P24-1740 / CAN / L013v2

18 August 2026

FAO John Hardy
Miller Homes (North West)
Hawthorn House
Newton-le-Willows
WA12 OHF

Dear John,

Discharge of Condition 14a relating to application 143085/FO/2025
Land at Hinchley Road, Manchester, M9 7FG

This technical note has been prepared to address potential noise impact upon proposed dwellings from fixed plant at Land at Hinchley Road, Manchester, M9 7FG. As a residential development there are limited sources of fixed plant noise however the development does include a proposed 500kVA substation and domestic Air Source Heat Pumps (ASHPs).

The Environmental Health Officer(s) at Manchester City Council (MCC) have requested that noise from proposed Air Source Heat Pumps (ASHPs) and the proposed substation are required to be assessed to discharge the criteria found within Condition 14a of planning approval 143085/FO/2025. Condition 14a is reproduced below:

"Externally mounted ancillary plant, equipment and servicing or louvres and plant associated with or located behind any louvres shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location.

Prior to commencement of the use hereby approved the scheme shall be submitted to and approved in writing by the City Council as local planning authority in order to secure a reduction in the level of noise emanating from the site. The scheme shall be implemented in full before the use commences or as otherwise agreed in writing by the City Council as local planning authority."

The planning application (143085/FO/2025) was supported by a noise assessment prepared by Hepworth Acoustics[1] which included daytime and nighttime attended noise measurements across the Site. This previous noise report did not include an assessment of ASHPs or the proposed substation.

Substation Noise

[1] Report ref: P25-018-R01v4, dated September 2025

Criteria

Noise from a substation should be assessed utilising BS4142[2]. The rating level is compared against a representative background sound level for both the daytime and night-time. However, due to the absence of a clearly derived typical daytime and night-time measured background sound level within the Hepworth Acoustics report[1], this is not possible in an ordinary sense.

Therefore, the general guidance background sound level of 35 dB $L_{A90,T}$ for sub-urban areas, found within section 14 of ES352[3] has been used as the value to compare the predicted level to within the assessment. This value has been used for a night-time assessment as this will be the constraining factor. The Hepworth Acoustics report[1] noise survey results show that daytime background sound levels at the Site are around 50 dB $L_{A90, 5min}$ with background sound levels elevated by constant road traffic noise from the nearby M60 Motorway. It is therefore considered that where this limit is met the requirements of Condition 14a will be achieved in the daytime and night-time.

Assessment

The proposed substation is located at the western edge of the Site. As shown in Figure 1, the proposed substation is approximately 6.5 m distance from the closest proposed dwelling.

It is understood that a 500 kVA transformer is proposed to be installed within a brick substation building and the sound power level of the transformer will be up to 56 dB L_{wA} based on the maximum permitted transformer noise level within ES352 (it is noted that many transformers are significantly below this maximum value). It is assumed that the transformer will operate continuously through the daytime and night-time, representing a worst-case scenario. This assessment has considered nighttime impact as this would be the constraining factor.

Based on calculations assuming the brick building has a sound reduction value of at least Rw 25 dB (in reality it is likely higher), the apparent sound power level of the transformer noise break out from the brick substation building will be 48 dB L_{wA}. This has accounted for louvres covering approximately 5% of the total building area providing ventilation.

A simple distance loss calculation has been carried out to predict the noise level at the nearest façade (featuring a bedroom window) of the closest proposed dwelling.

The predicted noise level is 24 dB $L_{Aeq,T}$ which falls 11 dB below guidance background sound level. This would be considered as low impact in terms of BS4142 methodology and will meet the Condition 14a criteria.

The façade closest to the substation (shown in Figure 1) is the side of the dwelling which will not feature windows, it is therefore likely that some screening will be provided by the dwelling itself

[2] BS4142:2014+A1:2019 'Methods for Rating and Assessing Industrial and Commercial Sound'

[3] Electricity Specification 352 'Design of Distribution Substations and Transforming Points', issue 11, February 2024

to windows of habitable rooms. This would further reduce the noise impact upon future occupiers.

Dwellings which are further away from the proposed substation will also experience a low impact due to further distance loss attenuation and screening provided by intervening buildings.

