COLT LON4

Planning condition 12 – Living Walls and Roofs

Section 1: Living roof

A0 - Do not scale

1 Level 00
1 : 500

Department Legend

- Ancillary
- Colt Office Area
- Circulation
- Plant
- Gantry
- Gantry MEP Rooms
- Loading Bay
- Office
- Fallow Space
- Storage
- Switch Room
- Toilets
- Calculating...

2 Level 01
1 : 500

Department Legend

- Ancillary
- Client Office Area
- Circulation
- Plant
- Gantry
- Fallow Space
- Storage
- Switch Room
- Terrace
- Toilets
- Calculating...

80_Department Schedule	
Department	Area
01_Level 00	
Ancillary	3 m²
Circulation	857 m²
Colt Office Area	147 m²
Fallow Space	1254 m²
Gantry	904 m²
Gantry MEP Rooms	106 m²
Loading Bay	307 m²
Office	270 m²
Plant	1085 m²
Storage	276 m²
Switch Room	8 m²
Toilets	45 m²
	5261 m²
01_Level 01	
Ancillary	8 m²
Circulation	244 m²
Client Office Area	377 m²
Fallow Space	3036 m²
Gantry	1310 m²
Plant	68 m²
Storage	218 m²
Switch Room	15 m²
Terrace	114 m²
Toilets	24 m²
	5413 m²
01_Level 02	
Ancillary	3 m²
Circulation	249 m²
Client Office Area	376 m²
Fallow Space	3033 m²
Gantry	1309 m²
Plant	68 m²
Storage	218 m²
Switch Room	15 m²
Toilets	24 m²
	5295 m²

80_Department Schedule	
Department	Area
01_Level 03	
Ancillary	3 m²
Breakout	63 m²
Circulation	435 m²
Client Office Area	282 m²
Fallow Space	2834 m²
Gantry	1239 m²
Gantry MEP Rooms	62 m²
Office	29 m²
Plant	68 m²
Storage	217 m²
Switch Room	15 m²
Toilets	10 m²
	5258 m²
01_Level 04	
Ancillary	3 m²
Breakout	21 m²
Circulation	683 m²
Data Hall	1925 m²
Gantry	707 m²
Gantry MEP Rooms	508 m²
Plant	650 m²
Storage	216 m²
Switch Room	20 m²
Terrace	237 m²
Toilets	4 m²
	4975 m²
01_Roof Level 01	
Circulation	185 m²
Gantry	887 m²
Gantry MEP Rooms	323 m²
MEP Rooms	329 m²
Plant	2685 m²
Storage	10 m²
	4419 m²
01_Roof Level 02	
Cooling Gantry	2858 m²
	2858 m²
Grand total	33479 m²

3 Level 02
1 : 500

Department Legend

- Ancillary
- Client Office Area
- Circulation
- Plant
- Gantry
- Fallow Space
- Storage
- Switch Room
- Toilets
- Calculating...

4 Level 03
1 : 500

Department Legend

- Ancillary
- Breakout
- Client Office Area
- Circulation
- Plant
- Gantry
- Gantry MEP Rooms
- Office
- Fallow Space
- Storage
- Switch Room
- Toilets
- Calculating...

5 Level 04
1 : 500

Department Legend

- Ancillary
- Breakout
- Data Hall
- Circulation
- Plant
- Gantry
- Gantry MEP Rooms
- Storage
- Switch Room
- Terrace
- Toilets
- Calculating...

6 Roof Level 01
1 : 500

Department Legend

- Circulation
- Plant
- Gantry
- Gantry MEP Rooms
- MEP Rooms
- Storage
- Calculating...

7 Roof Level 02
1 : 500

Department Legend

- Cooling Gantry
- Calculating...

Status B
Gowttham Ganendran - ISG Ltd
Nov 11, 2022, 11:27 AM GMT+0:00

Project status box to be updated

General Notes

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2000 0 2000 4000 6000 8000
SCALE: 1:200
N

Key Plan

Rev	Details	By / Chkd / App	Date
P04	STAGE 4B ISSUE	VM	15/07/22
P03.01	STAGE 4A - PLANNING CHANGES	VM	21/03/22
P03	STAGE 4A ISSUE	VM	22/02/22
P02.03	STAGE 3 - 100% ISSUE	DL/EB/VM	17/12/21
P02.02	STAGE 3 - 90% ISSUE	DL/EB	19/11/21
P02.01	STAGE 3 - 50% ISSUE	DL/EB	15/10/21

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salus
Building Compliance without Complexity
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Control Risks
Cottons Centre, Cottons Lane
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www.controlrisks.com

Project Title
London 4

Drawing Title
Building 1 - Area Schedule

Project Status
STAGE 4A ISSUE

Discipline
ARCHITECTURE

Status Code
S4

Project Number
0493

Scale @ A0
1:500

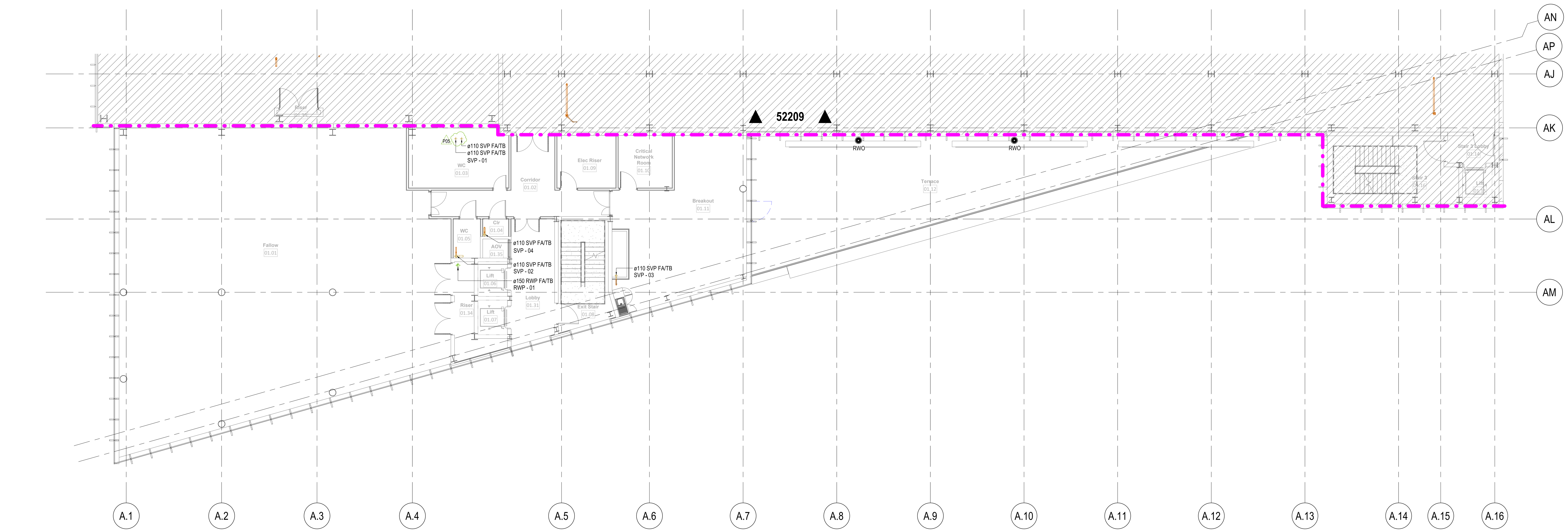
Revision
P04

Drawing Number
DCS20109-NWA-DC-01-ZZ-DR-A-80700
Project — Originator — Functional Breakdown — Spatial Breakdown — Level — Form — Discipline — Number

BIM 360://DCS-20-109 - London 4/DCS20109-NWA-DC-01-ZZ-M3-A-00005.rvt 15/07/2022 11:30:40

