

6 EXTERNAL FIRE SPREAD

6.1 Overview

Section A 3) of the Planning Policy D12 requires that the buildings be constructed in a way to minimise the risk of fire spread. The following sections detail how this is to be achieved.

6.2 Fire Spread between Buildings / Boundaries

6.2.1 Overview

The assessment in **Section 6.2.2** below assess the risk of fire spread from an elevation of a building on site to the relevant boundary. The relevant boundary can be either: the site boundary line; the middle of a publicly owned space (e.g. a road); or the halfway point between 2 buildings on the same site (also referred to as the notional boundary). **Figure 11** and **Figure 12** below indicate the distances to the relevant boundaries.

The external fire spread calculations have followed the methodology presented in BR 187, the inputs of which have been presented in table format (**Table 12** below) along with the results measured as a percentage (%) for maximum unprotected area permitted.

The following is a summary of the results:

- Elevations which achieve 100% maximum unprotected area (highlighted green) are assessed as being a sufficient distance away from their relevant boundary and the risk of external fire spread is considered negligible. Therefore, these elevations do not require any fire resistance to limit external fire spread.
- All other elevations which do not achieve 100% maximum unprotected area present a risk of external fire spread to their relevant boundaries. Therefore, these elevations will be fire rated to minimise the risk of external fire spread. The extent of fire rating needed for an elevation depends on the % of maximum unprotected area permitted as calculated in **Table 12** below.

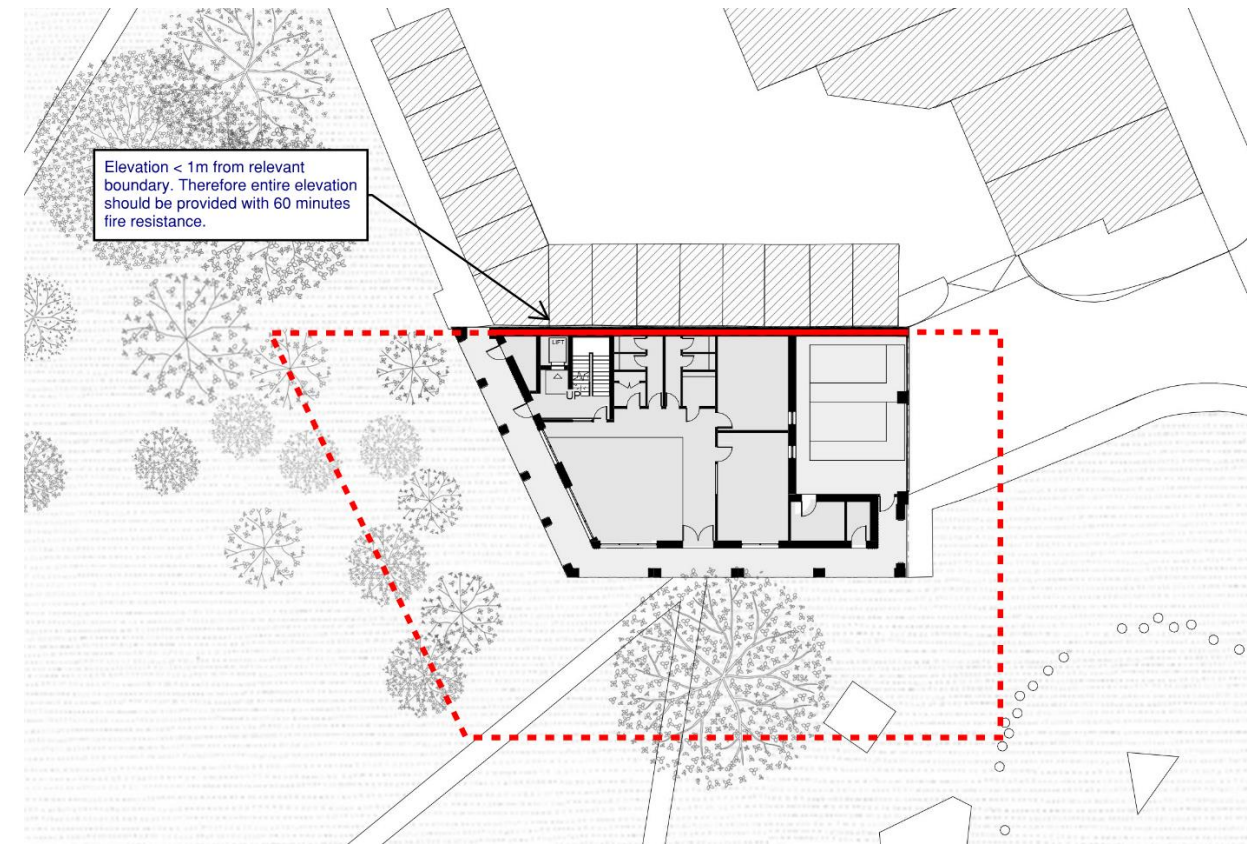


Figure 11: External Fire Spread – Community Centre

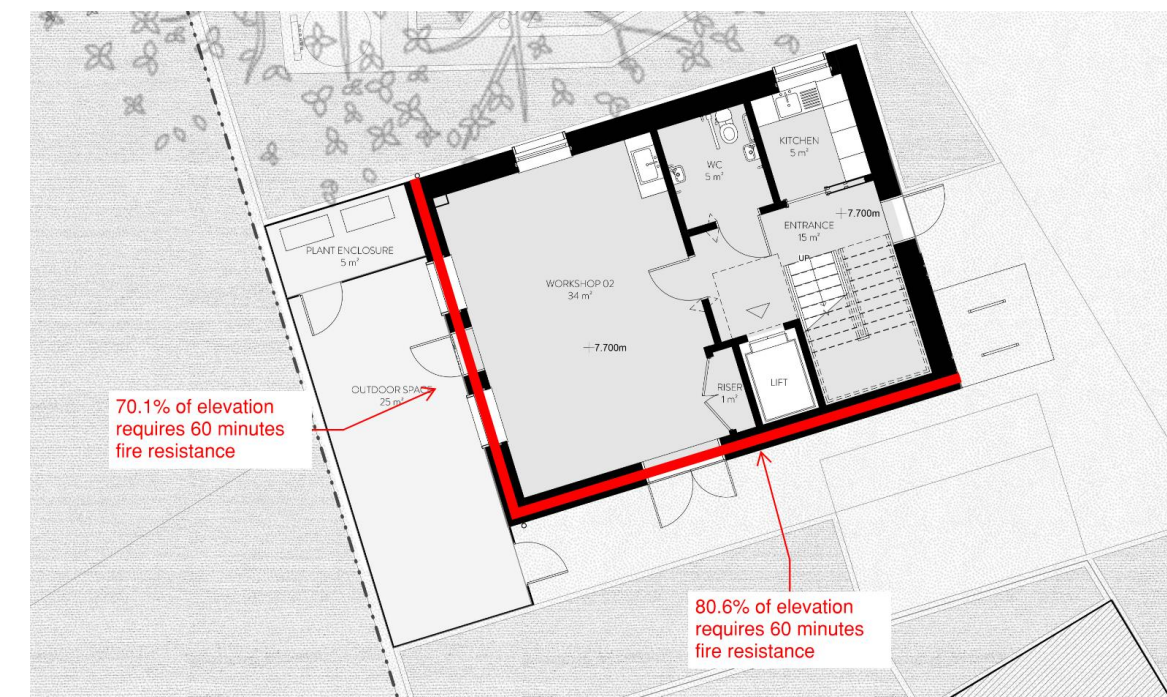


Figure 12: External Fire Spread – Richmond Maker Labs

6.2.2 Fire Resistance of External Wall

Table 12 below summaries the results of the external fire spread assessment in accordance with the methodologies of BR 187.

It is assessed that all elevations may achieve 100% allowable unprotected area with the exception of the following:

- Community Centre East Elevation achieves 0% allowable unprotected area as it lies < 1m from the relevant boundary and therefore the full elevation will be 60 minute fire rated at all levels.
- Richmond Maker Labs South Elevation achieves 19.4% allowable unprotected area as it lies 2.9m from the relevant boundary and therefore 80.6% of the elevation will be 60 minute fire rated at all levels.
- Richmond Maker Labs West Elevation achieves 29.9% allowable unprotected area as it lies 3.3m from the relevant boundary and therefore 70.1% of the elevation will be 60 minute fire rated at all levels.

Table 12: External Fire Spread

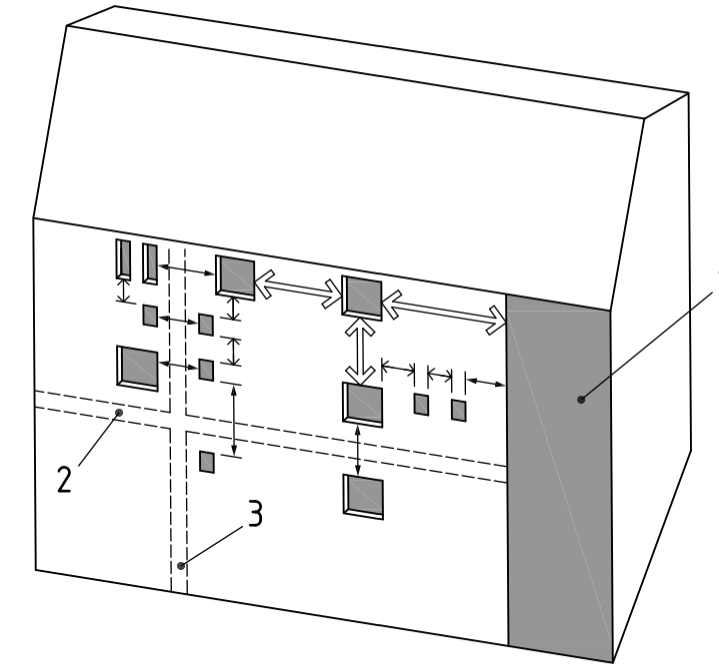
Building	Elevation	Width (m)	Height (m)	Distance to boundary (m)	Maximum unprotected Area %	Area Requiring Protection (m ²)
Community Centre	North	8.5m	11.51m	6.0m ^A	100%	-
	South	12.7m	11.51m	6.9m ^A	100%	-
	East	<1m from relevant boundary			0%	Entire Elevation
	West	16.0m	11.51m	8.4m ^A	100%	-
Richmond Maker Labs	North	10.7m	5.7m	11.4m	100%	-
	South	10.7m	5.7m	2.9m	19.4%	12.6m ²
	East	8.0m	5.7m	8.2m	100%	-
	West	8.0m	5.7m	3.3m	29.9%	15.1m ²

Note A: Minimum distance required to achieve 100% allowable Unprotected Area.

6.2.3 Small Unprotected Areas

The following do not contribute to the extent of unprotected area and may therefore be exempted from fire resistance on the external wall:

- 1) any part of an external wall of a stairway in a protected shaft.
- 2) small-unprotected areas in an otherwise protected façade according to the constraints shown in **Figure 13**.



Key

- 1 Unprotected area of the external wall of a stairway forming a protected shaft (this may be disregarded for separation distance purposes)
 - 2 Compartment floor
 - 3 Compartment wall
- Unprotected area of not more than 1 m²
 - Two or more smaller areas within an area of 1 m x 1 m
 - Area of not more than 0.1 m²
 - Minimum distance 4 m
 - Minimum distance 1.5 m
 - Dimension unrestricted

Figure 13: Allowable unprotected areas

6.3 External Wall Construction

6.3.1 Combustibility of Construction

The building are <18m in height and therefore the following Reaction to Fire Classifications will be achieved for the primary external wall elements (except those listed below) in line with relevant guidance:

- No Provision - A distance > 1m from relevant boundary from the elevation.
- Euro Class B-s3,d2 - A distance < 1m from relevant boundary from the elevation.

The external wall construction will be reviewed in further detail in the next stage of design.

The following elements are not considered primary elements:

- Cavity trays.
- Door frames, doors, window frames and glass.
- Electrical installations.
- Seals, gaskets, fixings, sealants and backer rods.
- Thermal break materials.
- Intumescent and firestopping materials.
- Insulation and water proofing materials used below ground level.
- Membranes.

6.3.2 Cladding

The external surfaces of walls will primarily be masonry construction and therefore will achieve a Reaction to Fire Classification A2-s1, d0 or better. Timber cladding will also be used on the external surfaces of walls which will meet the recommendations in the table below. Refer to the elevation drawings issued by WRAP architects for the extent of timber cladding.

All surfaces of external walls will meet the minimum Reaction to Fire Classification as recommended in guidance and given below in **Table 13**.

Table 13: Reaction to Fire Classification - Cladding

Building	Building Height to Mean Roof Level (m)	Surface spread of flame or Reaction to fire classification
Community Centre	<18m	Euro Class B-s3,d2
Richmond Maker Labs	<18m	Euro Class B-s3,d2

7 ACCESS AND FACILITIES FOR THE FIRE SERVICE

7.1 Vehicle Access

Sections A 1) and B 5) of the Planning Policy D12 requires that suitable outside space and access routes are provided for the fire service. This is demonstrated as being achieved as follows:

7.1.1 Perimeter Access

Both the Community Centre and Richmond Maker Labs meet the recommendations of guidance by providing at least 15% perimeter access within 18m of the fire tender parking position. The available perimeter access for each building is shown in **Table 14** below.

Table 14: Typical access route specifications

Building	Building Perimeter (m)	Available access to building perimeter (m)	% of perimeter (%)	Acceptable?
Community Centre	69.9m	19.3m	27.6%	Yes
Richmond Maker Labs	37.1m	27.4m	73.9%	Yes

It is assessed that these buildings meet the recommendations outlined above. The Perimeter Access for the Community Centre and Richmond Maker Labs is shown below in **Figure 14 & Figure 15**.

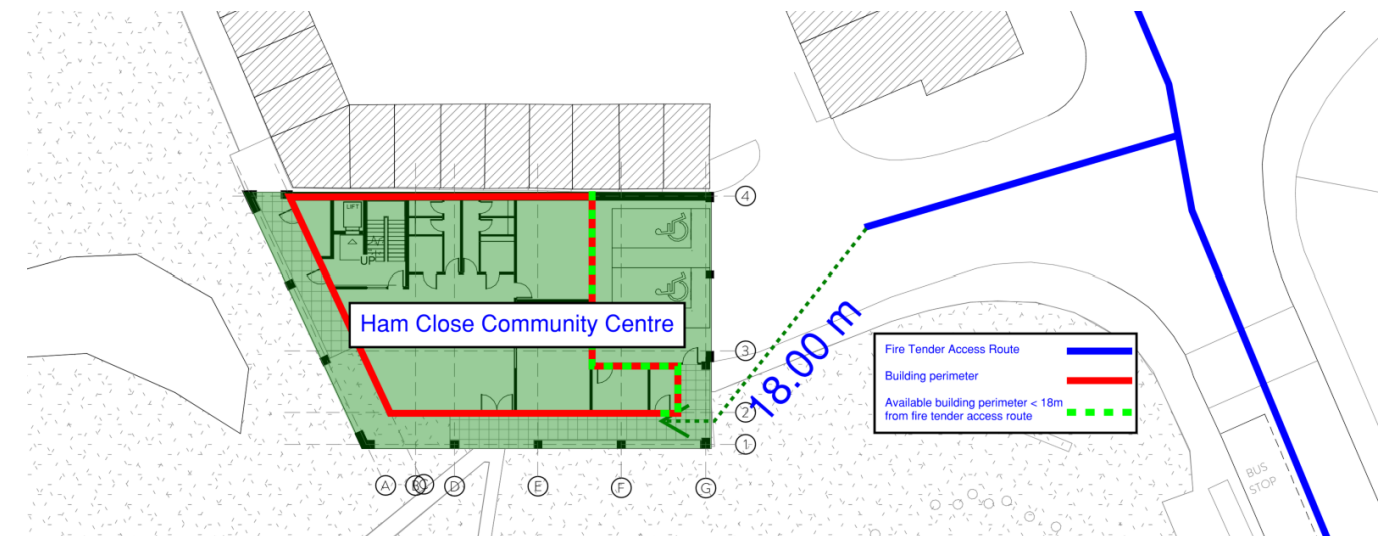


Figure 14: Perimeter Access – Community Centre

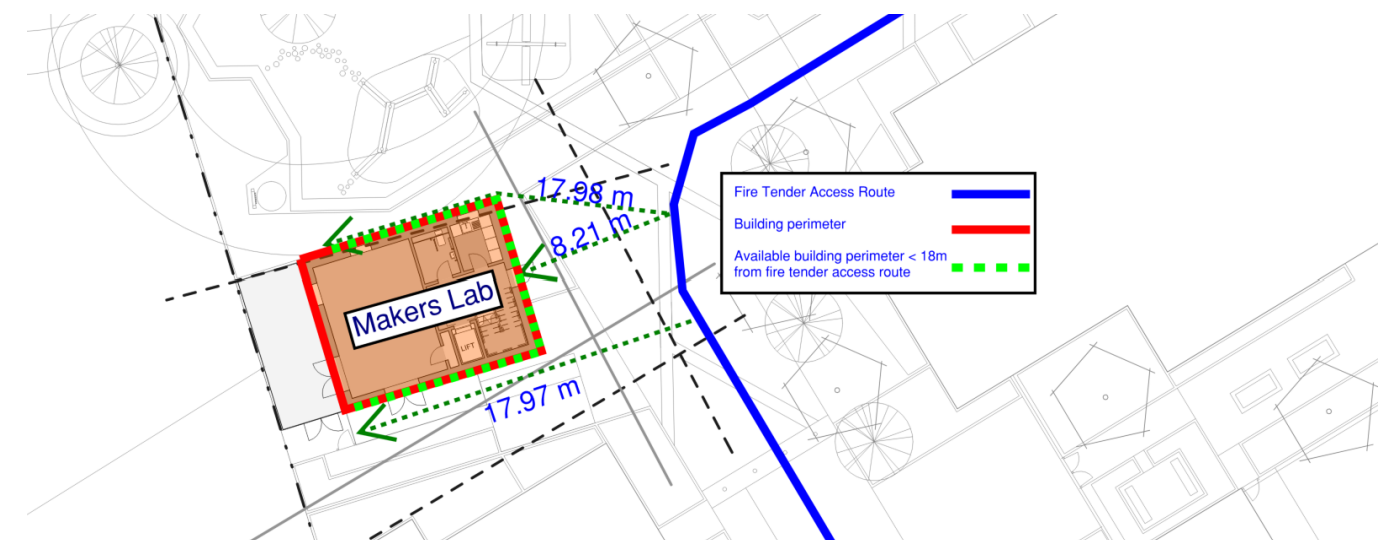


Figure 15: Perimeter Access – Richmond Maker Labs

7.2 Water Supplies

7.2.1 Fire Hydrants

Existing hydrant locations will be confirmed as design progresses. If an existing hydrant is not within 100m of a firefighting access point to a building, a new hydrant will be provided which is within 90m of the access point to a building

