

Notes:
Unit selection based on Mitsubishi/Kooltech type LGH-50RVX3-E (75%/Speed 3)

Attenuator reference	Location	HRU reference	Air flowrate (l/s)	Maximum pressure drop (Pa)	Dimensions (LxWxH mm)	Duct connection size (dia mm)	Selections based on Caice type
ATT 05/01	Intake	HRU 05/01	104	20	2000x1600	200	Circular CG01U/2K/L
ATT 05/02	Supply	HRU 05/01	104	20	2000x1600	200	Circular CG01U/2K/L
ATT 05/03	Return	HRU 05/01	104	20	2000x1600	200	Circular CG01U/2K/L
ATT 05/04	Exhaust	HRU 05/01	104	20	2000x1600	200	Circular CG01U/2K/L
ATT 05/05	Exhaust	TEF 01	350	31	375x375x320	300	Rectangular RGV1E/L
ATT 05/06	Exhaust	TEF 02	300	31	375x375x320	300	Rectangular RGV1E/L

Notes:
Unit selections based on Caice

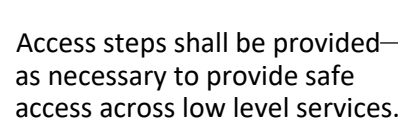
Notes:
Selections based on Waterloo

Supply Criticality	Location	Type (supply)	RA/Hrs	Air flowrate (l/s)	Maximum pressure drop (Pa)	Face size (mm)	Duct connection size (mm)	Throw (m)	Weight (kg)	Noise	Selections based on Watfores ref
S6/01	Meeting room	High capacity fixed swift	90/30	75	14	3300a	250	1.3	7	<0018A	SCFPH250 (no plenum box required)
S6/02	Meeting room	High capacity fixed swift	90/30	75	14	3300a	250	1.3	7	<0018A	SCFPH250 (no plenum box required)
S6/03	Meeting room	High capacity fixed swift	90/30	63	8	3300a	250	1.1	7	<0018A	SCFPH250 (no plenum box required)
S6/04	Meeting room	High capacity fixed swift	90/30	63	8	3300a	250	1.1	7	<0018A	SCFPH250 (no plenum box required)
S6/05	Meeting room	High capacity fixed swift	90/30	63	8	3300a	250	1.1	7	<0018A	SCFPH250 (no plenum box required)
S6/06	Meeting room	High capacity fixed swift	90/30	63	8	3300a	250	1.1	7	<0018A	SCFPH250 (no plenum box required)
S6/07	Meeting room	High capacity fixed swift	90/30	63	8	3300a	250	1.1	7	<0018A	SCFPH250 (no plenum box required)
S6/08	Open plan	High capacity fixed swift	90/30	63	8	3300a	250	1.1	7	<0018A	SCFPH250 (no plenum box required)
S6/09	Open plan	High capacity fixed swift	90/30	63	8	3300a	250	1.1	7	<0018A	SCFPH250 (no plenum box required)
S6/10	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/11	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/12	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/13	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/14	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/15	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/16	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/17	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/18	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/19	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/20	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/21	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/22	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/23	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/24	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/25	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/26	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/27	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/28	Agile Working	High capacity fixed swift	90/30	88	20	3300a	250	1.5	7	<0018A	SCFPH250 (no plenum box required)
S6/29	Agile Working	High capacity fixed swift	90/30	88	20	3300a	250	1.5	7	<0018A	SCFPH250 (no plenum box required)
S6/30	Agile Working	High capacity fixed swift	90/30	88	20	3300a	250	1.5	7	<0018A	SCFPH250 (no plenum box required)
S6/31	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/32	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/33	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/34	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018A	SCFPH250 (no plenum box required)
S6/35	Open plan	High capacity fixed swift	90/30	100	22	3300a	250	1.6	7	<0018	

