

The College of Richard Collyer - New Technology Centre

Noise Statement for Planning.

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1. Executive Summary

BDP has undertaken a noise assessment in support of a planning application for the proposed Technology Centre at The College of Richard Collyer. The assessment has been informed by an environmental noise survey undertaken around the site and relevant national guidance, standards and local planning policy.

The assessment considered the potential noise impacts associated with the proposed development, including building services plant, the relocation of the existing college car park, and noise breakout from workshop activities. Baseline noise measurements were used to establish the existing acoustic environment and to define appropriate assessment criteria.

A detailed plant noise assessment was undertaken using 3D acoustic modelling to establish maximum permissible noise emission limits and to assess the suitability of the proposed plant strategy. The assessment demonstrates that, with the incorporation of appropriate mitigation measures and adherence to the recommended noise limits, the local authority's requirements can be met.

The proposed relocation of the college car park was assessed using 3D acoustic modelling based on a robust worst-case operational scenario. The assessment found that predicted noise levels satisfy relevant residential amenity criteria. When considered in the context of the existing local sound environment and proposed car park management measures, the proposals are not expected to give rise to significant adverse effects.

An assessment of workshop noise breakout was also undertaken using measured noise levels from a comparable operational workshop. The results indicate that noise levels at the nearest residential receptors would remain well below the prevailing ambient and background sound levels, such that adverse effects on residential amenity are not anticipated.

Overall, the assessment concludes that the proposed development is capable of meeting the relevant acoustic requirements and, subject to the implementation of the recommendations contained within this report, is not expected to result in significant adverse noise impacts on nearby noise-sensitive receptors.

2. Introduction

This Noise Impact Assessment has been prepared by BDP Acoustics in support of the proposed new Technology Centre development at The College of Richard Collyer, Hurst Road, Horsham.

To achieve compliance with the relevant Local Planning Authority (LPA) policies, this report includes the following:

- Establishes ambient and background noise climate within and around the site, representative of the nearest noise sensitive receptors.
- Setting of fixed plant noise emission limits in order to meet the LPA noise planning policy requirements;
- Assessment of the current proposed plant noise sources against the planning noise criteria.
- Sets out noise mitigation requirements for fixed plant where required.
- Addresses the activity noise associated with the proposed car park activity against good practice design guidance.
- Addresses noise break out levels from the proposed workshops in relation to the nearest off site noise sensitive receptors.

2.1. Suitably Qualified Persons

This noise impact assessment report and associated baseline environmental noise survey has been undertaken by Tom Price AMIOA. Tom is an acoustic consultant at BDP, has 7 years' acoustic consultancy experience, a BSc (hons) degree, and is an Associate Member of the Institute of Acoustics. The report and survey has been supervised by Keir Hannan, a senior acoustic consultant at BDP, who has 10 years' acoustic consultancy experience, a Msc (Hons) degree and is a Member of the Institute of Acoustics.

3. Site Description

The project proposed is a *phased development of Technology Centre consisting of two buildings, associated landscaping, and reconfigured access and parking.*

Proposal

The Technology Centre consists of two buildings – the 'Phase 1 building' and 'Phase 2 building', and comprises the following:

- Phase 1:
 - Erection of a new three storey building
 - Replacement car park comprising 144 spaces (7% reduction to existing)
 - 40 new cycle spaces
 - Reconfigured vehicular and pedestrian access
 - Permanent landscaping proposals
 - Interim landscaping proposals in the location of the Phase 2 building
- Phase 2
 - Erection of a new single storey building
 - Landscaped steps with connection to the roof of the Phase 2 building and first floor of the Phase 1 building

The new Technology Centre is to be situated on the current Collyer's car park adjacent to Hurst Road. The proposed site is bordered by Hurst Road (B2180) to the southwest which provides the main access to the college grounds. The existing college buildings and sports fields lie directly to the northwest and northeast respectively. Residents along Hurst Avenue border the southeast of the site and extend northeasterly along the sports field boundary.

A trainline servicing Horsham train station, located approximately 0.5km from the site, arcs from north to southeast. The trainline lies approximately 300m from the site location at its nearest point.

The area is largely residential in nature, however Horsham Community Hospital and Horsham Police station lie close by along Hurst Road.

4. Planning Policy and Guidance

Guidance and requirements relating to noise associated with the development is derived from the following planning policy and guidance documents.

4.1. Horsham District Council – Horsham District Planning Framework (excluding South Downs National Park) November 2015

The Horsham District Planning Framework (HDPF) 2015 requires developments to protect the amenity of existing and future occupants by minimising exposure to, and the generation of, environmental pollutants, including noise. Under Policy 24 (Environmental Protection), development proposals are expected to minimise noise emissions and ensure that any potential impacts are appropriately assessed and mitigated. Under Policy 33, the proposed development should be designed to avoid unacceptable harm to the amenity of occupiers/users of nearby property and land, for example through overlooking or noise, whilst having regard to the sensitivities of surrounding development.

The policy specifically states that proposals should be considered alongside any relevant planning guidance documents. Horsham District Council directs applicants to its Planning Noise Advice Document (Sussex Noise Guidance for Developers) for detailed guidance on when noise assessments are required and the standards that should be applied.

4.2. Horsham District Local Plan 2023-2040 Regulation 19

The Horsham District Local Plan 2023–2040 (Regulation 19 Submission Version and subsequent modifications) seeks to ensure that development protects the amenity of existing and future occupants by avoiding unacceptable impacts arising from pollution, including noise.

It is noted that, at the time of writing, the Horsham District Local Plan 2023–2040 is undergoing examination and has not yet been adopted, however it remains a material planning consideration. This assessment has therefore considered the relevant objectives of both the emerging Local Plan and the adopted Horsham District Planning Framework (2015).

4.3. Planning Noise Advice Document Sussex (2023)

Section 3 of the Planning Noise Advice Document Sussex (2023) provides guidelines and criteria for sound sources of an industrial and commercial nature. The document specifically refers to assessing sound sources within the scope of British Standard BS 4142:2014+A1:2019 "Methods for Rating and Assessing Industrial and Commercial Sound", with specific reference to sound from fixed installations, which comprise of mechanical and electrical plant.