8 FIRE SAFETY MANAGEMENT

8.1 Introduction

The ongoing management and maintenance of the building for each building shall fall under the control of the Regulatory Reform (Fire Safety) Order 2005. So as to allow for any future fire safety management to be co-ordinated with design of the building this section is provided to identify:

- The minimal standard of Fire Safety Management upon which this Fire Strategy has been developed. And,
- Specific Fire Safety Management requirements which are made as part of the Fire Strategy which must be adopted as part of the Fire Safety Management Plan to maintain the building in a condition consistent with the Fire Strategy.

8.2 Management Level

This fire strategy for each building has been developed on the basis that the Fire Safety Management of the building will achieve at least the standard required to comply with the Regulatory Reform (Fire Safety) Order 2005.

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Document Reference No: AFF_20700_01_Ham Close, Richmond – Non-Residential Buildings_FSS_05

Rev	Date Issued	Comment	Prepared by	Reviewed by	Verified by
01	28/03/2022	1 st Draft issue for comments	Aidan McCready BEng (Hons) AIFireE	Evan Doherty BEng (Hons) AIFireE	Jeremy Ockenden MSc BEng (Hons) AIFireE
02	07/04/2022	Planning issue – Incorporating latest drawings	Aidan McCready BEng (Hons) AIFireE	Evan Doherty BEng (Hons) AIFireE	Jeremy Ockenden MSc BEng (Hons) AIFireE
03	20/04/2022	Planning issue – Incorporating comments from Sphere25	Aidan McCready BEng (Hons) AIFireE	Evan Doherty BEng (Hons) AIFireE	Jeremy Ockenden MSc BEng (Hons) AIFireE
04	20/04/2022	Planning issue	Aidan McCready BEng (Hons) AIFireE	Evan Doherty BEng (Hons) AIFireE	Jeremy Ockenden MSc BEng (Hons) AIFireE
05	26/04/2022	Planning issue	Aidan McCready BEng (Hons) AIFireE	Evan Doherty BEng (Hons) AIFireE	Jeremy Ockenden MSc BEng (Hons) AIFireE

Affinity Fire Engineering UK Ltd

120 Aldersgate St. Barbican, London, EC1A 4JQ

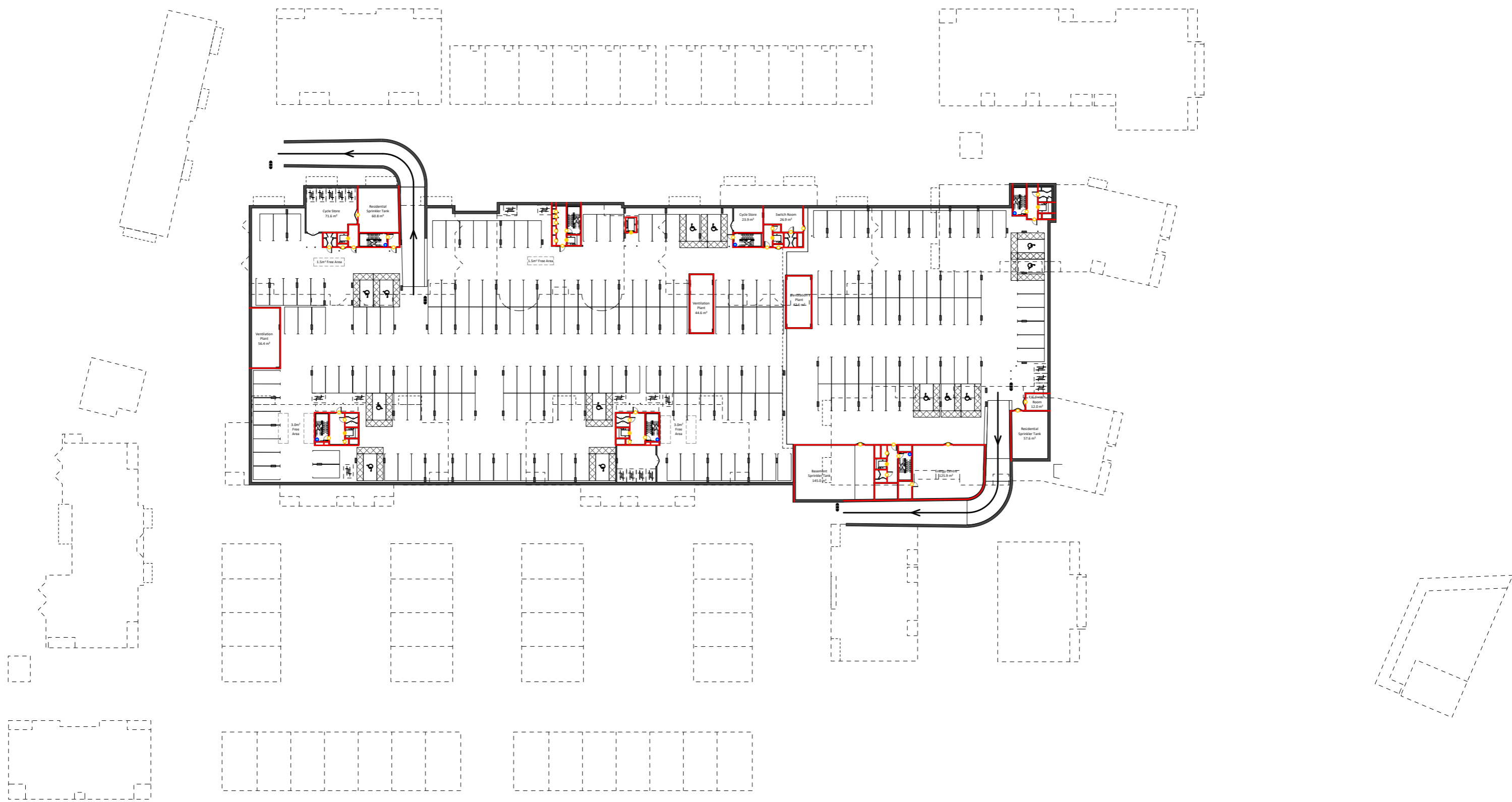
+44 20 3384 0050, enquiries@affinity-fire.com

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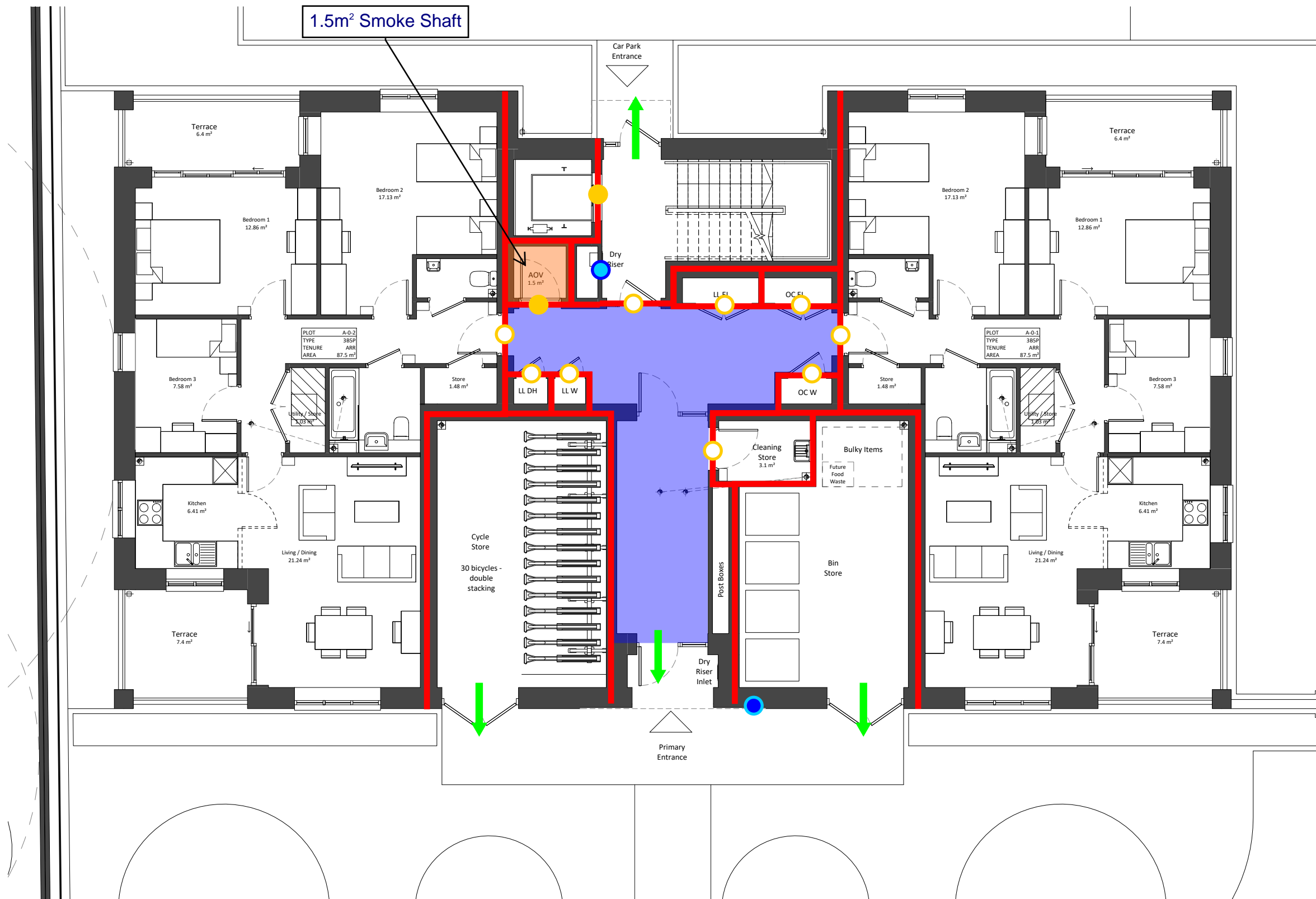
APPENDIX 1. FIRE STRATEGY DRAWINGS – RESIDENTIAL (PART 1)



Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Basement					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
			FD60 Door		FD60S Door		60/60/60 FRR
			FD90 Door		FD90S Door		90/90/90 FRR
			FD120 Door		FD120S Door		120/120/120 FRR
							Dry Riser Outlet
							Dry Riser Inlet
							Fire Hydrant





1.5m² Smoke Shaft

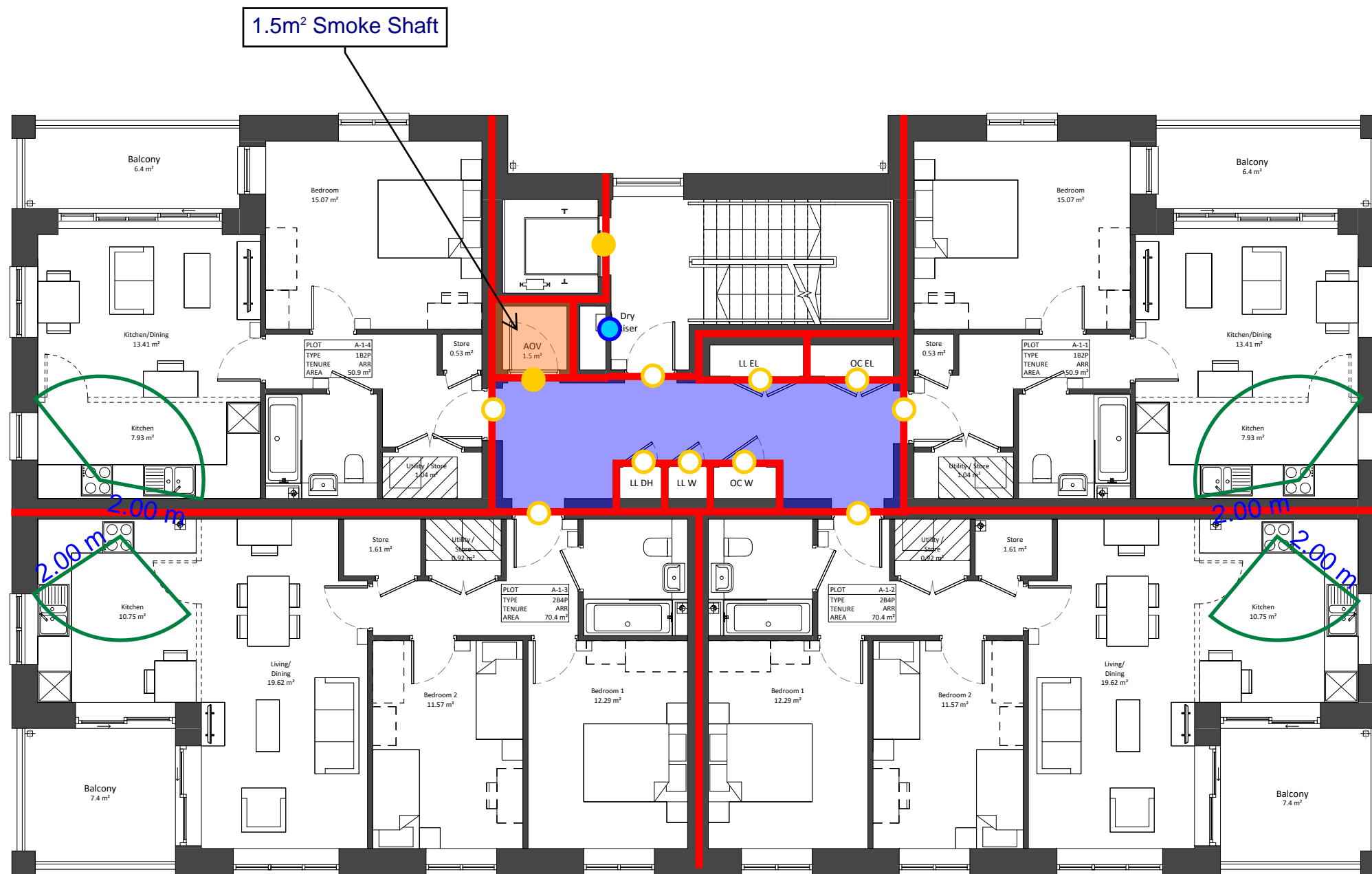
Car Park Entrance

Primary Entrance

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block A - Ground Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
			FD60 Door		FD60S Door		60/60/60 FRR
			FD90 Door		FD90S Door		90/90/90 FRR
			FD120 Door		FD120S Door		120/120/120 FRR
							Dry Riser Outlet
							Dry Riser Inlet
							Fire Hydrant





