Drawing List	A	B	C	Installation Issue
Issue Date	22/08/2025	28/08/2025		
00 Air Transfer	✓	✓		
01 Isometric	✓	✓		
02 Base Plan				
03 GF Plan	✓	✓		
04 FF Plan	✓	✓		
05 SF Plan				
06 TF Plan				
10 Section A	✓	✓		
11 Section B	✓	✓		
12 Section C	✓	✓		
13 Section D				
15 Fire Strategy	✓	✓		
16 Unit Layout	✓	✓		
17 Thro' the wall Detail	Installation Issue			
18 Intake Exploded	Installation Issue			
19 Exhaust Exploded	Installation Issue			
20 Supply Install BF	Installation Issue			
21 Supply Install GF	Installation Issue			
22 Supply Install FF	Installation Issue			
23 Supply Install SF	Installation Issue			
24 Supply Install TF	Installation Issue			
25 Extract Install BF	Installation Issue			
26 Extract Install GF	Installation Issue			
27 Extract Install FF	Installation Issue			
28 Extract Install SF	Installation Issue			
29 Extract Install TF	Installation Issue			
30 Wiring Diagram	Installation Issue			
31 Air Valve Details	Installation Issue			
Insulation Template	Installation Issue			

Revisions :

Designer : OS

- Rev A - Initial design.
- Rev B - After feedback

PLEASE NOTE: THESE DRAWINGS ARE NOT THE INSTALLATION DRAWINGS.

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Project		
2071LEW049COLT		
Date: 28.08.2025	Revision: B	
Scale: As Noted	Designer: OS	Checked by: OS

Designer Details and Contact

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Understanding the Design

These design pages show a 2D overview of your MVHR design, which we have created using a 3D CAD model.

This is a rigid steel / semi rigid system.

Page 00 Air Transfer: Detailing air flow levels at each air valve in the property and includes flow rates under doors, which determines the undercut depth.

Page 01 Isometric: An isometric view of the 3D model showing unit location, duct routes, primary and secondary attenuation (if applicable).

Page 02 - 06 Floor Plans: A plan view of duct routes. These include labeled air valves showing room names, flow rates and sound levels.

Page 10 - 13 Sections: Section view of duct routes.

Page 15 Fire Strategy: Details of fire strategy for MVHR system through the property (if applicable).

Page 16 Unit Layout: Various scaled views of the unit within the space. This page includes unit specification, intake and exhaust information, condensate drain details and maintenance requirements.

Key* found on plan layout pages

Ready to Sign Off?

It's important that the below points have been considered before signing the design off and receiving the MVHR kit.

Is there any structure not shown on the drawings?

Is there a point to connect the condensate drain to and has a run been considered?

Are you happy with the position of the air valves in the rooms?

Does the size of duct fit within the structure (ie: joists, lowered ceilings)?

Is the front of the unit accessible for maintenance and regular filter changes?

Has your installer had a thorough check through the design on site and done a walk-around?

Is your installer happy the design will work?

If applicable, have building control reviewed and approved the ventilation strategy and fire strategy drawings?

Product Overview

Sprial wound galvenized steel (Rigid)

Radial plastic duct (semi-rigid)

Rigid systems are push fit and utilize rubber seal gaskets to achieve a high airtightness. Semi-rigid systems use manifold boxes to distribute ducts to rooms in the property.

Primary Attenuation

Primary attenuation minimizes MVHR fan noise transmittance through ducts into rooms. Secondary attenuation reduces noise travel between rooms in rigid branched systems.

External Grilles

External grilles are mounted on your external wall, housing the intake and exhaust ducts.

Air Valve Types

Standard

Our chosen range of air valves are specialized for MVHR design. Using the coanda effect, air is distributed well within rooms, resulting in an optimal delivery of fresh air and removal of stale air.

Control Options

Zehnder Standard

ComfoSwitch C67

User-friendly application for controlling the ventilation unit. Various unit control options are available. Manual controls placed in easy to access places such as kitchens are standard. A wireless connection option via Wi-Fi networks are also available.

Please notify your designer of any preferences you have.

