MEP Services Concept Report

Darwin Court

Airspace Group Ltd

January 2024

envision

BUILDING SERVICES MEP SERVICES CONCEPT REPORT

PROJECT NUMBER	ESL 23-0339
PROJECT	Mechanical and Electrical Services MEP Report – Concept Prepared for Darwin Court
CLIENT	Airspace Group Ltd
CONSULTING ENGINEERS	Envision Sustainability Ltd 8-9 Stephen Mews London W1T 1AF

Revision	Date
A	19/01/2024

Author	Signature
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Checked & Authorised	**Signature**
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1 INTRODUCTION – MEP CONCEPT REPORT

This MEP Concept Report has been prepared by Envision on behalf of Airspace Group Ltd and supports the scheme development at Darwin Court.

The works described within this document have been based on the latest drawings for the proposed works.

This document seeks to provide an overall strategy for the new rooftop extension works but remains at a strategic level. It is anticipated that detailed design will be required to resolve all issues required for a successful re-development.

The contractor shall note that they are required to undertake detailed design of all services, this report and the design drawing produced are at concept stage only.

1.1 Building use / Description

The existing building is located at 2-24 Gloucester Avenue, comprises 5 x flat roofed apartment buildings constructed in the 1970s. The buildings are constructed in a linear form and are set within large plots with large areas of soft landscaping.

The buildings contribute to the varied character of Gloucester Road, which includes a range of buildings with varying heights, age and architectural style.

The site is located within the Primrose Hill Conservation Area. None of the buildings are statutory listed, and the buildings are noted as making a negative contribution to the character and appearance of the Conservation Area. The site is located in Flood Zone 1, the lowest probability of flood risk. The site benefits from a public transport accessibility level (PTAL) of 3.

The proposal is the construction of a new single storey extension on the existing roof of Darwin Court on each block, This will include the introduction of 8 new flats with a range of 2 bed and 3bed flats. The proposals have be developed to meet the requirements of the both the existing building and the new proposed works.

1.2 Building form

The build will be undertaken over a single storey extension.

Existing service risers are to be retained with an allowance for this space to be made within the new layouts.

It is anticipated that a 150mm ceiling void will be provided throughout to accommodate services routing.

Figure 1.1 –Existing Site Plan

1.3 Concept stage MEP load analysis

The contractor shall be responsible for making applications for all new supplies and disconnections of existing supplies where applicable.

1.4 Summary of Building Heat loss (Estimated)

For the purpose of this concept report an estimated load of 60w/m2 has been applied to the new development. This equates to a total of 65.64 kW. A summary of the load breakdown can be seen below.

Additionally, each dwelling shall be provided with a suitably sized DHW cylinder linked to the heat pumps and backed up with an immersion heater.

The ASHP will be sized to match the highest demand for each property, with a suitably arranged control to allow for the hot water production to occur during night time when there is no demand for space heating.

Block	Type	Area (m2)	Heat Loss (W)	Heat Loss (kW)
A	3 Bed	184	11040	11.04
B	2 Bed	121	7260	7.26
B	2 Bed	121	7260	7.26
C	2 Bed	121	7260	7.26
C	2 Bed	121	7260	7.26
D	2 Bed	121	7260	7.26
D	2 Bed	121	7260	7.26
E	3 Bed	184	11040	11.04
			Total Site Load	**65.64**

It is anticipated that a Mitsubishi Air Source Heat Pump (ASHP) system will be utilised for the production of domestic heating and hot water.

The each dwelling shall be provided with a suitably sized DHW cylinder linked to the heat pumps and backed up with an immersion heater.

The ASHP will be sized to match the highest demand for each property, with a suitably arranged control to allow for the hot water production to occur during night time when there is no demand for space heating.

Note: Comfort cooling/air-conditioning is not included in this services strategy.

1.5 Summary of Booster Tank and Pumpset Sizing

The building water supply is currently provided via a mains cold water feed to the building which is routed to roof level and feeds a number of cold water storage tanks. The building is then provided with a Cold Water Down Service (CWDS).

Part of the new works requires the existing CWDS tanks to be stripped out to allow the new roof top extension to be completed.

As the existing water pressure cannot be guaranteed, a new below ground booster set and storage tank shall be installed as indicated on the associated drawings and provide a new boosted cold water service to the building.

The existing cold water pipework risers within each block shall be retained and reconnected to the new BCWS as shown on ESL 23-0339-SS-00-001. The below indicates the total water requirements on a block by block basis, including the requirements for the new extension works.

Block by Block requirement	LU	l/s	Storage Requirement (L)
Block A	493	2.00	1800
Block B	450	1.80	1620
Block C	450	1.80	1620
Block D	526	2.05	1845
Block E	341	1.65	1485

1.6 Preliminary Estimated Electrical Load

It is anticpated that the new electrical load will be in the order of 224 kVA for the site. This assumes that the Electric Vehicle Charging points will include loading monitoring to reduce the charging capacity when loads are high in the property. The required works have been detailed by crown energy and the asscoiated quote has been porivded as supporting information.

Temporary Shutdown - Block E

Crowmn Energy have assessed the existing network and confirmed that in this instance they are able to accommodate a new total loadas detailed below, without the need to alter our contractor infrastructure. however, They will have to organise a temporary shutdown to allow you to work on your distribution board. the price shown below includes the cost of the temporary shutdown and the costs incurred by our contractor in assessing the network.

Inspection of your first point of isolation/distribution board and termination of your conductorsblocks a, b, c &d.

We have assessed our existing network and i am pleased to confirm that in this instance we are able to accommodate a new total load as detailed below without the need to alter our contractor infrastructure. However, we will have to inspect your first point of isolation/distribution board and arrange for the termination of your conductors onto our point of supply. The price shown below includes

The cost of the inspection and the termination of your conductors, as well as the costs incurred by our contractor in assessing the network.

Total maximum load

We have concluded that a total maximum load of 224 kva can be provided to your site via the requested additional mpans and those already registered where applicable, as per below load breakdown:

Blocks: A, B, C –141kva total load

Blocks: D&E -83kva total load

Note

The power requirement for the building shall be served via the local network which is owned and operated by UK Power Networks (UKPN). The proposed development receiving the load is subject to application and network studies taking place to ensure there is sufficient capacity within the network adjacent to the site.

The apartments will have a new consumer unit which will supply the electrical services within the unit, a new smart meter will be fitted.

1.7 Approved Document Part L Concept Stage Review

The works shall comply with the New Build sections of current Part L 2021 and the contractor shall provide an updated, lodged EPC on completion.

2 DESCRIPTION OF WORKS

The following works describe the preliminary design for the installation of the Mechanical and Electrical and Public Health (MEP) services for the works at Bericote House.

The Brief provides an outline description scope of works anticipated for the Building Services within the building. The building design, floor layouts and configuration concepts are in development. This concept review has considered information provided by Scenario Architecture and has been developed in line with our interpretation of the client's requirements and with design options to be considered.

The installation shall comply fully with all the relevant British Standards, Statutory Acts, CIBSE Guidelines, Building Regulations Parts L and F and any Planning Constraints including:

IET 18th Edition Wiring Regulations BS7671 to current amendment.
CIBSE Codes of Practice, Guidelines and Recommendations in particular SLL Lighting Guide 9:Residential Lighting and SLL Lighting Handbook.
All relevant British Standards and Codes of Practice in particular:

- Fire alarm detection in accordance with BS 5839
- Emergency lighting in accordance with BS 5266-1 and EN 1838.
- BS EN 12464-1: 2011 Light and Lighting – Lighting of Work Places Part 1: Indoor Work Places
- BS EN 12464-2: 2014 Light and Lighting – Lighting of Work Places Part 2: Outdoor Work Places.

Building Regulation approved Documents and in particular Part P relating to Electrical Safety in Dwellings.
Electro-magnetic interference guidelines.
Construction design and management regulations.
Manufacturers recommendations for installation, testing and commissioning, and maintenance.
COSHH regulations.
The Health & Safety at Work Act & Recommendations of the Health & Safety at Work Executive.
Factories Act.
Health & Safety at Work Act.
Electricity Acts.
Electricity at Work Regulations.
Local By-Laws and regulations.