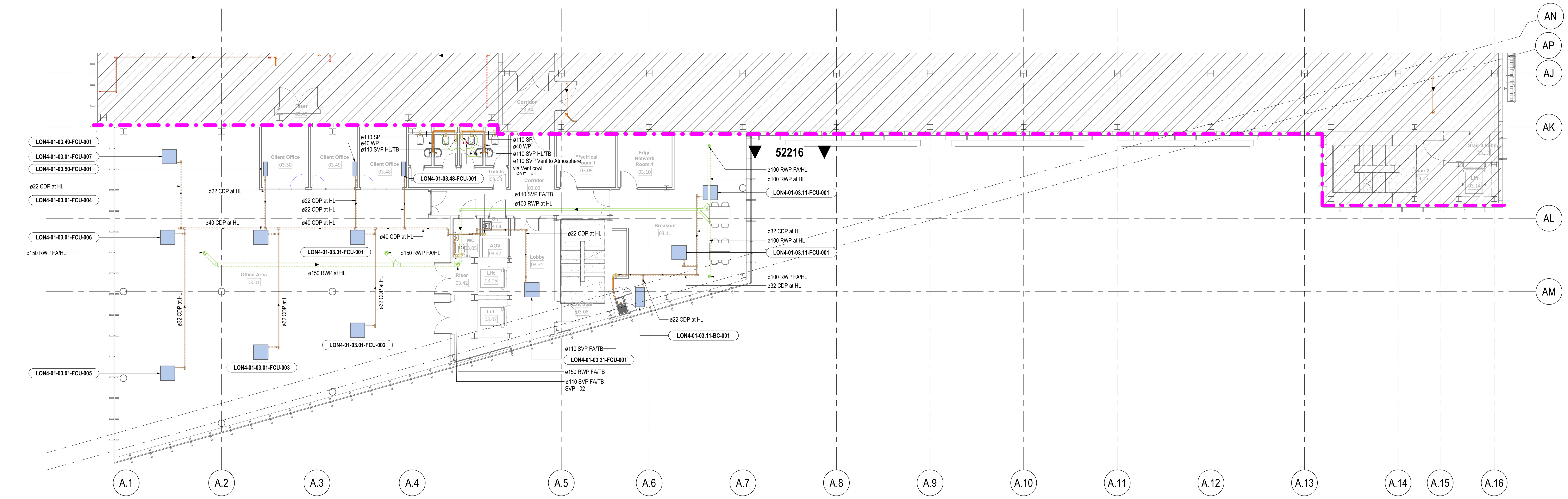
BWE_TB_A0v_Frame_LON4_v2

A0 - Do not scale



A | Drainage Layout - Office - Level 01 & 02

SCALE: 1 : 100



B | Drainage Layout - Office - Level 03

SCALE: 1 : 100

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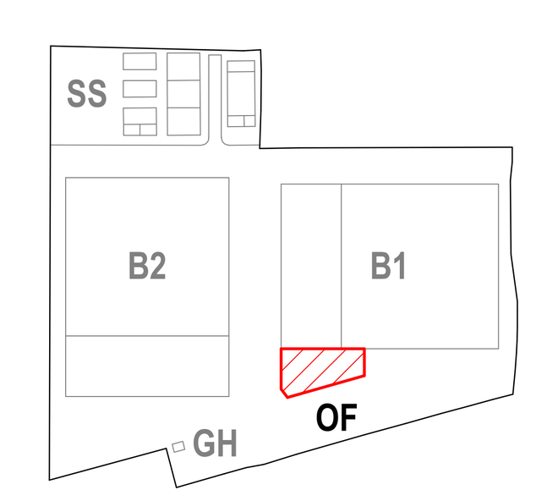
1000 0 1000 2000 3000 4000

SCALE: 1:100

N

Key Plan



Legend:

- Soil Pipe
- Waste Pipe
- Condensate
- Rainwater
- Vent Pipe
- Trace Heated Pipework
- Pipework Below Ground
- Pipework Above Ground

Abbreviation:

AAV	Air Admittance Valve
AP	Access Panel
FC	Fire Collar
VTR	Vent thru Roof
SD	Shower Drain
SP	Soil Pipe
SVP	Soil Vent Pipe
URI	Urinal
WC	Water Closet
WHB	Wash Hand Basin
WP	Waste Pipe
WVP	Waste Vent Pipe
RWO	RainWater Outlet
FCU	Fan Coil Unit
VTR	Vent Thru Roof
CDP	Condensate Drain
TB	To below
FG-1	Floor gully with dry seal trap and funnel top
FG-2	Floor gully with dry seal trap
FG-3	Closed Top Floor gully For Future use
FCO	Floor Clean Out
WM	Water Meter

Mechanical Asset Nomenclature

LON4-01-00.01-EG-001

- **Asset Reference**
- **Asset Type**
- **Room Number (Level.Number)**
- **Building Reference**
- **Site Code**

Notes

1. **Refer to Client "Asset Naming Convention" document for full details of "Asset Type" abbreviations.**

Rev	Details	By / Chkd / App	Date
P05	STAGE 4A - NOVEMBER '22 UPDATE	JM / PA / OO	04 / 11 / 22
P04	STAGE 4A - JULY '22 UPDATE	JM / PA / OO	18 / 07 / 22
P03	STAGE 4A ISSUE	JM / PA / OO	30 / 03 / 22
P02	STAGE 4A ISSUE	JM / PA / OO	22 / 02 / 22
P01	STAGE 3 - 100% ISSUE	JM / PA / OO	17 / 12 / 21
P01.1	STAGE 3 - 90% ISSUE	JM / PA / OO	19 / 11 / 21

Drawing Development

This drawing has been developed from the following Design Information:

Architectural Model:
DCS20109-NWA-DC-01-ZZ-M3-A-00005.rvt
Received: 20/10/22
DCS20109-NWA-DC-01-ZZ-M3-A-00004.rvt
Received: 20/10/22

Civils Model:
DCS20109-ARUP-DC-ZZ-LP-M3-C-00012.nwd
Received: 05/12/22

Structural Model:
DCS20109-ARUP-DC-01-ZZ-M3-S-00001.rvt
Received: 29/10/22

Residual Risk Register

Item: No Residual Risk Identified.

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

1. **CONSTRUCTION**
   Local Building Regulations shall be complied with in respect to inspection and commissioning
2. **MAINTENANCE / CLEANING**
   Health and **Safety** work place regulations shall be observed
3. **DECOMMISSIONING / DEMOLITION**
   WEEE and **ROHS** regulations shall be complied with

N.B. It is assumed that all work will be carried out by a competent contractor working, where appropriate, to an approved method statement

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Security Designer

Cottons Centre, Cottons Lane
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www.controlrisks.com

Project Title
London 4

Drawing Title
Drainage Layout
Office
Level 01, 02 & 03
(Typical Fallow Floor)

Project Status
STAGE 4A ISSUE

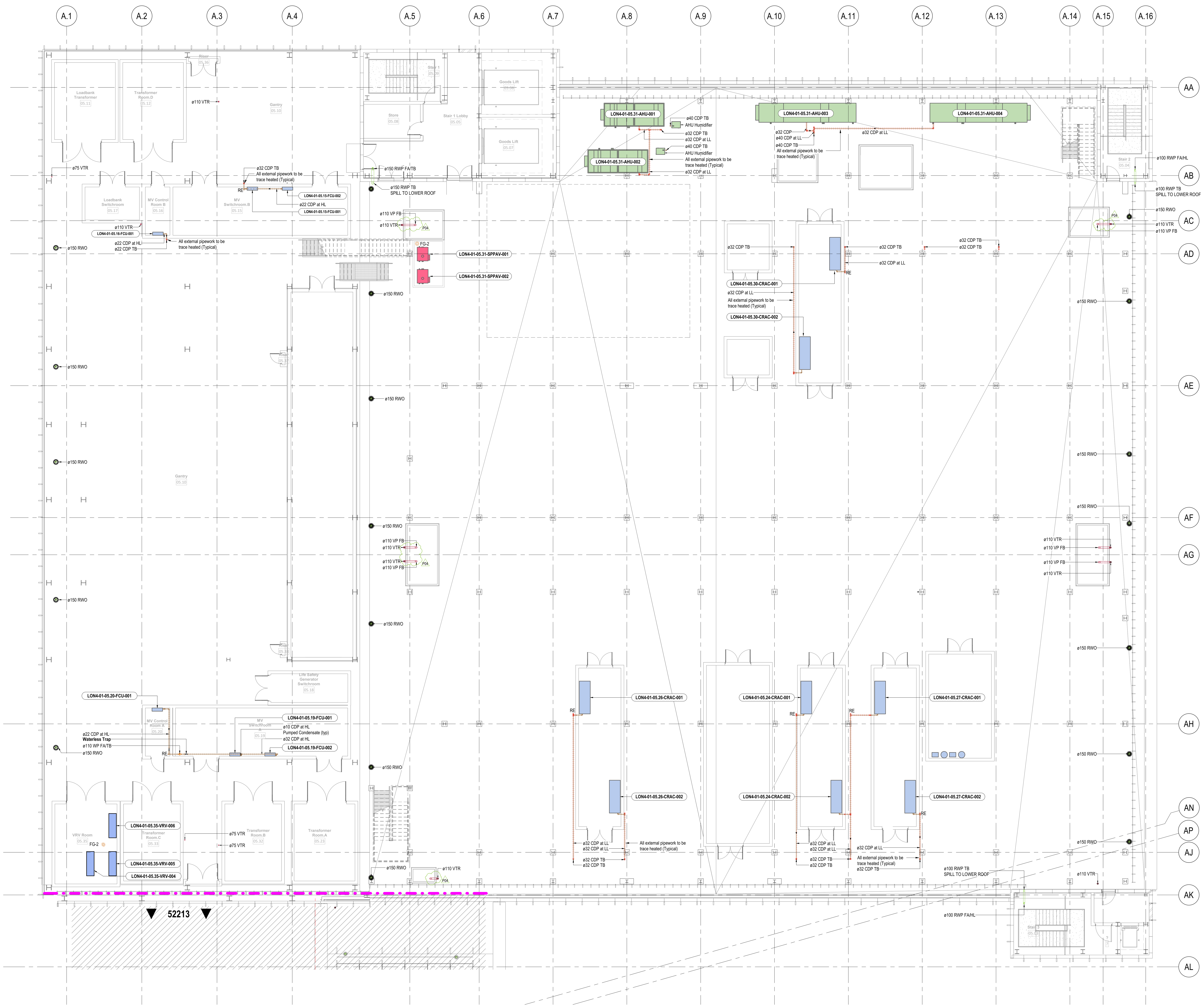
Discipline	Status Code
PLUMBING	**S4**

Project Number	Scale @ A0	Revision
P20114	**1:100**	**P05**

Drawing Number
DCS20109-BWE-DC-OF-ZZ-DR-P-52216

Project — Originator — Functional Breakdown — Spatial Breakdown — Level — Form — Discipline — Number