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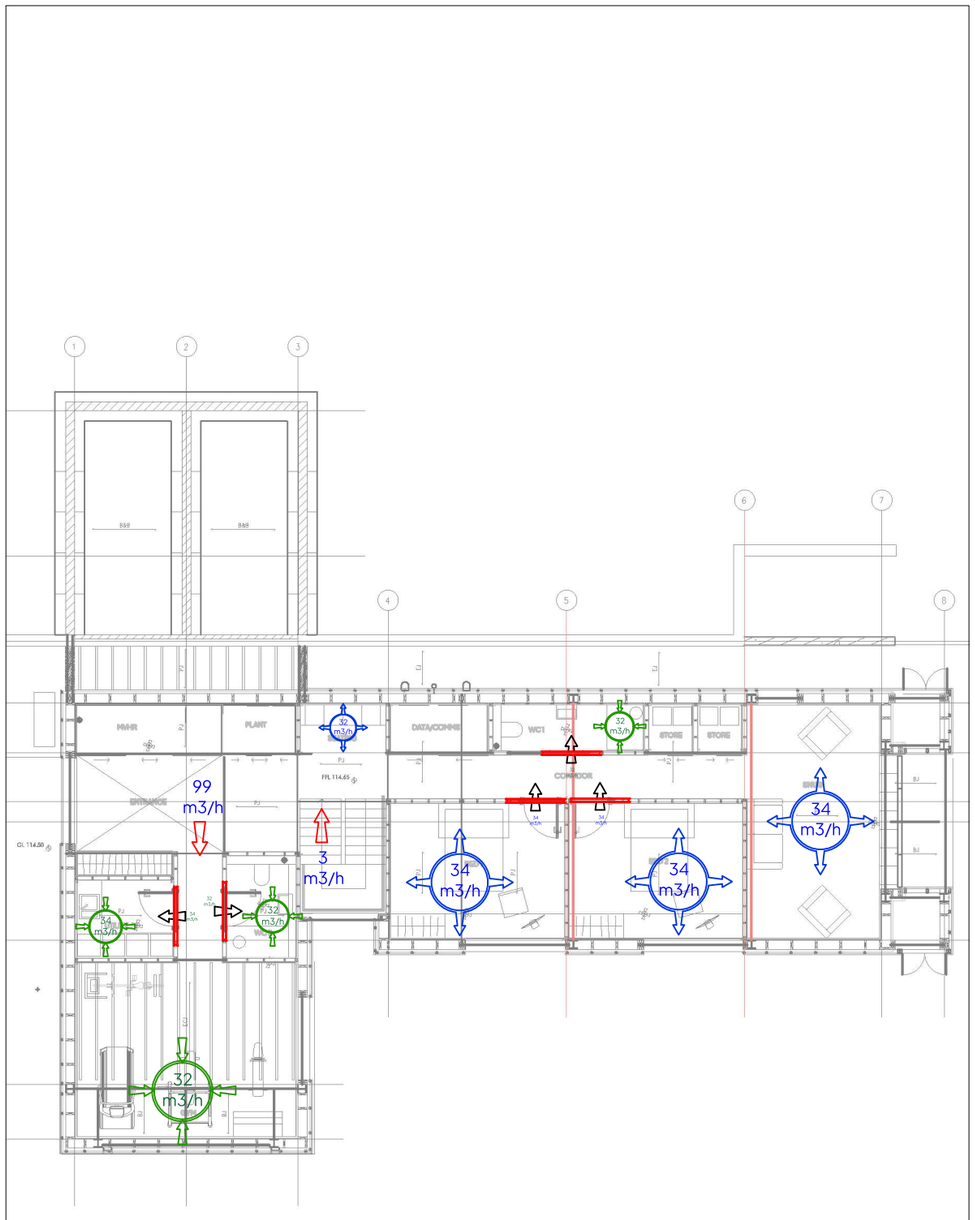
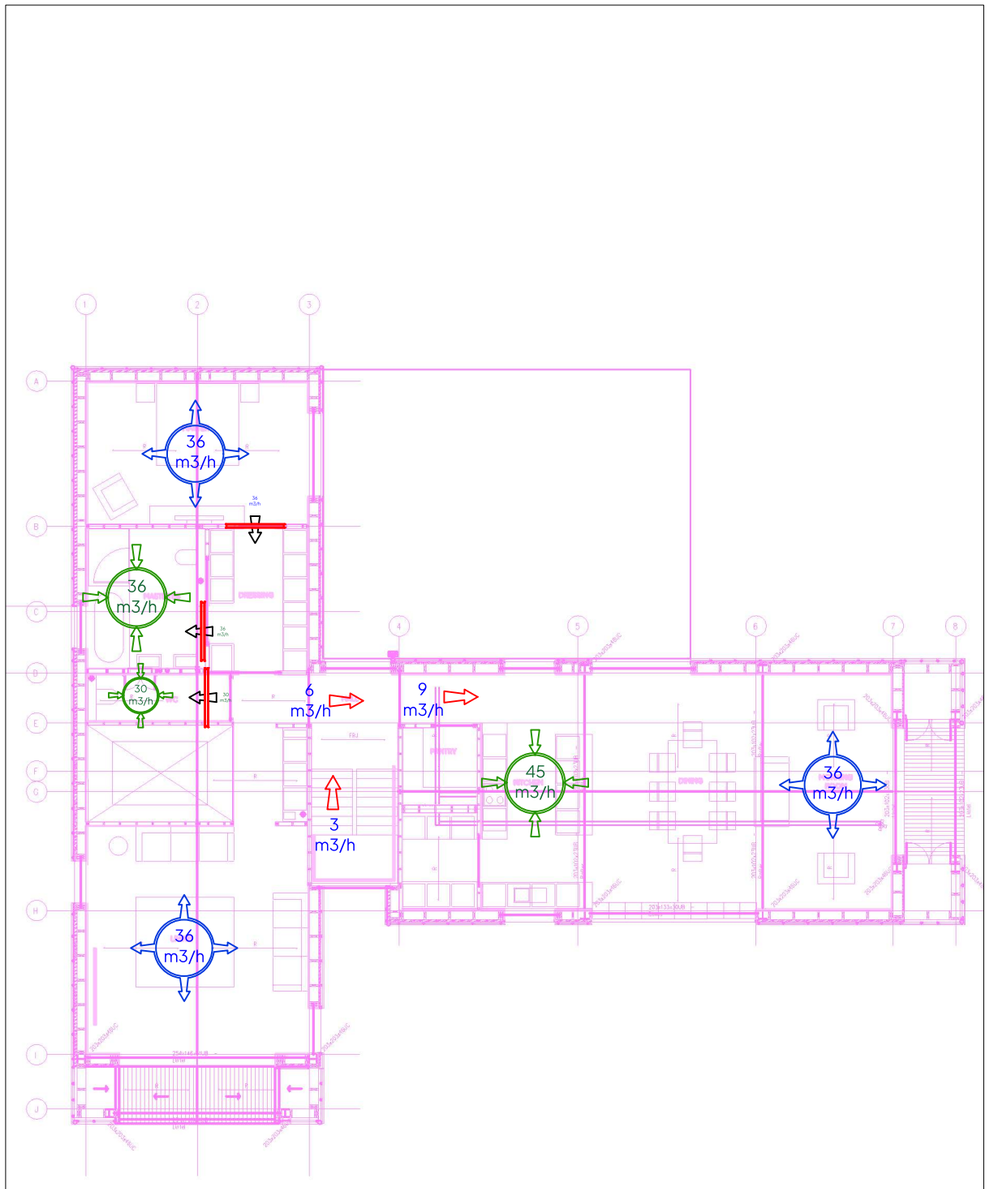


Ventilation gaps must not exceed the maximum width permitted by door manufacturers' requirements.
Any conflict between this drawing and manufacturers requirements are to be brought to the immediate attention of the contract administrator

Ground Floor Plan



First Floor Plan

Ventilation Rate

Low: 168 m3/h

Standard: 240 m3/h

Boost: 312 m3/h

General Notes

Key - Air Transfer

Air Transfer Path (Under Door) — 60 m3/h

Fire Grille — 30 m3/h

Air Flow Arrow

Supply — 24 m3/h

Extract — 24 m3/h

Ventilation Rates

Ventilation rates shown relate to Building regulations part F (ventilation).