"The rating level of the industrial or commercial sound source should, where practicable, achieve a level no greater than the representative background sound, when measured in accordance with BS 4142:2014 + A1: 2019. There may be instances, for specific sites, where a rating level below background is deemed appropriate. This can be determined through discussion with the Local Planning Authority (LPA). A rating level below background may be required if there are concerns for potential noise creep, for example in a High Street setting. It is considered that meeting this criterion would avoid adverse noise impacts, in the interests of ensuring a good standard of amenity and protecting human health. Where these criteria are not attainable, the noise report should explain why, and how best practicable means will be implemented to control noise in order to satisfy the

LPA that the development is acceptable. At all times the reports shall have regard to the context. Good Acoustic Design will be a consideration for any mitigation proposals."

4.4. National Planning Policy Framework

The National Planning Policy Framework (NPPF) December 2024, sets out the Government's planning policies for England. In respect of noise, Paragraph 198 of the NPPF states the following:

"Planning policies and decisions should 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 impact on health and the quality of life;

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

The above gives no quantitative guidance on noise emission limits for a new development.

4.5. World Health Organisation (WHO) Guidelines for Community Noise 1999

The WHO guidelines for community noise document aims to consolidate scientific knowledge on the health impacts of community noise and to provide guidance to environmental health authorities and professionals trying to protect people from the harmful effects of noise in non-industrial environments.

4.6. BS 8233:2014 Guidance on sound insulation and noise reduction for buildings. 28 Feb 2014

This code of practice recommends suitable acoustic rating criteria for various indoor environments and uses. BS 8233 recommends levels for overall noise design of a building based on existing guidelines issued by the World Health Organisation (WHO) in 1999, for areas where a controlled acoustic environment is necessary. The following criteria for unoccupied bedrooms, living rooms and dining rooms are stated as desirable whilst also providing adequate ventilation.

Table 1 BS 8233:2014, 'Recommended internal ambient noise levels for dwellings'

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 dB $L_{Aeq,16hour}$	-
Dining	Dining room/area	40 dB $L_{Aeq,16hour}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$

4.7. Parking Lot Study 2007, 6th Edition: Bayerisches Landesamt für Umwelt, August 2007

In lieu of any UK standard calculation methodology for car park noise, guidance from revision 6 of the 'Parkplatzlärmstudie des Bayerischen Landesamts für Umweltschutz' (Parking Area Noise: Recommendations for the calculation of sound emissions of parking areas, motorcar centres and bus stations as well as of multi-storey car parks and underground car parks) will be used in order to predict noise emission levels from the proposed new car park. The standard is used internationally for predicting the noise emissions of car parking areas of various types.

The calculations within convert several characteristics, including number of car parking spaces, parking movements per hours, and car park surface type, to an area noise source for use within 3D noise propagation models.

4.8. HDC Responses to date on design proposals related to acoustics.

BDP have received on the 3rd February 2026 a Pre-Application advice letter from Horsham District Council.

The letter outlined the following advice with respect to noise from the proposed development:

"Amenity:

Policy 33 of the HDPF states that development should consider the scale, massing and orientations between buildings, respecting the amenities and sensitivities of neighbouring properties and ensuring unacceptable harm to amenity of neighbouring properties, such as overlooking or noise is avoided.

I can see that work has gone into considering the neighbours and the proximity and further work is being put into the car park lighting, I will consider this further when amended building designs have been provided. I can see the DT block has been located in closer proximity to the existing dwellings. It is my understanding these classes can cause a level of noise through machinery use. Any formal application should address this and specify any necessary mitigation. "

5. Environmental Noise Survey

Attended and unattended baseline noise surveys were undertaken around the site between Wednesday 7th May 2025 and Thursday 8th May 2025 to establish the existing noise climate around the proposed site of the new technology centre. Attended noise measurements were carried out at several positions representative of the proposed car park location. An unattended continuous logger was also installed to collect noise levels considered to be representative of the nearest noise sensitive receptors, identified as the residents along Hurst Avenue.

5.1. Existing Noise Climate

On-site observations describe the existing noise climate as being dominated by the regular flow of traffic noise along Hurst Road. Trains are clearly audible above the background noise as they regularly pass along the nearby train line, particularly to the north where the trainline is closest to the site. Occasional aircraft fly overs were also noted to contribute to the existing ambient noise climate at the site, with the western end of the Gatwick airport runway lying approximately 11km from the development site.

5.2. Survey Methodology

5.2.1. Attended Noise Measurements

Short-term attended noise measurements were undertaken on Thursday 8th May 2025 at locations representative of the nearest noise sensitive receptors at the worst-case periods for the night-time and daytime activity from vehicle movements in the proposed car park on a typical weekday during college term-time. Noise measurements were taken at 3 measurement locations with 3 x 5 minute measurements captured at each position. This was repeated for each hour period between 06:00 and 09:00. Measurement positions are shown in Figure 2.

For the attended noise survey, the sound level meter was attached to a tripod extending a minimum 1.2m above the ground and positioned at an appropriate distance from any other reflecting surfaces such that the measurement can be considered as free-field, as shown in Figure 1.

Figure 1 Attended Measurement Position



Figure 2 Site Survey Locations



5.2.2. Unattended Noise Monitoring

Unattended continuous noise measurements were undertaken between 11:00 on Wednesday 7th May 2025 and 11:00 on Thursday 8th May 2025 at a position considered to be representative of the nearest noise sensitive receptors, identified as the residents along Hurst Avenue. A full time-history log of the data is provided in Appendix II Environmental Noise Survey Time Histor.

The microphone was placed on a monopod which was affixed to an outbuilding and extended approximately 1m above the roof level. The measurements were made at an appropriate distance from any other reflecting surfaces such that the measurements can be considered free-field. The measurement location is shown in the site plan in Figure 2 and equipment set up in the image in Figure 3.

Figure 3 Unattended Survey Position



5.3. Weather Conditions

Weather conditions throughout the survey period were dry with low wind speeds and generally clear of cloud cover, therefore deemed suitable for environmental noise surveying. All surveying work was undertaken in general accordance with BS 7445-1:2003 "Description and measurement of environmental noise. Guide to quantities and procedures".

5.4. Instrumentation

The following equipment was used to carry out the attended noise measurements:

Table 2 Attended survey instrumentation

Item	Make and Model	Serial No.
Sound Level Meter	B&K 2250	3011134
Microphone	B&K 4189	3086749
Pre-Amplifier	B&K ZC 0032	25571
Sound Calibrator	B&K 4231	2170240

The microphone was positioned at a minimum height of 1.2m above the ground and all measurements were free from the influence of other reflecting surfaces.

