023771-R11-B
31 July 2026

MCFC North Stand Expansion

Planning condition 30 discharge report

SANDY BROWN
ACOUSTICS

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Version	Date	Comments	Author	Reviewer
A	2 Apr 26		JMG	JA
B	31 Jul 26	Plant noise verification included for part b of condition	JMG	JA

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Summary

Sandy Brown has been commissioned by John Sisk & Sons Ltd to carry out noise verification measurements of the installed plant at the MCFC North Stand expansion, to demonstrate compliance with Planning Condition 30b under 136763/FO/2023. This report sets out relevant information to discharge the condition.

Plant items which are external or include atmosphere side terminations are installed in the following areas of the development:

- Commercial building rooftop plant area
- Hotel building rooftop plant area
- North stand level 3 and 3M plant room.

Localised sample noise measurements were undertaken on site on 13 and 16 July 2026 to verify noise levels from the installed plant serving the North Stand, Commercial Building and Hotel Building. Measurements at the nearest noise sensitive receptors were also undertaken.

The planning noise limits as required by Manchester City Council Planning Condition 30 for planning application 136763/FO/2023 are set out within this report. The measurements and subsequent assessment indicates that cumulative plant noise egress is compliant with these criteria at the nearest noise sensitive receptors.

Based on the above, Planning Condition 30(b) and 52 (which references Planning Condition 30) can be discharged.

The information required to discharge Planning Condition 30(a) is provided in report 023771-R11-A, *Planning Condition 30 Discharge* Report, dated 2 April 2026.

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Contents

1 Introduction 5

2 Planning Condition 30 5

3 Plant noise egress limits 6

4 Site description 7

5 Development proposals 9

6 Verification measurements 14

7 Plant noise egress assessment 23

Appendix A 26

Survey details 26

Appendix B 29

Measurement location mark-ups 29

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1 Introduction

Sandy Brown has been commissioned by John Sisk & Sons Ltd to carry out carry out acoustic verification measurements to demonstrate compliance with Planning Condition 30b under 136763/FO/2023. This report sets out relevant information to discharge the planning condition.

Noise measurements were carried out on site on 13 and 16 July 2026 for the installed and operational plant. The measurement results have been used to calibrate a 3D acoustic model to predict plant noise levels at the nearest noise sensitive receptors for comparison with the criteria set out in line with Manchester City Council (MCC) requirements.

Verification measurements were also carried out outside the noise sensitive premises to the north east (The Drum and The Cube) to assess compliance at the nearest noise sensitive premises.

2 Planning Condition 30

Planning Condition 30 (a) of decision letter dated 12 August 2025 of MCC planning application 143447/NMC/2025 (non-material amendment of 136763/FO/2023) states:

> *'Prior to the first use of sections 1, 2 and 3 of the development hereby approved as shown on Plan Ref: ZZ-ZZ-DR-J-000083 RevP01, received by the City Council, as Local Planning Authority, on the 15 July 2025, details of any externally mounted ancillary plant, equipment and servicing shall be submitted for approval. For the avoidance of doubt, externally mounted plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5 dB (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location.'*

Sections 1, 2 and 3 of the development correspond to the North Stand, Hotel and Commercial buildings, respectively.

Planning Condition 30 (b) states:

> *'The approved scheme shall be implemented and prior to the first use of sections 1, 2 and 3 of the development hereby approved as shown on Plan Ref: ZZ-ZZ-DR-J-000083 RevP01, received by the City Council, as Local Planning Authority, on the 15 July 2025, a verification report will be required to validate that the work undertaken conforms to the recommendations and requirements approved under part (a) of this planning condition. The verification report shall include post completion testing to confirm the noise criteria has been met. In instances of non conformity, these shall be detailed along with mitigation measures required to ensure compliance with the noise criteria. Any mitigation measures shall be implemented in accordance with a timescale to be agreed with the City Council, as Local Planning Authority, and thereafter retained and maintained in situ.'*

Planning Condition 52 also states:

> *'… The air source heat pumps must also comply with the noise criteria as specified in condition 30. The approved details shall then be implemented prior to the first use of section 1 and thereafter retained and maintained in situ.'*

3 Plant noise egress limits

Plant noise egress limits are set out in the received Vanguardia Stage 4 acoustic report NSE-VAN-NS-XX-TR-YA-000001_MCFC North Stand Stage 4 Acoustic design report_S4 - Suitable for review & authorisation (by LAP)_P01, dated 31 August 2023.

The report states:

> *'Plant noise egress criteria for the project has been defined in MCFC ES Chapter 11 – Noise and Vibration. It should be noted these criteria apply cumulatively to all new plant associated with the North Stand, Commercial and Hotel development.'*

The limits within the Vanguardia Stage 4 acoustic report are summarised in Table 1.

Table 1 Maximum plant noise egress levels from Vanguardia Stage 4 acoustic report

Location	Maximum plant noise rating level (BS4142) $L_{ar,Tr}$ (dB)	
	Day (07:00-23:00)	Night (23:00-07:00)
6 Cromarty Walk	47	44
12 Biscay Close	47	44
The Cube	52	37
The Drum	52	37

3.1 MCFC ES Chapter 11 – Noise and Vibration

The noise and vibration ES Chapter submitted (by others) as part of MCC planning condition reference 136763/FO/2023 includes the background sound levels which inform the Vanguardia Stage 4 acoustic report limits. These are summarised in Table 2.

Table 2 Typical background sound levels from MCFC ES Chapter 11 – Noise and Vibration (by others)

Location	Typical background sound level, $L_{A90,15min}$ (dB)	
	Day (07:00-23:00)	Night (23:00-07:00)
6 Cromarty Walk	52	49
12 Biscay Close	52	49
The Cube	57	42
The Drum	57	42

The ES Chapter states that the typical background sound level is the modal value. The ES Chapter states that the measurements are free-field.

3.2 MCC comments on ES Noise Chapter

The project note (by others) dated from 26 June 2023 as part of MCC planning condition reference 136763/FO/2023 provides responses to MCC comments on the MCFC ES Chapter (by others).

The project note presents revised typical background sound levels using the method defined in MCC Planning and Noise Technical Guidance (October 2022), as requested by MCC. These are summarised in Table 3.

Table 3 Typical background sound levels from planning application project note (by others)

Location	Typical background sound level, $L_{A90,15min}$ (dB)	
	Day (07:00-23:00)	Night (23:00-07:00)
6 Cromarty Walk	48	48
12 Biscay Close	48	48
The Cube	52	41
The Drum	52	41

The corresponding revised plant noise egress limits are also provided in the project note, as summarised in Table 4.

Table 4 Revised plant noise limits from planning application project note (by others)

Location	Typical background sound level, $L_{A90,15min}$ (dB)	
	Day (07:00-23:00)	Night (23:00-07:00)
6 Cromarty Walk	43	43
12 Biscay Close	43	43
The Cube	47	36
The Drum	47	36

These are free-field noise limits.

4 Site description

4.1 The site and its surroundings

The site location in relation to its surroundings is shown in Figure 1, with the noise sensitive receptors identified as part of Chapter 11 of the Environmental Statement: Volume 1 from the original planning application (planning ref 136763/FO/2023). The site is bounded by Alan

Turing Way (A6010) to the west, Ashton New Road (A662) to the south and the Metrolink tramline to the north and west.

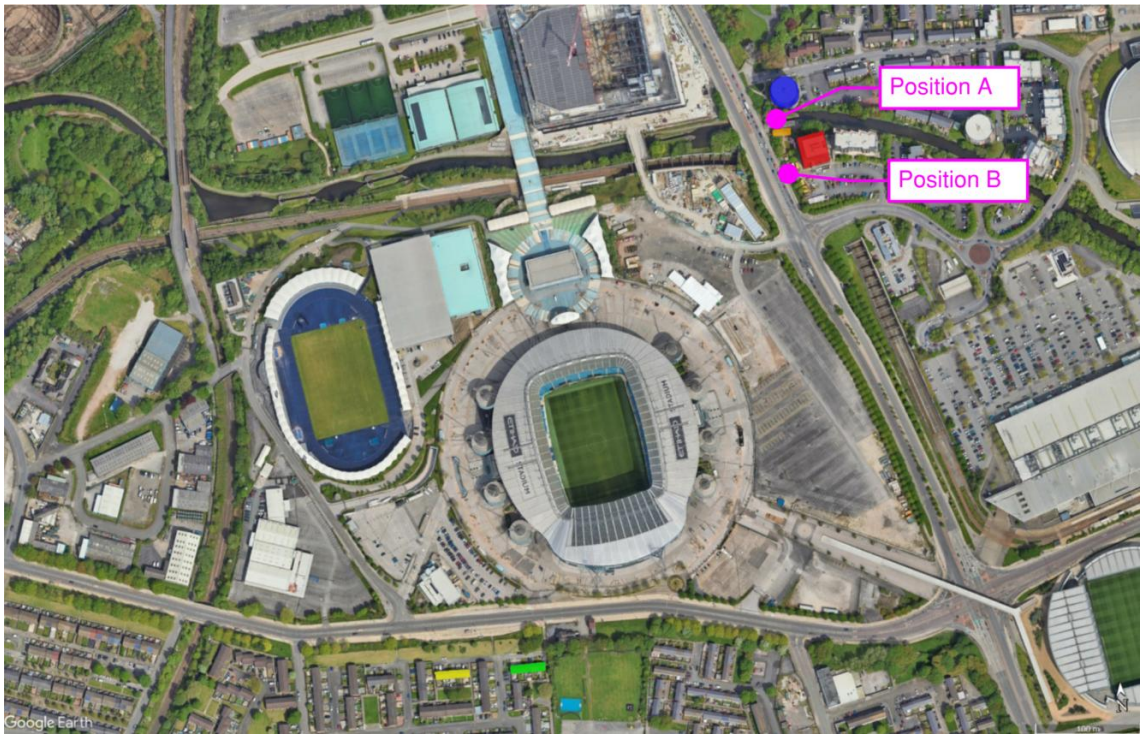


Figure 1 Aerial view of site (courtesy of Google Earth Pro)

4.2 Adjacent premises

The nearest noise sensitive residential receptors have been identified as part of the original Environmental Statement, dated April 2023, and are summarised below:

- Residential premises located at 2b The Waterfront (The Cube), Gibbon Street, approximately 260 m east of the City Square, highlighted in red
- Residential premises located at 2 Stuart Street (The Drum), approximately 270 m east of the City Square, highlighted in blue
- Residential premises located at 6 Cromarty Walk, approximately 380 m southwest of the City Square, highlighted in yellow
- Residential premises located at 12 Biscay Close, approximately 380 m south of the City Square, highlighted in green

An additional noise sensitive receptor has also been identified and is included in this noise impact assessment due to its proximity to the North Stand expansion:

- Residential premises located along Alan Turing Way, approximately 270 m east of the City Square, highlighted in orange.

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5 Development proposals

The following items of plant have been installed at each building under normal operations.

5.1 North Stand

The following items of plant are proposed at Level 3 and 3M plant room with non-acoustic louvres to the north, west and east plant room facades:

5.1.1 Level 3

- 2 x AHUs highlighted in red in Figure 2.
- 16 x DXC units highlighted in green in Figure 2.
- 5 x AHC units highlighted in yellow in Figure 2.
- 11 x ACC units highlighted in blue in Figure 2.
- 4 x TEF units highlighted in orange in Figure 2.
- 4 x Kitchen extract fans highlighted in brown in Figure 2.
- 1 x EAHU highlighted in light green in Figure 2.
- 2 x MVHRs highlighted in light blue in Figure 2.