A0 - Do not scale



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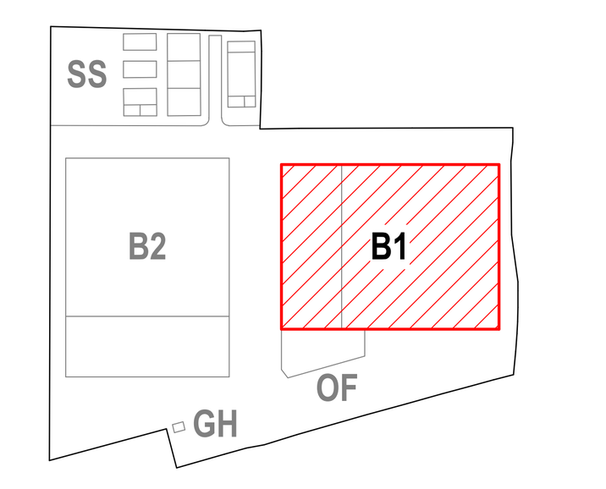
1000 0 1000 2000 3000 4000
SCALE: 1:100
N

Key Plan



Legend:

- Soil Pipe
- Waste Pipe
- Condensate
- Rainwater
- Vent Pipe
- Trace Heated Pipework
- Pipework Below Ground
- Pipework Above Ground

Abbreviation:

AAV	Air Admittance Valve
AP	Access Panel
FC	Fire Collar
VTR	Vent thru Roof
SD	Shower Drain
SP	Soil Pipe
SVP	Soil Vent Pipe
URI	Urinal
WC	Water Closet
WHB	Wash Hand Basin
WP	Waste Pipe
WVP	Waste Vent Pipe
RWO	RainWater Outlet
FCU	Fan Coil Unit
VTR	Vent Thru Roof
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FCO	Floor Clean Out
WM	Water Meter

Mechanical Asset Nomenclature

LON4-01-00.01-EG-001

- **Asset Reference**
- **Asset Type**
- **Room Number (Level.Number)**
- **Building Reference**
- **Site Code**

Notes

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P03	STAGE 4A - JULY '22 UPDATE	JM / PA / OO	18 / 07 / 22
P03	STAGE 4A ISSUE	JM / PA / OO	22 / 02 / 22
P02	STAGE 3 - 100% ISSUE	JM / PA / OO	17 / 12 / 21
P02.2	STAGE 3 - 90% ISSUE	JM / PA / OO	19 / 11 / 21
P02.1	STAGE 3 - 50% ISSUE	JM / PA / OO	15 / 10 / 21
P01	STAGE 2 - 100% ISSUE	GDC / PF / TB	16 / 07 / 21

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Drawing Development

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Architectural Model:
DCS20109-NWA-DC-01-ZZ-M3-A-00005.rvt
Received: 20/10/22
DCS20109-NWA-DC-01-ZZ-M3-A-00004.rvt
Received: 20/10/22

Civils Model:
DCS20109-ARUP-DC-ZZ-LP-M3-C-00012.nwd
Received: 05/12/22

Structural Model:
DCS20109-ARUP-DC-01-ZZ-M3-S-00001.rvt
Received: 29/10/22

Residual Risk Register

Item: No Residual Risk Identified.

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Project Title
London 4

Drawing Title
Drainage Layout Building 01 Roof Level 01

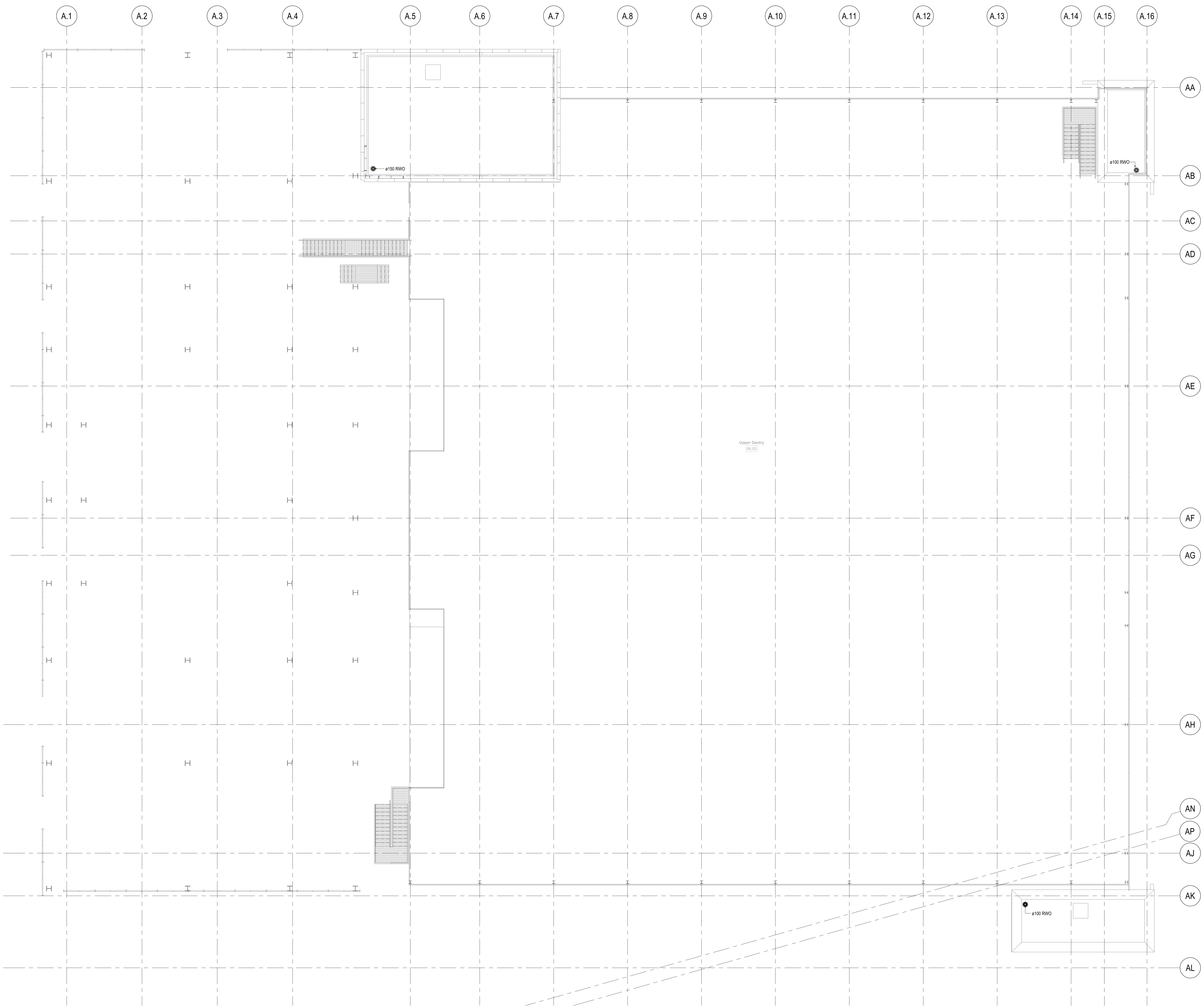
Project Status
STAGE 4A ISSUE

Discipline	Status Code
PLUMBING	**S4**

Project Number	Scale @ A0	Revision
P20114	**1:100**	**P04**

Drawing Number
DCS20109-BWE-DC-01-05-DR-P-52203
Project — Originator — Functional Breakdown — Spatial Breakdown — Level — Form — Discipline — Number

A0 - Do not scale



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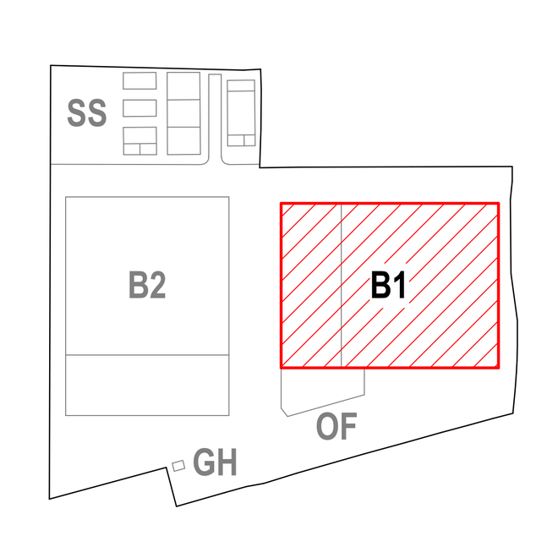
1000 0 1000 2000 3000 4000
SCALE: 1:100
N