Figure 1: Distance between Substation and Closest Proposed Dwelling Window



Figure notes: Site plan provided by Miller Homes (North West)

It is therefore considered the requirements of Condition 14a will be met for noise from the substation.

Noise from ASHPs

Criteria

The ASHPs installed are domestic heat pumps that comply with the MCS Planning Standards and are therefore permitted development[4]. It is considered this Condition 14a therefore does not apply to the ASHPs. However, this section provides calculations to show the selected ASHP will meet the fixed noise limit within the MCS Planning Standards.
The MCS 020a[5] guidance uses the assessment threshold criteria of 37 dB(A). This is at 1 m distance away from the centre of a window or door to a habitable room (living room or bedroom).

Assessment

The precise installation location(s) of the proposed ASHPs are currently unknown. However, the unit to be installed is the Vaillant aroTHERM plus. Either the 3.5 kW, or 5 kW model will be installed depending upon the house type. The maximum sound power level of either model in heating mode is 48 dB L_{wA}. This has been used within the calculations.

The following equation, taken from the MCS 020a guidance, has been used to calculate the minimum distance required between any ASHP unit and any window or door to a habitable room to meet the threshold criteria outlined above. It has been assumed that the ASHPs will be installed close to a wall (within 1 m) and therefore a directivity factor of Q=4 has been applied.

$$L_p = L_w + 10.\log\left(\frac{Q}{4.\pi.r^2}\right)$$

The outcome of the calculation has indicated that any ASHP should be installed at a minimum of 3 m distance away from the centre of a window or door to a habitable room of a neighbouring property (living room or bedroom).

Cumulative Impact

The Institute of Acoustics (IoA) and the Chartered Institute of Environmental Health (CIEH) have produced an advice note[6] regarding the assessment of noise impact from ASHPs. The IoA / CIEH advice note states:

> *"Multiple units in close proximity may cause cumulative impact from combined sound. Greater care is needed in high-density environments where multiple units are likely to be co-located. Multiple ASHPs installed over time could cause background creep, which may be relevant in Level 2 assessments and local planning policy. Cumulative impact is unlikely to be a problem for detached, semi-detached and terraced properties based on recent research; it is only necessary to consider cumulative impact for courtyards or flats, depending on local context."*

[4] The Town and Country Planning (General Permitted Development) (England) Order 2015
[5] MCS 020 a) ISSUE 1.0 'Air Source Heat Pump Sound Calculation (For Permitted Development Installations)'
[6] IoA and CIEH 'Domestic Air Source Heat Pumps Professional Advice Note (2026)'

Furthermore, the inclusion of close boarded timber fencing of various heights (as seen in the approved Site plan[7]) between gardens is expected to provide further reduction to any potential cumulative ASHP impact, particularly at ground floor level. Therefore, cumulative noise impact from ASHPs is assumed to be low and has not been assessed further.

The ASHP External Unit Details, ASHP Plan (Both included in Appendix A) and house type planning drawings have been reviewed. The maximum height of an ASHP unit from floor level is 1.057 m and the minimum height of a first-floor window is 4.2 m, therefore the distance from ASHP units to all first-floor habitable windows will exceed 3 m. ASHP are located on the rear elevations of the houses and so are screened from ground floor lounge windows and have a separation distance of at least 10 m.

ASHP will be installed at a minimum of 3 m distance away from the centre of a window or door to a habitable room of a neighbouring property (living room or bedroom) and therefore will meet the fixed noise limit within the MCS Planning Standards and are therefore permitted development.

Conclusion

This technical note has been produced to assess the potential noise impact from the proposed substation and ASHPs upon proposed dwellings at Land at Hinchley Road, Manchester, M9 7FG. This has been carried out to discharge the criteria found within Condition 14a of planning approval 143085/FO/2025.

The assessment of noise from the proposed substation has indicated the Condition 14a criteria is achieved for the closest dwelling as well as for proposed dwellings located further away from the substation.

