

Heineken Manchester, Denmark Road Manchester

Acoustic Commissioning Report
Report 23102.AC.10

Norder Design Associates Ltd
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Green lane
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1.0 INTRODUCTION

KP Acoustics Ltd has been commissioned by Norder Design Associates Ltd, Beech Lawn, Green Lane, Belper, Derbyshire, DE56 1BY to undertake commissioning noise measurements of a completed plant equipment installation and change to a façade in the HV/LV Area at Heineken, Denmark Road, Manchester. Norder project reference 8767.

This report presents commissioning measurements to demonstrate the installations comply with the emissions criteria at the closest noise-sensitive receptors. This report follows an earlier report, reference '23102.PCR.01', which assessed the impact of plant more widely across the site.

2.0 SITE SURVEYS

2.1 Site Description

As shown in Figure 2.1, the site is bounded by Greenheys Lane to the North, Princess Road to the West, Moss Lane to the South and local roads to the East. There are commercial buildings to the west of the site over the road and a mix of commercial, residential and civil buildings in other directions.

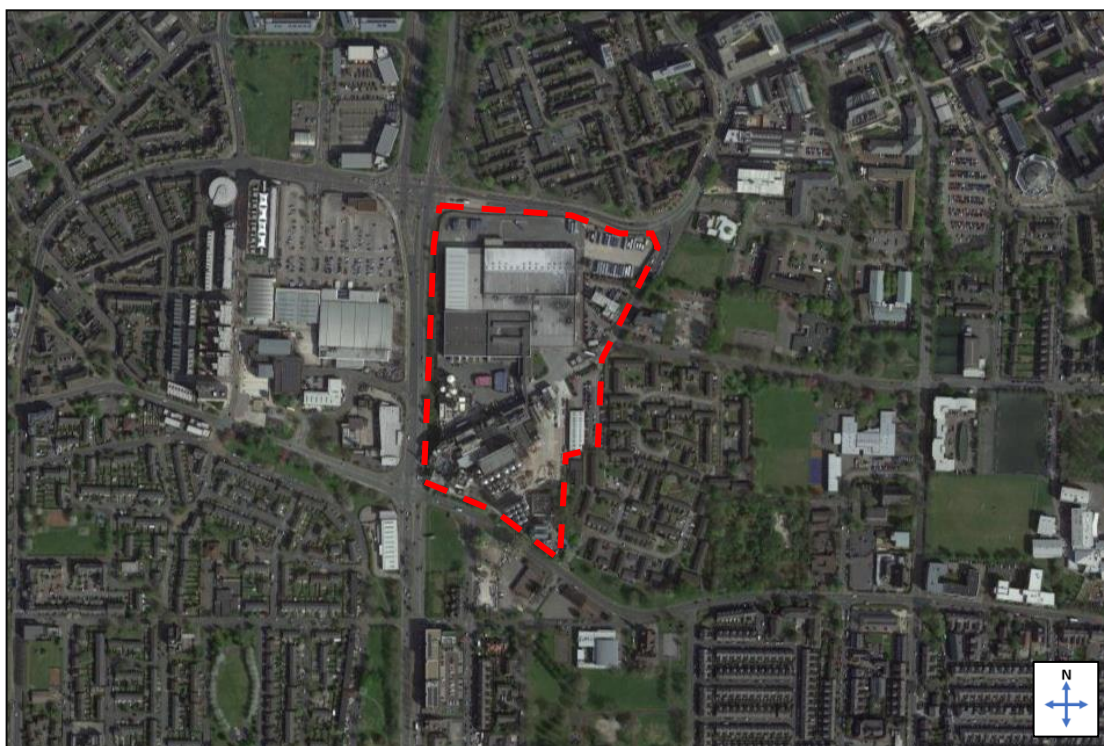


Figure 2.1 Site Location Map (Image Source: Google Maps)

2.2 Previous Assessment

A full study of the noise environment was carried out and detailed in KP Acoustics report with reference 23102.PCR.01, dated 23/12/2021.

