

P23012 Wingates Plot 3

Drawing Register: GAC

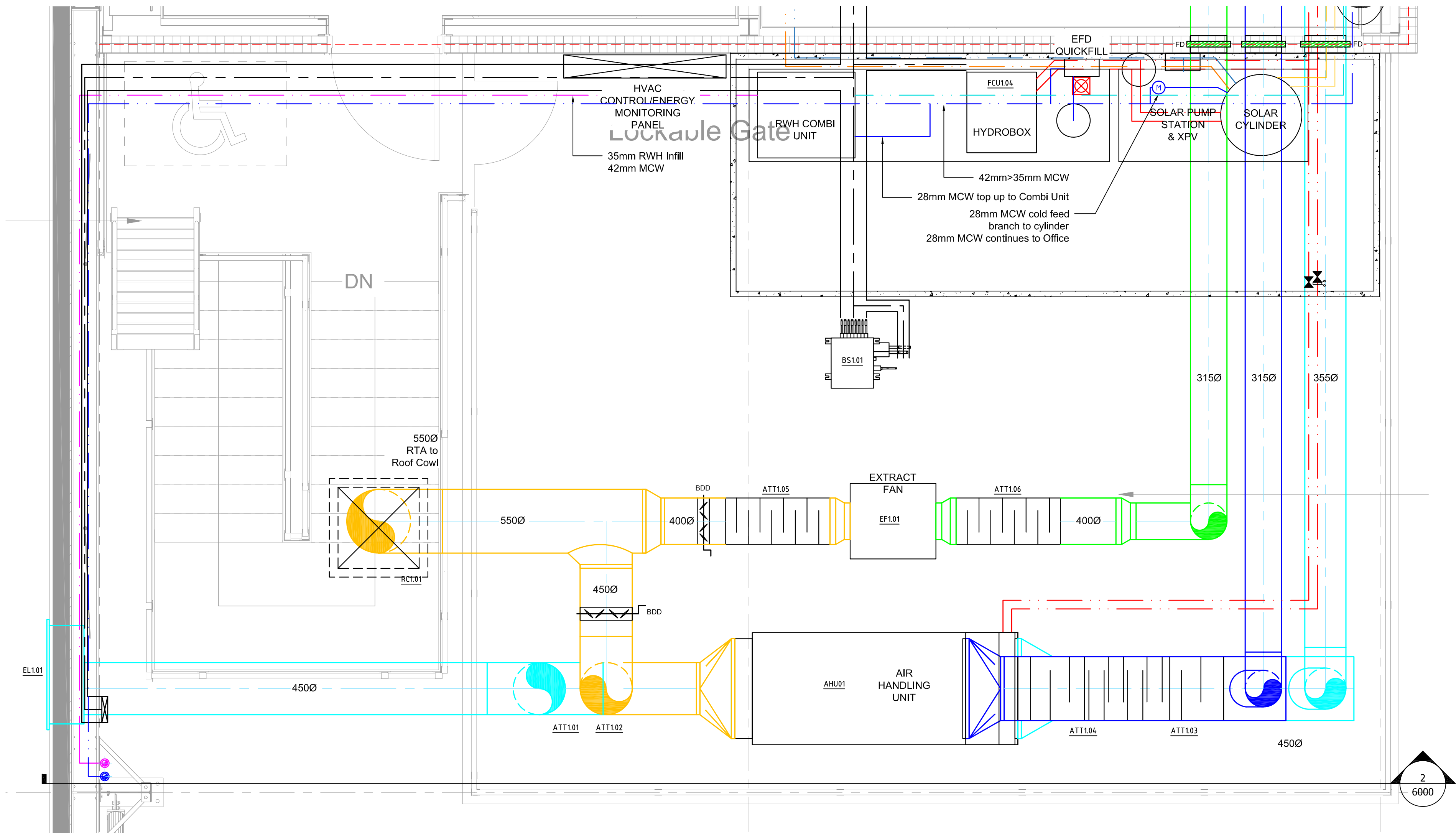
*Please note: All drawings listed below are hyperlinked to the drawings listed.
Please click on the drawing title to go directly to the drawing of your choice.*

Works Completed:

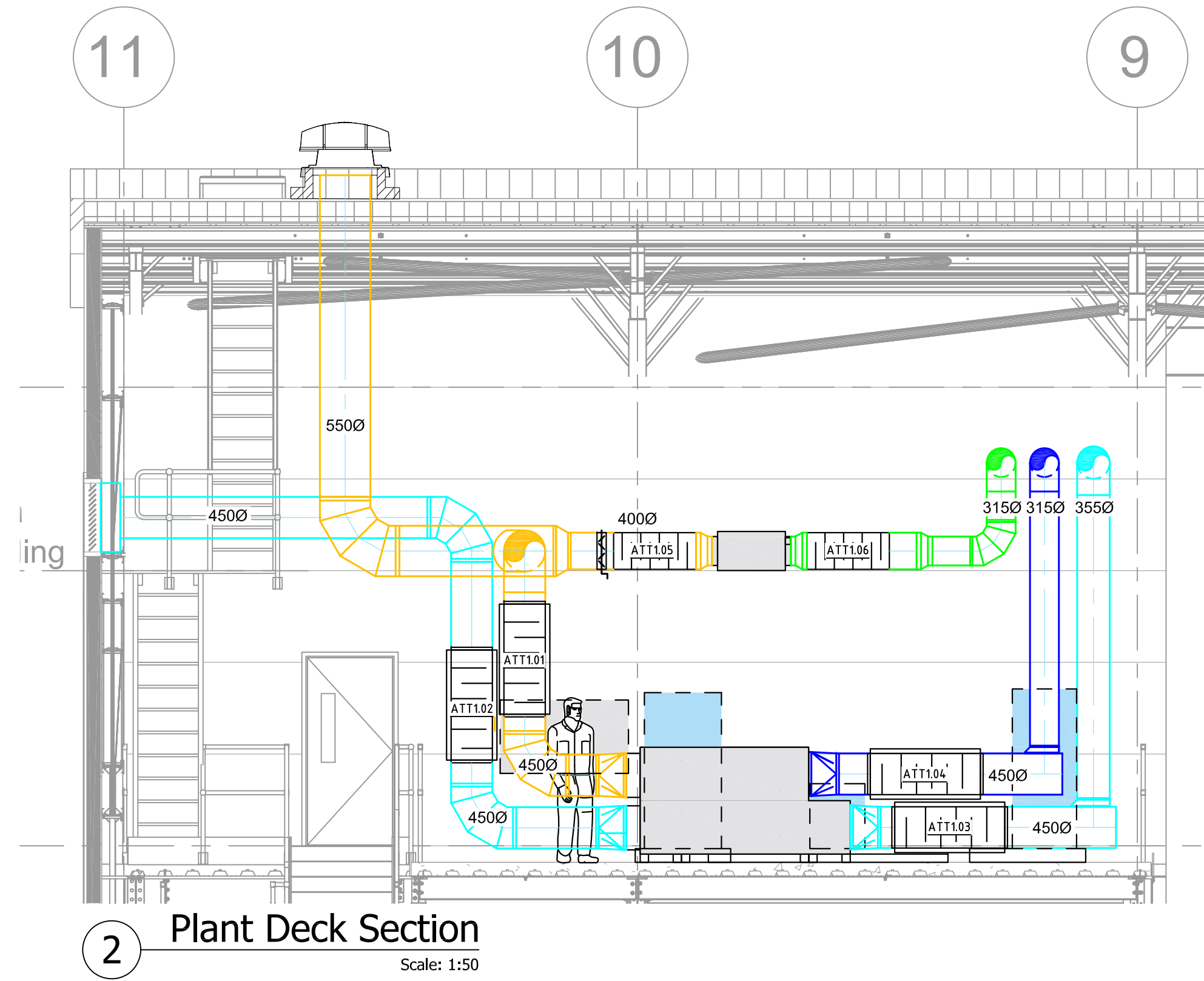
Mechanical Works

Drawing No.	Drawing Title	Rev
P23012-GAC-BR-XX-DR-M-6000	Mechanical Services Layout Plant Deck	A1
P23012-GAC-BR-ZZ-DR-M-1000	LTHW Heating Ground & First Floor Main Office	A1
P23012-GAC-BR-ZZ-DR-M-2000	Domestic Water Services Ground & First Floor Main Office	A1
P23012-GAC-BR-ZZ-DR-M-3000	Air Conditioning & Ventilation Ground & First Floor Main Office	A1
P23012-GAC-BR-ZZ-DR-M-4000	Above Ground Drainage Ground & First Floor Main Office	A1
P23012-GAC-EX-XX-DR-M-7000	External Services	A1
P23012-GAC-XX-XX-DR-M-9000	Domestic Water Services Schematic	A1