The following equipment was used to carry out the unattended noise measurements:

Table 3 Unattended survey instrumentation

Item	Make and Model	Serial No.
Sound Level Meter	01dB Fusion	12834
Microphone	GRAS 40CD	383196
Pre-Amplifier	01dB PRE22	2004249
Sound Calibrator	Rion NC-74	35046790

The microphone was positioned at a height of approximately 3m above the ground and all measurements were free from the influence of other reflecting surfaces.

For both the attended and unattended surveys, the sound level meters were calibrated before and after measurements were taken, during which time no significant drift was observed.

5.5. Results

5.5.1. Attended Survey

Results from the attended survey measurements are presented in Table 4.

Table 4 Attended noise survey results

Measurement Position	Start Time (hh:mm:)	Time Averaged Sound Pressure Level $L_{Aeq, 5 \text{ min}}$ (dB)	Background Noise Level $L_{A90, 5 \text{ min}}$ (dB)
Position 1	06:01	53	40
	06:07	53	41
	06:12	54	45
	07:00	56	48
	07:05	54	44
	07:10	57	50
	07:59	56	50
	08:04	55	51
	08:10	55	50

Position 2	06:20	46	42
	06:25	47	41
	06:30	45	42
	07:18	46	44
	07:23	46	44
	07:28	48	45
	08:26	48	44
	08:31	48	45
	08:36	48	44
Position 3	06:39	47	42
	06:44	46	43
	06:50	44	42
	07:36	46	44
	07:41	47	45
	07:46	48	45
	08:44	45	43
	08:50	47	43
	09:07	46	43

5.5.2. Unattended Survey

Results from the unattended survey measurements are presented in Table 5 below.

Table 5 Unattended noise survey results

Date	Period	Time Averaged Sound Pressure Level Range	Typical Background Noise Level
		$L_{Aeq, 15 \text{ mins}}$ (dB)	$L_{A90, 15 \text{ min}}$ (dB)
07/05/25 – 08/05/25	Daytime (07:00 – 23:00)	45 – 56	46
	Night-time (23:00 – 07:00)	34 - 56	34

6. Assessment Methodology

6.1. Approach to establishing noise emissions limits

6.1.1. Fixed plant noise sources

As detailed in Section 4 of this report, Local Planning Policy guidance refers to the assessment of industrial and commercial sound sources through the application of British Standard BS 4142:2014+A1:2019. With reference to this standard, the external noise limits related to fixed plant and equipment installations shall be set in line with Section 11 which describes the methodology for rating and assessing sound of an industrial and/or commercial nature as follows:

“The significant of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs... Obtain an initial estimate of the impact of the specific sound by subtracting the measured background sound level from the rating level and consider the following...”

- a) Typically, the greater this difference, the greater the magnitude of the impact.
- b) A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- c) A difference of around +5dB is likely to be an indication of an adverse impact, depending on context.
- d) 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 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.”

In order to best ensure the new development does not result in any adverse impact on the existing noise environment, noise limits for the development operations will be set out in line with BS 4142:2014+A1:2019.

For the purpose of the assessment, the nearest noise sensitive receptors (NSRs) are determined to be residents along Hurst Avenue.

Following the completion of the environmental noise survey, the noise limits are proposed in line with the above Local Planning Policy guidance as follows:

Table 6 External plant noise emissions limits

Location	Period	Typical Background Noise Level L _{A90, 15 min} (dB)	Proposed Noise Emissions Level Limit, L _{Aeq,Tr} (dB)
Dwellings along Hurst Avenue	Daytime (07:00 – 23:00)	46	≤ 46
	Night-time (23:00 – 07:00)	34	≤ 34

The limits should be met in the presence of all new fixed plant expected to operate simultaneously during the day-time and night-time periods, and are based on the measurement background noise levels L_{A90} presented in Table 5. The noise emission limits are inclusive of any acoustic feature corrections as described in BS 4142:2014+A1:2019, such as tonality, impulsivity or intermittency. The noise emission limit has been set to equal the measured typical background noise level, with the aim of avoiding adverse noise impacts as stipulated in Planning Noise Advice Document Sussex (2023).

6.1.2. Approach to establishing car park noise limits

There is no identified planning noise guidance in the local planning authority's publications. BDP have therefore assessed against the applicable good practice design documents.

It is proposed that the noise impact of new noise sources from the proposed temporary car park, be assessed in line with the assessment methodology set out in 'Parking Lot Study 2007, 6th Edition'.

Noise emissions from the car park have then been assessed against the WHO guidelines for community noise in specific environments.

Table 7 WHO noise limits - outdoor living areas

Specific Environment	Proposed Noise Emissions Level Limit, $L_{Aeq,60\text{ min}}$ (daytime) (dB)
Outdoor living areas	50

BS 8233 recommends levels for overall noise design of a building based on existing guidelines issued by the World Health Organisation (WHO) in 1999, the following noise limits have also been applied to the dwellings along Hurst Avenue.

Table 8 BS8233 internal noise level limits in dwellings

Activity	Location	Internal noise limit in dwelling 07:00 to 23:00
Resting	Living room	35 dB $L_{Aeq,16\text{ hour}}$
Dining	Dining room/area	40 dB $L_{Aeq,16\text{ hour}}$
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16\text{ hour}}$

It should be noted that no car park activity is expected to occur at night between 23:00 and 07:00, therefore night time noise criteria have not been set as part of this assessment.

6.1.3. Workshop noise

No specific planning policy or guidance relating to noise has been identified from the Local Planning Authority. Consequently, the assessment has been undertaken using measured workshop noise data from BDP's noise

measurement database, considered representative of the proposed workshop activities. Noise breakout has been predicted based on a mechanically ventilated workshop with emissions occurring principally through the glazed façade facing the nearest noise-sensitive receptor, located approximately 50 m away on Hurst Road.

Noise levels are then compared against the existing ambient and background noise levels.

7. Assessment of Fixed Plant Installations

7.1. Summary of Proposals

At the time of writing, preliminary external plant selections and layouts for the new development have been provided to BDP Acoustics by BDP MEP.