In the above study, the noise impact of the site was found to be acceptable after the implementation of noise mitigation measures recommended to bring down the noise levels of some elements, which had been complained about or were otherwise found to require mitigation.

The location of receptors is explained in detail in report reference '23102.PCR.01', but in summary they are:

- **R1** - Quinney Crescent to the southwest of the site
- **R2** - Barnhill Street to the south of the site
- **R3** - Charles Halle Road to the east of the site
- **R4** - Greenheys Lane to the north of the site
- **R5** - Westwood Street to the southeast of the site

The typical background sound level for each receptor was determined in report reference '23102.PCR.01', and are listed below.

Period	Typical Background Sound Level (L _{A90}) at Receptor				
	1	2	3	4	5
Daytime (07:00 -23:00)	62 dB	62 dB	62 dB	60 dB	63 dB
Night-time (23:00 – 07:00)	55 dB	55 dB	46 dB	49 dB	51 dB

Table 2.2 Typical background sound level at each receptor

3.0 NOISE ASSESSMENT GUIDANCE AND TARGETS

3.1 Local Authority Guidance

The requirements of Manchester City Council in this instance is described in Planning Decision Notice 137788/FO/2023:

"4) a) 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 5dB (L_{Aeq}) below the typical background (L_{A90}) 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.

b) Prior to the operation of the scheme, a verification report shall be submitted to and approved in writing by the City Council as Local Planning Authority to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic report.

The report shall also undertake post completion testing to confirm that the noise criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the agreed noise criteria.”

3.2 Targets

The targets for noise level external to receivers 1-5 were set in report reference ‘23102.PCR.01’, and are listed below in Table 3.1.

Period	Plant Noise Emission Limits, L _{Ar,T}				
	1	2	3	4	5
Daytime (07:00 -23:00)	57 dB	57 dB	57 dB	55 dB	58 dB
Night-time (23:00 – 07:00)	50 dB	50 dB	41 dB	44 dB	46 dB

Table 3.1 Criteria at nearest noise sensitive locations

4.0 PLANT INSTALLATION

4.1 Main Heat Recovery Area

The plant installation is comprised of the following units:

- 3 No. HRV2 rooftop fans
- 6 No. pumps for hot & cold vessel packs (HRV3)
 - 3 No. Pump Type 1
 - 2 No. Pump Type 2
 - 1 No. Pump Type 3
- 3 No. ammonia extract fans (HRV4)

Note that no new condensers have been installed as part of these works. Although permission was originally obtained for these items, they have been omitted from the design.

The plant installation locations are shown in Appendix A. The noise emission levels as provided by the manufacturer for the units are shown in Table 4.1. Note that frequency spectrum noise levels are assumed from similar units, as only single figure noise levels were available.

Unit	Descriptor	Octave Frequency Band (Hz)								Overall (dBA)
		63	125	250	500	1k	2k	4k	8k	
HRV2 Fans	SPL@1m (dB)	Spectral data not provided by manufacturer								80
HRV3 Pump Type 1	SPL@1m (dB)	Spectral data not provided by manufacturer								58
HRV3 Pump Type 2	SPL@1m (dB)	Spectral data not provided by manufacturer								62
HRV3 Pump Type 3	SPL@1m (dB)	Spectral data not provided by manufacturer								66
HRV4 Fans	SPL@1m (dB)	Spectral data not provided by manufacturer								80

Table 4.1 Plant Units Noise Emission Levels as provided by the manufacturer

4.2 HVLV Area

The plant installation is comprised of the following units:

- 2 No. Wilson T2 Ecotrans Transformers - 2000KVA- Tier 2
- HV Switchgear – understood not to produce significant noise

The installation location is in the Engineering Workshop building, in a room on the northwest façade, as shown in Appendix A along with the façade changes. The noise emission levels as provided by the manufacturer for the units are shown in Table 4.1.

