Rev C01

Drawing 1338B-NGB-NB-XX-SC-M-570004

LEVEL 07

LEVEL 06

LEVEL 05

LEVEL 04

LEVEL 03

LEVEL 02

LEVEL 01

LEVEL 00

04.01a CLEAN SAMPLE PREP		
ROOM SYSTEM VENTILATION		
ALL FUME CUPBOARDS CLOSED		
SUPPLY	– BASED ON 6AC/HR	– 0.300m³/s
EXTRACT	– TO MATCH SUPPLY	– 0.300m³/s
ALL FUME CUPBOARDS OPEN		
SUPPLY	– BASED ON 6AC/HR	– 0.300m³/s
FUME EXTRACT	– 1 CUPBOARD	– 0.240m³/s
EXTRACT	– REDUCED TO BALANCE	– 0.060m³/s

04.01 INORGANIC PREP AREA		
ROOM SYSTEM VENTILATION		
ALL FUME CUPBOARDS CLOSED		
SUPPLY	– BASED ON 6AC/HR	– 0.550m³/s
EXTRACT	– TO MATCH SUPPLY	– 0.550m³/s
ALL FUME CUPBOARDS OPEN		
FUME EXTRACT	– 1 CUPBOARD 10VEN	– 0.800m³/s
SUPPLY	– INCREASED TO BALANCE	– 0.800m³/s
EXTRACT	– TURNED OFF	– 0.000m³/s

AHU/05

AHU/06

ENVIRONMENT AND ECOLOGY LAB 04.05

GROWTH CHAMBER 04.04

FREEZER ROOM 04.02

CLEAN SAMPLE PREP 04.01a

INORGANIC PREP AREA 04.01

SMART INFRASTRUCTURE 03.03

IT LAB 03.02

CORE GENOMICS 03.01

PRE-PCR 03.01a

SUPER LAB 02.08

SUPER LAB HOLDING ROOM 02.04

ROOM SYSTEM VENTILATION		
ALL FUME CUPBOARDS CLOSED		
SUPPLY	– BASED ON 6AC/HR	– 4.086m³/s
EXTRACT	– TO MATCH SUPPLY	– 4.086m³/s
ALL FUME CUPBOARDS OPEN		
SUPPLY	– BASED ON 6AC/HR	– 4.086m³/s
FUME EXTRACT	– 8 CUPBOARDS	– 2.400m³/s
EXTRACT	– REDUCED TO BALANCE	– 1.686m³/s

LEGEND

- ATTENUATOR
- EXTRACT GRILLE
- SUPPLY GRILLE
- FLOOR GRILLE
- FD FIRE DAMPER
- VCD VOLUME CONTROL DAMPER
- HEATER BATTERY
- EXTRACT FAN

FLOW RATE (m³/s)	DUCT SIZE (mm)
VELOCITY (m/s)	PRESSURE (Pa/m)

NOTES

1. SUPPLY & GENERAL EXTRACT DUCTWORK WILL BE INSTALLED IN ACCORDANCE WITH DW144.
2. DUCTWORK ACCESS HATCHES WILL BE PROVIDED FOR INSPECTION/SERVICING & CLEANING IN ACCORDANCE WITH TR19, TABLE 3, BY THE DUCTWORK CONTRACTOR ONLY
3. FINAL CONNECTIONS TO GRILLES MAY BE FLEXIBLE UP TO MAXIMUM LENGTH OF 500mm. FLEXIBLE DUCTWORK ON SUPPLY DUCTWORK SHALL BE PRE-INSULATED
4. ALL GRILLES SHALL HAVE A POWDER COATED FINISH TO A STANDARD MANUFACTURERS COLOUR TO BE AGREED WITH THE ARCHITECT.
5. FIRE DAMPERS WITH ACCESS DOORS SHALL BE PROVIDED WHERE DUCTWORK PASSES THROUGH FIRE RATED CONSTRUCTION. REFER TO ARCHITECTS FIRE STRATEGY DRAWING FOR DETAILS.
6. ALL VENTILATION SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH CIBSE COMMISSIONING CODE A.
7. INTERNAL DIAMETER OF THE FLEXIBLE DUCTWORK SHOULD BE EQUAL TO THE EXTERNAL DIAMETER OF THE RIGID DUCTWORK.
8. ALL SUPPLY DUCTWORK SHALL BE INSULATED IN ACCORDANCE WITH BS 5422.
9. EXTRACT AIR BELLMOUTHS TO INCLUDE WIRE MESH TO PREVENT DEBRIS ENTERING SYSTEM.
10. DUCTWORK TO BE INSTALLED WITHIN 500mm OF FIRE PARTITIONS
11. MULTI-BLADE VCD'S TO BE USED ON DUCTWORK 300ø AND ABOVE
12. DUCTWORK TO BE INSTALLED IN LINE WITH DW144
13. FUME CUPBARD EXTRACT TO BE IN PLASTIC DUCTWORK.
14. OVEN EXTRACT TO BE IN STAINLESS STEEL DUCTWORK

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

For details of site wide and general risks to be read in conjunction with these notes, refer to the following documents:

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

Construction and Manufacture

Maintenance, Cleaning and Operation

Decommissioning and Demolition

It is assumed that all works associated with this drawing will be carried out by competent operatives working, where appropriate, to an approved method statement.

Rev	Description	Date
C02	VOLUMES UPDATED TO SUIT PRESSURE REGIME	01.12.22
C01	CONSTRUCTION ISSUE	01.06.22
P02	GENERAL UPDATE	16.11.21
P01	PRELIMINARY ISSUE	30.07.21

NG Bailey

321 Ordsall Lane, Salford M5 3HP
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: JW J Bejsiuk

Drawn By: TJF J Parker

Title: Ventilation Schematic AHU-05/06 Laboratory Areas

Issue Date: 30.07.21 16/12/22

Status: A1 - Approved & Accepted

Scale: NTS

Sheet Size: A0

Rev: C02

Drawing No: 1338B-NGB-NB-XX-SC-M-570004

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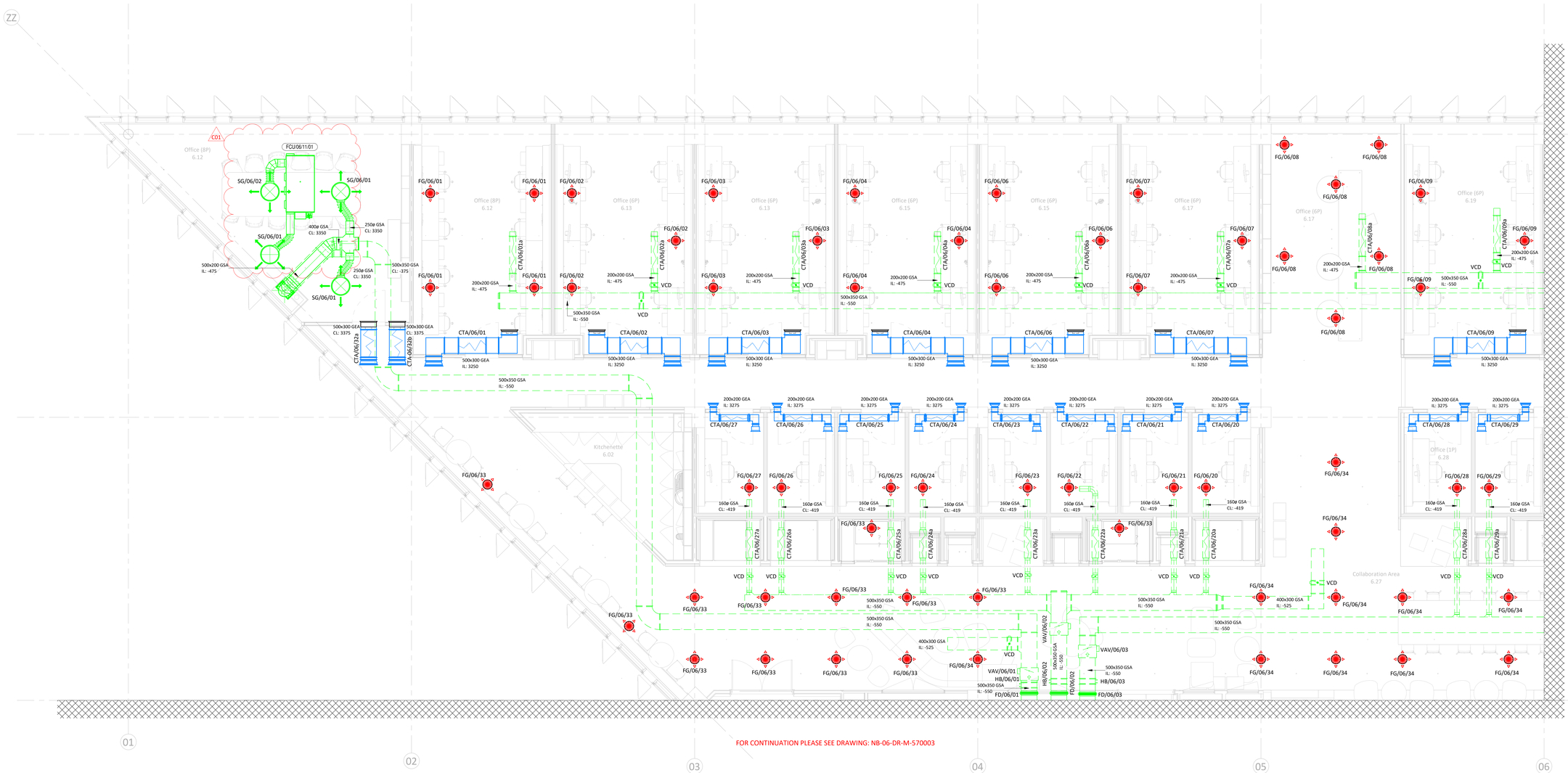
Rev C01

Drawing No. 1338B-NGB-NB-06-DR-M-570001

Plot Date: 08/06/22 Plotted By: Parker, Jay (NGB) Drawing No. & Orientation: 1338B - NGB - NB-06-DR-M-570001.dwg



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SAFETY First & Foremost

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

For details of site wide and general risks to be read in conjunction with these notes, refer to the following documents:

No specific SHE risks have been identified for the contents of this drawing.

KEY PLAN

NOTES:

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2. THIS DRAWING FORMS PART OF THE SPECIFICATION AND CONTRACT DOCUMENTS FOR THE WORKS
3. ANY DEVIATIONS FROM THIS DRAWING SHALL BE RECORDED AND RETURNED TO INFORM THE RECORD DRAWING
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED. UNDER NO CIRCUMSTANCES SHOULD DIMENSIONS BE SCALED FROM THIS DRAWING
5. INSTALL IN LINE WITH MANUFACTURERS GUIDANCE FOR DUCT, FITTINGS, EQUIPMENT, AND PLANT.
6. DUCTWORK MANUFACTURED AND INSTALLED IN ACCORDANCE WITH DW144
7. KITCHEN EXTRACT DUCTWORK MANUFACTURED AND INSTALLED IN ACCORDANCE WITH DW172
8. ALL KITCHEN EXTRACT DUCTWORK SUPPORTS ARE TO BE FIRE RATED
9. UNLESS STATED OTHERWISE IN THE SPECIFICATION, THE LEVEL OF CLEANLINESS SHALL BE IN LINE WITH HVCA TR/19 TABLE F2 - INTERMEDIATE POI LEVEL
10. UNLESS STATED OTHERWISE IN THE SPECIFICATION, THE DUCTWORK CONTRACTOR SHALL INSTALL ACCESS DOORS FITTED IN ACCORDANCE WITH HVCA TR/19 TABLES 3, 4 AND 5. ALL ACCESS DOORS TO BE INSULATED TYPE
11. VCDS ARE INSTALLED ON ALL MAIN, SUB MAIN AND TERMINAL BRANCHES UNLESS DRAWING INDICATES SELF-BALANCED HEADER
12. ALL METAL DUCTWORK PENETRATIONS THROUGH A FIRE COMPARTMENT OF ANY RATING SHALL HAVE FIRE DAMPERS WHICH ARE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE AND COMPLETE WITH INSTALLATION FRAMES
13. ALL PLASTIC DUCTWORK PASSING THROUGH A FIRE COMPARTMENT OF ANY RATING SHALL HAVE AN INTUMESCENT BLOCK INSTALLED TO MEET THE SAME RATING WHICH SHALL BE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE
14. ALL FIRE DAMPERS HAVE VISUAL INDICATION STATUS
15. ALL RECTANGULAR DUCTWORK, AND CIRCULAR OVER 250 DIA SHALL HAVE MULTI-BLADE OBD TYPE VCDS
16. SUPPLY GRILLE FLEXIBLE CONNECTIONS ARE FULLY INSULATED AND OF THE ACOUSTIC FLEX TYPE (500MM MAX)
17. FREE ISSUE FILTER MEDIA IS INSTALLED BY THE DUCTWORK CONTRACTOR PRIOR TO PROJECT COMPLETION
18. THE DISHWASHER EXTRACT SYSTEM IS INSTALLED IN STAINLESS STEEL AS PER PROJECT SPECIFICATION
19. SLEEVES ARE INSTALLED THROUGH ALL WALLS
20. UNLESS STATED OTHERWISE IN THE SPECIFICATION, THE FOLLOWING MINIMUM SHALL APPLY TO DAMPER TESTING: 100% OF FIRE AND MOTORISED DAMPERS SHALL BE TESTED, WITH 50% OFFERED TO NGB AND 10% TO THE CLIENT/BUILDING CONTROL FINAL SIGN OFF
21. ALL DUCTWORK COMPONENTS SHALL BE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS
22. DOOR UNDERCUTS SHALL BE 10MM UNLESS NOTED OTHERWISE
23. ALL EXTRACT BELLMOUTHS TO INCLUDE WIRE MESH ON INTAKE TOP PREVENT DEBRIS ENTERING THE SYSTEM

LEGEND:

VCD	VOLUME CONTROL DAMPER
FD	FIRE DAMPER
IC	INTUMESCENT COLLAR
ATT	ATTENUATOR
CTA	CROSSTALK ATTENUATOR
VAV	VARIABLE AIR VOLUME BOX
CAV	CONSTANT AIR VOLUME BOX
FG	FLOOR GRILLE
SG	SUPPLY GRILLE
EG	EXTRACT GRILLE
EL	EXHAUST LOUVRE
FCU	FAN COIL UNIT
GEA	GENERAL EXTRACT
GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
SMX	SMOKE EXTRACT
DEA	DIRTY EXTRACT
FFL	FINISHED FLOOR LEVEL
AFFL	ABOVE FINISHED FLOOR LEVEL
CL	CENTRE LINE
IL	INVERT LEVEL
FA	FROM ABOVE
TB	TO BELOW
FB	FROM BELOW
RTA	RISE TO ABOVE
LL	LOW LEVEL
HL	HIGH LEVEL
RTHL	RISE TO HIGH LEVEL

FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	11/02/22
P02	Comments Incorporated	16/11/21
P01	Preliminary Issue	27/06/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Sixth Floor Sheet 1 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No. 1338B-NGB-NB-06-DR-M-570001

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Rev C01

Drawing No. 1338B-NGB-NB-04-DR-M-570001

Plotted: 08/06/2022 08:47:14 Printed by: Jack Parker (NGB - Leeds) on: \\ngb.local\Leeds\Projects\1338B - MMU - Science & Engineering\1338B - MMU - SCI & ENG - Mechanical\Revit\1338B-NGB-NB-04-DR-M-570001.rvt

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SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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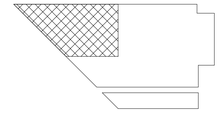

KEY PLAN

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LEGEND:

VCD	VOLUME CONTROL DAMPER
FD	FIRE DAMPER
IC	INTUMESCENT COLLAR
ATT	ATTENUATOR
CTA	CROSSTALK ATTENUATOR
VAV	VARIABLE AIR VOLUME BOX
CAV	CONSTANT AIR VOLUME BOX
FG	FLOOR GRILLE
SG	SUPPLY GRILLE
EG	EXTRACT GRILLE
EL	EXHAUST LOUVRE
FCU	FAN COIL UNIT
GEA	GENERAL EXTRACT
GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
SMX	SMOKE EXTRACT
DEA	DIRTY EXTRACT
FFL	FINISHED FLOOR LEVEL
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IL	INVERT LEVEL
FA	FROM ABOVE
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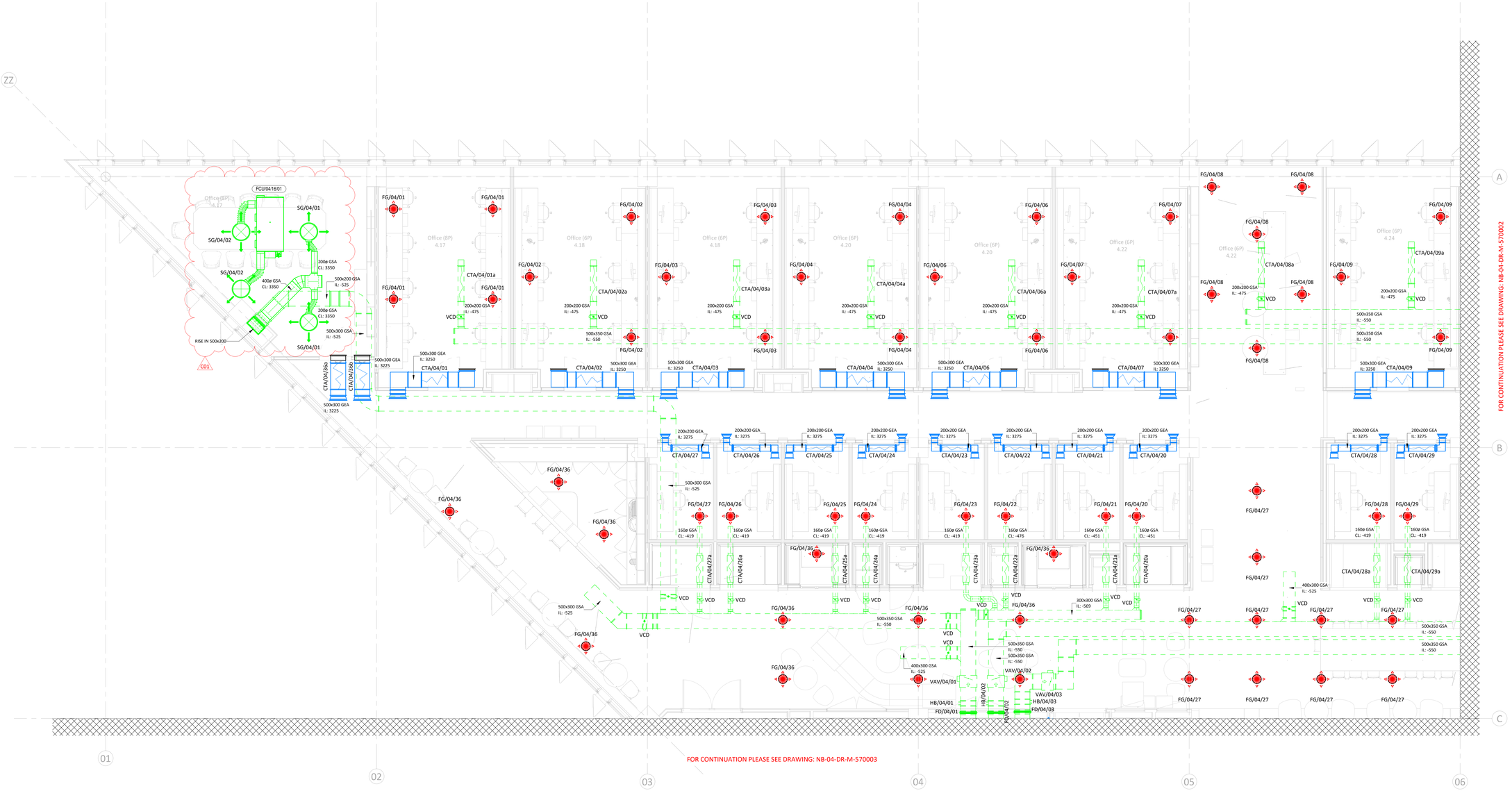
RTA	RISE TO ABOVE
LL	LOW LEVEL
HL	HIGH LEVEL
RTHL	RISE TO HIGH LEVEL
	FIRE RATED DUCTWORK
	UNDERFLOOR DUCTWORK



FOR CONTINUATION PLEASE SEE DRAWING: NB-04-DR-M-570002

FOR CONTINUATION PLEASE SEE DRAWING: NB-04-DR-M-570003

Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	31/02/22
P02	Comments Incorporated	19/11/21
P01	Preliminary Issue	27/09/21

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Fourth Floor Sheet 1 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No. 1338B-NGB-NB-04-DR-M-570001

Project Code | Originator | Zone | Level | Type | Role | Number
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Rev: C01

Drawing No: 1338B-NGB-NB-B1-DR-M-570001

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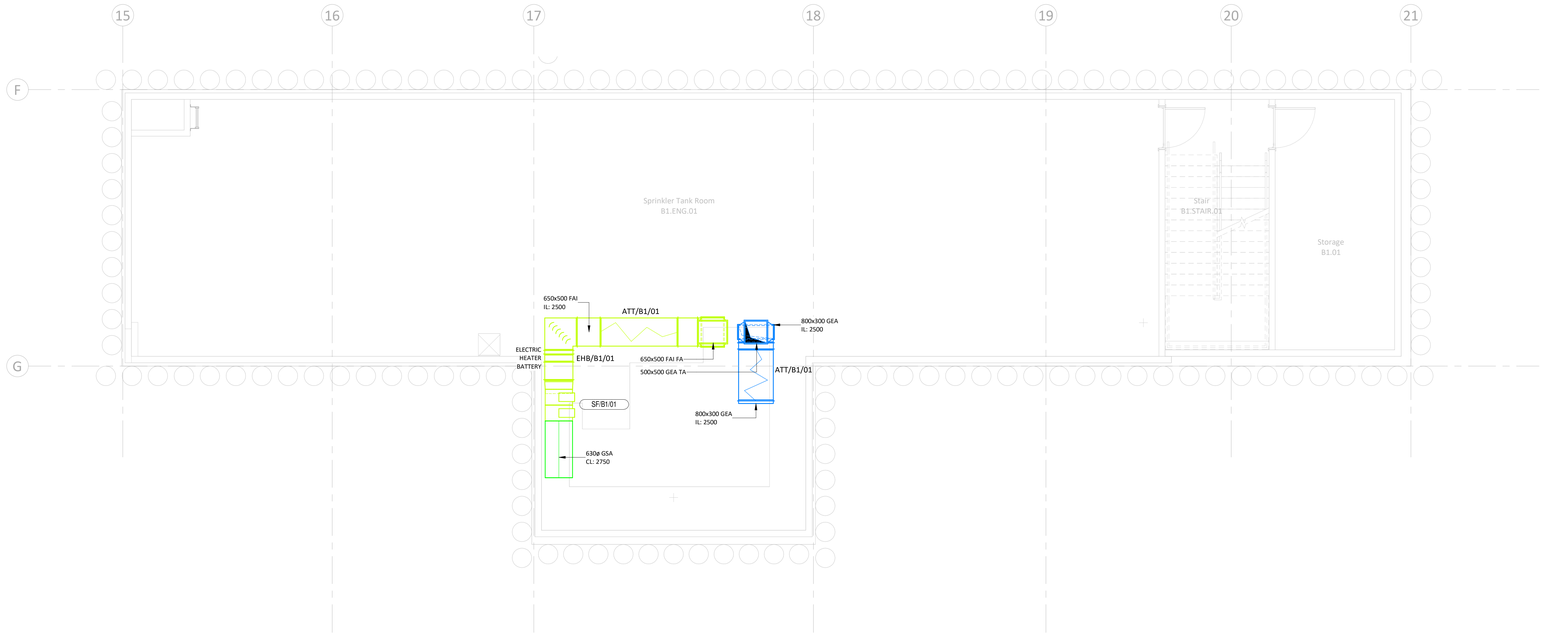

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SAFETY First & Foremost

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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LEGEND:

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FCU	FAN COIL UNIT
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GSA	GENERAL SUPPLY
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FAI	FRESH AIR INTAKE
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IL	INVERT LEVEL
FA	FROM ABOVE
TB	TO BELOW
FB	FROM BELOW
RTA	RISE TO ABOVE
LL	LOW LEVEL
HL	HIGH LEVEL
RTHL	RISE TO HIGH LEVEL
	FIRE RATED DUCTWORK
	UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	20/09/22
P03	Preliminary Issue	09/08/22

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Basement Floor

Issue Date: 20/09/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No: 1338B-NGB-NB-B1-DR-M-570001

(Project Code) (Originator) (Zone) (Level) (Type) (Role) (Number)
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Rev: C01