Building regulations requires a minimum of 10mm undercut of doors where an air transfer path is required.

Air Transfer paths shown are under doors or through wall grilles as you prefer. As a guideline, air velocity should be about 1m/s.

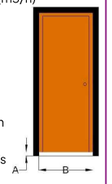
Air Transfer Formula

A = depth of undercut (mm)
Q = required flow rate (m3/h)
V = velocity (m/s)
B = door width (mm)

$$A = \frac{Q}{0.0036 \times V \times B}$$

Example:
for flow rate of 44m3/h and door width of 750mm, assuming 1m/s air velocity:

A = 44 / (0.0036 x 1 x 750)
= 16mm



00 Air Transfer

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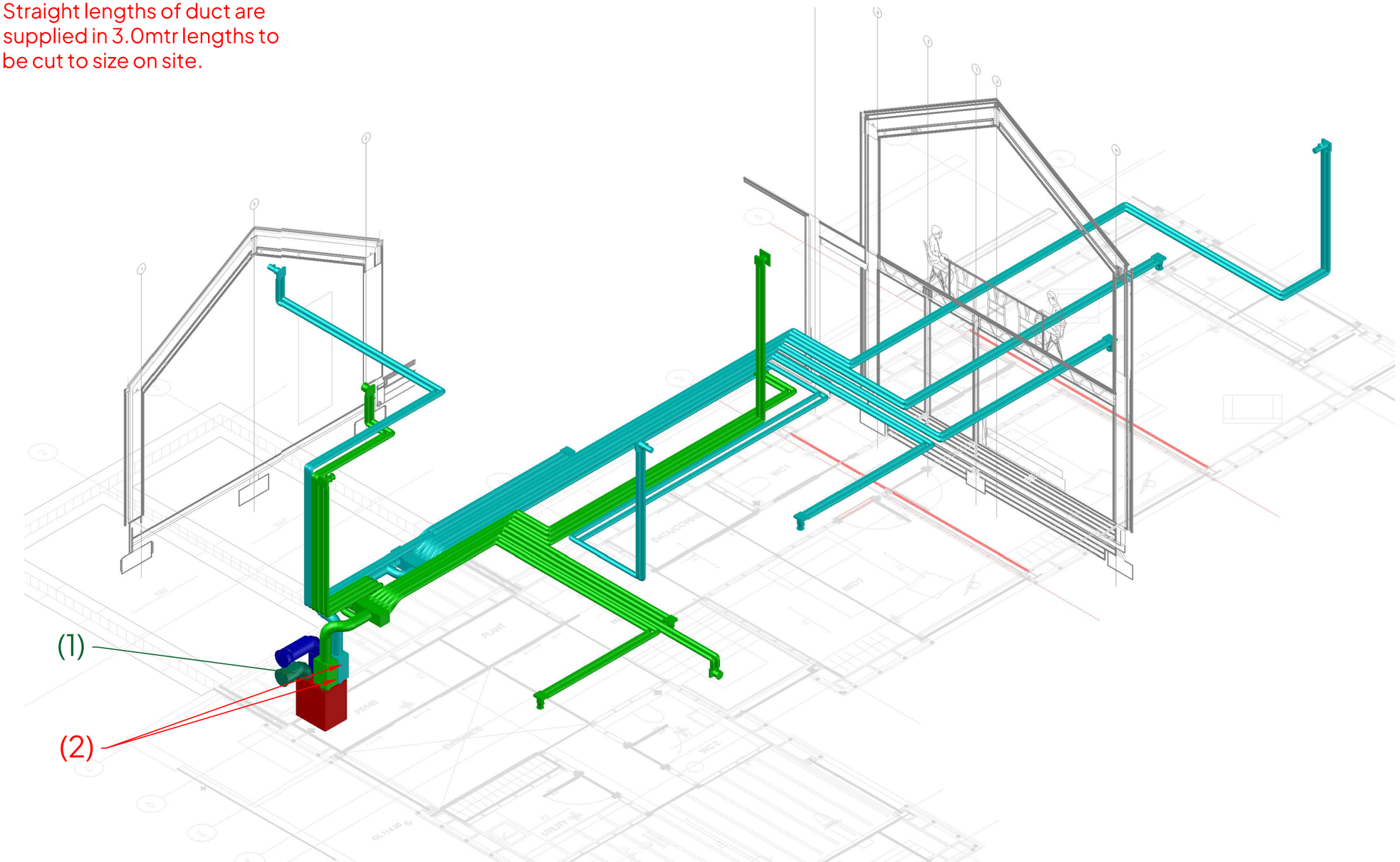
Straight lengths of duct are supplied in 3.0mtr lengths to be cut to size on site.

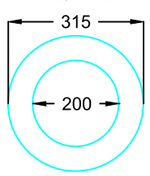


	Fan Speed 1		Fan Speed 2		Fan Speed 3	
Supply and Extract pressure	16	14	32	29	54	49
Intake and Exhaust pressure	2	2	5	5	8	8
Total in / out pressure	18	17	37	34	63	57
Ave. externally available pressure	17		36		60	
Select AHU	Zehnder ComfoAir Q 450					
Power consumption of AHU (W)	18		36		61	
Average cost per Annum (£) when electricity costs 30 p/kWh			£95			
H.E. efficiency			88%			
Reduction in H.E. efficiency due to intake and exhaust ducts			0.9%			

(1)

Primary Silencers

Exhaust: 250mm long, circular, 200mm duct, 57mm wall, overall diameter = 315mm

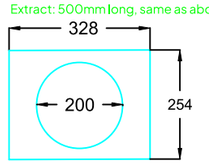


(2)

Primary Silencers

Supply: 500mm long, rectangular, 160mm duct, 25mm wall, 328x254

Extract: 500mm long, same as above



General Notes

Key

Intake duct
Supply duct
Extract duct
Exhaust duct
Silencer

Primary and cross talk attenuation:

Where primary attenuation (1) is represented, please add 100mm onto diameter of ductwork.