Unit	Descriptor	Octave Frequency Band (Hz)								Overall (dBA)
		63	125	250	500	1k	2k	4k	8k	
Wilson T2 Ecotrans Transformers - 2000KVA- Tier 2	SWL (dBA)	Spectral data not provided by manufacturer								100

Table 4.2 Plant Units Noise Emission Levels as provided by the manufacturer

5.0 COMMISSIONING MEASUREMENTS

5.1 Procedure

Heat Recovery Project – Main Heat Recovery Area

The site was attended on 10 September 2025 to undertake commissioning measurements. Source noise measurements were undertaken of each specific plant item at the distance noted.

For the ammonia extract fans (HRV4), measurements were undertaken with the equipment both in 'normal' duty and 'emergency' duty which would kick in if there was a build-up of ammonia, and this would be considered a real emergency.

Weather conditions were generally dry with light winds and therefore suitable for the measurement of noise.

Heat Recovery Project – HVLV Area

The site was attended on 27 June 2025 to undertake commissioning measurements. Source noise measurements were undertaken at a distance of 1.5 m from each specific plant item.

Weather conditions were generally dry with light winds and therefore suitable for the measurement of noise.

Subjectively, there was no noise audible from the transformer room door over and above the general background noise other than when listening at a distance of less than 0.5 m from the door itself. This correlates to the noise level measurements of the source not being above the general background noise level measurement. Regardless, all subsequent assessment has been based on the measured level with no correction for background noise, which would represent an extremely pessimistic assessment.

5.2 Equipment

The equipment calibration was verified before and after use and no abnormalities were observed. The equipment used is described below.

Measurement Instrumentation	Manufacturer and Type	Serial Number
SLM4 Precision integrating sound level meter & analyser	For site visit on 27/06/25 NTi Audio, XL2-TA Calibration No: TCRT24/1627 Calibration Dates: 20/08/2023 Calibration Due: 19/08/2025	A2A-09207-E0
	For site visit on 10/09/25 NTi Audio, XL2-TA Calibration No: UCRT25/2203 Calibration Date: 01/09/2025 Calibration Due: 31/08/2027	
CAL3 – KP North Calibrator 3	For site visit on 27/06/25 Larson Davies CAL200 Calibration No: UCRT24/2065 Calibration Date: 07/08/2024 Calibration Due: 06/08/2025	8932
	For site visit on 10/09/25 Larson Davies CAL200 Calibration No: UCRT25/2200 Calibration Date: 01/09/2025 Calibration Due: 31/08/2026	

Table 5.1 Measurement instrumentation

5.3 Results

The measured source noise level data is provided below.

Source	Sound Pressure Level (dB) at Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
HRV2 Fans (5m)	65	65	69	66	64	59	53	42	69
HRV3 Pumps (3m)	66	68	71	70	70	68	69	59	76
HRV4 Fans – normal duty (2m)	68	73	75	73	70	67	66	55	75
Louvred transformer room door (1.5m)	61	60	59	58	54	50	48	38	59
Background (no influence from transformer)	59	60	58	57	54	52	48	40	60

Table 5.2 Measured source noise level data

Subjectively, there was no noise audible from the transformer room door over and above the general background noise other than when listening at a distance of less than 0.5 m from the door itself. This correlates to the noise level measurements of the source not being above the general background noise level measurement. Regardless, all subsequent assessment has been based on the measured level with no correction for background noise, which would represent an extremely pessimistic assessment.

6.0 ASSESSMENT

6.1 Closest Noise Sensitive Receptors

The closest noise sensitive receptor to the plant installation is as follows:

- **R1** - Approximately **220 m**, partially screened
- **R2** - Approximately **215 m**, fully screened
- **R3** - Approximately **160 m**, partially screened
- **R4** - Approximately **325 m**, fully screened
- **R5** - Approximately **140 m**, fully screened

6.2 Calculations

Taking all acoustic corrections into consideration and based on the source noise measurements undertaken in Section 5.0, the noise level contribution expected at the nearest receptors from the proposed plant would be as shown below.

The calculated noise level at each receptor has been assessed against the night-time criteria for each individual receptor to facilitate a worst-case assessment.

Detailed calculations for each source noise level measurement are shown in Appendix B.