Key Plan



Legend:

- Soil Pipe
- Waste Pipe
- Condensate
- Rainwater
- Vent Pipe
- Trace Heated Pipework

Abbreviation:

AAV	Air Admittance Valve
AP	Access Panel
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FCO	Floor Clean Out
WM	Water Meter

Mechanical Asset Nomenclature

LON4-01-00.01-EG-001

- **Asset Reference**
- **Asset Type**
- **Room Number (Level.Number)**
- **Building Reference**
- **Site Code**

Notes

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P03	STAGE 4A ISSUE	JM / PA / OO	22 / 02 / 22
P02	STAGE 3 - 100% ISSUE	JM / PA / OO	17 / 12 / 21
P02.2	STAGE 3 - 90% ISSUE	JM / PA / OO	19 / 11 / 21
P02.1	STAGE 3 - 50% ISSUE	JM / PA / OO	15 / 10 / 21
P01	STAGE 2 - 100% ISSUE	GDC / PF / TB	16 / 07 / 21

Drawing Development

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Architectural Model:
DCS20109-NWA-DC-01-ZZ-M3-A-00001.rvt
Received: 14/02/22
DCS20109-NWA-DC-01-ZZ-M3-A-00004.rvt
Received: 14/02/22

Civils Model:
DCS20109-ARUP-DC-ZZ-LP-M3-C-00012.nwd
Received: 04/12/21

Structural Model:
DCS20109-ARUP-DC-01-ZZ-M3-S-00001.rvt
Received: 14/02/22

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Project Title
London 4

Drawing Title
Drainage Layout
Building 01
Roof Level 02

Project Status
STAGE 4A ISSUE

Discipline	Status Code
PLUMBING	**S4**

Project Number	Scale @ A0	Revision
P20114	**1:100**	**P03**

Drawing Number
DCS20109-BWE-DC-01-06-DR-P-52204
Project — Originator — Functional Breakdown — Spatial Breakdown — Level — Form — Discipline — Number

Ss_45_40_47_28
Extensive green roof systems

Systems

Ss_45_40_47_28 Extensive green roof systems Admin Roof

1. Description: Moy FM Global and FLL Compliant Extensive Green Roof System.
   - Substrate: Deck in accordance with the design of the project structural engineer.
   - Slope: Minimum Slope in accordance with FM Global 1-35: Concrete Deck – 2
2. System performance: Ac_85_70_40/210 Contractor design of living roofs; Ac_85_70_40/260 Compliance with performance requirements; Ac_85_70_40/240 Hydraulic performance of living roofs
3. System manufacturer:
4. Protection
   4.1. Protection layer: Diadem VLU 300 Fleece.
   • Manufacturer: Diadem / Moy Materials.
   - Product reference: VLU150 Protection fleece.
   • Material: mechanically hardened and thermally treated polypropylene fleece layer.
   - Thickness: 3mm.
5. Moisture control
   5.1. Drainage layer: Diadem DE25 H Drainage & Reservoir Board.
   • Manufacturer: Diadem / Moy Materials.
   - Product reference: Diadem DE25 H Drainage & Reservoir Board.
   • Material: Recycled Polystyrene.
   - Depth: 25mm.
   • Infill: May be infilled with suitable stone chipping where a load from roof mounted plant or equipment is proposed. Seek manufacturer's advice.
   5.2. Filter membrane: Diadem VLF150 Filtration Fleece.
   • Manufacturer: Diadem / Moy Materials.
   - Product reference: VLF150 Filtration Fleece.
   • Material: Mechanically hardened and thermally treated polypropylene fleece layer.
   - Mass: 150 grm / M2.
6. Planting systems
   6.1. Planting medium: Moy Biodiversity Sedum Mix blanket.
   • Manufacturer: Moy Materials.
   - Product reference: Native Sedum Mix blanket.
   • Planting mix: TBC
   - Thickness: Nominal 25mm.
   • Vegetation coverage (minimum): 85%.
   6.2. Planting requirements: To comply with FM Global 1-35.
   • Material: Rounded washed stone pebble per ASTM D448 diameter 25 – 50mm.
   • Depth: 76mm minimum.
   • Width: Per requirements of FM Global 1-35 (not less than 900mm where parapets of 760mm or
   greater are provided). Create 4.0m wide gravel subdivision of larger vegetated areas to sections
   not exceeding 1,450 M2, with no dimension exceeding 39M.
7. Support Pedestal:: Moy Diadem Paving Support Pedestal.
   • Manufacturer: Diadem / Moy Materials.
   - Product reference: Diaturtle.
   • Type: Adjustable Pedestal.
   • Material: Polypropylene.
   • Dimensions: Height 26 – 440mm.
   • Additional pedestals: See Manufacturers data pages.

• Accessories: Slope correcting shims, Spacer Shims, Timber joist holders, Interlocking drainage channel and door threshold grilles (Manufacturers data pages).

8. Edge restraints: Moy Gravel Board.
   • Manufacturer: Diadem / Moy Materials.
   - Product reference: Moy KLS AL 8/12 Perforated Gravel Board.
   • Material: Aluminium.
   • Height: 80 / 120mm.
9. Inspection Chamber:: Moy Rainwater Outlet Inspection Chambers.
   • Manufacturer: Diadem / Moy Materials.
   - Product reference: KSE (Vertical Spigot) & KSA (Horizontal Spigot).
   • Material: Polypropylene to Colour RAL 7032.
   • Size: 300 x 300mm.
   - Depth: 150mm (Extension elements available).
   • Access covers: Lockable Lid with water drainage opening.
   • Features: UV Stabilized. Pre scored knock outs for drainage pipes and other services
10. Execution: Preparation: Clear all surfaces of debris.
    - Timing: After certification of waterproof membrane integrity.
    - Surface condition: Visually inspect waterproof membrane, report any damage.
    • Faults in waterproof membrane: Report.
    • Contamination: Do not use materials detrimental to healthy plant growth.
    • Storage: Do not overload.
    - Point loads: Avoid.
    • Outlets: Do not block.
    - Outlet grilles: Installed
11. Adverse Weather: Preparation: Clear all surfaces of debris.
    - Timing: After certification of waterproof membrane integrity.
    - Surface condition: Visually inspect waterproof membrane, report any damage.
    • Faults in waterproof membrane: Report.
    • Contamination: Do not use materials detrimental to healthy plant growth.
    • Storage: Do not overload.
    - Point loads: Avoid.
    • Outlets: Do not block.
    - Outlet grilles: Installed
12. Protection Layer Installation:: Joints: Minimize.
    - Overlaps (minimum): 150mm.
    • Upstands: Extend to top of growing medium
13. Moisture Retention MAT Installation:: Joints: Minimize.
    - Overlaps (minimum): 150mm.
    • Upstands: Fit closely around penetrations and outlets.
14. Drainage Layer Installation:: Extent: Continuous over entire roof area.
    • Fitting: Laid loose with butt joined edges.
    • Upstands: Fit closely around penetrations and outlets
15. Filter Drain installation:: oints: Minimize.
    - Overlaps (minimum): 200mm.
    • Fitting: Laid Loose, turned back over the surface of the growing medium before placement of the
    Sedum blanket.
    • Upstands: Extend to top of growing medium and turn back per manufacturer’s details.
16. Growing Medium Installation: : Handling: Minimize.
    - Conditions: Handle in the driest condition possible. Do not handle or install when wet or frozen.
    • Layers:
    - Depth (maximum): 100 mm.
    - Sequence: Gently firm each layer before spreading the next.
17. Vegetation Blanket Installation: Handling blankets:
    - Timing: Lay within 36 hours of lifting from growing position.

- Excessive stacking: Not permitted.
- Material loss (maximum): 3% of total surface area.
• Growing medium condition: Thoroughly watered.
• Laying blankets:
- Dry, damaged, frosty or waterlogged blankets: Do not lay.
- Orientation: Diagonal or perpendicular to slope of roof.
- Joints: Stagger. Butt together or slightly overlap to prevent gaps. Do not stretch blankets. Secure with biodegradable pegs.
- Edges: Finish edges and perimeters with whole blankets.
- Consolidation: Firm as laying proceeds to ensure full contact with the growing medium. Do not use rollers. Install such temporary wind securement ballast as may be required to secure the blanket until established. Seek manufacturers advice for exposed sites.
• Dressing: Apply Moy growing media to any exposed blanket edges or bare areas.
- Application: Brush in to fill joints.
• Watering: Water at a minimum rate of 2 liters per M2, immediately after laying and dressing. Irrigate 2 -3 times weekly until the blanket becomes established.