(1)

Where cross talk attenuation (2) is represented, the silencer has in reality a square cross-section. Please add 50mm onto diameter of ductwork to give the square dimensions.

(2)

Intake and Exhaust Insulation

On Intake and Exhaust ducts (leading to outside) we specify 43mm ComfoPipe Plus. Therefore please add 86mm onto the diameter of the ductwork.

01 Isometric

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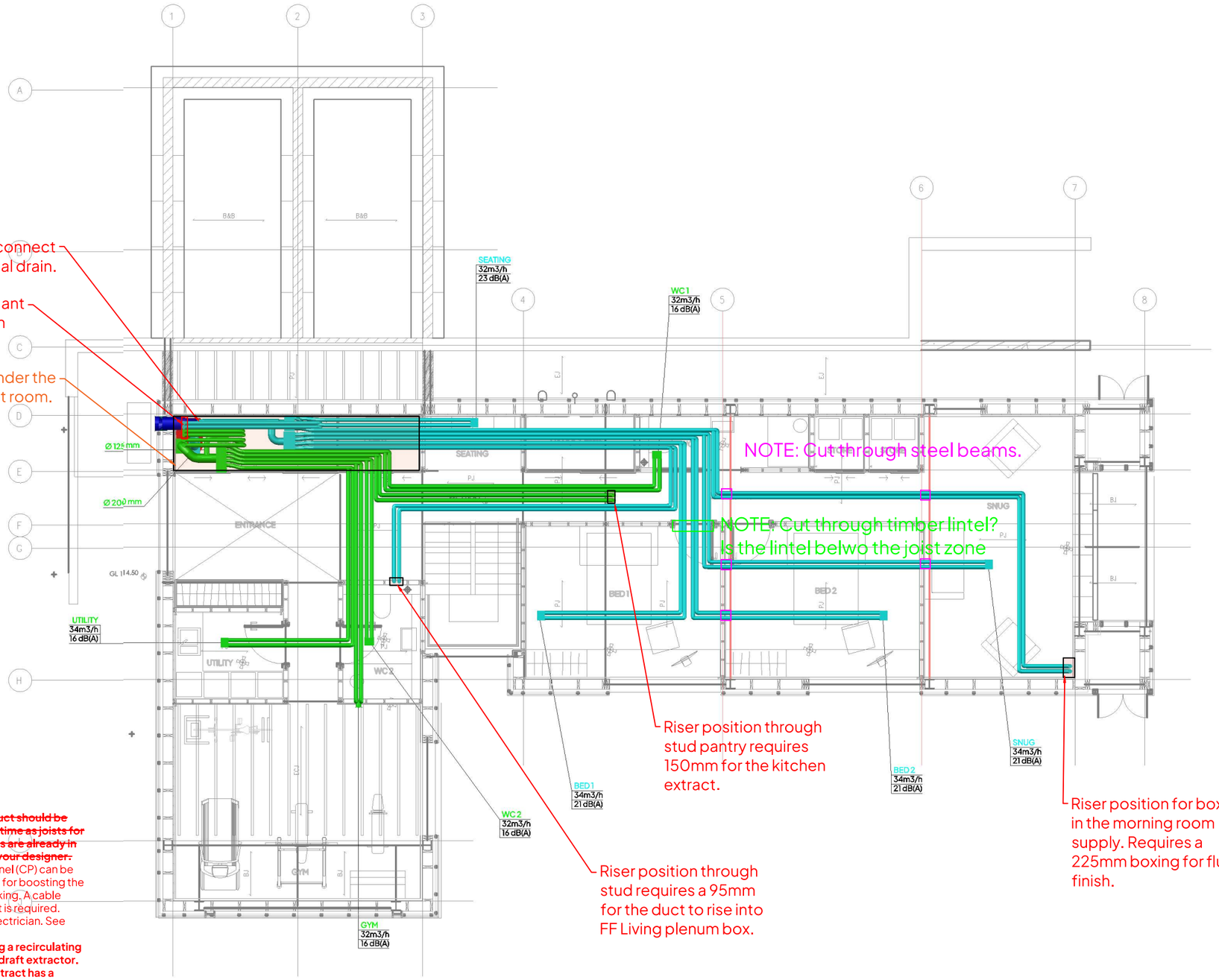

Important notes:

(1) ~~**Straight lengths of duct should be installed at the same time as joists for ease of install. If joists are already in place, please notify your designer.**~~
(2) The MVHR Control panel (CP) can be located in the kitchen for boosting the ventilation when cooking. A cable back to the MVHR unit is required. Please advise your electrician. See wiring diagram.
(3) We recommend using a recirculating cookerhood / downdraft extractor. The MVHR kitchen extract has a disposable fleece filter to take out remaining dirt.
(4) Please notify the designer of fire strategies where applicable.
(5) All ductwork should run within the thermal envelope of the property
(6) The MVHR unit must remain accessible for regular filter changes and maintenance. 600mm access to front panel required.

