Reference: Longsight Custody Suite, Manchester
Project No: 2422646
Date: 24th July 2026

Technical Note 4 (rev 1)

Re: Planning Condition 5 (Part a and b)

Sharps Redmore (SR) have been instructed to undertake assessment and verification measurement of noise arising from new items of fixed building services plant being fitted as part of refurbishment works to the former Longsight Police Custody Suite. The Custody Suite sits within the Greater Manchester Police compound in Longsight just off Stockport Road, M13 OLL. The improvements and recommissioning of the Custody Suite has been granted planning permission, subjected to a Condition relating to noise from mechanical services plant.

The Local Authority condition comprises 2 parts, the first element, requires design stage assessment (a.), the second part of the condition requires post completion validation measurement of the plant installed and commissioned (b.). Assessment of noise is to made in accordance with BS 4142:2014+A1:2019 "*Methods for rating and assessing industrial and commercial sound*".

Environmental noise surveying was undertaken at the site prior to construction works commencing, and based on the measured prevailing background noise levels at a location considered to be representative of the nearest receptors, cumulative plant noise rating limits that can be considered to satisfy the LPA requirement were established and reported on previously.

Part a. of the condition has been formally discharged by Manchester City Council; this note has been produced with a view to discharge Part b. of the Condition with the wording reproduced below for clarity.

Planning Condition 5

"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 (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.

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.

Reason -To minimise the impact of the development and to prevent a general increase in pre-existing background noise levels around the site, pursuant to policies SP1 and DM1, of the Manchester Core Strategy and saved policy DC26 of the Unitary Development Plan for the City of Manchester."

To discharge the second part of the condition (Part b.) a verification noise report is required that verifies atmospheric noise from building services plant has been fitted with appropriate noise mitigation to comply with the approved noise limit at the nearest noise sensitive receiver.

Such noise limits have been verified by Sharps Redmore through operational source site noise measurement of building services plant and subsequent assessment. Equal to Part a. assessment has been undertaken in accordance with British Standard 4142:2014+A1, as detailed below.

1. <u>British Standard 4142:2014+A1:2019 (BS 4142)</u>

In line with the condition assessment of fixed items of building services plant noise is to be undertaken in accordance with the methodology in BS 4142:2014+A1:2019 '*Methods for rating and assessing industrial and commercial sound*'. The scope of this standard states that it is suitable for the assessment of:

"*a) sound from industrial and manufacturing processes;*

b) sound from fixed installations which comprise mechanical and electrical plant and equipment;

c) sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and d) sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site."

The significance of sound impact is to be determined according to the following summary process:

i) Determine the background sound levels, in terms of the index L_{A90}, at the receptor locations of interest.

ii) Determine the specific sound level of the source being assessed, in terms of its L_{AeqT} level (T = 1 hour for day or 15 minutes for night), at the receptor location of interest.

iii) Apply a rating level acoustic feature correction if the source sound has tonal, impulsive, intermittent, or other characteristics which attract attention.

iv) Compare the rating sound level with the background sound level; the greater the difference between the two, the higher the likelihood of adverse impact.

v) A difference (rating – background) of around +10 dB is an indication of significant adverse impact, depending on the context; a difference of +5 dB is an indication of an adverse impact, depending on the context. 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 upon context.

2. Site Conditions & Noise Criteria

The site on which development was approved, sits amongst buildings of commercial and residential nature with the condition wording stipulating assessment of noise impact be carried out at the nearest noise sensitive location.

The nearest such location has been previously determined, as the 1st floor windows to dwellings on Grindlow Street. These buildings are considered of closest proximity to the new items of fixed building services plant, with properties on Richmond Grove exposed to higher background noise levels due to their proximity to the A6 Stockport Road.

Residents to the west on Plymouth Grove are of a similar albeit slightly greater distance than those on Grindlow Street, but background L_{A90} noise levels were measured as being higher here, 41 dBA at night compared to 33 dBA on Grindlow Street.