1.5m² Smoke Shaft

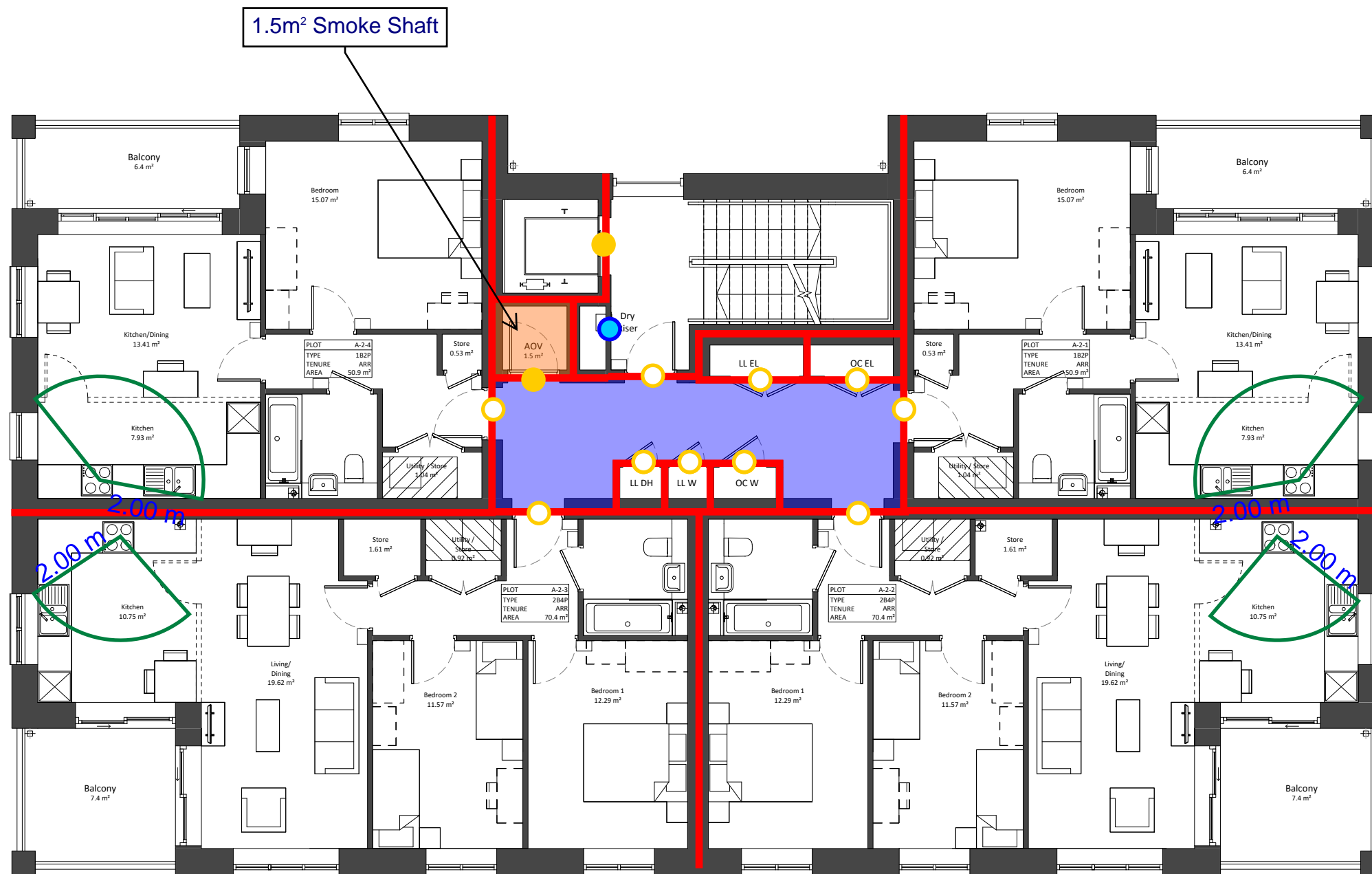
2.00m

2.00m

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block A - First Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
	FD60 Door		FD60S Door		60/60/60 FRR		Dry Riser Outlet
	FD90 Door		FD90S Door		90/90/90 FRR		Dry Riser Inlet
	FD120 Door		FD120S Door		120/120/120 FRR		Fire Hydrant





1.5m² Smoke Shaft

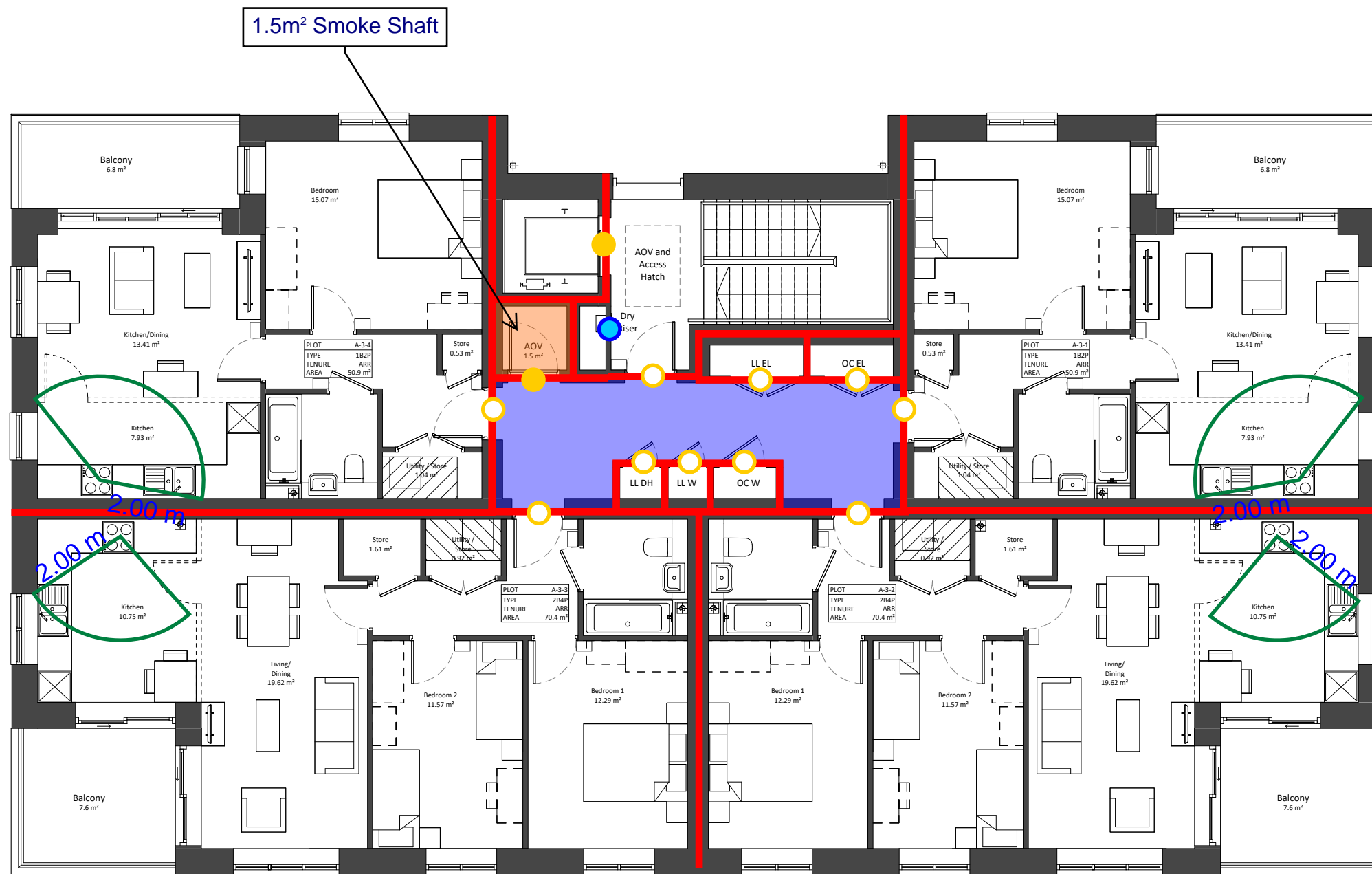
2.00 m

2.00 m

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block A - Second Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
	FD60 Door		FD60S Door		60/60/60 FRR		Dry Riser Outlet
	FD90 Door		FD90S Door		90/90/90 FRR		Dry Riser Inlet
	FD120 Door		FD120S Door		120/120/120 FRR		Fire Hydrant



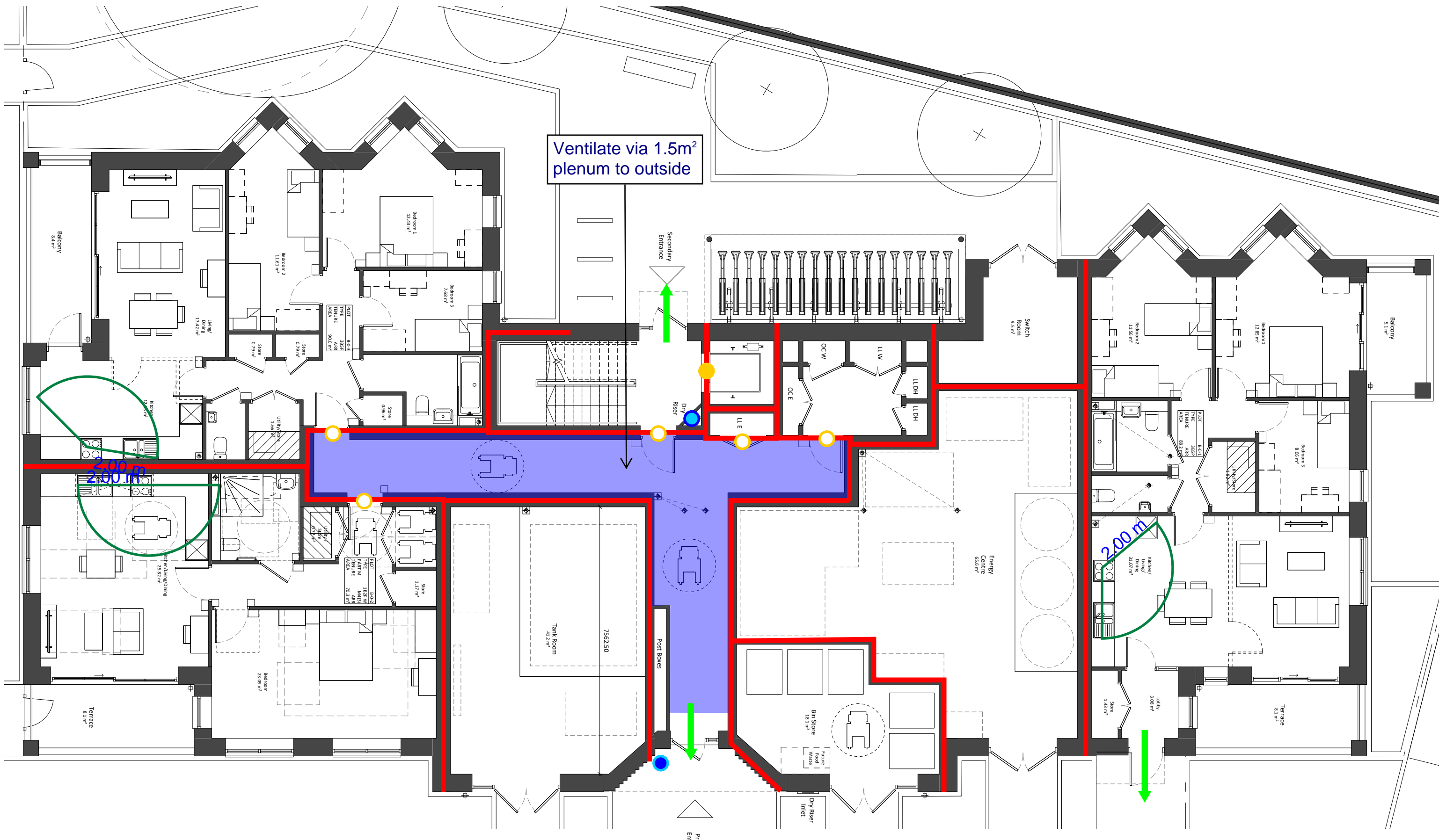


1.5m² Smoke Shaft

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block A - Third Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
	FD60 Door		FD60S Door		60/60/60 FRR		Dry Riser Outlet
	FD90 Door		FD90S Door		90/90/90 FRR		Dry Riser Inlet
	FD120 Door		FD120S Door		120/120/120 FRR		Fire Hydrant





Ventilate via 1.5m² plenum to outside

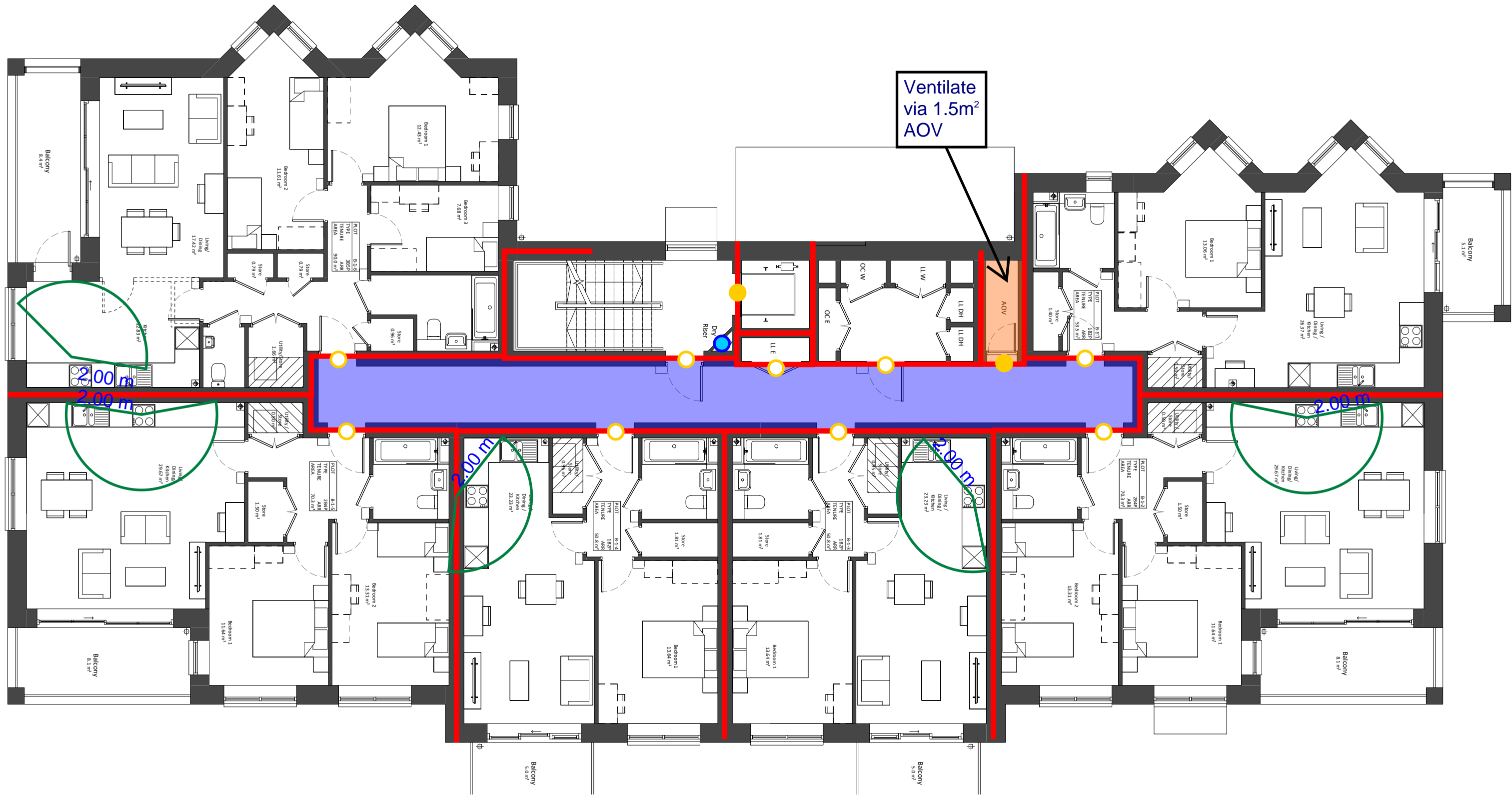
200m

200m

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block B - Ground Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:				
Alternative Exit	FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet
FD60 Door	FD60S Door	60/60/60 FRR	Dry Riser Inlet	Fire Hydrant
FD90 Door	FD90S Door	90/90/90 FRR		
FD120 Door	FD120S Door	120/120/120 FRR		