General Notes

Key

- Intake duct
- Supply duct
- Extract duct
- Exhaust duct
- Silencer

03 Ground Floor

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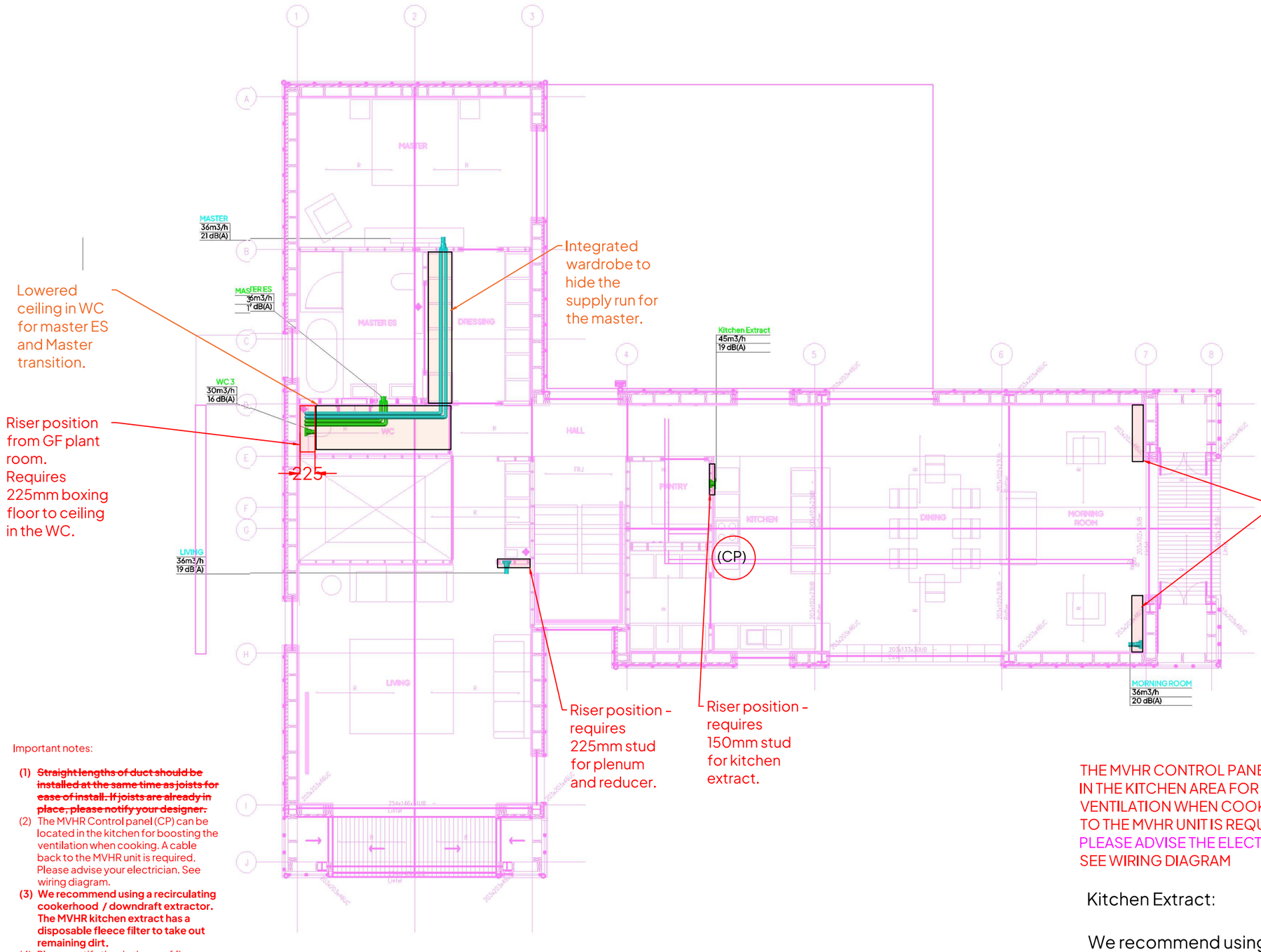

Important notes:

(1) ~~Straight lengths of duct should be installed at the same time as joists for ease of install. If joists are already in place, please notify your designer.~~

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(3) We recommend using a recirculating cookerhood / downdraft extractor. The MVHR kitchen extract has a disposable fleece filter to take out remaining dirt.

(4) Please notify the designer of fire strategies where applicable.

(5) All ductwork should run within the thermal envelope of the property

(6) The MVHR unit must remain accessible for regular filter changes and maintenance. 600mm access to front panel required.

THE MVHR CONTROL PANEL IS TO BE LOCATED IN THE KITCHEN AREA FOR BOOSTING THE VENTILATION WHEN COOKING. A CABLE BACK TO THE MVHR UNIT IS REQUIRED.
PLEASE ADVISE THE ELECTRICIAN
SEE WIRING DIAGRAM

Kitchen Extract:

We recommend using a recirculating cooker hood / downdraft extractor.

The MVHR kitchen extract has a disposable fleece filter to take out the remaining dirt.

General Notes

Key

- Intake duct
- Supply duct
- Extract duct
- Exhaust duct
- Silencer

Control Panel

To be positioned for easy access for boosting the unit and changing settings. We recommend installing the controller in a kitchen or entrance hall.

(CP)

(Zehnder Comfoswitch C67)