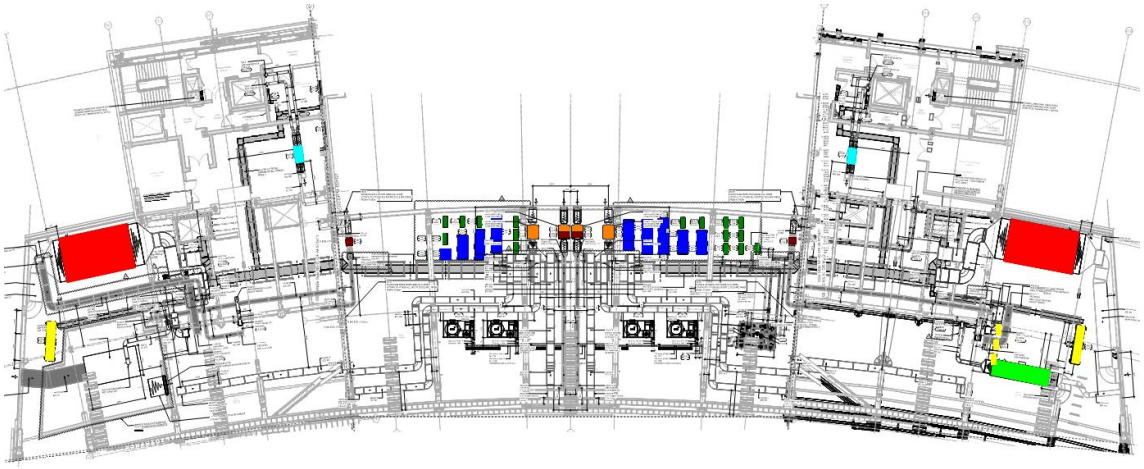


Figure 2 North Stand Level 3 plant room and proposed plant item locations

5.1.2 Level 3M

- 4 x EAHU highlighted in light green in Figure 3.
- 8 x ASHP highlighted in pink in Figure 3.

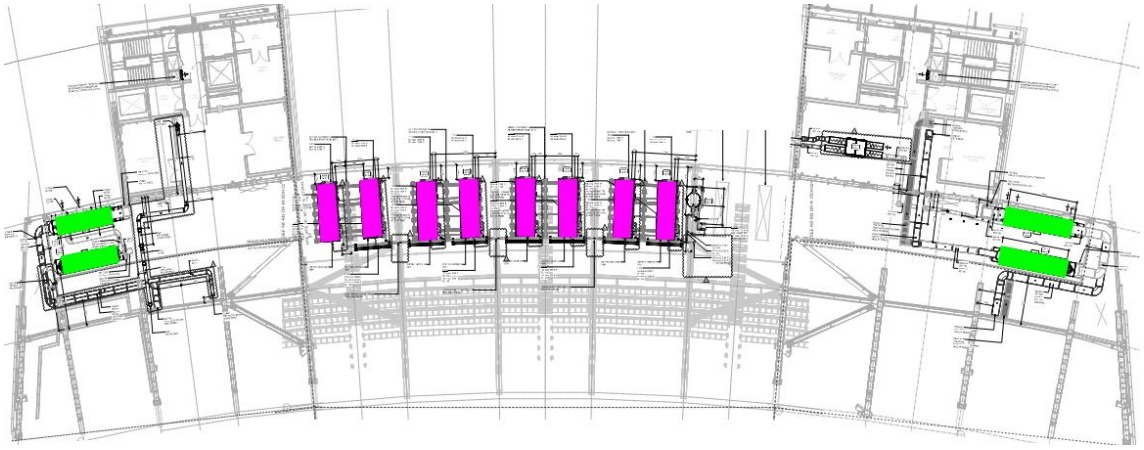


Figure 3 North Stand Level 3M plant room and proposed plant item locations

5.1.3 Proposed hours of operation

The proposed hour of operation for the above plant items within the north stand are summarised in Table 5. Day and night operations relate to 07:00 to 23:00 and 23:00 to 07:00 respectively.

Table 5 Proposed plant items and hours of operation (North Stand)

Type of unit	Item of plant	Proposed operation
ACC	ACC 0.01, ACC 1.01, ACC 4.03, ACC 0.05, ACC 0.03, ACC 0.02, ACC 4.02	Day - Full design duty Night - Set back mode at night running at low speed. (60% capacity 3-4 dBA reduction)
	ACC 4.01, ACC 5.02, ACC 0.04, ACC 5.01	Day - Full design duty
DXC	DXC 3.01, DXC 3.02, DXC 3M.02 1, DXC 1.02, DXC 3M.01 2, DXC 3M.01 1, DXC 1.01, DXC 3M.03 2, DXC 3M.04 2, DXC 3M.04 1, DXC 1.03, DXC 3.04, DXC 3.03, DXC 1.04, DXC 2.01	Day and night - Full design duty
	DXC 2.02, DXC 3M.02 2	Day only- Full design duty

Type of unit	Item of plant	Proposed operation
AHC	AHC 3.01, AHC 3M.01, AHC 3M.04, AHC 3M.03, AHC 3M.02, AHC 3.05, AHC 3.02	Day and night- Full design duty
AHU	AHU 3.01, AHU 3.02	Day - Full design duty Night - trickle mode (10%) a minimum 10 dBA reduction is assumed
ASHP	ASHP 3M.01, ASHP 3M.02, ASHP 3M.03, ASHP 3M.04, ASHP 3M.05, ASHP 3M.06, ASHP 3M.07, ASHP 3M.08	Day - Full design duty Night - Set back mode at night running at low speed. (60% capacity 8-10 dBA reduction)
EAHU	EAHU 3.01, EAHU 3M.01, EAHU 3M.02, EAHU 3M.03, EAHU 3M.04	Day only
TEF	TEF 3.01, TEF 3.02, TEF 3.03, TEF 3.04, TEF 3.05, TEF 3.06	Day only
KEF	KEF 3.01, KEF 3.02, KEF 3.03, KEF 3.04	Day and night
MVHR	MVHR 3.01, MVHR 3.02, MVHR 3M.01	Day only

5.2 Hotel building

5.2.1 Level 8

The following outdoor rooftop plant is proposed on Level 8 for the hotel building.

- 20 x ACC units highlighted in brown in Figure 4

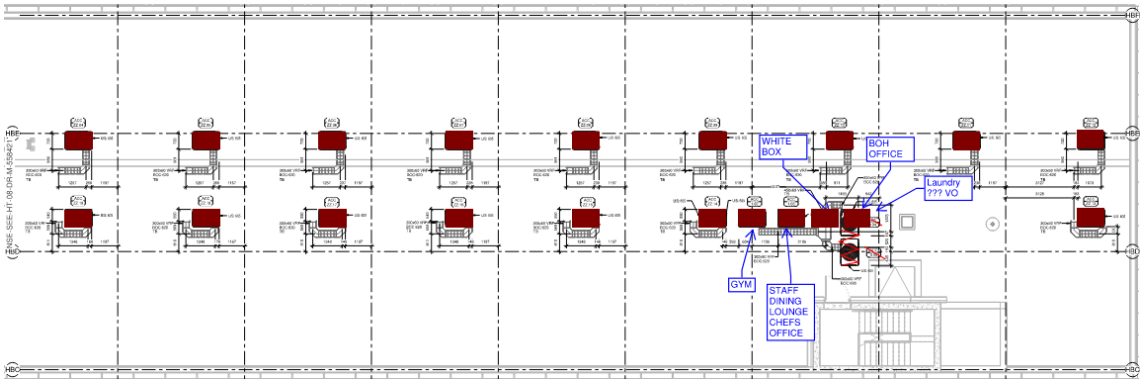


Figure 4 Hotel Level 8 rooftop layout showing the proposed plant

5.2.2 Level 9

The following outdoor rooftop plant is proposed on Level 9 for the hotel building.

- 18 x ACC units highlighted in brown in Figure 5
- 21 x DXC units highlighted in green in Figure 5
- 3 x AHC units highlighted in blue in Figure 5.



Figure 5 Hotel Level 9 rooftop layout showing the proposed plant

5.2.3 Proposed hours of operation

The proposed hours of operation for the above plant items are summarised in Table 6. Day and night operations relate to 07:00 to 23:00 and 23:00 to 07:00 respectively.

Table 6 Proposed plant items and hours of operation (Hotel building)

Type of unit	Item of plant	Proposed operation
ACC	All ACC units	Day - Full design duty Night – units at set back night mode (60% capacity), 3-4 dBA reduction
DXC	All DXC units	Day and night
AHC	All AHC units	Day only

5.3 Commercial building

The following outdoor rooftop plant is proposed for the commercial building.

- 9 x ACC units highlighted in green in Figure 6
- 2 x DXC units highlighted in blue in Figure 6

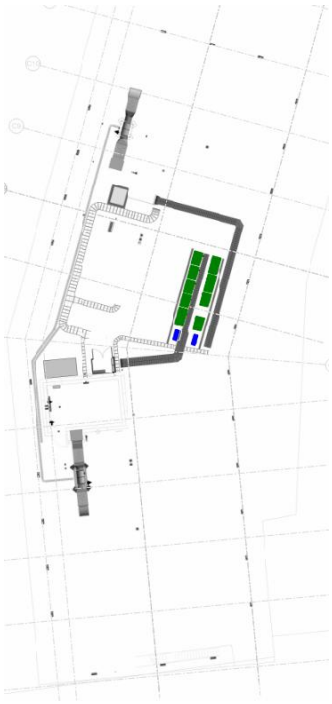


Figure 6 Commercial building rooftop level and proposed plant item locations

5.3.1 Proposed hours of operation

The proposed hours of operation for the above plant items are summarised in Table 7. Day and night operations relate to 07:00 to 23:00 and 23:00 to 07:00 respectively.

Table 7 Proposed plant items and hours of operation (commercial building)

Type of unit	Item of plant	Proposed operation
DX	All DX units	Day and night (continuous operation)
ACC	All ACC units	Day and night (06:00 to 23:00)

5.4 Acoustic screening

A solid parapet of 1.5 m above hotel level 8 and level 9 rooftop plant areas, and a solid parapet of 1.2 m above the commercial building rooftop plant level is proposed and has been considered within the assessment. This has been specified to provide a minimum weight of 15 kg/m^2.

5.5 Internal plant (all areas)

Internal plant with atmosphere side terminations have specified to ensure a limit of L_{Aeq} 55 dB, 1 m from the atmosphere side connections is achieved.

These internal plant with atmosphere terminations are assumed to be in operation during the day and night.

6 Verification measurements

6.1 Method

Sample noise measurements were carried out on 13 and 16 July 2026 to determine the noise levels produced by the installed and operational normally operating plant. Measurements were carried out in 1/3 octave bands over 1-minute periods.

Measurements were carried out by the following experienced Sandy Brown engineers in the following locations:

- 13 July 2026: North Stand plant and nearest noise sensitive receptors
- 16 July 2026: Commercial building and Hotel building rooftop plant and nearest noise sensitive receptors.

For each measurement, the microphone was mounted on a tripod approximately 1 m from each plant item/termination and approximately 1.5 m above the plant room/roof level. Except for measurement references 6 and 43, measurements were carried out at balconies

approximately 11 m above the ground level (canopy height) and 1.5 m above the balcony floor level.

A mark-up of the measurement locations is provided in Appendix B. For the Commercial Building and Hotel Building, as-built MEP layouts have not been received; therefore, mark-ups have been provided showing the measurement locations and, where noted, any plant relocations identified during the site visits.

6.2 Weather conditions

Weather conditions during the measurements on 13 and 16 July 2026 were clear and dry and considered suitable for obtaining representative measurements.

6.3 Measurement results

6.3.1 Localised plant measurement results

Plant noise measurement results are set out in Table 8. Observations for each measurement are provided. Plant noise was noted to be the dominant noise source in all cases. No attention catching features, with reference to BS4142 were noted during the measurements.

All plant in operation were understood to operate at day mode duty.