At this stage our assessment suggest the following Building Services will be considered for design development:

1. New below ground break and booster set to be installed providing the building with a new boosted cold water supply. Reconnection to the existing MCWS riser to provide new supply for the building replacing the existing down service and re connect into the existing internal distribution network.
2. New individual Air Source Heat Pumps (ASHP) (heating & DHW generation only) located on the roof as indicated on layout drawings. Internal distribution of LTHW pipework to underfloor heating and DHW systems. Domestic hot water will be provided via a suitably sized DHW cylinder and backed up with a 3kW immersion heater.
3. 115L of stored water per bedroom, and backed up with a 3kW immersion heater.
4. Above ground drainage from each new sanitary appliance.
5. Existing roof top drainage and vent pipes to be extended to new roof level.
6. MVHR system providing fresh air to all habitable zones in the new flats and extracting air from wet rooms and the kitchen.
7. A new sprinkler misting system shall be provided to each new flat fed from the new boosted supply.
8. New electrical supply to the new flats. LV electrical distribution from a central distribution location in the basement. Meters to be located within the basement and cables extended to roof level.
9. A smart meter and consumer unit shall be provided in each flat which will be used to power all the circuitry within.
10. Small Power, Lighting and Data design throughout each apartment.
11. Lighting circuit and fittings to each new area with manual switching, PIR and daylight dimming where applicable.
12. Remove and replace TV via satellite mounted on existing roof levels, and replace on new roof extension. Extend service to all new and existing apartments.
13. New Fibre to each new flat for data and telecoms.
14. Fire alarms and detectors to each new flat.
15. LV and control wiring for all mechanical plant in each new flat.

2.1 Design Criteria

The following design criteria shall be applied to all Building Services selections.

a. Internal Conditions for areas within the buildings.

All heated spaces : 21˚c

Note – Conditions will vary with Ambient temperature in summertime where no active cooling proposed.

b. Heating Temperatures (LTHW)

ASHP – Underfloor Heating

Flow Temperature: 50˚c

Return: 40˚c

DHW will be stored at 60oC minimum.

c. Internal Lighting Levels

Dwelling lighting levels shall be as follows, using light fittings with a minimum efficacy of 100 luminaire lumens per circuit watt:

Room/Area	Light Level (LUX)
Entrance Halls	200
Living Rooms	150
Dining Rooms	150
Kitchens	200
Bedrooms	150
Bathrooms	150

d. External Lighting Levels

Pedestrian Walkways: 5Lux – uniformity 0.25

e. Occupancy density

In line with architect drawings.

f. Ventilation Systems

Mechanical supply and extract systems to incorporate heat recovery via heat exchange in accordance with building regulations part F, table 1.3.

Each habitable room should have mechanical supply ventilation. The total supply air flow should be distributed proportionately to the volume of each habitable room. Mechanical supply terminals should be located and directed to avoid draughts.

The systems shall include intake/exhaust louvers within the external walls to bring fresh air into the building and discharge stale are to atmosphere. Louvers will be positioned as such that contamination of the fresh air is mitigated by locating these away from potential pollution sources e.g., toilet extract discharge etc.

All internal doors shall be undercut to allow good internal air transfer between rooms.

g. Electrical Supply Characteristics

Electrical General	
Temperature range for equipment selection	External -15C to +40C Internal +10C to +40C
Relative humidity for equipment selection	0 to 80% RH
Supply Voltage	240/1/50 nominal
Electrical Cable Sizing	
Total volt drop from origin of circuit	Lighting – 3% Other uses – 5%
Sub-main cable size	2.5mm2 minimum
Cable sizing general except for final circuits	20% spare capacity
Final Circuits: Ring circuits Radial circuits Lighting circuits	 2.5mm2 minimum 2.5mm2 minimum 1.5mm2 minimum
Radial circuits	2.5mm2 minimum
Lighting circuits	1.5mm2 minimum
Final Circuit Design	
Lighting	6.0A max installed load
Final Circuit design current for volt-drop and Grouping calculations	
Lighting	Installed load
Ring circuits	32.0A
Final Circuit Grouping – in addition to IET Regs requirements – Max. number of circuits per containment compartment	
Lighting	16 circuits
Ring or radial (combined circuit)	7 circuits
Final Circuit load diversity for building load calculations	
Lighting	Minimum – design load x 66%

Ring circuits	Minimum – 32.0A x 30%
Radial circuits	Minimum – design load x 50%
Spare Capacity required	
Containment – trunking	Sized to ensure that a 45% space factor can be attained with 20% additional future cabling
Containment – sub-main	Sized to allow 20% additional future cabling without stacking
Containment - other	Sized to allow 20% additional future cabling
Sub-main cables	Diversified design current not to exceed 75% of corrected rating
Final circuit distribution boards	20% complete spare TPN ways above design requirements
Switch boards	20% complete spare TPN ways above design

h. Sanitary Appliances

The contractor shall undertake Part G calculations when sanitary fittings have been selected to ensure compliance with the planning policy and Building Regulations.

3 MEP CONCEPT – KEY DESIGN ITEMS

3.1 Above Ground Drainage

New above ground drainage utilising branch UPVC pipework will be installed to serve all necessary equipment that will include, but not necessarily limited to, the following:-

- Soil and waste fittings to WC's, Showers, Baths, Sinks and Wash Hand Basins.
- All over flows from WC cisterns and basins.

The above ground drainage installation will be designed and installed in accordance with the relevant BS & Codes of Practice. The local Building Control Officers' requests will also be sought and implemented

The installation of the above ground drainage will be designed in order to ensure that:-

- All the appliances drain quickly, quietly and completely at all times without nuisance or risk to health.
- Discharge is conveyed without cross flow, back fall, leakage or blockage.
- All above ground drainage shall be contained within removable 'boxing in' sections. Rodding eye locations shall be allowed as necessary.

All vertical stack drainage shall be acoustically insulated – Geberit - Silent db20 HDPE or equal within the new parts of the building.

3.2 Domestic Cold Water Services

The existing domestic water arrangement consists of an incoming mains supply which serves a cold water storage tank located at roof level of each block. The storage tanks provide a gravity fed supply to each of the apartments with a down service which drops to below from the tank room.

As part of the new upgrade works, a new cold water system and break tank will be required with two options for the temporary isolation works.

- Option 1 - Requires temporary down service tanks to be located at roof level outside of the new development zone. This allows for the new extension works to take place whilst still providing a cold water down service to the building.
- Option 2 - Requires new below ground booster set and break tank to be installed at basement level prior to the new developments works taking place providing a new boosted cold water supply for the building.

The building shall be provided with a new boosted cold water services (BCWS) at basement level or roof level depending on the selected option, which will rejuvenate the existing MCWS riser within the building. All works for the new/temporary booster set will be required prior to any decommissioning of the existing down service tanks and distribution at roof level. This will ensure the building continues to have a water supply whilst upgrade works are taking place.

Each new apartment will be provided with a circa 28mm diameter cold water supply to serve the sanitary fittings and any water using equipment. Stop cocks will be provided within the services cupboard prior to connecting to any outlets within the apartment.

The energy and sustainability report has specific reference to water saving requirements for the development.

3.3 External Lighting to Building

External lighting shall be provided to the new roof level and is to be designed by a lighting specialist.

The lighting will be designed to enable the residents a safe route to walk around the building.

The lighting will be controlled via a presence and daylight sensor array to ensure no nuisance lighting.

3.4 Internal Lighting

Internal lighting shall be provided to the building and is to be designed by a lighting specialist.

The lighting within the building will be designed to give a habitable and a level of light which will give the occupants an inviting feeling.

Within the units, downlights accompanied by pendant fittings should be considered. The lighting shall be control by manual switching, PIR and daylight dimming.

3.5 Ventilation

Mechanical ventilation with heat recovery and natural ventilation will be the preferred method to sustain the environment within the dwellings. Natural ventilation will be provided to reduce the risk of overheating in the summer by a method suitable to the space and also with full consideration to security and safety. Additional natural ventilation and purge will be achieved by utilising the openable windows.

The design of the ventilation systems will be undertaken in conjunction with the project Architect to provide a fully integrated solution.

The ventilation openings will be designed to achieve ventilation at a rate to satisfy the latest building regulations part F.

The kitchens, bathroom, bedrooms and living room areas will be provided with type 4 continuous mechanical supply and extract ventilation with heat recovery. Fresh air make up air will be provided by supply diffusers mounted at high level within the dwelling, generally in accordance with the typical arrangement shown below.

The proposed ventilation unit for each apartment is the Nuaire MVHR - MRXBOX95(AB)-WM1.

Figure 4.1 – Nuaire MVHR details

3.6 EPCs/SAP/SBEM

The contractor shall be responsible for producing the associated Energy works for the proposed installation. The contractor shall be required to update the EPCs for the new dwellings and lodge at practical completion.