04 First Floor

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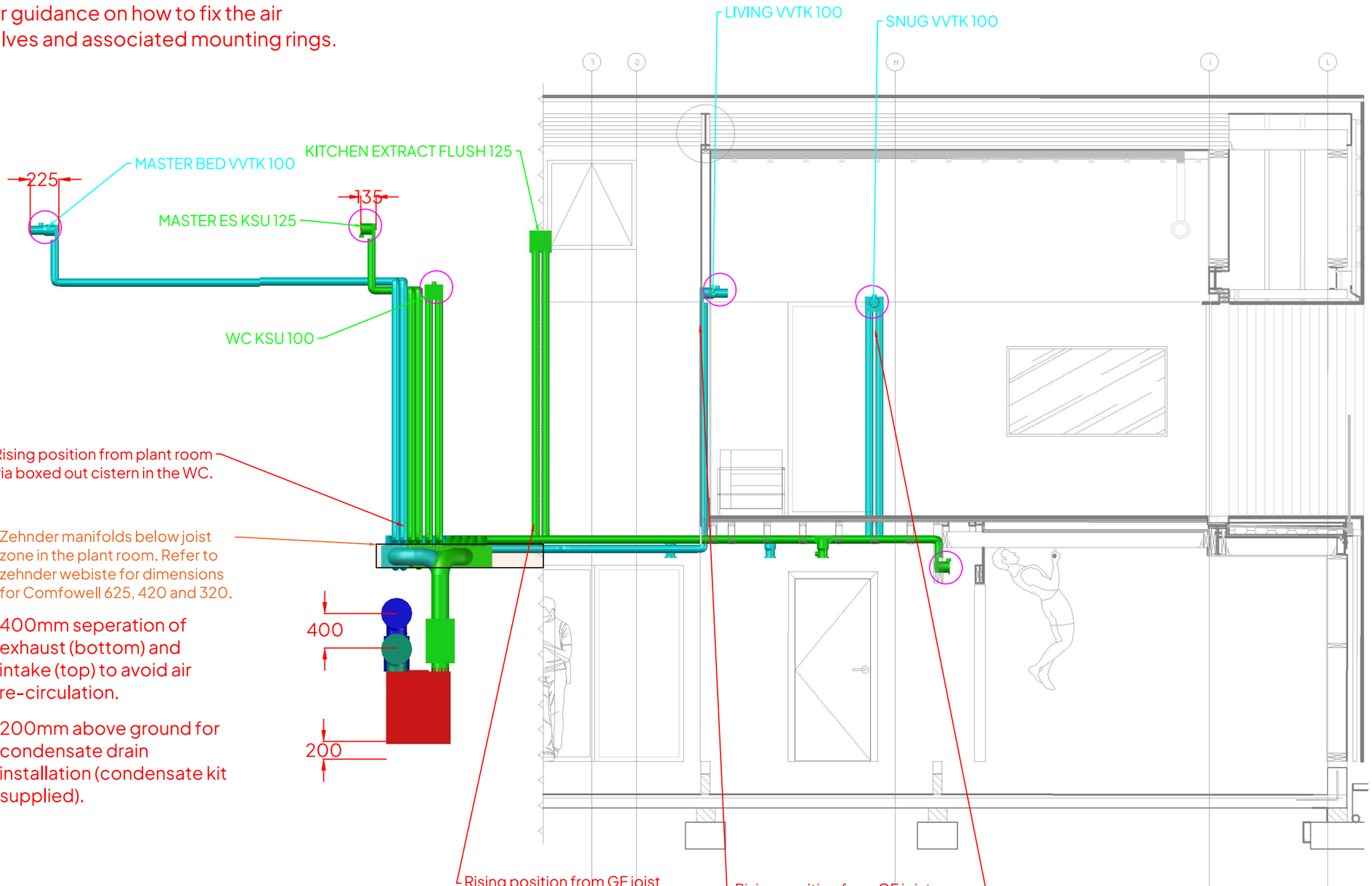
Wall Mounted air Valves:
Where wall mounted air valves have been shown it is important to ensure that the duct on which they are mounted is at least a 100mm offset from center to the ceiling finish for commissioning and air flow purposes.

See generic air valve mounting drawing for guidance on how to fix the air valves and associated mounting rings.



General Notes

Key

- Intake duct
- Supply duct
- Extract duct
- Exhaust duct
- Silencer

10 Section A

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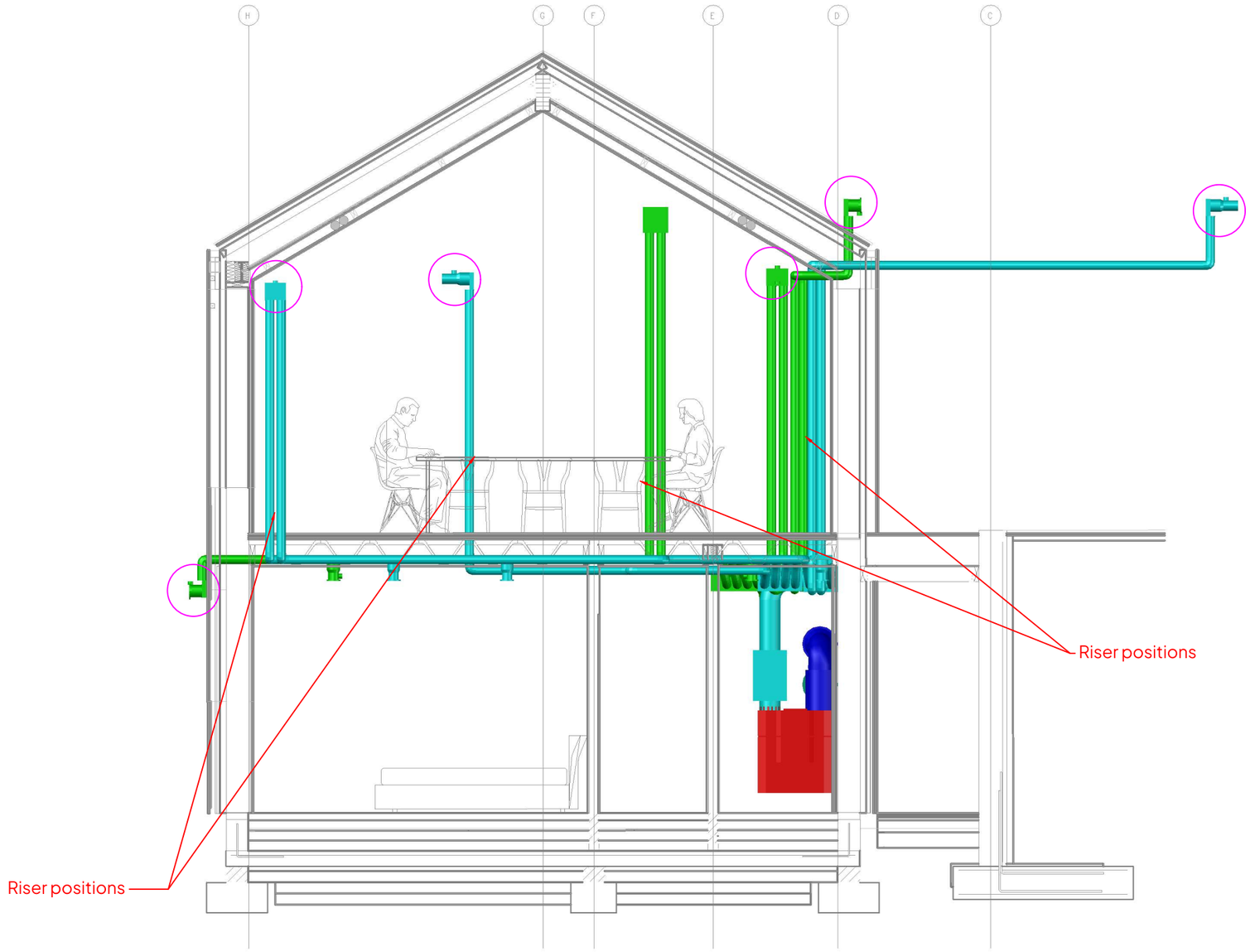