18. Edge Retention Profile Installation:: Cutting: Neat, accurate and without spalling.
- Junctions: vertical, secured using proprietary connectors.
• Position: True to line and level. Smooth continuous lines.
• Fixing: Seek Manufacturers advice.

19. Inspection Chamber Installation:: Location: Install centrally over drain outlet.
- Orientation: Align parallel with adjacent features.
• Bedding: Securely bedded upon the protection fleece layer.
• Backfill: Min 300mm wide band of ballast pebble.
• Surround: Dressed with a pre-cut apron of VLF150 fleece tightly fitted by cutting and pulling over
the walls of the inspection chamber. No growing media shall be allowed to wash into the rainwater outlet.

20. Pedestal Installation: : Ensure that surface to accept pedestals is clean and free of debris.
• Setting out: Mark center-point of pedestal on substrate surface, with perpendicular guidelines to ensure square layout.
- Orientation: Align parallel with adjacent features.
- Spacing: Per requirements of the selected paving slab.
• Overall movement tolerance (maximum): 3 mm

21. System completion: General: Leave the works in a clean, tidy condition.
• Surfaces: Clean immediately before handover.
• Outlets: Clean and clear of obstructions.
• Completed green roof: Protect from adjacent or high level working

21.1. Documentation:: Timing: Submit at handover.
• Contents:
- Growing medium declaration of analysis.
- Manufacturers' guarantees and warranties.
- Procedures for maintenance of the green roof.
- Record drawings showing the location of planting and associated features.
• Number of copies: Digital Copy to Installing Contractor & Main Building Contractor.

21.2. Inspection:: Before handover.
- Give notice (minimum): 3 days

Ss_45_40_47_28 Extensive green roof systems Lower Terrace Roof

1. Description: Roof type: Moy FM Global and FLL Compliant Extensive Green Roof System.
- Substrate: Deck in accordance with the design of the project structural engineer.
- Slope: Minimum Slope in accordance with FM Global 1-35: Concrete Deck – 2%
• Waterproofing: Moy Paraflex warm roof system in accordance with Section J41.
• Thermal insulation: Moy Hardrock DD range in accordance with Section J41.
• Protection: Moy VLU 300 Protection and Water Retention fleece.
• Moisture control layers: Moy DE25 H water reservoir and drainage layer.
• Accessories: Inspection Chambers for rainwater outlet positions type KSE (vertical spigot) or

KSA (horizontal spigot). Moy Aluminium gravel edge trims. 140

• PAVING AND DECKING SYSTEMS
• Type: Paving / Decking in accordance with the project Architect's details.

• Paving support: Moy Diadem Paving Support Pedestal "Diaturtle" Infinitely height adjustable from
26 to 440mm, heavy duty polypropylene pedestal, designed for concrete slabs, drainage grilles and gratings and for terraces with wood or composite decking. Resistant to UV radiation, adverse weather and chemicals. Top support diameter 120mm, base diameter 200mm; with circular base plate to avoid pressure damage in the roof waterproofing.

2. System performance: Ac_85_70_40/210 Contractor design of living roofs Type C; Ac_85_70_40/260 Compliance with performance requirements Type C; Ac_85_70_40/240 Hydraulic performance of living roofs Type C
3. System manufacturer: Moy
4. Loads:: Dead loads:
- Green roof layers: 135Kg / M2 combined saturated weight.
• Imposed loads:
- Activity: Pedestrian maintenance access.
- Vegetation: Incorporated in combined saturated weight.
- Allowance for additional loads during construction: Subject to structural engineer's review.
• Service loads: Subject to structural engineer's review.
• Requirement: Restrict site activities to ensure that design loads are not exceeded, or submit proposals for temporary supports
5. Protection
   5.1. Protection layer: Diadem VLU 300 Fleece.
   • Manufacturer: Diadem / Moy Materials.
   - Product reference: VLU150 Protection fleece.
   • Material: mechanically hardened and thermally treated polypropylene fleece layer.
   - Thickness: 3mm.
   5.2. Root barrier: Paraflex ARD/S (FM) anti root waterproofing membrane.
   • Manufacturer: Imper Italia / Moy.
   - Product reference: Paraflex ARD/S Anti Root.
   • Material: FM Approved modified bitumen waterproofing membrane.
   - Thickness: 4mm.
6. Moisture control
   6.1. Drainage layer: Diadem DE25 H Drainage & Reservoir Board.
   • Manufacturer: Diadem / Moy Materials.
   - Product reference: Diadem DE25 H Drainage & Reservoir Board.
   • Material: Recycled Polystyrene.
   - Depth: 25mm.
   • Infill: May be infilled with suitable stone chipping where a load from roof mounted plant or equipment is proposed. Seek manufacturer's advice.
   6.2. Filter membrane: Diadem VLF150 Filtration Fleece.
   • Manufacturer: Diadem / Moy Materials.
   - Product reference: VLF150 Filtration Fleece.
   • Material: Mechanically hardened and thermally treated polypropylene fleece layer.
   - Mass: 150 grm / M2.
7. Support Pedestal:: Moy Diadem Paving Support Pedestal.
• Manufacturer: Diadem / Moy Materials.
- Product reference: Diaturtle.
• Type: Adjustable Pedestal.
• Material: Polypropylene.
• Dimensions: Height 26 – 440mm.
• Additional pedestals: See Manufacturers data pages.

• Accessories: Slope correcting shims, Spacer Shims, Timber joist holders, Interlocking drainage channel and door threshold grilles (Manufacturers data pages).

8. Edge restraints: Moy Gravel Board.
   • Manufacturer: Diadem / Moy Materials.
   - Product reference: Moy KLS AL 8/12 Perforated Gravel Board.
   • Material: Aluminium.
   • Height: 80 / 120mm.
9. Inspection Chamber:: Moy Rainwater Outlet Inspection Chambers.
   • Manufacturer: Diadem / Moy Materials.
   - Product reference: KSE (Vertical Spigot) & KSA (Horizontal Spigot).
   • Material: Polypropylene to Colour RAL 7032.
   • Size: 300 x 300mm.
   - Depth: 150mm (Extension elements available).
   • Access covers: Lockable Lid with water drainage opening.
   • Features: UV Stabilized. Pre scored knock outs for drainage pipes and other services
10. Execution: Preparation: Clear all surfaces of debris.
    - Timing: After certification of waterproof membrane integrity.
    - Surface condition: Visually inspect waterproof membrane, report any damage.
    • Faults in waterproof membrane: Report.
    • Contamination: Do not use materials detrimental to healthy plant growth.
    • Storage: Do not overload.
    - Point loads: Avoid.
    • Outlets: Do not block.
    - Outlet grilles: Installed
11. Adverse Weather: Preparation: Clear all surfaces of debris.
    - Timing: After certification of waterproof membrane integrity.
    - Surface condition: Visually inspect waterproof membrane, report any damage.
    • Faults in waterproof membrane: Report.
    • Contamination: Do not use materials detrimental to healthy plant growth.
    • Storage: Do not overload.
    - Point loads: Avoid.
    • Outlets: Do not block.
    - Outlet grilles: Installed
12. Protection Layer Installation:: Joints: Minimize.
    - Overlaps (minimum): 150mm.
    • Upstands: Extend to top of growing medium
13. Moisture Retention MAT Installation:: Joints: Minimize.
    - Overlaps (minimum): 150mm.
    • Upstands: Fit closely around penetrations and outlets.
14. Drainage Layer Installation:: Extent: Continuous over entire roof area.
    • Fitting: Laid loose with butt joined edges.
    • Upstands: Fit closely around penetrations and outlets
15. Filter Drain installation:: oints: Minimize.
    - Overlaps (minimum): 200mm.
    • Fitting: Laid Loose, turned back over the surface of the growing medium before placement of the
    Sedum blanket.
    • Upstands: Extend to top of growing medium and turn back per manufacturer’s details.
16. Edge Retention Profile Installation:: Cutting: Neat, accurate and without spalling.
    - Junctions: vertical, secured using proprietary connectors.
    • Position: True to line and level. Smooth continuous lines.
    • Fixing: Seek Manufacturers advice.
17. Inspection Chamber Installation:: Location: Install centrally over drain outlet.
    - Orientation: Align parallel with adjacent features.
    • Bedding: Securely bedded upon the protection fleece layer.
    • Backfill: Min 300mm wide band of ballast pebble.

• Surround: Dressed with a pre-cut apron of VLF150 fleece tightly fitted by cutting and pulling over
the walls of the inspection chamber. No growing media shall be allowed to wash into the rainwater outlet.