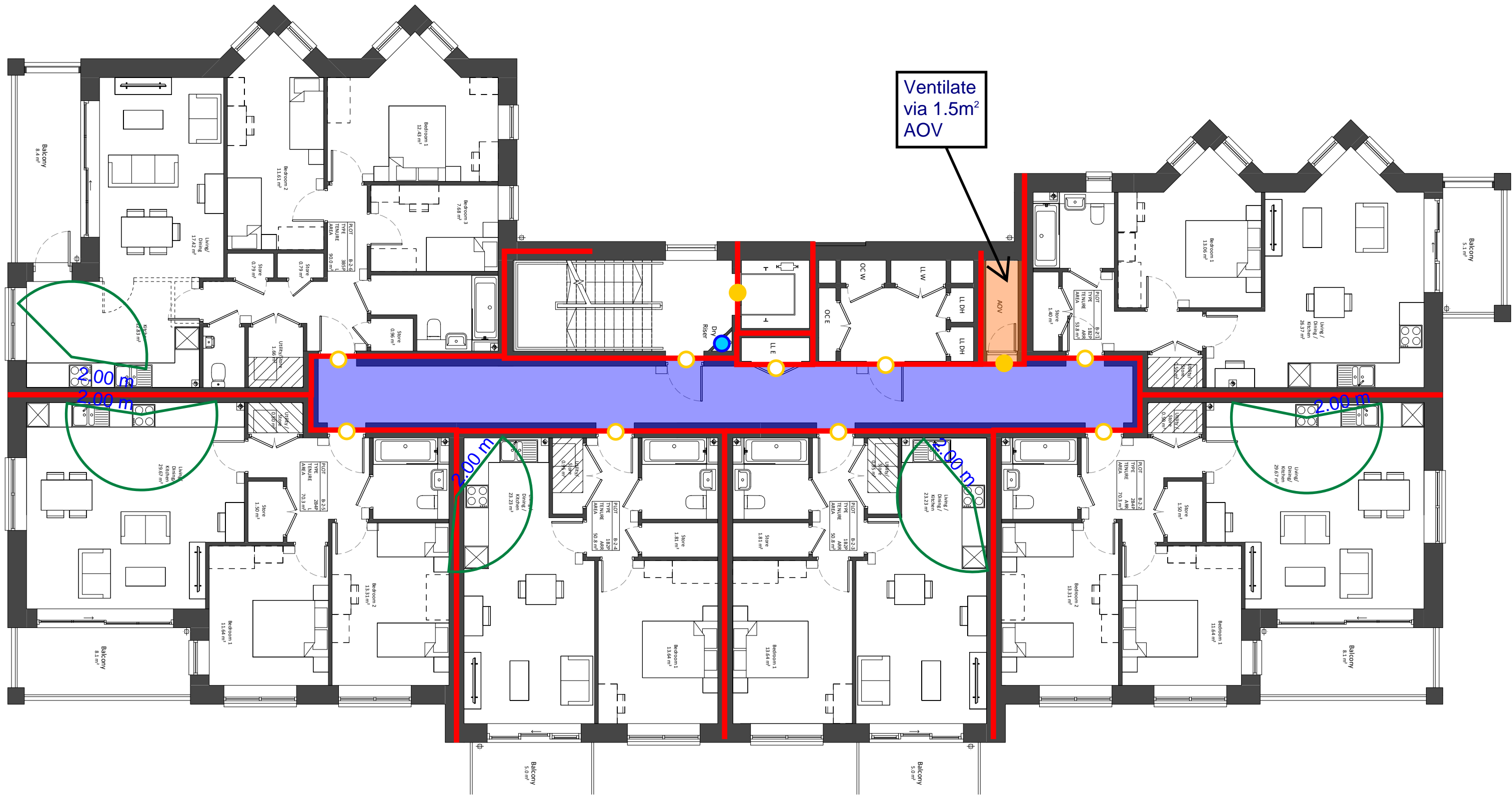


Ventilate via 1.5m² AOV

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block B - First Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:	
Alternative Exit	FD30 Door
FD60 Door	FD30S Door
FD90 Door	FD60S Door
FD120 Door	FD90S Door
	FD120S Door
30/30/30 FRR	60/60/60 FRR
90/90/90 FRR	120/120/120 FRR
Dry Riser Outlet	Dry Riser Inlet
Fire Hydrant	



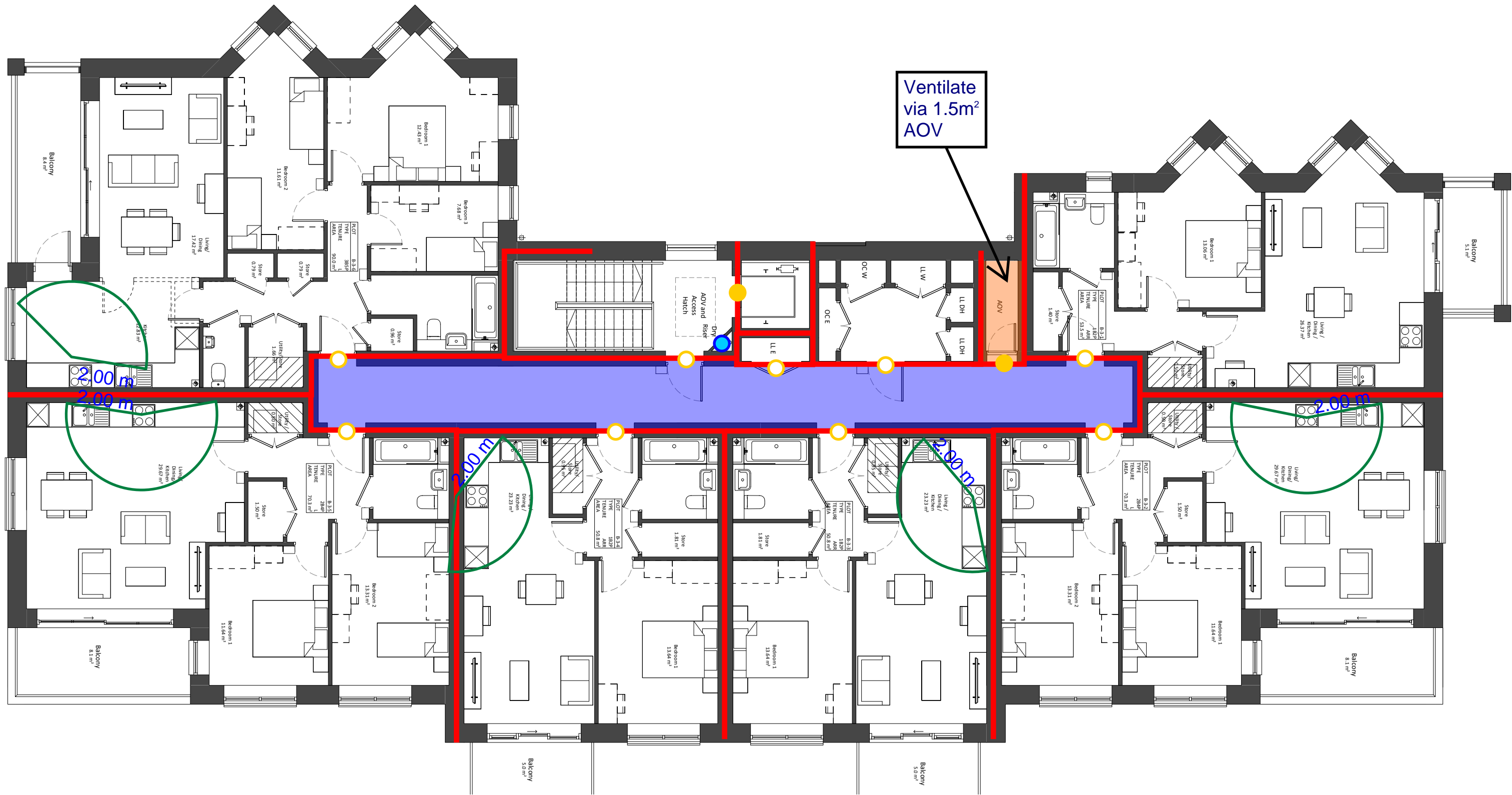


Ventilate via 1.5m² AOV

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block B - Second Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:				
Alternative Exit	FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet
FD60 Door	FD60S Door	60/60/60 FRR	Dry Riser Inlet	Fire Hydrant
FD90 Door	FD90S Door	90/90/90 FRR		
FD120 Door	FD120S Door	120/120/120 FRR		



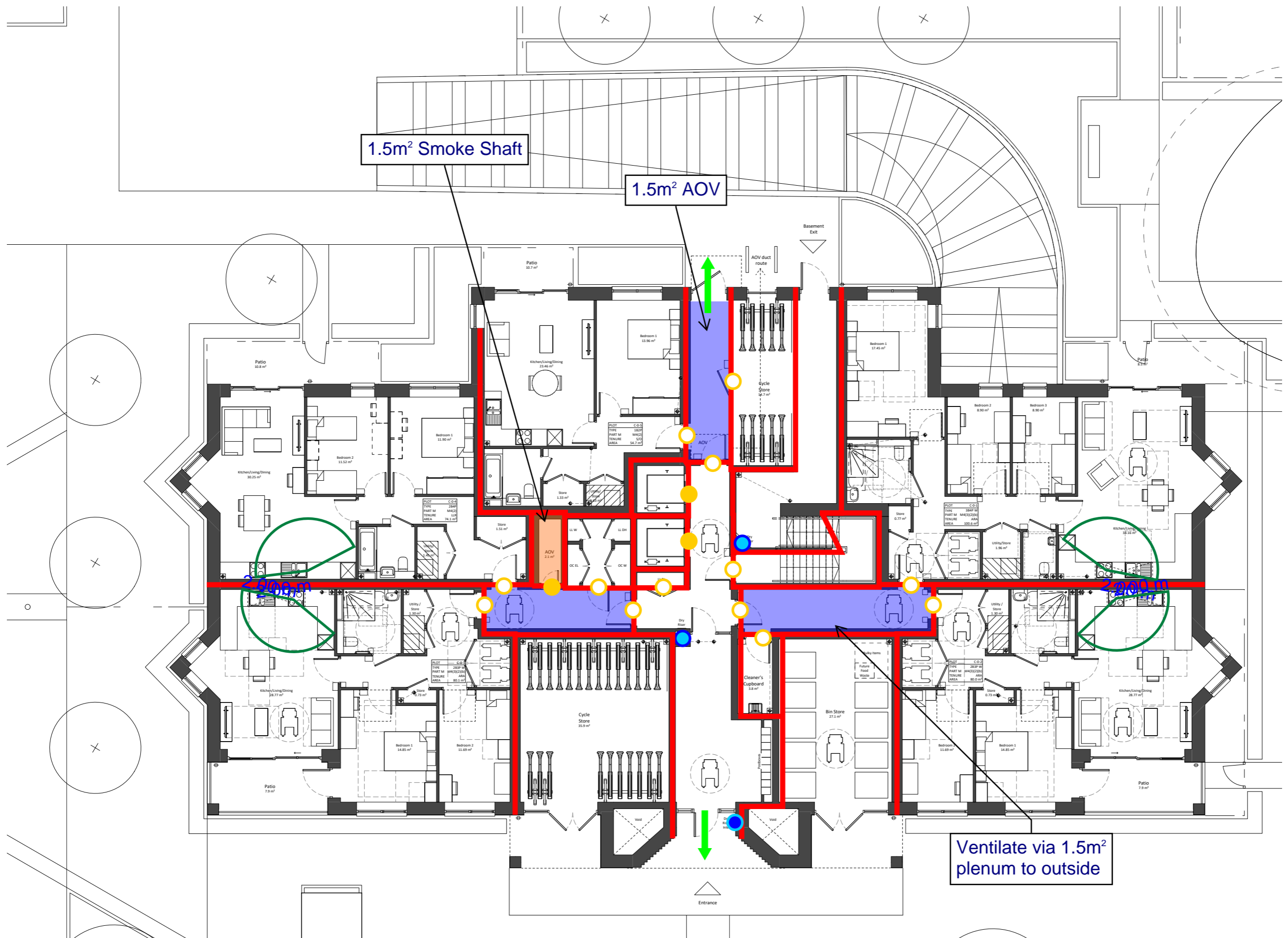


Ventilate via 1.5m² AOV

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block B - Third Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:				
Alternative Exit	FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet
FD60 Door	FD60S Door	60/60/60 FRR	Dry Riser Inlet	Fire Hydrant
FD90 Door	FD90S Door	90/90/90 FRR		
FD120 Door	FD120S Door	120/120/120 FRR		





1.5m² Smoke Shaft

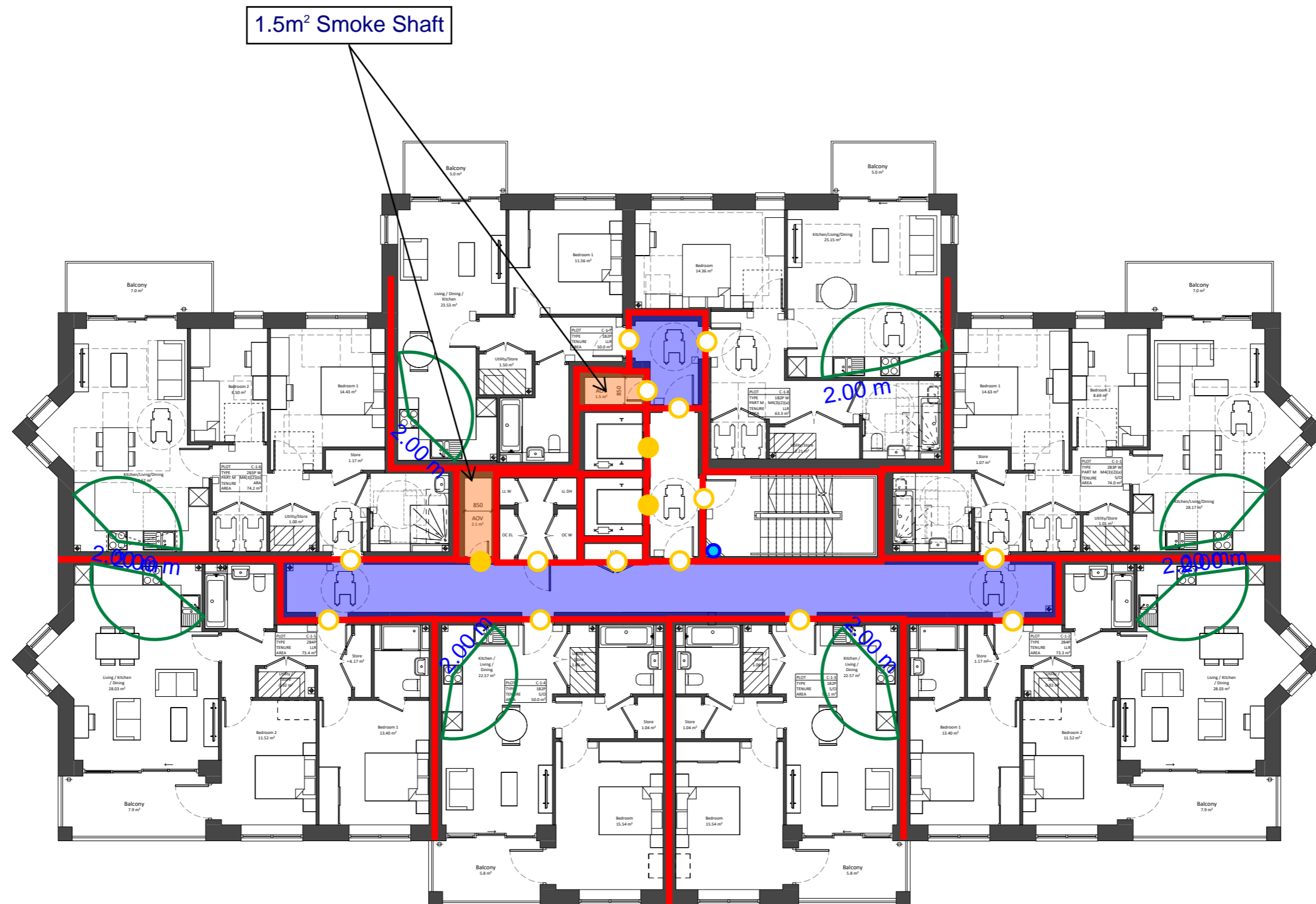
1.5m² AOV

Ventilate via 1.5m² plenum to outside

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Drawing Name:		Block C - Ground Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
			FD60 Door		FD60S Door		60/60/60 FRR
			FD90 Door		FD90S Door		90/90/90 FRR
			FD120 Door		FD120S Door		120/120/120 FRR
							Dry Riser Outlet
							Dry Riser Inlet
							Fire Hydrant