4 RENEWABLE TECHNOLOGY OPTIONS

The following systems shall be considered during the design development process to satisfy clients aspirations to reduce energy demand and implement best practice guidance for new buildings.

The systems selections shall be designed to satisfy planning and building regulations requirements for new build construction.

4.1 Heating Installation – Air Source Heat Pumps

Envisions assessment has determined the most appropriate heating solution for the development will be the use of air source heat pumps. External space has been allocated for the equipment and it is anticipated these will be located on the new roof extension.

Figure 5.1 – Mitsubishi Ecodan Ultra Quiet Unit

This system (at stage 2) is considered the most suitable and in line with budget cost appraisal and as identified in the planning stage energy statement.

Options will be developed using a Mitsubishi Ecodan ultra quiet unit which will be combined with a suitably sized Mitsubishi FTC5 pre-plumbed standard cylinder for DHW generation. Space allowance has been made externally for the heat pump unit and space will be required in each unit for the DHW cylinder.

Each dwelling will be provided with heating to all rooms via underfloor heating with control provided by thermostats for zone temperature control.

4.2 DHW installation – Air Source Heat Pumps

The heat pump shall provide LTHW to each unit's DHW cylinder. The DHW storage in each unit will be via a suitably sized cylinder designed to integrate with the Mitsubishi heat pump system. It is proposed that the 1-bed apartments and 2-bed apartments will accommodate a 150litre and 210litre cylinder respectively.

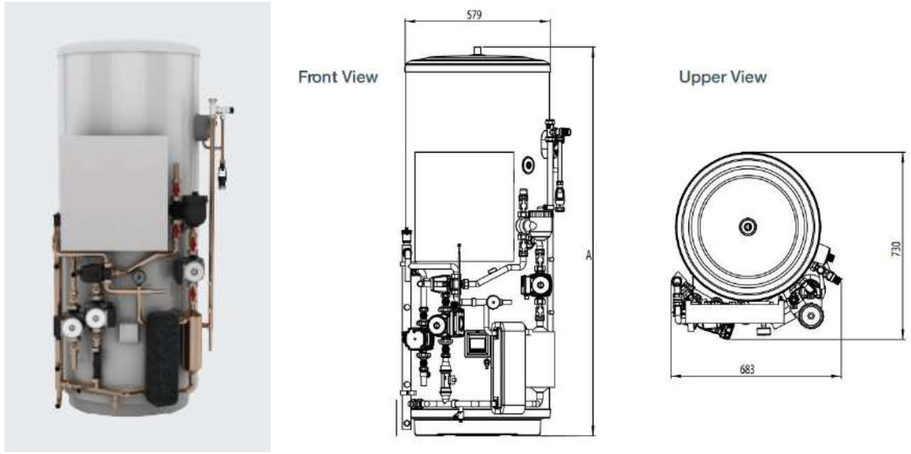


Figure 5.2 – Mitsubishi Pre-plumbed Cylinder

4.3 Roof Mounted PV array

The site has the potential to incorporate a total of 511m2 of free area to mount a PV array over 3 roofs, this will equate to approximately 90kWp depending on the manufacturer chosen. A total of 16.4 kWp is required toi be directly connected to the new development with the remaining portion being reconnected into the building main ryefield panel and distributed to the existing apartments.

The contractor shall allow to install these at roof level in the location shown on the drawings, with the inverters mounted internally within a cupboard or store space to be agreed with the architect. A supply from the PV system will be fed directly to the central distribution to ensure an even distribution of renewable energy to each apartment

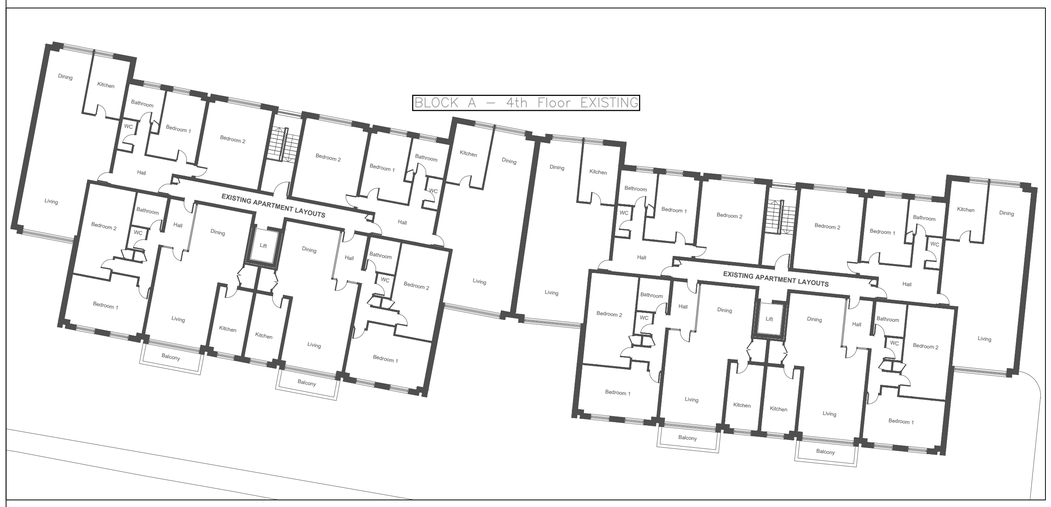
APPENDIX A – PROPOSED MANUFACTURERS (ALL EQUAL AND APPROVED)

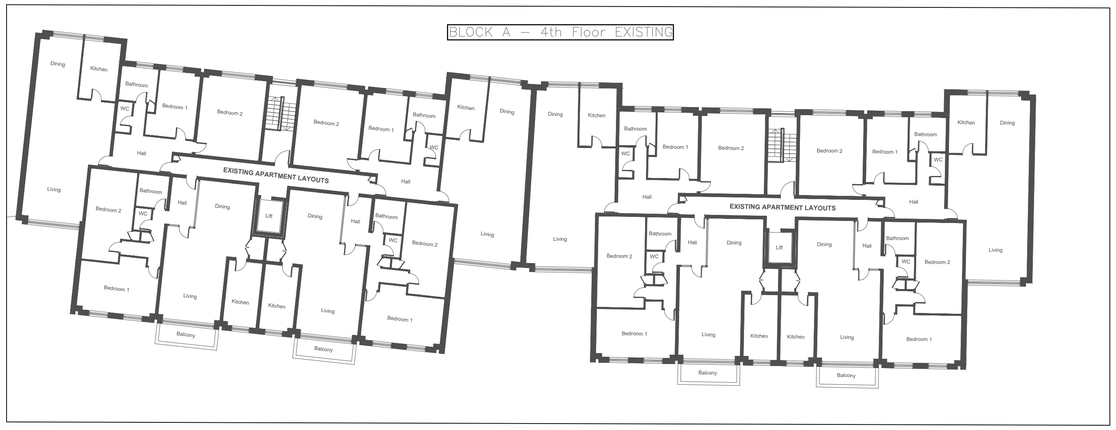
Mechanical Services

System	Manufacturer
Heat Pump System	Mitsubishi Electric
	Daikin
MVHR	Vent Axia
	Nuaire
Grilles and Diffusers	Nuaire
	Schako Limited
	Trox Limited
Valves	Crane Limited
	Hattersley Limited
	Oventrop
Water storage Cylinders	Mitsubishi Electric
	Daikin
Pumps	Grundfos
Underfloor Heating	Warmafloor
	Uponor

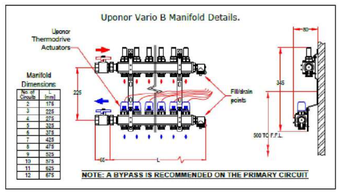
Electrical services

System	Manufacturer
Distribution Switchgear	Eaton MEM
	Schneider
General Lighting	Orlight
	Thorlux Lighting
	Concord Lighting
	ASD Lighting
External Lighting	Thorlux Lighting
	Concord Lighting
	ASD Lighting
LV Small Power Accessories	MK
	Crabtree
	Schneider
Fire Detection Systems	Clymac Fire Detection Systems
	Chubb Fire Detection
CCTV	Y3K – Xvision
	Bascom





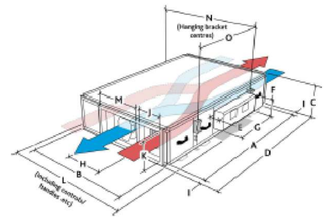
UFH DETAIL



UFH TYPICAL DIMENSIONS

KEY	
	EXISTING VENT PIPE
	NEW RISER LOCATION
	MAINS COLD WATER SERVICE (MCWS)
	COLD WATER DOWN SERVICE (CWDS)
	ISOLATION VALVE
	PIPEWORK BELOW FLOOR
	PIPEWORK AT LOW LEVEL

NOTE:
ALL NEW EXTERNAL PIPEWORK TO BE THERMALLY INSULATED AND CONCEALED TO PREVENT FREEZING AND EXTERNAL DAMAGE.
ALL NEW EXTERNAL COLD WATER PIEPWORK TO BE INSTALLED IN MDPE TO REDUCE RISK OF LEAKS IN THE VOID BELOW APARTMENTS.