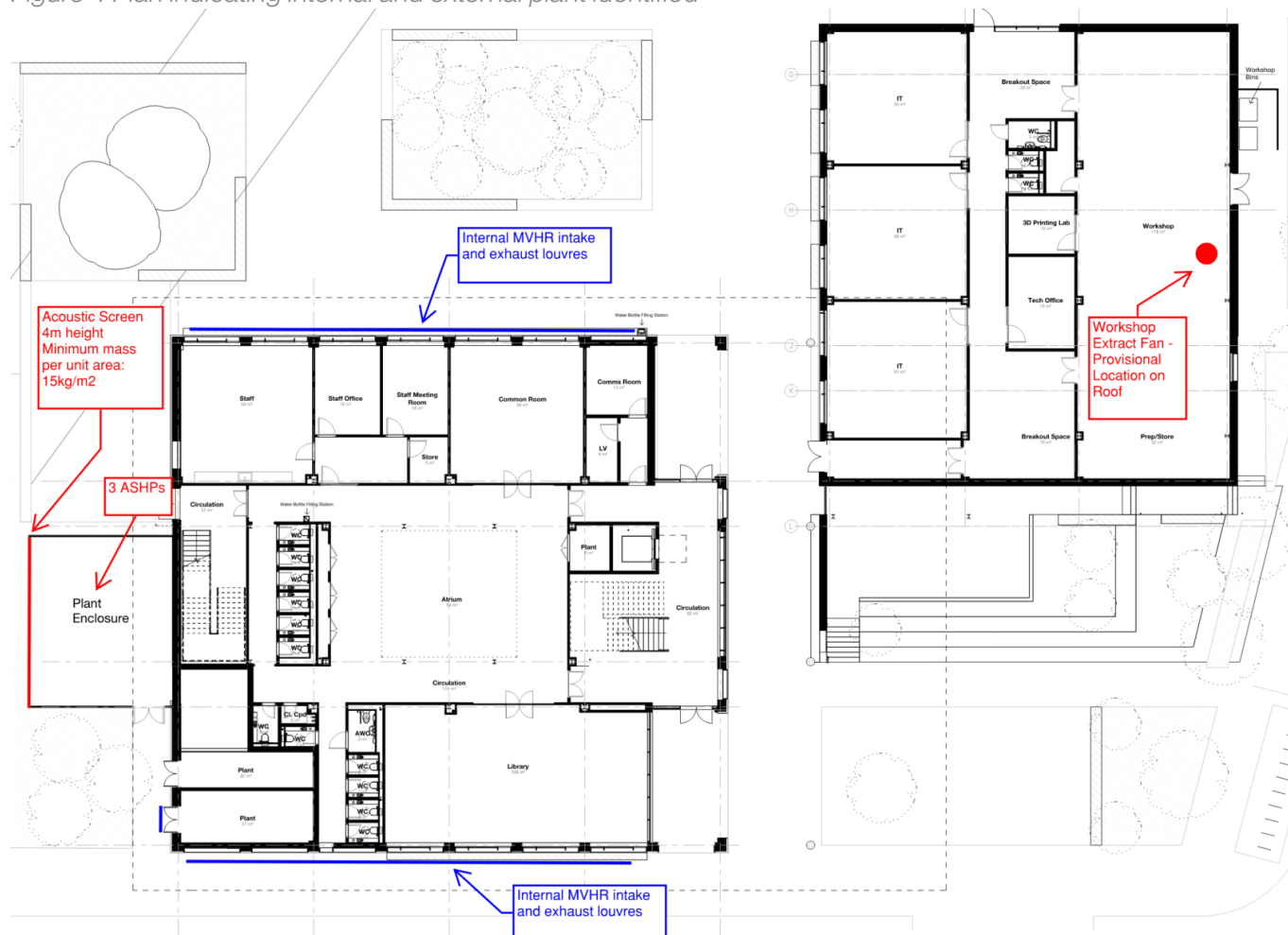
The primary plant items currently proposed comprise of the following:

- **Three Air Source Heat Pumps (ASHPs)** located within an external plant compound to the east of the phase 1 building. An acoustic screen is proposed to be installed around the ASHPs to assist in limiting noise breakout to wider areas of the school campus and off site noise sensitive receptors.
- **Mechanical Ventilation with Heat Recovery (MVHR) units** serving the phase 1 building, with intake and exhaust terminals located on the north and south building façades.
- **Internal pump plant room**, located adjacent to the ASHP enclosure, with a ventilation louvre situated on the east elevation of the phase 1 building.

The workshop building design is in an earlier stage of development than that of the phase 1 building. It is understood that an extract fan serving the workshop is to be located on the roof of the phase 1 building. A noise limit has been applied to this to be included in the cumulative noise assessment of the overall proposed development. As the design progress, appropriate noise mitigation measures shall be considered to all internal plant items associated with the workshop to ensure that the local authority plant noise emissions limits are met.

Figure 4 outlines the locations of the external plant and internal plant terminals included as part of the proposed development.

Figure 4 Plan indicating internal and external plant identified



7.2. Fixed Plant Source Noise Level Limits

The following plant noise emissions limits have been established as part of the current project scheme to ensure that the relevant local authority noise emissions are met.

Table 9 Proposed plant noise emissions limits

Item	Plant Item	Maximum Sound Power Level L _w dB(A) at terminal/casing
1	ASHP 1 Omicron Zero S4 SLN 10.4/VEM	Casing (sides): 72 Fan discharge (top): 72
2	ASHP 2 Zeta Zero HP SLN HP SLN 10.4/ VEM	Casing (sides): 72 Fan discharge (top): 72
3	ASHP 3 Zeta Zero HP SLN HP SLN 10.4/ VEM	Casing (sides): 72 Fan discharge (top): 72
4	Internal MVHR's	Intake: 60 Exhaust: 60