Ref	AHU01
Location	Plant Deck
Supply Section	Yes
Max Flow (m³/s)	0.472 (+0.336 future)
Pressure (Pa)	150
Extract Section	Yes
Max Flow (m³/s)	0.336 (+0.336 future)
Pressure (Pa)	170
Recuperator	Yes - Thermal Wheel
Efficiency (min)	77
Heating Section	Yes
Water Flow	55°C
Water Return	49°C
Air on	13.8°C
Air off	18.3°C
Output	4.40 kW
Actual SFP	1.37
Electrical Details	
Phase	3Ø
Motor Rating	4.3 kW
Motor FLC	13 A
Dimensions	
Length	2290 mm
Width	967 mm
Height	1254 mm
Weight	403 kg
Accessories	Co2 Sensor



1 Plant Deck Plan
Scale: 1:25



2 Plant Deck Section
Scale: 1:50

- NOTES:
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AI	As Installed	JSH	13.05.24
Rev:	Amendments	By	Date

Drawing Status:	External References:
As Installed	

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Building Services Engineers

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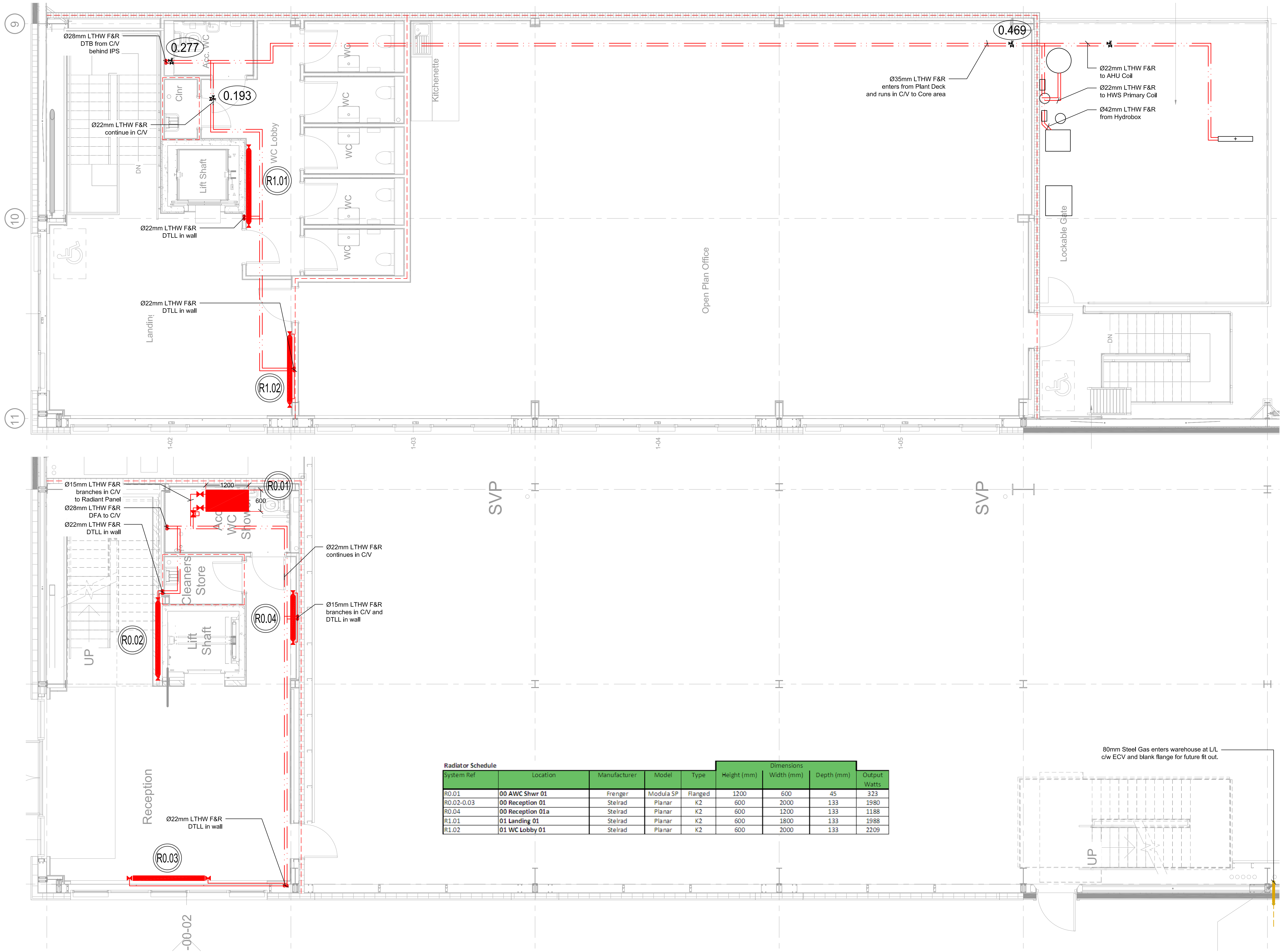
Client:

winvic

Project:
Unit 3 Wingates Bolton
Great Bank Road
Westhoughton, Bolton
BL5 3XN

Title:
Mechanical Services Layout
Plant Deck

Drawn By: JSH	Engineer: DPM	Rec Copy Chk: -
Primary Scale: Varies	Size: A1	Date Created: May 2024
Drawing Number: P23012-GAC-BR-XX-DR-M-6000	Revised: AI	



Radiator Schedule								
System Ref	Location	Manufacturer	Model	Type	Dimensions			Output Watts
					Height (mm)	Width (mm)	Depth (mm)	
R0.01	00 AWC Shwr 01	Frenger	Modula SP	Flanged	1200	600	45	323
R0.02-0.03	00 Reception 01	Stelrad	Planar	K2	600	2000	133	1980
R0.04	00 Reception 01a	Stelrad	Planar	K2	600	1200	133	1188
R1.01	01 Landing 01	Stelrad	Planar	K2	600	1800	133	1988
R1.02	01 WC Lobby 01	Stelrad	Planar	K2	600	2000	133	2209

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Legend

- Radiator
- Commissioning Valve
- Isolating Valve
- Flow Rate (litres / sec)
- Radiator Reference No.
- Pipework at Low Level
- Pipework in Floor Void
- Pipework in False Ceiling
- Pipework at High Level
- Rise or Drop

- Notes:-
- Pipework to be copper with Xpress type fittings
 - Drain cocks to be installed at all low points, air vents to be installed at all high points
 - Radiators to be Stelrad Planar flat faced, except disabled which are to be low surface temperature
 - All radiators to have thermostatic valves
 - Pipework to be concealed in walls wherever possible

AI	As Installed	JSH	29.04.24
Rev:	Amendments	By	Date

Drawing Status: As Installed External References:

GAC
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Client: **winvic**

Project:
Unit 3 Wingates Bolton
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BL5 3XN

Title:
**LTHW Heating
Ground & First Floor
Main Office**

Drawn By: JSH	Engineer: DPM	Rec Copy Chk: -
Primary Scale: 1:50	Size: A1	Date Created: Apr 2024
Drawing Number: P23012-GAC-BR-ZZ-DR-M-1000	Revison: AI	

NOTES:

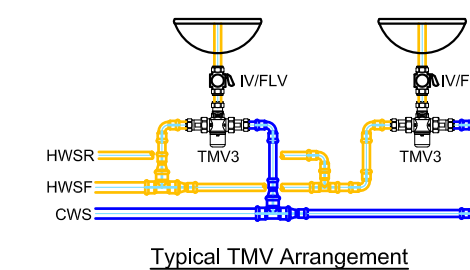
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Legend