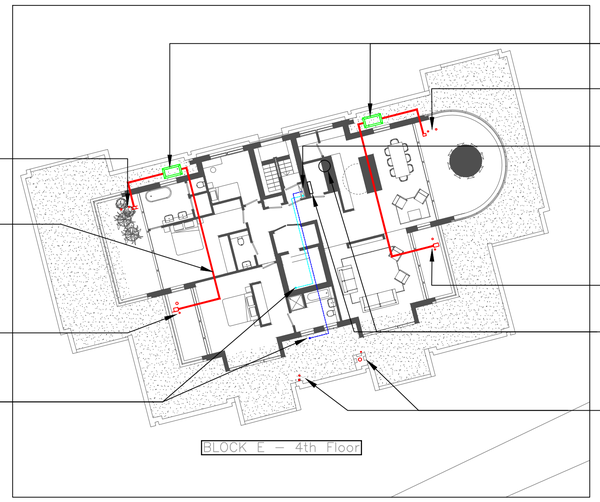
MVHR TYPICAL SCHEMATIC

RETAINED VENT PIPES TO VENT WITHIN NEW ROOFTOP EXTENSION VOID

NEW DUCTWORK TO BE INSTALLED AT EXISTING ROOF LEVEL AND TO CONNECT TO EXISTING RISER THROUGH THE NEW ROOFTOP EXTENSION VOID . ALL DUCTWORK TO BE THERMALLY INSULATED

RETAINED VENT PIPES TO VENT WITHIN NEW ROOFTOP EXTENSION VOID

TYPICAL NEW BCWS AND CWDS SERVICE RISER/DROPS. NEW BCWS TO BE RECONNECTED TO EXISTING CWDS BELOW NEW MODULAR EXTENSION AS PER SCHEMATIC DRAWING.



NEW EXTRACT FAN TO BE INSTALLED AT ROOF LEVEL TO REPLACE EXISTING

RETAINED VENT PIPES TO VENT WITHIN NEW ROOFTOP EXTENSION VOID

TYPICAL NEW BCWS AND CWDS RISER/DROPS. NEW BCWS TO BE RECONNECTED TO EXISTING CWDS BELOW NEW MODULAR EXTENSION AS PER SITE SERVICES DRAWING ESL 23-0339-S0-06-001. NEW RISER CUPBOARD TO BE CREATED TO ALLOW FOR ISOLATION OF EXISTING PIPEWORK.

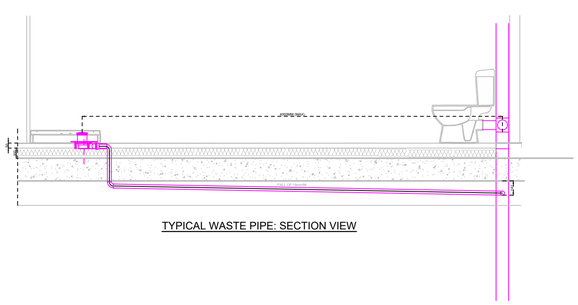
RETAINED VENT PIPES TO VENT WITHIN NEW ROOFTOP EXTENSION VOID

SPACE ALLOWANCE FOR NEW DHW CYLINDER AND CONSUMER UNIT

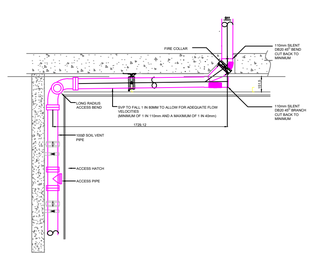
VENT PIPES TO BE RETAINED

NOTE:

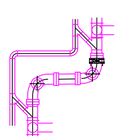
1. SITE SURVEY WAS CONDUCTED TO IDENTIFY THE NEED FOR REMOVAL/MOVING OF ROOF TOP EQUIPMENT TO ACCOMMODATE THE NEW ROOF TOP EXTENSION. IN THE EVENT ANY ADDITIONAL SERVICES ARE IDENTIFIED WHICH WHERE NOT HIGHLIGHTED ON STRIP OUT DRAWINGS, THE CONTRACTOR SHOULD IDENTIFY A SAFE METHOD OF ISOLATING AND RELOCATING WHERE REQUIRED.
2. ANY CABLE AND CABLE TRAY ROUTED AT ROOF LEVEL CAN BE RETAINED AND WILL BE CONCEALED WITHIN THE NEW ROOFTOP EXTENSION VOID.
3. ALL EXISTING WALKWAY GUARD RAILS ARE TO BE REMOVED.
4. ANY PIPERWORK ROUTED EXTERNAL IS TO BE ADEQUATELY INSULATED AND CONCEALED WHERE POSSIBLE WITH ACCESS FOR MAINTENANCE AND INSPECTION.



TYPICAL WASTE PIPE: SECTION VIEW



TYPICAL SVP OFFSET WITHIN SERVICES VOID



STACK OFFSET VENTILATION ARRANGEMENT

DOUBLE AIR BRICK - TO FIRE REGS

Notes

The contractor is to check and verify all building and site dimensions, levels and sewer invert levels at connection points before work starts. The Contractor is to comply in all respects with current building legislation, British standard specifications, building regulations, construction (design & management) regulations, party wall act, etc, whether or not specifically stated on this drawing. This drawing must be read with and checked against all relevant engineers and architects drawings and all other specialist documentation provided.

Sketch proposals are for illustrative purposes only & as such are subject to detailed site investigation including ground conditions / contaminants, drainage, design & planning / density negotiations. Sketch proposals may be based upon enlargements of OS sheets & visual estimations of existing site features, accuracy will therefore need to be verified by survey. Sketch proposals have not been considered in respect of CDM regulations.

Do not scale. Work to given dimensions only.

This drawing is a single service drawing showing the concept design. This drawing is not a co-ordinated working/installation drawing and should not be used as such. Any Contractor using this drawing as a working/installation drawing does so at his own risk.

Status

☐ Preliminary ☒ For Comment ☐ For Approval
☐ For Information ☐ For Tender ☐ For Contract
☐ For Record Purposes

Revision

Ref	Details	Rev.by	Chk'd	Date
A	Issued for comment	HS	CD	19.01.24

Client

Airspace

Project

Darwin Court
New Rooftop Extension

envision
8-9 Stephen Mews
Fitzrovia
London
W1T 1AF
T: 0207 4860680

Title

M&E Servcies - Concept Layout
Proposed 4th Floor

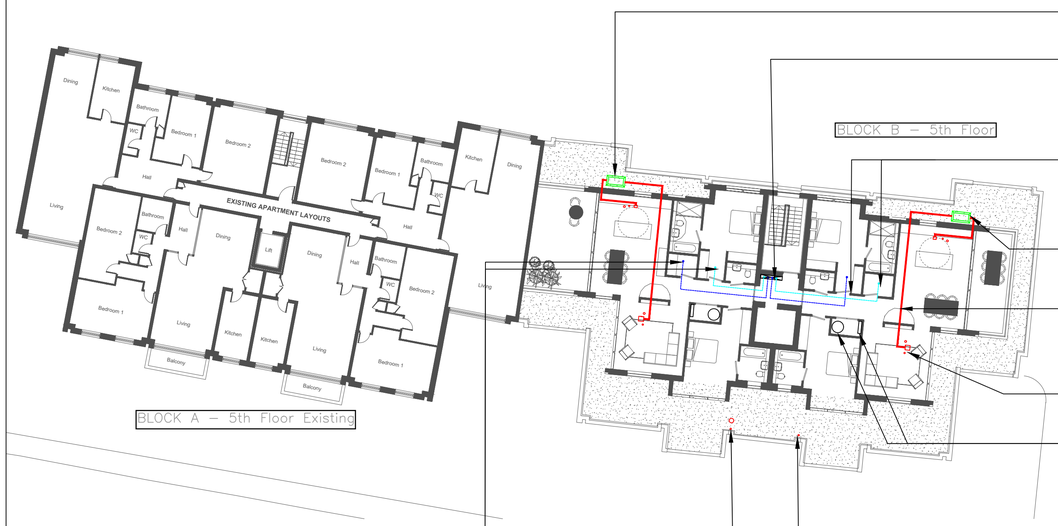
Drawn/CAD	Engineer	Scale	Date
HS	CD	1:200	JAN '24

Drg No

ESL 23-0339-ME-04-001

Revision

A



NEW EXTRACT FAN TO BE INSTALLED AT ROOF LEVEL TO REPLACE EXISTING

TYPICAL NEW BCWS AND CWDS RISER/DROPS. NEW BCWS TO BE RECONNECTED TO EXISTING CWDS BELOW NEW MODULAR EXTENSION AS PER SITE SERVICES DRAWING ESL 23-0339-S0-06-001. NEW RISER CUPBOARD TO BE CREATED TO ALLOW FOR ISOLATION OF EXISTING PIPEWORK.