The precise locations of proposed ASHPs are currently unknown. Therefore, calculations have been undertaken which have indicated that any ASHP should be installed at a minimum of 3 m distance away from the centre of a window or door to a habitable room (living room or bedroom). In this case they will meet the requirements of the MCS Planning Standards and are therefore permitted development

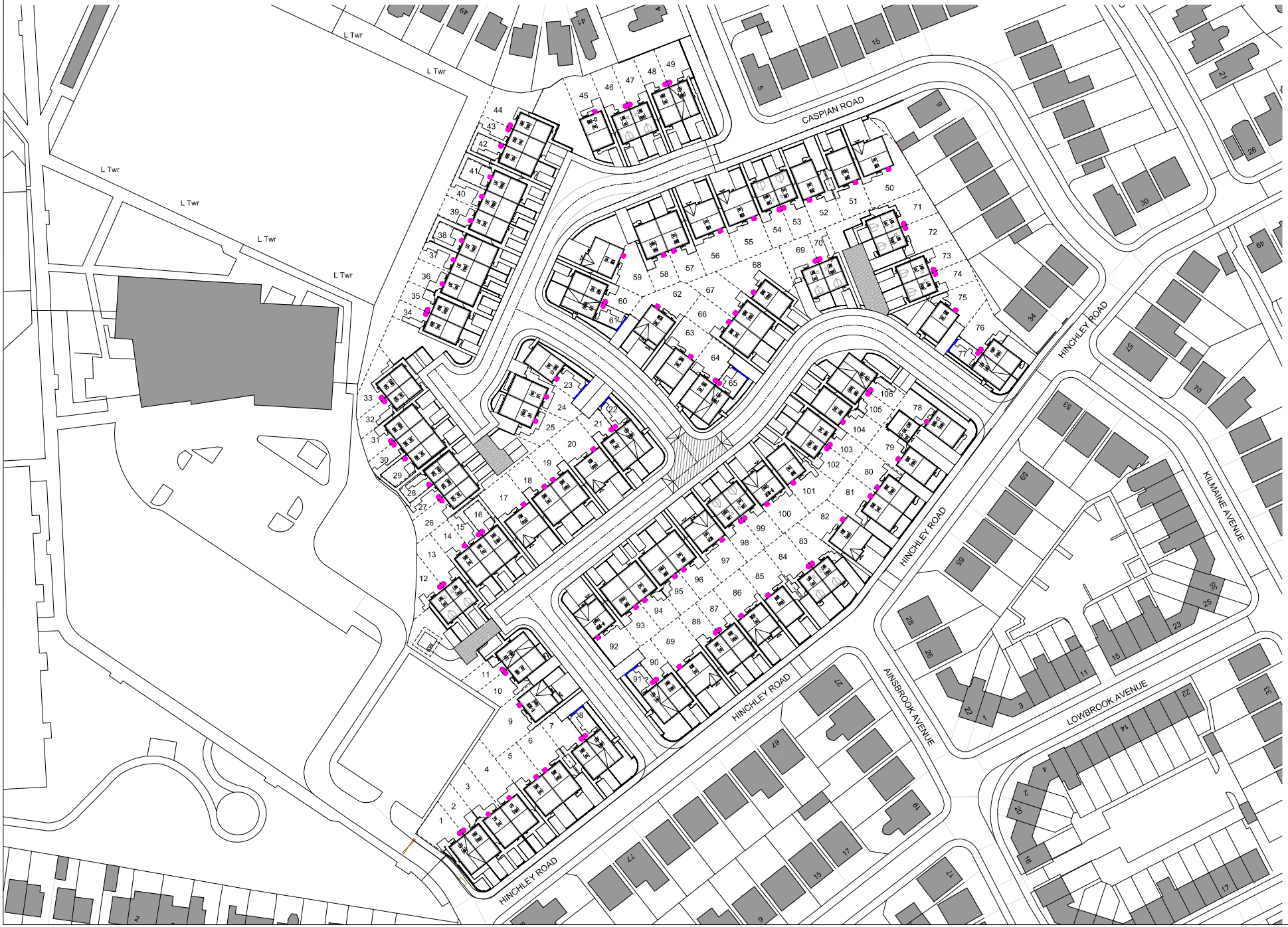
Based on the results of the assessment, it has been demonstrated Condition 14a can be discharged.