Table 8 Plant measurement results

Test ref	Time	Sound pressure level measured, L_{Aeq} (dB)	Notes
North Stand			
1	16:59	66	Dominated by nearby plant units in operation, with additional contributions from other operational plant within the plant room.
	17:01	67	
	17:02	67	
2	17:10	60	Dominated by AHU breakout and exhaust noise, with contributions from other plant within the plant room.
	17:11	60	
	17:12	60	
3	17:14	61	As above
	17:15	61	
	17:16	61	

Test ref	Time	Sound pressure level measured, L_{Aeq} (dB)	Notes
4	17:18	62	Dominated by AHU intake noise, with contributions from other plant within the plant room.
5	17:21	78	Dominated by AHU intake
6	17:28	65	Dominated by plant noise egress via the Level 3 and Level 3M louvres, with plant operating under normal daytime condition
	17:30	62	
	18:15	58	
	18:16	64	
	18:17	65	
7	17:40	70	Dominated by AHU noise and nearby AHUs at lower levels, with contributions from ASHP breakout noise and other plant within the plant room.
8	17:46	66	Dominated by noise from the nearby chiller unit in operation
9	17:49	68	Dominated by noise from the nearby chiller unit in operation
10	17:52	67	Dominated by noise from the nearby chiller unit in operation
11	17:54	65	Dominated by noise from the nearby chiller unit in operation
12	18:03	66	Dominated by noise from the nearby chiller unit in operation
13	18:04	66	Dominated by noise from the nearby chiller unit in operation
14	18:06	67	Dominated by noise from the nearby chiller unit in operation
15	18:07	65	Dominated by noise from the nearby chiller unit in operation
16	18:09	61	Dominated by noise from the nearby chiller unit in operation

Test ref	Time	Sound pressure level measured, L_{Aeq} (dB)	Notes
17	19:28	61	Dominated by ASHP noise, with contributions from AHUs at lower level and other plant within the plant room.
18	18:37	60	Dominated by AHU breakout noise, with contributions from other plant within the plant room.
19	18:39	58	As above
20	16:59	63	Dominated by noise from the nearby ACC unit, with contributions from other plant within the plant room.
21	17:00	63	As above
22	17:02	63	As above
23	17:03	61	As above
24	17:05	60	Dominated by noise from the nearby ACC unit, with contributions from other plant within the plant room.
25	17:07	59	Dominated by noise from other plant within the plant room.
26	17:09	58	As above
27	17:11	59	As above
28	17:13	59	As above
29	17:23	62	Dominated by operational plant noise within a reverberant environment.
30	17:28	57	Cumulative contribution from all operational plant within the plant room under reverberant conditions.
31	17:29	59	Dominated by AHU breakout noise, with contributions from other plant within the plant room.
32	17:30	63	Dominated by AHU exhaust noise and breakout noise, with contributions from other plant within the plant room.

Test ref	Time	Sound pressure level measured, L_{Aeq} (dB)	Notes
33	17:34	61	Dominated by AHU intake noise, with contributions from other plant within the plant room.
34	17:42	61	Dominated by noise from the nearby ACC unit, with contributions from AHU intake noise and other plant within the plant room.
35	17:47	77	Dominated by AHU intake
36	17:50	62	Dominated by AHU intake noise and breakout noise, with contributions from other plant within the plant room.
37	17:51	60	As above
38	17:52	55	Cumulative contribution from all operational plant within the plant room under reverberant conditions.
39	18:03	63	Dominated by DXC unit noise, with contributions from other plant within the plant room.
40	18:06	62	Dominated by DXC unit noise, with contributions from other plant within the plant room.
41	18:08	59	Dominated by DXC unit noise, with contributions from other plant within the plant room.
42	18:09	54	Cumulative contribution from all operational plant within the plant room under reverberant conditions.
43	18:15	56	Dominated by plant noise egress via the Level 3 and Level 3M louvres, with plant operating under normal daytime conditions.
Commercial building			
44	16:42	66	Dominated by noise from the nearby unit in operation, with contributions from other operational rooftop plant items.
45	16:47	65	As above
46	16:49	68	As above

Test ref	Time	Sound pressure level measured, L_{Aeq} (dB)	Notes
47	16:56	69	As above
48	17:01	68	As above
49	17:03	65	As above
50	17:05	66	As above
51	17:08	68	As above
52	17:10	70	As above
53	17:15	70	As above
54	17:17	70	As above
55	17:20	72	As above
56	17:22	72	As above
57	17:25	71	As above
58	17:30	65	Dominated by distant plant in operation
	17:31	65	
	17:32	65	
Hotel Level 8			
59	17:56	60	Dominated by plant in operation
60	17:59	60	Dominated by plant in operation
61	18:00	60	Dominated by plant in operation
62	18:04	58	Dominated by plant in operation
63	18:06	59	Dominated by plant in operation
64	18:11	60	Dominated by plant in operation
65	18:14	61	Dominated by plant in operation
66	18:17	60	Dominated by plant in operation
67	18:19	54	Dominated by plant in operation
68	18:21	56	Dominated by plant in operation
69	18:24	56	Dominated by plant in operation
70	18:28	58	Dominated by plant in operation
71	18:30	56	Dominated by plant in operation

Test ref	Time	Sound pressure level measured, L_{Aeq} (dB)	Notes
72	18:32	58	Dominated by plant in operation
73	18:34	66	Dominated by plant in operation
74	18:35	63	Dominated by plant in operation
Hotel Level 9			
75	17:06	59	Dominated by plant in operation
76	17:08	58	Dominated by plant in operation
77	17:09	57	Dominated by plant in operation
78	17:12	54	Dominated by plant in operation
79	17:14	52	Dominated by plant in operation
80	17:15	56	Dominated by plant in operation
81	17:17	57	Dominated by plant in operation
82	17:19	57	Dominated by plant in operation
83	17:20	57	Dominated by plant in operation
84	17:47	51	Dominated by operational plant noise, with contributions from nearby DXC units.
85	17:49	54	Dominated by operational plant noise, with contributions from nearby DXC units
86	17:51	53	Dominated by operational plant noise, with contributions from nearby DXC units
87	17:57	54	Dominated by operational plant noise, with contributions from nearby DXC units
88	17:59	53	Dominated by operational plant noise, with contributions from nearby DXC units
89	18:01	53	Dominated by operational plant noise, with contributions from nearby DXC units
90	18:02	51	Dominated by operational plant noise, with contributions from nearby DXC units
91	18:05	51	Dominated by operational plant noise, with contributions from nearbv DXC units
92	18:07	49	Dominated by operational plant noise, with contributions from nearby DXC units

Test ref	Time	Sound pressure level measured, L_{Aeq} (dB)	Notes
93	18:09	49	Dominated by ACC unit in operation
94	18:11	50	As above
95	18:14	56	As above
96	18:16	58	As above
97	18:18	53	As above
98	18:19	52	As above
99	18:22	51	Dominated by operational plant noise, with contributions from nearby DXC units
100	18:26	50	Dominated by operational plant noise, with contributions from nearby DXC units
101	18:27	51	Dominated by ACC unit in operation
102	18:29	54	Dominated by ACC unit in operation
103	18:30	53	Dominated by ACC unit in operation
104	18:31	52	Dominated by ACC unit in operation
105	18:34	52	Dominated by DXC units in operation

6.3.2 Measurements results outside nearby noise sensitive receptors

In addition to the above, measurements were undertaken at the nearest noise sensitive premises to the northeast (The Cube and The Drum) with all plant fully commissioned and in operation. Additional measurements were undertaken with the plant switched off to establish background noise levels.

These measurements were carried out between 18:40 and 19:40 on 13 July 2026 and between 18:53 and 19:10 on 16 July 2026. The measurement locations are indicated as Position A (representative of The Drum), and Position B (representative of The Cube) respectively in Figure 1. The measurement time reference was 5 min, except for Position A with plant switched off, where the measurement duration was 15 min.

Photographs of the measurement position are given in Figure 7.



Figure 7 Photographs of the measurements positions, Position A- (left), Position B (right)

The measurement results are summarised in Table 9. All measurements were dominated by road traffic on Alan Turning Way with no plant noise subjectively audible at the receptors.

Table 9 Measurement results at nearest noise sensitive premises (13 and 16 July 2026)

Position/date	Start time	Sound pressure levels (dB)		
		$L_{Aeq,5min}$	$L_{AFmax,5min}$	$L_{A90,5min}$
All plant in operation				
A 13 July 26	18:40	64	80	55
	18:45	71	93	57
	18:50	65	73	59
16 July 26	18:53	65	75	55
	18:58	65	76	57
	19:03	66	75	56
B 13 July 26	18:57	64	80	55
	19:02	62	74	55
	19:07	65	80	56
16 July 26	18:55	65	76	55
	19:00	66	85	56
	19:05	66	80	56

Position/date	Start time	Sound pressure levels (dB)		
		$L_{Aeq,5min}$	$L_{AFmax,5min}$	$L_{A90,5min}$
All plant switched off				
A 13 July 26	19:28	66[1]	80[1]	54[1]
B 13 July 26	19:30	65	83	54
	19:35	63	71	53
	19:40	63	76	54

[1] Measurement interval 15min

7 Plant noise egress assessment

7.1 3D modelling

A 3D environmental noise model of the site has been produced using the computational acoustic modelling package CadnaA (version 2026).

The model has been used to predict plant noise egress at the nearest noise sensitive receptors for normally operating plant, based on the site verification measurement results.

The model includes rooftop parapets where installed and has been calibrated based on the measurements to predict plant noise egress levels at the worst affected noise sensitive receptors.

The software carries out calculations using a ray tracing technique, and considers the effects of topography, reflections, screening and distance attenuation for noise sources to predict noise levels in three dimensions. Calculations are carried out in accordance with ISO 9613 *Attenuation of sound during propagation outdoors*.

A screenshot of the model is provided in Figure 8.

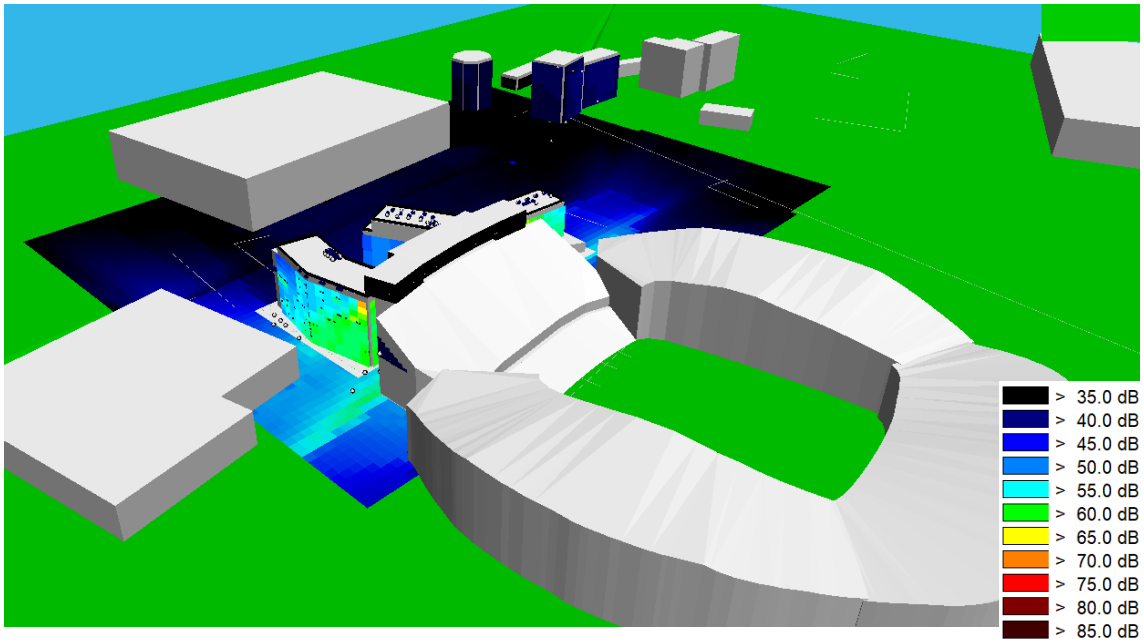


Figure 8 Screenshot of the 3D model showing precited noise levels, L_{Aeq} (dB)

7.2 Results and assessment

The predicted plant noise egress levels outside the nearby noise sensitive receptors are provided in Table 10. These have been calculated with the 3D acoustic model which has been calibrated based on the localised plant noise measurements presented above.