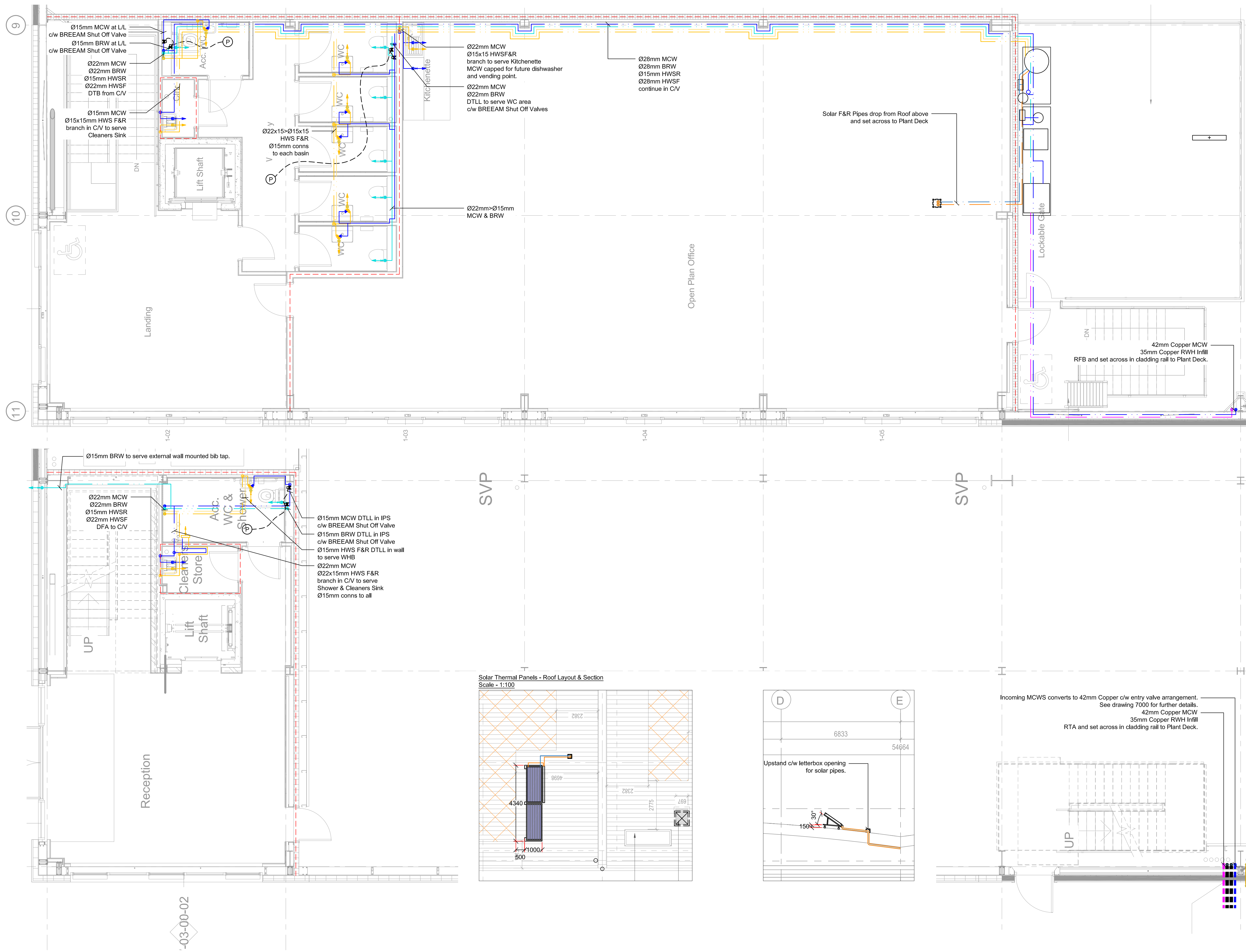
- Draw-off Point
- Blender
- Shower
- PIR Solenoid
- Low Level
- Under Floor
- High Level
- Ceiling Void
- HWSF
- HWSR
- MCW
- BRW
- Hot Water Flow
- Hot Water Return
- Mains Cold Water
- Boosted Rainwater

Notes:-

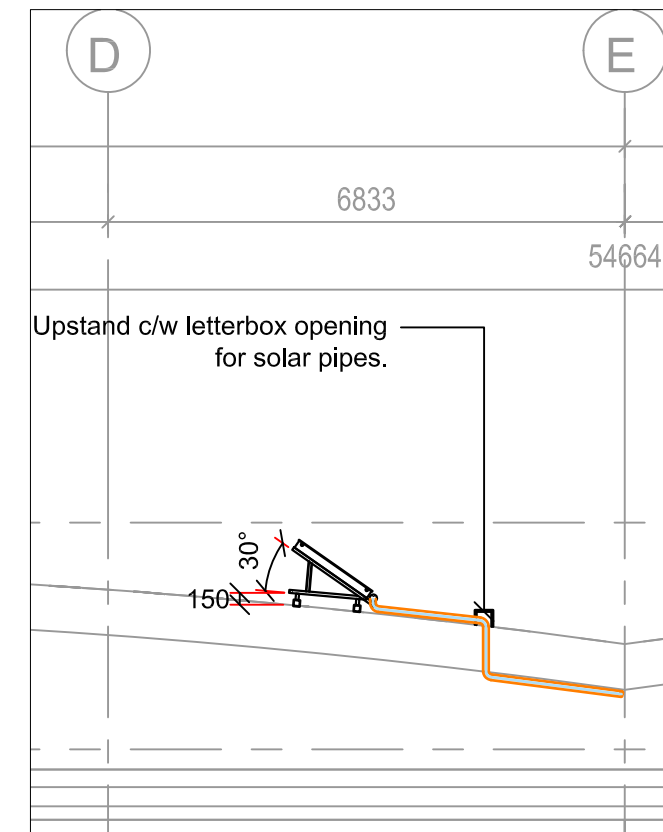
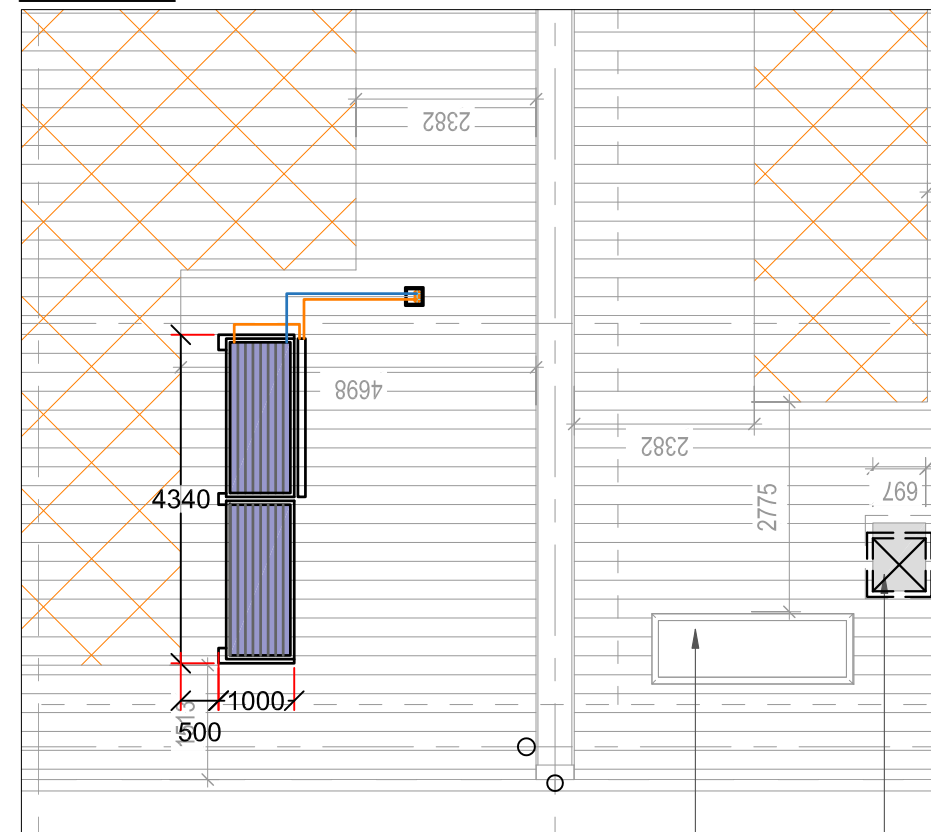
1. Pipework to be copper with pressfit fittings
2. 1/4 turn valve and flow regulator to all basins
3. 1/4 turn valve to all other appliances drain cocks at low level
4. All pipework to be concealed in walls where possible, with isolation valve at the top of each dropper. Exposed pipework to be chrome plated.