The subjective impression on site was that the source noise was constant and free of acoustic features such as tonality or impulsivity. It should also be noted that the measured noise levels also do not indicate tonality when assessed objectively in accordance with the guidance of BS 4142:2014. Whilst the need for character corrections should be assessed based on the noise level at the receptors, this is a positive indication that no corrections are required.

Description	Receptor				
	1	2	3	4	5
Predicted Rating Level at Receptor $L_{Ar,15min}$	35 dB	30 dB	38 dB	27 dB	34 dB
Criteria $L_{Ar,15min}$	50 dB	50 dB	41 dB	44 dB	46 dB

Table 6.1 Assessment for the heat recovery project

As shown above, the above indicates compliance with the requirements of the Local Authority. Furthermore, the above is based on a very pessimistic assessment and is still at least 8 dB below the typical background sound level at the nearest receptor such that there should be minimal contribution to 'background noise creep' at the nearest receptors.

7.0 CONCLUSION

Commissioning noise surveys have been undertaken for the Heat Recovery Project at the Heineken Denmark Road site. Source measurements and subsequent propagation calculations have been carried out in accordance with BS 4142:2014 and BS 7445:2003.

The results demonstrate that the predicted Rating Levels at all identified noise-sensitive receptors fall comfortably below both the site-specific criteria established in report reference 23102.PCR.01 and the prevailing background sound levels.

On this basis, the installed plant is considered to comply with the requirements of Condition 4 of the planning decision notice 137788/FO/2023. No further noise mitigation measures are considered necessary.

APPENDIX A

Main Heat Recovery Area

The installation location for the heat recovery area elements is as below.

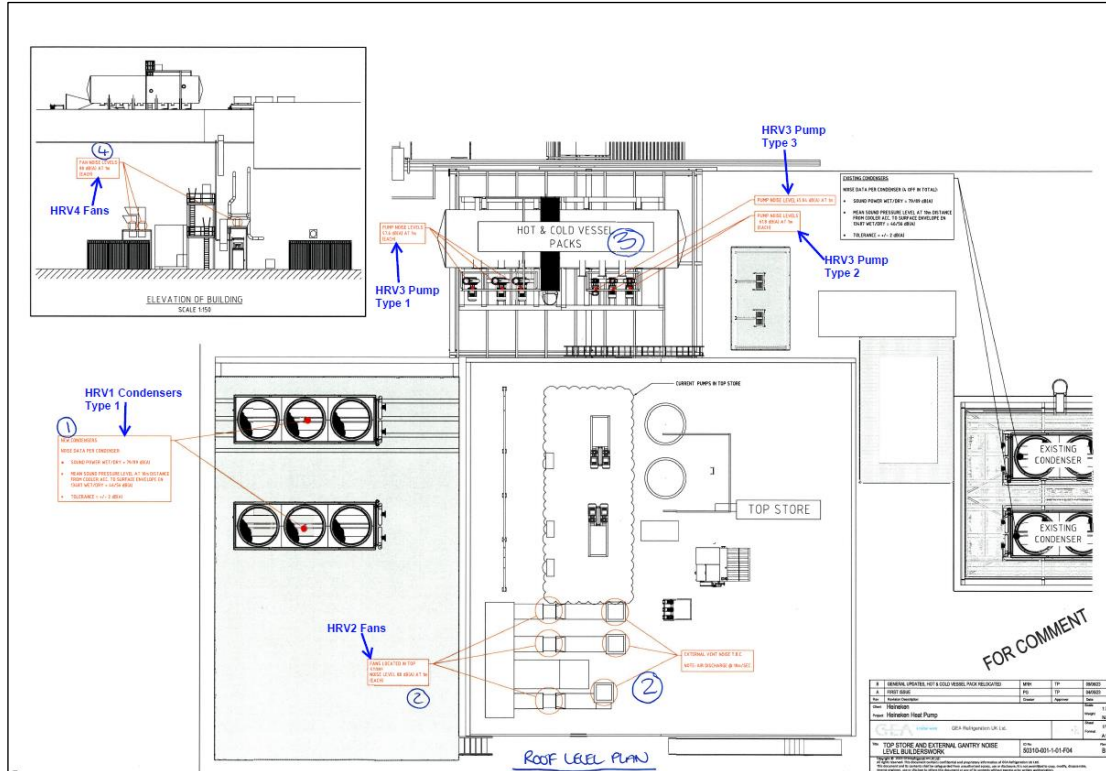


Figure A.1 Heat recovery project plant

HVLV Area

The installation location is in the Engineering Workshop building, in a room on the northwest façade, as shown marked in red below.