Yours sincerely,

[redacted]
Principal Acoustics Consultant – Climate, Air and Noise
Email: [redacted]

[7] Miller Homes (North West), Job no. 809380, Drawing no. HR-SL-01 rev D

Appendix A: ASHP Drawings



1:500 0 5 10 15 25m

ASHP: -

- Denotes approximate location of air source heat pump (ASHP).

Refer to standard detail ref. SV-GID-EN-008 - ASHP EXTERNAL UNIT DETAILS (C2)

Rev.	Description	Drawn	Date
-	-	-	-

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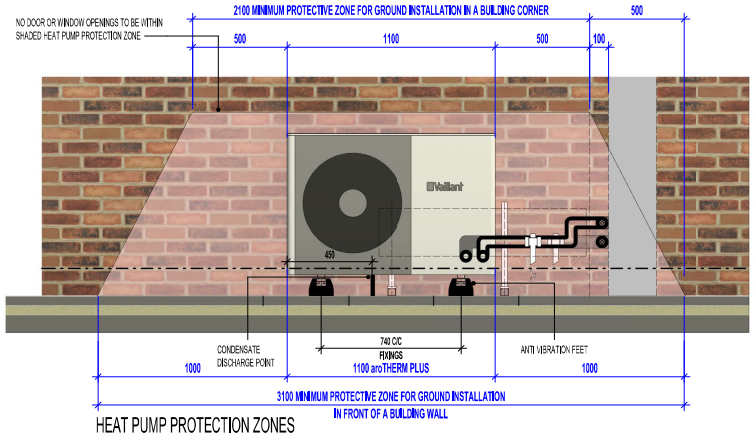
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HINCHLEY ROAD,
CHARLESTOWN

Drawing Title
AIR SOURCE HEAT PUMP PLAN

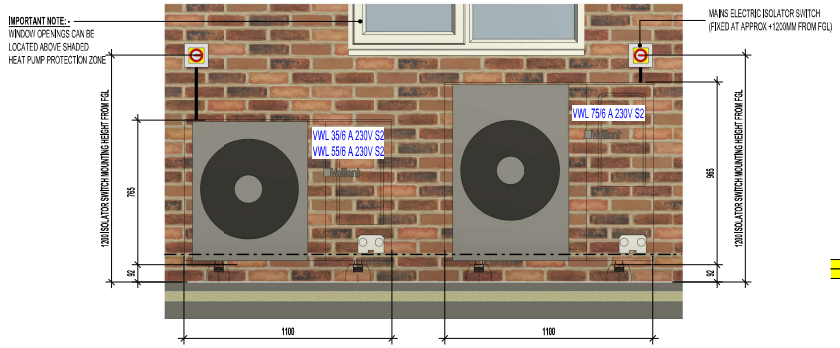
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Job No.	Drawing No.	Revision
809380	HR- ASHP-01	-

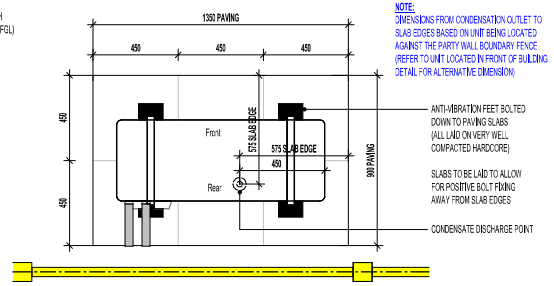
Original Sheet Size A1 Do Not Scale From This Drawing