See generic air valve mounting drawing for guidance on how to fix the air valves and associated mounting rings.

General Notes

Key

- Intake duct
- Supply duct
- Extract duct
- Exhaust duct
- Silencer

11 | Section B

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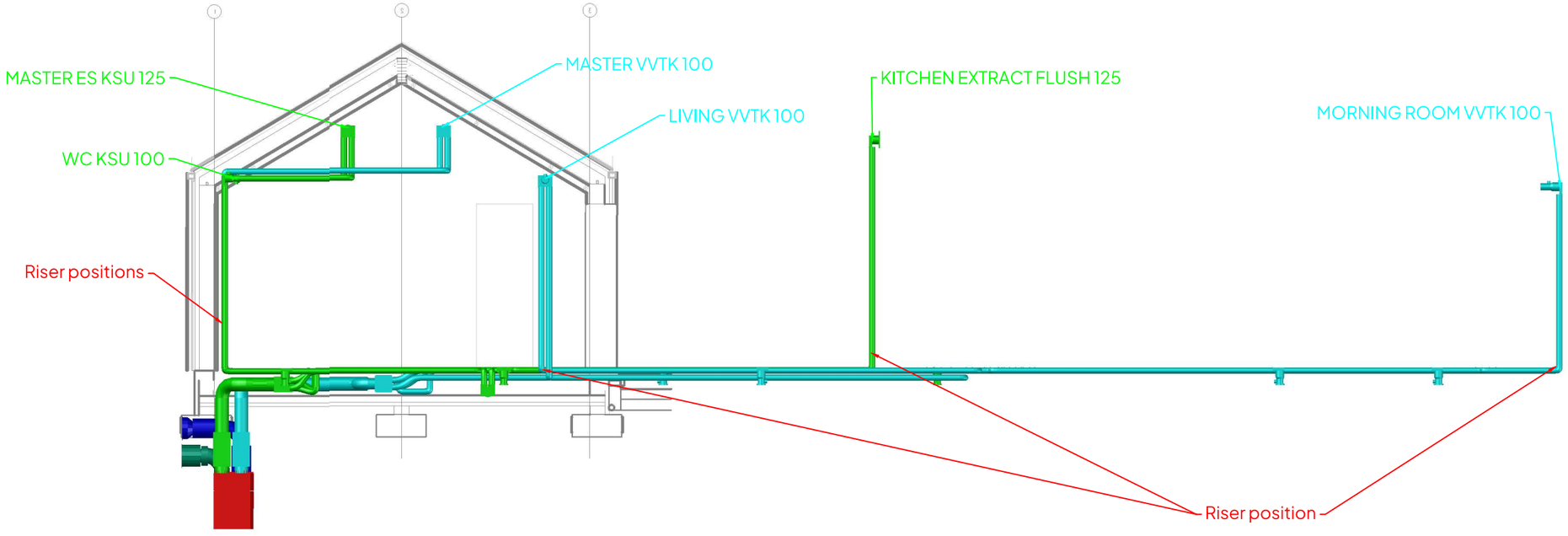

See generic air valve mounting drawing for guidance on how to fix the air valves and associated mounting rings.

General Notes

Key

- Intake duct
- Supply duct
- Extract duct
- Exhaust duct
- Silencer

12 Section C

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No special requirements for the MVHR system in relation to fire protection have been communicated to the designer.

If there is a requirement for a protected escape route the extent of this should be communicated by drawing the full extent of its boundary as a continuous line on both the plans and relevant sections.

Responsibility for checking that the signed off MVHR design is compatible with the building's fire strategy and that its installation adheres to all applicable regulations remains with the architect or building designer not 21°.