18. Pedestal Installation: : Ensure that surface to accept pedestals is clean and free of debris.
• Setting out: Mark center-point of pedestal on substrate surface, with perpendicular guidelines to ensure square layout.
- Orientation: Align parallel with adjacent features.
- Spacing: Per requirements of the selected paving slab.
• Overall movement tolerance (maximum): 3 mm

19. System completion: General: Leave the works in a clean, tidy condition.
• Surfaces: Clean immediately before handover.
• Outlets: Clean and clear of obstructions.
• Completed green roof: Protect from adjacent or high level working

19.1. Documentation:: Timing: Submit at handover.
• Contents:
- Growing medium declaration of analysis.
- Manufacturers' guarantees and warranties.
- Procedures for maintenance of the green roof.
- Record drawings showing the location of planting and associated features.
• Number of copies: Digital Copy to Installing Contractor & Main Building Contractor.

19.2. Inspection:: Before handover.
- Give notice (minimum): 3 days

Ss_45_40_47_28 Extensive green roof systems Stair Core & Fuel Store Roofs

1. Description: Green roof and associated features: Complete the detailed design.
• Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
• Performance criteria: FM Global 1-35 and FLL Guidelines

2. System performance: Ac_85_70_40/210 Contractor design of living roofs Type A; Ac_85_70_40/260 Compliance with performance requirements Type A; Ac_85_70_40/240 Hydraulic performance of living roofs Type A

3. Green Roof Loads:: Dead loads:
- Green roof layers: 135Kg / M2 combined saturated weight.
• Imposed loads:
- Activity: Pedestrian maintenance access.
- Vegetation: Incorporated in combined saturated weight.
- Allowance for additional loads during construction: Subject to structural engineer’s review.
• Service loads: Subject to structural engineer’s review.
• Requirement: Restrict site activities to ensure that design loads are not exceeded, or submit proposals for temporary supports.

4. System manufacturer: MOY Materials

5. Root Layer:: Paraflex ARD/S (FM) anti root waterproofing membrane.
• Manufacturer: Imper Italia / Moy.
- Product reference: Paraflex ARD/S Anti Root.
• Material: FM Approved modified bitumen waterproofing membrane.
- Thickness: 4mm.

6. Protection

6.1. Protection layer: Diadem VLU 300 Fleece.
• Manufacturer: Diadem / Moy Materials.
- Product reference: VLU150 Protection fleece.
• Material: mechanically hardened and thermally treated polypropylene fleece layer.
- Thickness: 3mm.

7. Moisture control

7.1. Drainage layer: Diadem DE25 H Drainage & Reservoir Board.
• Manufacturer: Diadem / Moy Materials.
- Product reference: Diadem DE25 H Drainage & Reservoir Board.
• Material: Recycled Polystyrene.
- Depth: 25mm.
• Infill: May be infilled with suitable stone chipping where a load from roof mounted plant or equipment is proposed. Seek manufacturer's advice

7.2. Filter membrane: Diadem VLF150 Filtration Fleece.
• Manufacturer: Diadem / Moy Materials.
- Product reference: VLF150 Filtration Fleece.
• Material: Mechanically hardened and thermally treated polypropylene fleece layer.
- Mass: 150 grm / M2.

8. Planting systems

8.1. Planting medium: Moy Biodiversity Sedum Mix blanket.
• Manufacturer: Moy Materials.
- Product reference: Native Sedum Mix blanket.
• Planting mix: TBC
- Thickness: Nominal 25mm.
• Vegetation coverage (minimum): 85%.

8.2. Planting requirements: To comply with FM Global 1-35.
• Material: Rounded washed stone pebble per ASTM D448 diameter 25 – 50mm.
• Depth: 76mm minimum.
• Width: Per requirements of FM Global 1-35 (not less than 900mm where parapets of 760mm or
greater are provided). Create 4.0m wide gravel subdivision of larger vegetated areas to sections
not exceeding 1,450 M2, with no dimension exceeding 39M.

9. Vegetation Blanket:: Moy Biodiversity Sedum Mix blanket.
• Manufacturer: Moy Materials.
- Product reference: Native Sedum Mix blanket.
• Planting mix: TBC
- Thickness: Nominal 25mm.
• Vegetation coverage (minimum): 85%

10. Vegetation Barrier:: To comply with FM Global 1-35.
• Material: Rounded washed stone pebble per ASTM D448 diameter 25 – 50mm.
• Depth: 76mm minimum.
• Width: Per requirements of FM Global 1-35 (not less than 900mm where parapets of 760mm or greater are provided). Create 4.0m wide gravel subdivision of larger vegetated areas to sections not exceeding 1,450 M2, with no dimension exceeding 39M

11. Support Pedestal:: Moy Diadem Paving Support Pedestal.
• Manufacturer: Diadem / Moy Materials.
- Product reference: Diaturtle.
• Type: Adjustable Pedestal.
• Material: Polypropylene.
• Dimensions: Height 26 – 440mm.
• Additional pedestals: See Manufacturers data pages.
• Accessories: Slope correcting shims, Spacer Shims, Timber joist holders, Interlocking drainage channel and door threshold grilles (Manufacturers data pages).

12. Edge restraints: Moy Gravel Board.
• Manufacturer: Diadem / Moy Materials.
- Product reference: Moy KLS AL 8/12 Perforated Gravel Board.
• Material: Aluminium.
• Height: 80 / 120mm.

13. Inspection Chamber:: Moy Rainwater Outlet Inspection Chambers.
• Manufacturer: Diadem / Moy Materials.
- Product reference: KSE (Vertical Spigot) & KSA (Horizontal Spigot).

• Material: Polypropylene to Colour RAL 7032.
• Size: 300 x 300mm.
- Depth: 150mm (Extension elements available).
• Access covers: Lockable Lid with water drainage opening.
• Features: UV Stabilized. Pre scored knock outs for drainage pipes and other services

14. Execution: Preparation: Clear all surfaces of debris.
- Timing: After certification of waterproof membrane integrity.
- Surface condition: Visually inspect waterproof membrane, report any damage.
• Faults in waterproof membrane: Report.
• Contamination: Do not use materials detrimental to healthy plant growth.
• Storage: Do not overload.
- Point loads: Avoid.
• Outlets: Do not block.
- Outlet grilles: Installed

15. Adverse Weather: Preparation: Clear all surfaces of debris.
- Timing: After certification of waterproof membrane integrity.
- Surface condition: Visually inspect waterproof membrane, report any damage.
• Faults in waterproof membrane: Report.
• Contamination: Do not use materials detrimental to healthy plant growth.
• Storage: Do not overload.
- Point loads: Avoid.
• Outlets: Do not block.
- Outlet grilles: Installed

16. Protection Layer Installation:: Joints: Minimize.
- Overlaps (minimum): 150mm.
• Upstands: Extend to top of growing medium

17. Moisture Retention MAT Installation:: Joints: Minimize.
- Overlaps (minimum): 150mm.
• Upstands: Fit closely around penetrations and outlets.

18. Drainage Layer Installation:: Extent: Continuous over entire roof area.
• Fitting: Laid loose with butt joined edges.
• Upstands: Fit closely around penetrations and outlets

19. Filter Drain installation:: oints: Minimize.
- Overlaps (minimum): 200mm.
• Fitting: Laid Loose, turned back over the surface of the growing medium before placement of the
Sedum blanket.
• Upstands: Extend to top of growing medium and turn back per manufacturer’s details.

20. Growing Medium Installation: : Handling: Minimize.
- Conditions: Handle in the driest condition possible. Do not handle or install when wet or frozen.
• Layers:
- Depth (maximum): 100 mm.
- Sequence: Gently firm each layer before spreading the next.

21. Vegetation Blanket Installation: Handling blankets:
- Timing: Lay within 36 hours of lifting from growing position.
- Excessive stacking: Not permitted.
- Material loss (maximum): 3% of total surface area.
• Growing medium condition: Thoroughly watered.
• Laying blankets:
- Dry, damaged, frosty or waterlogged blankets: Do not lay.
- Orientation: Diagonal or perpendicular to slope of roof.
- Joints: Stagger. Butt together or slightly overlap to prevent gaps. Do not stretch blankets. Secure with biodegradable pegs.
- Edges: Finish edges and perimeters with whole blankets.
- Consolidation: Firm as laying proceeds to ensure full contact with the growing medium. Do not use rollers. Install such temporary wind securement ballast as may be required

to secure the blanket until established. Seek manufacturers advice for exposed sites.
• Dressing: Apply Moy growing media to any exposed blanket edges or bare areas.
- Application: Brush in to fill joints.
• Watering: Water at a minimum rate of 2 liters per M2, immediately after laying and dressing. Irrigate 2 -3 times weekly until the blanket becomes established.

22. Edge Retention Profile Installation:: Cutting: Neat, accurate and without spalling.
- Junctions: vertical, secured using proprietary connectors.
• Position: True to line and level. Smooth continuous lines.
• Fixing: Seek Manufacturers advice.

23. Inspection Chamber Installation:: Location: Install centrally over drain outlet.
- Orientation: Align parallel with adjacent features.
• Bedding: Securely bedded upon the protection fleece layer.
• Backfill: Min 300mm wide band of ballast pebble.
• Surround: Dressed with a pre-cut apron of VLF150 fleece tightly fitted by cutting and pulling over
the walls of the inspection chamber. No growing media shall be allowed to wash into the rainwater outlet.