Noise form fixed items of plant at windows to sensitive buildings on Richmond Grove and Plymouth Grove are considered to be of lower impact, afforded similar or greater screening and distance attenuation losses. Considering the higher levels of background noise at these locations, prediction of noise at windows to dwellings on Grindlow Street can be considered to present a worst case assessment.

Pre-development Environmental Noise Survey

Data obtained from noise surveying at the site between July and August 2024 has been used to establish the prevailing representative noise levels at the nearest NSR, for further information on this survey which consisted of short attended and long-term unattended measurement, the reader is referred to the acoustic design report R1-22.8.24-Acoustic Report-Longsight Custody Suite-2422646-PJB which has been appended to this note.

Background L_{A90} measured day and night noise data at the above mentioned properties is presented below.

North, Grindlow Street (No. 19-21)

Daytime 0700-2300: Background L_{A90} = 42 dB

Night time 2300-0700: Background L_{A90} = 33 dB

The site plan from the aforementioned report that shows the assessment position relative to the development site is provided in Figure 1. Plant noise rating limits for items of fixed building services plant associated with the development at this position, in accordance with Condition 4a are presented in Table 3.1.

Table 3.1: Minimum background noise levels and plant noise limits

Receptor	Period	Typical Minimum L_{A90} dB	Cumulative plant noise limit rating dB $L_{Ar,Tr}$
NSR on Grindlow Street	07:00-23:00	$L_{A90,\ 15\ minutes} \approx 42$	37
	23:00-07:00	$L_{A90,\ 5\ minutes} \approx 33$	28

Figure 1: Site Plan showing NSR



Emergency Plant

Items of emergency plant are not required to meet the noise limits given for all other items of building services plant, but these items were designed to minimise disturbance during the brief period when the plant is operational for day time testing. A limiting noise level for emergency plant was proposed;

Emergency Plant Noise Limits: $L_{Aeq\ 9:00\text{-}17:00}$ 54 dB

This limit, is applicable at the nearest dwelling on Grindlow Street to the 4 installed smoke extract fans.

3. Noise Verification Assessment

Fixed buildings services plant: Sharps Redmore visited the site on Thursday 26th March to undertake in-situ operational noise measurement of fixed items of building services plant that have been installed and commissioned.

Noise generated from items of fixed building services plant installed as part of the fit-out has been measured within the external AHU compound above the operational hub, on the roof of the building where the outdoor condensers and other associated equipment has been installed and at a distance of 1m from the existing Police building façade louvre that overlooks the car park to account for noise from new ventilation duct terminations.

Drawing upon information obtained during the design stage of the project, as the mechanical engineer and Contractor indicated that plant could operate at any time during a 24 hour period, the data has been considered during both day and night to account for the lower levels of background noise between the hours of 23:00-07:00.

Noise levels measured by Sharps Redmore during the visit on 26th March are detailed in Table 3.1.

Table 3.1: Measured plant verification noise level

Unit model ref	Number of Units	Comment	Measured L_{Aeq} at 1m
AHU Plant Compound	2	External Compound	L_{Aeq} at 1m = 63 dB
Roof Outdoor Condenser Plant	-		L_{Aeq} at 1m = 66 dB
Existing Police Building – Façade Louvre	-	Internal Plant Ducted	L_{Aeq} at 1m = 56 dB
Background L_{A90} level in absence of Plant			L_{A90} = 55 dB

Atmospheric noise assessment: In our experience, the operation of the proposed equipment is not impulsive, tonal or intermittent, neither does site measured or Manufacturer supplied data provided suggest such characteristics, and no penalties have therefore been applied in accordance with BS 4142.

Noise levels predicted at NSRs (as identified in Section 2) are outlined in Table 3.2 where relevant, a correction to the measured plant noise level has been applied to account for background L_{A90} noise in the absence of plant equipment operating.