TYPICAL NEW BCWS AND CWDS SERVICE POINTS. NEW BCWS TO BE RECONNECTED TO EXISTING CWDS BELOW NEW MODULAR EXSTENSION AS PER SCHEMATIC DRAWING.

NEW EXTRACT FAN TO BE INSTALLED AT ROOF LEVEL TO REPLACE EXISTING

NEW DUCTWORK TO BE INSTALLED AT EXISTING ROOF LEVEL AND TO CONNECT TO EXISTING RISER THROUGH THE NEW ROOFTOP EXTENSION VOID . ALL DUCTWORK TO BE THERMALLY INSULATED

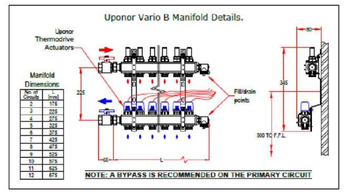
RETAINED VENT PIPES TO VENT WITHIN NEW ROOFTOP EXTENSION VOID

SPACE ALLOWANCE FOR NEW DHW CYLINDER AND CONSUMER UNIT

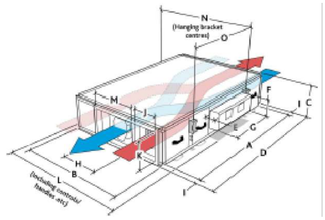
TYPICAL NEW BCWS AND CWDS SERVICE POINTS. NEW BELOW GROUND BCWS TO BE RECONNECTED TO EXISTING CWDS BELOW NEW MODULAR EXSTENSION AS PER SCHEMATIC DRAWING.

RETAINED VENT PIPES TO VENT WITHIN NEW ROOFTOP EXTENSION VOID

UFH DETAIL



UFH TYPICAL DIMENSIONS



MVHR TYPICAL SCHEMATIC

KEY	
○	EXISTING VENT PIPE
⊠	NEW RISER LOCATION
———	MAINS COLD WATER SERVICE (MCWS)
———	COLD WATER DOWN SERVICE (CWDS)
⋈	ISOLATION VALVE
– – – –	PIPEWORK BELOW FLOOR
———	PIPEWOK AT LOW LEVEL

NOTE;
ALL NEW EXTERNAL PIPEWORK TO BE THERMALLY INSULATED AND CONCEALED TO PREVENT FREEZING AND EXTERNAL DAMAGE.
ALL NEW EXTERNAL COLD WATER PIEPWORK TO BE INSTALLED IN MDPE TO REDUCE RISK OF LEAKS IN THE VOID BELOW APARTMENTS.

TYPICAL NEW BCWS AND CWDS RISER/DROPS. NEW BCWS TO BE RECONNECTED TO EXISTING CWDS BELOW NEW MODULAR EXTENSION AS PER SITE SERVICES DRAWING ESL 23-0339-S0-06-001. NEW RISER CUPBOARD TO BE CREATED TO ALLOW FOR ISOLATION OF EXISTING PIPEWORK.

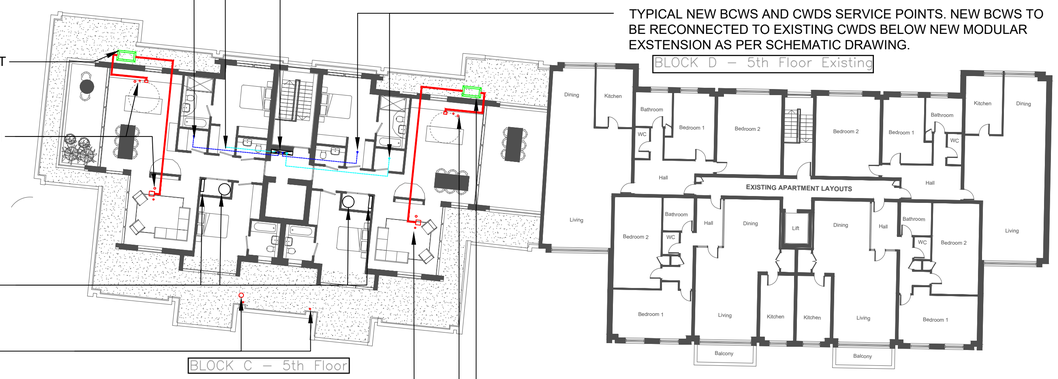
TYPICAL NEW BCWS AND CWDS SERVICE POINTS. NEW BCWS TO BE RECONNECTED TO EXISTING CWDS BELOW NEW MODULAR EXTENSION AS PER SCHEMATIC DRAWING.

NEW EXTRACT FAN TO BE INSTALLED AT ROOF LEVEL TO REPLACE EXISTING

RETAINED VENT PIPES TO VENT WITHIN NEW ROOFTOP EXTENSION VOID

SPACE ALLOWANCE FOR NEW DHW CYLINDER AND CONSUMER UNIT

VENT PIPES TO BE RETAINED



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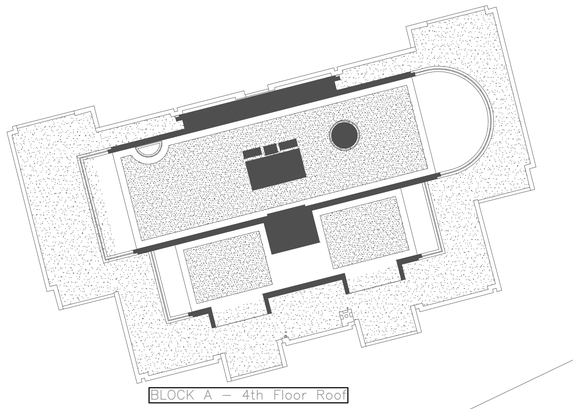
NEW EXTRACT FAN TO BE INSTALLED AT ROOF LEVEL TO REPLACE EXISTING

RETAINED VENT PIPES TO VENT WITHIN NEW ROOFTOP EXTENSION VOID



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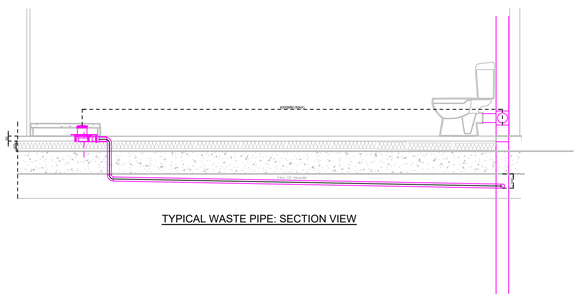
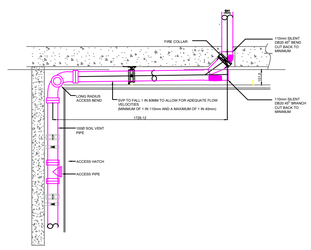
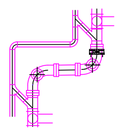


TYPICAL WASTE PIPE: SECTION VIEW



TYPICAL SVP OFFSET WITHIN SERVICES VOID



STACK OFFSET VENTILATION ARRANGEMENT

DOUBLE AIR BRICK - TO FIRE REGS

Notes

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☐ For Information ☐ For Tender ☐ For Contract
☐ For Record Purposes