1.5m² Smoke Shaft

2.00 m

2.00m

2.00m

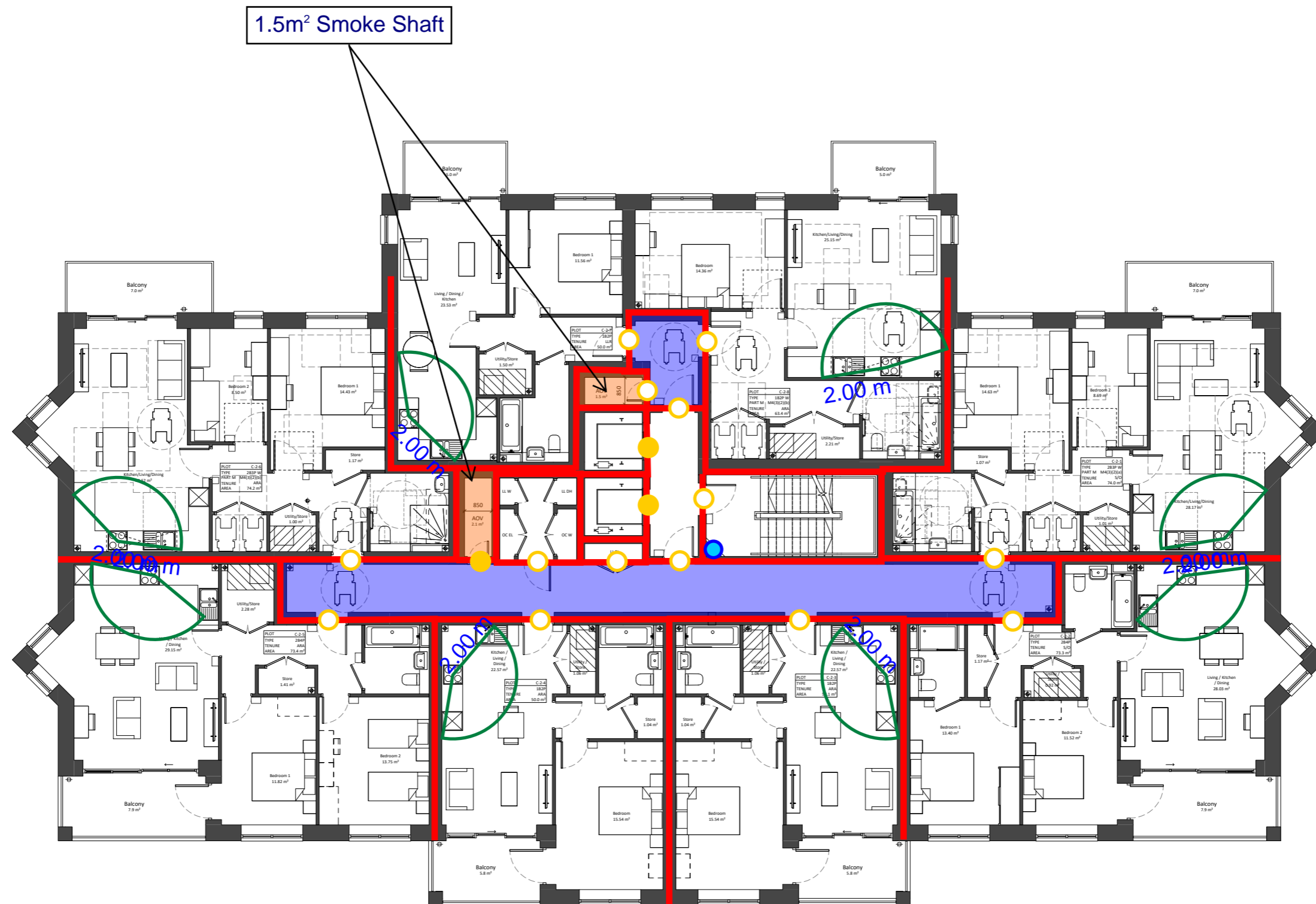
2.00m

2.00m

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block C - First Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:		Alternative Exit		FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet
		FD60 Door	FD60S Door	60/60/60 FRR	FD90S Door	90/90/90 FRR	Dry Riser Inlet
		FD90 Door	FD120 Door	120/120/120 FRR			Fire Hydrant





1.5m² Smoke Shaft

2.00 m

2.00m

2.00m

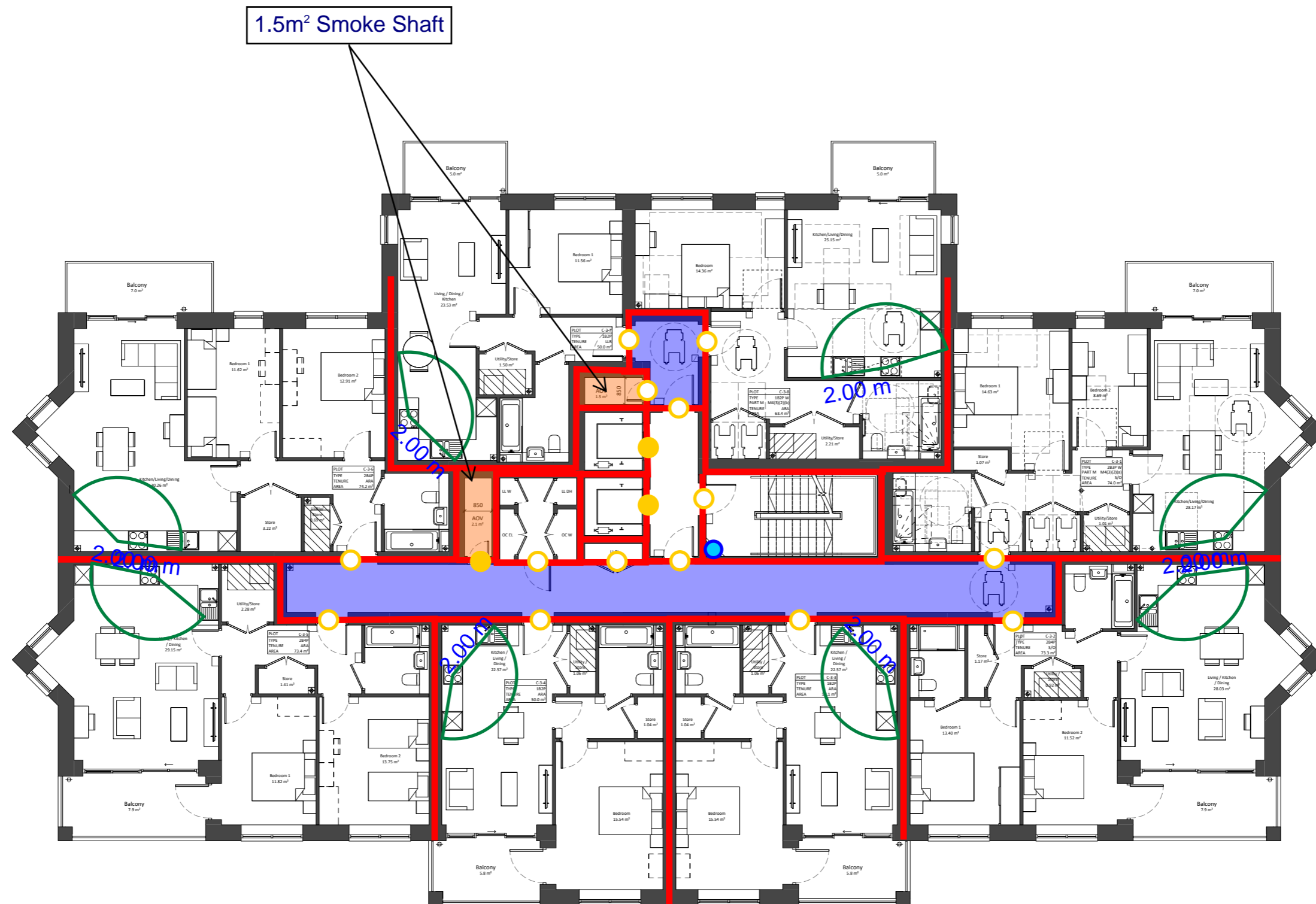
2.00m

2.00m

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block C - Second Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:					
	Alternative Exit		FD30 Door		FD30S Door
			FD60 Door		FD60S Door
			FD90 Door		FD90S Door
			FD120 Door		FD120S Door
			30/30/30 FRR		60/60/60 FRR
			90/90/90 FRR		120/120/120 FRR
			Dry Riser Outlet		Dry Riser Inlet
			Fire Hydrant		



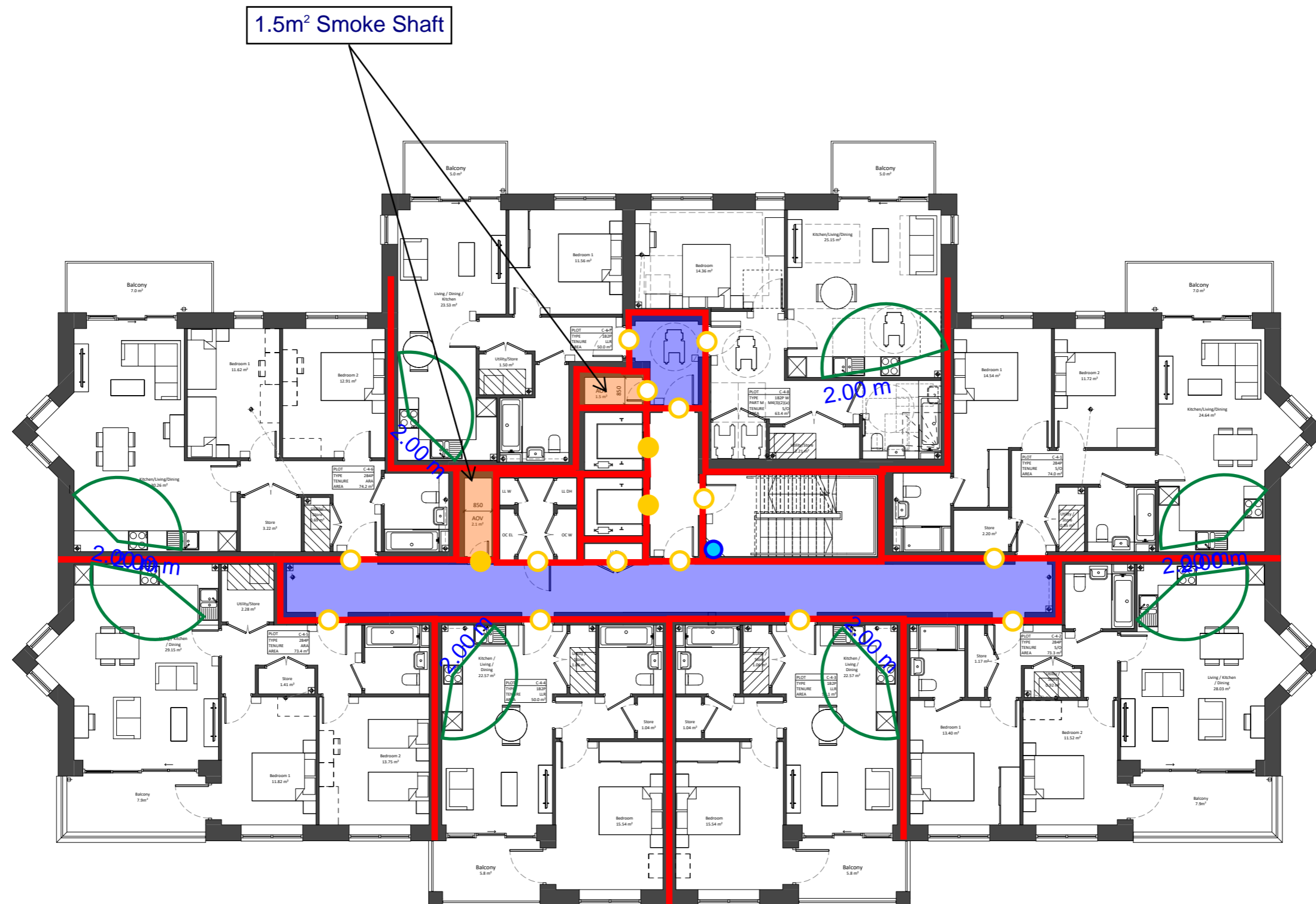


Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block C - Third Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:				
Alternative Exit	FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet
FD60 Door	FD60S Door	60/60/60 FRR	Dry Riser Inlet	Fire Hydrant
FD90 Door	FD90S Door	90/90/90 FRR		
FD120 Door	FD120S Door	120/120/120 FRR		

AFFINITY

FIRE ENGINEERING



1.5m² Smoke Shaft

2.00 m

2.00m

2.00m

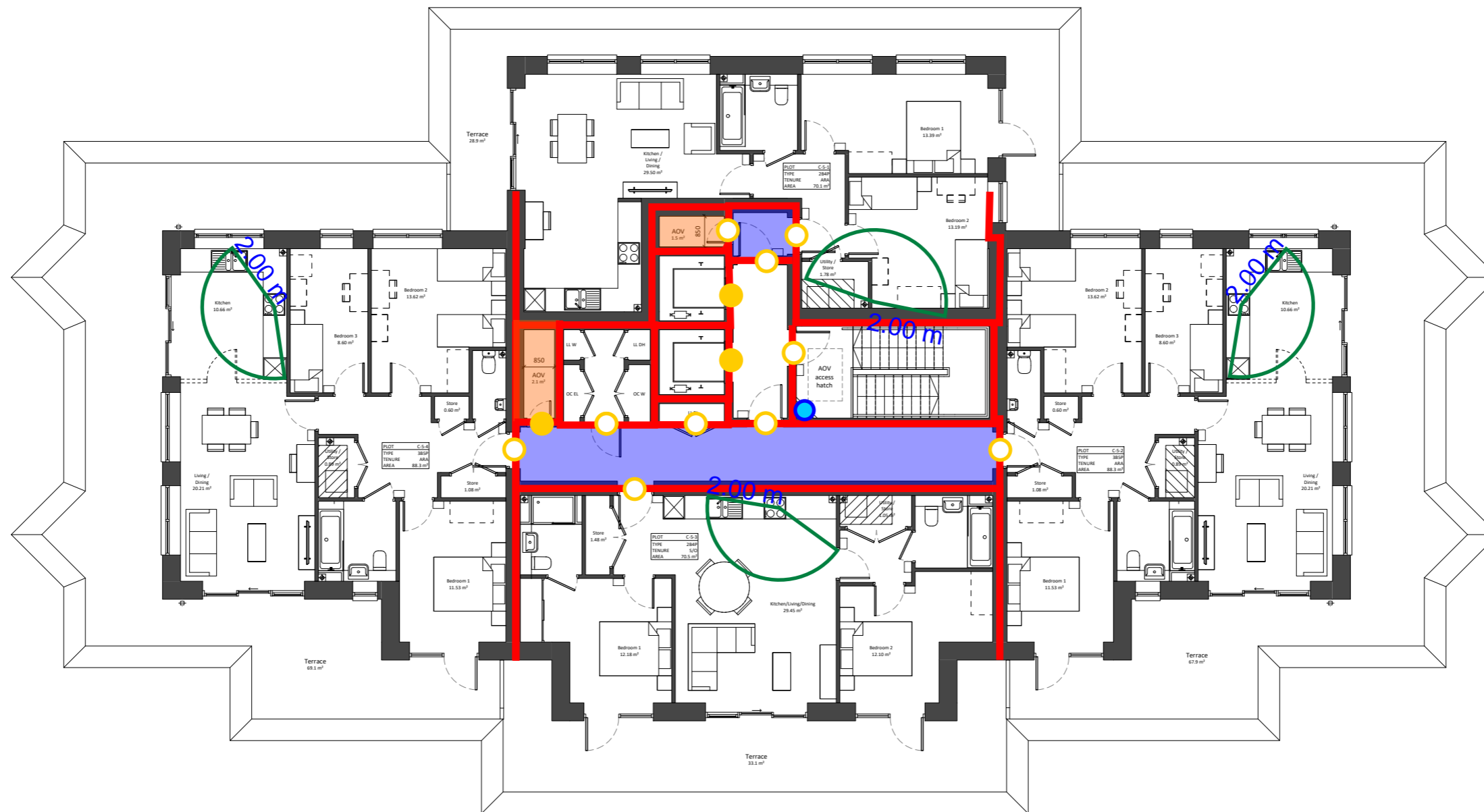
2.00m

2.00m

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block C - Fourth Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:		Alternative Exit		FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet
		FD60 Door	FD60S Door	60/60/60 FRR	FD90 Door	90/90/90 FRR	Dry Riser Inlet
		FD120 Door	FD120S Door	120/120/120 FRR			Fire Hydrant