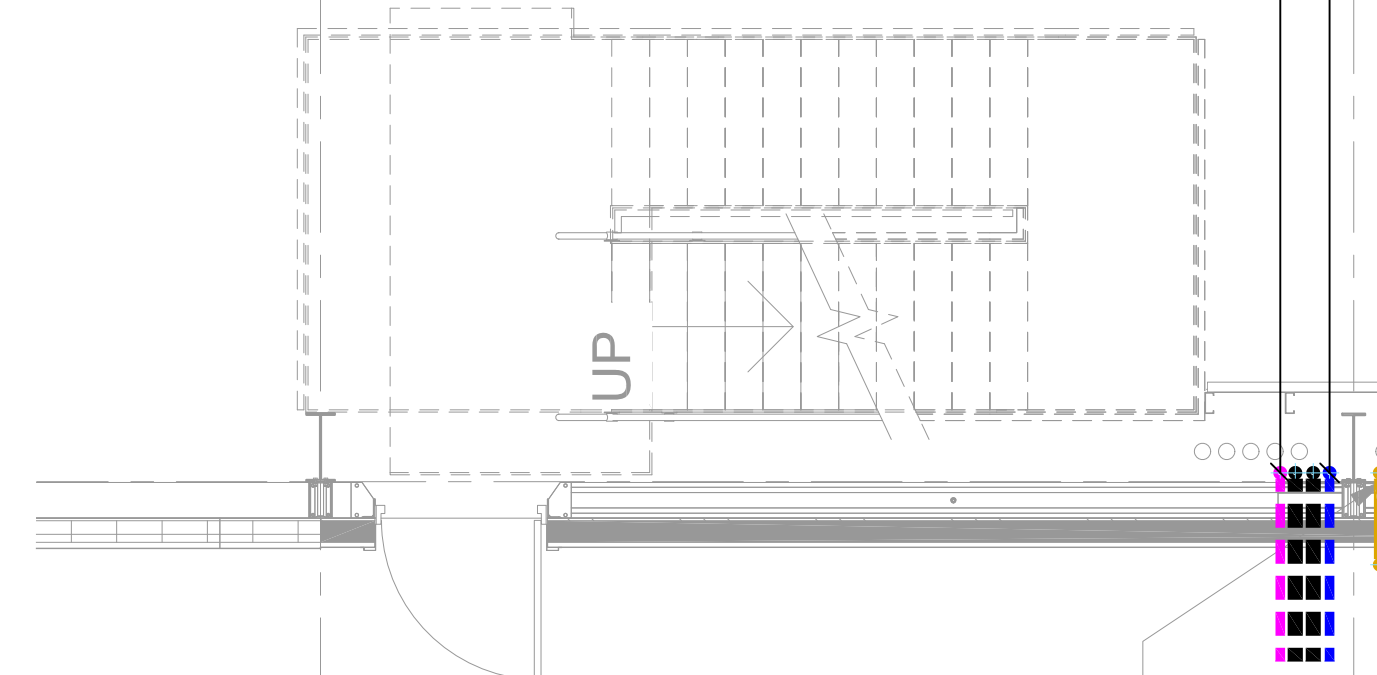
Typical TMV Arrangement



Solar Thermal Panels - Roof Layout & Section
Scale - 1:100



Incoming MCWS converts to 42mm Copper c/w entry valve arrangement.
See drawing 7000 for further details.
42mm Copper MCW
35mm Copper RWH Infill
RTA and set across in cladding rail to Plant Deck.



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Rev:	Amendments	By	Date

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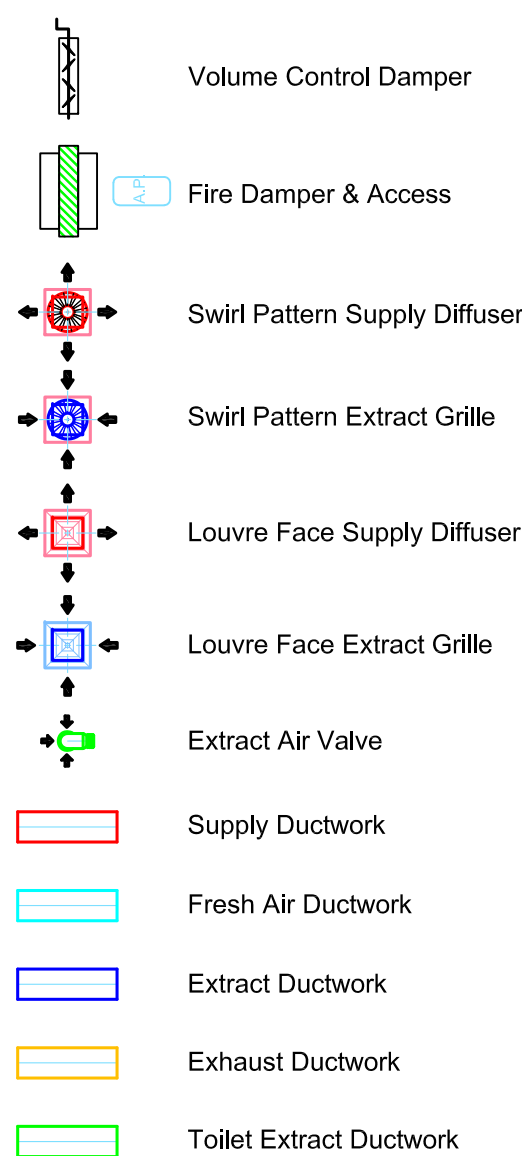
Title:
Domestic Water Services
Ground & First Floor
Main Office

Drawn By: JSH	Engineer: DPM	Rec Copy Chk: -
Primary Scale: 1:50	Size: A1	Date Created: Apr 2024
Drawing Number: P23012-GAC-BR-ZZ-DR-M-2000	Revised: AI	