Revision

Ref	Details	Rev.by	Chk'd	Date
A	Issued for comment	HS	CD	19.01.24

Client

Airspace

Project

Darwin Court
New Rooftop Extension

envision
8-9 Stephen Mews
Fitzrovia
London
W1T 1AF
T: 0207 4860680

Title

M&E Servcies - Concept Layout
Proposed 5th Floor

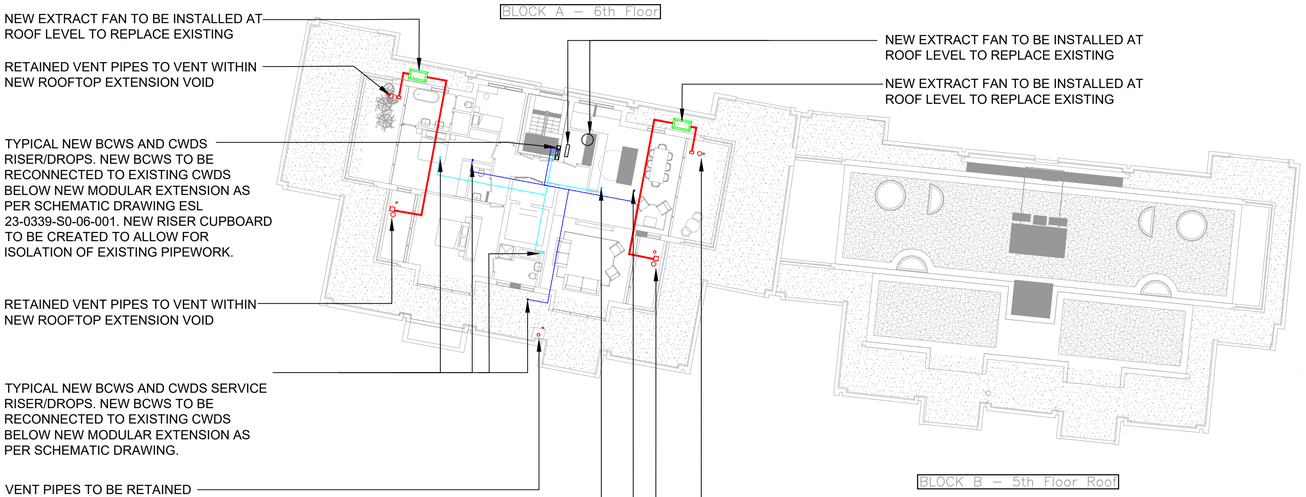
Drawn/CAD	Engineer	Scale	Date
HS	CD	1:200	JAN '24

Drg No

ESL 23-0339-ME-05-001

Revision

A



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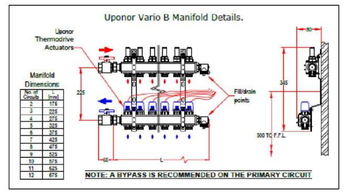
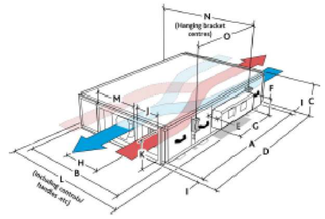


UFH TYPICAL DIMENSIONS



MVHR TYPICAL SCHEMATIC

KEY	
○	EXISTING VENT PIPE
⊠	NEW RISER LOCATION
———	MAINS COLD WATER SERVICE (MCWS)
———	COLD WATER DOWN SERVICE (CWDS)
⋈	ISOLATION VALVE
– – – –	PIPEWORK BELOW FLOOR
———	PIPEWORK AT LOW LEVEL

NOTE:
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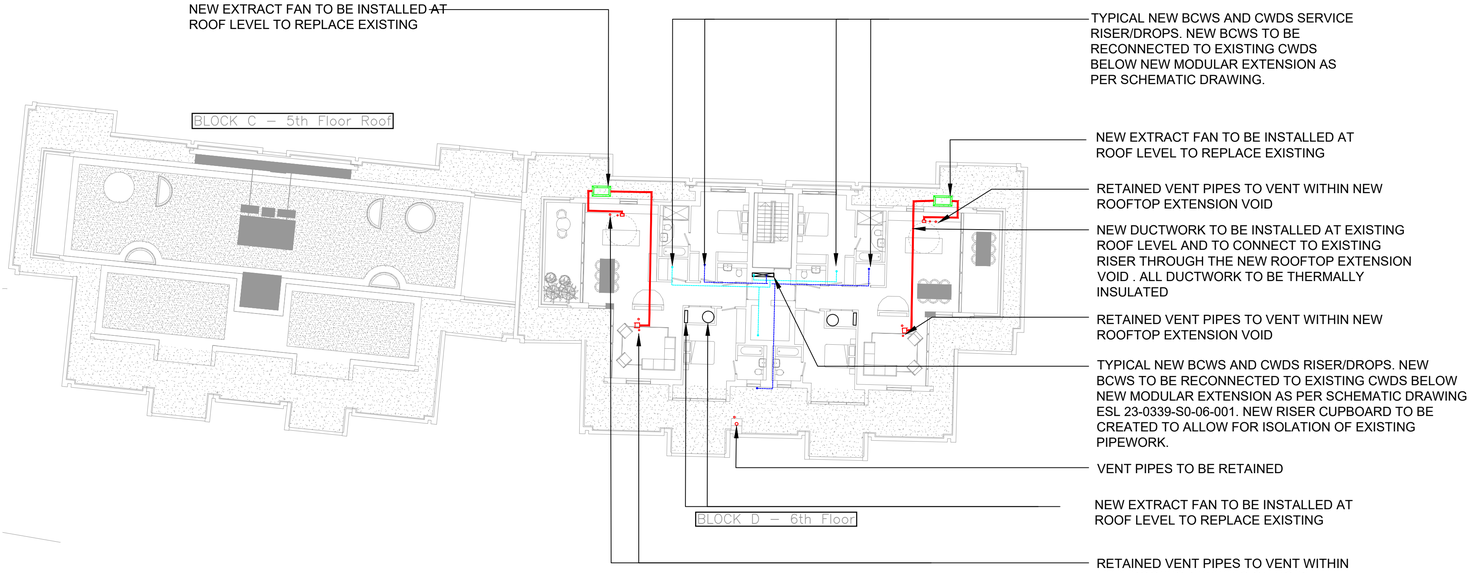

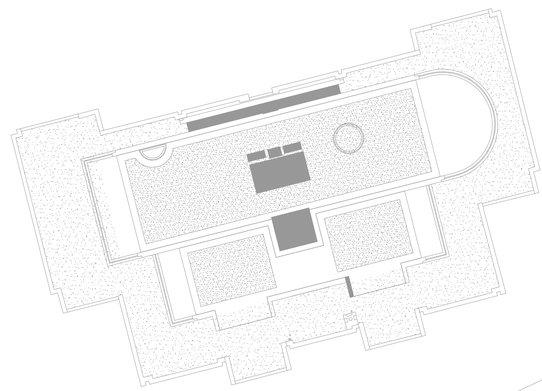

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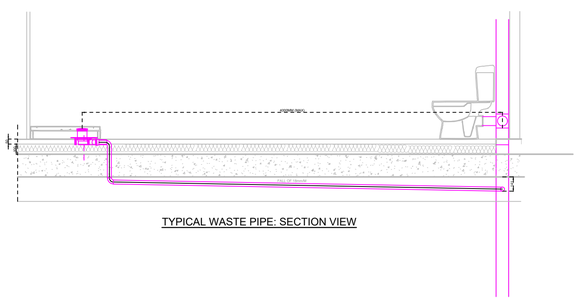
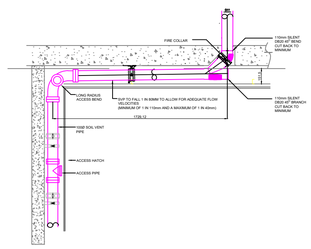
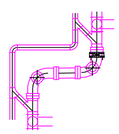


TYPICAL WASTE PIPE: SECTION VIEW



TYPICAL SVP OFFSET WITHIN SERVICES VOID



STACK OFFSET VENTILATION ARRANGEMENT

DOUBLE AIR BRICK - TO FIRE REGS

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Revision

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A	Issued for comment	HS	CD	19.01.24

Client

Airspace

Project

Darwin Court
New Rooftop Extension

envision
8-9 Stephen Mews
Fitzrovia
London
W1T 1AF
T: 0207 4860680

Title

M&E Servcies - Concept Layout
Proposed 6th floor

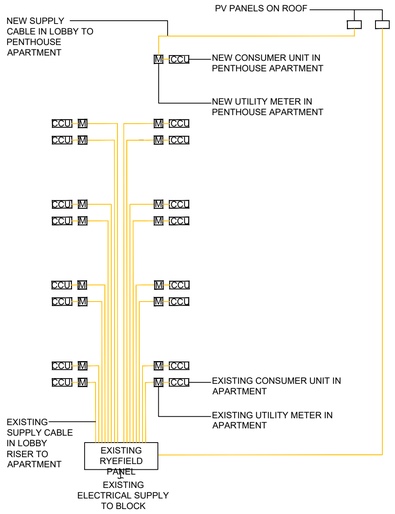
Drawn/CAD	Engineer	Scale	Date
HS	CD	1:200	JAN' 24