Figure A.2 Plant location (red) (Source: Google Maps)

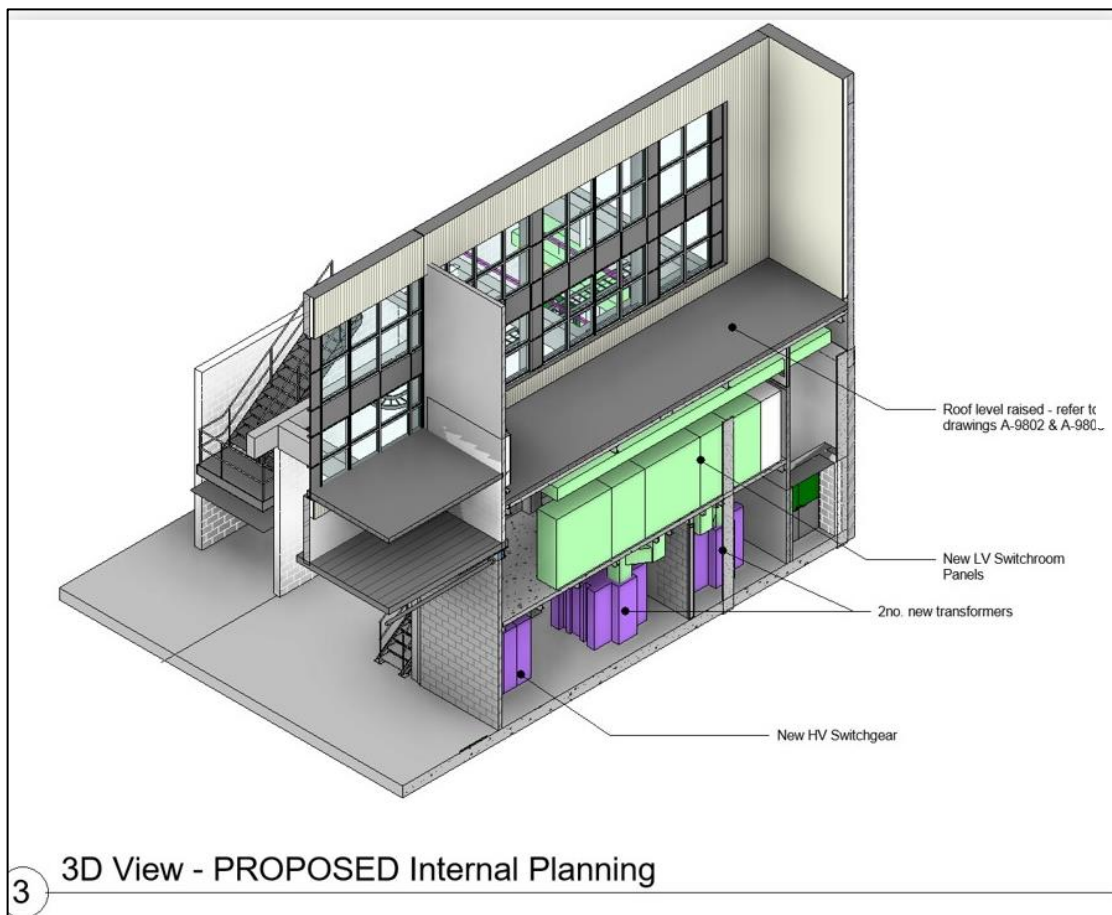


Figure A.3 Proposed plant locations (Source: Norder)