Table 10 Predicted plant noise egress and noise limits at the nearest noise sensitive premises

Location	Maximum plant noise criteria (BS4142) $L_{ar,Tr}$ (dB) (free -field)		Predicted sound pressure level outside noise sensitive premises (free-field) L_{Aeq}(dB)	
	Day (07:00-23:00)	Night (23:00-07:00)	Day (07:00-23:00)	Night (23:00-07:00)
6 Cromarty Walk	43	43	32	32
12 Biscay Close	43	43	31	31
The Cube	47	36	36	36
The Drum	47	36	35	35

The plant noise egress levels meet with the noise egress criteria and no additional mitigation measures are required.

The verification measurements undertaken at the nearest noise sensitive premises indicate that measured noise levels were comparable with the plant operating and switched-off. Subjective observations noted during the measurements indicate that plant noise was not

audible when in operation at The Cube and The Drum and dominated by road traffic on Alan Turing Way (A6010).

Based on the above, Planning Condition 30b and 52 can be discharged.

Information required to address Planning Condition 30a has been provided separately within 023771-R11-A *Planning Condition 30 Discharge Report* dated 2 April 2026,

SANDY BROWN
ACOUSTICS

Appendix A

Survey details

SANDY BROWN
ACOUSTICS

Reference standards

- BS 7445 Part 1: 2003 *Description and measurement of environmental noise, Part 1. Guide to quantities and procedures*
- BS 7445: Part 2: 1991 *Description and measurement of environmental noise, Part 2. Guide to the acquisition of data pertinent to land use*.

Equipment

The attended noise measurements were taken using a Rion NL-52 sound level meter.

Calibration details for the equipment used during the survey are provided in Table A1.

Table A1 Equipment calibration data

Equipment description	Type/serial number	Manufacturer	Calibration expiry	Calibration certification number
Sound level meter	NL-52/01143564	Rion	12 Dec 26	TCRT24/1898
Microphone	UC-59/10153	Rion	12 Dec 26	TCRT24/1898
Pre-amp	NH-25/43581	Rion	12 Dec 26	TCRT24/1898
Calibrator	NC-74/34257023	Rion	12 Dec 26	TCRT24/1895
Sound level meter	NL-52/01010788	Rion	24 Sep 27	TRAC25/09422
Microphone	UC-59/20416	Rion	24 Sep 27	TRAC25/09422
Pre-amp	NH-25/11436	Rion	24 Sep 27	TRAC25/09422
Calibrator	SV30A/10559	Svantek	24 Sep 27	TRAC25/09422

Calibration of the meters used for the measurements is traceable to national standards. Calibration certificates for the sound level meter used in this survey are available upon request.

Calibration checks were carried out on the meters and their measurement chains at the beginning and end of the survey. No significant calibration deviation occurred.

Noise indices

Noise indices recorded included the following:

- $L_{Aeq,T}$ The A-weighted equivalent continuous sound pressure level over a period of time, T.
- $L_{AFmax,T}$ The A-weighted maximum sound pressure level that occurred during a given period, T, with a fast time weighting.
- $L_{A90,T}$ The A-weighted sound pressure level exceeded for 90% of the measurement period. Indicative of the background sound level.

Sound pressure level measurements are normally taken with an A-weighting (denoted by a subscript 'A', eg, L_{A90}) to approximate the frequency response of the human ear.

Weather conditions

During the attended noise measurements, the weather was generally clear and dry and no rain occurred. Wind speeds were measured at each position and varied between 0 m/s and 2 m/s.

These weather conditions are considered suitable for obtaining representative measurements.

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Appendix B

Measurement location mark-ups

SANDY BROWN
ACOUSTICS

North Stand

Risk Register Reference	Hazard Description	Hazard Colour	Severity	Risk Rating	Risk Active at Approval	Risk Active at Construction
		Red - Major (Seek Advice)				
		Amber - Review Risk Assessment				
		Green - Caution	(1-5)	(1-5)	(Y/N)	(Y/N)

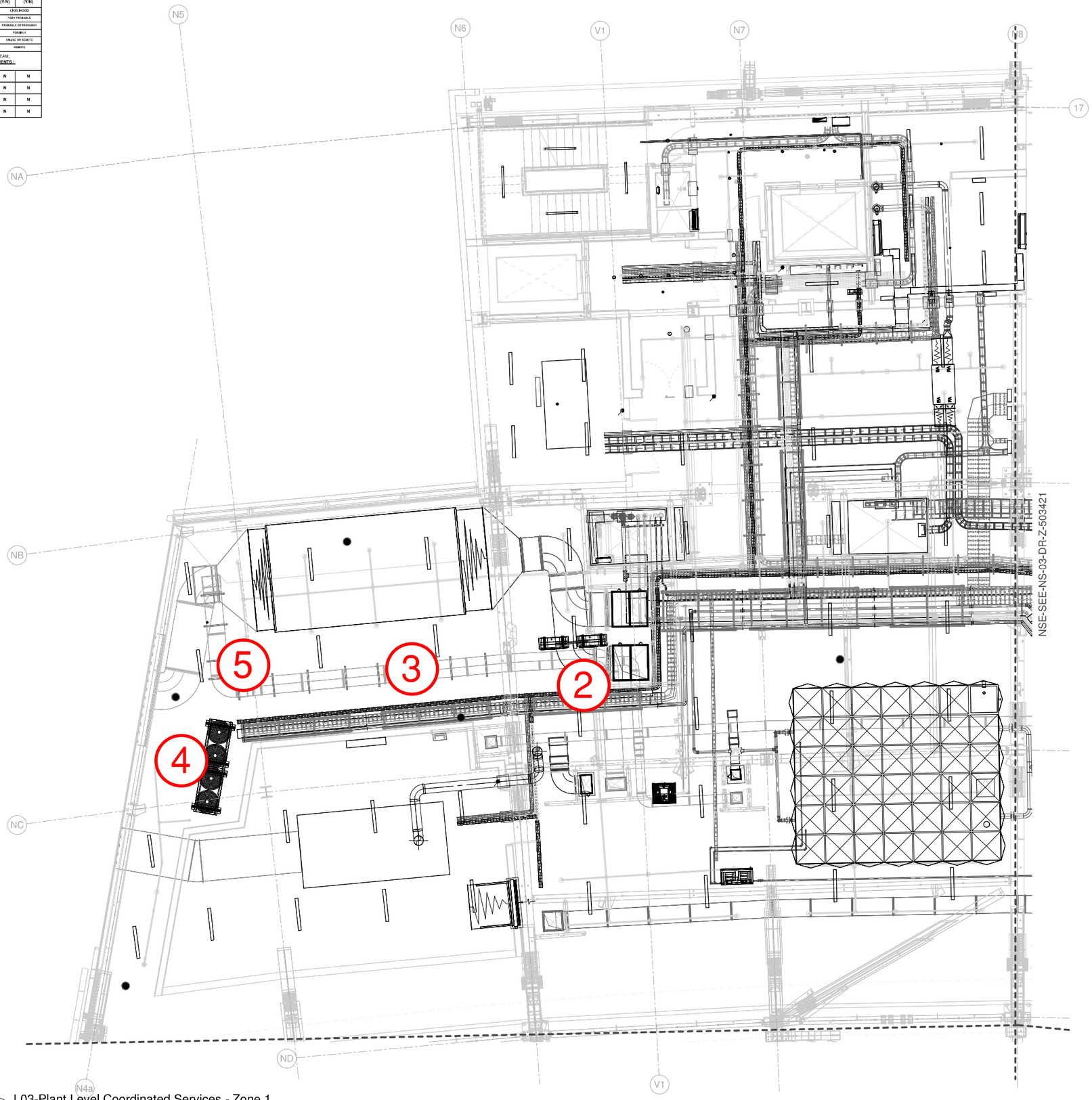
SCALE	LEVEL OF RISK
	EXCEPTIONAL
HIGH	ABOVE MODERATE
MODERATE	TYPICAL OR NORMAL
LOW	BELOW MODERATE
VERY LOW	WELL BELOW MODERATE

SCALE	CONSEQUENCE
	CATASTROPHIC
HIGH	SEVERE
MODERATE	SERIOUS
LOW	MARGINAL
VERY LOW	NEGIGIBLE

SCALE	LIKELIHOOD
	VERY PROBABLE
HIGH	PROBABLE OR FREQUENT
MODERATE	POSSIBLE
LOW	UNLIKE OR REMOTE
VERY LOW	REMOTE

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001	Working At Height To Install Services	AMBER	3	1	N	N
002	Slip, Trip & Falls	AMBER	2	1	N	N
003	Mechanical Isolations	AMBER	2	1	N	N
004	Electrical Isolations	AMBER	4	1	N	N



1 L03-Plant Level Coordinated Services - Zone 1
1 : 50

Title	North Stand plant measurement positions
Project	MCFC North Stand Expansion
Project no.	23771
Version	A
Marked-up by	JMG
Reviewed by	JA
Date	31 July 2026

Key:

XX Measurement location

Plant relocation

SANDY BROWN ACOUSTICS

WILLIAM HARE STRUCTURE
NSE-WHL-NS-XX-MR-X-000001

BANAGHER TERRACE
NSE-BPC-NS-ZZ-M3-X-001000

FK FACADE
NSE-FKG-NS-ZZ-M3-X-000001

Rev	Drn	Ckd	Date	Description
C02	AR	AW	15.05.25	Updated To Suit Services Layouts
C01	QH	AR	05.12.24	Issued For Construction

Scale: 1 : 50
Original Size: A0

Status: A5 - FOR AUTHORISATION AS STAGE COMPLETE

Client: Manchester City

Project: MCFC

Title: NORTH STAND COORDINATED SERVICES LAYOUT LEVEL 03 ZONE 1

Drawing No.: NSE-SEE-NS-03-DR-Z-503411
Revision: C02

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Status A: Approved

Risk Register Reference	Hazard Description	Hazard Colour	Severity (1-5)	Risk Rating (1-5)	Risk Active at Approval (Y/N)	Risk Active at Construction (Y/N)
		Red - Major (Seek Advice)				
		Amber - Review Risk Assessment				
		Green - Caution				