Drawing No: 1338B-NGB-NB-05-DR-M-570001

Plotted: 08/06/2022 08:47:56 Plotted By: Parker, Jake (NGB) Drawing: N:\Projects\1338B_NGB_NB-05_M\Drawings\1338B-NGB-NB-05-DR-M-570001.dwg

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SAFETY First & Foremost

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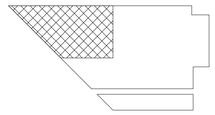

KEY PLAN

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5. INSTALL IN LINE WITH MANUFACTURERS GUIDANCE FOR DUCT, FITTINGS, EQUIPMENT, AND PLANT.
6. DUCTWORK MANUFACTURED AND INSTALLED IN ACCORDANCE WITH DW144
7. KITCHEN EXTRACT DUCTWORK MANUFACTURED AND INSTALLED IN ACCORDANCE WITH DW172
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9. UNLESS STATED OTHERWISE IN THE SPECIFICATION, THE LEVEL OF CLEANLINESS SHALL BE IN LINE WITH HVCA TR/19 TABLE F2 - INTERMEDIATE PDI LEVEL
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11. VCDS ARE INSTALLED ON ALL MAIN, SUB MAIN AND TERMINAL BRANCHES UNLESS DRAWING INDICATES SELF-BALANCED HEADER
12. ALL METAL DUCTWORK PENETRATIONS THROUGH A FIRE COMPARTMENT OF ANY RATING SHALL HAVE FIRE DAMPERS WHICH ARE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE AND COMPLETE WITH INSTALLATION FRAMES
13. ALL PLASTIC DUCTWORK PASSING THROUGH A FIRE COMPARTMENT OF ANY RATING SHALL HAVE AN INTUMESCENT BLOCK INSTALLED TO MEET THE SAME RATING WHICH SHALL BE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE
14. ALL FIRE DAMPERS HAVE VISUAL INDICATION STATUS
15. ALL RECTANGULAR DUCTWORK, AND CIRCULAR OVER 250 DIA SHALL HAVE MULTI-BLADE OBD TYPE VCDS
16. SUPPLY GRILLE FLEXIBLE CONNECTIONS ARE FULLY INSULATED AND OF THE ACOUSTIC FLEX TYPE (500MM MAX)
17. FREE ISSUE FILTER MEDIA IS INSTALLED BY THE DUCTWORK CONTRACTOR PRIOR TO PROJECT COMPLETION
18. THE DISHWASHER EXTRACT SYSTEM IS INSTALLED IN STAINLESS STEEL AS PER PROJECT SPECIFICATION
19. SLEEVES ARE INSTALLED THROUGH ALL WALLS
20. UNLESS STATED OTHERWISE IN THE SPECIFICATION, THE FOLLOWING MINIMUM SHALL APPLY TO DAMPER TESTING: 100% OF FIRE AND MOTORISED DAMPERS SHALL BE TESTED, WITH 50% OFFERED TO NGB AND 10% TO THE CLIENT/BUILDING CONTROL FINAL SIGN OFF
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LEGEND:

VCD	VOLUME CONTROL DAMPER
FD	FIRE DAMPER
IC	INTUMESCENT COLLAR
ATT	ATTENUATOR
CTA	CROSSTALK ATTENUATOR
VAV	VARIABLE AIR VOLUME BOX
CAV	CONSTANT AIR VOLUME BOX
FG	FLOOR GRILLE
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GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
SMX	SMOKE EXTRACT
DEA	DIRTY EXTRACT
FFL	FINISHED FLOOR LEVEL
AFFL	ABOVE FINISHED FLOOR LEVEL
CL	CENTRE LINE
IL	INVERT LEVEL
FA	FROM ABOVE
FB	FROM BELOW
RTA	RISE TO ABOVE
LL	LOW LEVEL
HL	HIGH LEVEL
RTHL	RISE TO HIGH LEVEL

FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

FOR CONTINUATION PLEASE SEE DRAWING: NB-05-DR-M-570002

FOR CONTINUATION PLEASE SEE DRAWING: NB-05-DR-M-570003

Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	31/02/22
P02	Comments Incorporated	26/11/21
P01	Preliminary Issue	27/09/21

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 2171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Fifth Floor Sheet 1 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No: 1338B-NGB-NB-05-DR-M-570001

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Rev: C01

Drawing No: 1338B-NGB-NB-03-DR-M-570001

Plotted: 08/06/22 at 14:14 By: Jessica Parker C:\Users\jparker\Desktop\1338B_MMU_Stores_&_Engineering\1338B_MMU_Local_Exhaust_Ventilation_R22_jparker.rvt

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SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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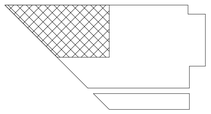

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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

FOR CONTINUATION PLEASE SEE DRAWING: NB-03-DR-M-570002

FOR CONTINUATION PLEASE SEE DRAWING: NB-03-DR-M-570003

Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	17/02/22
P02	Comments Incorporated	16/12/21
P01	Preliminary Issue	27/09/21

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 2171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Third Floor Sheet 1 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No: 1338B-NGB-NB-03-DR-M-570001

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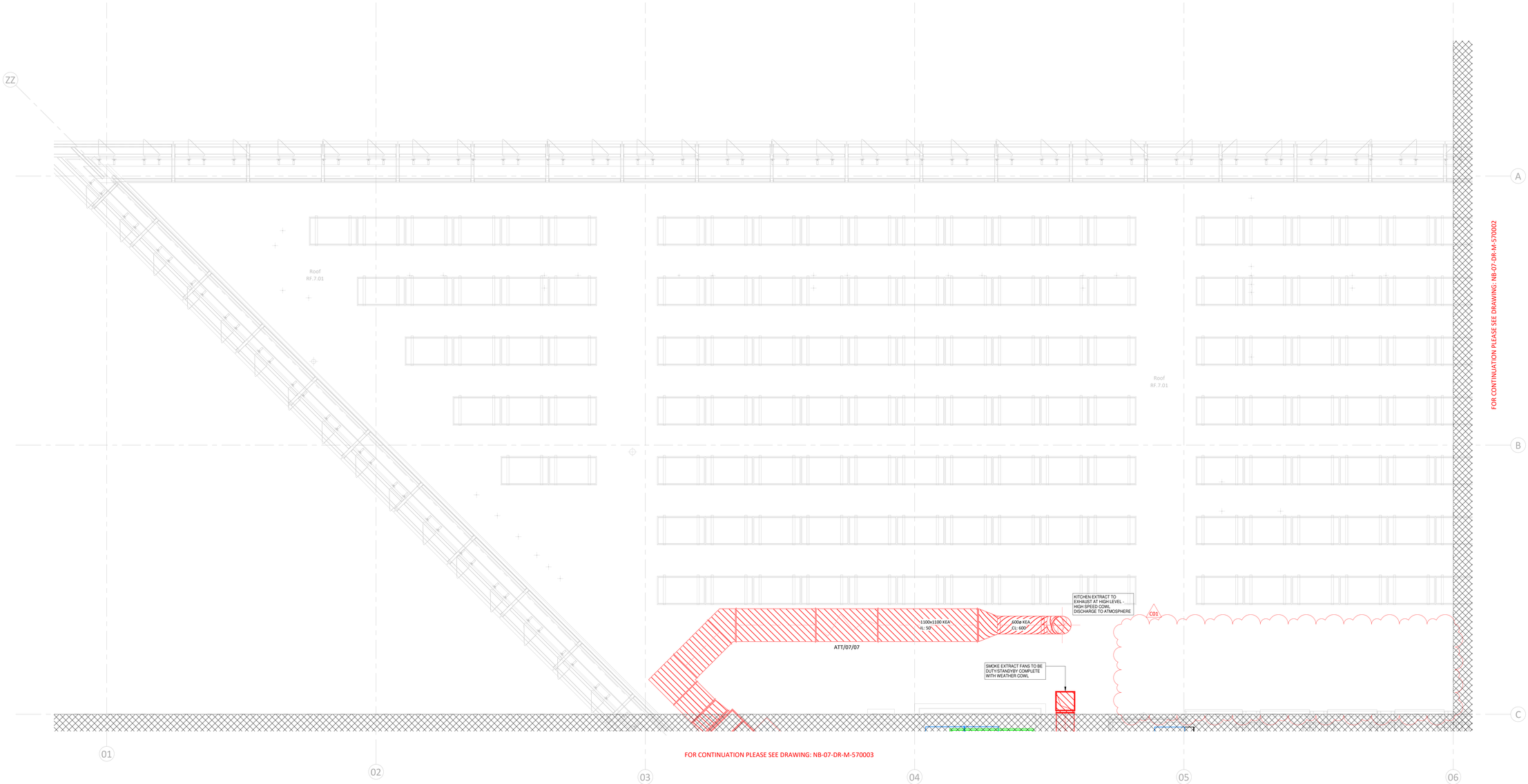
PLOTTED ON: 08/06/22 Autodesk Docs://NGB_Drawing_Templates/NGB_A1SD_V2.0_22_24_Dr_Template.rvt



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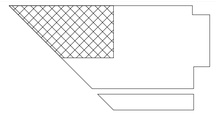

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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	31/02/22
P02	Comments Incorporated	16/11/21
P01	Preliminary Issue	27/09/21

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 2211

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Seventh Floor Sheet 1 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No. 1338B-NGB-NB-07-DR-M-570001

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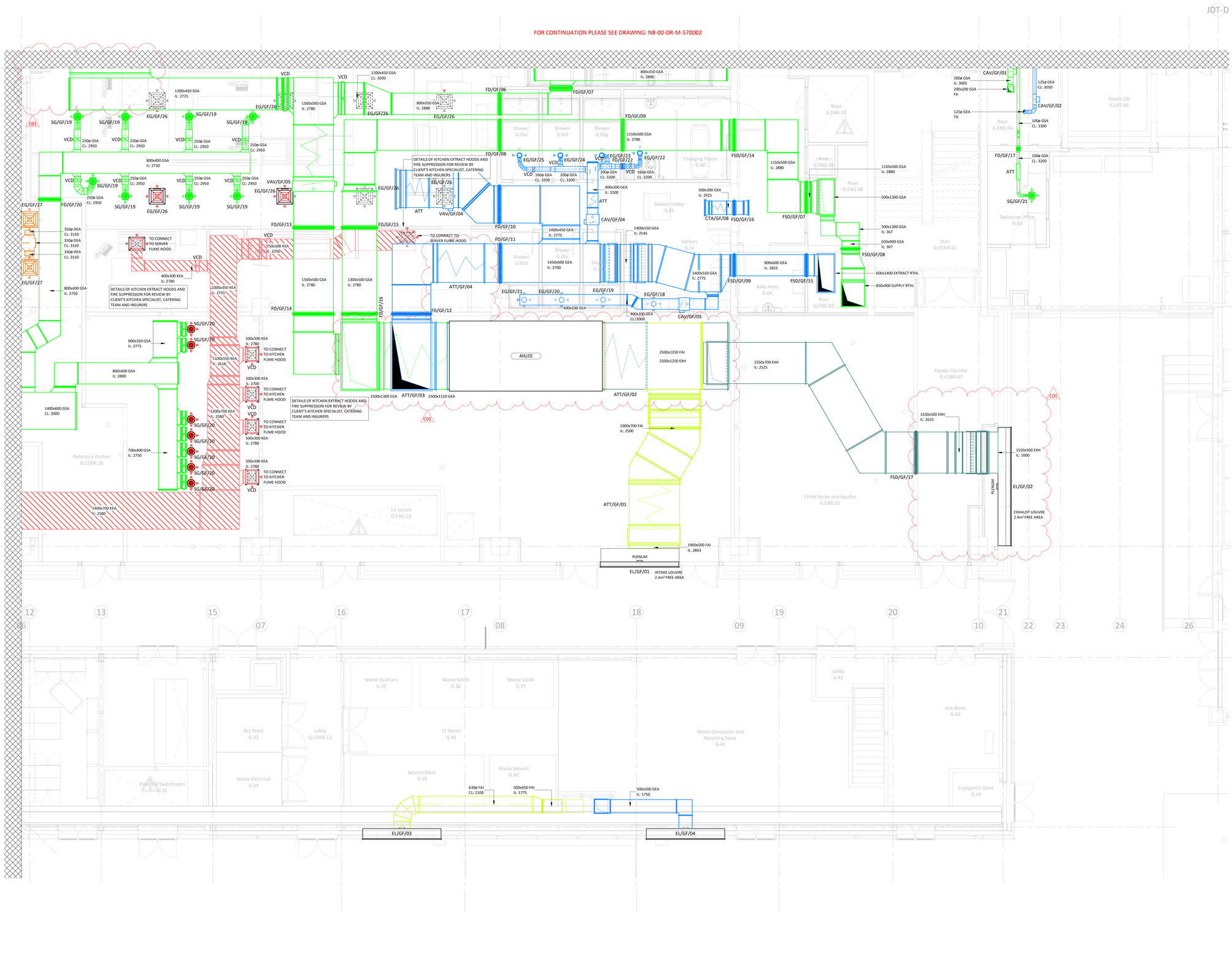
Rev C01

Drawing No. 1338B-NGB-NB-00-DR-M-570004

Plotted: 08/06/22 Plotted By: Bejsiuk, Jakub Filename: N:\Projects\1338B - MMU - Science & Engineering\1338B - MMU - Ph2 & 3 - BIM to Site\Models\1338B-NGB-NB-00-DR-M-570004.rvt

FOR CONTINUATION PLEASE SEE DRAWING: NB-00-DR-M-570002

FOR CONTINUATION PLEASE SEE DRAWING: NB-00-DR-M-570003



FOR CONTINUATION PLEASE SEE DRAWING: NB-00-DR-M-570002

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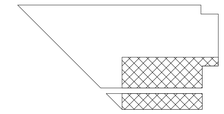

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	FIRE RATED DUCTWORK
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Rev	Description	Date
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Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Ground Floor Sheet 4 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No. 1338B-NGB-NB-00-DR-M-570004

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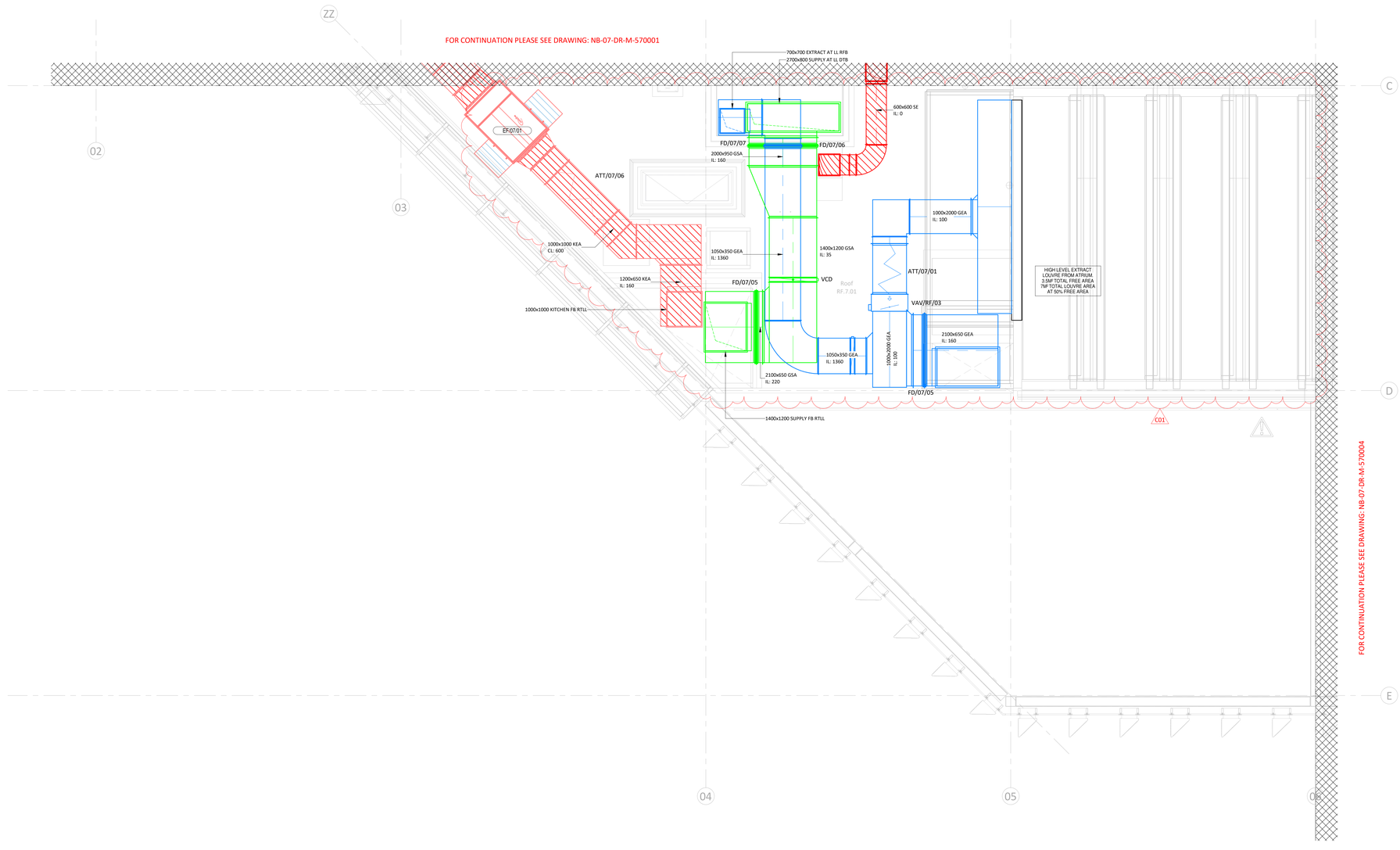
Rev C01

Drawing No. 1338B-NGB-NB-07-DR-M-570003

PLOTTED: 08/06/22 Accurate Tech - CAD Drivers & Engineers - CAN - GB - DC-01 - ATC-00000477

FOR CONTINUATION PLEASE SEE DRAWING: NB-07-DR-M-570001



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SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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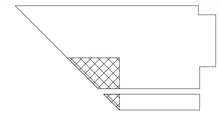
No specific SHE risks have been identified for the contents of this drawing.



KEY PLAN

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CTA	CROSSTALK ATTENUATOR
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CAV	CONSTANT AIR VOLUME BOX
FG	FLOOR GRILLE
SG	SUPPLY GRILLE
EG	EXTRACT GRILLE
EL	EXHAUST LOUVRE
FCU	FAN COIL UNIT
GEA	GENERAL EXTRACT
GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
SMX	SMOKE EXTRACT
DEA	DIRTY EXTRACT
FFL	FINISHED FLOOR LEVEL
AFFL	ABOVE FINISHED FLOOR LEVEL
CL	CENTRE LINE
IL	INVERT LEVEL
FA	FROM ABOVE
TB	TO BELOW
FB	FROM BELOW
RTA	RISE TO ABOVE
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	FIRE RATED DUCTWORK
	UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	11/02/22
P02	Comments Incorporated	16/11/21
P01	Preliminary Issue	27/06/21

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Seventh Floor Sheet 3 of 4

Issue Date: 08/06/22

Status: A1 - Approved & Accepted

Scale: 1 : 50

Sheet Size: A0

Rev: C01

Drawing No. 1338B-NGB-NB-07-DR-M-570003

Originator | Volume | Level | Type | Role | Number
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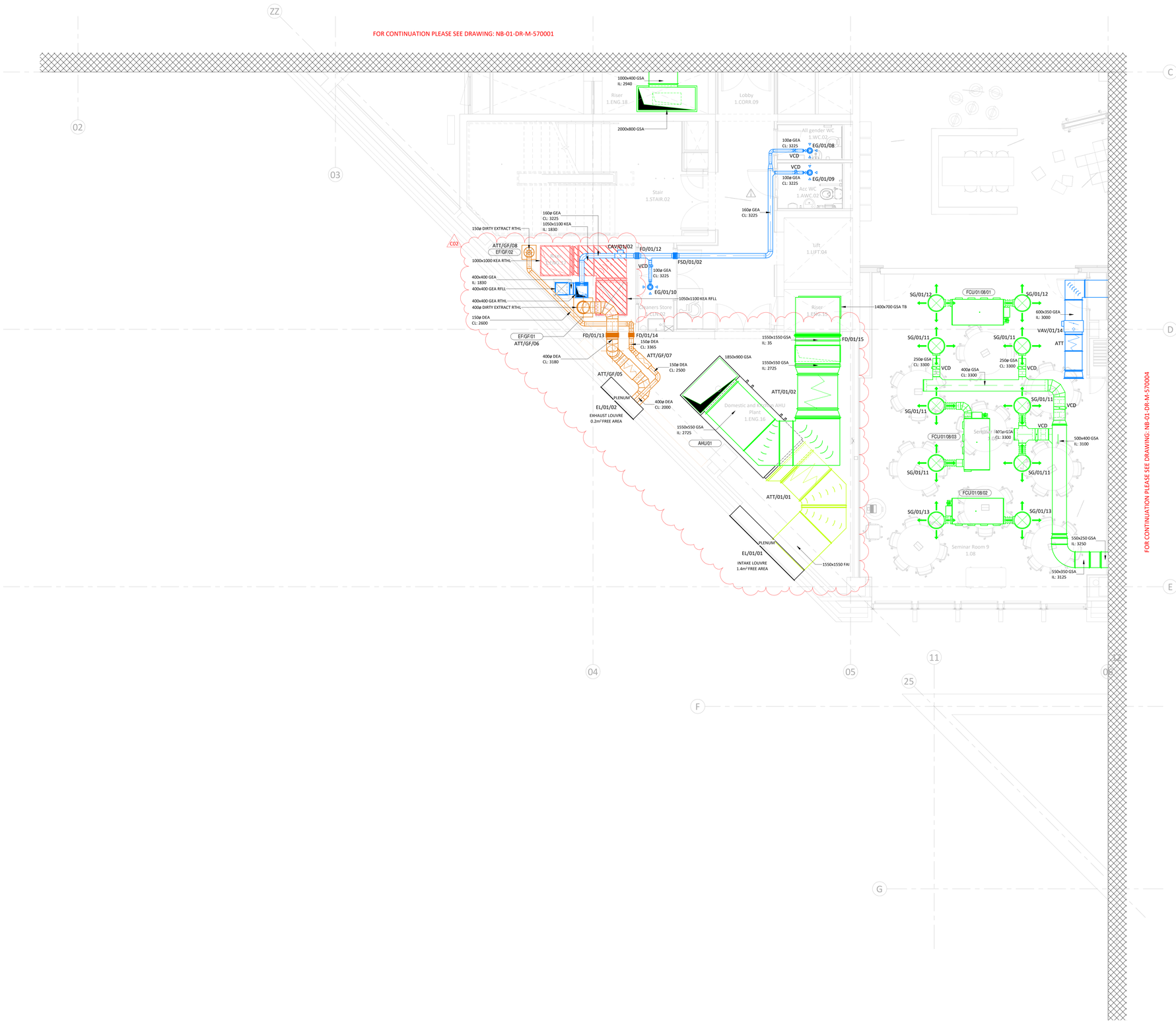
Rev C02

Drawing No. 1338B-NGB-NB-01-DR-M-570003

Plot Date/Time: 14/11/2022 - 08:54:53 Autodesk Docs://MMU Science & Engineering/1338B-NGB-NB-01-DR-M-570003.rvt

FOR CONTINUATION PLEASE SEE DRAWING: NB-01-DR-M-570001



FOR CONTINUATION PLEASE SEE DRAWING: NB-01-DR-M-570004

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SAFETY First & Foremost

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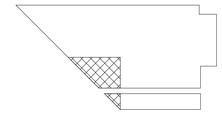

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GEA	GENERAL EXTRACT
GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
SMX	SMOKE EXTRACT
DEA	DIRTY EXTRACT
FFL	FINISHED FLOOR LEVEL
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FA	FROM ABOVE
TB	TO BELOW
FB	FROM BELOW
RTA	RISE TO ABOVE
LL	LOW LEVEL
HL	HIGH LEVEL
RTHL	RISE TO HIGH LEVEL

FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C02	Comments Incorporated, EF/GF/01 & EF/GF/02 Relocated	04/11/22
C01	Construction Issue	01/06/22
P03	Comments Incorporated	17/02/22
P02	Comments Incorporated	16/11/21
P01	Preliminary Issue	27/09/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation First Floor Sheet 3 of 4

Issue Date: 14/11/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C02

Drawing No. 1338B-NGB-NB-01-DR-M-570003

Project Code | Originator | Zone | Level | Type | Role | Number
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Drawing No. 1338B-NGB-NB-XX-SC-M-570003 Rev C01