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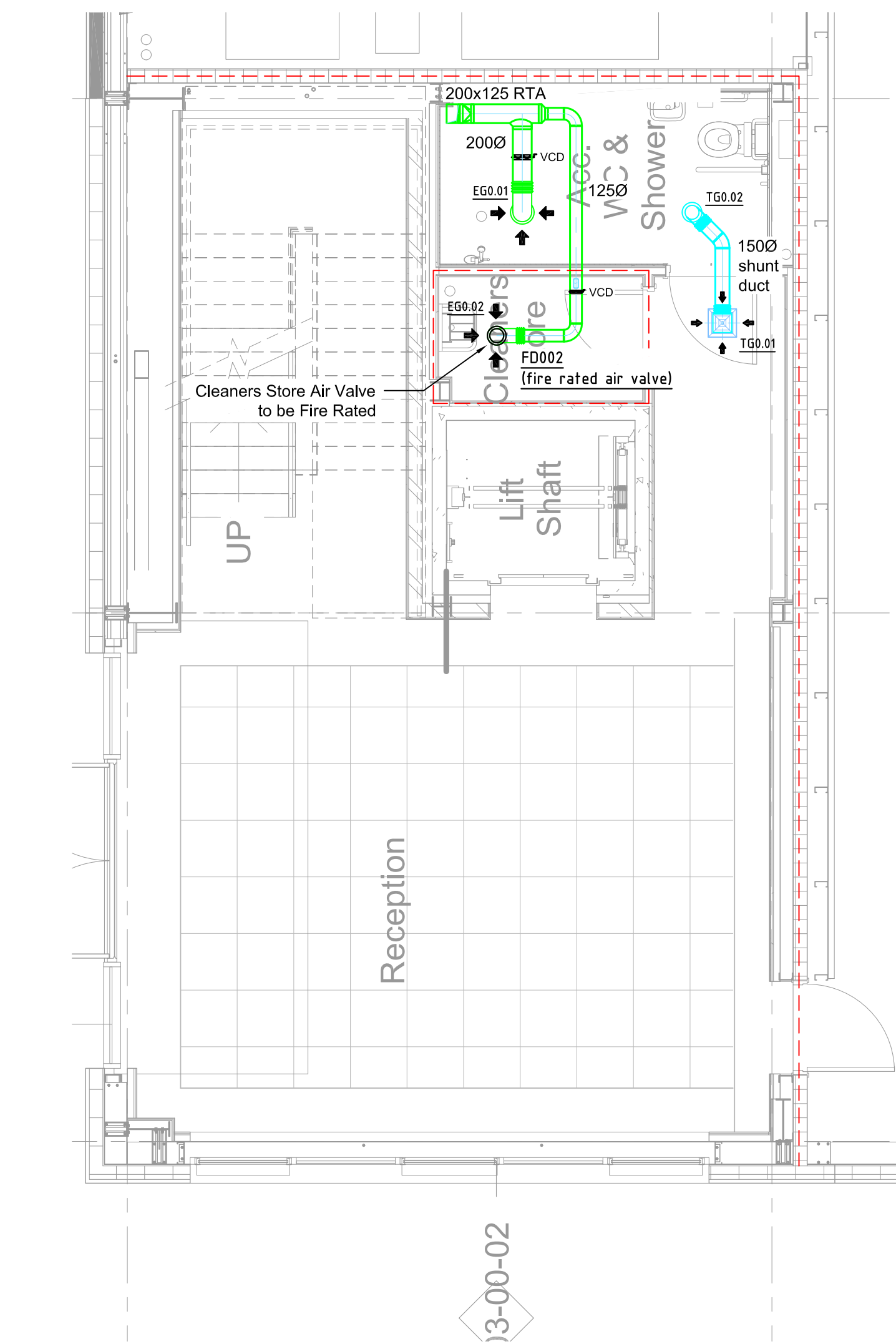
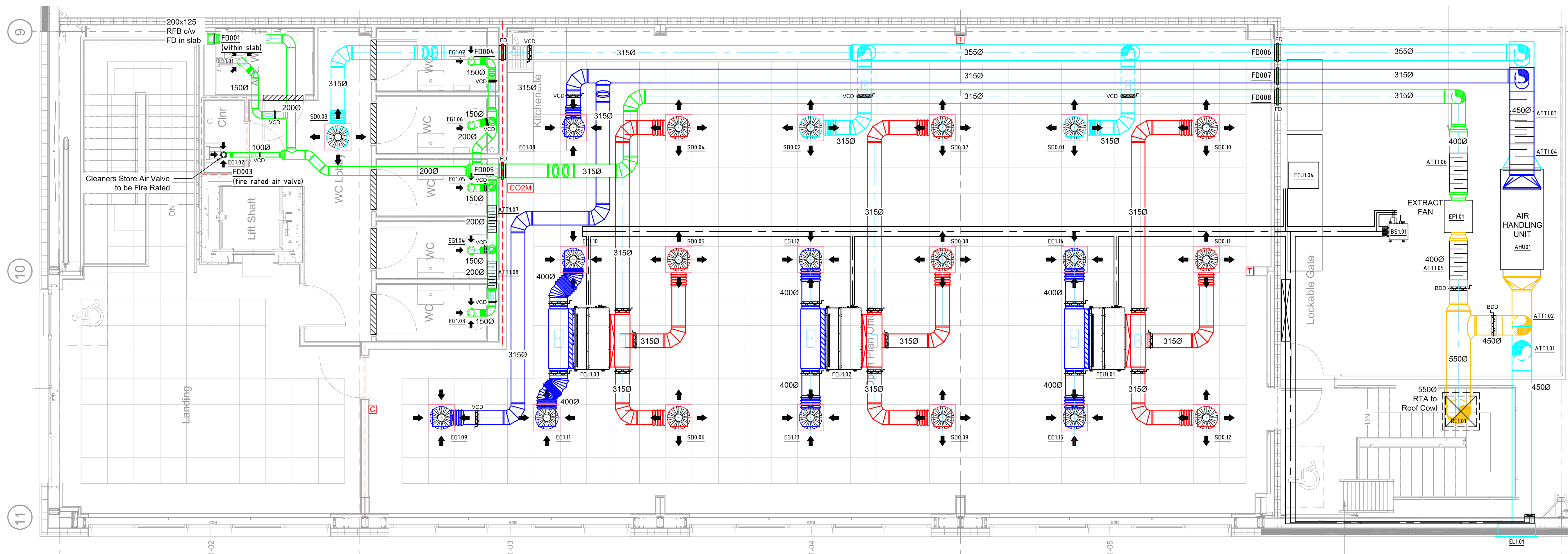
Ductwork Legend



DUCTWORK TO BE DW144

ALL TOILET DOORS TO BE UNDERCUT
ARE MARKED WITH

CO2M Standalone CO2 Monitor



Supply Diffuser Schedule

System Ref	Room NR	Neck Size W (mm)	Neck Size H (mm)	Duct Velocity m/s	Flow l/s	Throw @ 0.5 m/s	Pressure Drop Pa	Noise NR	Model
Ground Floor									
TG0.01	40	225	225	2.15	38	-	≤ 10	≤ 20 dBA	Louvre Faced
TG0.02	40	150	N/A	2.15	38	≥ 1.0	≤ 15	≤ 20 dBA	Air Valve
First Floor									
SD1.01	38	595	595	2.16	168	≥ 2.0	≤ 13	≤ 26 dBA	48 Vane Swirl
SD1.02	38	595	595	2.16	168	≥ 2.0	≤ 13	≤ 26 dBA	48 Vane Swirl
SD1.03	38	595	595	1.75	136	≥ 1.9	≤ 7	≤ 20 dBA	48 Vane Swirl
SD1.04	38	595	595	2.28	178	≥ 2.1	≤ 15	≤ 28 dBA	48 Vane Swirl
SD1.05	38	595	595	2.28	178	≥ 2.1	≤ 15	≤ 28 dBA	48 Vane Swirl
SD1.06	38	595	595	2.28	178	≥ 2.1	≤ 15	≤ 28 dBA	48 Vane Swirl
SD1.07	38	595	595	2.28	178	≥ 2.1	≤ 15	≤ 28 dBA	48 Vane Swirl
SD1.08	38	595	595	2.28	178	≥ 2.1	≤ 15	≤ 28 dBA	48 Vane Swirl
SD1.09	38	595	595	2.28	178	≥ 2.1	≤ 15	≤ 28 dBA	48 Vane Swirl
SD1.10	38	595	595	2.28	178	≥ 2.1	≤ 15	≤ 28 dBA	48 Vane Swirl
SD1.11	38	595	595	2.28	178	≥ 2.1	≤ 15	≤ 28 dBA	48 Vane Swirl
SD1.12	38	595	595	2.28	178	≥ 2.1	≤ 15	≤ 28 dBA	48 Vane Swirl

Extract Grille Schedule

Grille Ref	Room NR	Neck Size W (mm)	Neck Size H (mm)	Duct Velocity m/s	Flow l/s	Pressure Drop Pa	Noise NR	Model
Ground Floor								
EG0.01	40	200	N/A	1.53	48	≤ 7	≤ 22 dBA	Air Valve
EG0.02	40	125	N/A	1.79	22	≤ 11	≤ 20 dBA	Air Valve
First Floor								
EG1.01	40	150	N/A	1.58	28	≤ 11	≤ 20 dBA	Air Valve
EG1.02	40	100	N/A	1.66	13	≤ 9	≤ 25 dBA	Air Valve
EG1.03	40	150	N/A	1.64	29	≤ 11	≤ 20 dBA	Air Valve
EG1.04	40	150	N/A	1.58	28	≤ 11	≤ 20 dBA	Air Valve
EG1.05	40	150	N/A	1.58	28	≤ 11	≤ 20 dBA	Air Valve
EG1.06	40	150	N/A	1.58	28	≤ 11	≤ 20 dBA	Air Valve
EG1.07	40	150	N/A	1.64	29	≤ 11	≤ 20 dBA	Air Valve
EG1.08	38	595	595	2.16	168	≤ 18	≤ 20 dBA	48 Vane Swirl
EG1.09	38	595	595	2.16	168	≤ 18	≤ 20 dBA	48 Vane Swirl
EG1.10	38	595	595	2.13	267	≤ 33	≤ 28 dBA	48 Vane Swirl
EG1.11	38	595	595	2.13	267	≤ 33	≤ 28 dBA	48 Vane Swirl
EG1.12	38	595	595	2.13	267	≤ 33	≤ 28 dBA	48 Vane Swirl
EG1.13	38	595	595	2.13	267	≤ 33	≤ 28 dBA	48 Vane Swirl
EG1.14	38	595	595	2.13	267	≤ 33	≤ 28 dBA	48 Vane Swirl
EG1.15	38	595	595	2.13	267	≤ 33	≤ 28 dBA	48 Vane Swirl