24. Pedestal Installation: : Ensure that surface to accept pedestals is clean and free of debris.
• Setting out: Mark center-point of pedestal on substrate surface, with perpendicular guidelines to ensure square layout.
- Orientation: Align parallel with adjacent features.
- Spacing: Per requirements of the selected paving slab.
• Overall movement tolerance (maximum): 3 mm

25. System completion: General: Leave the works in a clean, tidy condition.
• Surfaces: Clean immediately before handover.
• Outlets: Clean and clear of obstructions.
• Completed green roof: Protect from adjacent or high level working

25.1. Documentation:: Timing: Submit at handover.
• Contents:
- Growing medium declaration of analysis.
- Manufacturers' guarantees and warranties.
- Procedures for maintenance of the green roof.
- Record drawings showing the location of planting and associated features.
• Number of copies: Digital Copy to Installing Contractor & Main Building Contractor.

25.2. Inspection:: Before handover.
- Give notice (minimum): 3 days

Ss_45_40_47_28 Extensive green roof systems Upper Terrace

1. Description: XTENSIVE GREEN ROOF
• Roof type: Moy FM Global and FLL Compliant Extensive Green Roof System.
- Substrate: Deck in accordance with the design of the project structural engineer.
- Slope: Minimum Slope in accordance with FM Global 1-35: Concrete Deck – 2%
• Waterproofing: Moy Paraflex warm roof system in accordance with Section J41.
• Thermal insulation: Moy Hardrock DD range in accordance with Section J41.
• Protection: Moy VLU 300 Protection and Water Retention fleece.
• Moisture control layers: Moy DE40 water reservoir and drainage layer.
• Growing medium: Moy Extensive Green Roof growing media at Min 250mm depth after consolidation and settlement.
- Depth: Minimum depth 250mm after consolidation and settlement.
• Vegetation: Moy pre cultivated Sedum Mix species blanket, native in biodiversity species mix. Sourced closed to project location.
• Accessories: Inspection Chambers for rainwater outlet positions type KSE (vertical spigot) or KSA (horizontal spigot). Moy Aluminium gravel edge trims. 140

• PAVING AND DECKING SYSTEMS
• Type: Paving / Decking in accordance with the project Architect’s details.

• Paving support: Moy Diadem Paving Support Pedestal “Diaturtle” Infinitely height adjustable from
26 to 440mm, heavy duty polypropylene pedestal, designed for concrete slabs, drainage grilles and gratings and for terraces with wood or composite decking. Resistant to UV radiation, adverse weather and chemicals. Top support diameter 120mm, base diameter 200mm; with circular base plate to avoid pressure damage in the roof waterproofing.

2. System performance: Green roof and associated features: Complete the detailed design.
   • Proposals: Submit drawings, technical information, calculations and manufacturers' literature.
   • Performance criteria: FM Global 1-35 and FLL Guidelines. Ac_85_70_40/210 Contractor design of living roofs Type B; Ac_85_70_40/260 Compliance with performance requirements Type B; Ac_85_70_40/240 Hydraulic performance of living roofs Type B
3. Green Roof Loads:: Dead loads:
   - Green roof layers: 320Kg / M2 combined saturated weight.
   • Imposed loads:
   - Activity: Pedestrian maintenance access.
   - Vegetation: Incorporated in combined saturated weight.
   - Allowance for additional loads during construction: Subject to structural engineer’s review.
   • Service loads: Subject to structural engineer’s review.
   • Requirement: Restrict site activities to ensure that design loads are not exceeded, or submit proposals for temporary supports.
4. System manufacturer: MOY Materials
5. Root Layer:: Paraflex ARD/S (FM) anti root waterproofing membrane.
   • Manufacturer: Imper Italia / Moy.
   - Product reference: Paraflex ARD/S Anti Root.
   • Material: FM Approved modified bitumen waterproofing membrane.
   - Thickness: 4mm.
6. Protection
   6.1. Protection layer: Diadem VLU 300 Fleece.
      • Manufacturer: Diadem / Moy Materials.
      - Product reference: VLU150 Protection fleece.
      • Material: mechanically hardened and thermally treated polypropylene fleece layer.
      - Thickness: 3mm.
7. Moisture control
   7.1. Drainage layer: Diadem DE40 Drainage & Reservoir Board.
      • Manufacturer: Diadem / Moy Materials.
      - Product reference: Diadem DE40 Drainage & Reservoir Board.
      • Material: Recycled Polystyrene.
      - Depth: 40mm.
      • Infill: May be infilled with suitable stone chipping where a load from roof mounted plant or equipment is proposed. Seek manufacturer’s advice.
   7.2. Filter membrane: Diadem VLF150 Filtration Fleece.
      • Manufacturer: Diadem / Moy Materials.
      - Product reference: VLF150 Filtration Fleece.
      • Material: Mechanically hardened and thermally treated polypropylene fleece layer.
      - Mass: 150 grm / M2
8. Planting systems
   8.1. Planting medium: Moy Grass Blanket blanket.
      • Manufacturer: Moy Materials.
      - Product reference: Native Grass blanket.
      • Planting mix: TBC
      - Thickness: Nominal 45mm.
      • Vegetation coverage (minimum): 85%.
   8.2. Planting requirements: To comply with FM Global 1-35.
      • Material: Rounded washed stone pebble per ASTM D448 diameter 25 – 50mm.

• Depth: 76mm minimum.
• Width: Per requirements of FM Global 1-35 (not less than 900mm where parapets of 760mm or
greater are provided). Create 4.0m wide gravel subdivision of larger vegetated areas to sections
not exceeding 1,450 M2, with no dimension exceeding 39M.

9. Vegetation Blanket:: Moy Biodiversity Sedum Mix blanket.
   • Manufacturer: Moy Materials.
   - Product reference: Native Sedum Mix blanket.
   • Planting mix: TBC
   - Thickness: Nominal 25mm.
   • Vegetation coverage (minimum): 85%
10. Vegetation Barrier:: To comply with FM Global 1-35.
    • Material: Rounded washed stone pebble per ASTM D448 diameter 25 – 50mm.
    • Depth: 76mm minimum.
    • Width: Per requirements of FM Global 1-35 (not less than 900mm where parapets of 760mm or greater are provided). Create 4.0m wide gravel subdivision of larger vegetated areas to sections not exceeding 1,450 M2, with no dimension exceeding 39M.
11. Support Pedestal:: Moy Diadem Paving Support Pedestal.
    • Manufacturer: Diadem / Moy Materials.
    - Product reference: Diaturtle.
    • Type: Adjustable Pedestal.
    • Material: Polypropylene.
    • Dimensions: Height 26 – 440mm.
    • Additional pedestals: See Manufacturers data pages.
    • Accessories: Slope correcting shims, Spacer Shims, Timber joist holders, Interlocking drainage channel and door threshold grilles (Manufacturers data pages).
12. Edge restraints: Moy Gravel Board.
    • Manufacturer: Diadem / Moy Materials.
    - Product reference: Moy KLS AL 8/12 Perforated Gravel Board.
    • Material: Aluminium.
    • Height: 80 / 120mm.
13. Inspection Chamber:: Moy Rainwater Outlet Inspection Chambers.
    • Manufacturer: Diadem / Moy Materials.
    - Product reference: KSE (Vertical Spigot) & KSA (Horizontal Spigot).
    • Material: Polypropylene to Colour RAL 7032.
    • Size: 300 x 300mm.
    - Depth: 150mm (Extension elements available).
    • Access covers: Lockable Lid with water drainage opening.
    • Features: UV Stabilized. Pre scored knock outs for drainage pipes and other services
14. Execution: Preparation: Clear all surfaces of debris.
    - Timing: After certification of waterproof membrane integrity.
    - Surface condition: Visually inspect waterproof membrane, report any damage.
    • Faults in waterproof membrane: Report.
    • Contamination: Do not use materials detrimental to healthy plant growth.
    • Storage: Do not overload.
    - Point loads: Avoid.
    • Outlets: Do not block.
    - Outlet grilles: Installed
15. Adverse Weather: Preparation: Clear all surfaces of debris.
    - Timing: After certification of waterproof membrane integrity.
    - Surface condition: Visually inspect waterproof membrane, report any damage.
    • Faults in waterproof membrane: Report.
    • Contamination: Do not use materials detrimental to healthy plant growth.
    • Storage: Do not overload.
    - Point loads: Avoid.