HEAT PUMP PROTECTION ZONES

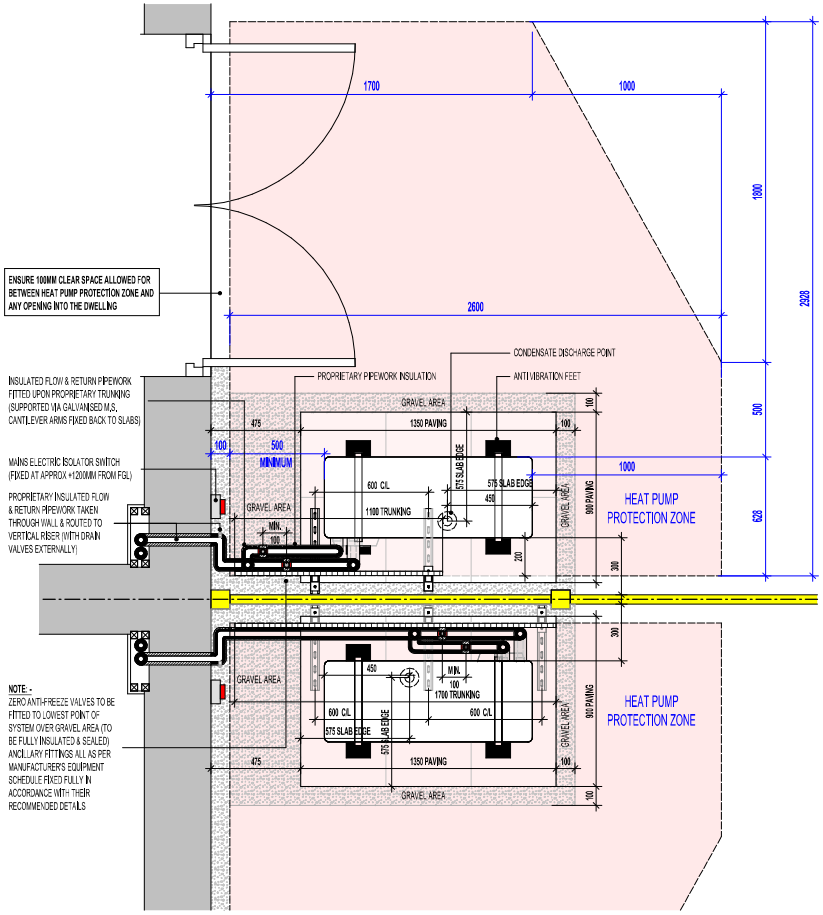


HEAT PUMP EXTERNAL UNIT DIMENSIONS



NOTE: DIMENSIONS FROM CONDENSATION OUTLET TO SLAB EDGES BASED ON UNIT BEING LOCATED AGAINST THE PARTY WALL BOUNDARY FENCE (REFER TO UNIT LOCATED IN FRONT OF BUILDING DETAIL FOR ALTERNATIVE DIMENSION)

GROUND LEVEL PLAN

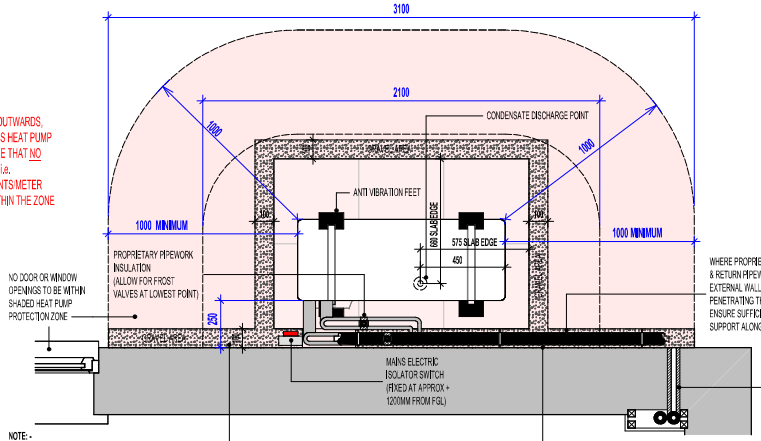


HEAT PUMP LOCATED ADJACENT BOUNDARY FENCE (SEMI-DETACHED DWELLING)

NO WINDOW OR DOOR OPENINGS PERMITTED WITHIN THE SHADED ZONE

IMPORTANT GENERAL NOTE: -

WHERE FRENCH DOORS OPEN OUTWARDS, DOOR SWING CAN OPEN ACROSS HEAT PUMP PROTECTION ZONE (BUT ENSURE THAT NO APERTURE INTO THE BUILDING (i.e. WINDOWS/DOORS/SOCKETS/VENTS/METER BOXES ETC.,) ARE LOCATED WITHIN THE ZONE