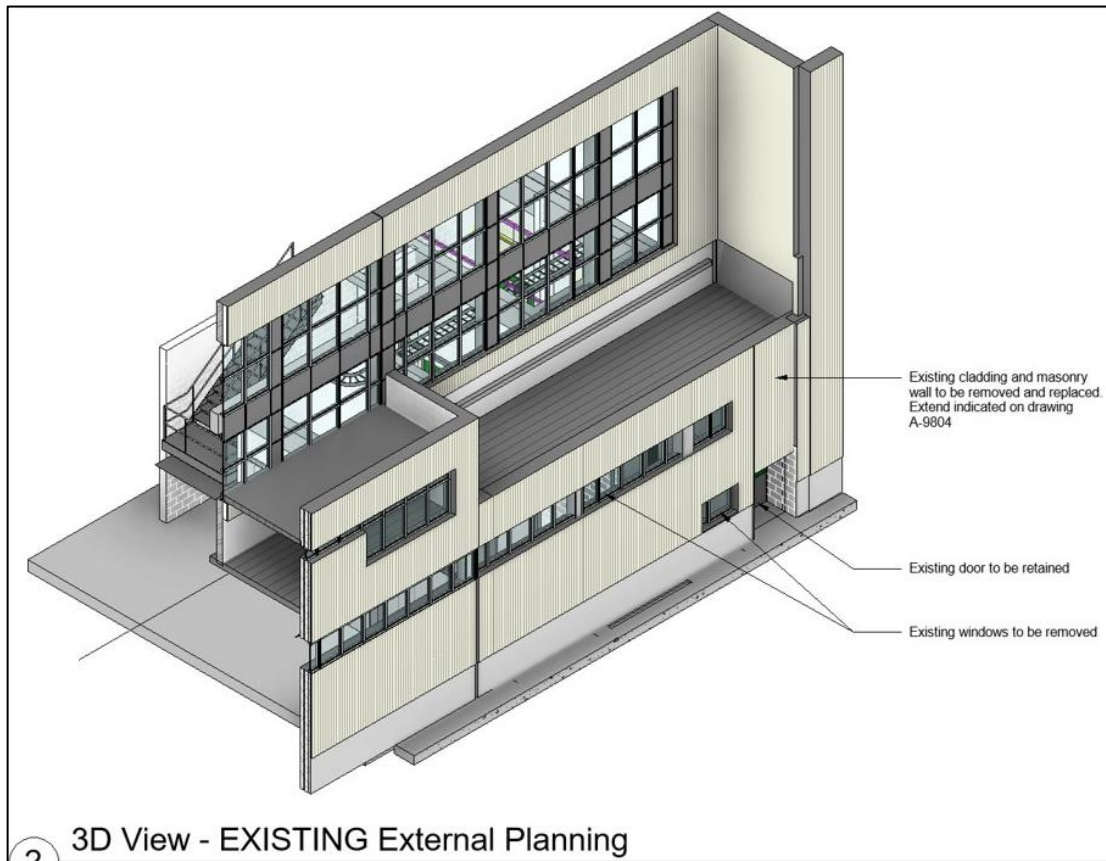
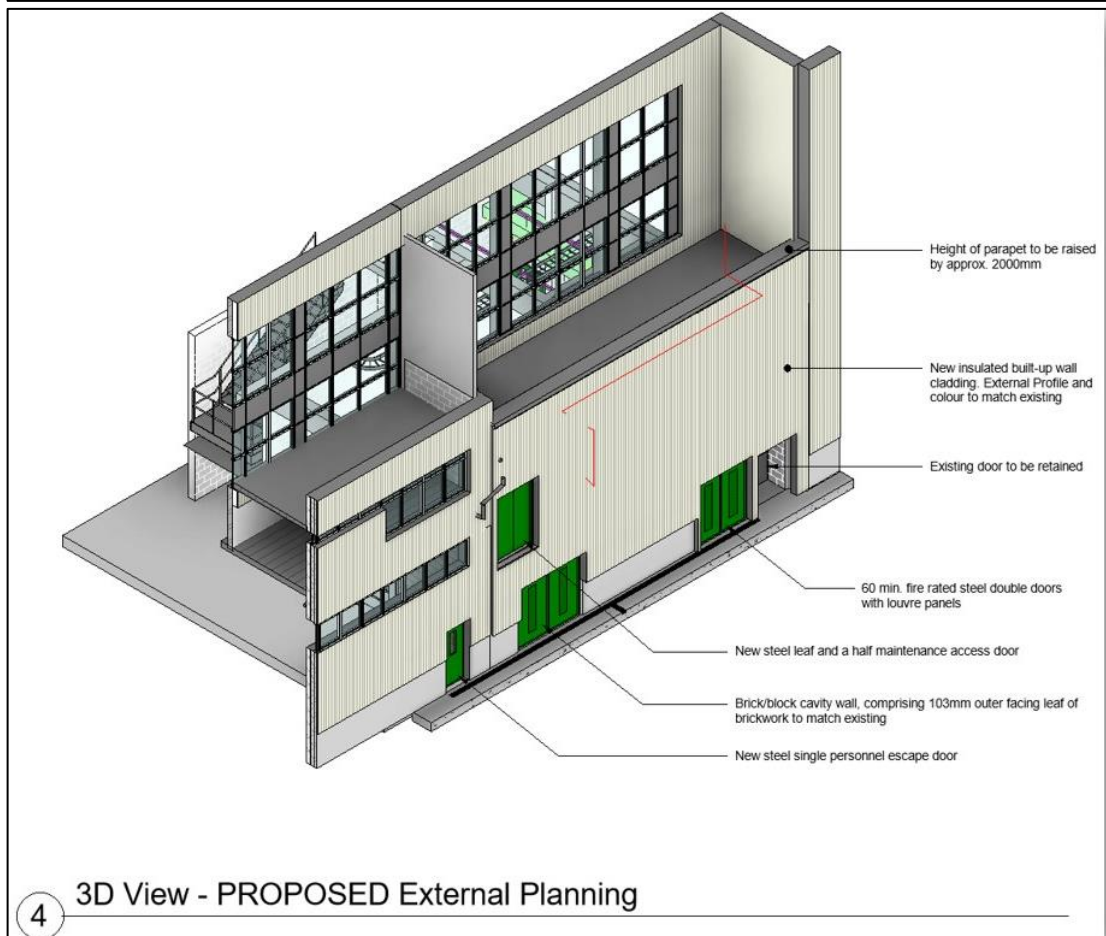