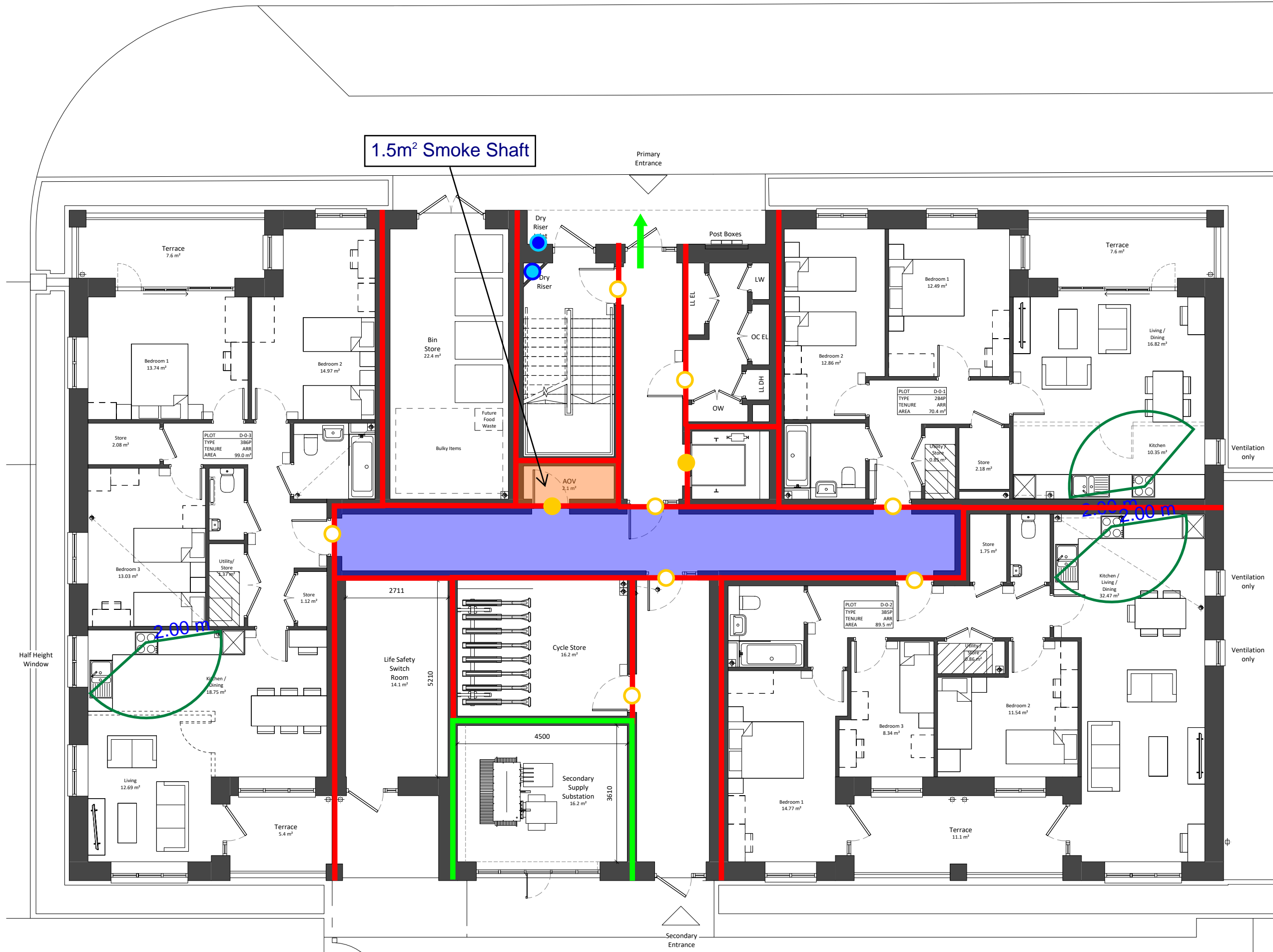




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Drawing Name:		Block C - Fifth Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:						
Alternative Exit	FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet		
FD60 Door	FD60S Door	60/60/60 FRR	Dry Riser Inlet	Fire Hydrant		
FD90 Door	FD90S Door	90/90/90 FRR				
FD120 Door	FD120S Door	120/120/120 FRR				





1.5m² Smoke Shaft

Primary Entrance

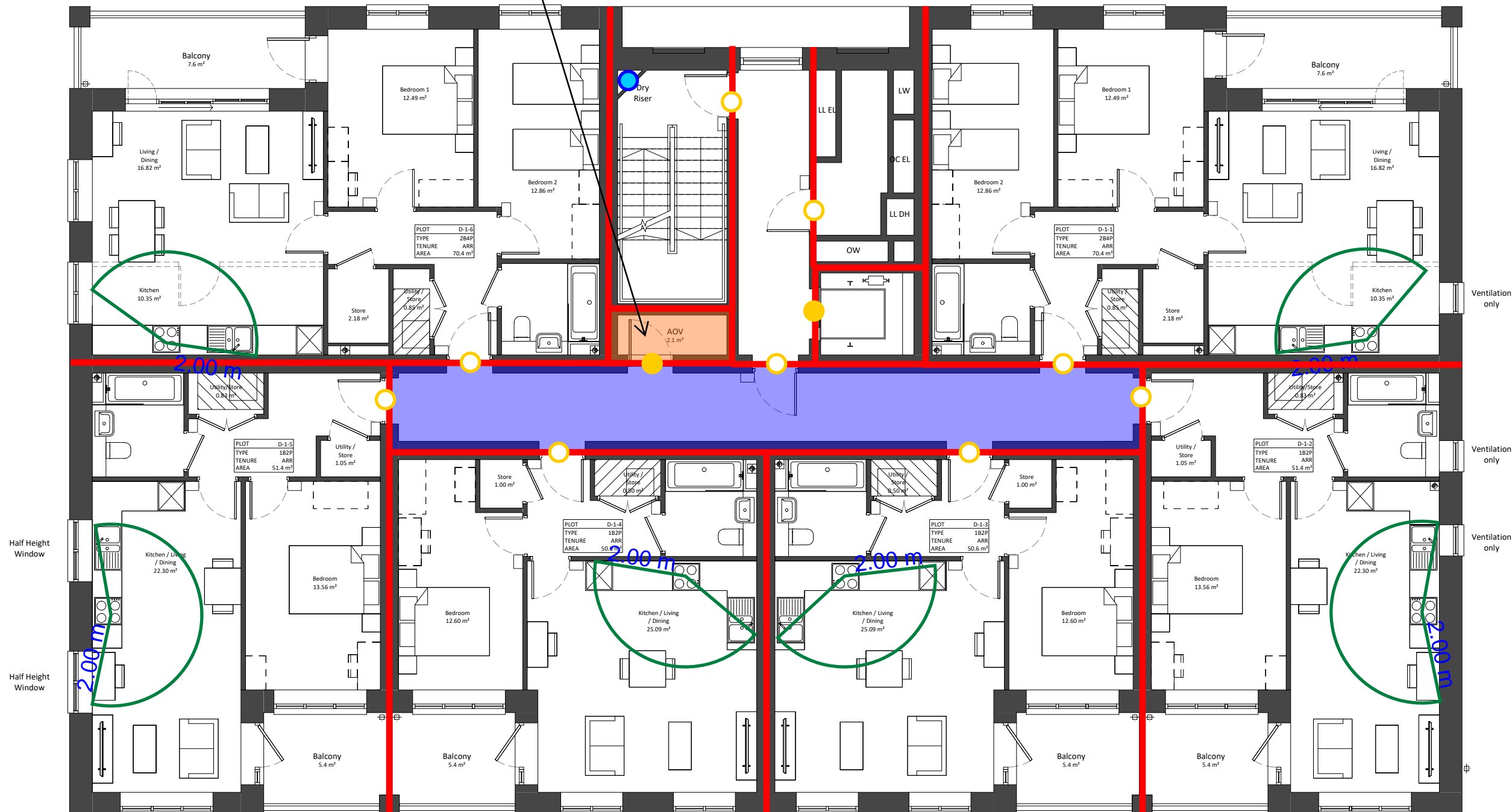
Secondary Entrance

Project Name:	Ham Close, Richmond - Residential						
Drawing Name:	Block D - Ground Floor						
Drawing Reference:	AFF_20700_01_Ham Close, Richmond - Residential_FSD_03						
Date:	07/04/2022	Drawn By:	AM	Checked By:	ED	Approved By:	JO

Legend:	<ul style="list-style-type: none"> ▼ Alternative Exit ● FD30 Door ● FD60 Door ● FD90 Door ● FD120 Door 	<ul style="list-style-type: none"> ○ FD30S Door ○ FD60S Door ○ FD90S Door ○ FD120S Door 	<ul style="list-style-type: none"> 30/30/30 FRR 60/60/60 FRR 90/90/90 FRR 120/120/120 FRR 	<ul style="list-style-type: none"> ● Dry Riser Outlet ● Dry Riser Inlet ● Fire Hydrant
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1.5m² Smoke Shaft



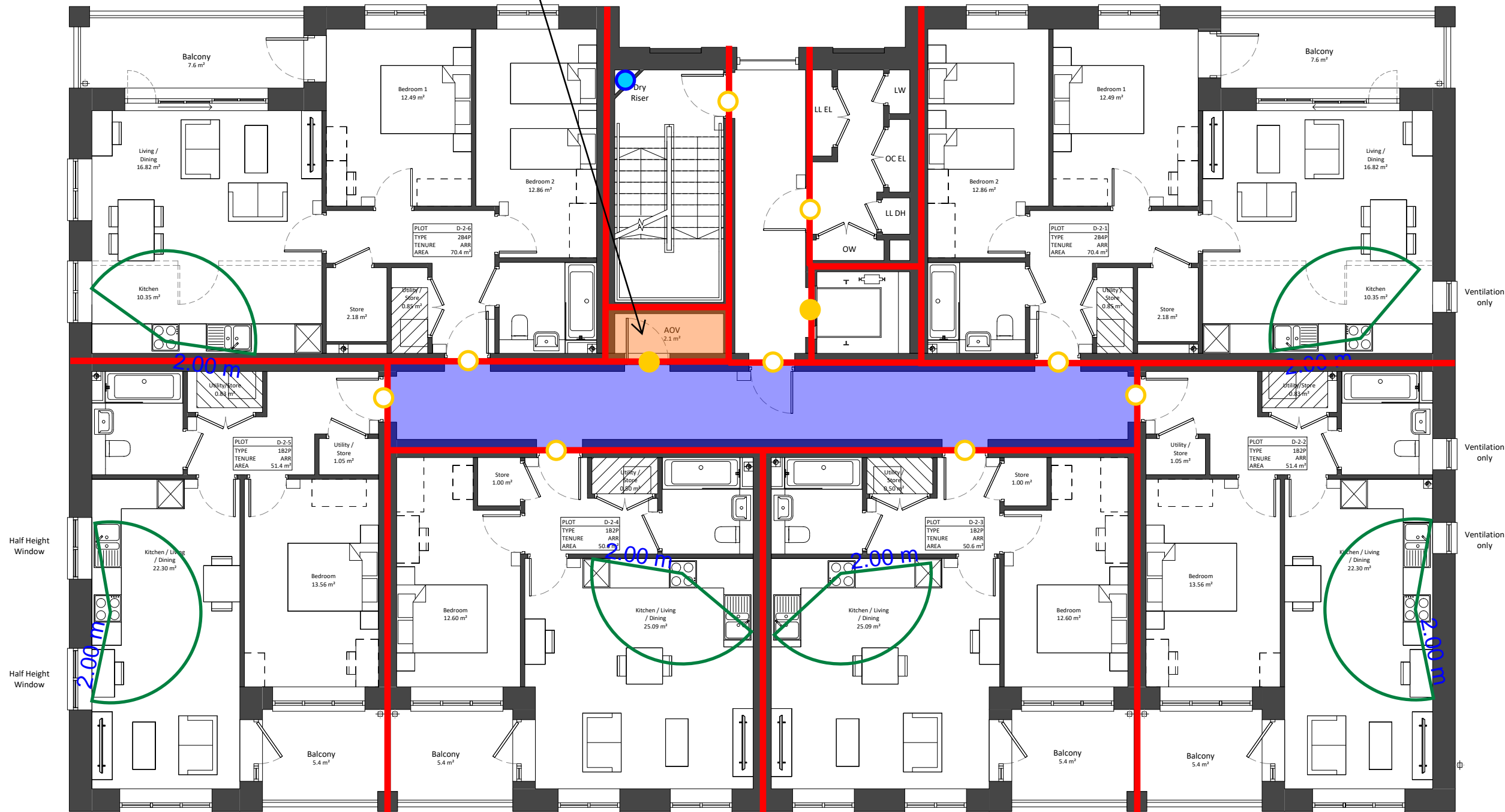
Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block D - First Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:				
Alternative Exit	FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet
FD60 Door	FD60S Door	60/60/60 FRR	Dry Riser Inlet	Fire Hydrant
FD90 Door	FD90S Door	90/90/90 FRR		
FD120 Door	FD120S Door	120/120/120 FRR		

AFFINITY

FIRE ENGINEERING

1.5m² Smoke Shaft

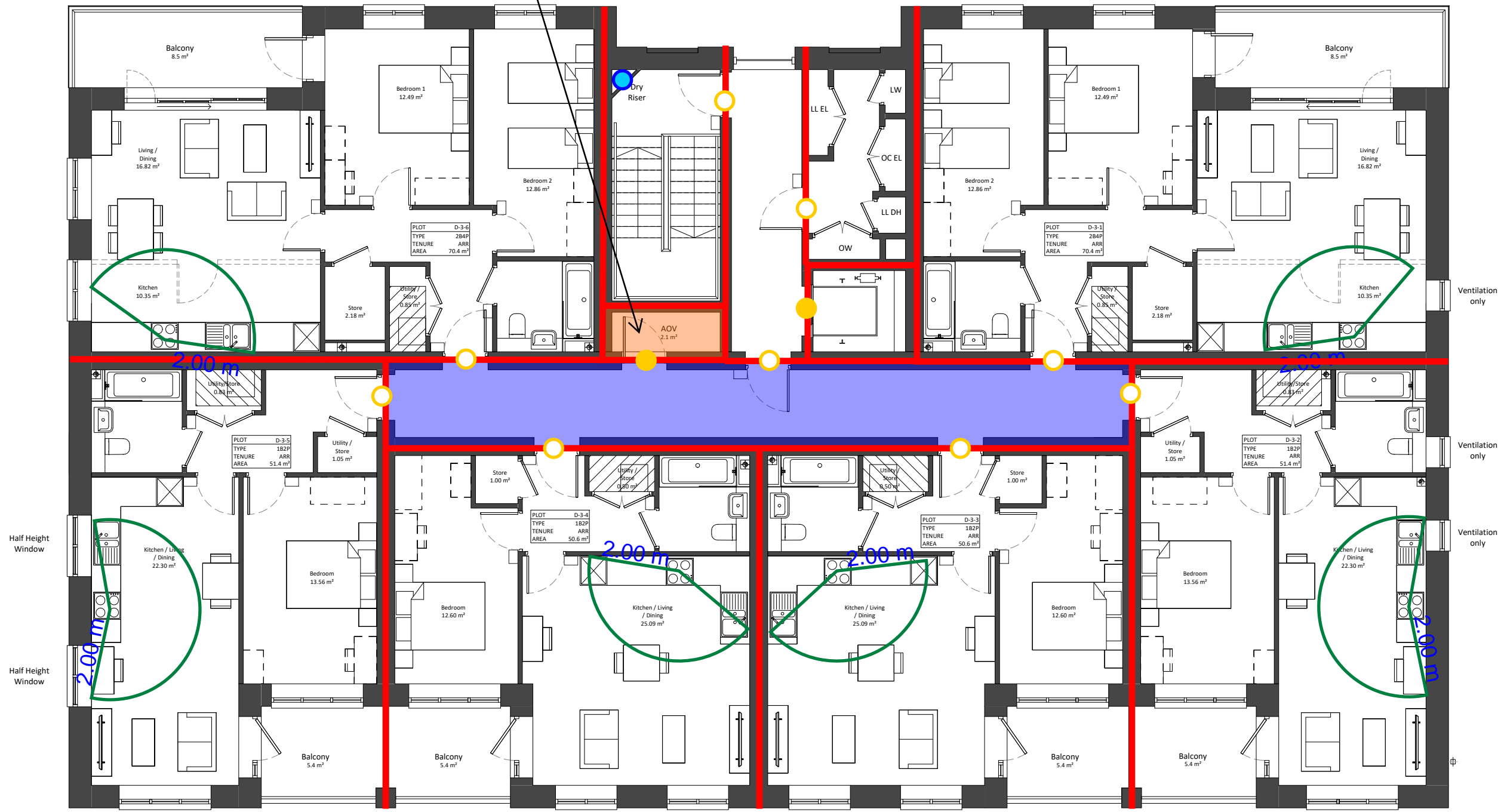


Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block D - Second Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:				
Alternative Exit	FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet
FD60 Door	FD60S Door	60/60/60 FRR	Dry Riser Inlet	Fire Hydrant
FD90 Door	FD90S Door	90/90/90 FRR		
FD120 Door	FD120S Door	120/120/120 FRR		