• Outlets: Do not block.
- Outlet grilles: Installed

16. Protection Layer Installation:: Joints: Minimize.
- Overlaps (minimum): 150mm.
• Upstands: Extend to top of growing medium
17. Moisture Retention MAT Installation:: Joints: Minimize.
- Overlaps (minimum): 150mm.
• Upstands: Fit closely around penetrations and outlets.
18. Drainage Layer Installation:: Extent: Continuous over entire roof area.
• Fitting: Laid loose with butt joined edges.
• Upstands: Fit closely around penetrations and outlets
19. Filter Drain installation:: Joints: Minimize.
- Overlaps (minimum): 200mm.
• Fitting: Laid Loose, turned back over the surface of the growing medium before placement of the
Sedum blanket.
• Upstands: Extend to top of growing medium and turn back per manufacturer's details.
20. Growing Medium Installation: : Handling: Minimize.
- Conditions: Handle in the driest condition possible. Do not handle or install when wet or frozen.
• Layers:
- Depth (maximum): 100 mm.
- Sequence: Gently firm each layer before spreading the next.
21. Vegetation Blanket Installation: Handling blankets:
- Timing: Lay within 36 hours of lifting from growing position.
- Excessive stacking: Not permitted.
- Material loss (maximum): 3% of total surface area.
• Growing medium condition: Thoroughly watered.
• Laying blankets:
- Dry, damaged, frosty or waterlogged blankets: Do not lay.
- Orientation: Diagonal or perpendicular to slope of roof.
- Joints: Stagger. Butt together or slightly overlap to prevent gaps. Do not stretch blankets. Secure with biodegradable pegs.
- Edges: Finish edges and perimeters with whole blankets.
- Consolidation: Firm as laying proceeds to ensure full contact with the growing medium. Do not use rollers. Install such temporary wind securement ballast as may be required to secure the blanket until established. Seek manufacturers advice for exposed sites.
• Dressing: Apply Moy growing media to any exposed blanket edges or bare areas.
- Application: Brush in to fill joints.
• Watering: Water at a minimum rate of 2 liters per M2, immediately after laying and dressing. Irrigate 2 -3 times weekly until the blanket becomes established.
22. Edge Retention Profile Installation:: Cutting: Neat, accurate and without spalling.
- Junctions: vertical, secured using proprietary connectors.
• Position: True to line and level. Smooth continuous lines.
• Fixing: Seek Manufacturers advice.
23. Inspection Chamber Installation:: Location: Install centrally over drain outlet.
- Orientation: Align parallel with adjacent features.
• Bedding: Securely bedded upon the protection fleece layer.
• Backfill: Min 300mm wide band of ballast pebble.
• Surround: Dressed with a pre-cut apron of VLF150 fleece tightly fitted by cutting and pulling over
the walls of the inspection chamber. No growing media shall be allowed to wash into the rainwater outlet.
24. Pedestal Installation: : Ensure that surface to accept pedestals is clean and free of debris.
• Setting out: Mark center-point of pedestal on substrate surface, with perpendicular guidelines to ensure square layout.

- Orientation: Align parallel with adjacent features.
- Spacing: Per requirements of the selected paving slab.
• Overall movement tolerance (maximum): 3 mm

25. System completion: General: Leave the works in a clean, tidy condition.
• Surfaces: Clean immediately before handover.
• Outlets: Clean and clear of obstructions.
• Completed green roof: Protect from adjacent or high level working

25.1. Documentation:: Timing: Submit at handover.
• Contents:
- Growing medium declaration of analysis.
- Manufacturers' guarantees and warranties.
- Procedures for maintenance of the green roof.
- Record drawings showing the location of planting and associated features.
• Number of copies: Digital Copy to Installing Contractor & Main Building Contractor.

25.2. Inspection:: Before handover.
- Give notice (minimum): 3 days

System performance

Ac_85_70_40/210 Contractor design of living roofs

1. Description: Submit proposals
2. Scope: *Complete the design of the green roof systems in accordance with GRO's 'Green roof code: code of best practice for the UK'*.
3. Design criteria
   3.1. Functional:
   3.2. Aesthetic: Semi Matured
   3.3. Biological and physiological
      3.3.1. Growing conditions:
         - Wind resistance, Microclimate suitable
4. Submittals: Manufacturers' literature. Overall dimensions of construction. Planting layout drawings. Schedule of proposed seed mixes. Technical information.

Ac_85_70_40/210 Contractor design of living roofs Type A

1. Description: Submit proposals
2. Scope: *Complete the design of the green roof systems in accordance with GRO's 'Green roof code: code of best practice for the UK'*.
3. Design criteria
   3.1. Functional:
   3.2. Aesthetic: Semi Matured
   3.3. Biological and physiological
      3.3.1. Growing conditions:
         - Wind resistance, Microclimate suitable
4. Submittals: Manufacturers' literature. Overall dimensions of construction. Planting layout drawings. Schedule of proposed seed mixes. Technical information.

Ac_85_70_40/210 Contractor design of living roofs Type B

1. Description: Submit proposals

2. Scope: *Complete the design of the green roof systems in accordance with GRO's 'Green roof code: code of best practice for the UK'*.
3. Design criteria
   3.1. Functional:
   3.2. Aesthetic: Semi Matured
   3.3. Biological and physiological
      3.3.1. Growing conditions:
         - Wind resistance, Microclimate suitable

4. Submittals: Manufacturers' literature. Overall dimensions of construction. Planting layout drawings. Schedule of proposed seed mixes. Technical information.

Ac_85_70_40/210 Contractor design of living roofs Type C

1. Description: Submit proposals
2. Scope: *Complete the design of the green roof systems in accordance with GRO's 'Green roof code: code of best practice for the UK'*.
3. Design criteria
   3.1. Functional:
   3.2. Aesthetic: By Agreement with Architect
   3.3. Biological and physiological
      3.3.1. Growing conditions:
         - Wind resistance, Microclimate suitable

4. Submittals: Manufacturers' literature. Overall dimensions of construction. Planting layout drawings. Schedule of proposed seed mixes. Technical information.

Ac_85_70_40/240 Hydraulic performance of living roofs

1. Description: hydraulic performance requirements for living roofs
2. Standard: CIRIAC753,The SuDS manualindicates that the hydraulic design of living roof drainage should follow the principles set out inBS EN 12056-3
3. Average water retention capacity: Refer to Arups Civils Documentation
4. Discharge coefficient (C): Refer to Arups Civils Documentation
5. Water storage capacity: Refer to Arups Civils Documentation

Ac_85_70_40/240 Hydraulic performance of living roofs Type A

1. Description: hydraulic performance requirements for living roofs
2. Standard: CIRIAC753,The SuDS manualindicates that the hydraulic design of living roof drainage should follow the principles set out inBS EN 12056-3
3. Average water retention capacity: Refer to Arups Civils Documentation
4. Discharge coefficient (C): Refer to Arups Civils Documentation
5. Water storage capacity: Refer to Arups Civils Documentation

Ac_85_70_40/240 Hydraulic performance of living roofs Type B

1. Description: hydraulic performance requirements for living roofs
2. Standard: CIRIAC753,The SuDS manualindicates that the hydraulic design of living roof drainage should follow the principles set out inBS EN 12056-3

3. Average water retention capacity: Refer to Arups Civils Documentation
4. Discharge coefficient (C): Refer to Arups Civils Documentation
5. Water storage capacity: Refer to Arups Civils Documentation

Ac_85_70_40/240 Hydraulic performance of living roofs Type C

1. Description: hydraulic performance requirements for living roofs
2. Standard: CIRIAC753,The SuDS manualindicates that the hydraulic design of living roof drainage should follow the principles set out inBS EN 12056-3
3. Average water retention capacity: Refer to Arups Civils Documentation
4. Discharge coefficient (C): Refer to Arups Civils Documentation
5. Water storage capacity: Refer to Arups Civils Documentation

Ac_85_70_40/260 Compliance with performance requirements

1. Description:
2. Requirement: Proof of compliance with specified performance.
3. Method
   3.1. Previous test results: Structural Performance
   3.2. Computer simulation testing: Hydraulic Performance
4. Submittals
   4.1. Format: *Test results and certification*.
   4.2. Timing: *At detailed design stage*.
   Before commencing installation.

Ac_85_70_40/260 Compliance with performance requirements Type A

1. Description:
2. Requirement: Proof of compliance with specified performance.
3. Method
   3.1. Previous test results: Structural Performance
   3.2. Computer simulation testing: Hydraulic Performance
4. Submittals
   4.1. Format: *Test results and certification*.
   4.2. Timing: *At detailed design stage*.
   Before commencing installation.

Ac_85_70_40/260 Compliance with performance requirements Type B

1. Description:
2. Requirement: Proof of compliance with specified performance.
3. Method
   3.1. Previous test results: Structural Performance
   3.2. Computer simulation testing: Hydraulic Performance
4. Submittals
   4.1. Format: *Test results and certification*.
   4.2. Timing: *At detailed design stage*.
   Before commencing installation.

Ac_85_70_40/260 Compliance with performance requirements Type C

1. Description:
2. Requirement: Proof of compliance with specified performance.
3. Method
   3.1. Previous test results: Structural Performance
   3.2. Computer simulation testing: Hydraulic Performance
4. Submittals
   4.1. Format: *Test results and certification*.
   4.2. Timing: *At detailed design stage*.
   Before commencing installation.

Ω End of System