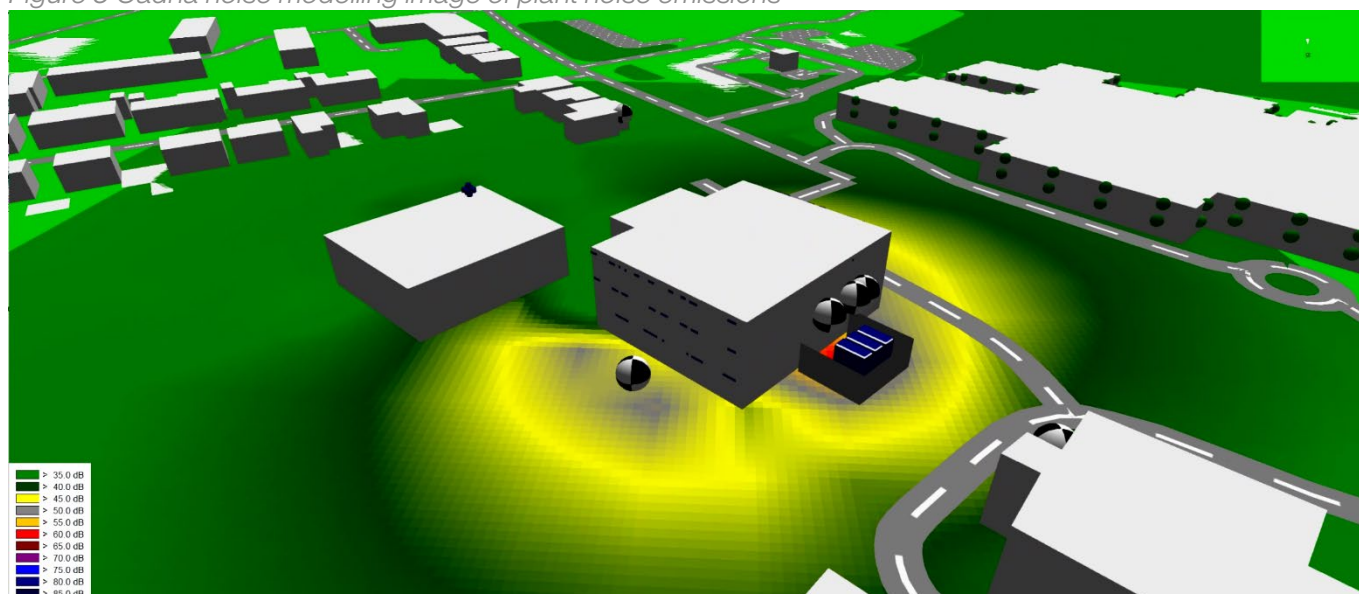
5	Pump Plant Room Louvre	Intake: 60 Exhaust: 60
6	Workshop Extract Fan	Exhaust: 75

7.3. 3D Acoustic Modelling

The proposed external plant and identified internal plant with terminals to the external facade have been reviewed via desktop analysis using proprietary noise modelling software CadnaA, where current plant selections allow. Plant sources, taking account of any proposed mitigation measures, have been modelled based on source noise levels provided within technical datasheets, where currently available, as detailed in section 7.2.

This 3D modelling has been used to predict the cumulative noise emissions at 1m from the NSR, considering source noise data for all identified plant items with associated mitigation where proposed.

Figure 5 Cadna noise modelling image of plant noise emissions



Following coordination with the MEP design team, it is understood that the ASHPs may be in operation during a 24 hour period. All other plant items are proposed to operate during the daytime only.

Predicted noise levels at the NSR as a result of the proposed strategy are provided in Table 10.

Table 10 Predicted cumulative noise levels at the nearest NSR's as a result of newly proposed plant proposals

Location	Period	Proposed Noise Emissions Level Limit, $L_{Aeq,Tr}$ (dB)	Predicted Cumulative Noise Emissions Level at Receptor, dBA
Residents along Hurst Avenue	Daytime (07:00–23:00)	≤ 46	36
	Night-time (23:00 – 07:00)	≤ 34	15

Based upon the plant noise emission limits set for each identified noise source associated with the proposed development, the LPA noise limits for plant noise are expected to be met.

7.4. Plant noise attenuation provision based on project proposals

To control noise emissions from the ASHP plant compound, the eastern side of the enclosure is proposed to comprise a **4 m high** acoustic screen with a minimum mass per unit area of **15kg/m²**. The screen is intended mitigate noise emission from the ASHPs to the adjacent library building on the school campus and in turn, reduce the level of attenuation required from the ASHP attenuator packages. Figure 4 identifies the location of the proposed screening.

Attenuator packs are proposed to be installed on the external air source heat pumps based on the current plant selections and location.

The following attenuation provision is to be applied to the ASHPs.

Table 11 Attenuation to be provided to ASHPs

Location	Overall attenuation provided by acoustic pack
Horizontal sides of each ASHP	10dB
Vertical side of each ASHP	15dB

With the acoustic screening and attenuator measures described above, the proposed plant is expected to achieve the noise emission limits set out in Table 10.

At the time of writing, detailed specifications for the internal plant serving the Main Building have not been developed, however the location of the external louvre terminals is known. Based on their location the internal plant selections shall be made to achieve the maximum sound power level limits specified.

Internal plant selections and locations in the Workshop have not been finalised, as the design progresses and plant selections are confirmed, a further review will be undertaken to verify compliance with the specified noise limits and the relevant planning requirements.

8. Assessment of Car Park Noise

8.1. Summary of Proposals

The new technology centre buildings are proposed to be built on the location of the current main car park of the college. As a result, the existing parking area is proposed to be relocated to the sports fields, to run adjacent to the rear of the residential properties along Hurst Avenue.

The proposed car park has been modelled using proprietary acoustic software CadnaA where the noise emission levels have been predicted for vehicle movements assuming worst-case conditions:

- Indicative worst-case operational hours are understood to be between 07:30-08:30;
- Nearest/most exposed noise sensitive receptors for the purpose of this car parking noise assessment are expected to be the residential properties along Hurst Road along the eastern-boundary of the proposed car park due to their close proximity;
- The “full capacity” of the proposed car park is understood to be 144 cars;
- The potential worst-case hourly number of car parking movements (170 cars arriving or leaving the car park) during a one-hour daytime period (any one-hour period between 07:00 and 23:00;
- The surface of the new carpark has been modelled as concrete slabs with > 3 mm gaps;
- No screening between the car park and NSRs has been considered in the model. Although, some screening may be provided by the wooden fencing at the garden boundaries and via the contour of the land. As such, this presents a worst-case assessment;
- When assessing the noise levels as a result of car park noise in the residential dwellings, a level difference of around 13 dB from external free-field levels to reverberant internal levels can typically be assumed for a window that is sufficiently open to enable some ventilative cooling. As referenced from table 4-B from the ANC AVO Guide – Acoustics Ventilation and Overheating – Residential Design Guide Version 1.1 2020.

A car park management plan is also being developed as part of the project proposals. Included in this are the following considerations in relation to limiting noise:

- One-way systems;
- Speed limits;
- Restrictions on large vehicle access near the sensitive facades;
- Signage to discourage engine revving, slamming of car doors;
- Management presence on site.