1.5m² Smoke Shaft

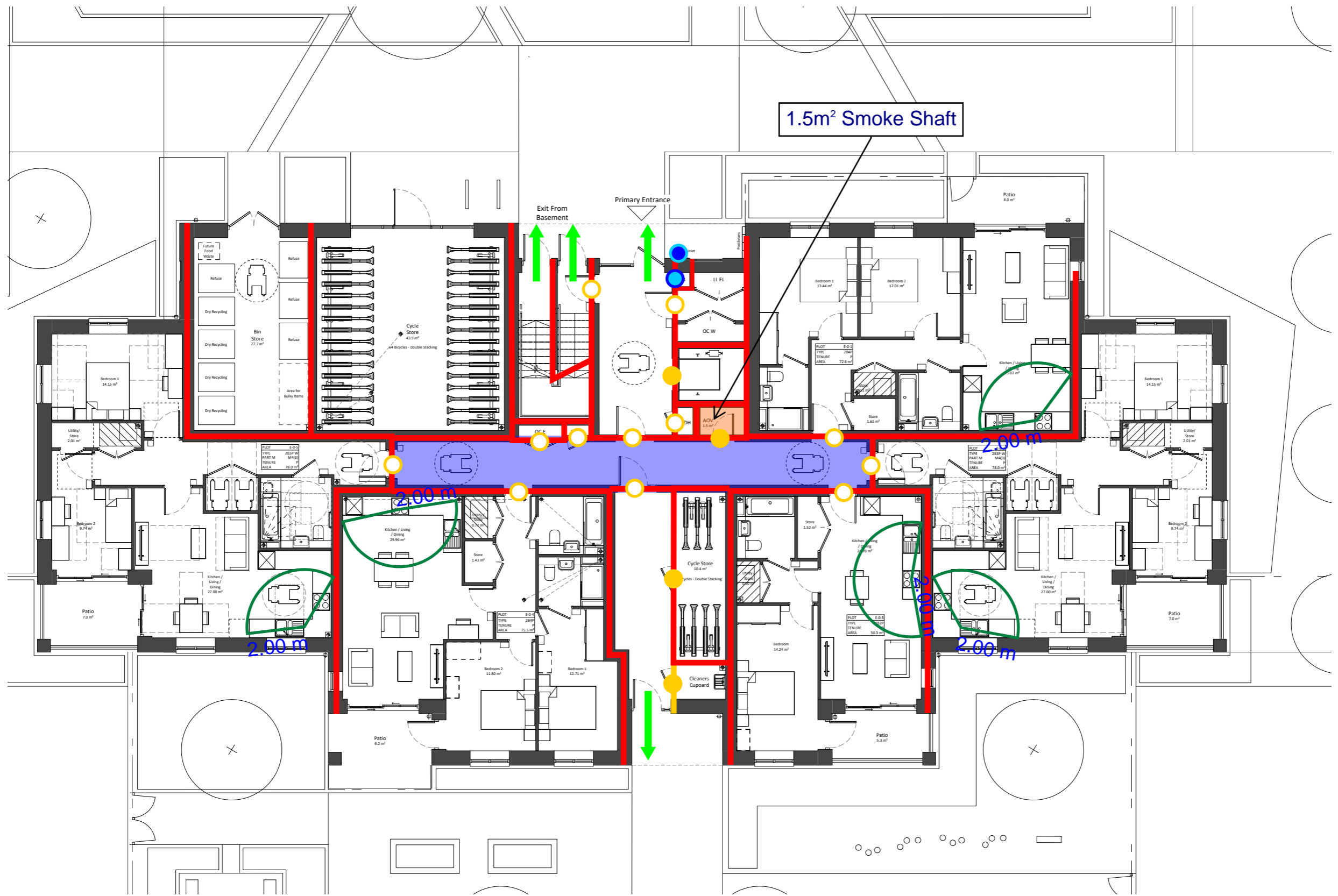


Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block D - Third Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:				
Alternative Exit	FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet
FD60 Door	FD60S Door	60/60/60 FRR	Dry Riser Inlet	Fire Hydrant
FD90 Door	FD90S Door	90/90/90 FRR		
FD120 Door	FD120S Door	120/120/120 FRR		

AFFINITY

FIRE ENGINEERING



1.5m² Smoke Shaft

Exit From Basement
Primary Entrance

2.00 m

2.00 m

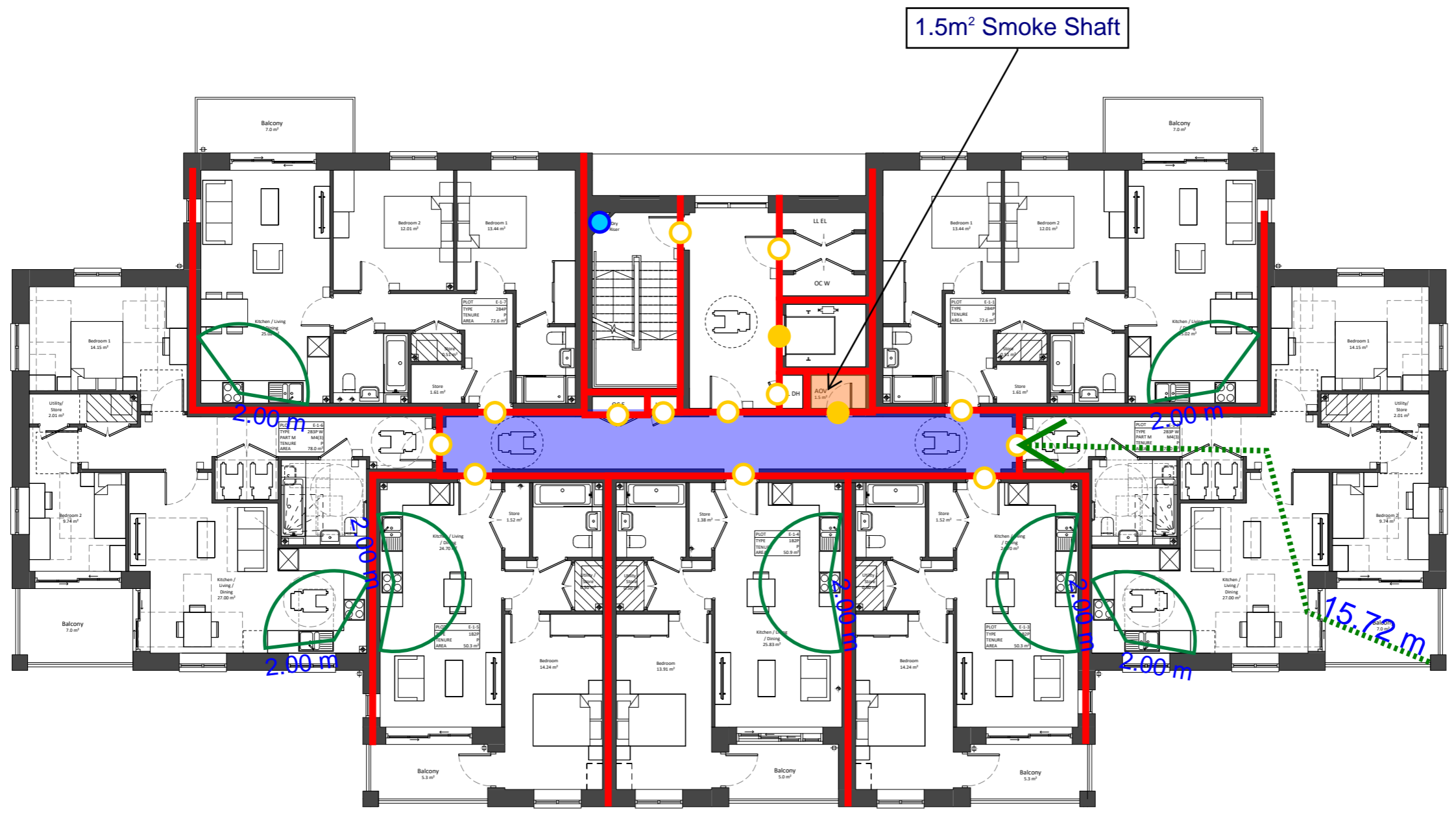
2.00 m

2.00 m

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block E - Ground Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:					
Alternative Exit	FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet	
	FD60 Door	FD60S Door	60/60/60 FRR	Dry Riser Inlet	
	FD90 Door	FD90S Door	90/90/90 FRR	Fire Hydrant	
	FD120 Door	FD120S Door	120/120/120 FRR		

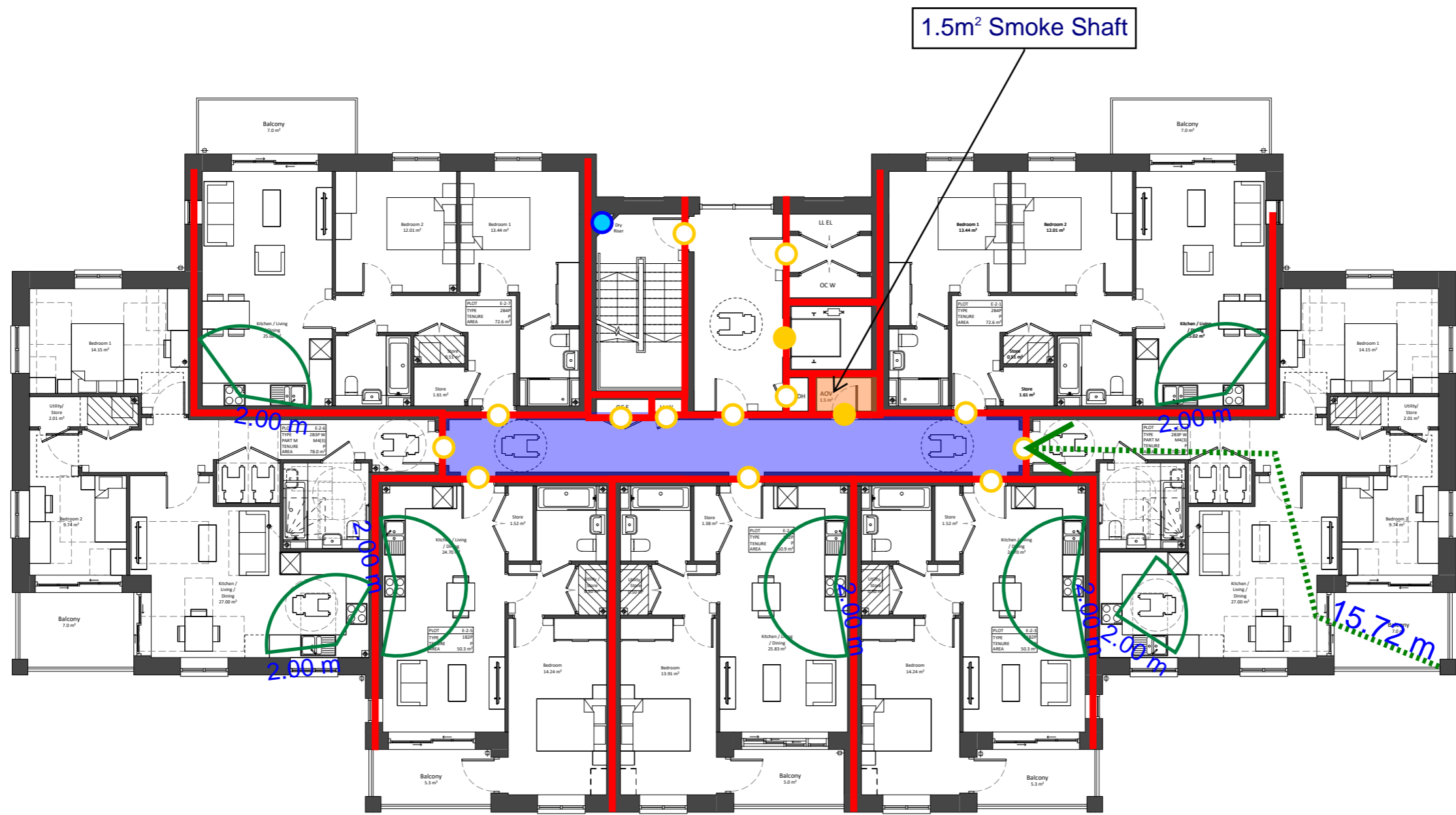




1.5m² Smoke Shaft

Project Name:	Ham Close, Richmond - Residential						
Drawing Name:	Block E - First Floor						
Drawing Reference:	AFF_20700_01_Ham Close, Richmond - Residential_FSD_03						
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:									
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR		Dry Riser Outlet
			FD60 Door		FD60S Door		60/60/60 FRR		Dry Riser Inlet
			FD90 Door		FD90S Door		90/90/90 FRR		Fire Hydrant
			FD120 Door		FD120S Door		120/120/120 FRR		

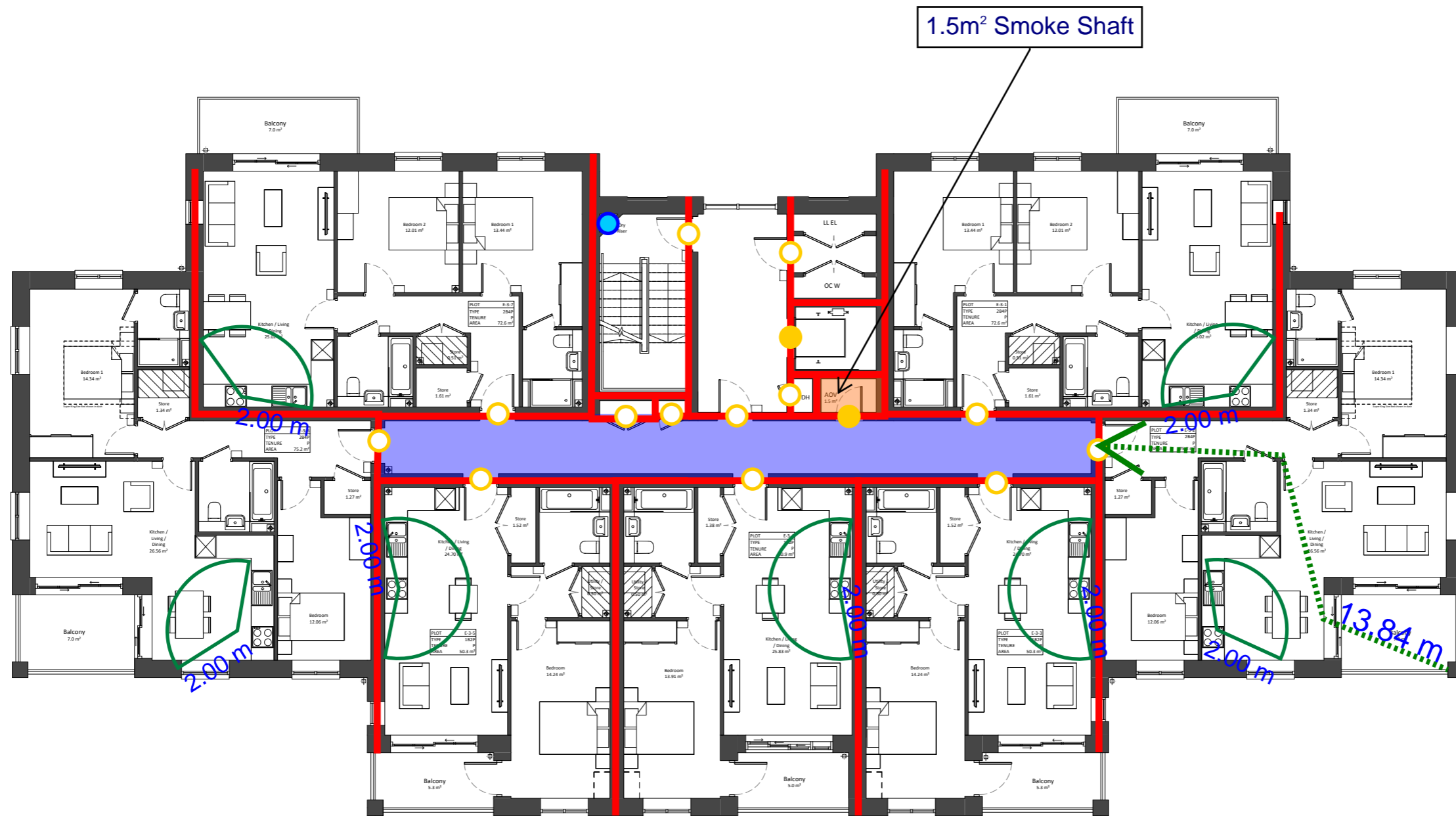


1.5m² Smoke Shaft

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block E - Second Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
			FD60 Door		FD60S Door		60/60/60 FRR
			FD90 Door		FD90S Door		90/90/90 FRR
			FD120 Door		FD120S Door		120/120/120 FRR
			Dry Riser Outlet		Dry Riser Inlet		Fire Hydrant