Drg No

ESL 23-0339-ME-06-001

Revision

A



KEY	
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⊠	NEW RISER LOCATION
———	MAINS COLD WATER SERVICE (MCWS)
———	COLD WATER DOWN SERVICE (CWDS)
⋈	ISOLATION VALVE
– – – –	PIPEWORK BELOW FLOOR
———	PIPEWOK AT LOW LEVEL
	NEW ASHP LOCATION

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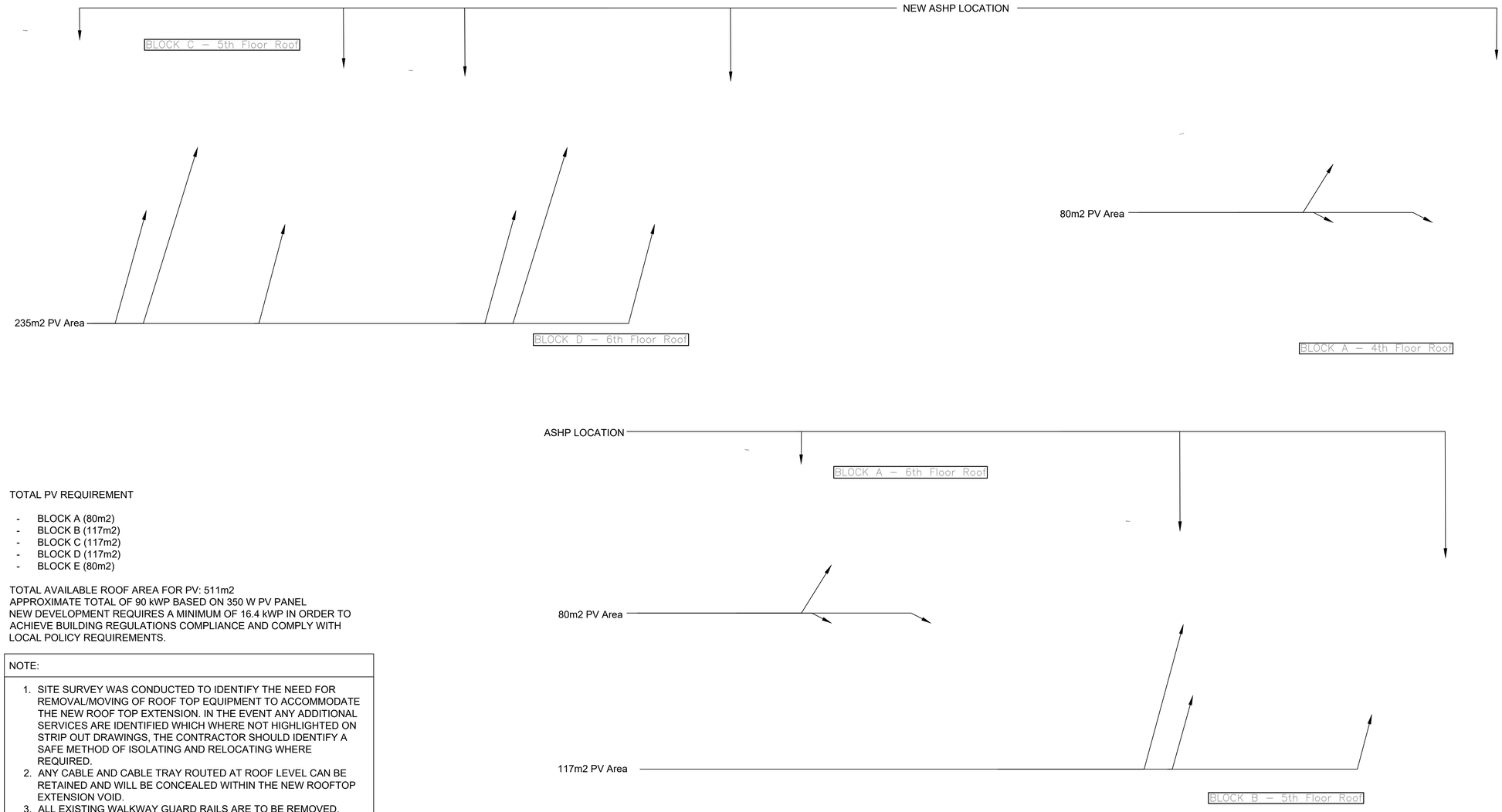

TOTAL PV REQUIREMENT

- BLOCK A (80m2)
- BLOCK B (117m2)
- BLOCK C (117m2)
- BLOCK D (117m2)
- BLOCK E (80m2)

TOTAL AVAILABLE ROOF AREA FOR PV: 511m2
APPROXIMATE TOTAL OF 90 kWP BASED ON 350 W PV PANEL
NEW DEVELOPMENT REQUIRES A MINIMUM OF 16.4 kWP IN ORDER TO ACHIEVE BUILDING REGULATIONS COMPLIANCE AND COMPLY WITH LOCAL POLICY REQUIREMENTS.

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Title

M&E Servcies - Concept Layout
Proposed Roof Level

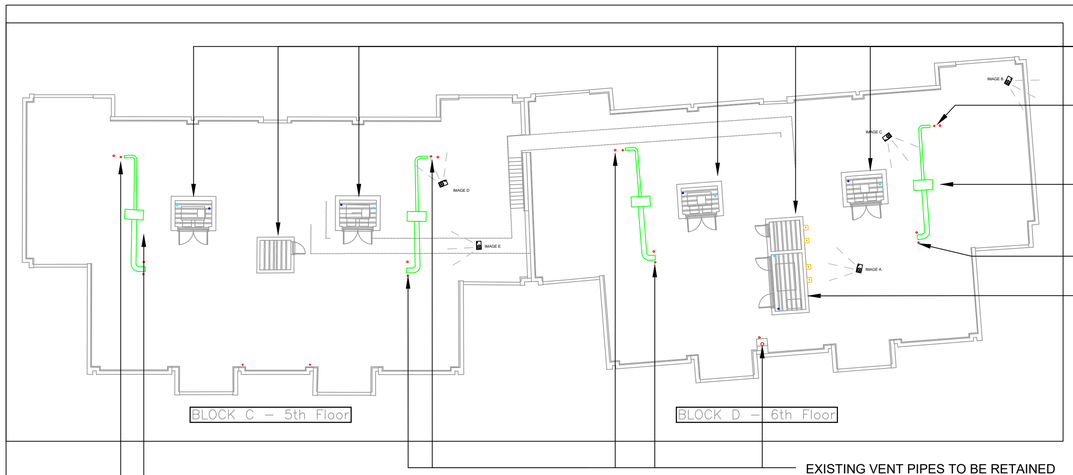
Drawn/CAD	Engineer	Scale	Date
HS	CD	1:200	JAN' 24

Drg No

ESL 23-0339-ME-07-001

Revision

A



COLD WATER TANK ROOM TO BE ISOLATED AND STRIPPED OUT. MCWS AND CWDS PIPEWORK RISER/DROPS TO BE RETAINED FOR RECONNECTION

EXISTING VENT PIPES TO BE RETAINED

TYPICAL EXISTING FANS TO BE REMOVED AND STRIPPED OUT. EXISTING HOLES TO BE RETAINED TO ALLOW RECONNECTION TO SYSTEM.

EXISTING VENT PIPES TO BE RETAINED

LIFT OVERRUN MOTOR EQUIPMENT TO BE RELOCATED TO NEW ROOF LEVEL

EXISTING VENT PIPES TO BE RETAINED

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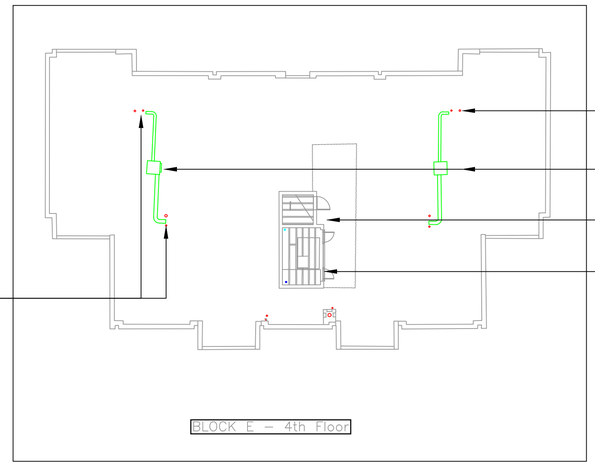

EXISTING VENT PIPES TO BE RETAINED

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LIFT OVERRUN MOTOR EQUIPMENT TO BE RELOCATED TO NEW ROOF LEVEL

COLD WATER TANK ROOM TO BE ISOLATED AND STRIPPED OUT. MCWS AND CWDS PIPEWORK RISER/DROPS TO BE RETAINED FOR RECONNECTION

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COLD WATER TANK ROOM TO BE ISOLATED AND STRIPPED OUT.