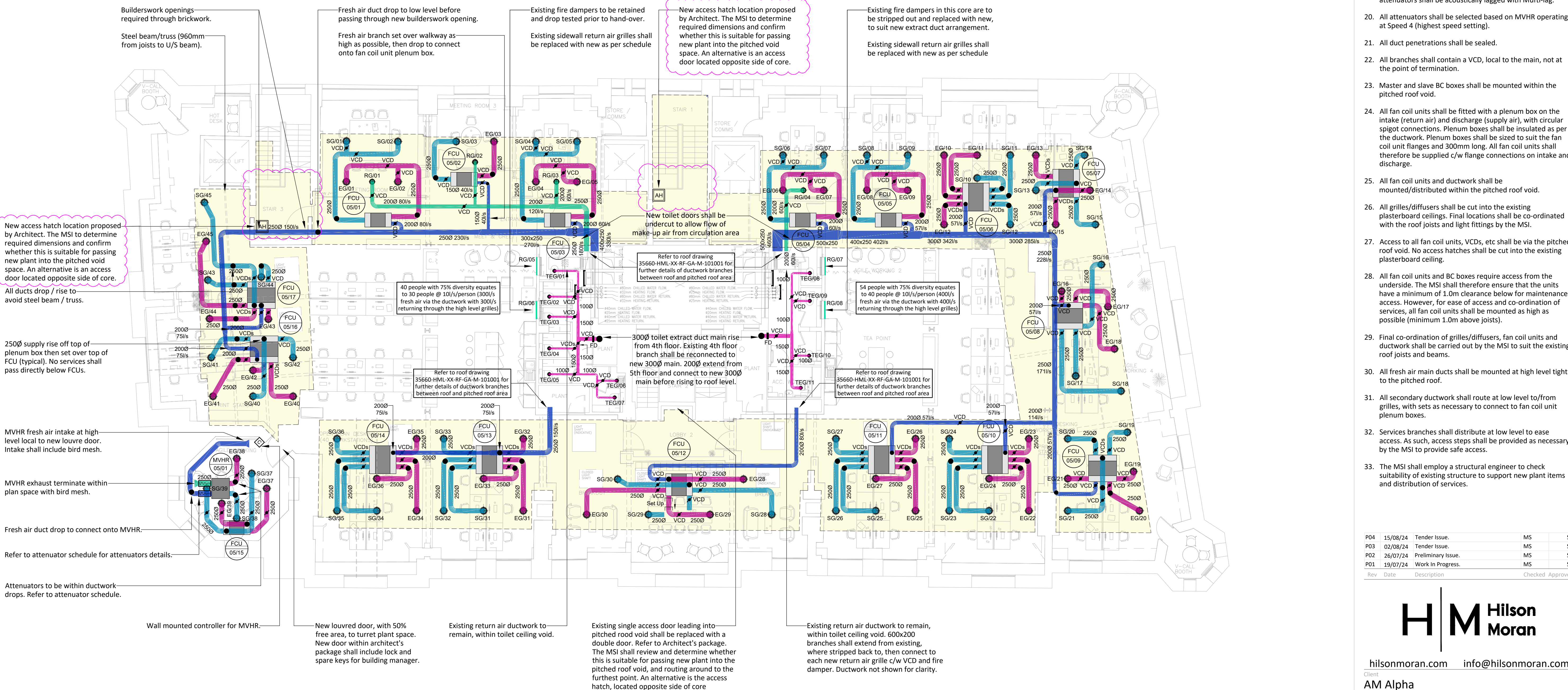
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- Fresh Air Duct
- Return Air Duct
- Secondary Supply Duct
- Secondary Extract Duct



Attic Detail
(NTS)



IVHR. New louvred door, with 50% free area, to turret plant space. New door within architect's package shall include lock and spare keys for building manager.

Existing single access door leading into pitched roof void shall be replaced with a double door. Refer to Architect's package. The MSI shall review and determine whether this is suitable for passing new plant into the pitched roof void, and routing around to the furthest point. An alternative is the access hatch, located opposite side of core

Existing return air ductwork to remain, within toilet ceiling void. 600x200 branches shall extend from existing, where stripped back to, then connect each new return air grille c/w VCD and damper. Ductwork not shown for clarity.

1. This drawing shall be read in conjunction with all other drawings and specifications.
2. This drawing has been produced from a limited-access site survey by the engineer. The contractor shall therefore verify via their own intrusive site survey that the drawing reflects the installations at the commencement of works.
3. All mechanical services, equipment and installations which are to remain located in the area of works shall be protected for the duration of works.
4. Any services that are to remain, but inadvertently stripped out or damaged shall be reinstated by the MSI at no cost to the Employer, and to the satisfaction of the Engineer.