FOR CONTINUATION TO AHU/03 REFER TO DETAIL BELOW

AHU/03

FILTER | EXTRACT FAN | PLATE HEAT EXCHANGER | FILTER | SUPPLY FAN | CLC COIL | HTG COIL | UV | UV COIL

CONTINUED FROM ABOVE

LEVEL 07 | LEVEL 06 | LEVEL 05 | LEVEL 04 | LEVEL 03 | LEVEL 02 | LEVEL 01 | LEVEL 00

SEMINAR ROOM 12 02.09 | SEMINAR ROOM 10 01.10 | BREAKOUT 01.11 | SEMINAR ROOM 1 GF.20 | SEMINAR ROOM 2 GF.21 | SEMINAR ROOM 3 GF.22

FPVC MEETING ROOM 03.10 | EXEC PA 03.09 | FPVC WAITING AREA 03.09a | MEETING ROOM 03.24 | DIRECTOR OF FP&O 03.11 | MEETING ROOM 03.23 | FACULTY PVC (DEAN) 03.12 | MEETING ROOM 03.22 | AD/DIRECTOR OF P&P 03.13 | SDS MANAGER 03.21 | RKE MANAGER 03.19 | KITCHENETTE 03.16 | MEETING ROOM 03.18 | MEETING ROOM 03.17 | COLLABORATION AREA 03.07 | 14P OFFICE 03.20 | FPVC MEETING ROOM 03.10

COLLABORATION AREA 04.06 | FACULTY ACCOUNTANT 04.11 | OFFICE 04.10 | OFFICE 04.09 | OFFICE 04.08 | OFFICE 04.12 | OFFICE 04.13 | OFFICE 04.14 | OFFICE 04.15 | MEETING ROOM 04.16 | COLLABORATION AREA 04.36 | OFFICE 04.32 | OFFICE 04.33 | OFFICE 04.34 | OFFICE 04.35 | COLLABORATION AREA 04.36 | OFFICE 04.38 | OFFICE 04.39 | OFFICE 04.40 | OFFICE 04.41 | DEPARTMENT OF LIFE SCIENCES STUDIO SPACE 04.37

COLLABORATION AREA 05.01 | MEETING ROOM 05.11 | OFFICE 05.07 | OFFICE 05.08 | OFFICE 05.09 | OFFICE 05.10 | OFFICE 05.06 | OFFICE 05.05 | OFFICE 05.04 | OFFICE 05.03 | COLLABORATION AREA 05.27 | OFFICE 05.29 | OFFICE 05.30 | OFFICE 05.31 | OFFICE 05.32 | COLLABORATION AREA 05.27 | OFFICE 05.33 | OFFICE 05.34 | DEPARTMENT OF NATURAL SCIENCES STUDIO SPACE 05.28

COLLABORATION AREA 06.01 | MEETING ROOM 06.11 | OFFICE 06.07 | OFFICE 06.08 | OFFICE 06.09 | OFFICE 06.10 | OFFICE 06.06 | OFFICE 06.05 | OFFICE 06.04 | OFFICE 06.03 | COLLABORATION AREA 06.27 | OFFICE 06.28 | OFFICE 06.29 | OFFICE 06.30 | OFFICE 06.31 | COLLABORATION AREA 06.27

WC 06.WC_02 | AWC 06.AWC_02 | CLEANERS STORE 06.CLN_02

WC 05.WC_02 | AWC 05.AWC_02 | CLEANERS STORE 05.CLN_02

WC 04.WC_02 | AWC 04.AWC_02 | CLEANERS STORE 04.CLN_02

WC 03.WC_02 | AWC 03.AWC_02 | CLEANERS STORE 03.CLN_02

WC 02.WC_02 | AWC 02.AWC_02 | CLEANERS STORE 02.CLN_02

WC 01.WC_02 | AWC 01.AWC_02 | CLEANERS STORE 01.CLN_02

WC GF.WC_021 | WC GF.WC_021 | WC GF.WC_021 | RELIGIOUS WASH GF.WC_02b | RELIGIOUS WASH GF.WC_02a | AWC GF.AWC_02 | WC GF.WC_021 | WC GF.WC_02g | WC GF.WC_02h | WC GF.WC_02i | WC GF.WC_02j | AWC GF.AWC_02a | AWC GF.AWC_03 | WC GF.WC_03 | CLEANERS STORE GF.CLN_01

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following;

Construction and Manufacture

Maintenance, Cleaning and Operation

Decommissioning and Demolition

It is assumed that all works associated with this drawing will be carried out by competent operatives working, where appropriate, to an approved method statement.

LEGEND

- ATTENUATOR
- EXTRACT GRILLE
- SUPPLY GRILLE
- FLOOR GRILLE
- FD FIRE DAMPER
- VCD VOLUME CONTROL DAMPER
- HEATER BATTERY
- EXTRACT FAN
- VALUES INCLUDE 80% DIVERSIFICATION

FLOW RATE (m³/s)	DUCT SIZE (mm)
VELOCITY (m/s)	PRESSURE (Pa/m)

NOTES

1. SUPPLY & GENERAL EXTRACT DUCTWORK WILL BE INSTALLED IN ACCORDANCE WITH DW144.
2. DUCTWORK ACCESS HATCHES WILL BE PROVIDED FOR INSPECTION/SERVICING & CLEANING IN ACCORDANCE WITH TR19, TABLE 3, BY THE DUCTWORK CONTRACTOR ONLY
3. FINAL CONNECTIONS TO GRILLES MAY BE FLEXIBLE UP TO MAXIMUM LENGTH OF 500mm. FLEXIBLE DUCTWORK ON SUPPLY DUCTWORK SHALL BE PRE-INSULATED
4. ALL GRILLES SHALL HAVE A POWDER COATED FINISH TO A STANDARD MANUFACTURERS COLOUR TO BE AGREED WITH THE ARCHITECT.
5. FIRE DAMPERS WITH ACCESS DOORS SHALL BE PROVIDED WHERE DUCTWORK PASSES THROUGH FIRE RATED CONSTRUCTION. REFER TO ARCHITECTS FIRE STRATEGY DRAWING FOR DETAILS.
6. ALL VENTILATION SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH CIBSE COMMISSIONING CODE A.
7. INTERNAL DIAMETER OF THE FLEXIBLE DUCTWORK SHOULD BE EQUAL TO THE EXTERNAL DIAMETER OF THE RIGID DUCTWORK.
8. ALL SUPPLY DUCTWORK SHALL BE INSULATED IN ACCORDANCE WITH BS 5422.
9. EXTRACT AIR BELLMOUTHS TO INCLUDE WIRE MESH TO PREVENT DEBRIS ENTERING SYSTEM.
10. DUCTWORK TO BE INSTALLED WITHIN 500mm OF FIRE PARTITIONS
11. MULTI-BLADE VCD'S TO BE USED ON DUCTWORK 300Ø AND ABOVE
12. DUCTWORK TO BE INSTALLED IN LINE WITH DW144

Rev	Description	Date
C01	CONSTRUCTION ISSUE	01.08.22
P02	GENERAL UPDATE	16.11.21
P01	PRELIMINARY ISSUE	30.07.21

NG Bailey
321 Ordsall Lane, Salford M5 3HP
Tel: 0161 872 0373

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: R Paterson

Title: Ventilation Schematic AHU-04 Office Areas Sheet 2 of 2

Issue Date: 06/07/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	NTS	A0	C01

Drawing No. 1338B-NGB-NB-XX-SC-M-570003

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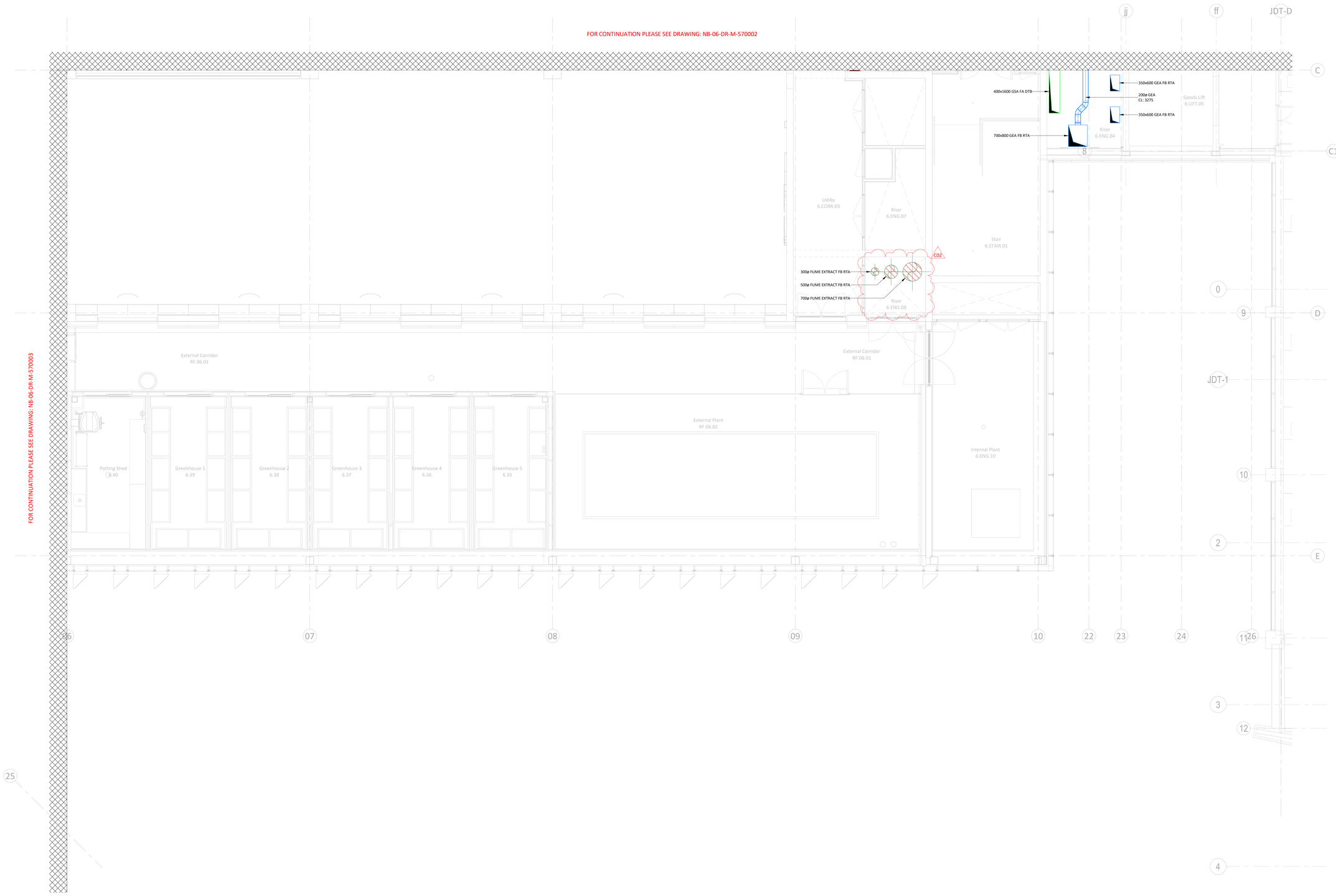
Rev. C02

Drawing No. 1338B-NGB-NB-06-DR-M-570004

FOR CONTINUATION PLEASE SEE DRAWING: NB-06-DR-M-570003

FOR CONTINUATION PLEASE SEE DRAWING: NB-06-DR-M-570002



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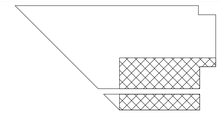

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	FIRE RATED DUCTWORK
	UNDERFLOOR DUCTWORK

Rev	Description	Date
C02	Comments Incorporated	23/11/22
C01	Construction Issue	01/06/22
P03	Comments Incorporated	31/02/22
P02	Comments Incorporated	06/12/21
P01	Preliminary Issue	27/09/21

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Tel: 0161 872 0171.

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Sixth Floor Sheet 4 of 4

Issue Date: 23/11/22

Status	Scale	Sheet Size	Rev.
A1 - Approved & Accepted	1 : 50	A0	C02

Drawing No. 1338B-NGB-NB-06-DR-M-570004

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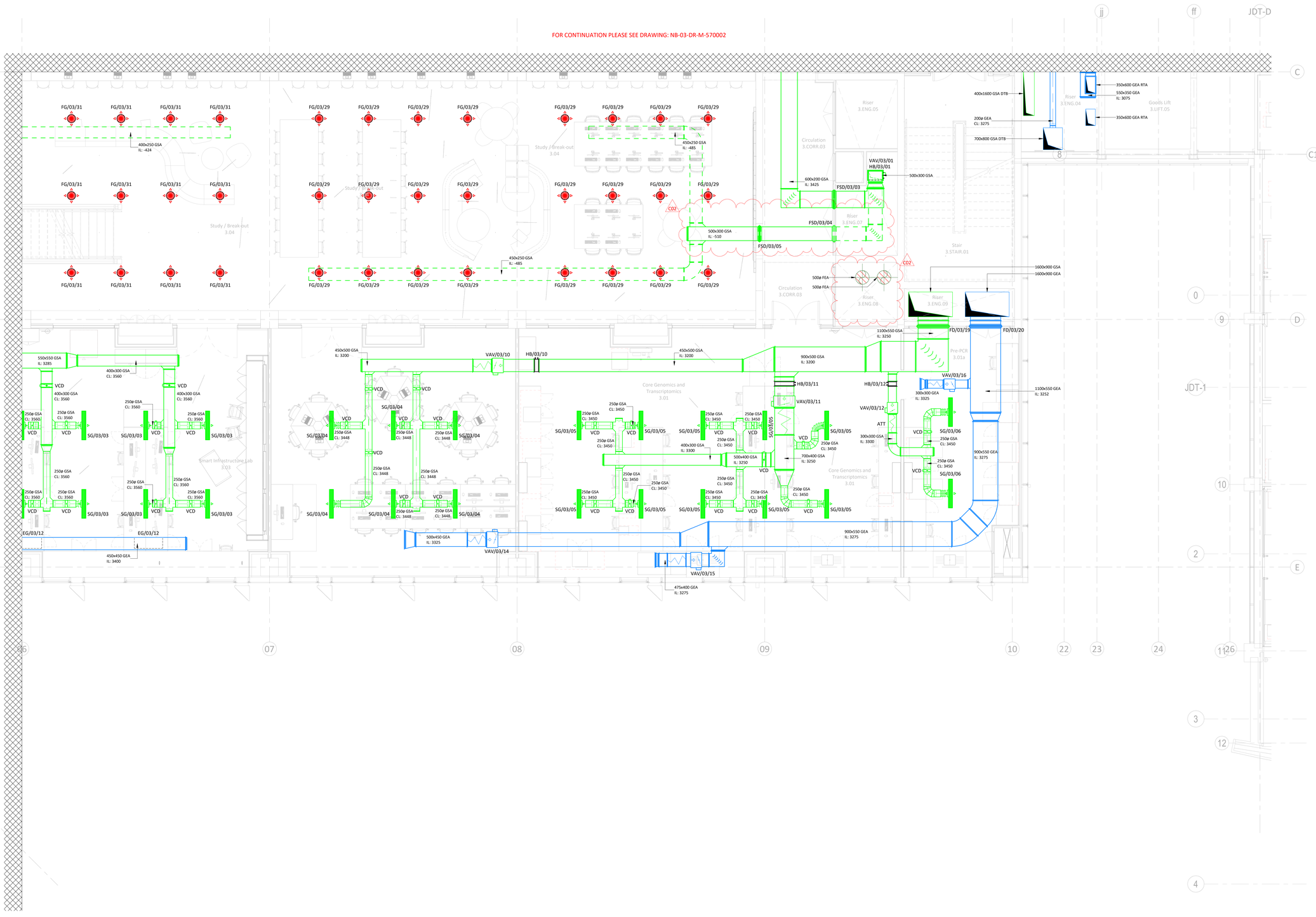
FOR CONTINUATION PLEASE SEE DRAWING: NB-03-DR-M-570003

FOR CONTINUATION PLEASE SEE DRAWING: NB-03-DR-M-570002



SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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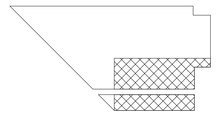

KEY PLAN

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LEGEND:

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VAV	VARIABLE AIR VOLUME BOX
CAV	CONSTANT AIR VOLUME BOX
FG	FLOOR GRILLE
SG	SUPPLY GRILLE
EG	EXTRACT GRILLE
EL	EXHAUST LOUVRE
FCU	FAN COIL UNIT
GEA	GENERAL EXTRACT
GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
SMX	SMOKE EXTRACT
DEA	DIRTY EXTRACT
FFL	FINISHED FLOOR LEVEL
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	FIRE RATED DUCTWORK
	UNDERFLOOR DUCTWORK

Rev	Description	Date
C02	Comments Incorporated	23/11/22
C01	Construction Issue	31/08/22
P03	Comments Incorporated	31/02/22
P02	Comments Incorporated	20/12/21
P01	Preliminary Issue	27/09/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Third Floor Sheet 4 of 4

Issue Date: 23/11/22

Status: A1 - Approved & Accepted

Scale: 1 : 50

Sheet Size: A0

Rev: C02

Drawing No.: 1338B-NGB-NB-03-DR-M-570004

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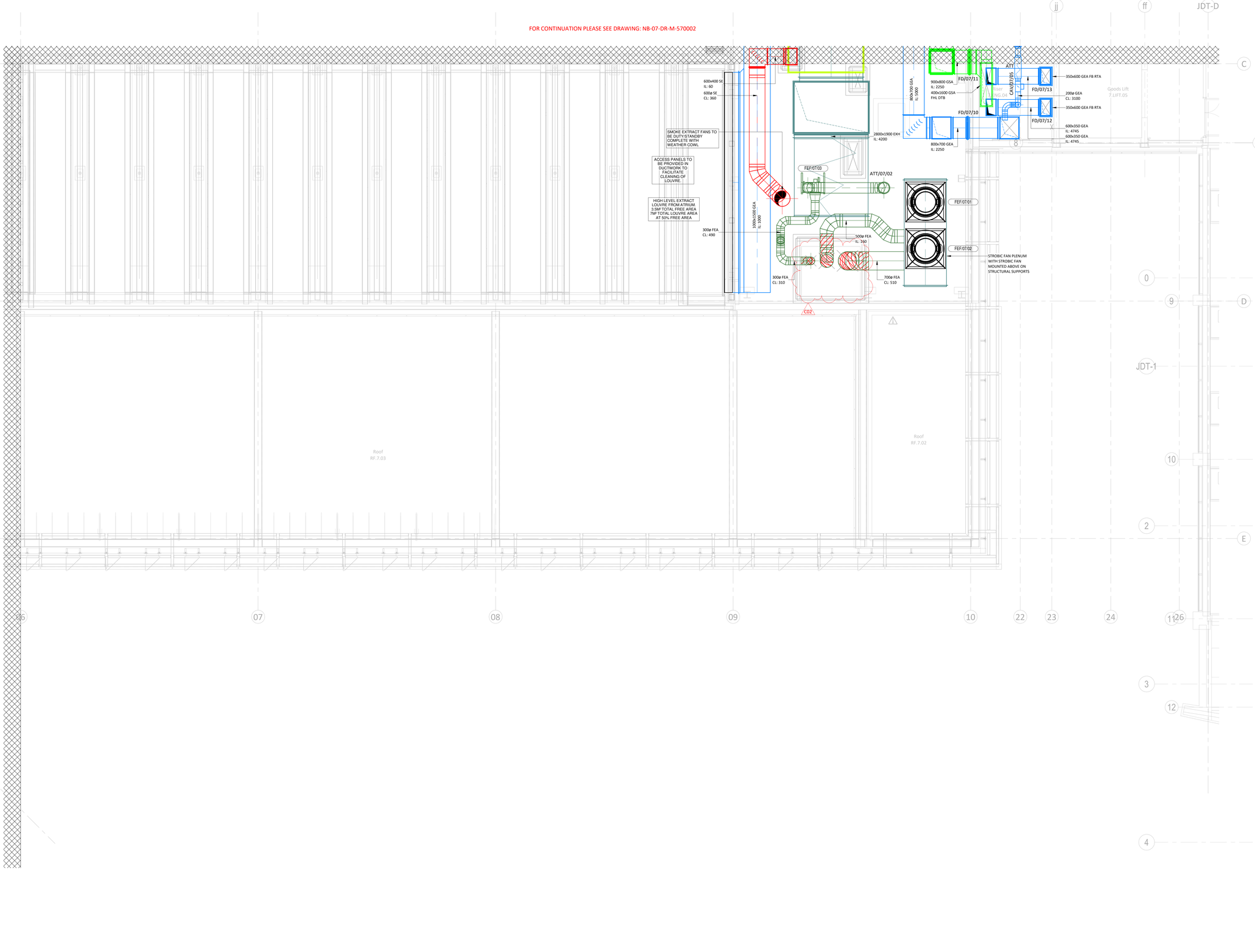
Rev: C02

Drawing No: 1338B-NGB-NB-07-DR-M-570004

FOR CONTINUATION PLEASE SEE DRAWING: NB-07-DR-M-570003

FOR CONTINUATION PLEASE SEE DRAWING: NB-07-DR-M-570002



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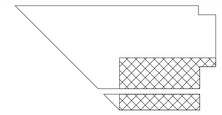

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GEA	GENERAL EXTRACT
GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C02	Comments Incorporated	23/11/22
C01	Construction Issue	31/08/22
P03	Comments Incorporated	31/02/22
P02	Comments Incorporated	16/11/21
P01	Preliminary Issue	27/09/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 2111

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Seventh Floor Sheet 4 of 4

Issue Date: 23/11/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C02

Drawing No: 1338B-NGB-NB-07-DR-M-570004

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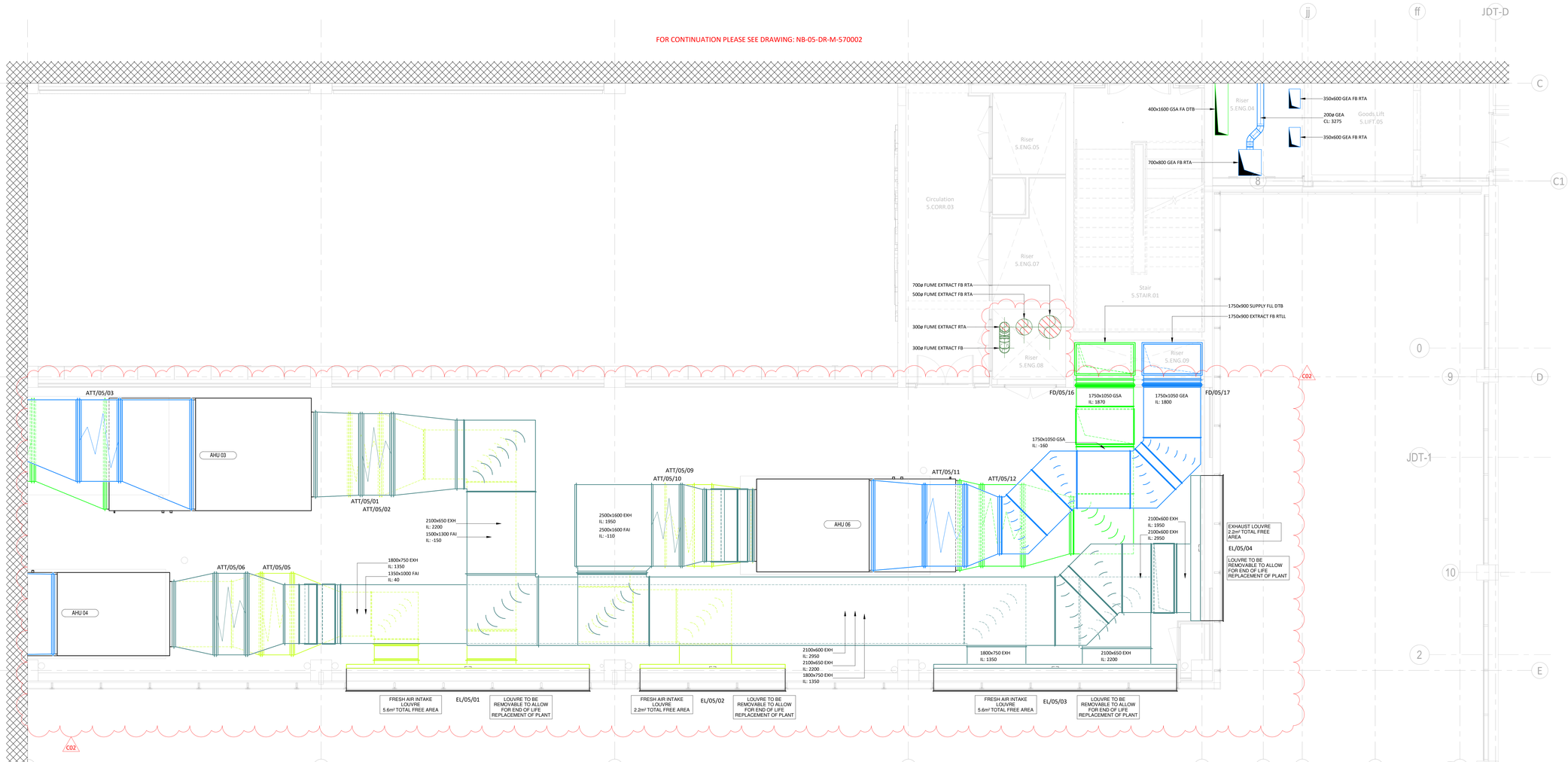
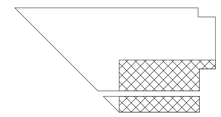
Rev C02

