

Attenuator Schedule

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	200dia x 600	200	Circular CG01U/2K/L
ATT 05/02	Supply	HRU 05/01	104	20	200dia x 900	200	Circular CG01U/2K/L
ATT 05/03	Return	HRU 05/01	104	20	200dia x 900	200	Circular CG01U/2K/L
ATT 05/04	Exhaust	HRU 05/01	104	20	200dia x 600	200	Circular CG01U/2K/L
ATT RF/01	Exhaust	TEF/01	350	31	375x375x920	300	RectangularLG01V/1E/L/S
ATT RF/02	Exhaust	TEF/02	300	31	375x375x920	300	RectangularLG01V/1E/L/S

Notes:

Unit selections based on Caice.

Condensing Unit Schedule

Outdoor unit reference	Unit location	System served	Unit selection	Dimensions HxWxD (mm)	Airflow Rate (L/S)	Sound Pressure	Power Supply	Fuse rating	Starting Current	Running current	Weight (kg)
OU/01	Roof	5th floor LHS	PURY-P500YNW	1858 x 1750 x 740	4917	65 dB(A)	400V 3Nph	1 x 50Amp	8-Amp	43.2	337
OU/02	Roof	5th floor RHS	PURY-P550YNW	1858 x 1750 x 740	6833	70 dB(A)	400V 3Nph	1 x 63Amp	8-Amp	51.4	337

Notes:

Unit selections based on Mitsubishi/Kooltech.

Toilet Extract Fan Schedule

TEF reference	Location	Air flowrate (l/s)	Pressure drop (pa)	Dimensions (mm)	Running current (A)	Power Supply	Weight (kg)	Duct connection sizes (mm dia)	Manufacturer's Selection
TEF/01	Flat roof area	350	250	850W x 800Lx 450H	3.1	220V 1ph	40	300	Woods EC Twin Box fan
TEF/02	Flat roof area	300	250	850W x 800Lx 450H	3.1	220V 1ph	40	300	Woods EC Twin Box fan

Notes:

Unit selections based on FlaktWoods. Contact Andrew Window (07801 723 212).

Units shall be provided c/w speed controllers and suitable for mounting externally.

Elevation On Supply Riser

Elevation On Extract Riser

New refrigeration pipework from condensing units shall be routed on cable tray then extend through new builderswork opening into pitch roof void.

New condensing units for VRF systems shall be mounted on big-foot type supports c/w unistrut frame, mounted 300mm above finished roof level. Big-foot supports shall span the width of the existing refrigeration pipework (serving ground floor condensing units). Location of big-foot supports shall be above existing beams. The MSI shall therefore employ a structural engineer to review the existing structure and advise the MSI where the supports shall be located.

Existing tenant plant to be disconnected and stripped out by others.

Existing roof-light (capped/not-in use) to remain as existing.

Existing tenant plant to be retained.

New refrigeration pipework from condensing units shall be routed on cable tray then extend through new builderswork opening into turret void space.

Existing roof mounted condensing units serving the ground floor.

Pumped waste pipe discharge at roof level. Location shall be routed to avoid access for maintenance or trip hazard.

Existing refrigeration pipework mounted at low level extending between existing condensing units and lightwell.

The MSI shall co-ordinate the proposed new refrigeration pipe route with the existing structure/access platform, then drop into void space above the 5th floor meeting room.

Waste pump unit mounted at low level. Discharge pipe shall rise adjacent to new refrigeration pipework, then set onto roof.

New services within this void space have been indicated on the layout drawings, as per the services within the pitched roof area.

New refrigeration pipework from condensing units shall be routed on cable tray. Pipework shall pass over existing refrigeration pipework serving the ground floor, pass below the access steps, then extend through new builderswork opening into pitch roof void.

250Ø fresh air duct extend from new 400x300 branch, then route to pitch roof along Deansgate. Route of duct shall be co-ordinated on site by MSI with existing services and avoiding restricting access.