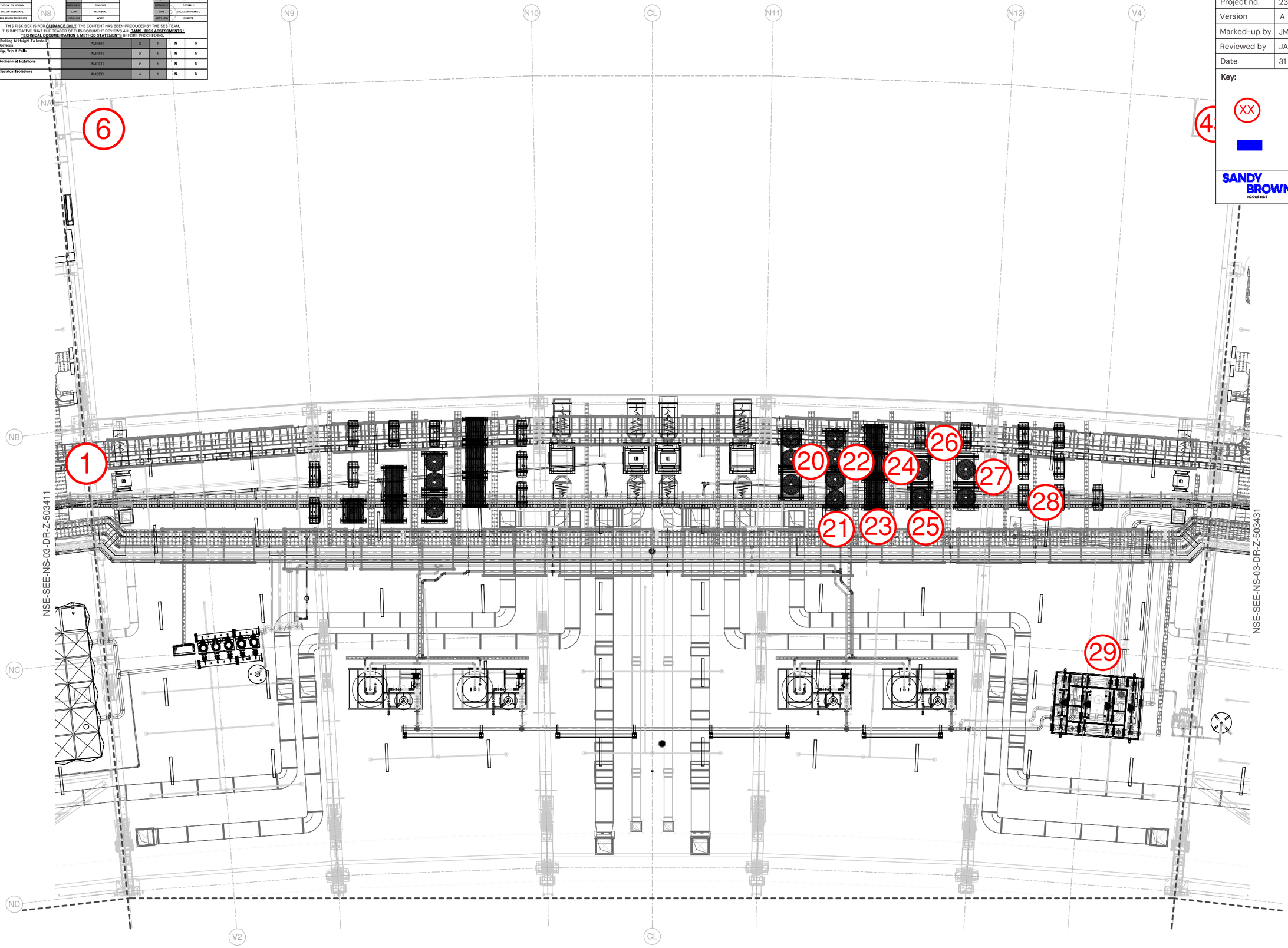
SCALE	LEVEL OF RISK
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HIGH	ABOVE MODERATE
MODERATE	TYPICAL OR NORMAL
LOW	BELOW MODERATE
VERY LOW	WELL BELOW MODERATE

SCALE	CONSEQUENCE
	CATASTROPHIC
SEVERE	SEVERE
MODERATE	SERIOUS
LOW	MARGINAL
VERY LOW	MINOR

SCALE	LIKELIHOOD
	VERY PROBABLE
HIGH	PROBABLE OR FREQUENT
MODERATE	POSSIBLE
LOW	UNLIKELY OR REMOTE
VERY LOW	REMOTE

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001	Working At Height To Install Services	AMBER	3	1	N	N
002	Slip, Trip & Falls	AMBER	2	1	N	N
003	Mechanical Isolations	AMBER	2	1	N	N
004	Electrical Isolations	AMBER	4	1	N	N



1 L03-Plant Level Coordinated Services - Zone 2
1 : 50

Title	North Stand plant measurement positions
Project	MCFC North Stand Expansion
Project no.	23771
Version	A
Marked-up by	JMG
Reviewed by	JA
Date	31 July 2026

Key:

XX Measurement location

Plant relocation

SANDY BROWN ACOUSTICS

WILLIAM HARE STRUCTURE
NSE-WHL-NS-XX-M9-X-000001

BANAGHER TERRACE
NSE-BPC-NS-ZZ-M3-X-001000

FK FACADE
NSE-FKG-NS-ZZ-M3-X-000001

Rev	Dm	Ckd	Date	Description
C02	AR	AW	15.05.25	Updated To Suit Services Layouts
C01	QM	AR	05.12.24	Issued For Construction

Scale: 1 : 50
Original Size: A0

Status: A5 - FOR AUTHORISATION AS STAGE COMPLETE

Client:

Project: MCFC

Title: NORTH STAND COORDINATED SERVICES LAYOUT LEVEL 03 ZONE 2

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Risk Register Reference	Hazard Description	Hazard Colour	Servority	Risk Rating	Risk Active at Approval	Risk Active at Construction
		Red - Major (Seek Advice)				
		Amber - Review Risk Assessment				
		Green - Caution	(1-5)	(1-5)	(Y/N)	(Y/N)

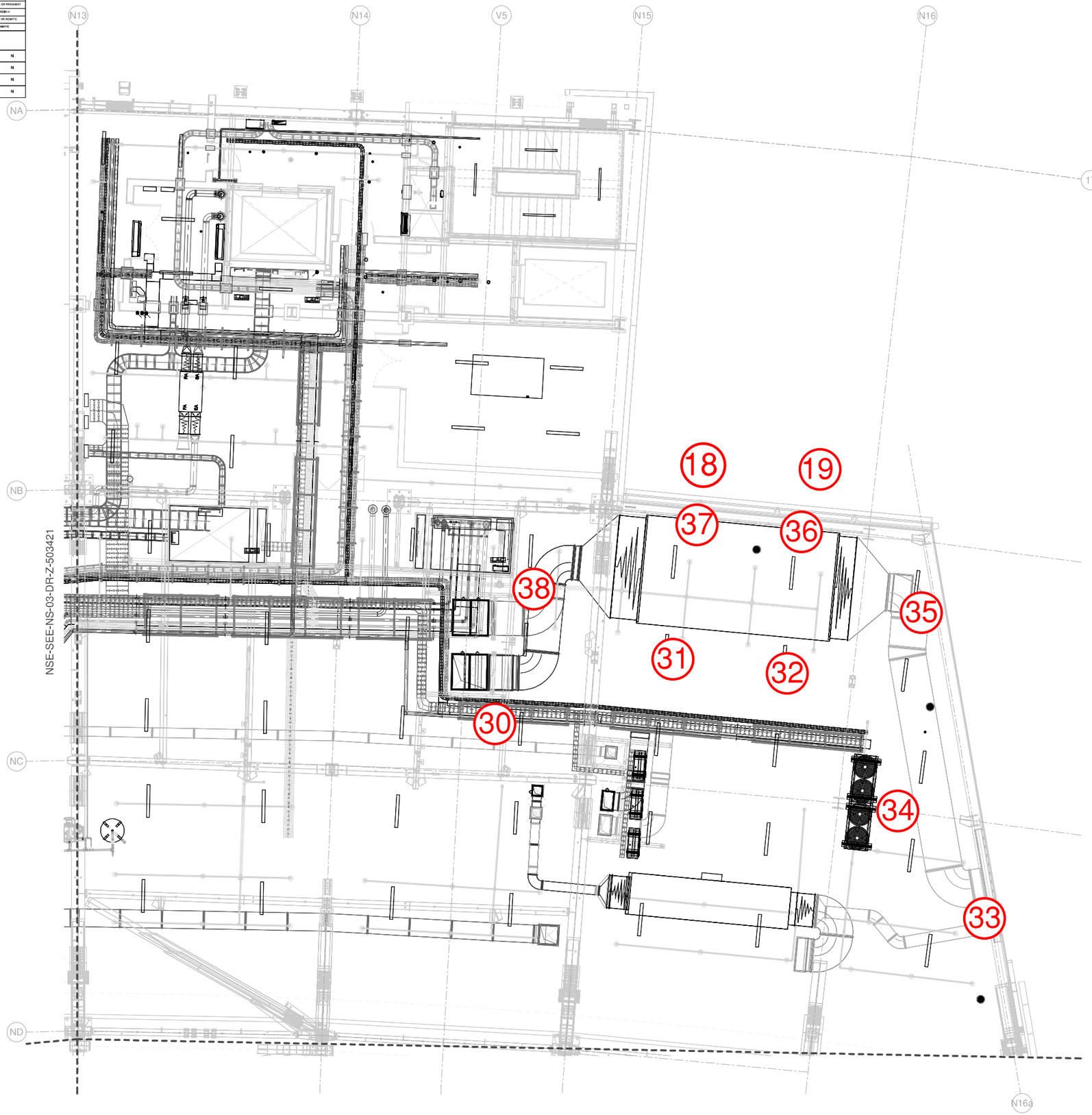
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HIGH	ABOVE MODERATE
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VERY LOW	WELL BELOW MODERATE

SCALE	CONSEQUENCE
	CATASTROPHIC
HIGH	SEVERE
MODERATE	SERIOUS
LOW	MARGINAL
VERY LOW	NEGIGIBLE

SCALE	LIKELIHOOD
	VERY PROBABLE
HIGH	PROBABLE OR FREQUENT
MODERATE	POSSIBLE
LOW	UNLIKE OR IMMOTIC
VERY LOW	REMOTE

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001	Working At Height To Install Services	AMBER	3	1	N	N
002	Slip, Trip & Falls	AMBER	2	1	N	N
003	Mechanical Isolations	AMBER	2	1	N	N
004	Electrical Isolations	AMBER	4	1	N	N



1 L03-Plant Level Coordinated Services - Zone 3
1 : 50

Title	North Stand plant measurement positions
Project	MCFC North Stand Expansion
Project no.	23771
Version	A
Marked-up by	JMG
Reviewed by	JA
Date	31 July 2026

Key:

XX Measurement location

Plant relocation

SANDY BROWN ACOUSTICS

NSE-BRE-NS-ZZ-M3-S-001000

WILLIAM HARE STRUCTURE
NSE-WHLAIS-XX-MR-X-000001

BANAGHER TERRACE
NSE-BPC-NS-ZZ-M3-X-001000

FK FACADE
NSE-FKG-NS-ZZ-M3-X-000001

Rev	Dm	Ckd	Date	Description
C02	AR	AW	15.05.25	Updated To Suit Services Layouts
C01	QM	AR	05.12.24	Issued For Construction

Scale: 1 : 50
Original Size: A0

Status: A5 - FOR AUTHORISATION AS STAGE COMPLETE

Client:

Project: MCFC

Title: NORTH STAND COORDINATED SERVICES LAYOUT LEVEL 03 ZONE 3

Drawing No.: NSE-SEE-NS-03-DR-Z-503431
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Risk Register Reference	Hazard Description	Hazard Colour	Severity	Risk Rating	Risk Active at Approval	Risk Active at Construction
		Red - Major (Seek Advice)				
		Amber - Review Risk Assessment				
		Green - Caution	(1-5)	(1-5)	(Y/N)	(Y/N)

