Architects Drg No.	Rev
Structural Drg No.	Rev
Survey Drg No.	Rev
Other Drg No.	Rev
Other Drg No.	Rev

THIS DRAWING MAY INDICATE ELEMENTS RELATED TO FIRE SYSTEMS. THESE ARE INDICATIVE ONLY AND FINAL NUMBER, POSITIONING AND PERFORMANCE MUST BE ESTABLISHED AS PART OF THE CDP WORKS TO MAINTAIN THE INTENT OF THE DESIGN FIRE STRATEGY

NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL, STRUCTURAL AND ENGINEERING SERVICES DRAWINGS, SPECIFICATIONS, SCHEDULES AND PROJECT SPECIFIC DOCUMENTS.
2. ALL PLANT AND EQUIPMENT IS TO BE INSTALLED TO MANUFACTURER'S RECOMMENDATIONS, ALLOWING FULL ACCESS FOR COMMISSIONING, MAINTENANCE AND REMOVAL/REPLACEMENT.
3. ALL DIMENSIONS IN mm UNLESS OTHERWISE STATED.
4. DO NOT SCALE FROM THIS DRAWING.
5. FOR SYMBOLS SEE DRAWING XXXX(XX)XXXX.

PARTITIONS LEGEND

IN-SITU REQUIREMENT (INDICATIVE EQUIVALENT LABORATORY RATING)

APPROVED DOCUMENT R PARTY WALLS:

≥ 45 dB $D_{nT,w}$ + C_r (≥ 53 dB R_w + C_r)

LABORATORY ONLY REQUIREMENT

≥ 40 dB R_w

INDEPENDENT WALL LINING RECOMMEND TO MITIGATE STRUCTURE BORNE NOISE

unmarked NO ACOUSTIC REQUIREMENT

DOORSET LEGEND

LABORATORY ONLY REQUIREMENT

≥ 29 dB R_w

unmarked NO ACOUSTIC REQUIREMENT

INTERNAL ACOUSTIC DESIGN CRITERIA LEGEND

35 — UPPER LIMIT FOR INTERNAL AMBIENT NOISE LEVEL, dB $L_{Aeq,1hr}$

35-30 — UPPER LIMIT FOR INTERNAL AMBIENT NOISE LEVEL IN BEDROOMS:
35 dB $L_{Aeq,16hr}$ (07.00 - 23:00)
30 dB $L_{Aeq,8hr}$ (23:00 - 07:00)

30 — UPPER LIMIT FOR BUILDING SERVICES NOISE LEVEL, NR $L_{eq,T}$

ACOUSTIC ABSORPTION IN COMMON AREAS TO ACHIEVE COMPLIANCE WITH REQUIREMENT E3 OF APPROVED DOCUMENT E (TYPICALLY ACHIEVED BY CLASS C ABSORPTIVE FINISH TO 100% OF AVAILABLE CEILING AREA).

NOTE: MAXIMUM IMPACT SOUND TRANSMISSION CRITERION TO ALL HABITABLE RECEIVER ROOMS IS <82 dB $L'_{nT,w}$

Issue	Date	Description	By	Chkd	Verfd
P01	06/10/25	FIRST ISSUE	AH	MP	CO

Project
THE PARK PUB,
WYTHENSHAWE

Client
WATSON GROUP

Title
ACOUSTIC PERFORMANCE REQUIREMENTS
FIRST FLOOR

Drawing Status
S2 - FOR INFORMATION

Project No. 1046253 | Scale NTS

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Drawing No.
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True scale at 1:1

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ZERO CARBON DESIGN 2030