250Ø extract duct extend through wall from pitched roof void, serving 5th floor.

400x250 fresh air duct extend from new 400x300 branch, then through wall into pitched roof void to serve 5th floor.

400x300 branch off underside of existing fresh air duct.

500x300 branch off underside of existing fresh air duct.

500x250 fresh air duct extend from new 500x300 branch, then through wall into pitched roof void to serve 5th floor.

200Ø extract duct extend through wall from pitched roof void, serving 5th floor.

250Ø fresh air duct extend through wall into pitched roof void to serve 5th floor.

200Ø fresh air duct extend through wall into pitched roof void to serve 5th floor.

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250Ø fresh air duct extend through wall into pitched roof void to serve 5th floor.

Existing extract ductwork shall remain as existing.

200Ø extract duct extend through wall from pitched roof void, serving 5th floor.

Extract duct extend at low level then re-connect into side of existing extract duct.

250Ø fresh air duct extend from new 500x300 branch, then route to pitch roof along Deansgate. Route of duct shall be co-ordinated on site by MSI with existing services and avoiding restricting access.

Discharge from toilet extract fan shall terminate with a tapered bend cut at 45° with bird mesh.

New 250Ø fresh air duct extend across roof at low level, co-ordinating with existing services. Existing steel step-over shall be removed and replaced with new, extending over new 250Ø duct.

New 200Ø fresh air duct extend across roof at low level, co-ordinating with existing services. Existing steel step-over shall be removed and replaced with new, extending over new 200Ø duct.

Do not scale from this drawing.
Verify dimensions by site measurement.
Read this drawing in conjunction with the latest architectural and structural drawings.

Notes:

- This drawing shall be read in conjunction with all other drawings and specifications.
- 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.
- All mechanical services, equipment and installations which are to remain located in the area of works shall be protected for the duration of works.
- 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.
- 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.
- The MSI shall dispose of all redundant materials utilising their own skips, etc, in accordance with the building landlord's access conditions.
- 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.
- Works shall be arranged such that there is no disruption to occupied staff. All works shall be undertaken in accordance with the Employers and building landlord's site rules and restrictions.
- The MSI shall allow for full liaison and co-ordination with the other parties regarding the extent of provision and interfacing, to ensure that the delivery/site assembly are co-ordinated on site.
- Services requiring maintenance shall be kept within accessible areas.
- New builderswork holes shall be formed by the MSI or Principal Contractor, including pipe sleeves and fire stopping where necessary.
- All new ductwork shall contain air flow direction arrows.
- Duct access panels for cleaning purposes shall be located as per HVAC TR19.
- All pipework shall be fully bonded to earth.
- Refrigeration pipework shall be mounted on basket tray.
- Where new ductwork extends from existing, the MSI shall ensure all duct insulation is made good and finished in matching materials as existing.
- All new externally mounted ductwork shall be insulated and finished in black PIB.
- Where new ductwork and refrigeration pipework extends into roof void, new builderswork openings shall be formed (and supported with a lintel if necessary), then sealed and weather-proofed to provide a neat finish with matching materials as existing.
- The MSI shall ensure that the condensing units are installed and spaced in accordance with the manufacturer's recommendations.
- This drawing has been produced from a limited-access site survey by the engineer. As such, the MSI shall attend site and ensure the new ductwork and refrigeration pipework is fully co-ordinated with the existing services, ensuring that the proposed routes do not restrict access to new or existing services.

P03	02/08/24	Tender Issue.	MS	SR
P02	26/07/24	Preliminary Issue.	MS	SR
P01	19/07/24	Work In Progress.	MS	SR
Rev	Date	Description	Checked	Approved



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Client
AM Alpha

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

Drawing Title
Mechanical Services
Roof Level
Proposed Layout

Scale 1:100	Sheet Size A1	Designed DA	Checked SR
Project Status TENDER	Suitability	HM Project No. 35660	Rev
Drawing No. 35660-HML-XX-RF-GA-M-101001			P03