Attenuator Schedule

Ref	Location	Room NR	System	System Placement	Air Volume (m³/s)	Manufacturer	Attenuator Size (mm)
							Width Height Length
ATT1.01	Plant Deck	65	AHU01	Intake	0.472	Calce	450 dia 1200
ATT1.02	Plant Deck	38	AHU01	Exhaust	0.336	Calce	450 dia 1200
ATT1.03	Plant Deck	38	AHU01	Supply	0.472	Calce	450 dia 1200
ATT1.04	Plant Deck	50	AHU01	Extract	0.336	Calce	450 dia 1200
ATT1.05	Plant Deck	65	EF1.01	Exhaust	0.433	Calce	400 dia 900
ATT1.06	Plant Deck	40	EF1.01	Extract	0.433	Calce	400 dia 900
ATT1.07	01 WC 01	40	EF1.01	Cross Talk	0.056	Calce	200 dia 615
ATT1.08	01 WC 02	40	EF1.01	Cross Talk	0.028	Calce	200 dia 615

Fan Schedule

System Ref	Location	Description	Supply on Extract	Type	Flow Rate l/s	Resistance Pa	Manufacturer	Model Ref	Electrical Phase	Power kW	Actual SFP	Control
EF1.01	Plant Deck	Toilet Fan	Extract	Twin Inline	434	105	Systemair	KV DUO 315 EC	1Φ	0.169	0.345	Timeclock

Louvre Schedule

System Ref	Location	Louvre Size (Neck)	Overall Free Area %	Overall Free Area m²	Flow Rate m³/s	Face Velocity m/s	Core Velocity m/s	Resistance Pa	Weight kg	RAL	Notes
		W (mm) H (mm)									
EL1.01	Warehouse	850 850	48.00%	0.35	0.808	1.118	2.330	11.27	16	TBC	Intake Air Louvre - By Others
RC1.01	Warehouse Roof	700 700	100.00%	0.49	1.106	2.257	2.257	25	15	TBC	Exhaust Air Roof Cowl - By GAC

Fan Coil Unit Schedule

System Ref	Location	Manufacturer	Model	Phase	Electrical			FCU Flow l/s	Cooling Information		Heating Information	
					Current Amps	Current Watts	Fuse Rating		Required S Load kW	FCU S Output kW	FCU Total Output kW	Required FCU Load kW
FCU1.01 - 1.03	01 Open Office 01	Daikin	FXSO100A	1Φ	2.2 A	506 W	5.0 A	533	5.658	7.200	9.000	3.321
FCU1.04	Plant Deck	Daikin	HXHD200A8	3Φ	12.5 A	8314 W	16.0 A	-	-	-	-	21.200
BS1.01	Plant Deck	Daikin	BS4Q14AV18	1Φ	0.4 A	92 W	15.0 A	-	-	-	-	-
OD001	External Compound	Daikin	REYQ14U	3Φ	27.0 A	17958 W	32.0 A	-	-	-	-	-

AI	As Installed	JSH	29/04/24
Rev:	Amendments	By	Date

Drawing Status:

External References:

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Client:



Project:
Unit 3 Wingates Bolton
Great Bank Road
Westhoughton, Bolton
BL5 3XN

Title:
Air Conditioning & Ventilation
Ground & First Floor
Main Office

Drawn By:
JSH

Engineer:

DPM

Rec Copy Chk:

-

Primary Scale:

1:50

Size:

A1

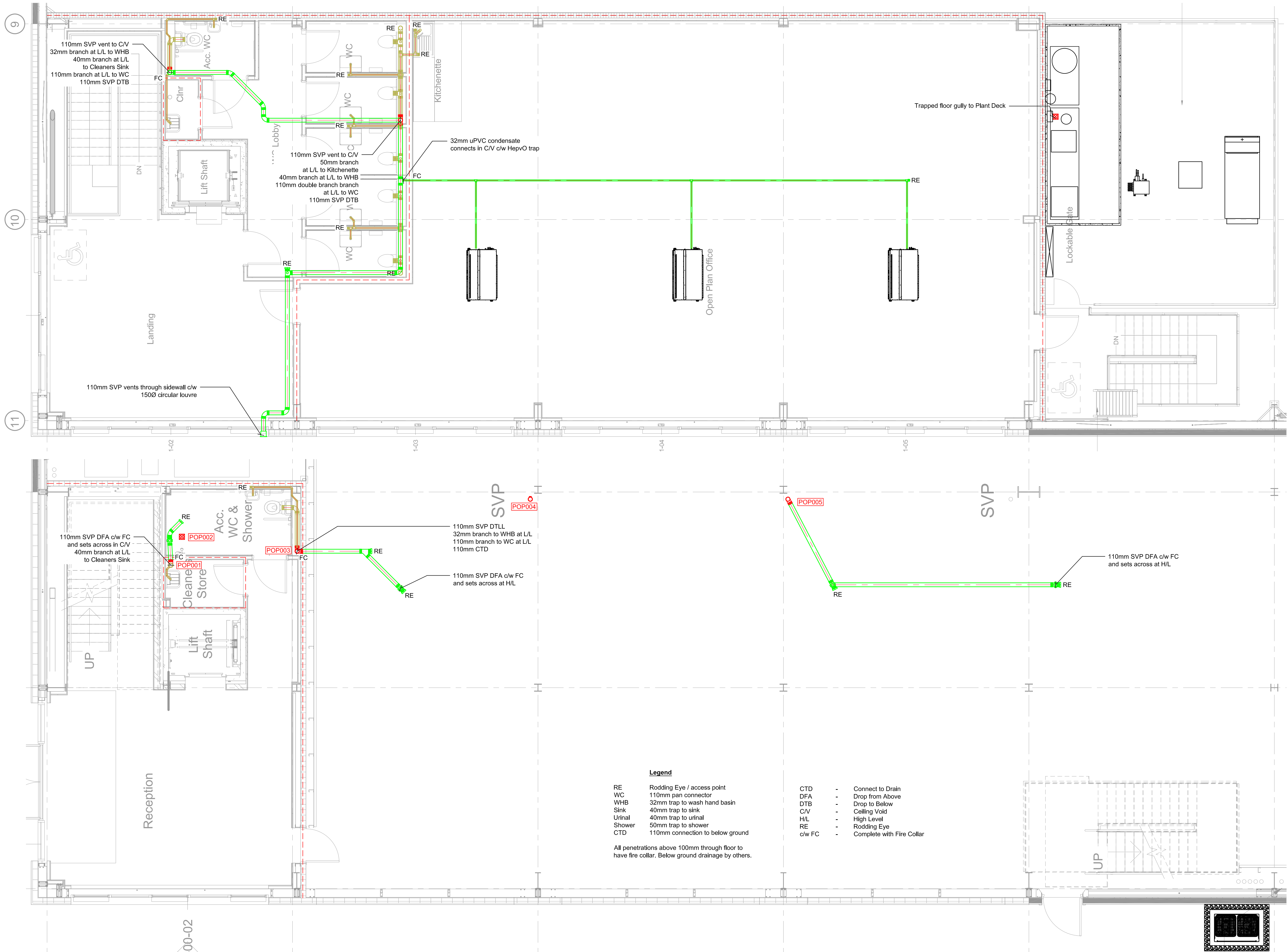
Date Created:

Apr 2024

Revison:

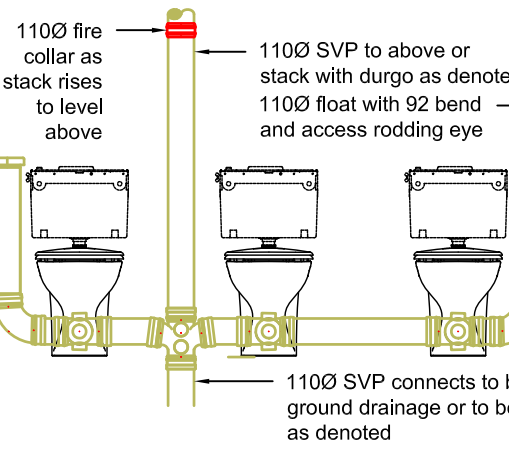
P23012-GAC-BR-ZZ-DR-M-3000

AI

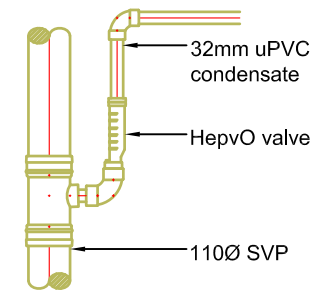


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Typical WC range



Standard HepvO valve detail

To be installed at high level within ceiling void or low level behind IPS - whichever suits site requirements.