1. The refurbishment works will be undertaken within an occupied building. The MSI shall therefore ensure noisy works, including drilling, etc shall be completed out of normal working hours.
2. The MSI shall dispose of all redundant materials utilising their own skips, etc, in accordance with the building landlord's access conditions.
3. All works on site shall be undertaken in liaison with the site managers; no works shall be commenced without a permit to work and without comprehensive method statements and risk assessments.
4. Works shall be arranged such that there is no disruption to other tenants. All works shall be undertaken in accordance with the Employers and building landlord's site rules and restrictions.
5. The MSI shall allow for full liaison and co-ordination with the other parties regarding the extent of provision and interference to ensure that the delivery/site assembly are co-ordinated on site.
6. Services requiring maintenance shall be kept within accessible areas.
7. New builderswork holes shall be formed by the MSI or Principal Contractor, including pipe sleeves and fire stopping where necessary.
8. All new ductwork shall contain air flow direction arrows. All fresh air intake ductwork shall be insulated.
9. All new inlet plant shall be supported independently and not utilise the ceiling grid for support.
10. All ceiling diffusers shall be swirl type (supply and extract) and co-ordinated / symmetrical with the lighting fittings.
11. Flexible connections shall be no longer than 500mm.
12. Ceiling voids/pitched roof areas shall not be used as a construction area. All return ductwork shall be hard-cut connected to fan coil units.
13. All services passing through fire compartments shall contain fusible link fire dampers and have penetrations fire stopped.
14. Duct access panels for cleaning purposes shall be located at per HVAC TR19.
15. All ductwork between MVHR and duct mounted attenuators shall be acoustically lagged with Multi-lag.
16. All attenuators shall be selected based on MVHR operating at Speed 4 (highest speed setting).
17. All duct penetrations shall be sealed.
18. All branches shall contain a VCD, local to the main, not at the point of termination.
19. Master and slave BC boxes shall be mounted within the pitched roof void.
20. All fan coil units shall be fitted with a plenum box on the intake and discharge (supply air), with circular spigot connections. Plenum boxes shall be insulated as per the ductwork. Plenum boxes shall be sized to suit the fan coil units and 300mm long. All fan coil units shall therefore be supplied with c/w flange connections on intake and discharge.
21. All fan coil units and ductwork shall be mounted/distributed within the pitched roof void.
22. All grilles/diffusers shall be cut into the existing plasterboard ceilings. Final locations shall be co-ordinated with the roof joists and lighting fittings by the MSI.
23. Access to all fan coil units, VCDs, etc shall be via the pitched roof void. No access hatches shall be cut into the existing plasterboard ceiling.
24. All fan coil units and BC boxes require access from the underside of the MSI shall therefore ensure that the units have a minimum of 1.0m clearance below for maintenance access. However, for ease of access and co-ordination of services and structural steelwork shall be mounted as close as possible (minimum 1.0m above units).
25. Final co-ordination of grilles/diffusers, fan coil units and ductwork shall be carried out by the MSI to suit the existing roof joists and beams.
26. All fresh air main ducts shall be mounted at high level to the pitched roof void.
27. All secondary ductwork shall route at low level to/from grilles, with sets as necessary to connect to fan coil unit plenum boxes.
28. Services branches shall distribute at low level to ease access. As such, steps access shall be provided as necessary by the MSI to provide safe access.
29. The MSI shall employ a structural engineer to check the existing structure to support new plant items and distribution of services.

P04	15/08/24	Tender Issue.	M\$	5
P03	02/08/24	Tender Issue.	M\$	5
P02	26/07/24	Preliminary Issue.	M\$	5
P01	19/07/24	Work In Progress.	M\$	5

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Client

AM Alpha

Project
Royal London House
196 Deansgate, Manchester
5th Floor Refurbishment Works

Drawing Title

Mechanical Services

5th Floor

Proposed Ventilation Layout

Scale 1:100	Sheet Size A0	Designed DA	Checked !
Project Status TENDER		Suitability	HM Project No 3566