8.2. 3D Acoustic Modelling results

Based upon the information provided by the design team to date, Table 12 presents the results of the noise modelling predictions.

Table 12 Car park noise assessment results

Location	Period	Proposed Noise Emissions Level Limit, L _{Aeq,60} min (daytime) (dB)		Predicted ambient equivalent continuous noise level, L _{Aeq,60} min (daytime) (dB)	
		In garden	At window of NSR	In garden (perimeter)	At window of NSR (most exposed)
Residents along Hurst Avenue	Daytime (07:00 – 23:00)	≤ 50	48	49	47

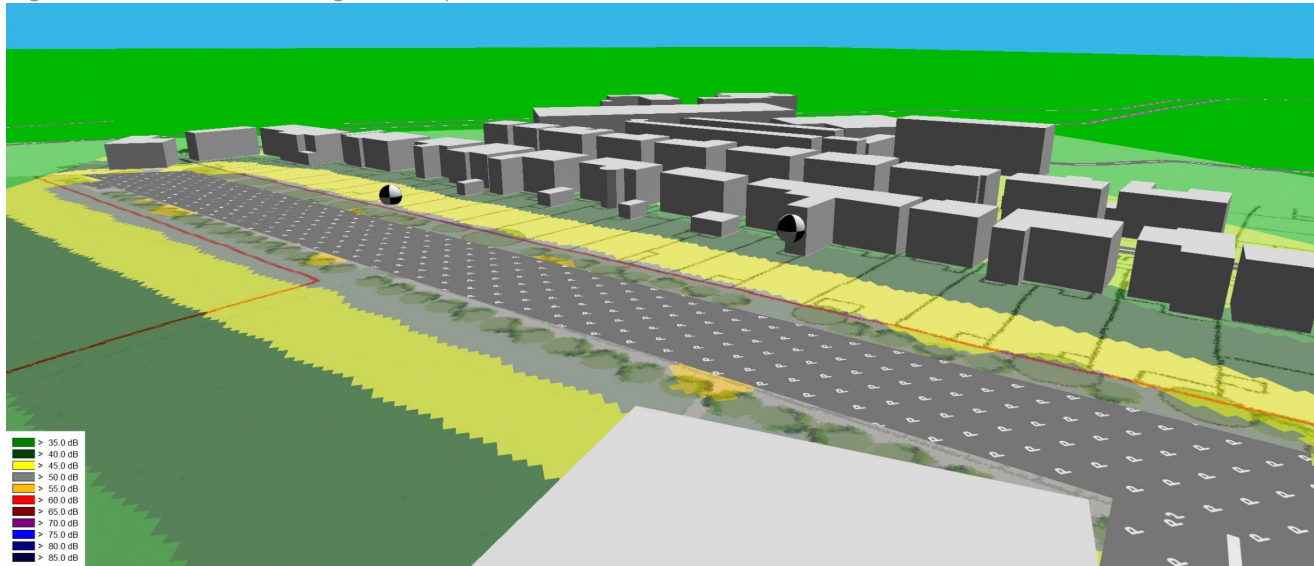
It is important that the assessment of car park activity noise is considered within the appropriate acoustic context.

The prevailing sound climate in the vicinity is already heavily influenced by road traffic noise from Hurst Road, particularly during peak commuting periods. These periods coincide with the times at which the proposed car park would experience its highest levels of activity.

Vehicle activity associated with the existing car park already contributes to the local noise climate experienced by residents along the college boundary. The introduction of the proposed development would therefore not represent a fundamentally new or unfamiliar source of sound. For receptors located closest to the existing car park, no material change in the character or level of noise is anticipated, and the resulting sound would remain consistent with the established acoustic environment.

The noise modelling predictions indicate that the noise levels as a result of the car park activities during the worst case rush hour period, achieve the WHO and BS8233 guidance. Taking into account the context of the proposed site, car park management plan, noise emissions are anticipated to be appropriately mitigated.

Figure 6 Cadna model image of car park assessment



9. Phase 2 building noise breakout assessment

Noise breakout from the workshop has been assessed based on measured operational noise levels within a comparable workshop environment. Measurements indicated an internal noise level of approximately 86 dBA during typical workshop activities.

Assuming noise transmission occurs primarily through the closed glazing, which has an area of approximately 44 m² and a sound reduction performance of R_w 34 dB typical of double glazing specifications, calculations indicate that noise levels at the nearest receptor, located approximately 50 m from the façade, would be approximately **28 dBA** under free-field conditions. This is 8dB below the typical background noise level at the nearest noise sensitive receptor and 18dB below the lowest measured ambient noise level taken during the attended noise survey at locations representative of the nearest noise sensitive receptor.

The results suggest that noise breakout from workshop activities is unlikely to result in significant adverse impact. The assessment is based on a simplified calculation methodology and assumes the glazing represents the dominant transmission path, with no significant contribution from other façade elements.

10. Conclusion

This Noise Statement has been prepared in support of a planning application for the Technology Centre of the College of Richard Collyer.

The assessment criteria and methodology have been developed with reference to relevant standards, guidance and local planning policies and have been informed by way of measurement surveys conducted around the site.

Based upon measured data, it is recommended that in order for noise from fixed plant installation meet local planning authority guidance, the following Noise Rating levels are applied to be met at the façade of the nearest Noise Sensitive Receptors (NSR):

Table 13 Predicted cumulative noise levels at the nearest NSR's as a result of newly proposed plant proposals

Location	Time Period	Proposed Noise Emissions Level Limit, $L_{Aeq,Tr}$ (dB)	Predicted Cumulative Noise Emissions Level at Receptor, dBA
Residential receptors on Hurst Avenue	Daytime (07:00– 23:00)	≤ 46	36
	Night-time (23:00 – 07:00)	≤ 34	15

A plant noise assessment has been undertaken based on the proposed plant strategy, taking into account the mitigation measures incorporated within the design, to assess the potential impact of external noise emissions associated with the development.

3D noise modelling indicates that initial plant selections are predicted to be meet the requirements of local planning authority policies and guidance with appropriate mitigation measures. As a result, the proposed development is considered to result in negligible impact on nearby noise-sensitive receptors,

Final plant selections and mitigation measures shall be designed to meet the noise emissions level limits set in Table 13.

A noise assessment of the proposed relocated car park has been undertaken using 3D acoustic modelling to evaluate the impact of vehicle movements on nearby residential properties along Hurst Avenue.