Drawing No. 1338B-NGB-NB-05-DR-M-570004

FOR CONTINUATION PLEASE SEE DRAWING: NB-05-DR-M-570002

FOR CONTINUATION PLEASE SEE DRAWING: NB-05-DR-M-570003





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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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Rev	Description	Date
C02	AHU Sizes Updated, Comments Incorporated	19/10/22
C01	Construction Issue	01/06/22
P03	Comments Incorporated	17/02/22
P02	Comments Incorporated	16/11/21
P01	Preliminary Issue	21/09/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Fifth Floor Sheet 4 of 4

Issue Date: 04/11/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C02

Drawing No. 1338B-NGB-NB-05-DR-M-570004

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Rev C02

1338B-NGB-NB-02-DR-M-570004

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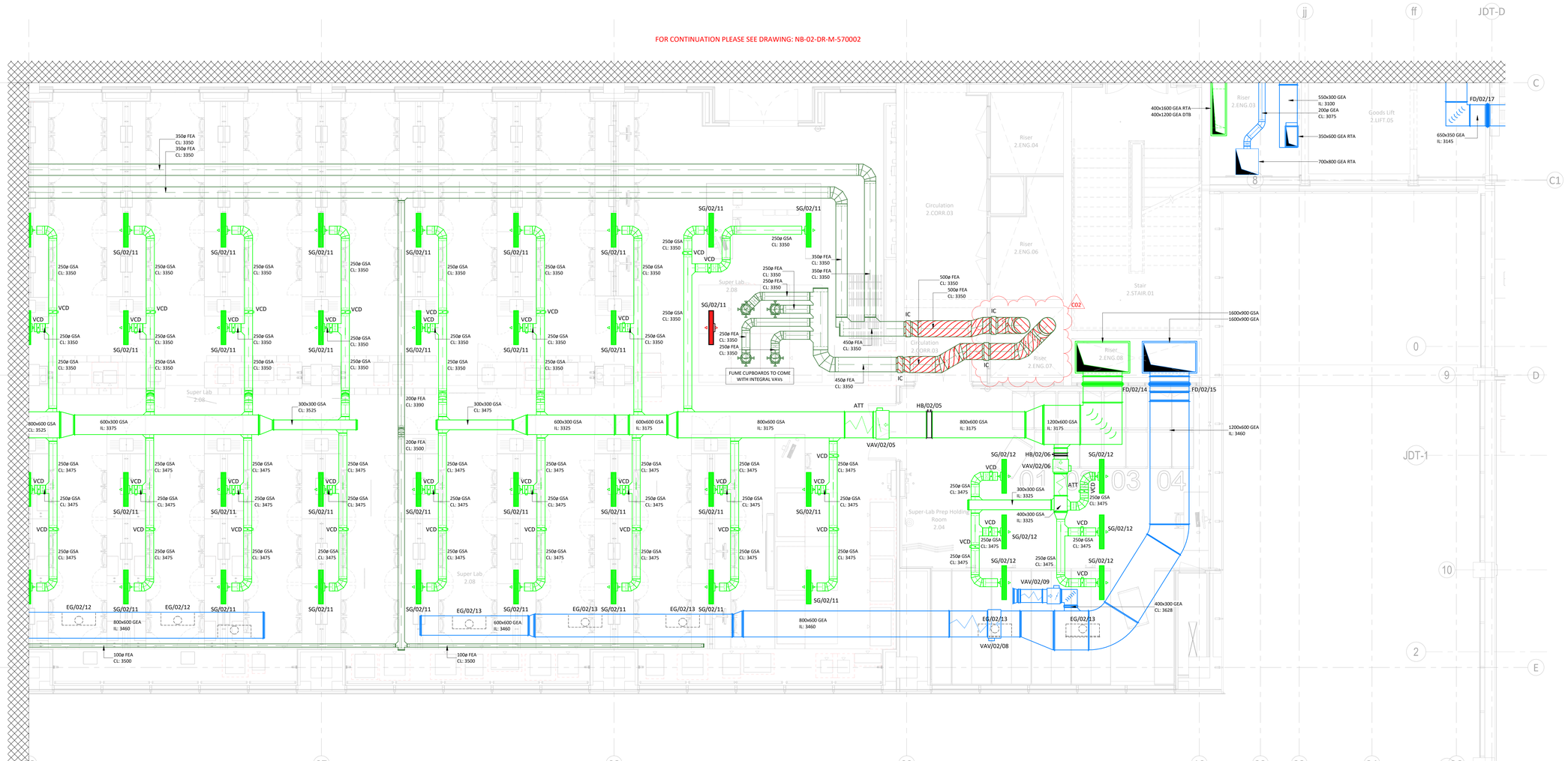
FOR CONTINUATION PLEASE SEE DRAWING: NB-02-DR-M-570002



FOR CONTINUATION PLEASE SEE DRAWING: NB-02-DR-M-570003

FOR CONTINUATION PLEASE SEE DRAWING: NB-02-DR-M-570002

bsi. BIM Design and Construction KITEMARK. KM 674652

SAFETY First & Foremost

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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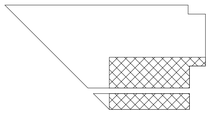

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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C02	Comments Incorporated	23/11/22
C01	Construction Issue	01/06/22
P04	Comments Incorporated	17/02/22
P03	Comments Incorporated	11/02/22
P02	Comments Incorporated	19/11/21
P01	Preliminary Issue	27/09/21

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Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Second Floor Sheet 4 of 4

Issue Date: 23/11/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C02

Drawing No. 1338B-NGB-NB-02-DR-M-570004

Originator	Zone	Level	Type	Role	Number
Project Code					

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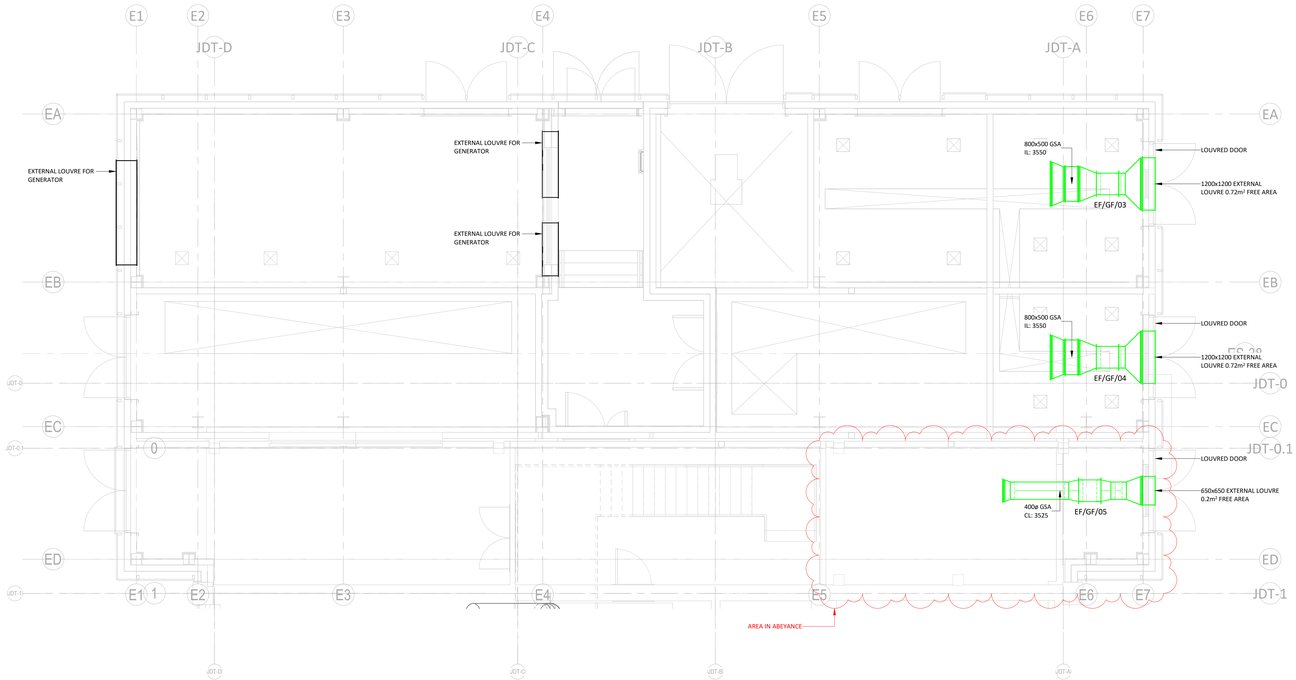
Rev C01

Job no. 1338B-NGB-NB-00-DR-M-570005

13/10/2022 08:17:11 ... Autodesk Docs://MMU_Science_&_Engineering_1338B_NGB_Ltd_01_ARC_for_COMMENT.rvt



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SAFETY First & Foremost

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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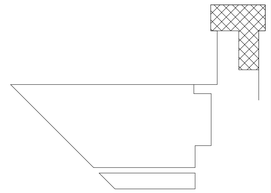

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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	19/10/22
P03	Preliminary Issue	21/09/22

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client
Manchester Metropolitan University

Contract
MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager
NGB

Checked By
J Bejsiuk

Title
Ventilation Ground Floor Energy Centre

Drawn By
J Parker

Issue Date
19/10/22

Status: A1 - Approved & Accepted
Scale: 1 : 50
Sheet Size: A0
Rev: C01

Drawing No.
1338B-NGB-NB-00-DR-M-570005

Project Code | Originator | Zone | Level | Type | Role | Number
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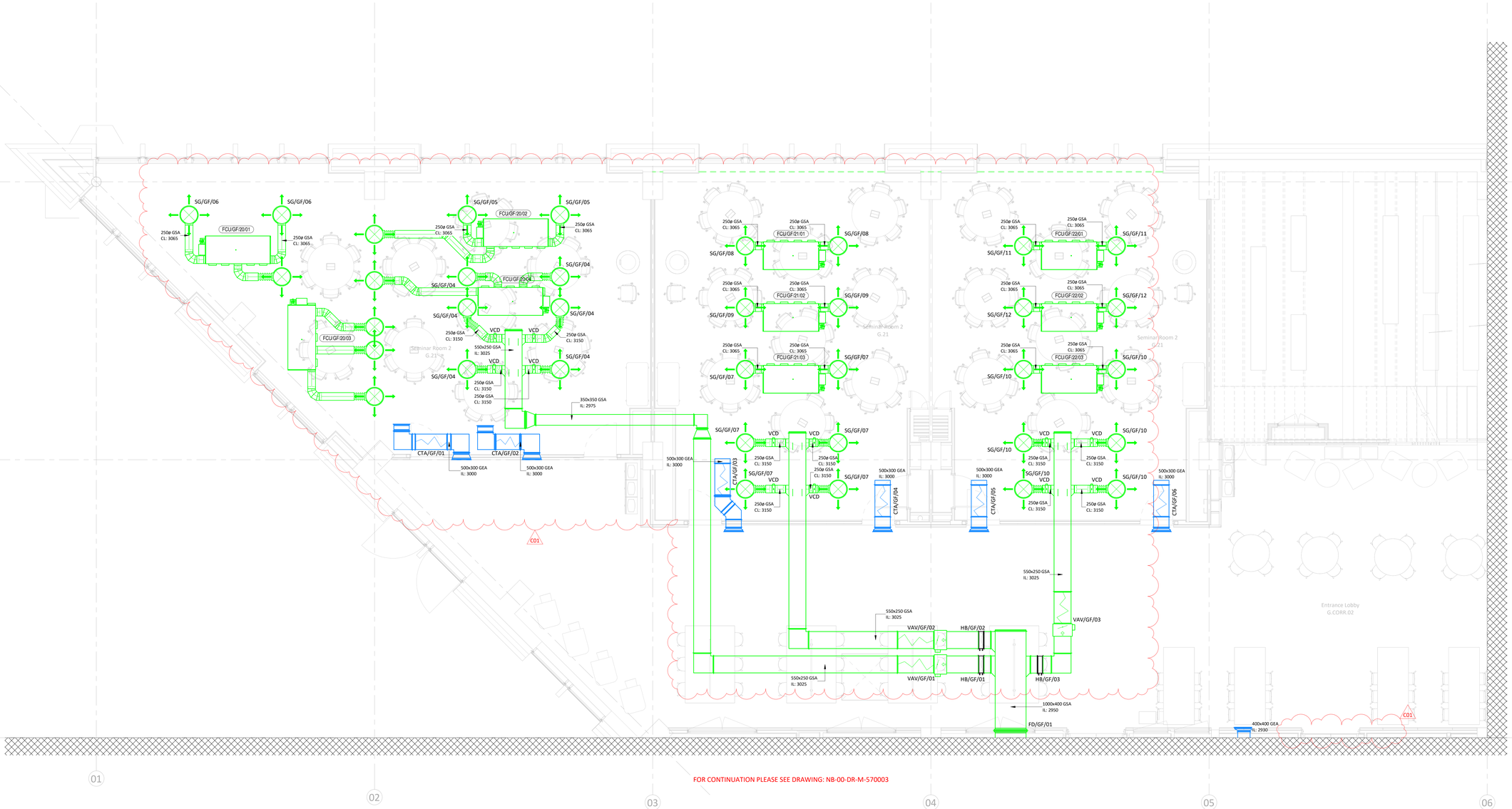
Rev C01

Job No. 1338B-NGB-NB-00-DR-M-570001

File: 1338B_GF.rvt Access: Work_Share, My Partitions, Links, Links_Arch, Links_Mech



FOR CONTINUATION PLEASE SEE DRAWING: NB-00-DR-M-570002

FOR CONTINUATION PLEASE SEE DRAWING: NB-00-DR-M-570003

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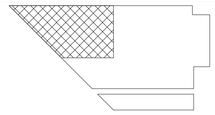

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	FIRE RATED DUCTWORK
	UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	31/02/22
P02	Comments Incorporated	16/12/21
P01	Preliminary Issue	27/09/21

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 2211

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Ground Floor Sheet 1 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No. 1338B-NGB-NB-00-DR-M-570001

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Rev C01

Drawing No. 1338B-NGB-NB-07-DR-M-570002

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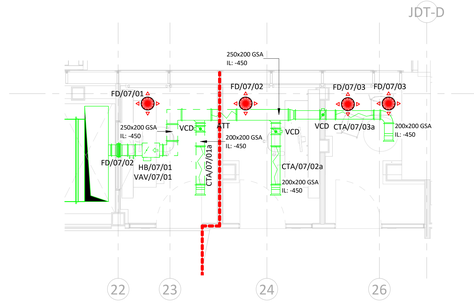
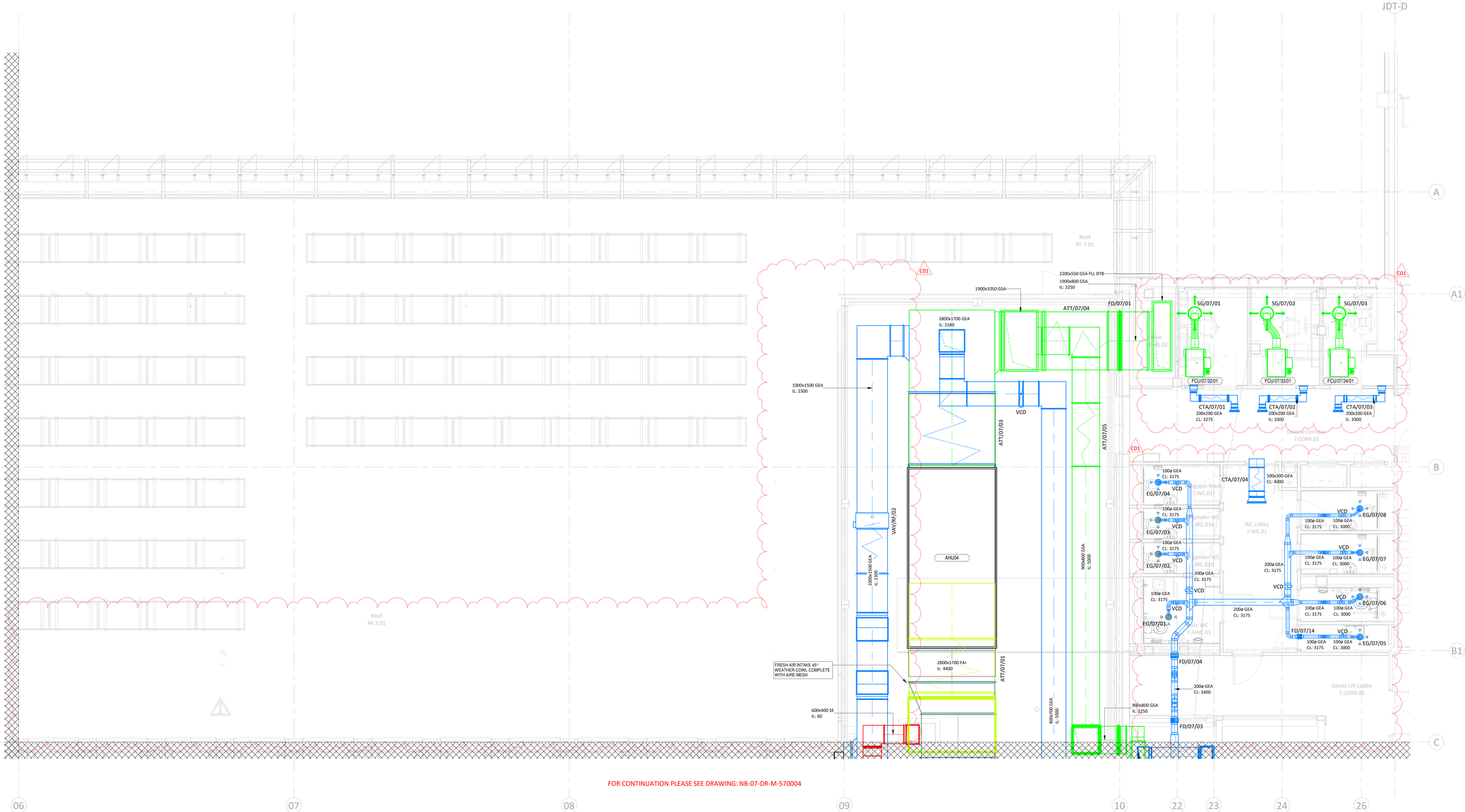


2 07 Ventilation - Low Level

1 : 50



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FOR CONTINUATION PLEASE SEE DRAWING: NB-07-DR-M-570004

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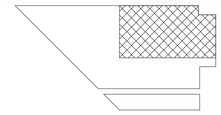

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P02	Comments Incorporated	16/11/21
P01	Preliminary Issue	27/09/21

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Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Seventh Floor Sheet 2 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No. 1338B-NGB-NB-07-DR-M-570002

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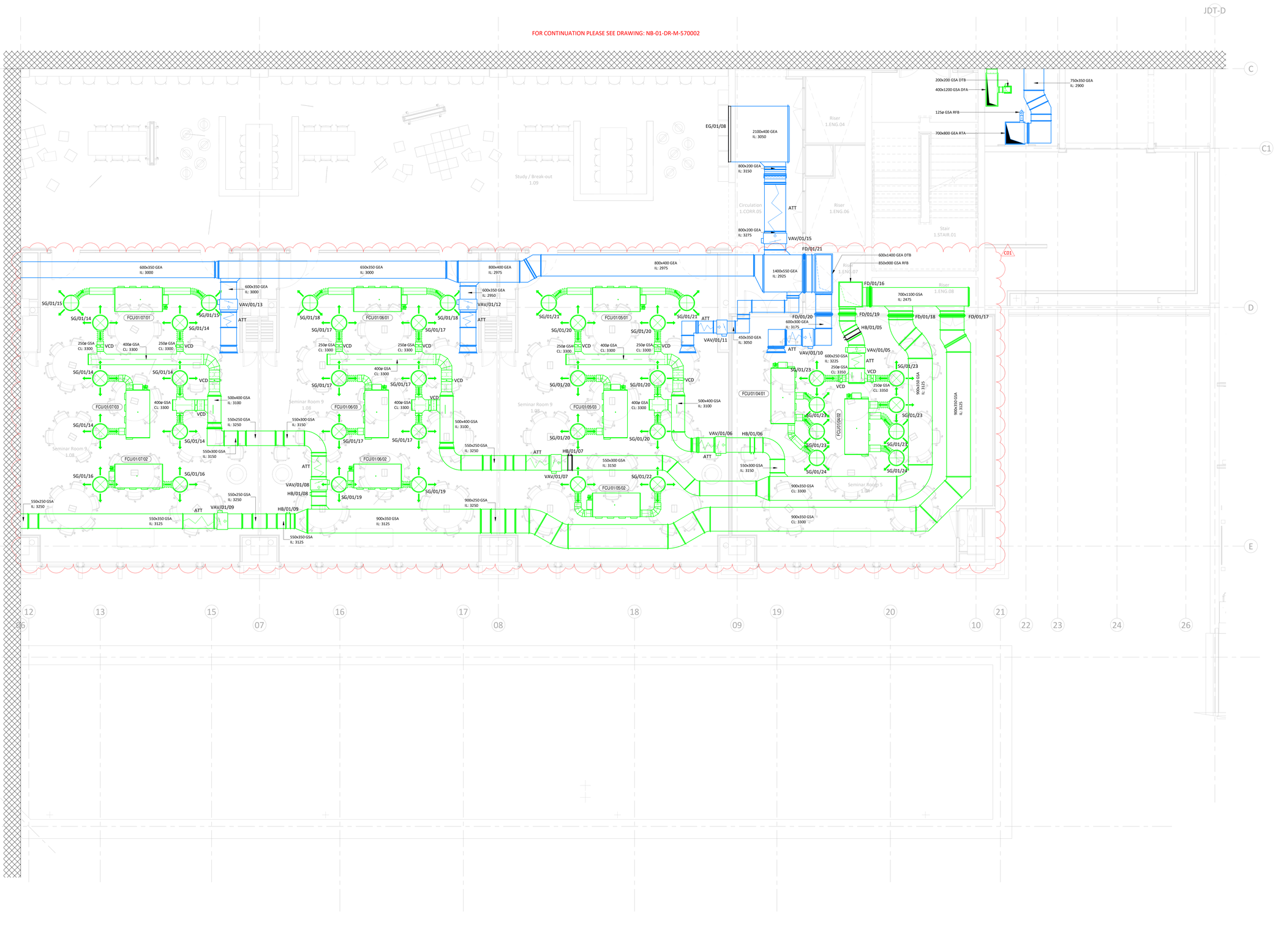
Rev C01

Drawing No. 1338B-NGB-NB-01-DR-M-570004

Plotted: 08/06/22 By: Jonathan Parker Drawing Path: C:\Users\jparker\Desktop\1338B_MMU Science & Engineering_NGB_JDT_R21_Parker_Detached.rvt

FOR CONTINUATION PLEASE SEE DRAWING: NB-01-DR-M-570003

FOR CONTINUATION PLEASE SEE DRAWING: NB-01-DR-M-570002



FOR CONTINUATION PLEASE SEE DRAWING: NB-01-DR-M-570003

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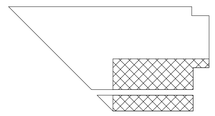

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FCU	FAN COIL UNIT
GEA	GENERAL EXTRACT
GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
SMX	SMOKE EXTRACT
DEA	DIRTY EXTRACT
FFL	FINISHED FLOOR LEVEL
AFFL	ABOVE FINISHED FLOOR LEVEL
CL	CENTRE LINE
IL	INVERT LEVEL
FA	FROM ABOVE
TB	TO BELOW
FB	FROM BELOW
RTA	RISE TO ABOVE
LL	LOW LEVEL
HL	HIGH LEVEL
RTHL	RISE TO HIGH LEVEL

FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	31/02/22
P02	Comments Incorporated	26/11/21
P01	Preliminary Issue	27/09/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB
Checked By: J Bejsiuk
Drawn By: J Parker
Issue Date: 08/06/22

Title: Ventilation First Floor Sheet 4 of 4

Status: A1 - Approved & Accepted
Scale: 1 : 50
Sheet Size: A0
Rev: C01

Drawing No. 1338B-NGB-NB-01-DR-M-570004

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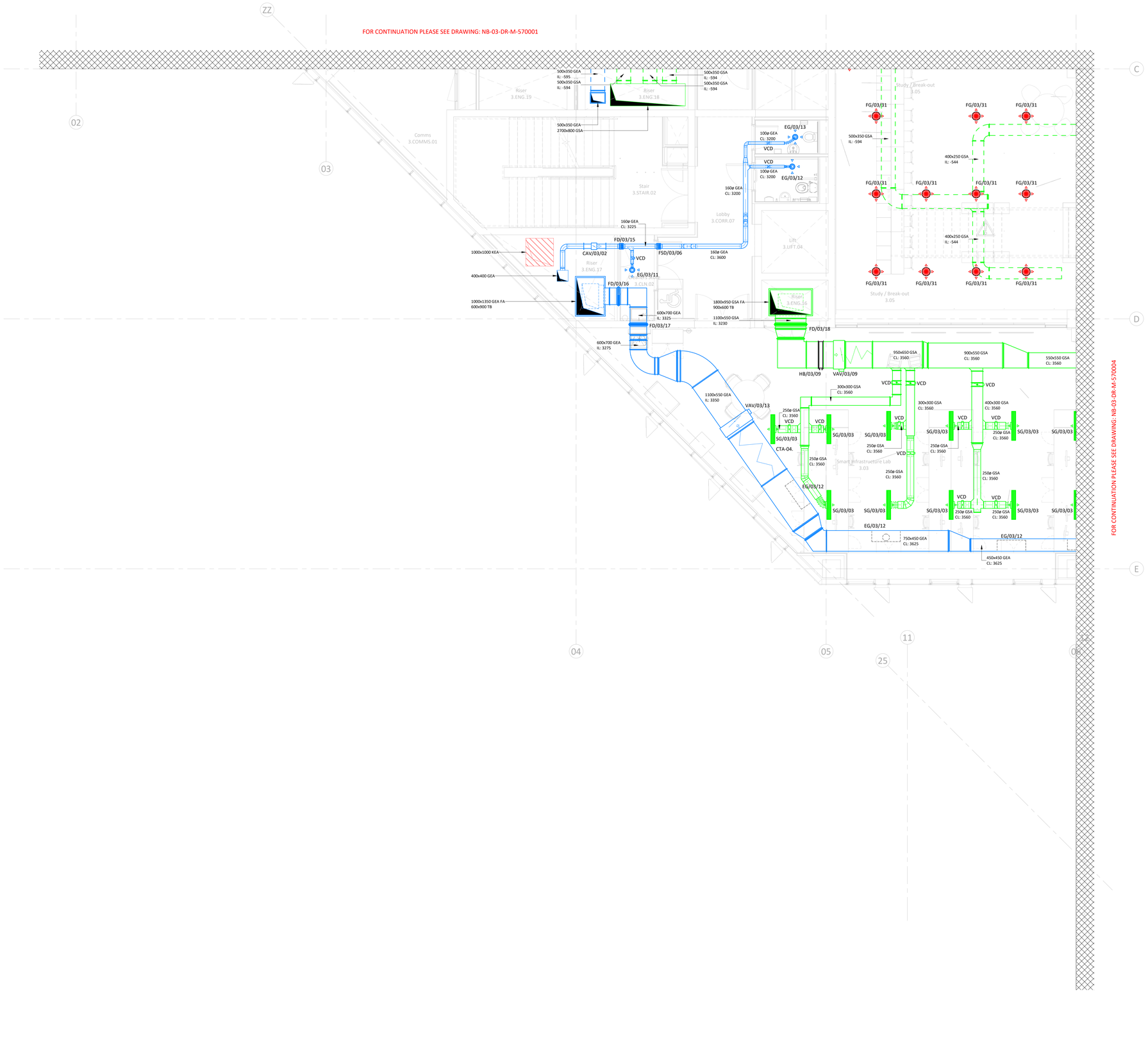
Rev C01

Drawing No. 1338B-NGB-NB-03-DR-M-570003

Plotted: 08/06/22 07:13 Plotted By: Jonathan Parker (JPA) Drawing Path: J:\Projects\1338B - MMU Science & Engineering\1338B - MMU - Vol 2 - All\3 - Mechanical\

FOR CONTINUATION PLEASE SEE DRAWING: NB-03-DR-M-570001



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SAFETY First & Foremost

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

For details of site wide and general risks to be read in conjunction with these notes, refer to the following documents:

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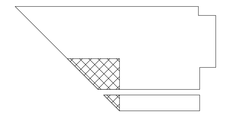

KEY PLAN

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL MECHANICAL, ELECTRICAL, ARCHITECTURAL, INTERIOR DESIGNER & STRUCTURAL DRAWINGS, MECHANICAL EQUIPMENT SCHEDULES, CONTRACT DOCUMENTATION AND SPECIFICATION ASSOCIATED WITH THE WORKS AND DETAILS OF EQUIPMENT POSITIONS, AND PROPOSED WORKS BY OTHERS.
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4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED. UNDER NO CIRCUMSTANCES SHOULD DIMENSIONS BE SCALED FROM THIS DRAWING
5. INSTALL IN LINE WITH MANUFACTURERS GUIDANCE FOR DUCT, FITTINGS, EQUIPMENT, AND PLANT.
6. DUCTWORK MANUFACTURED AND INSTALLED IN ACCORDANCE WITH DW144
7. KITCHEN EXTRACT DUCTWORK MANUFACTURED AND INSTALLED IN ACCORDANCE WITH DW172
8. ALL KITCHEN EXTRACT DUCTWORK SUPPORTS ARE TO BE FIRE RATED
9. UNLESS STATED OTHERWISE IN THE SPECIFICATION, THE LEVEL OF CLEANLINESS SHALL BE IN LINE WITH HVCA TR/19 TABLE F2 - INTERMEDIATE PDI LEVEL
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11. VCDS ARE INSTALLED ON ALL MAIN, SUB MAIN AND TERMINAL BRANCHES UNLESS DRAWING INDICATES SELF-BALANCED HEADER
12. ALL METAL DUCTWORK PENETRATIONS THROUGH A FIRE COMPARTMENT OF ANY RATING SHALL HAVE FIRE DAMPERS WHICH ARE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE AND COMPLETE WITH INSTALLATION FRAMES
13. ALL PLASTIC DUCTWORK PASSING THROUGH A FIRE COMPARTMENT OF ANY RATING SHALL HAVE AN INTUMESCENT BLOCK INSTALLED TO MEET THE SAME RATING WHICH SHALL BE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE
14. ALL FIRE DAMPERS HAVE VISUAL INDICATION STATUS
15. ALL RECTANGULAR DUCTWORK, AND CIRCULAR OVER 250 DIA SHALL HAVE MULTI-BLADE OBD TYPE VCDS
16. SUPPLY GRILLE FLEXIBLE CONNECTIONS ARE FULLY INSULATED AND OF THE ACOUSTIC FLEX TYPE (500MM MAX)
17. FREE ISSUE FILTER MEDIA IS INSTALLED BY THE DUCTWORK CONTRACTOR PRIOR TO PROJECT COMPLETION
18. THE DISHWASHER EXTRACT SYSTEM IS INSTALLED IN STAINLESS STEEL AS PER PROJECT SPECIFICATION
19. SLEEVES ARE INSTALLED THROUGH ALL WALLS
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21. ALL DUCTWORK COMPONENTS SHALL BE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS
22. DOOR UNDERCUTS SHALL BE 10MM UNLESS NOTED OTHERWISE
23. ALL EXTRACT BELLMOUTHS TO INCLUDE WIRE MESH ON INTAKE TOP PREVENT DEBRIS ENTERING THE SYSTEM

LEGEND:

VCD	VOLUME CONTROL DAMPER
FD	FIRE DAMPER
IC	INTUMESCENT COLLAR
ATT	ATTENUATOR
CTA	CROSSTALK ATTENUATOR
VAV	VARIABLE AIR VOLUME BOX
CAV	CONSTANT AIR VOLUME BOX
FG	FLOOR GRILLE
SG	SUPPLY GRILLE
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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	01/06/22
P04	Comments Incorporated	17/02/22
P03	Comments Incorporated	11/02/22
P02	Comments Incorporated	16/11/21
P01	Preliminary Issue	27/09/21

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Third Floor Sheet 3 of 4

Issue Date: 08/06/22

Status: A1 - Approved & Accepted | Scale: 1 : 50 | Sheet Size: A0 | Rev: C01

Drawing No. 1338B-NGB-NB-03-DR-M-570003

Project Code | Originator | Zone | Level | Type | Role | Number
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Rev C01

Drawing No. 1338B-NGB-NB-06-DR-M-570003

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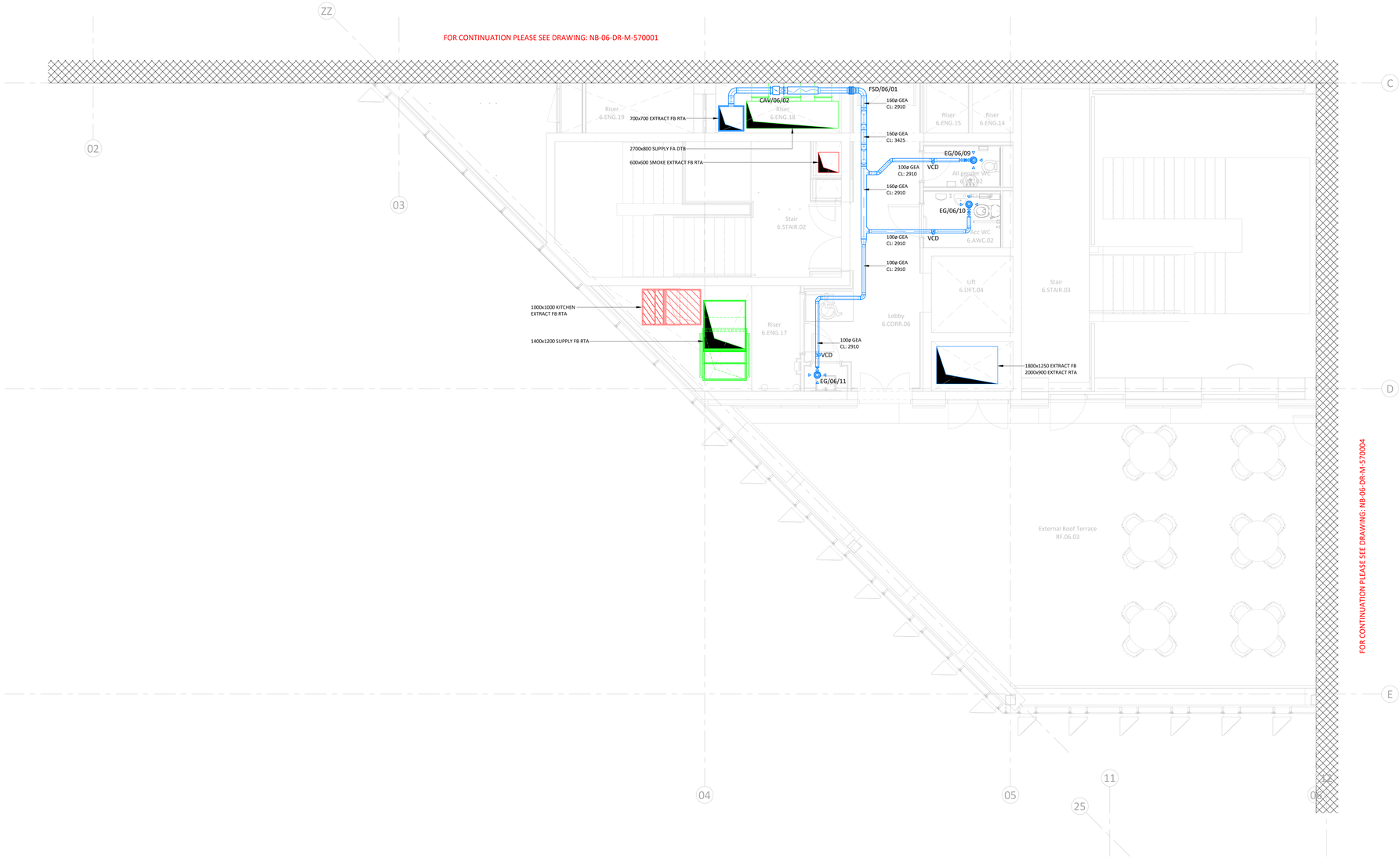
FOR CONTINUATION PLEASE SEE DRAWING: NB-06-DR-M-570001



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SAFETY First & Foremost

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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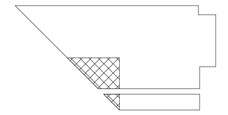

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NOTES:

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CL	CENTRE LINE
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RTA	RISE TO ABOVE
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	FIRE RATED DUCTWORK
	UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	31/01/22
P02	Comments Incorporated	16/11/21
P01	Preliminary Issue	27/09/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Sixth Floor Sheet 3 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No.
1338B-NGB-NB-06-DR-M-570003
Project Num. | Originator | Zone | Level | Type | Role | Number

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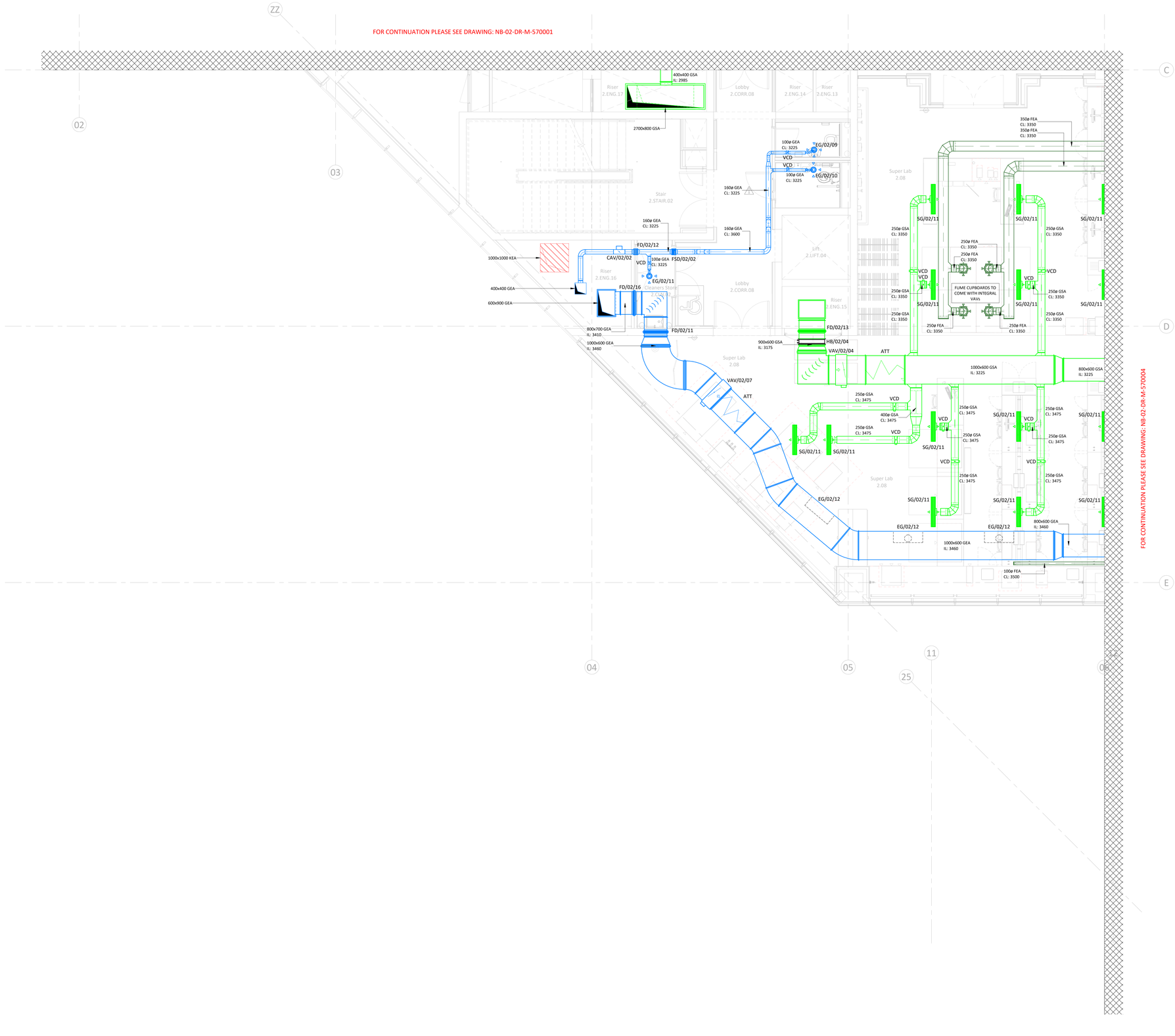
Rev C01

Drawing No. 1338B-NGB-NB-02-DR-M-570003

Plot Date: 23/11/22 Plotted By: Jeremy Parker (NGB) Drawing File Name: 1338B-NGB-NB-02-DR-M-570003.dwg

FOR CONTINUATION PLEASE SEE DRAWING: NB-02-DR-M-570001



FOR CONTINUATION PLEASE SEE DRAWING: NB-02-DR-M-570004

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SAFETY First & Foremost

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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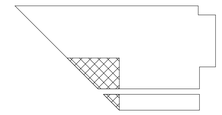

KEY PLAN

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LEGEND:

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IC	INTUMESCENT COLLAR
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VAV	VARIABLE AIR VOLUME BOX
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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	23/11/22
P03	Comments Incorporated	17/02/22
P02	Comments Incorporated	16/11/21
P01	Preliminary Issue	27/09/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Second Floor Sheet 3 of 4

Issue Date: 23/11/22

Status: A1 - Approved & Accepted

Scale: 1 : 50

Sheet Size: A0

Rev: C01

Drawing No. 1338B-NGB-NB-02-DR-M-570003

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Drawing No.
1338B-NGB-ND-XX-SC-M-570002

Rev
C01

AHU/04

LEVEL 07

LEVEL 06

LEVEL 05

LEVEL 04

LEVEL 03

LEVEL 02

LEVEL 01

LEVEL 00

24No FLOOR GRILLES

CONNECT TO EXISTING

CONNECT TO EXISTING

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

For details of site wide and general risks to be read in conjunction with these notes, refer to the following documents:

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following;

Construction and Manufacture

Maintenance, Cleaning and Operation

Decommissioning and Demolition

It is assumed that all works associated with this drawing will be carried out by competent operatives working, where appropriate, to an approved method statement.

LEGEND

- ATTENUATOR
- EXTRACT GRILLE
- SUPPLY GRILLE
- FLOOR GRILLE
- FD FIRE DAMPER
- VCD VOLUME CONTROL DAMPER
- HEATER BATTERY
- EXTRACT FAN
- VALUES INCLUDE 90% DIVERSIFICATION

FLOW RATE (m³/s)	DUCT SIZE (mm)
VELOCITY (m/s)	PRESSURE (Pa/m)

NOTES

1. SUPPLY & GENERAL EXTRACT DUCTWORK WILL BE INSTALLED IN ACCORDANCE WITH DW144.
2. DUCTWORK ACCESS HATCHES WILL BE PROVIDED FOR INSPECTION/SERVICING & CLEANING IN ACCORDANCE WITH TR19, TABLE 3, BY THE DUCTWORK CONTRACTOR ONLY
3. FINAL CONNECTIONS TO GRILLES MAY BE FLEXIBLE UP TO MAXIMUM LENGTH OF 500mm. FLEXIBLE DUCTWORK ON SUPPLY DUCTWORK SHALL BE PRE-INSULATED
4. ALL GRILLES SHALL HAVE A POWDER COATED FINISH TO A STANDARD MANUFACTURERS COLOUR TO BE AGREED WITH THE ARCHITECT.
5. FIRE DAMPERS WITH ACCESS DOORS SHALL BE PROVIDED WHERE DUCTWORK PASSES THROUGH FIRE RATED CONSTRUCTION. REFER TO ARCHITECTS FIRE STRATEGY DRAWING FOR DETAILS.
6. ALL VENTILATION SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH CIBSE COMMISSIONING CODE A.
7. INTERNAL DIAMETER OF THE FLEXIBLE DUCTWORK SHOULD BE EQUAL TO THE EXTERNAL DIAMETER OF THE RIGID DUCTWORK.
8. ALL SUPPLY DUCTWORK SHALL BE INSULATED IN ACCORDANCE WITH BS 5422.
9. EXTRACT AIR BELLMOUTHS TO INCLUDE WIRE MESH TO PREVENT DEBRIS ENTERING SYSTEM.
10. DUCTWORK TO BE INSTALLED WITHIN 500mm OF FIRE PARTITIONS
11. MULTI-BLADE VCD'S TO BE USED ON DUCTWORK 300Ø AND ABOVE
12. DUCTWORK TO BE INSTALLED IN LINE WITH DW144

Rev	Description	Date
C01	CONSTRUCTION ISSUE	01.08.22
P02	GENERAL UPDATE	16.11.21
P01	PRELIMINARY ISSUE	30.07.21

NG Bailey

321 Ordsall Lane, Salford M5 3HP
Tel: 0161 872 0373

Client
Manchester Metropolitan University

Contract
MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager
NGB

Checked By
J Bejsiuk

Drawn By
J Parker

Title
Ventilation Schematic
AHU-04
Office Areas
Sheet 1 of 2

Issue Date
14/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	NTS	A0	C01

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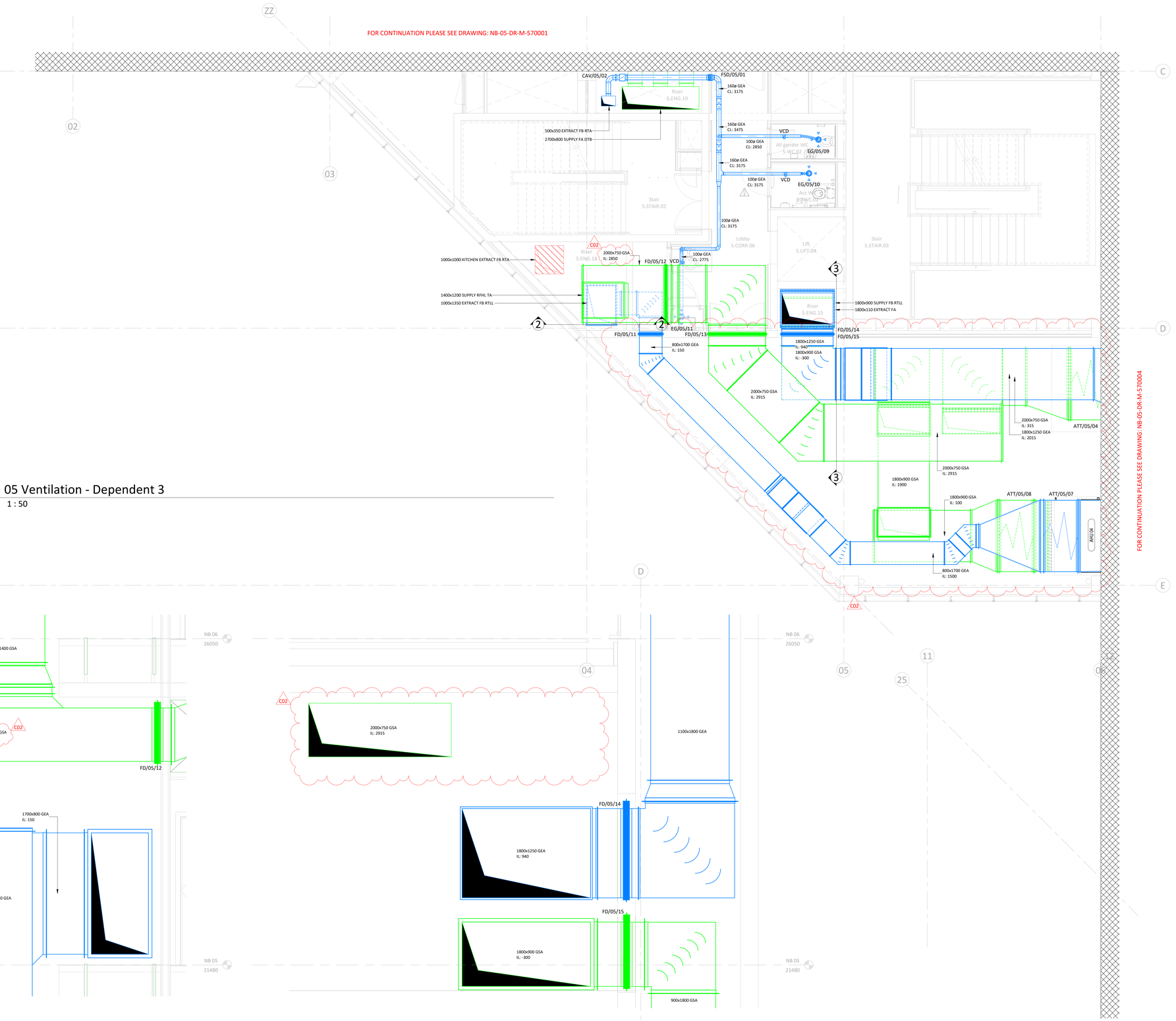
Rev C02