Detailed calculations are available upon request.

Table 3.2: Predicted noise level at worst affected windows; Grindlow Street

Location	Predicted noise level at NSR	
	07:00-23:00 hours	23:00-07:00 hours
Predicted Combined Plant Noise Rating Level $L_{Ar,Tr}$	26 dBA	26 dBA
Typical Background L_{A90} dB	42 dBA	33 dBA
Difference	- 16 dBA	-7 dBA
BS 4142 Impact	Low	Low
Planning Rating Limit $L_{Ar,Tr}$	37 dBA	28 dBA

The rating level has been determined based on the plant equipment operating simultaneously at any given time during a 24 hour period, presenting a worst case assessment. A comparison of the values in Table 3.2 indicates that noise from items of building services associated with the development has been controlled to meet the limits enforced by Manchester City Council under the condition given for the consented scheme, Condition 5.

Based on fully operational source noise levels measured by Sharps Redmore and subsequent calculation, in-situ verification measurement of all items of fixed building services plant giving rise to noise that warrants investigation, the noise limits stipulated under Condition 5 have in Sharps Redmore opinion been achieved.

Uncertainty in calculation: As assessment of uncertainty in measurement and calculation is required and has been evaluated considering the '*good practice guide on the sources and magnitude of uncertainty arising in the practical measurement of environmental noise*' (2007).

The uncertainty in quoted manufacturer noise data from source measurements in accordance with in BS EN ISO 3740P:2001 is considered as well as that associated with acoustic calculation and field site measurement.

SR are therefore of the opinion that following review of such considerations, the resultant outcome of the BS 4142 assessment is unlikely to be influenced.

Emergency Plant

The noise level with building services plant operating was measured on the pavement outside the Custody Suite Car Park on Grindlow Street during the afternoon of 26th March 2026. L_{Aeq} noise was measured at 54 dB, and 53 dB when these items of plant were not operating.

The corrected for background (measured at the time as being 50 dB L_{A90}) emergency plant noise level has been determined through calculation using the measurement data obtained at 51 dB L_{Aeq}.

The calculated noise level can therefore be considered to fall below the 54 dB noise limit proposed at the nearest dwelling on Grindlow Street.

4.. Conclusion

Noise associated with the installed items of fixed plant building services has been measured and assessed in general accordance with BS 4142:2014+A1:2019 “Methods for rating and assessing industrial and commercial sound.” Background noise data obtained in the summer of 2024 through long term surveying with in the vicinity of nearest sensitive properties has been considered, as required by Manchester City Council. The plant operating period L_{A90} noise level has been used to establish the fixed plant rating Limit, $L_{Ar,T.}$ at the noise sensitive receiver (NSR) windows.

The noise levels verified through site measured noise from installed, commissioned and operational items of fixed external building services plant has been undertaken in general accordance with BS 4142:2014+A1:2019 “Methods for rating and assessing industrial and commercial sound.”

Based on the noise data obtained at a distance of 1m from the source, including the intake discharge terminations of the ducted ventilation equipment, noise at the nearest residential properties has been predicted though verification measurement, noise has been calculated to fall significantly below the existing ‘period’ background noise climate during operation of the plant and this can in accordance with BS 4142:2014 be considered, to be of “low impact.”

Under the approved planning consent (139753/FO/2024), Condition 4a, atmospheric building services plant noise is required to not exceed a limit 5 dB below the minimum background $L_{A90,}$ with the L_{A90} noise level determined as being representative of noise at windows of the identified worst case residential receiver.

The assessment of noise from the installed building services indicates the noise at the noise sensitive receivers fall in line with the requirement of Condition 5. In addition, consideration has been given to uncertainty in measurement and calculation and this has been found to have no influence on assessment outcome. In view of the information presented within, Sharps Redmore are of the opinion that Part b. of the Condition is likely to be discharged.