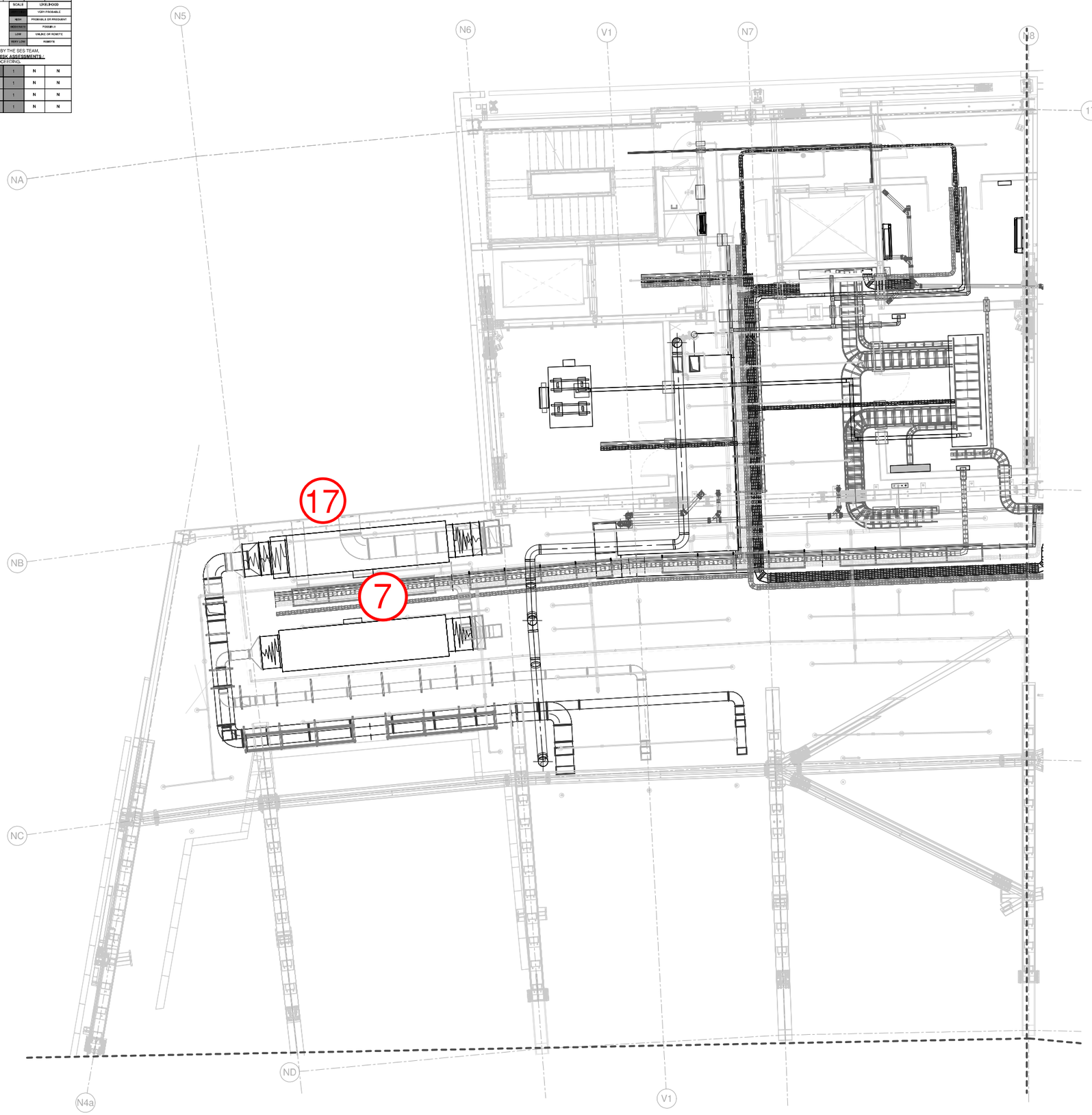
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HIGH	ABOVE MODERATE
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HIGH	SEVERE
MODERATE	SERIOUS
LOW	MARGINAL
VERY LOW	NEGIGIBLE

SCALE	LIKELIHOOD
	VERY PROBABLE
HIGH	PROBABLE OR FREQUENT
MODERATE	POSSIBLE
LOW	UNLIKE OR IMMATIC
VERY LOW	REMOTE

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003	Mechanical Isolations	AMBER	2	1	N	N
004	Electrical Isolations	AMBER	4	1	N	N



1 L03-M-Plant Level Mezzanine Coordinated Services - Zone 1
1 : 50

Title	North Stand plant measurement positions
Project	MCFC North Stand Expansion
Project no.	23771
Version	A
Marked-up by	JMG
Reviewed by	JA
Date	31 July 2026

Key:

XX Measurement location

Plant relocation

SANDY BROWN ACOUSTICS

WILLIAM HARE STRUCTURE
NSE-WHE-NS-XX-MR-X-000001

RANAGHER TERRACE
NSE-BPC-NS-ZZ-M3-A-001000

FK FACADE
NSE-FKG-NS-ZZ-M3-X-000001

Rev	Dm	Ckd	Date	Description
C02	AR	AW	15.05.25	Updated To Suit Services Layouts
C01	QM	AR	05.12.24	Issued For Construction

Scale: 1 : 50
Original Size: A0

Status: A5 - FOR AUTHORISATION AS STAGE COMPLETE

Client:

Project: MCFC

Title: NORTH STAND COORDINATED SERVICES LAYOUT LEVEL 03M ZONE 1

Drawing No.: NSE-SEE-NS-M3-DR-Z-503412
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Risk Register Reference	Hazard Description	Hazard Colour	Severity (1-5)	Risk Rating (1-5)	Risk Active at Approval (Y/N)	Risk Active at Construction (Y/N)
		Red - Major (Seek Advice)				
		Amber - Review Risk Assessment				
		Green - Caution				

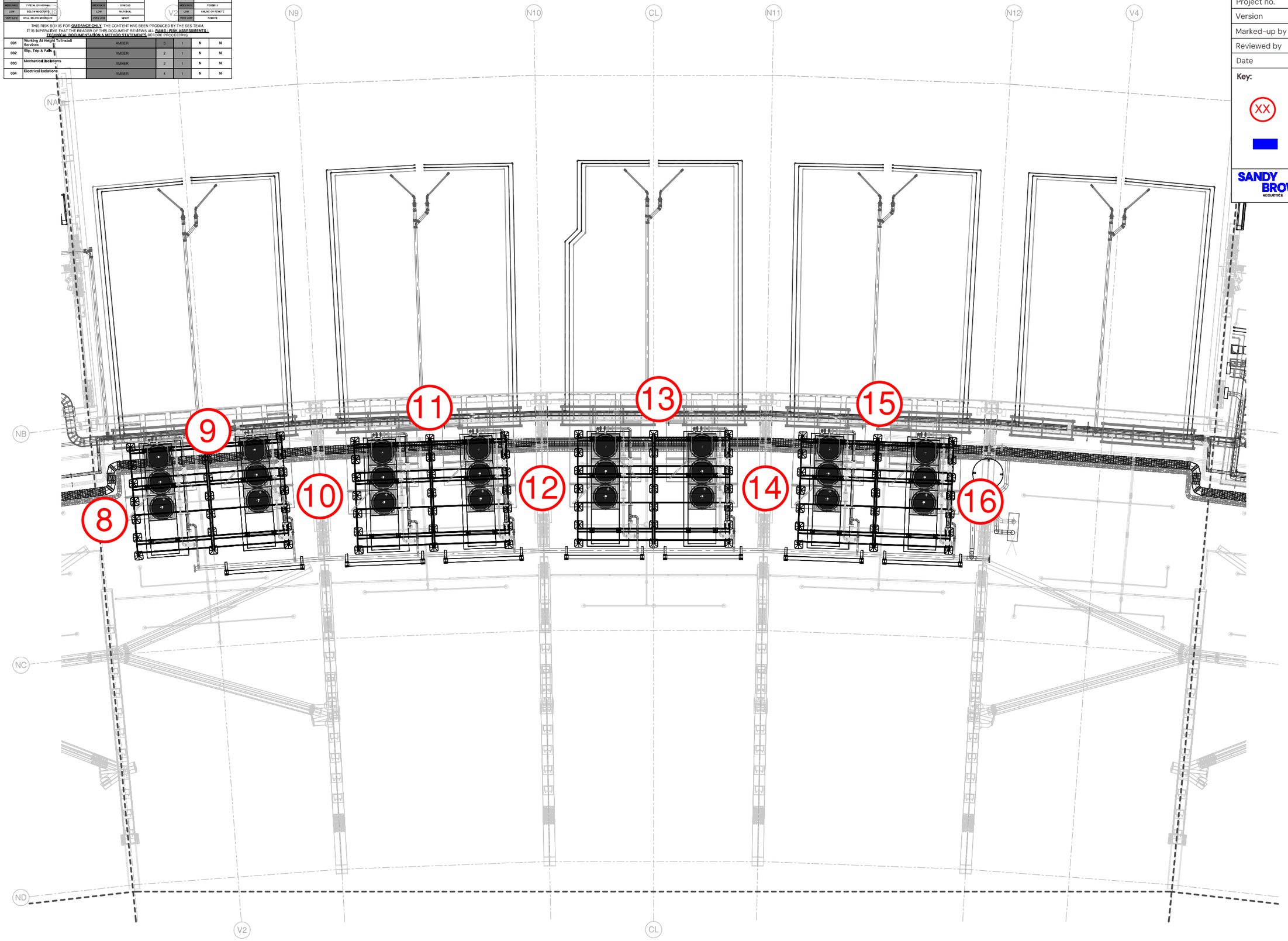
SCALE	LEVEL OF RISK
	EXCEPTIONAL
HIGH	ABOVE MODERATE
MODERATE	TYPICAL OR NORMAL
LOW	BELOW MODERATE
VERY LOW	WELL BELOW MODERATE

SCALE	CONSEQUENCE
	CATASTROPHIC
HIGH	SEVERE
MODERATE	SERIOUS
LOW	MARGINAL
VERY LOW	MINOR

SCALE	LIKELIHOOD
	VERY PROBABLE
HIGH	PROBABLE OR FREQUENT
MODERATE	POSSIBLE
LOW	UNLIKE OR REMOTE
VERY LOW	REMOTE

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001	Working At Height To Install Services	AMBER	3	1	N	N
002	Slip, Trip & Falls	AMBER	2	1	N	N
003	Mechanical Isolations	AMBER	2	1	N	N
004	Electrical Isolations	AMBER	4	1	N	N



1 L03-M-Plant Level Mezzanine Coordinated Services - Zone 2
1 : 50

Title	North Stand plant measurement positions
Project	MCFC North Stand Expansion
Project no.	23771
Version	A
Marked-up by	JMG
Reviewed by	JA
Date	31 July 2026

Key:

XX Measurement location

Plant relocation

SANDY BROWN ACOUSTICS

WILLIAM HARE STRUCTURE
NSE-WHL-NS-XX-M3-X-000001

BANAGHER TERRACE
NSE-BPC-NS-ZZ-M3-X-001000

FK FACADE
NSE-FKGAB-ZZ-M3-X-000001

Rev	Drn	Ckd	Date	Description
C02	AR	AW	15.05.25	Updated To Suit Services Layouts
C01	QM	AR	05.12.24	Issued For Construction

Scale: 1 : 50
Original Size: A0

Status: A5 - FOR AUTHORISATION AS STAGE COMPLETE

Client:

Project: MCFC

Title: NORTH STAND COORDINATED SERVICES LAYOUT LEVEL 03M ZONE 2

Drawing No.: NSE-SEE-NS-M3-DR-Z-503422
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Status A: Approved

Risk Register Reference	Hazard Description	Hazard Colour	Servority (1-5)	Risk Rating (1-5)	Risk Active at Approval (Y/N)	Risk Active at Construction (Y/N)
		Red - Major (Seek Advice)				
		Amber - Review Risk Assessment				
		Green - Caution				