Drawing No. 1338B-NGB-NB-05-DR-M-570003

FOR CONTINUATION PLEASE SEE DRAWING: NB-05-DR-M-570001



1 05 Ventilation - Dependent 3
1 : 50

2 Riser 18 Section
1 : 20

3 Riser 15 Section
1 : 20

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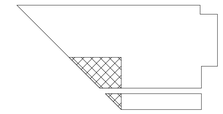

KEY PLAN

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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C02	RPO Sizes Updated, Comments Incorporated	19/10/22
C01	Construction Issue	01/06/22
P03	Comments Incorporated	17/02/22
P02	Comments Incorporated	04/11/21
P01	Preliminary Issue	27/09/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Fifth Floor Sheet 3 of 4

Issue Date: 04/11/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	As indicated	A0	C02

Drawing No. 1338B-NGB-NB-05-DR-M-570003

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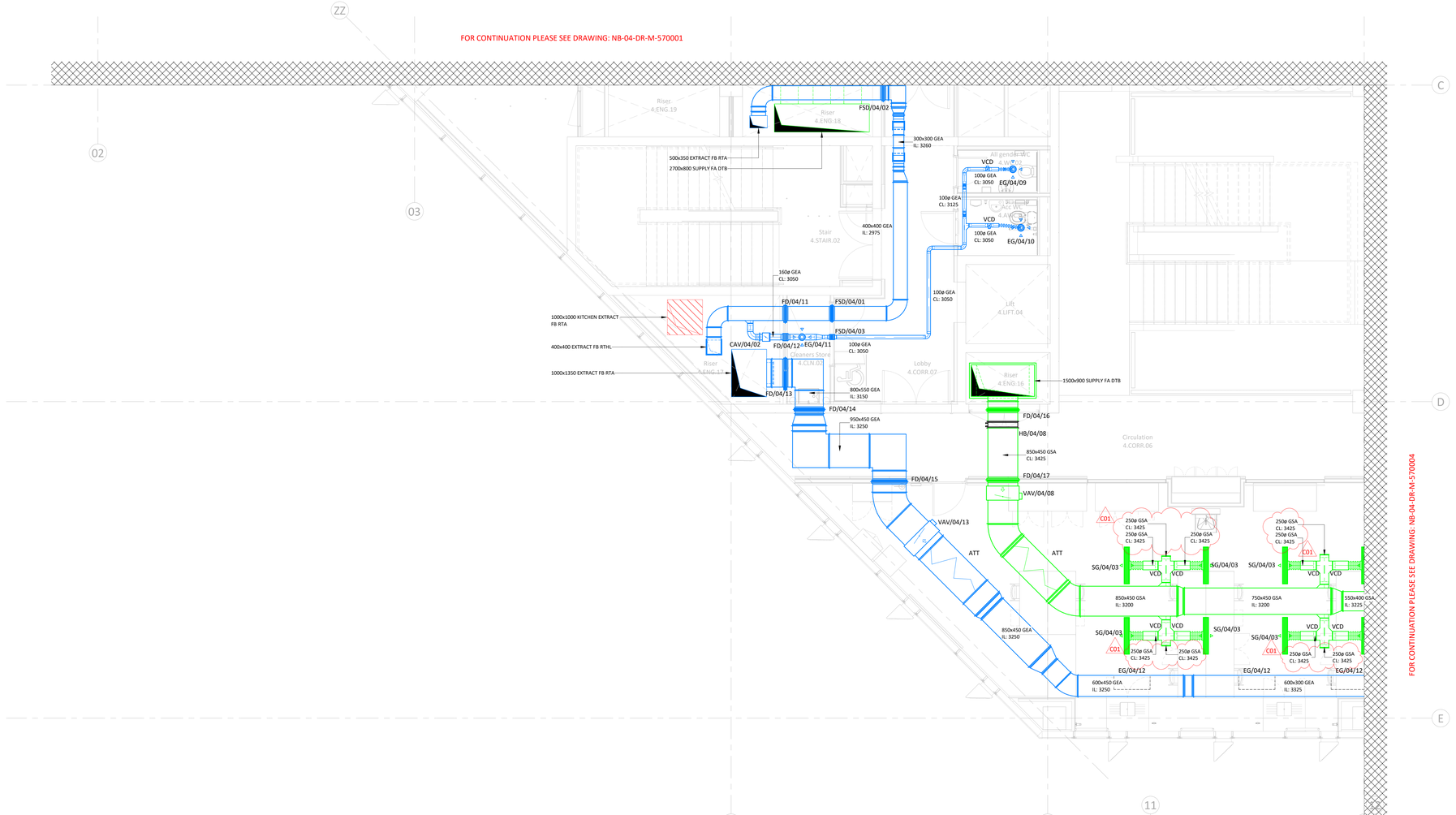
Rev C01

Drawing No. 1338B-NGB-NB-04-DR-M-570003

Plotted: 08/06/2022 09:47:11 Plotted By: Parker, James (NGB, Science & Engineering) Path: \\ngb.local\dfs\Projects\1338B_MMU_Science_and_Engineering\Revit\1338B_NGB_NB-04_DR_M_570003.rvt

FOR CONTINUATION PLEASE SEE DRAWING: NB-04-DR-M-570001



FOR CONTINUATION PLEASE SEE DRAWING: NB-04-DR-M-570004

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SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

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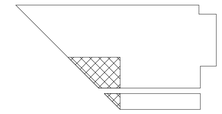

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GEA	GENERAL EXTRACT
GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
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DEA	DIRTY EXTRACT
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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	31/02/22
P02	Comments Incorporated	26/11/21
P01	Preliminary Issue	27/06/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Fourth Floor Sheet 3 of 4

Issue Date: 08/06/22

Status: A1 - Approved & Accepted

Scale: 1 : 50

Sheet Size: A0

Rev: C01

Drawing No. 1338B-NGB-NB-04-DR-M-570003

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Rev. C01

Drawing No. 1338B-NGB-NB-00-DR-M-570002

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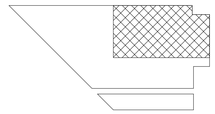

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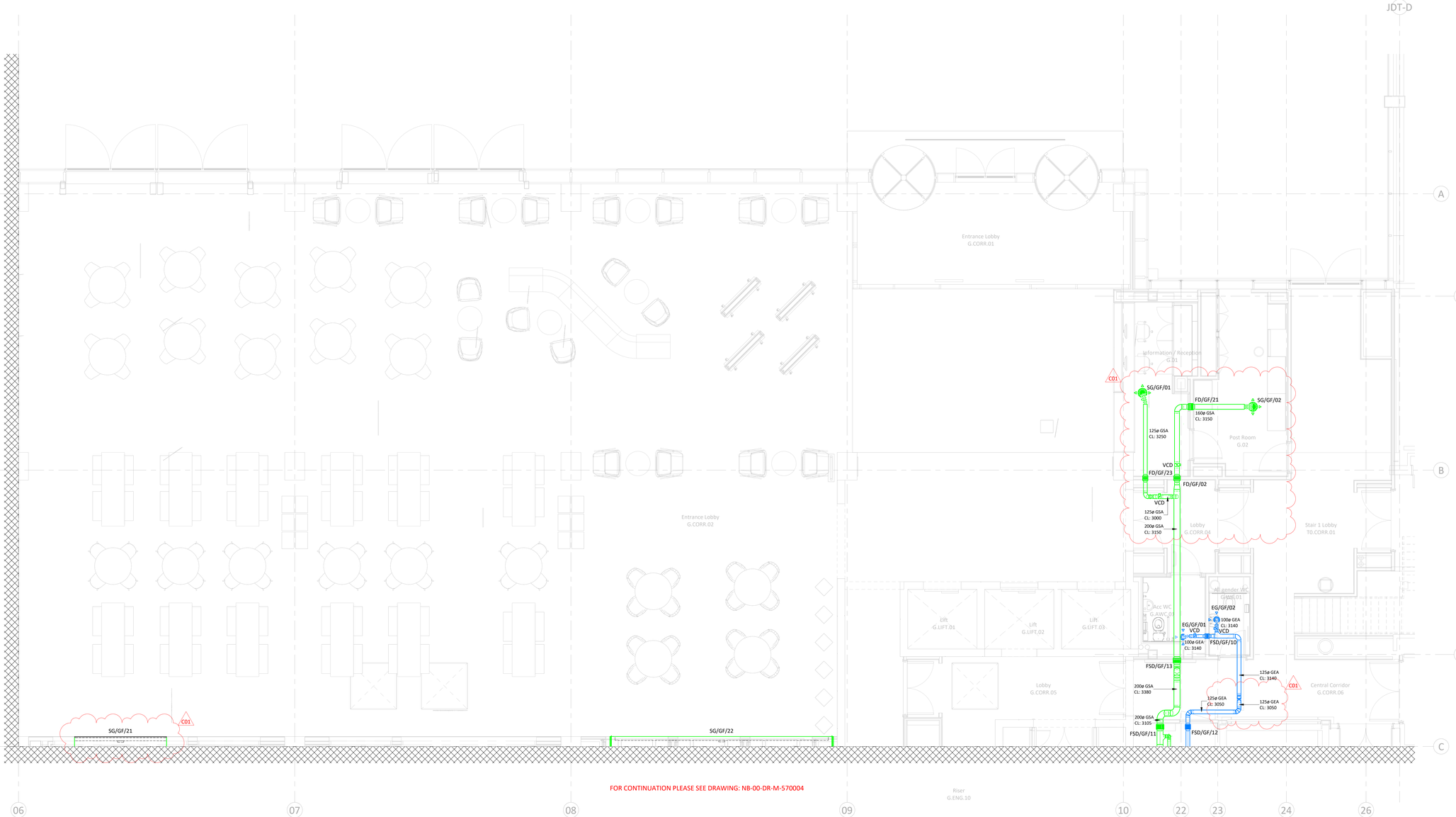
FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK



Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	17/02/22
P02	Comments Incorporated	16/12/21
P01	Preliminary Issue	27/09/21

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Ground Floor Sheet 2 of 4

Issue Date: 08/06/22

Status: A1 - Approved & Accepted

Scale: 1 : 50

Sheet Size: A0

Rev: C01

Drawing No. 1338B-NGB-NB-00-DR-M-570002

Project Code | Originator | Zone | Level | Type | Role | Number

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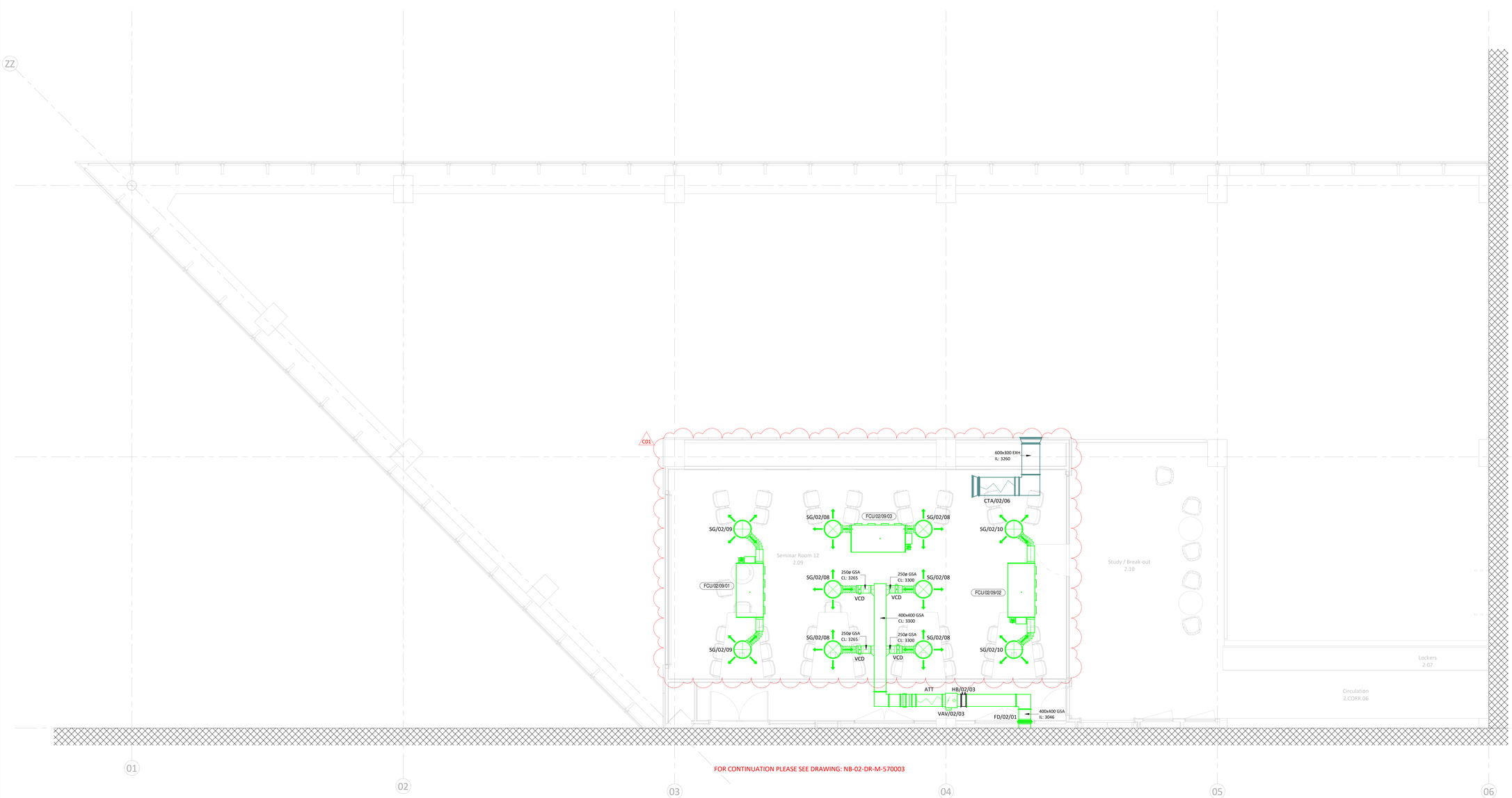
Rev C01

Drawing No. 1338B-NGB-NB-02-DR-M-570001

Plotted: 08/06/2022 09:56:03 By: Parker, Jack Drawing: M_Engineering\1338B_NGB_NB-02-DR-M_570001.dwg



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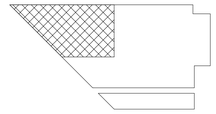

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	FIRE RATED DUCTWORK
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Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	11/02/22
P02	Comments Incorporated	16/11/21
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NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Second Floor Sheet 1 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No. 1338B-NGB-NB-02-DR-M-570001

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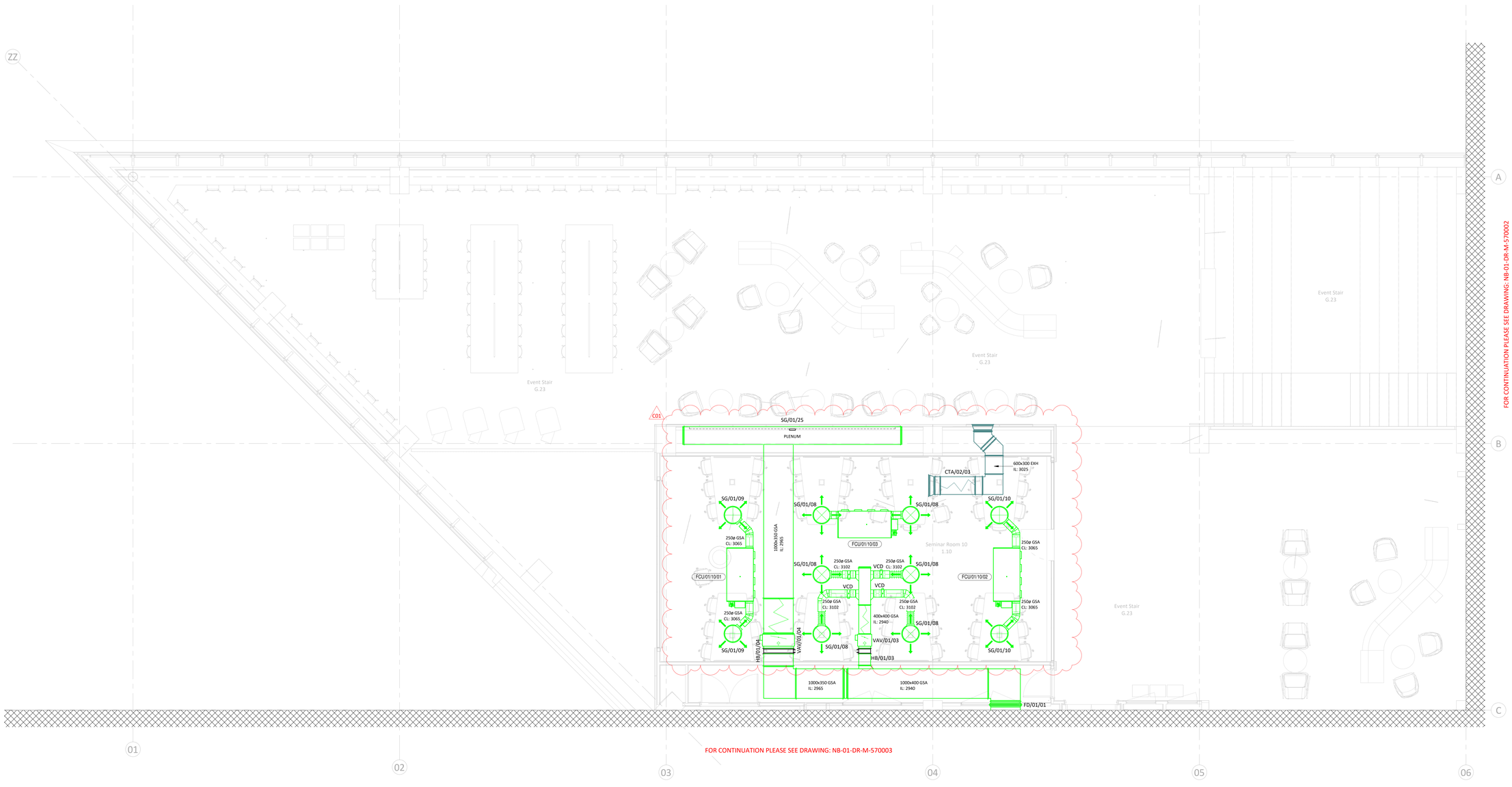
Rev: C01

Drawing No: 1338B-NGB-NB-01-DR-M-570001

C:\Revit Central_22_V17_1_ Arnould_Nick_LMW_Science_&_Engineering_LMW_nick_1412_dirt_to_2019nick.rvt



bsi. BIM Design and Construction KITEMARK. KM 674652

SAFETY First & Foremost

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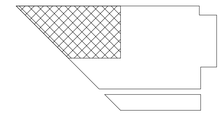

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GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
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Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	11/02/22
P02	Comments Incorporated	16/11/21
P01	Preliminary Issue	27/09/21

NG Bailey
6th Floor, 3 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 2171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation First Floor Sheet 1 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev.
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No: 1338B-NGB-NB-01-DR-M-570001

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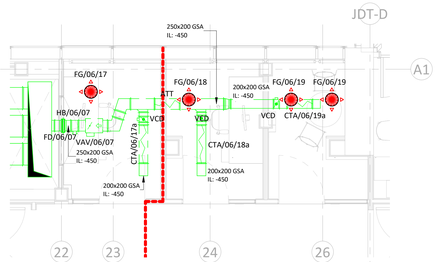
Rev C01

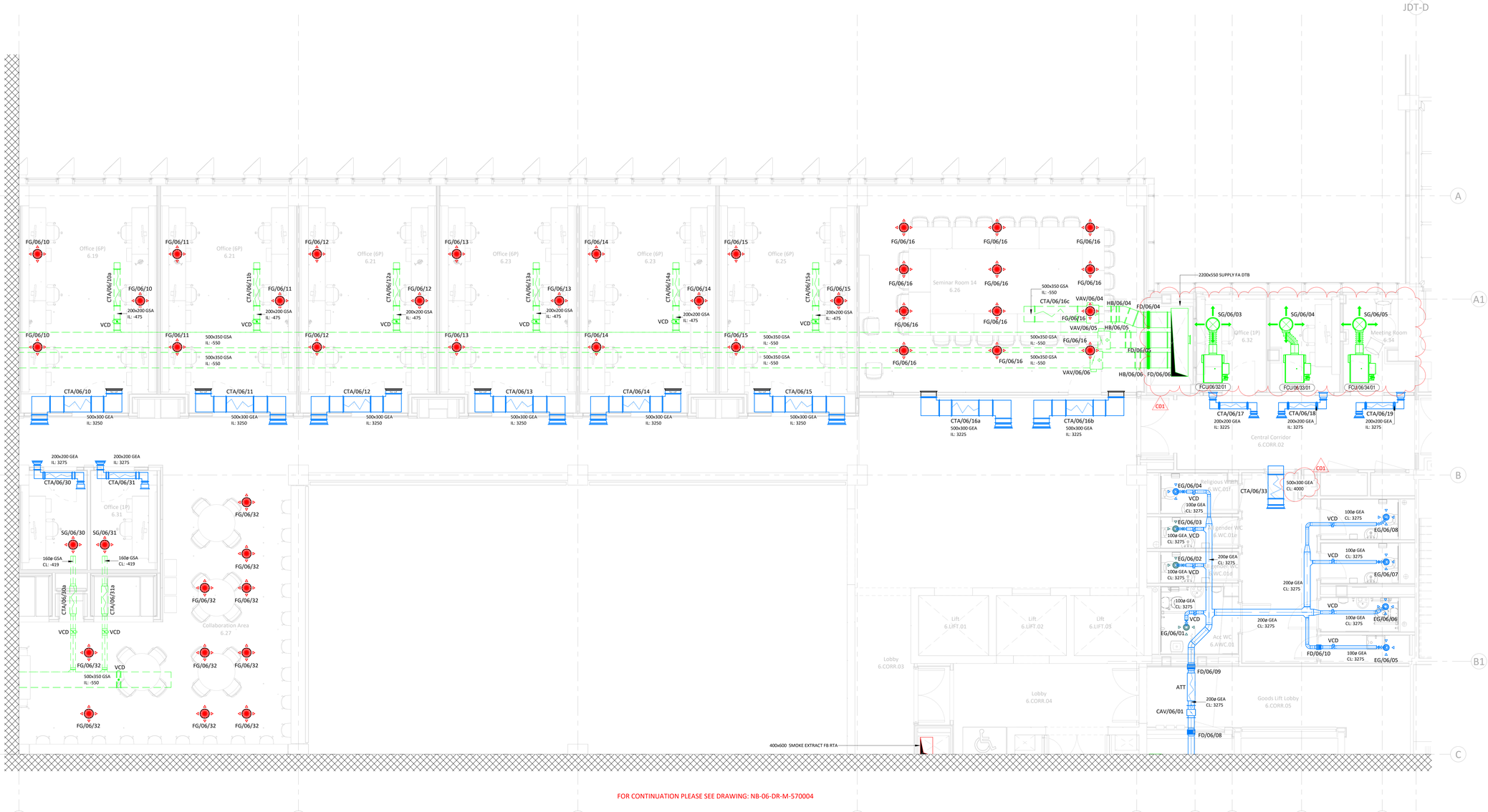
1338B-NGB-NB-06-DR-M-570002

FOR CONTINUATION PLEASE SEE DRAWING: NB-06-DR-M-570001



2 06 Ventilation - Low Level

1 : 50



FOR CONTINUATION PLEASE SEE DRAWING: NB-06-DR-M-570004

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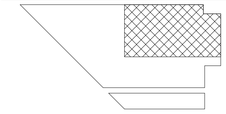

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Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	11/02/22
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NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Sixth Floor Sheet 2 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No: 1338B-NGB-NB-06-DR-M-570002