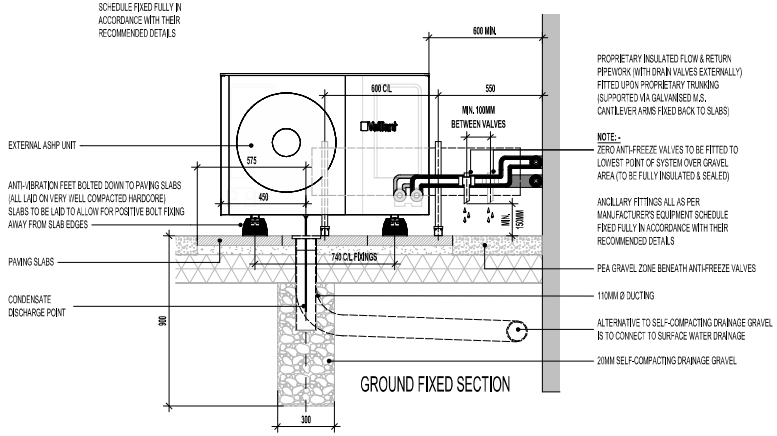


NOTE: - ZERO ANTI-FREEZE VALVES TO BE FITTED TO LOWEST POINT OF SYSTEM OVER GRAVEL AREA (TO BE FULLY INSULATED & SEALED)

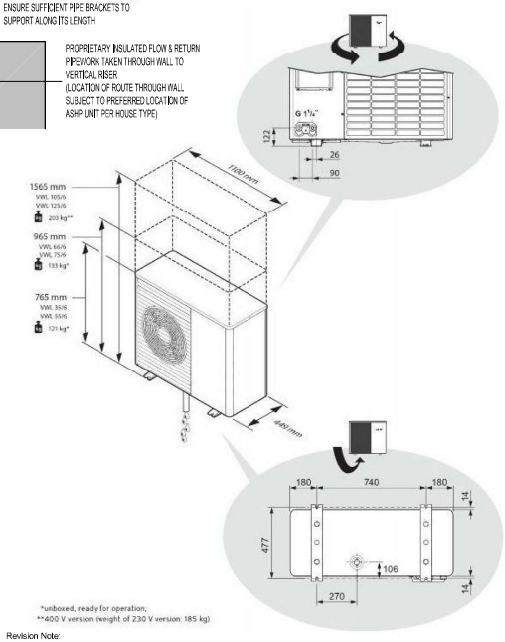
ANCILLARY FITTINGS ALL AS PER MANUFACTURER'S EQUIPMENT SCHEDULE FIXED FULLY IN ACCORDANCE WITH THEIR RECOMMENDED DETAILS

HEAT PUMP LOCATED IN FRONT OF A BUILDING

NO WINDOW OR DOOR OPENINGS PERMITTED WITHIN THE SHADED ZONE



GROUND FIXED SECTION



*unboxed, ready for operation;
**400 V version (weight of 230 V version: 185 kg)

AIR SOURCE HEAT PUMP DESIGN & INSTALLATION TO BE FULLY IN ACCORDANCE WITH NHBC TECHNICAL GUIDANCE NOTE 8.2/01

Revision Note:

PEA GRAVEL MARGIN DENOTED AROUND PERIMETER OF PAVING SLAB BASE & 20MM SELF-COMPACTING DRAINAGE GRAVEL ZONE (OR CONNECTION TO SURFACE WATER DRAINAGE) INDICATED TO ACCEPT CONDENSATE DISCHARGE

Project Title	Drawing Title
GROUP DESIGN - STANDARD DETAILS 2024	A.S.H.P. EXTERNAL UNIT DETAILS

Scale	Drawn By	Date
1 : 20	G.T.	15.03.24

Drawing No.	Revision
SV-GD-EN-008	C2

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CONTRACTORS MUST CHECK ALL DIMENSIONS ON SITE, ONLY FIGURED DIMENSIONS TO BE WORKED FROM DISCREPANCIES MUST BE REPORTED TO THE DESIGN OFFICE BEFORE PROCEEDING

ORIGINAL SHEET SIZE A2 - DO NOT SCALE FROM THIS DRAWING