Legend

- RE Rodding Eye / access point
- WC 110mm pan connector
- WHB 32mm trap to wash hand basin
- Sink 40mm trap to sink
- Urinal 40mm trap to urinal
- Shower 50mm trap to shower
- CTD 110mm connection to below ground

All penetrations above 100mm through floor to have fire collar. Below ground drainage by others.

- CTD - Connect to Drain
- DFA - Drop from Above
- DTB - Drop to Below
- C/V - Ceiling Void
- H/L - High Level
- RE - Rodding Eye
- c/w FC - Complete with Fire Collar

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Client: **winvic**

Project:
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Title:
**Above Ground Drainage
Ground & First Floor
Main Office**

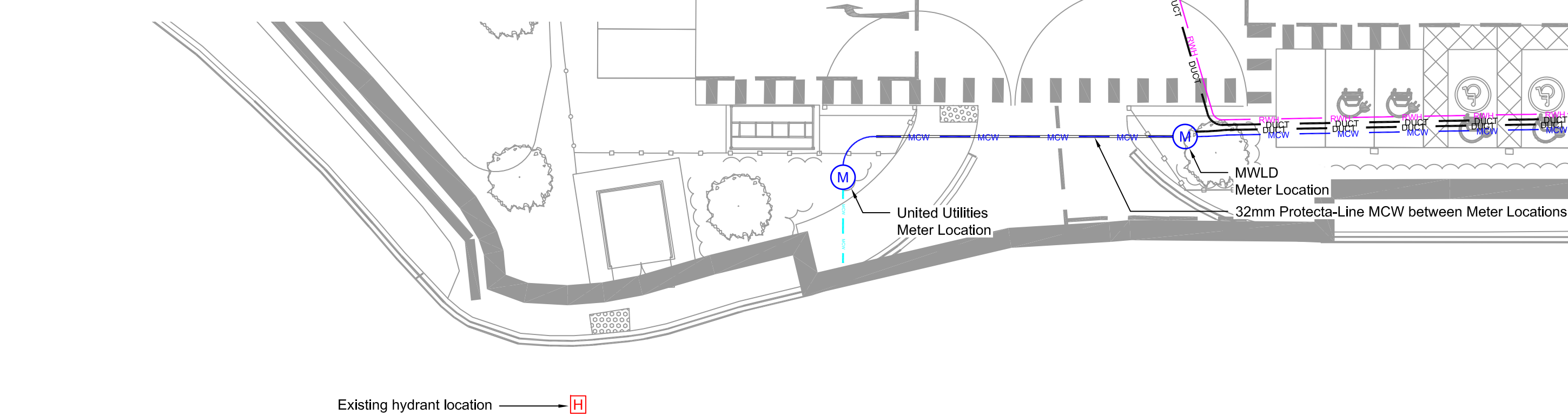
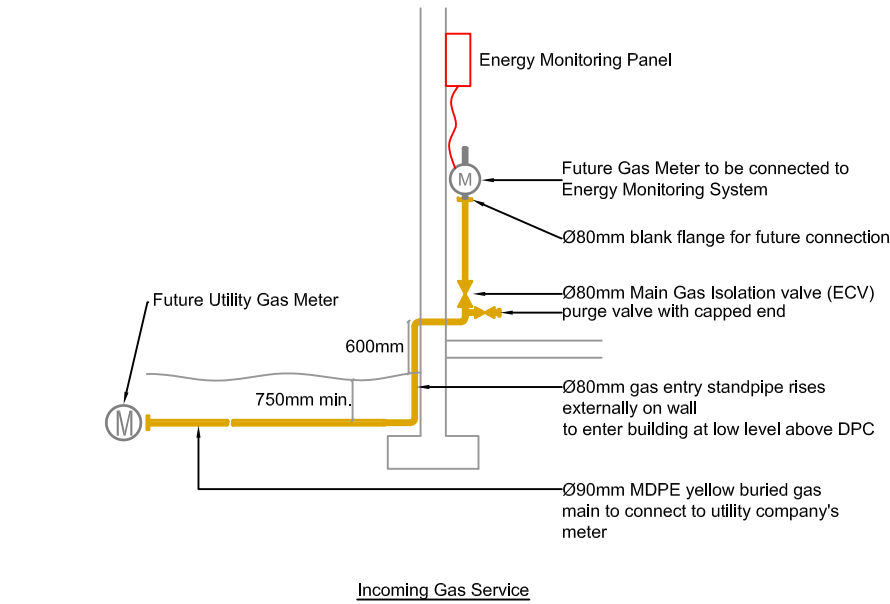
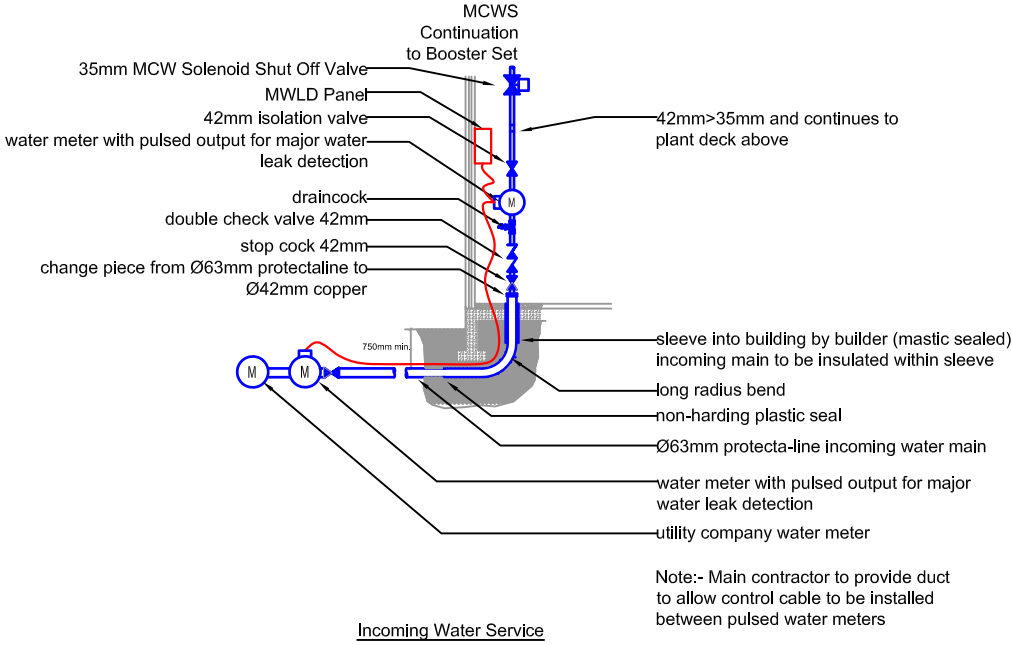
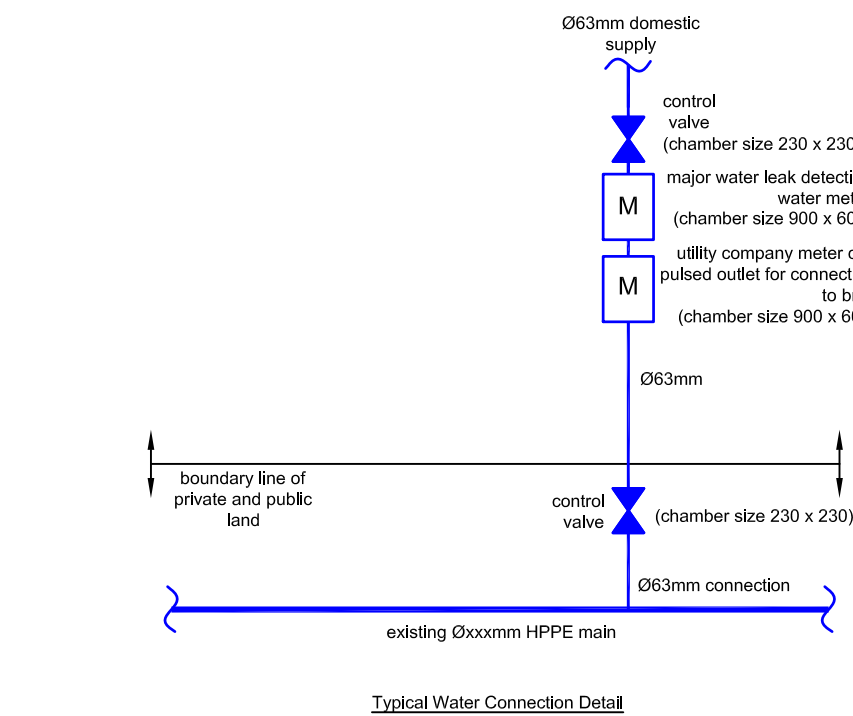
Drawn By:	Engineer:	Rec Copy Chk:
JSH	DPM	-