General Notes

15 Fire Strategy

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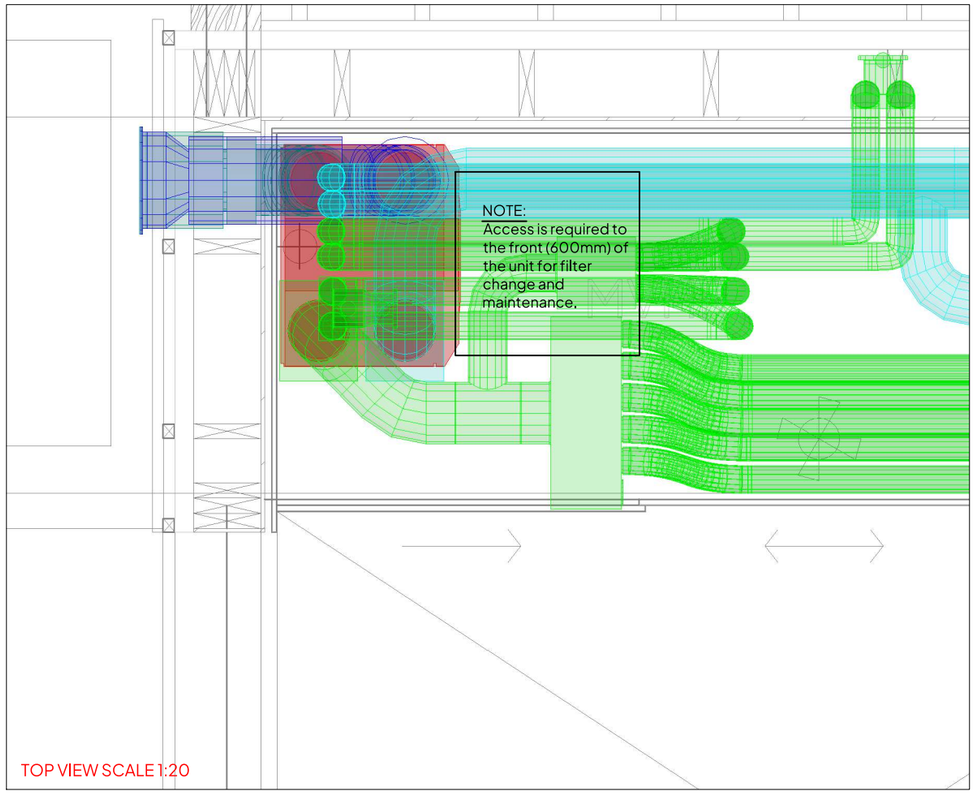


TOP VIEW SCALE 1:20

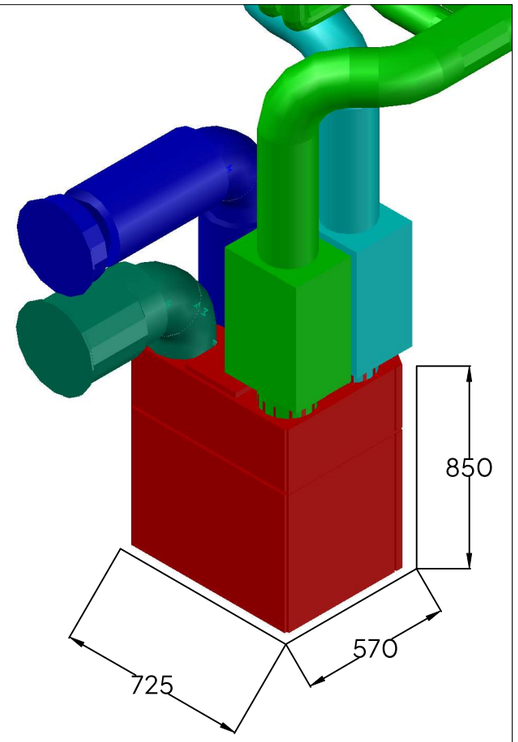
Inlet and Exhaust Ducts through the wall need a 315mm hole and a 2 degree slope to the outside to allow condensate to drain outwards.

Tape the polyproplene ComfoPipe ductwork joints with air tightness tape (TINVIS) to make the ductwork more rigid.

Zehnder ComfoAir Q 450

H=850mm, W=725mm, D=570mm.

Weight 50kg, hung on a single wall bracket (supplied) at the top rear of the unit.



UNIT LAYOUT

NOTE:
Access is required to the front (600mm) of the unit for filter change and maintenance.
It must be possible to remove the front cover of the unit.

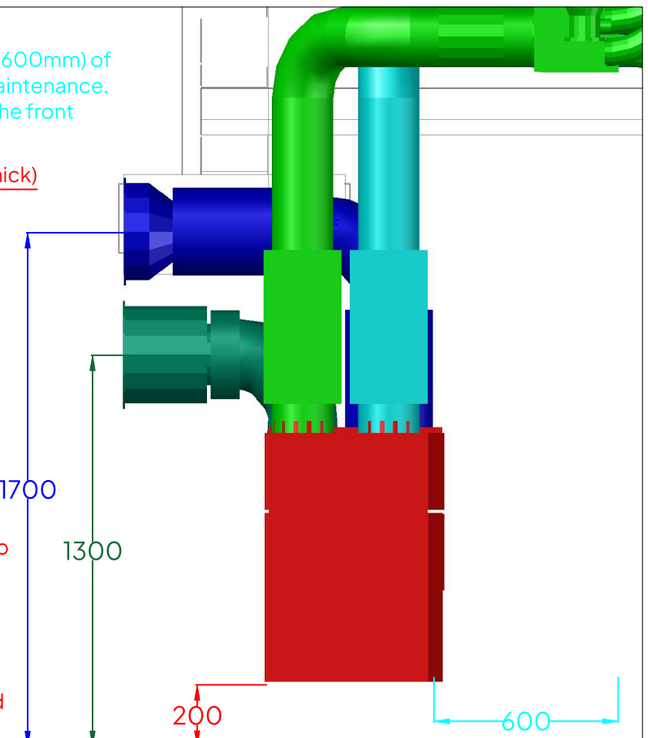
Comfopipe Plus 200 (43mm thick) Insualtion

INTAKE:
Comfopipe Plus 200
Confopipe Plus 200 45 x 2

EXHAUST:
Comfopipe Plus 200
Cofopipe Plus 200 45 x 2

Requires a Zehnder 200mm adapter which will be supplied.

Space for condensate drain connection and associated trap (minimum 200mm height). It is essential that the dry seal trap (supplied) is fitted to the condensate drain close to the unit.
Make sure this can be accessed for future servicing.
This should be connected to an internal drain.



General Notes

KEY NOTES:

Space for condensate drain connection and associated trap (minimum 200mm height)

Zehnder ComfoAir Q 450

The intake and exhaust need to tilt downwards by 2 degrees to drain any condensate to the outside of the building

For help with positioning of the remote controller or other questions, please consult 21°.

16 Unit Layout

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