Figure A.4 Existing view and proposed façade changes (Source: Norder)

APPENDIX B

Source		Sound Pressure Level (dB) at Octave Band Centre Frequency (Hz)								dBA
		63	125	250	500	1k	2k	4k	8k	
HRV2 Fans	Measured at 5m	65	65	69	66	64	59	53	42	69
	Corrected to 10m	59	59	63	60	58	53	47	36	63
HRV3 Pumps	Measured at 3m	66	68	71	70	70	68	69	59	76
	Corrected to 10m	52	54	57	56	56	54	55	45	62
HRV4 Fans – normal duty	Measured at 2m	68	73	75	73	70	67	66	55	75
	Corrected to 10m	54	59	61	59	56	53	52	41	61
Louvred transformer room door	Measured at 1.5m	61	60	59	58	54	50	48	38	59
	Corrected to 10m	41	40	39	38	34	30	28	18	39
Cumulative sound level at 10m		61	63	66	64	62	58	57	47	67

Table B.1 Standardised correction to cumulative sound level at 10m

Description	Receptor				
	1	2	3	4	5
Cumulative Sound Level at 10m $L_{Aeq,15min}$	67 dB	67 dB	67 dB	67 dB	67 dB
Distance Correction	-27 dB	-27 dB	-24 dB	-30 dB	-23 dB
Screening Correction	-5 dB	-10 dB	-5 dB	-10 dB	-10 dB
Predicted Rating Level at Receptor $L_{Ar,15min}$	35 dB	30 dB	38 dB	27 dB	34 dB

Table B.2 Calculation summary for heat recovery project