The assessment considered a robust worst-case scenario, including full car park occupancy, peak-hour vehicle movements and the absence of screening. The predicted noise levels were found to achieve the relevant WHO and BS 8233 guideline criteria for residential amenity.

Given the existing influence of road traffic and college-related activity on the local sound environment, together with the proposed car park management measures, the development is not expected to give rise to significant adverse noise effects.

A workshop noise breakout assessment has been undertaken based on measured noise levels from a comparable operational workshop and conservative assumptions regarding sound transmission through the building façade. The assessment indicates that noise levels at the nearest residential receptors would be

significantly below both the ambient and background noise levels. Noise breakout from workshop activities is therefore not expected to result in adverse effects on residential amenity, and no further specific mitigation measures are considered necessary to control workshop noise emissions.

Appendix I

Glossary of Acoustic Terms

A-weighting (dB(A)): A frequency weighting applied to sound measurements to reflect the sensitivity of human hearing, which is less responsive to very low and very high frequencies. It is commonly used in environmental noise assessment.

Ambient noise: The total sound present at a location from all sources at a given time, including both near and distant contributors.

Background noise ($L_{A90,T}$): The sound level exceeded for 90% of the measurement period, commonly used to represent the underlying noise climate excluding short-term events.

Decibel (dB): A logarithmic unit used to express sound level. Because the scale is logarithmic, small numerical changes can represent significant changes in sound energy.

Equivalent continuous sound level ($L_{Aeq,T}$): The steady A-weighted sound level that contains the same acoustic energy as the varying sound measured over a stated period T.

Façade level: A sound level measured or predicted at a building face, typically including the effect of reflection from the façade.

Free-field: A measurement condition where sound propagates without significant reflection from nearby surfaces, other than the ground plane where relevant.

Frequency (Hz): The number of sound wave cycles per second, expressed in hertz. Low frequencies are heard as bass sounds and high frequencies as treble sounds.

Maximum sound level (L_{Amax}): The highest A-weighted sound level measured during a stated period.

Noise sensitive receptor (NSR): A location or building where occupants may be adversely affected by noise, such as dwellings, schools, or hospitals.

Octave band: A frequency band where the upper limiting frequency is twice the lower limiting frequency, commonly used in acoustic analysis and specification.

Rating level: In BS 4142 assessments, the specific sound level after applying any character corrections for acoustic features such as tonality, impulsivity, intermittency, or other distinctive characteristics.

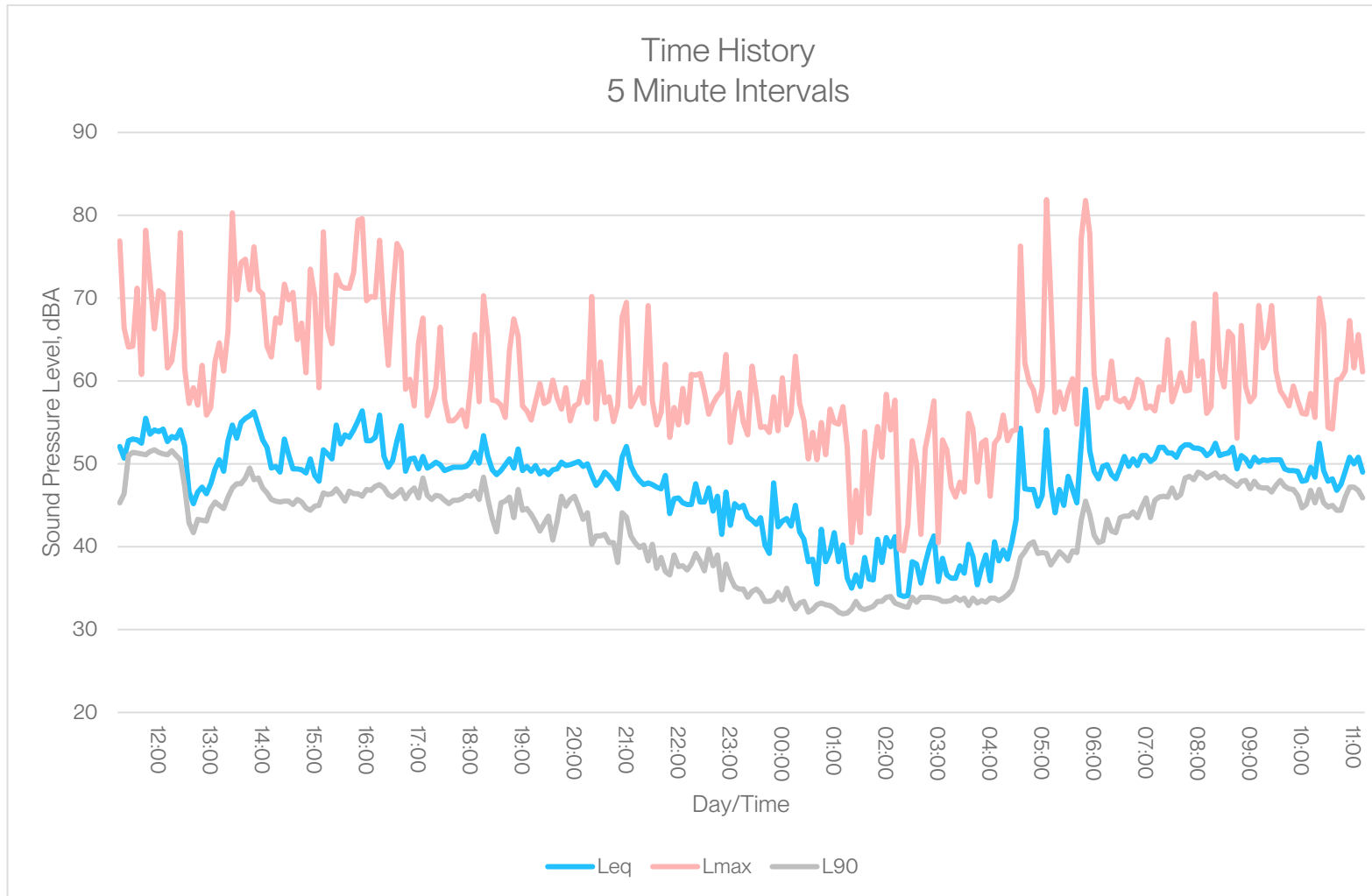
Receptor: The point or location at which sound is measured, assessed, or predicted.