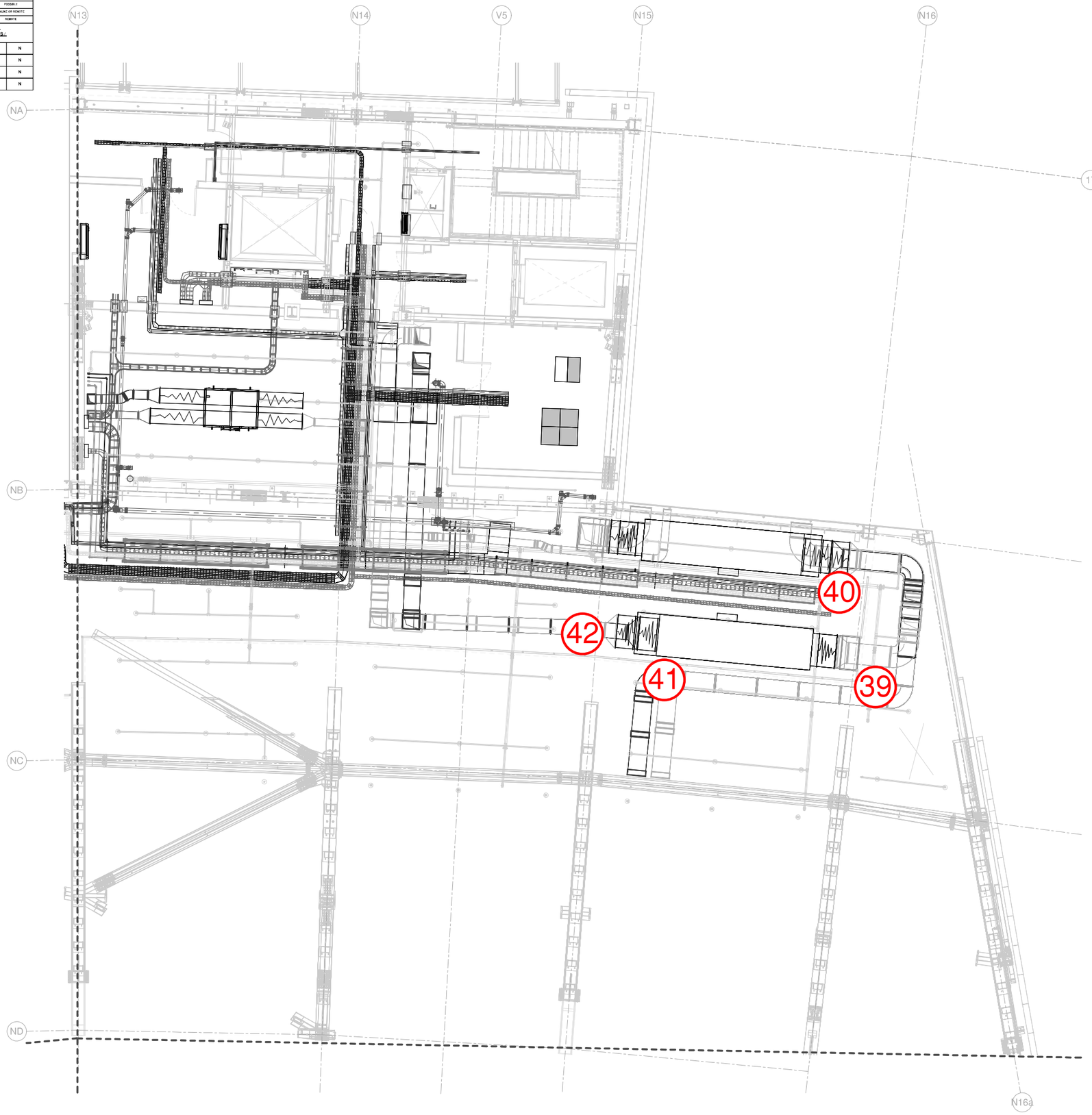
SCALE	LEVEL OF RISK
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HIGH	ABOVE MODERATE
MODERATE	TYPICAL OR NORMAL
LOW	BELOW MODERATE
VERY LOW	WELL BELOW MODERATE

SCALE	CONSEQUENCE
	CATASTROPHIC
HIGH	SEVERE
MODERATE	SERIOUS
LOW	MARGINAL
VERY LOW	MINOR

SCALE	LIKELIHOOD
	VERY PROBABLE
HIGH	PROBABLE OR FREQUENT
MODERATE	POSSIBLE
LOW	UNLIKE OR IMMOTE
VERY LOW	REMOTE

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002	Slip, Trip & Falls	AMBER	2	1	N	N
003	Mechanical Isolations	AMBER	2	1	N	N
004	Electrical Isolations	AMBER	4	1	N	N



1 L03-M-Plant Level Mezzanine Coordinated Services - Zone 3
1 : 50

Title	North Stand plant measurement positions
Project	MCFC North Stand Expansion
Project no.	23771
Version	A
Marked-up by	JMG
Reviewed by	JA
Date	31 July 2026

Key:

XX Measurement location

Plant relocation

SANDY BROWN ACOUSTICS

WILLIAM HARE STRUCTURE
NSE-WHL-NS-XX-MW-X-000001

RANAGHER TERRACE
NSE-ISPC-NS-ZZ-MS-X-001000

FK FACADE
NSE-FKG-NS-ZZ-MS-X-000001

C02	AR	AW	15.05.25	Updated To Suit Services Layouts
C01	QM	AR	05.12.24	Issued For Construction
Rev	Dm	Ckd	Date	Description

Scale: 1 : 50
Original Size: A0

Status: A5 - FOR AUTHORISATION AS STAGE COMPLETE

Client:

Project: MCFC

Title: NORTH STAND COORDINATED SERVICES LAYOUT LEVEL 03M ZONE 3

Drawing No.: NSE-SEE-NS-M3-DR-Z-503432
Revision: C02

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SES ENGINEERING SERVICES

Status A: Approved

SANDY BROWN
ACOUSTICS

Commercial Building

REFERENCE DRAWINGS:

ARCHITECTURAL:
ORIGINATOR: REF NAME: REVISION:
RPS/SES DRAWING 001 P02

STRUCTURAL:
ORIGINATOR: REF NAME: REVISION:
tbc tbc P03

POINT CLOUD:
ORIGINATOR: REF NAME: REVISION:
NA NA 00

FIRE STRATEGY:
ORIGINATOR: REF NAME: REVISION:
RPS/SES NA 00

Risk Register Reference	Hazard Description	Hazard Colour	Serverity	Risk Rating	Risk Active at Approval	Risk Active at Construction
		Red - Major (Seek Advice)				
		Amber - Review Risk Assessment				
		Green - Caution				
			(1-5)	(1-5)	(Y/N)	(Y/N)

SCALE	LEVEL OF RISK
	UNACCEPTABLE
HIGH	ABOVE MODERATE
MODERATE	TYPICAL OF NORMAL
LOW	BELOW MODERATE
VERY LOW	WELL BELOW MODERATE

SCALE	CONSEQUENCE
	CATASTROPHIC
HIGH	SEVERE
MODERATE	SERIOUS
LOW	MARGINAL
VERY LOW	MINOR

SCALE	LIKELIHOOD
	VERY PROBABLE
HIGH	PROBABLE OR FREQUENT
MODERATE	POSSIBLE
LOW	UNLIKELY OR IMPROTE
VERY LOW	REMOTE

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001	Working At Height To Install Services	AMBER	3	1	N	N
002	Slip, Trip & Falls	AMBER	2	1	N	N
003	Mechanical Isolations	AMBER	2	1	N	N
004	Electrical Isolations	AMBER	4	1	N	N



1 Commercial Coordination Services Layout Level 08 - Overall - NORTH
1 : 50

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Title	Commercial building plant measurement position
Project	MCFC North Stand Expansion
Project no.	23771
Version	A
Marked-up by	JMG
Reviewed by	JA
Date	31 July 2026

Key:

XX Measurement location

Plant relocation

SANDY BROWN ACOUSTICS

SUPPLY AIR
RETURN AIR
FRESH AIR
EXHAUST AIR
KITCHEN SUPPLY
KITCHEN EXTRACT
TOILET EXTRACT
SMOKE EXTRACT
FLUES

HEATING & COOLING LEGEND:
REFRIGERANT TRAY

DOMESTIC PIPEWORK LEGEND:
BOOSTED COLD WATER
HOT WATER FLOW
HOT WATER RETURN
CATS

DRAINAGE LEGEND:
STUB STACK
SOIL PIPE
VENT PIPE
RAINWATER PIPE
WASTE PIPE
CONDENSATE PIPE

Rev	Drn	Ckd	Date	Description
C01	RJS	SB	19/07/25	ISSUED FOR CONSTRUCTION
P01	RJS	SB	24/06/25	ISSUED FOR COMMENTS

Scale: As indicated
Original Size: A0

Status: A5 - AUTHORISATION AS STAGE COMPLETE

Client:

Project: COMMERCIAL BUILDING

Title: COMMERCIAL BLOCK COORDINATION SERVICES LAYOUT LEVEL 08 NORTH

Drawing No.: NSE-SEE-CM-08-DR-M-608411
Revision: C01

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Morley Road
Trafford Park
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SES ENGINEERING SERVICES

SANDY BROWN
ACOUSTICS

Hotel

Risk Register Reference	Hazard Description	Hazard Colour	Severity (1-5)	Risk Rating (1-5)	Risk Active at Approval (Y/N)	Risk Active at Construction (Y/N)
		Red - Major (Seek Advice)				
		Amber - Review Risk Assessment				
		Green - Caution				

SCALE	LEVEL OF RISK
	UNSPECIFIED
HIGH	ABOVE MODERATE
MODERATE	TYPICAL OR NORMAL
LOW	BELOW MODERATE
VERY LOW	WELL BELOW MODERATE

SCALE	CONSEQUENCE
	CATASTROPHIC
HIGH	SEVERE
MODERATE	SERIOUS
LOW	MINOR/SAL
VERY LOW	MINOR

SCALE	LIKELIHOOD
	VERY PROBABLE
HIGH	PROBABLE OR FREQUENT
MODERATE	POSSIBLE
LOW	UNLIKELY OR REMOTE
VERY LOW	REMOTE

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2		AMBER				
2		AMBER				
2		AMBER				



Title	Hotel rooftop plant measurement positions
Project	MCFC North Stand Expansion
Project no.	23771
Version	A
Marked-up by	JMG
Reviewed by	JA
Date	31 July 2026

Key:

XX — Measurement location

Plant relocation

SANDY BROWN ACOUSTICS

PJ PROJECT NO.
NSE-FKG-HT-ZZ-M3-X-300001

NOTES

1. ALL LEVELS ARE TAKEN FROM LEVEL>
LEVEL 09 = 92650

2. LEVELS OF SERVICES ARE TAKEN AS FOLLOWS:-
BOC: — = BOTTOM OF CONTAINMENT
BOD: — = BOTTOM OF DUCT
BOZ: — = BOTTOM OF ZONE
CL: — = CENTRE OF PIPE / DUCT
U/S: — = UNDERSIDE OF EQUIPMENT
COH: — = CENTRE OF HOLE
BOH: — = BOTTOM OF HOLE

Rev	Drawn Date	Description	Drawn By	Checked By
C02	03.09.25	PV CONTAINMENT REMOVED	TD	CE
C01	03.06.25	ISSUED FOR CONSTRUCTION	TD	CE
P01	02.06.25	ISSUED FOR REVIEW & COMMENT	MEE	MEE

Scale
Original Size
A0

Status
A5 - FOR AUTHORISATION AS STAGE COMPLETE

Client:

Project:
MCFC

Title:
HOTEL BUILDING COORDINATED SERVICES LAYOUT ROOF LEVEL 09 ZONE 2

Drawing No.: NSE-SEE-HT-RF-DR-Z-509221
Revision: C02

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SES ENGINEERING SERVICES

Status A: Approved

Risk Register Reference	Hazard Description	Hazard Colour	Severity	Risk Rating	Risk Active at Approval	Risk Active at Construction
		Red - Major (Seek Advice)				
		Amber - Review Risk Assessment				
		Green - Caution	(1-5)	(1-5)	(Y/N)	(Y/N)

SCALE	LEVEL OF RISK
	UNSIGNIFICANT
HIGH	ABOVE MODERATE
MODERATE	TYPICAL OR NORMAL
LOW	BELOW NORMAL
VERY LOW	WELL BELOW MODERATE

SCALE	CONSEQUENCE
	CATASTROPHIC
HIGH	SEVERE
MODERATE	SERIOUS
LOW	MARGINAL
VERY LOW	MINOR

SCALE	LIKELIHOOD
	VERY PROBABLE
HIGH	PROBABLE OR FREQUENT
MODERATE	POSSIBLE
LOW	UNLIKELY OR REMOTE
VERY LOW	REMOTE

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2		AMBER				
2		AMBER				
2		AMBER				