Prepared by,

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[redacted]

Appendix A*: Design Stage Acoustic Report, R1-22.8.24-Acoustic Report-Longsight Custody Suite-2422646-PJB)*

4.0 Environmental Noise Survey

4.1 To establish the existing noise climate and to assess suitability of the existing external building envelope for controlling external noise ingress a noise survey was carried at the site between Wednesday 31st July and Thursday 1st August 2024. Unattended measurements were taken with a Norsonic auto-logging Type 1 sound level meter and a Cirrus auto-logging Type 1 sound level meter[2].

4.2 Unattended measurement locations are shown in Figure 1, charted In Appendix A and summarised as follows in the tables below.

- Location 1 (L1): An auto-logging measurement location was established by fixing a microphone to a lamppost in the carpark of the grounds at a height of approximately 4.5m above ground with a direct line of sight to Plymouth Grove, albeit partially obscured by vegetation.
- Location 2 (L2): An auto-logging measurement location was established by fixing a microphone to a lamppost in the carpark of the grounds at a height of approximately 4.5m above ground with a direct line of sight to Grindlow Street, albeit partially obscured by vegetation.

Table 3: Measured un-attended noise levels summary

Location	Description	Period	$L_{Aeq,\,T}$ dB	Representative Minimum L_{A90} dB
L1	Plymouth Grove	Daytime 0700-2300hrs	68	$L_{A90,\,15\,mins}$ 47
		Night-time 0700-2300hrs	61	$L_{A90,\,5\,mins}$ 41
L2	Grindlow Street	Daytime 0700-2300hrs	54	$L_{A90,\,15\,mins}$ 42
		Night-time 0700-2300hrs	50	$L_{A90,\,5\,mins}$ 33

4.3 Weather conditions were dry with wind speeds typically less than 5 m/s during the measurement periods, and overall considered acceptable. The sound level meters were field checked for calibration before and after the measurement survey with no drift noted.

4.4 Noise across the façade is believed from site observation to have arisen from activity on both the main A6 Stockport Road and surrounding roads (Plymouth Grove, Richmond Grove and Grindlow Street) which the building is sandwiched between. Noise during low traffic periods was also considered to have been influenced by existing operational building services plant servicing the Police site premises.