Sound pressure level (SPL): A measure of the magnitude of sound pressure relative to a reference pressure, expressed in decibels.

Specific sound: The sound source under investigation in an assessment, considered separately from the residual acoustic environment.

Tonality: A distinctive sound character caused by one or more prominent tones, which can increase the subjective impact of a noise source.

Appendix II Environmental Noise Survey Time History



Appendix III External plant datasheets



02/02/2026
CHDesign - v2.14

Model: ZETA Zero HP SLN 10.4 /VEM
Option: 2PG-SLN-DVS-VEM-FVP-RA-FLUS-V3MC-A41N-CA-COTW-RMMT-IACV-SV3-PBA-FM0-ICSA-AG-RAM



COOLING

Performance data		
Cooling capacity (A2)	kW	120
Total input power (A2)	kW	34.7
Compressor input power	kW	32.4
Input current (E0)	A	68.7
Power factor (E0)	-	0.73
EER	W/W	3.46
SEER ^(B1)	W/W	3.86
$\eta_{s,h}$ ^(B2)	%	151
SEPR ^(B1)	W/W	5.17
Source		
Altitude	m	0.0
Dry bulb outdoor air	°C	35.0
Outdoor air Relative humidity	%	41.0
Air flow rate	m³/h	36544
Fan input power	kW	1.59
Fan input current	A	1.80
Fans available static pressure	Pa	0

User		
Fluid type		Water
Fouling fact.	m²K/kW	0.000
In/out fluid temperature	°C	19.0/14.0
Fluid flow rate	m³/h	20.77
Circuit pressure drops	kPa	67.6
Pump available external	kPa	0.0
Max pump available external	kPa	183.1
Sound data (C2)		
Calculated sound power	dB(A)	82.8
Sound pressure ^(C1) (10.0 m)	dB(A)	50.7

SOUND DATA-OCTAVE	Hz	63	125	250	500	1000	2000	4000	8000
Unit global sound power	dB	83.2	97.1	83.6	72.2	73.0	63.8	60.0	56.1

HEATING⁶⁶

Performance data		
Heating capacity	kW	78.8
Total input power (A2)	kW	39.2
Compressor input power	kW	33.8
Input current (E0)	A	77.6
Power factor (E0)	-	0.73
COP	W/W	2.01
SCOP LT ^(B2) /MT ^(B3)	W/W	3.99/3.39
$\eta_{s,h}$ LT ^(B2) /MT ^(B3)	%	157/132
Source		
Altitude	m	0.0
Dry bulb outdoor air	°C	-5.0
Outdoor air Relative humidity	%	99.9
Air flow rate	m³/h	54831
Fan input power	kW	5.20
Fan input current	A	5.18
Fans available static pressure	Pa	0

User		
Fluid type		Water
Fouling fact.	m²K/kW	0.000
In/out fluid temperature	°C	50.0/55.0
Fluid flow rate	m³/h	13.77
Circuit pressure drops	kPa	31.6
Pump available external static	kPa	0.0
Max pump available external	kPa	239.6
Sound data (C2)		
Calculated sound power	dB(A)	85.8
Sound pressure ^(C1) (10.0 m)	dB(A)	53.7

SOUND DATA-OCTAVE	Hz	63	125	250	500	1000	2000	4000	8000
Unit global sound power	dB	86.2	97.1	87.6	80.2	80.0	70.8	67.0	63.1

The certified standard performances and the certified software tool version can be verified in www.eurovent-certification.com



30/01/2026
CHDesign - v2.14

Model: OMICRON Zero S4 SLN 10.4 /VEM
Option: 2P2R-DVS-VEM-FVPP-FVPC-RA-V3MC-FLUS-A41N-SV3-COTW-RMMT-IACV-PBA-FM2-AG



COOLING

Performance data		
Cooling capacity (A2)	kW	118
Total input power (A2)	kW	34.5
Compressor input power	kW	31.8
Input current (E0)	A	63.7
Power factor (E0)	-	0.78
EER	W/W	3.42
SEER ^(B1)	W/W	3.86
$\eta_{s,h}$ ^(B2)	%	151
SEPR ^(B1)	W/W	5.28
Source		
Altitude	m	0.0
Dry bulb outdoor air	°C	35.0
Outdoor air Relative humidity	%	41.0
Air flow rate	m³/h	36553
Fan input power	kW	1.58
Fan input current	A	1.80
Fans available static pressure	Pa	0

User		
Fluid type		Water
Fouling fact.	m²K/kW	0.000
In/out fluid temperature	°C	19.0/14.0
Fluid flow rate	m³/h	20.44
Circuit pressure drops	kPa	104.9
Pump available external	kPa	0.0
Max pump available external	kPa	53.3
Sound data (C2)		
Calculated sound power	dB(A)	83.0
Sound pressure ^(C1) (10.0 m)	dB(A)	50.9

SOUND DATA-OCTAVE	Hz	63	125	250	500	1000	2000	4000	8000
Unit global sound power	dB	84.0	93.5	85.7	81.0	72.8	66.9	65.0	59.5

HEATING⁶⁶

Performance data		
Heating capacity	kW	74.4
Total input power (A2)	kW	35.8
Compressor input power	kW	30.6
Input current (E0)	A	62.4
Power factor (E0)	-	0.83
COP	W/W	2.08
SCOP LT ^(B2) /MT ^(B3)	W/W	3.59/3.21
$\eta_{s,h}$ LT ^(B2) /MT ^(B3)	%	140/125
Source		
Altitude	m	0.0
Dry bulb outdoor air	°C	-5.0
Outdoor air Relative humidity	%	99.9
Air flow rate	m³/h	54831
Fan input power	kW	5.01
Fan input current	A	5.18
Fans available static pressure	Pa	0

User		
Fluid type		Water
Fouling fact.	m²K/kW	0.000
In/out fluid temperature	°C	50.0/55.0
Fluid flow rate	m³/h	13.00
Circuit pressure drops	kPa	34.0
Pump available external static	kPa	0.0
Max pump available external	kPa	149.9
Sound data (C2)		
Calculated sound power	dB(A)	86.7
Sound pressure ^(C1) (10.0 m)	dB(A)	54.6

SOUND DATA-OCTAVE	Hz	63	125	250	500	1000	2000	4000	8000
Unit global sound power	dB	87.7	97.3	89.4	84.7	76.4	70.6	68.6	63.3

The certified standard performances and the certified software tool version can be verified in www.eurovent-certification.com