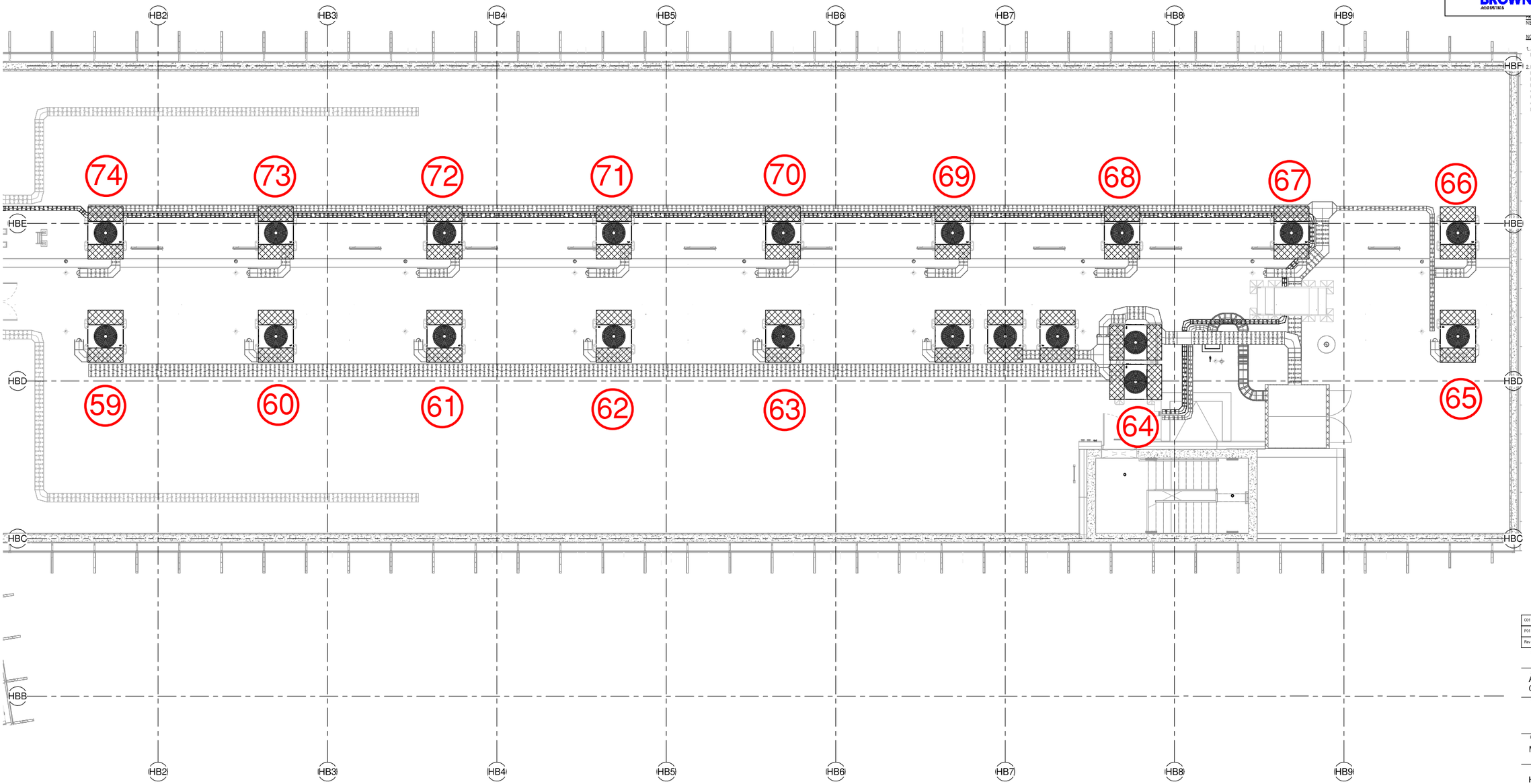
Title	Hotel rooftop plant measurement positions
Project	MCFC North Stand Expansion
Project no.	23771
Version	A
Marked-up by	JMG
Reviewed by	JA
Date	31 July 2026

Key:

XX — Measurement location

Plant relocation

SANDY BROWN ACOUSTICS



A1 ARCHIVE:
NSE-FKC-HT-ZZ-M3-A-000001

NOTES

1. ALL LEVELS ARE TAKEN FROM LEVEL - LEVEL 08 = 89650
2. LEVELS OF SERVICES ARE TAKEN AS FOLLOWS:-
   BOC --- = BOTTOM OF CONTAINMENT
   BOD --- = BOTTOM OF DUCT
   BOZ --- = BOTTOM OF ZONE
   CL --- = CENTRE OF PIPE / DUCT
   U/S --- = UNDERSIDE OF EQUIPMENT
   COH --- = CENTRE OF HOLE
   BOH --- = BOTTOM OF HOLE

Rev	Drawn Date	Description	Drawn By	Checked By
C01	22.08.25	ISSUED FOR CONSTRUCTION	TD	CE
P01	02.08.25	ISSUED FOR REVIEW & COMMENT	MEE	MEE

Scale

Original Size
A0

Status
A5 - FOR AUTHORISATION AS STAGE COMPLETE

Client

Project
MCFC

Title
HOTEL BUILDING COORDINATED SERVICES LAYOUT
ROOF LEVEL 08
OVERALL

Drawing No.
NSE-SEE-HT-RF-DR-Z-508331

Revision
C01

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SES ENGINEERING SERVICES

Status C with Major Comment

Risk Register Reference	Hazard Description	Hazard Colour	Severity (1-5)	Risk Rating (1-5)	Risk Active at Approval (Y/N)	Risk Active at Construction (Y/N)
		Red - Major (Seek Advice)				
		Amber - Review Risk Assessment				
		Green - Caution				

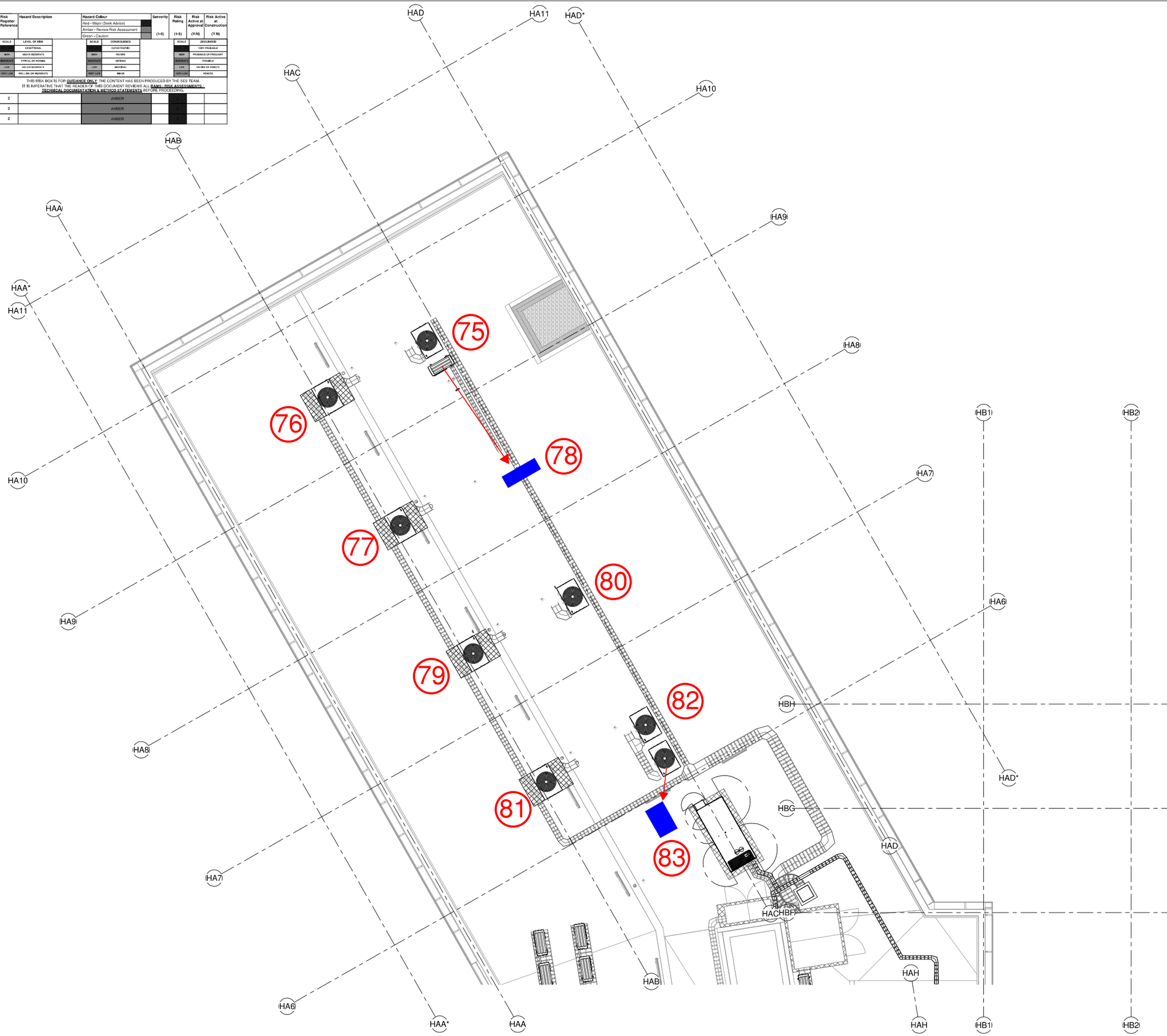
SCALE	LEVEL OF RISK
	LIGHTSAIL
HIGH	ABOVE MODERATE
MODERATE	TYPICAL OR NORMAL
LOW	ABLOW MODERATE
VERY LOW	WELL BELOW MODERATE

SCALE	CONSEQUENCE
	CATASTROPHIC
HIGH	SEVERE
MODERATE	SERIOUS
LOW	MINOR/SAL
VERY LOW	MINOR

SCALE	LIKELIHOOD
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2		AMBER		3		
2		AMBER		3		
2		AMBER		3		



Title	Hotel rooftop plant measurement positions
Project	MCFC North Stand Expansion
Project no.	23771
Version	A
Marked-up by	JMG
Reviewed by	JA
Date	31 July 2026

Key:

XX — Measurement location

Plant relocation

SANDY BROWN ACOUSTICS

NSE-FKC-HT-RF-M3-X-000001

NOTES

1. ALL LEVELS ARE TAKEN FROM LEVEL>
   LEVEL 09 = 92650

2. LEVELS OF SERVICES ARE TAKEN AS FOLLOWS:-
   BOC ---- = BOTTOM OF CONTAINMENT
   BOD ---- = BOTTOM OF DUCT
   BOZ ---- = BOTTOM OF ZONE
   CL: ---- = CENTRE OF PIPE / DUCT
   U/S: ---- = UNDERSIDE OF EQUIPMENT
   COH: ---- = CENTRE OF HOLE
   BOH: ---- = BOTTOM OF HOLE

Rev	Drawn Date	Description	Drawn By	Checked By
C02	03.09.25	PV CONTAINMENT REMOVED	TD	CE
C01	03.06.25	ISSUED FOR CONSTRUCTION	TD	CE
P01	02.06.25	ISSUED FOR REVIEW & COMMENT	MEE	MEE

Scale: Original Size: A0

Status: A5 - FOR AUTHORISATION AS STAGE COMPLETE

Client:

Project: MCFC

Title: HOTEL BUILDING COORDINATED SERVICES LAYOUT ROOF LEVEL 09 ZONE 1

Drawing No.: NSE-SEE-HT-RF-DR-Z-509211 Revision: C02

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SES ENGINEERING SERVICES

Status A: Approved

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SANDY BROWN
ACOUSTICS