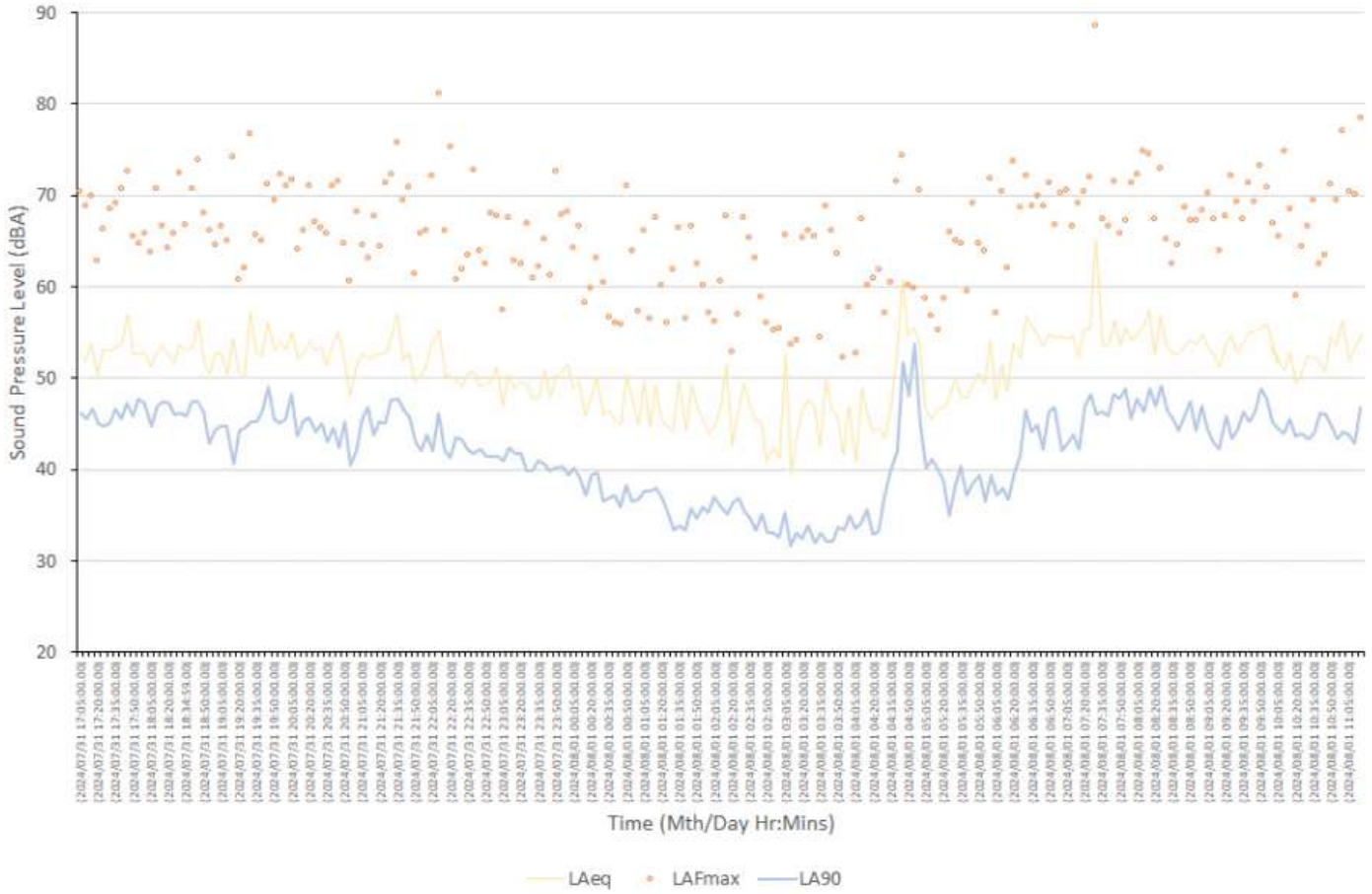
4.5 The noise level at the nearest noise sensitive receptor (NSR) was predominantly a result of noise from the two roads referenced above and also police vehicles along these roads, that of the A6 and Grindlow Street. Occasional traffic within the site car park during times of operation was also a factor.

[2] All meters have a full traceable history and were calibrated before and after use showing no significant drift. Auto-logging measurements were taken in 5-minute sample periods.