LIFT OVERRUN MOTOR EQUIPMENT TO BE RELOCATED TO NEW ROOF LEVEL

EXISTING VENT PIPES TO BE RETAINED

IMAGE A

IMAGE B

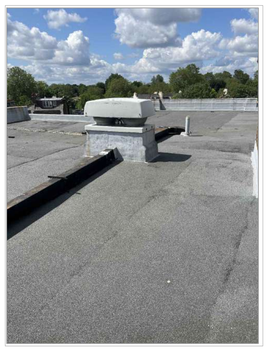

IMAGE C

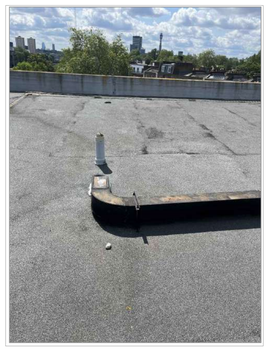

IMAGE D

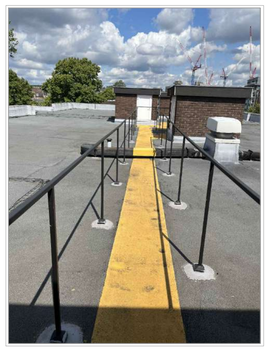

IMAGE E

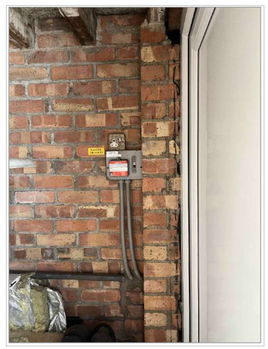

IMAGE F

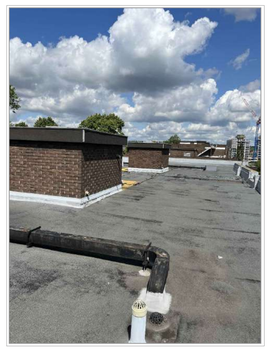

IMAGE G

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Title

M&E Servcies - Strip Out Drawing
Roof Level

Drawn/CAD	Engineer	Scale	Date
HS	CD	1:200	JAN' 24

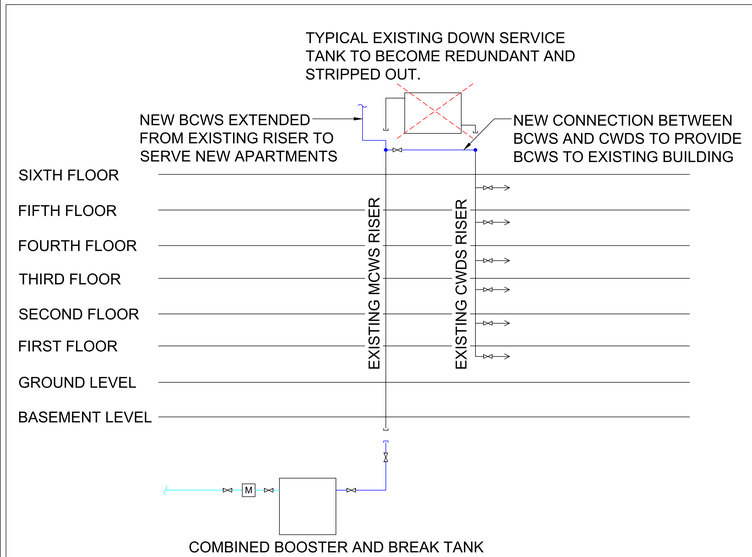
Drg No

ESL 23-0339-SO-06-001

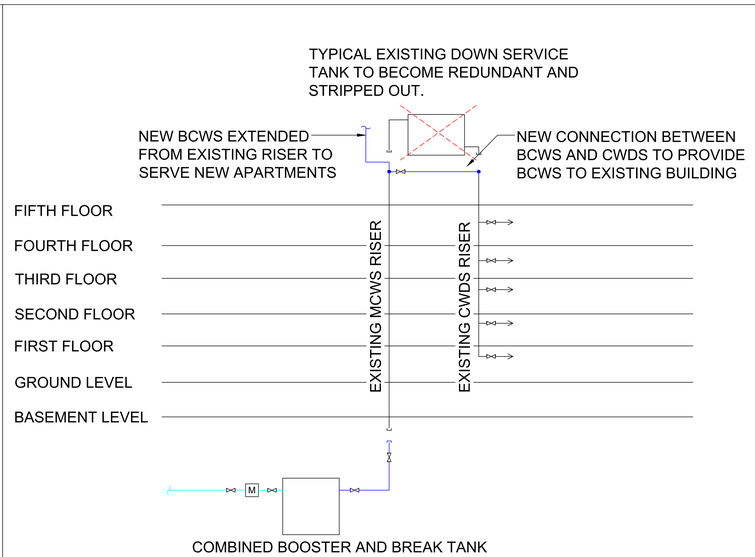
Revision

A

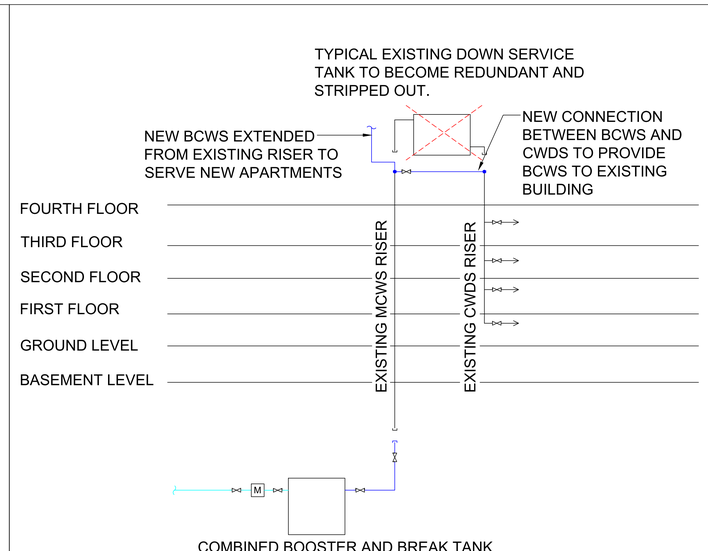
TYPICAL NEW WATER CONNECTION SCHEMATIC TYPE 1



TYPICAL NEW WATER CONNECTION SCHEMATIC TYPE 2



TYPICAL NEW WATER CONNECTION SCHEMATIC TYPE 3



Notes

The contractor is to check and verify all building and site dimensions, levels and sewer invert levels at connection points before work starts. The Contractor is to comply in all respects with current building legislation, British standard specifications, building regulations, construction (design & management) regulations, party wall act, etc. whether or not specifically stated on this drawing. This drawing must be read with and checked against all relevant engineers and architects drawings and all other specialist documentation provided.

Sketch proposals are for illustrative purposes only & as such are subject to detailed site investigation including ground conditions / contaminants, drainage, design & planning / density negotiations. Sketch proposals may be based upon enlargements of OS sheets & visual estimations of existing site features, accuracy will therefore need to be verified by survey. Sketch proposals have not been considered in respect of CDM regulations.

Do not scale. Work to given dimensions only.

This drawing is a single service drawing showing the concept design. This drawing is not a co-ordinated working/installation drawing and should not be used as such. Any Contractor using this drawing as a working/installation drawing does so at his own risk.

Status

- ☐ Preliminary
- ☒ For Comment
- ☐ For Approval
- ☐ For Information
- ☐ For Tender
- ☐ For Contract
- ☐ For Record Purposes

Revision

Ref	Details	Rev.by	Chk'd	Date
A	Issued For Comment	HS	CD	19.01.24

Client

Airspace

Project

Darwin Court
New Rooftop Extension

envision
Unit 2 Lodge Farm
Castlethorpe
Milton Keynes
MK9 7ES
T: 01908 062819

Title

Site Plan
Proposed Works

Drawn/CAD	Engineer	Scale	Date
HS	CD	1:250	Jan 24

Drg No

ESL 23-0339-SS-00-001

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