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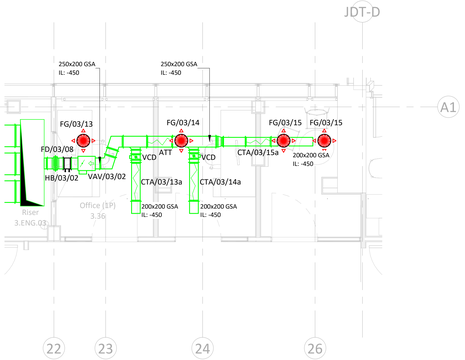
Rev C01

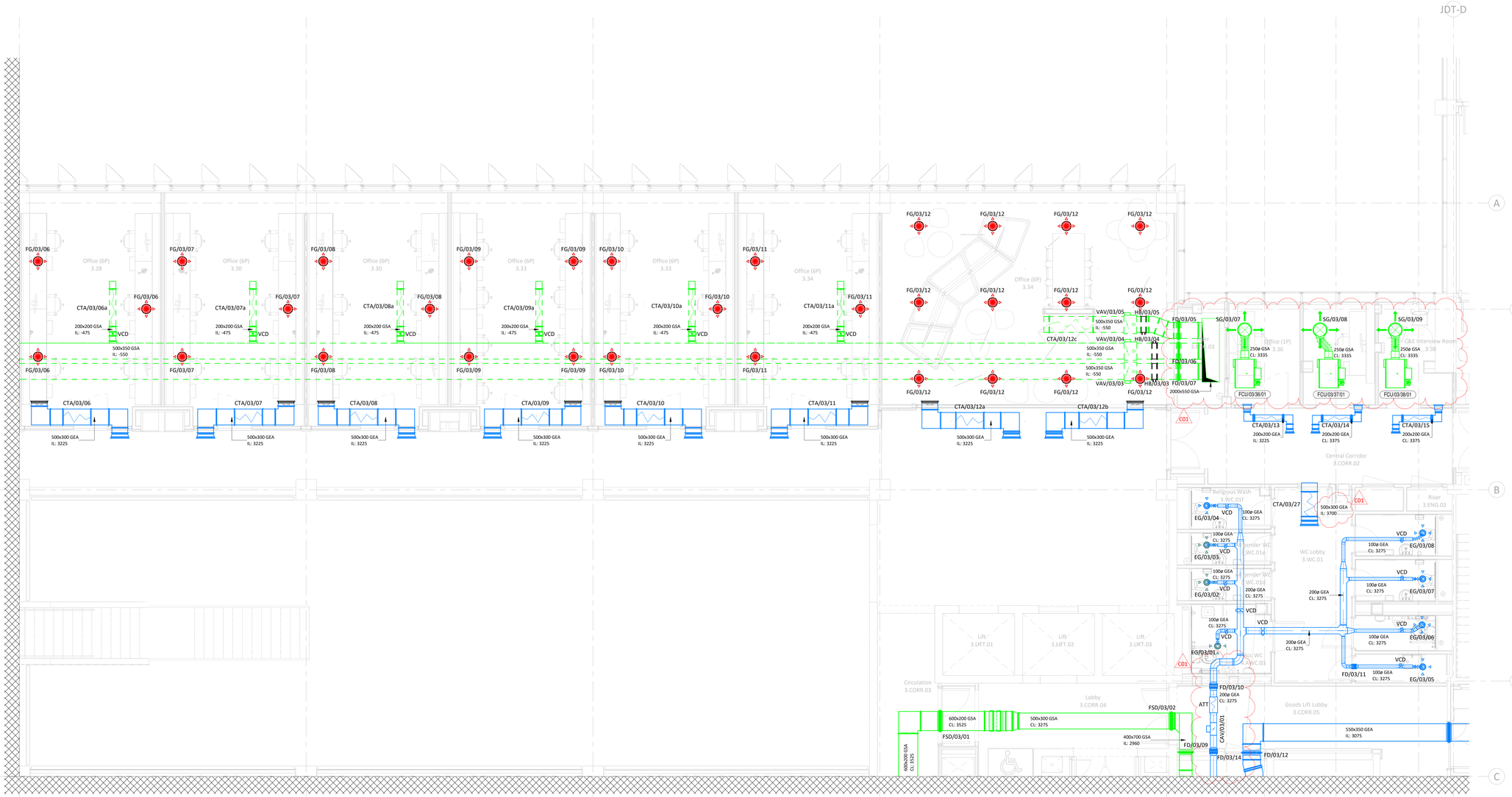
Drawing No. 1338B-NGB-NB-03-DR-M-570002

FOR CONTINUATION PLEASE SEE DRAWING: NB-03-DR-M-570001



2 03 Ventilation - Low Level

1 : 50



FOR CONTINUATION PLEASE SEE DRAWING: NB-03-DR-M-570004

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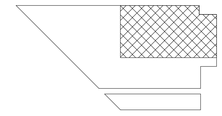

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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
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Tel: (0161 872 0171

Client
Manchester Metropolitan University

Contract
MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager
NGB

Checked By
J Bejsiuk

Drawn By
J Parker

Title
Ventilation Third Floor Sheet 2 of 4

Issue Date
08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No.
1338B-NGB-NB-03-DR-M-570002

(Project Code) (Originator) (Zone) (Level) (Type) (Role) (Number)
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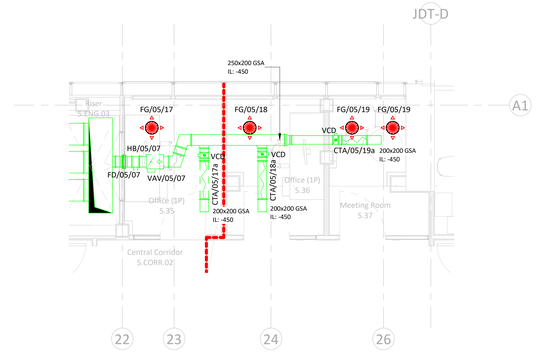
Rev: C01

Drawing No: 1338B-NGB-NB-05-DR-M-570002

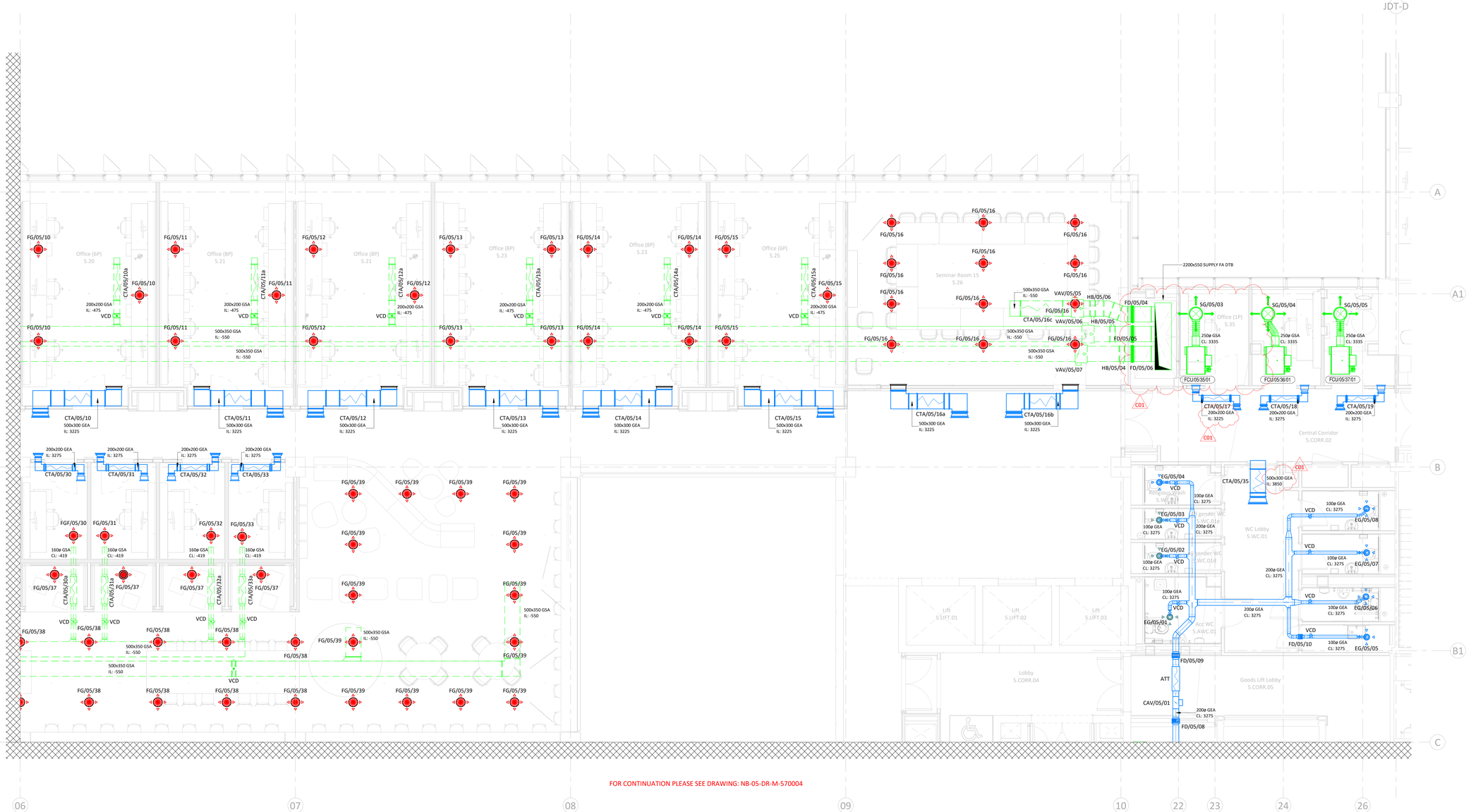
Plotted on: 08/06/2022 - 09:47:51 By: Jonathan.Parker@NGBailey.com

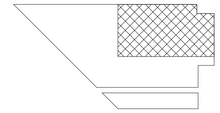
FOR CONTINUATION PLEASE SEE DRAWING: NB-05-DR-M-570001

FOR CONTINUATION PLEASE SEE DRAWING: NB-05-DR-M-570004



2 05 Ventilation - Low Level
1 : 50





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GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
SMX	SMOKE EXTRACT
DEA	DIRTY EXTRACT
FFL	FINISHED FLOOR LEVEL
AFFL	ABOVE FINISHED FLOOR LEVEL
CL	CENTRE LINE
IL	INVERT LEVEL
FA	FROM ABOVE
TB	TO BELOW
FB	FROM BELOW
RTA	RISE TO ABOVE
LL	LOW LEVEL
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RTHL	RISE TO HIGH LEVEL
	FIRE RATED DUCTWORK
	UNDERFLOOR DUCTWORK

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

For details of site wide and general risks to be read in conjunction with these notes, refer to the following documents:

No specific SHE risks have been identified for the contents of this drawing.

Rev	Description	Date
C01	Construction Issue	01/06/22
P04	Comments Incorporated	17/02/22
P03	Comments Incorporated	11/02/22
P02	Comments Incorporated	06/12/21
P01	Preliminary Issue	27/09/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Fifth Floor Sheet 2 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev.
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No: 1338B-NGB-NB-05-DR-M-570002

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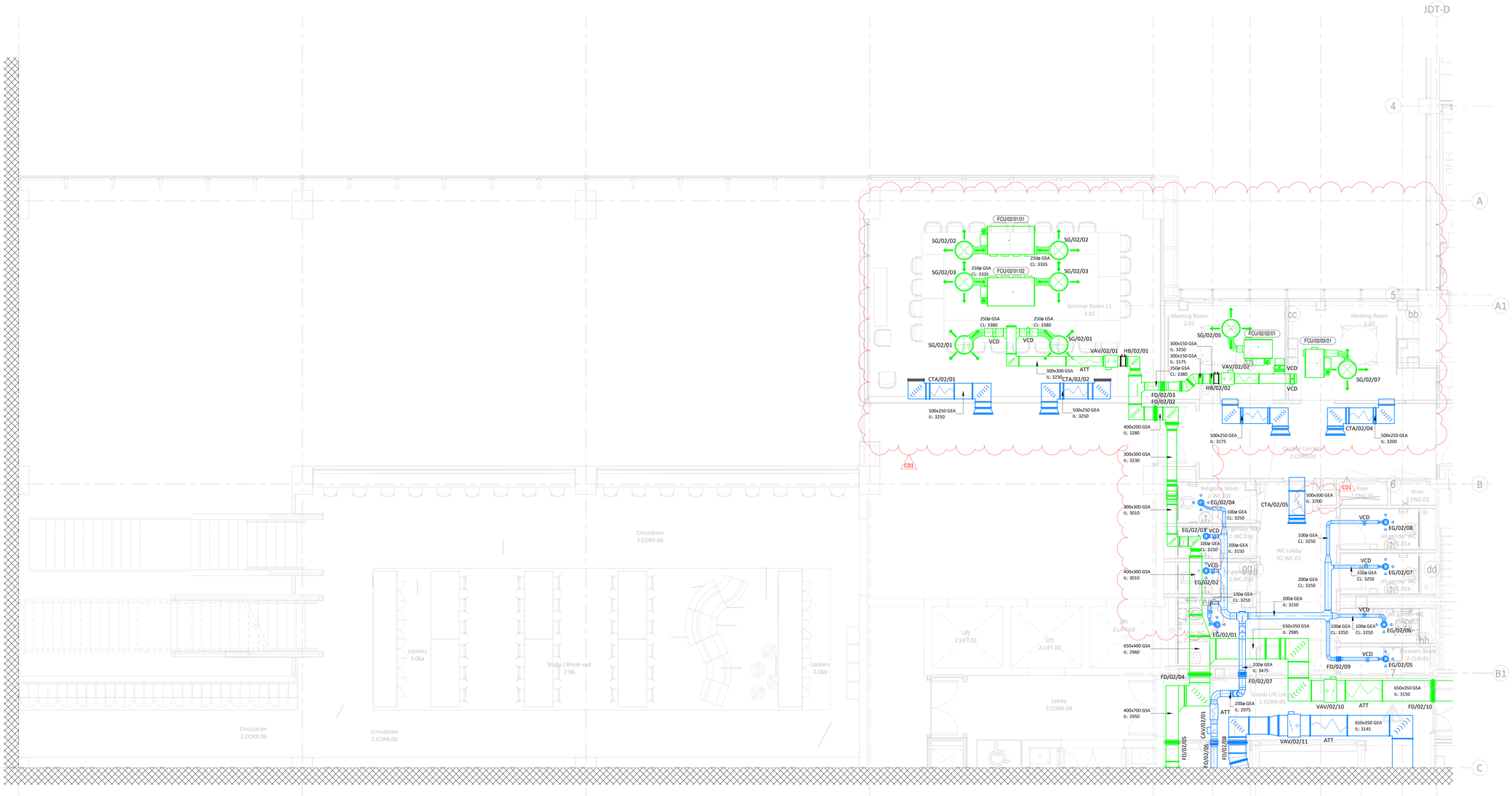
Drawing No. 1338B-NGB-NB-02-DR-M-570002

FOR CONTINUATION PLEASE SEE DRAWING: NB-02-DR-M-570001



FOR CONTINUATION PLEASE SEE DRAWING: NB-02-DR-M-570004

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SAFETY First & Foremost

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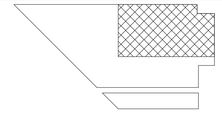

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21. ALL DUCTWORK COMPONENTS SHALL BE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS
22. DOOR UNDERCUTS SHALL BE 10MM UNLESS NOTED OTHERWISE
23. ALL EXTRACT BELLMOUTHS TO INCLUDE WIRE MESH ON INTAKE TOP PREVENT DEBRIS ENTERING THE SYSTEM

LEGEND:

VCD	VOLUME CONTROL DAMPER
FD	FIRE DAMPER
IC	INTUMESCENT COLLAR
ATT	ATTENUATOR
CTA	CROSSTALK ATTENUATOR
VAV	VARIABLE AIR VOLUME BOX
CAV	CONSTANT AIR VOLUME BOX
FG	FLOOR GRILLE
SG	SUPPLY GRILLE
EG	EXTRACT GRILLE
EL	EXHAUST LOUVRE
FCU	FAN COIL UNIT
GEA	GENERAL EXTRACT
GSA	GENERAL SUPPLY
EKH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
SMX	SMOKE EXTRACT
DEA	DIRTY EXTRACT
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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	23/11/22
P04	Comments Incorporated	17/02/22
P03	Comments Incorporated	31/01/22
P02	Comments Incorporated	26/11/21
P01	Preliminary Issue	27/09/21

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Second Floor Sheet 2 of 4

Issue Date: 23/11/22

Status: A1 - Approved & Accepted

Scale: 1 : 50

Sheet Size: A0

Rev: C01

Drawing No. 1338B-NGB-NB-02-DR-M-570002

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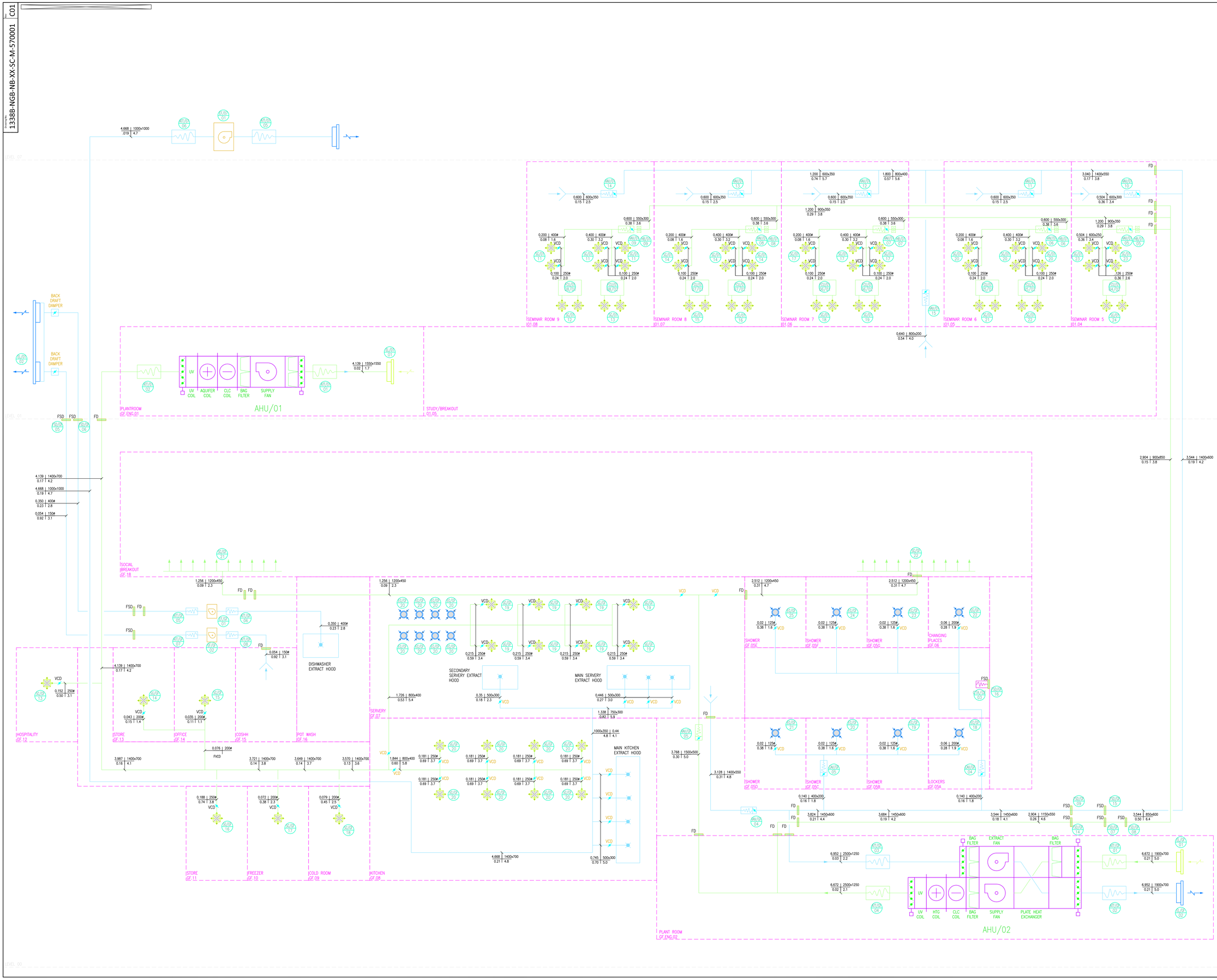
Rev C01

1338B-NGB-NB-XX-SC-M-570001



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SAFETY First & Foremost

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

For details of site wide and general risks to be read in conjunction with these notes, refer to the following documents:

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following;

Construction and Manufacture

Maintenance, Cleaning and Operation

Decommissioning and Demolition

It is assumed that all works associated with this drawing will be carried out by competent operatives working, where appropriate, to an approved method statement.

LEGEND

- ATTENUATOR
- EXTRACT GRILLE
- SUPPLY GRILLE
- FLOOR GRILLE
- FD — FIRE DAMPER
- VCD — VOLUME CONTROL DAMPER
- HEATER BATTERY
- EXTRACT FAN

FLOW RATE (m³/s)	DUCT SIZE (mm)
VELOCITY (m/s)	PRESSURE (Pa/m)

NOTES

1. SUPPLY & GENERAL EXTRACT DUCTWORK WILL BE INSTALLED IN ACCORDANCE WITH DW144.
2. DUCTWORK ACCESS HATCHES WILL BE PROVIDED FOR INSPECTION/SERVICING & CLEANING IN ACCORDANCE WITH TR19, TABLE 3, BY THE DUCTWORK CONTRACTOR ONLY
3. FINAL CONNECTIONS TO GRILLES MAY BE FLEXIBLE UP TO MAXIMUM LENGTH OF 500mm. FLEXIBLE DUCTWORK ON SUPPLY DUCTWORK SHALL BE PRE-INSULATED
4. ALL GRILLES SHALL HAVE A POWDER COATED FINISH TO A STANDARD MANUFACTURERS COLOUR TO BE AGREED WITH THE ARCHITECT.
5. FIRE DAMPERS WITH ACCESS DOORS SHALL BE PROVIDED WHERE DUCTWORK PASSES THROUGH FIRE RATED CONSTRUCTION. REFER TO ARCHITECTS FIRE STRATEGY DRAWING FOR DETAILS.
6. ALL VENTILATION SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH CIBSE COMMISSIONING CODE A.
7. INTERNAL DIAMETER OF THE FLEXIBLE DUCTWORK SHOULD BE EQUAL TO THE EXTERNAL DIAMETER OF THE RIGID DUCTWORK.
8. ALL SUPPLY DUCTWORK SHALL BE INSULATED IN ACCORDANCE WITH BS 5422.
9. EXTRACT AIR BELLMOUTHS TO INCLUDE WIRE MESH TO PREVENT DEBRIS ENTERING SYSTEM.
10. DUCTWORK TO BE INSTALLED WITHIN 500mm OF FIRE PARTITIONS
11. MULTI-BLADE VCD'S TO BE USED ON DUCTWORK 300ø AND ABOVE
12. DUCTWORK TO BE INSTALLED IN LINE WITH DW144

Rev	Description	Date
C01	CONSTRUCTION ISSUE	01.06.22
P02	GENERAL UPDATE	16.11.21
P01	PRELIMINARY ISSUE	30.07.21

NG Bailey

321 Ordsall Lane, Salford M5 3HP
Tel: 0161 872 0371

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: R Paterson

Title: Ventilation Schematic AHU-01/02 Dining Area/Seminar Rooms

Issue Date: 06/07/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	NTS	A0	C01

Drawing No. 1338B-NGB-NB-XX-SC-M-570001

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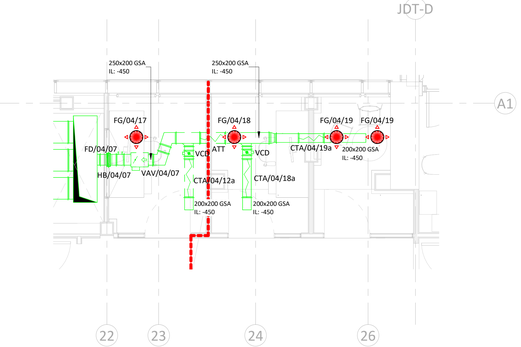
Rev C01