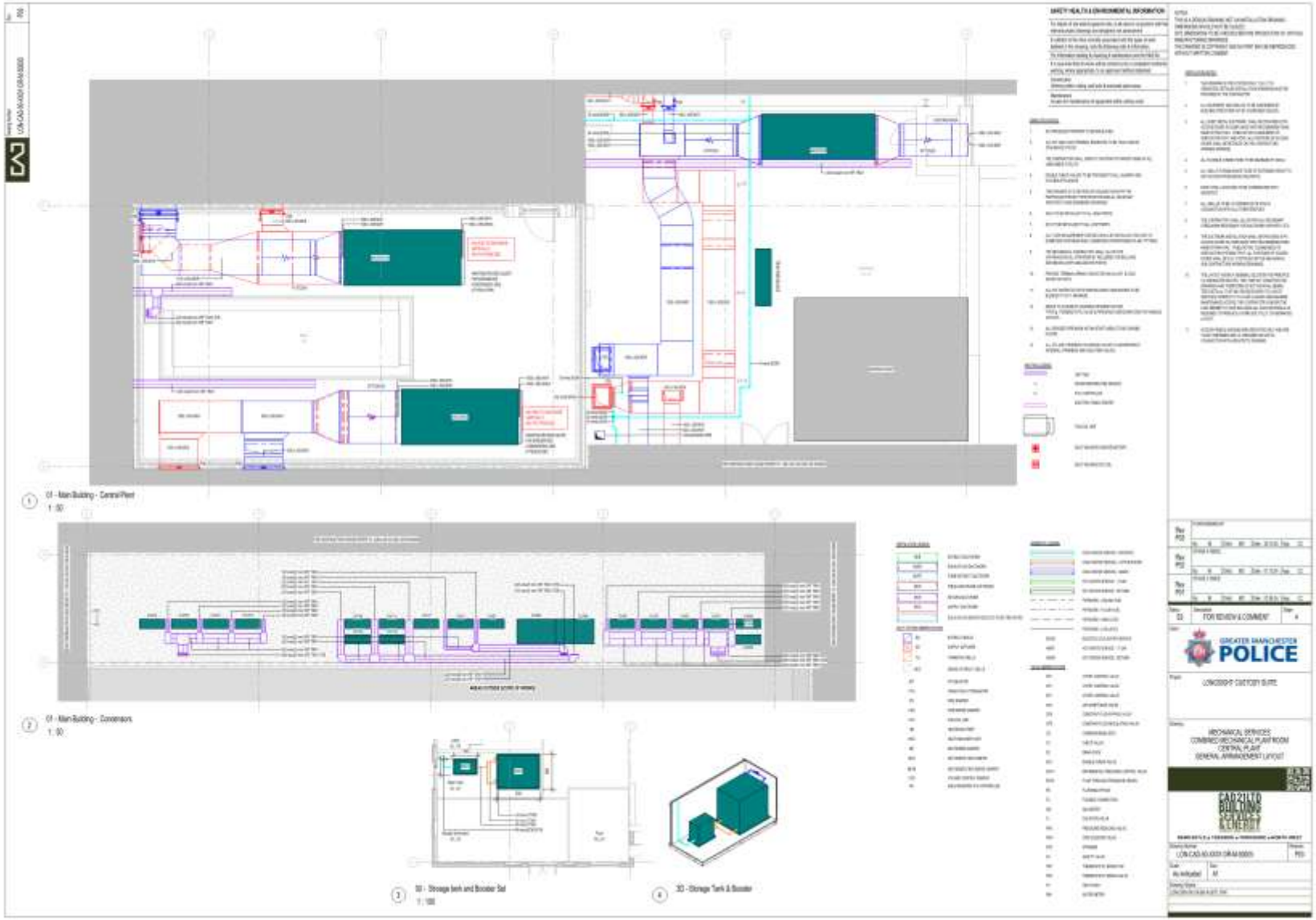
Figure A1 – Location L1



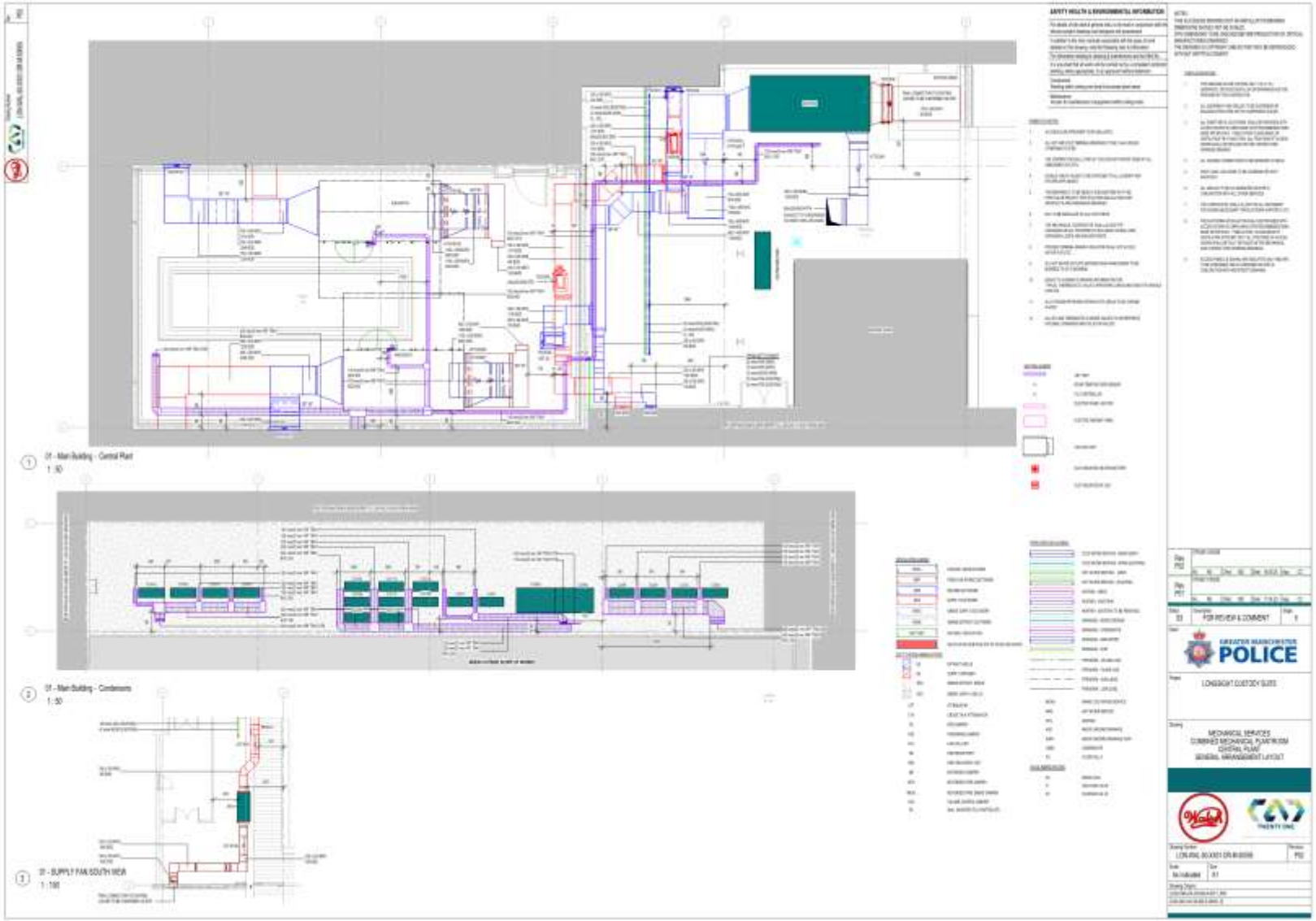
Figure A2 – Location L2



Appendix B*: Mechanical Drawings*


01 - Main Building - Central Plant
1 : 50
02 - Main Building - Condensors
1 : 50
03 - Storage tank and Booster Set
1 : 100
3D - Storage Tank & Booster
GREATER MANCHESTER POLICE
LONGSIGHT CUSTODY SUITE
MECHANICAL SERVICES
COMBINED MECHANICAL PLANT ROOM
CENTRAL PLANT
GENERAL ARRANGEMENT LAYOUT
CAD2TLTD
BUILDING
SERVICES
&ENERGY


POLICE


01 - Main Building - Central Plant
1 : 50
02 - Main Building - Condensers
1 : 50
03 - SUPPLY FAN SOUTH WEA
1 : 100
SAFETY HEALTH & ENVIRONMENTAL INFORMATION
FOR REVIEW & COMMENT
GREATER MANCHESTER POLICE
LONGSIGHT CUSTODY SUITE
MECHANICAL SERVICES
COMBINED MECHANICAL PLANTROOM
CENTRAL PLANT
GENERAL ARRANGEMENT LAYOUT