Primary Scale:	Size:	Date Created:
1:50	A1	Apr 2024

Drawing Number:	Revison:
P23012-GAC-BR-ZZ-DR-M-4000	AI

TABLE 1 - Recommended Colour Coding of Underground Utilities Apparatus
All depths are from the surface level to the crown of the apparatus

Utility	Duct	Pipe	Cable	Marker Systems	Recommended Footway/Verge	Minimum Depths Carriageway
Electricity HV (High Voltage)	Black or red duct or tile	N/A	Red or black	Yellow with black and red legend or concrete tiles	450-1200mm	750-1200mm
Electricity LV (Low Voltage)	Black or red duct or tile	N/A	Black or red	Yellow with black legend	450mm	600mm
Gas	Yellow	*** See row below		Black legend on PE pipes every linear metres	600mm footway 750mm verge	750mm
		*** PE - up to 2 bar - yellow or yellow with brown stripes (removable skin revealing white or black core pipe). - between 2 to 7 bar - orange. Steel pipes may have yellow wrap or black tar coating or no coating. Ductile iron may have plastic wrapping. Asbestos & Pl. Spun Cast iron No distinguishable colour				
Water non Potable & Grey Water	N/A	Black with green stripes	N/A	N/A	600 - 750mm	600 - 750mm
Water - Firefighting	N/A	Black with red stripes or bands	N/A	N/A	600 - 750mm	600 - 750mm
Oil / Fuel pipelines	N/A	Black	N/A	Various surface markers Marker tape or tiles above red concrete	900mm <i>All work within 3 metres of oil fuel pipelines must receive prior approval</i>	900mm <i>All work within 3 metres of oil fuel pipelines must receive prior approval</i>
Sewerage	Black	No distinguishing colour / material (eg Ductile iron may be red; PVC may be brown)	N/A	N/A	Variable	Variable
Communications	Grey, white, green, Black, Purple	N/A	Black or light grey	Various	250 - 350mm	450 - 600mm
Water	Blue or Grey	Blue polymer or blue or uncoated iron / GRP. Blue polymer with brown stripes (removable skin revealing white or black pipe)	N/A	Blue or Blue/black	750mm	750mm minimum
Water pipes for special purposes (e.g. contaminated ground)	N/A	Blue polymer with brown stripes (non-removable skin)	N/A	Blue or blue/black	750mm	750mm minimum



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- UTILITY COMPANY WATER PIPE (BY OTHERS)
- MAINS COLD WATER SDR11 PROTECTA-LINE BARRIER PIPE
- HARVESTED RAINWATER SDR11 BLACK/GREEN MDPE PIPE
- 100mm DUCT BY OTHERS
- GAS SDR21 YELLOW MDPE PIPE
- METER
- ISOLATING VALVE
- NON-RETURN VALVE
- EXTERNAL BIB TAP
- EXISTING TYPE 2 HYDRANT

ALL EXTERNAL COLD WATER PIPE TO BE WRAPPED IN SPIRAL WRAP MARKER TAPE IN ACCORDANCE WITH UNITED UTILITIES GUIDANCE & BS1710.

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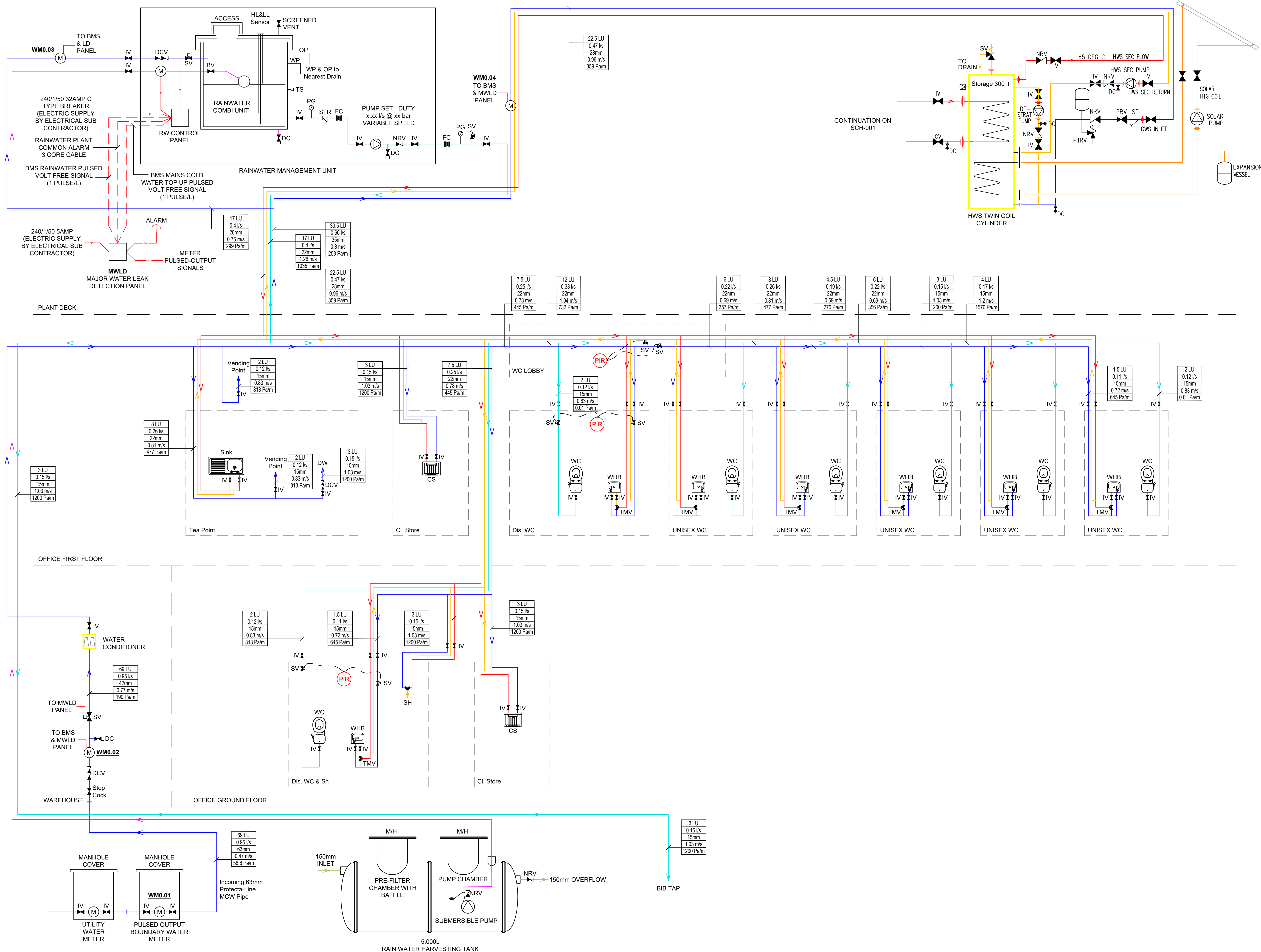
winvic

Project:
Unit 3 Wingates Bolton
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Title:
External Services

Drawn By: JSH	Engineer: DPM	Rec Copy Chk: -
Primary Scale: 1:200	Size: A1	Date Created: Apr 2024
Drawing Number: P23012-GAC-EX-XX-DR-M-7000	Revised:	

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Client: **winvic**

Project: Unit 3 Wingates Bolton
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Title: Domestic Water Services Schematic

Drawn By: JSH	Engineer: DPM	Rec Copy Chk: -
Primary Scale: NTS	Size: A1	Date Created: May 2024
Drawing Number: P23012-GAC-XX-XX-DR-M-9000	Revision: AI	