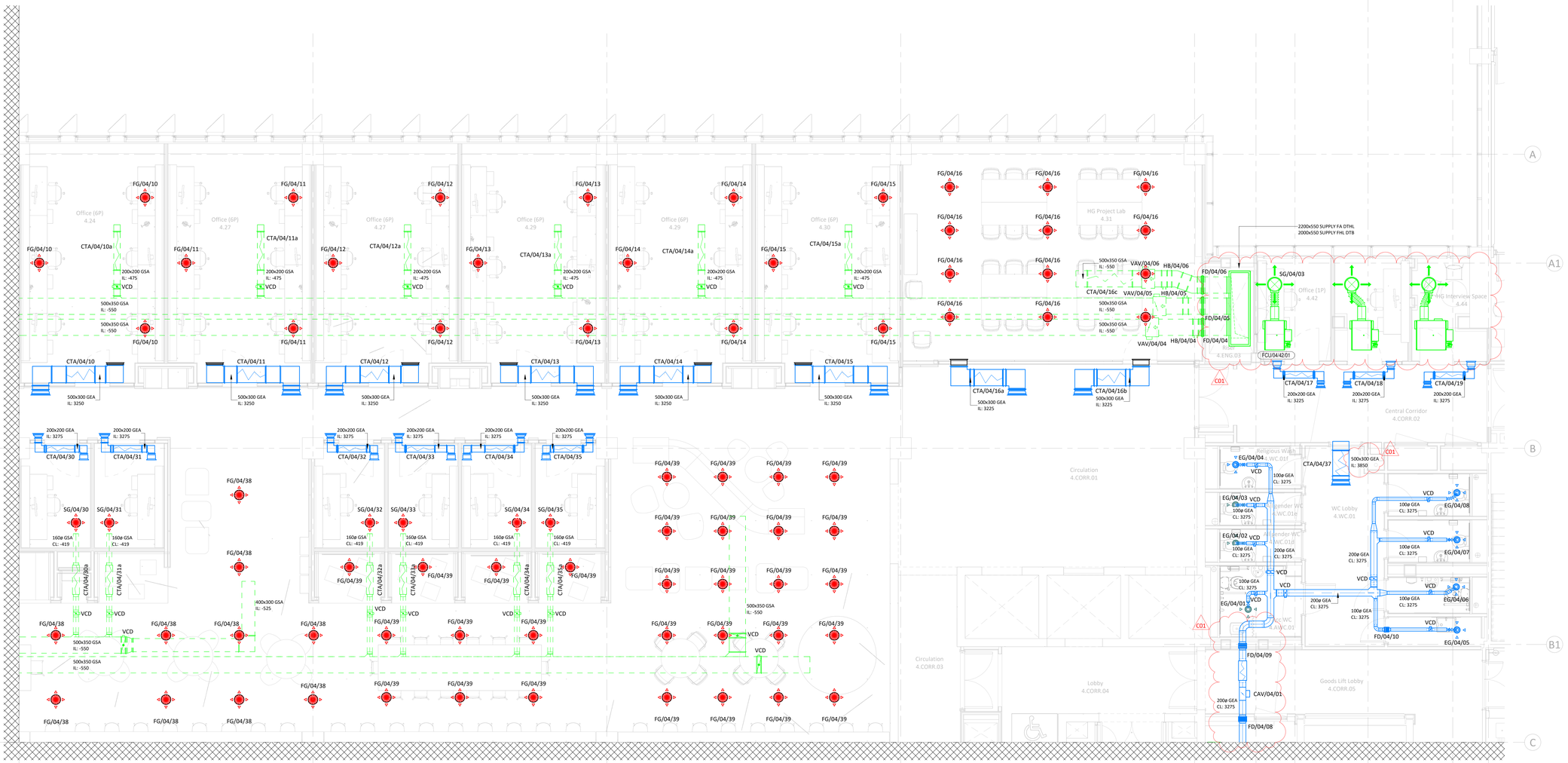
Drawing No. 1338B-NGB-NB-04-DR-M-570002

Plotted: 08/06/2022 - 08:14:53 Account: Nick.Lake Drawn: N. Frydrenkiel / Date: 08/06/2022 Plot By: Nick.Lake



2 04 Ventilation - Low Level

1 : 50



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SAFETY First & Foremost

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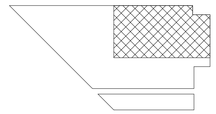

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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	01/06/22
P03	Comments Incorporated	31/02/22
P02	Comments Incorporated	28/12/21
P01	Preliminary Issue	27/09/21

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 2171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Fourth Floor Sheet 2 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No. 1338B-NGB-NB-04-DR-M-570002

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Rev: C02

Drawing No: 1338B-NGB-NB-00-DR-M-570003

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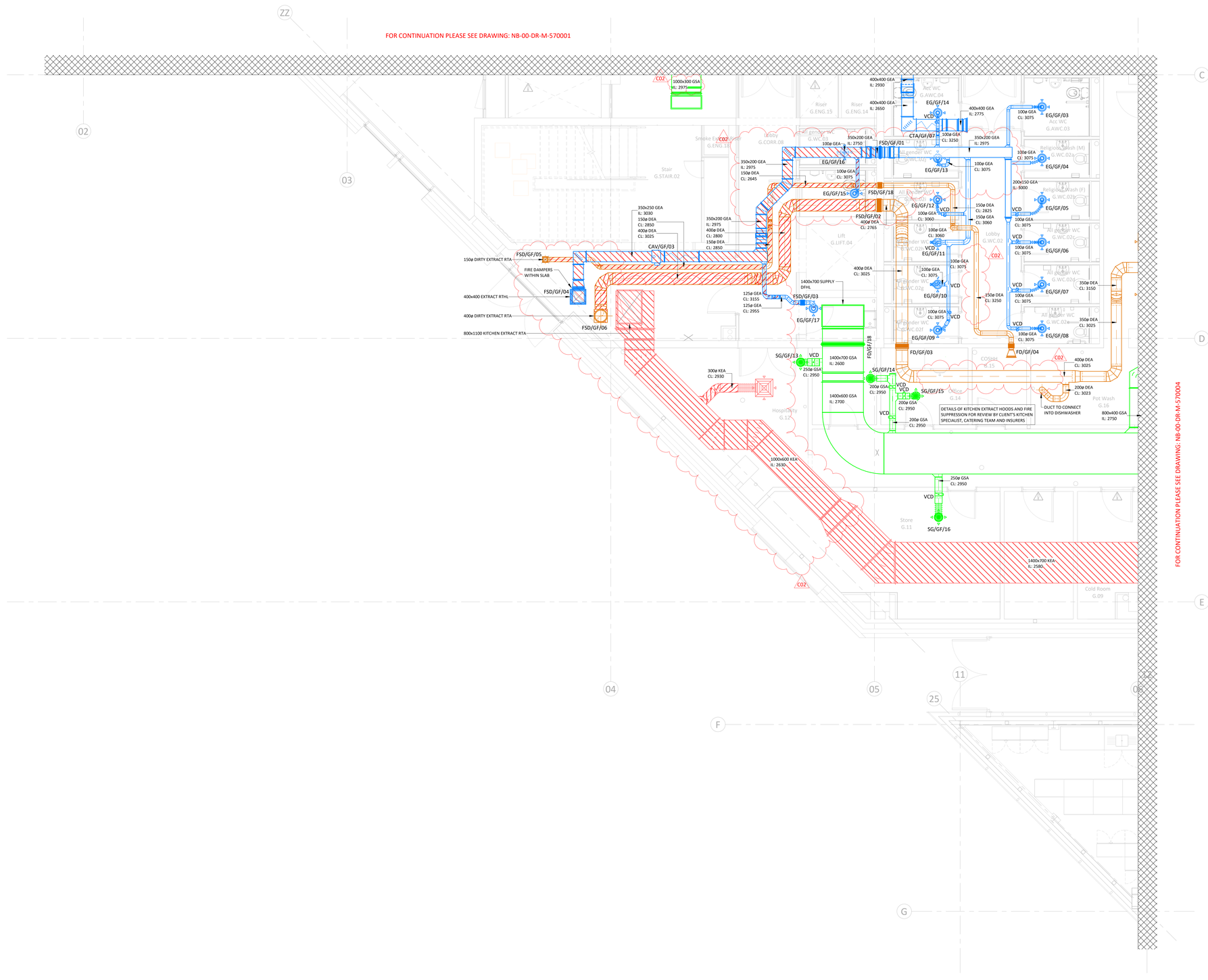

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SAFETY First & Foremost

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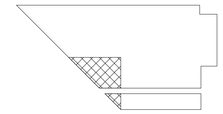
KEY PLAN



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FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C02	Comments Incorporated, EF/GF/01 & FF/GF/02 Relocated	04/11/22
C01	Construction Issue	31/08/22
P03	Comments Incorporated	17/02/22
P02	Comments Incorporated	04/11/21
P01	Preliminary Issue	27/09/21

NG Bailey

6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171.

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Ground Floor Sheet 3 of 4

Issue Date: 14/11/22

Status	Scale	Sheet Size	Rev
A1 - Approved & Accepted	1 : 50	A0	C02

Drawing No: 1338B-NGB-NB-00-DR-M-570003

Originator Project Volume Level Type Role Number Revision

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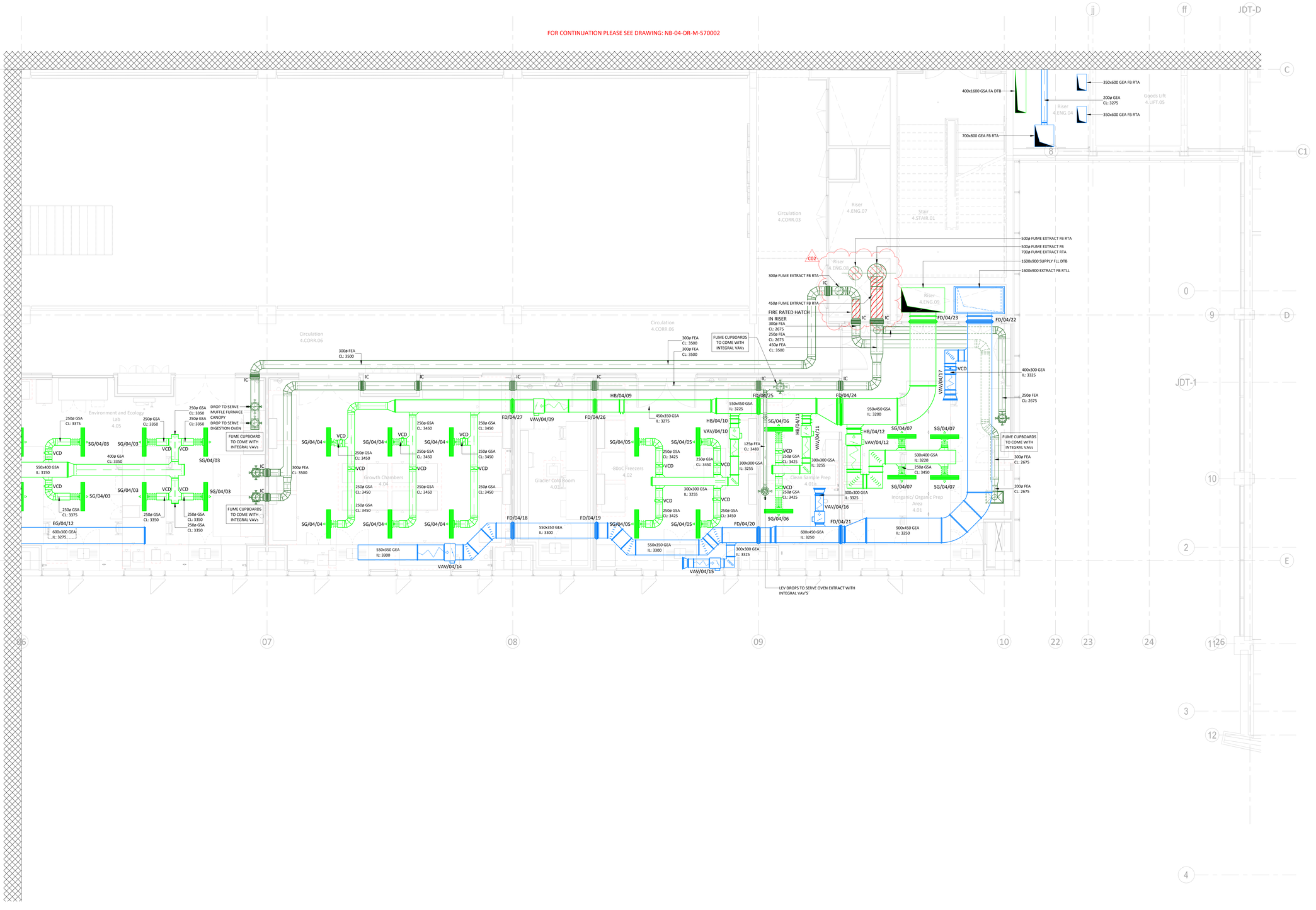
Rev C02

Drawing No. 1338B-NGB-NB-04-DR-M-570004

FOR CONTINUATION PLEASE SEE DRAWING: NB-04-DR-M-570003

FOR CONTINUATION PLEASE SEE DRAWING: NB-04-DR-M-570002



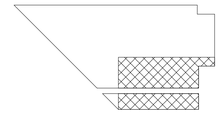
bsi. BIM Design and Construction KITEMARK™ KM 674652

SAFETY First & Foremost

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

For details of site wide and general risks to be read in conjunction with these notes, refer to the following documents:

No specific SHE risks have been identified for the contents of this drawing.



KEY PLAN

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL MECHANICAL, ELECTRICAL, ARCHITECTURAL, INTERIOR DESIGNER & STRUCTURAL DRAWINGS, MECHANICAL EQUIPMENT SCHEDULES, CONTRACT DOCUMENTATION AND SPECIFICATION ASSOCIATED WITH THE WORKS AND DETAILS OF EQUIPMENT POSITIONS, AND PROPOSED WORKS BY OTHERS.
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4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED. UNDER NO CIRCUMSTANCES SHOULD DIMENSIONS BE SCALED FROM THIS DRAWING
5. INSTALL IN LINE WITH MANUFACTURERS GUIDANCE FOR DUCT, FITTINGS, EQUIPMENT, AND PLANT.
6. DUCTWORK MANUFACTURED AND INSTALLED IN ACCORDANCE WITH DW144
7. KITCHEN EXTRACT DUCTWORK MANUFACTURED AND INSTALLED IN ACCORDANCE WITH DW172
8. ALL KITCHEN EXTRACT DUCTWORK SUPPORTS ARE TO BE FIRE RATED
9. UNLESS STATED OTHERWISE IN THE SPECIFICATION, THE LEVEL OF CLEANLINESS SHALL BE IN LINE WITH HVCA TR/19 TABLE F2 - INTERMEDIATE PDI LEVEL
10. UNLESS STATED OTHERWISE IN THE SPECIFICATION, THE DUCTWORK CONTRACTOR SHALL INSTALL ACCESS DOORS FITTED IN ACCORDANCE WITH HVCA TR/19 TABLES 3, 4 AND 5. ALL ACCESS DOORS TO BE INSULATED TYPE
11. VCDS ARE INSTALLED ON ALL MAIN, SUB MAIN AND TERMINAL BRANCHES UNLESS DRAWING INDICATES SELF-BALANCED HEADER
12. ALL METAL DUCTWORK PENETRATIONS THROUGH A FIRE COMPARTMENT OF ANY RATING SHALL HAVE FIRE DAMPERS WHICH ARE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE AND COMPLETE WITH INSTALLATION FRAMES
13. ALL PLASTIC DUCTWORK PASSING THROUGH A FIRE COMPARTMENT OF ANY RATING SHALL HAVE AN INTUMESCENT BLOCK INSTALLED TO MEET THE SAME RATING WHICH SHALL BE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE
14. ALL FIRE DAMPERS HAVE VISUAL INDICATION STATUS
15. ALL RECTANGULAR DUCTWORK, AND CIRCULAR OVER 250 DIA SHALL HAVE MULTI-BLADE OBD TYPE VCDS
16. SUPPLY GRILLE FLEXIBLE CONNECTIONS ARE FULLY INSULATED AND OF THE ACOUSTIC FLEX TYPE (500MM MAX)
17. FREE ISSUE FILTER MEDIA IS INSTALLED BY THE DUCTWORK CONTRACTOR PRIOR TO PROJECT COMPLETION
18. THE DISHWASHER EXTRACT SYSTEM IS INSTALLED IN STAINLESS STEEL AS PER PROJECT SPECIFICATION
19. SLEEVES ARE INSTALLED THROUGH ALL WALLS
20. UNLESS STATED OTHERWISE IN THE SPECIFICATION, THE FOLLOWING MINIMUM SHALL APPLY TO DAMPER TESTING: 100% OF FIRE AND MOTORISED DAMPERS SHALL BE TESTED, WITH 50% OFFERED TO NGB AND 50% TO THE CLIENT/BUILDING CONTROL FINAL SIGN OFF
21. ALL DUCTWORK COMPONENTS SHALL BE INDEPENDENTLY SUPPORTED TO THE BUILDING STRUCTURE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS
22. DOOR UNDERCUTS SHALL BE 10MM UNLESS NOTED OTHERWISE
23. ALL EXTRACT BELLMOUTHS TO INCLUDE WIRE MESH ON INTAKE TOP PREVENT DEBRIS ENTERING THE SYSTEM

LEGEND:

VCD	VOLUME CONTROL DAMPER
FD	FIRE DAMPER
IC	INTUMESCENT COLLAR
ATT	ATTENUATOR
CTA	CROSSTALK ATTENUATOR
VAV	VARIABLE AIR VOLUME BOX
CAV	CONSTANT AIR VOLUME BOX
FG	FLOOR GRILLE
SG	SUPPLY GRILLE
EG	EXTRACT GRILLE
EL	EXHAUST LOUVRE
FCU	FAN COIL UNIT
GEA	GENERAL EXTRACT
GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
SMX	SMOKE EXTRACT
DEA	DIRTY EXTRACT
FFL	FINISHED FLOOR LEVEL
AFFL	ABOVE FINISHED FLOOR LEVEL
CL	CENTRE LINE
IL	INVERT LEVEL
FA	FROM ABOVE
TB	TO BELOW
FB	FROM BELOW
RTA	RISE TO ABOVE
LL	LOW LEVEL
HL	HIGH LEVEL
RTHL	RISE TO HIGH LEVEL

FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C02	Comments Incorporated	23/11/22
C01	Construction Issue	24/06/22
P04	Comments Incorporated	23/03/22
P03	Comments Incorporated	17/02/22
P02	Comments Incorporated	16/12/21
P01	Preliminary Issue	27/09/21

NG Bailey
6th Floor, 5 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 0171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering, 99 Oxford RD, Manchester, M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation Fourth Floor Sheet 4 of 4

Issue Date: 23/11/22

Status: A1 - Approved & Accepted

Scale: 1 : 50

Sheet Size: A0

Rev: C02

Drawing No. 1338B-NGB-NB-04-DR-M-570004

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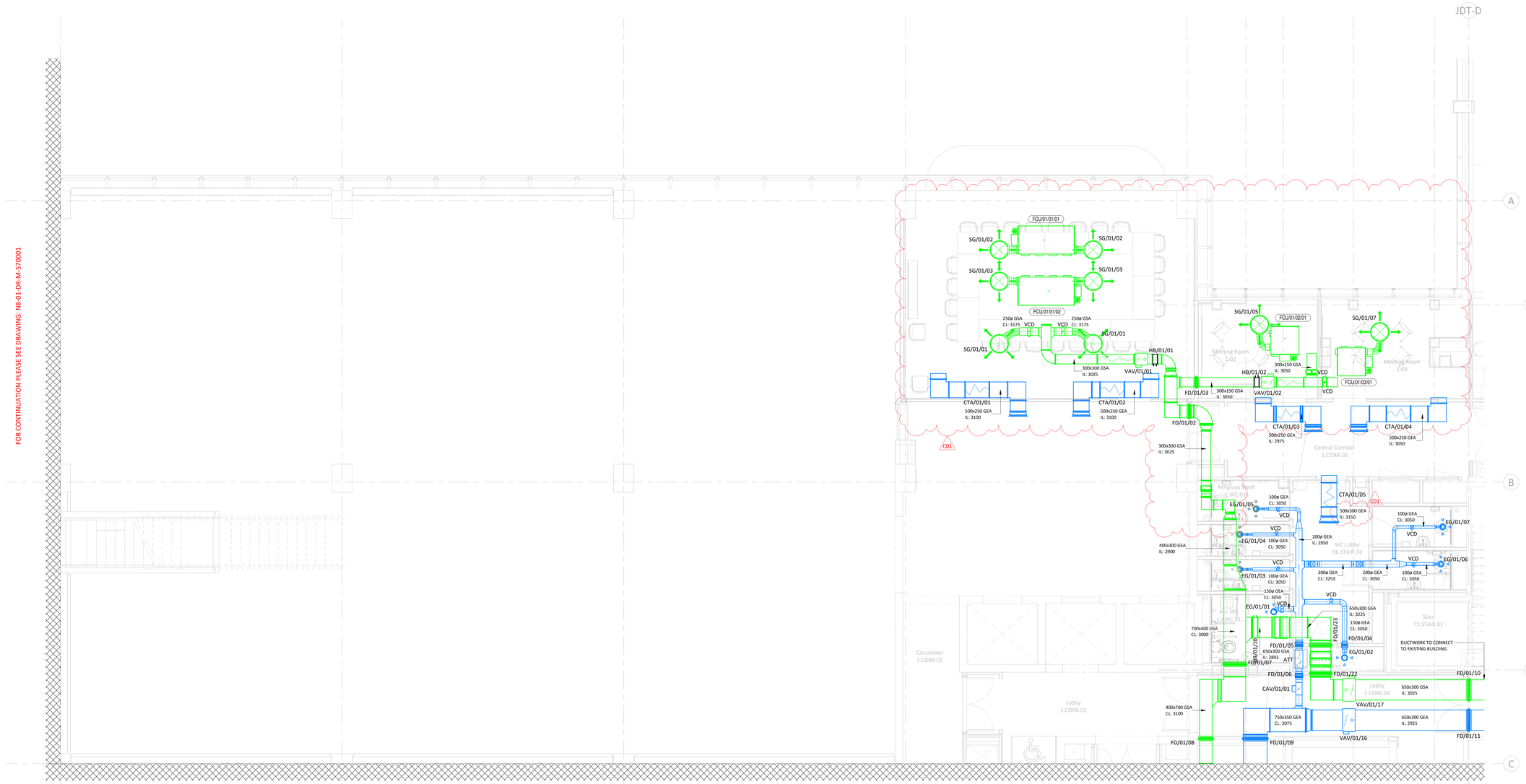
Rev: C01

Project No: 1338B-NGB-NB-01-DR-M-570002

Plotted: 08/06/2022 - 09:11 Plotted By: Jason Parker (NBA) Drawing File Name: P:\Projects\1338B - MMU Science & Engineering\Revit\1338B-NGB-NB-01-DR-M-570002.rvt

FOR CONTINUATION PLEASE SEE DRAWING: NB-01-DR-M-570001



FOR CONTINUATION PLEASE SEE DRAWING: NB-01-DR-M-570004

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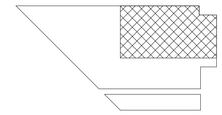

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SG	SUPPLY GRILLE
EG	EXTRACT GRILLE
EL	EXHAUST LOUVRE
FCU	FAN COIL UNIT
GEA	GENERAL EXTRACT
GSA	GENERAL SUPPLY
EXH	EXHAUST AIR
FAI	FRESH AIR INTAKE
FEA	FUME EXTRACT
KEA	KITCHEN EXTRACT
KSA	KITCHEN SUPPLY
SMX	SMOKE EXTRACT
DEA	DIRTY EXTRACT
FFL	FINISHED FLOOR LEVEL
AFFL	ABOVE FINISHED FLOOR LEVEL
CL	CENTRE LINE
IL	INVERT LEVEL
FA	FROM ABOVE
TB	TO BELOW
FB	FROM BELOW
RTA	RISE TO ABOVE
LL	LOW LEVEL
HL	HIGH LEVEL
RTHL	RISE TO HIGH LEVEL

FIRE RATED DUCTWORK

UNDERFLOOR DUCTWORK

Rev	Description	Date
C01	Construction Issue	01/06/22
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NG Bailey

6th Floor, 3 Exchange Quay, Salford, M5 3EF.
Tel: 0161 872 2171

Client: Manchester Metropolitan University

Contract: MMU Science & Engineering
99 Oxford RD
Manchester
M1 7EL

Design Manager: NGB

Checked By: J Bejsiuk

Drawn By: J Parker

Title: Ventilation First Floor Sheet 2 of 4

Issue Date: 08/06/22

Status	Scale	Sheet Size	Rev.
A1 - Approved & Accepted	1 : 50	A0	C01

Drawing No: 1338B-NGB-NB-01-DR-M-570002

Project Originator Volume Level Type Role Number
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