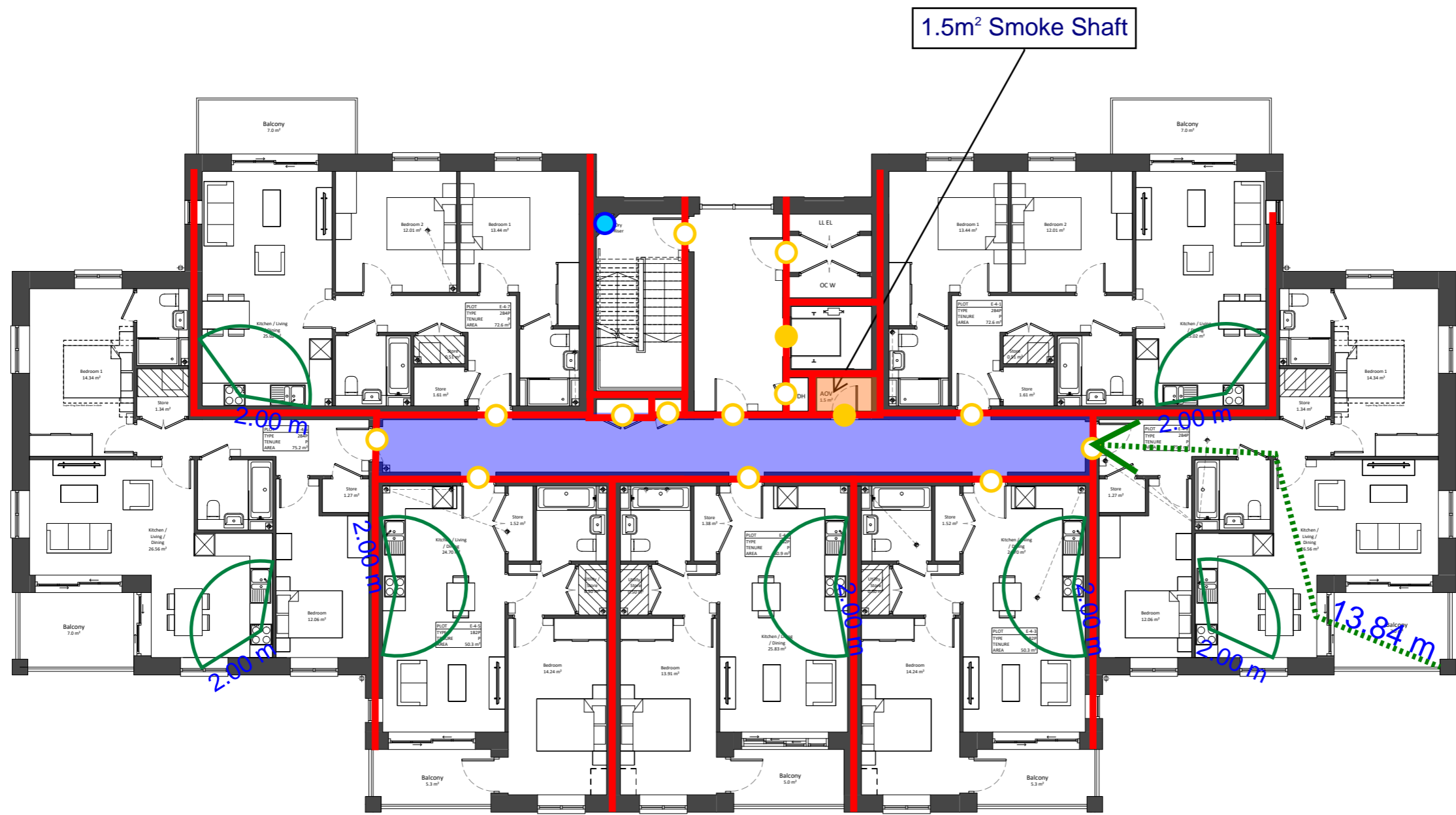


1.5m² Smoke Shaft

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block E - Third Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
			FD60 Door		FD60S Door		60/60/60 FRR
			FD90 Door		FD90S Door		90/90/90 FRR
			FD120 Door		FD120S Door		120/120/120 FRR
							Dry Riser Outlet
							Dry Riser Inlet
							Fire Hydrant



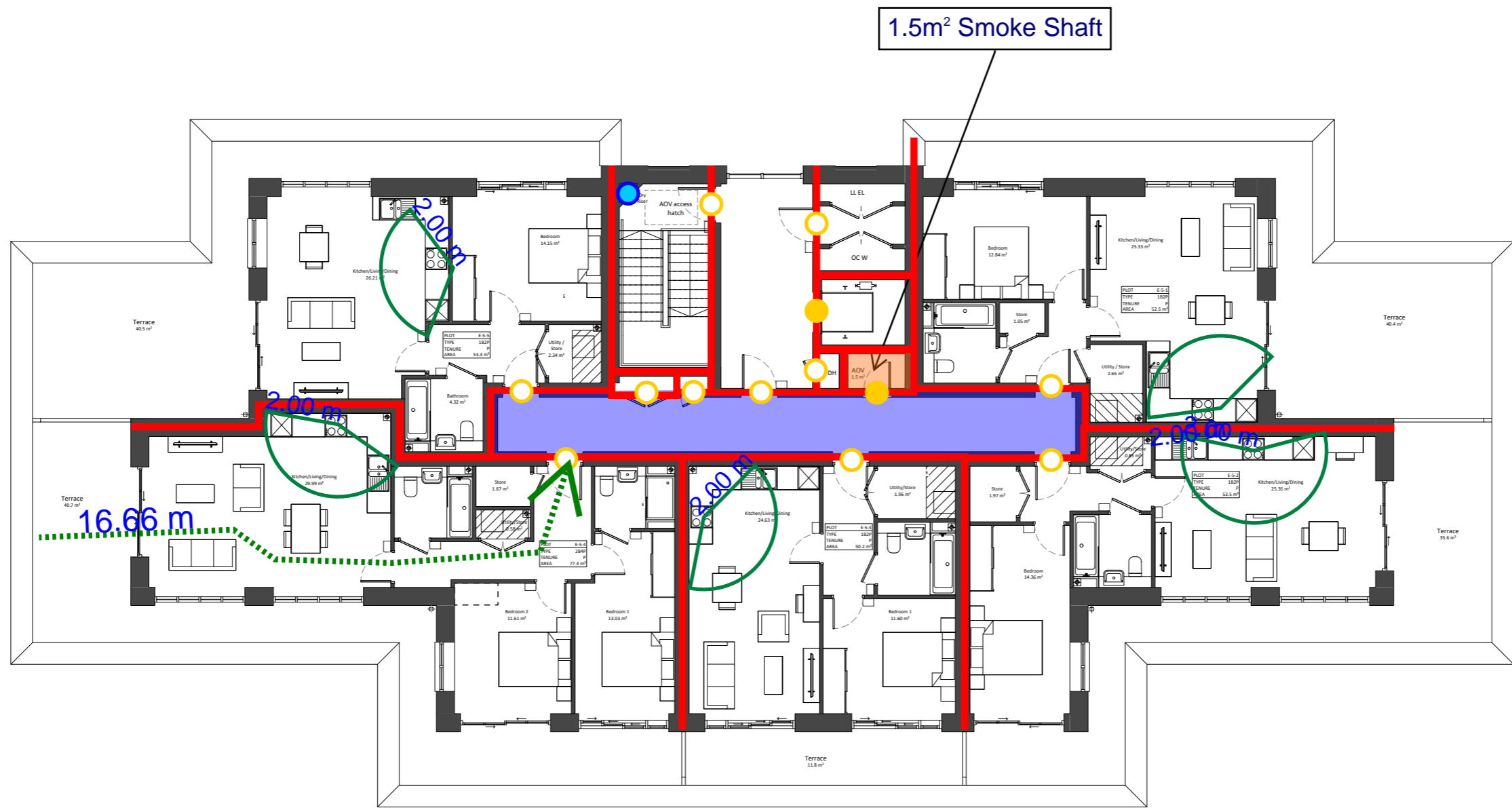


1.5m² Smoke Shaft

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block E - Fourth Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
			FD60 Door		FD60S Door		60/60/60 FRR
			FD90 Door		FD90S Door		90/90/90 FRR
			FD120 Door		FD120S Door		120/120/120 FRR
							Dry Riser Outlet
							Dry Riser Inlet
							Fire Hydrant



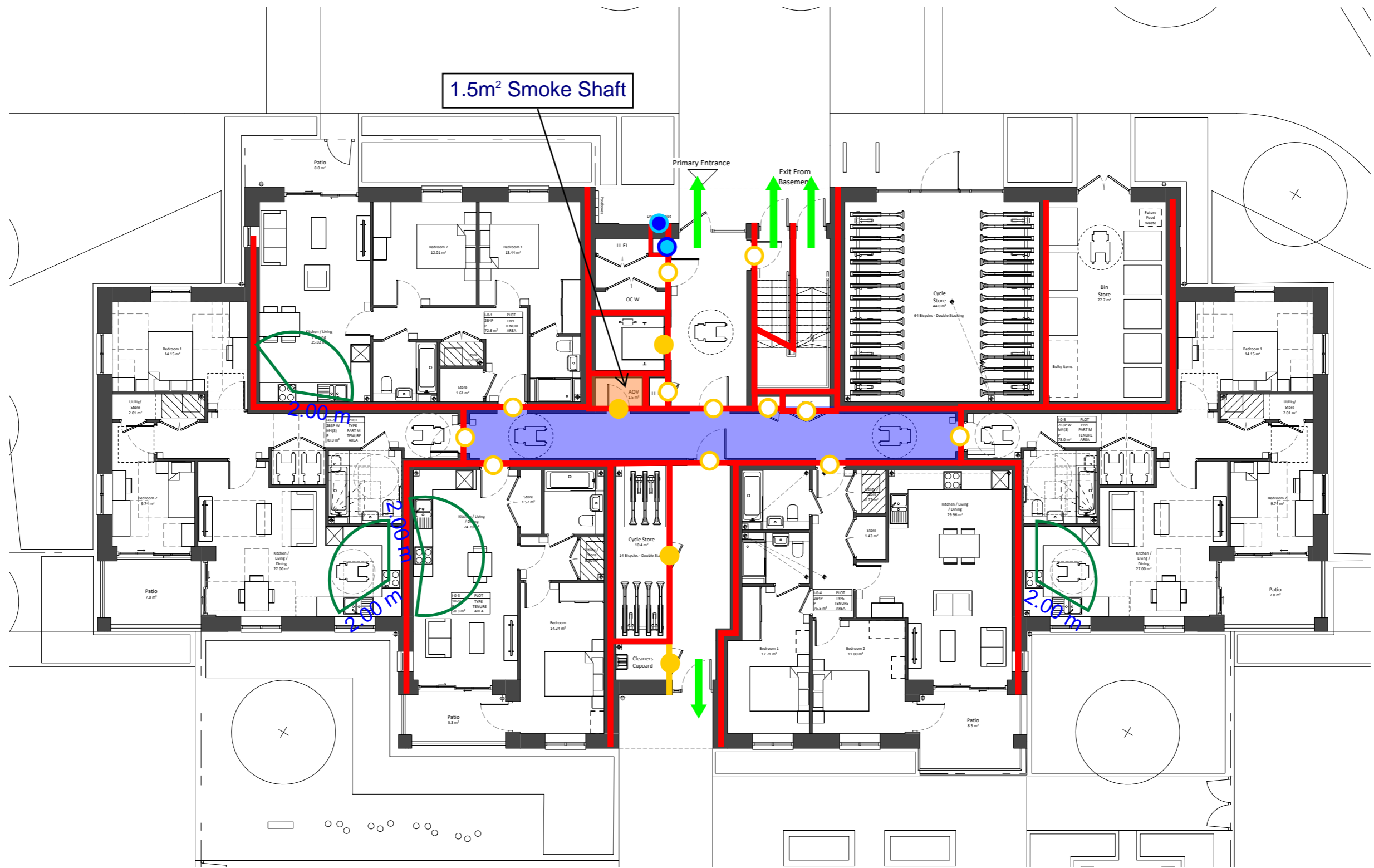


1.5m² Smoke Shaft

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block E - Fifth Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
			FD60 Door		FD60S Door		60/60/60 FRR
			FD90 Door		FD90S Door		90/90/90 FRR
			FD120 Door		FD120S Door		120/120/120 FRR
							Dry Riser Outlet
							Dry Riser Inlet
							Fire Hydrant





1.5m² Smoke Shaft

Primary Entrance

Exit From Basement

2.00m

2.00m
2.00m

2.00m

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block I - Ground Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
			FD60 Door		FD60S Door		60/60/60 FRR
			FD90 Door		FD90S Door		90/90/90 FRR
			FD120 Door		FD120S Door		120/120/120 FRR
							Dry Riser Outlet
							Dry Riser Inlet
							Fire Hydrant





1.5m² Smoke Shaft

2.00 m

2.00 m

2.00 m

2.00 m

2.00 m

2.00 m

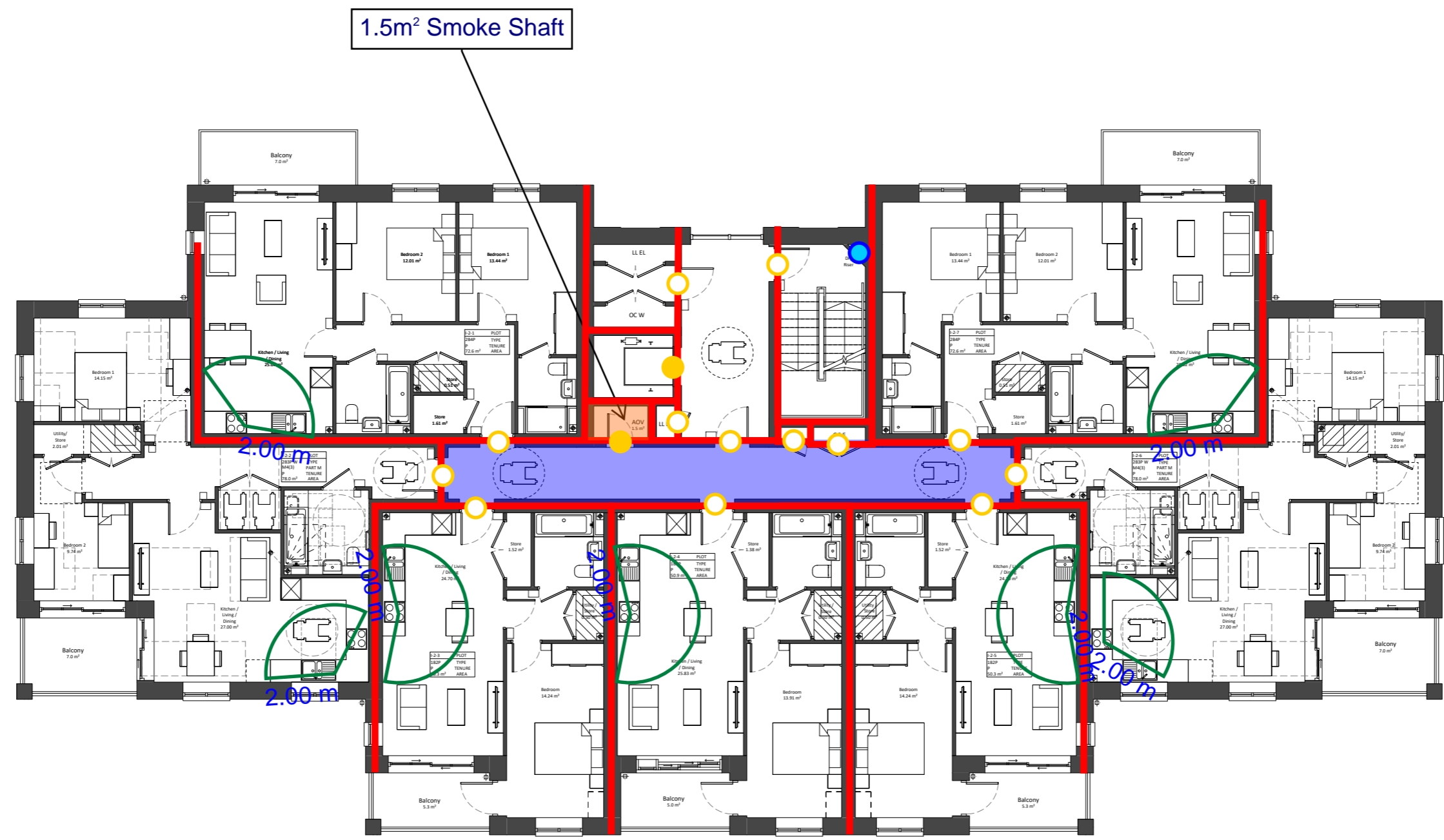
Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block I - First Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:		Alternative Exit		FD30 Door	FD30S Door	30/30/30 FRR	Dry Riser Outlet
		FD60 Door	FD60S Door	60/60/60 FRR	FD90 Door	90/90/90 FRR	Dry Riser Inlet
		FD120 Door	FD120S Door	120/120/120 FRR			Fire Hydrant





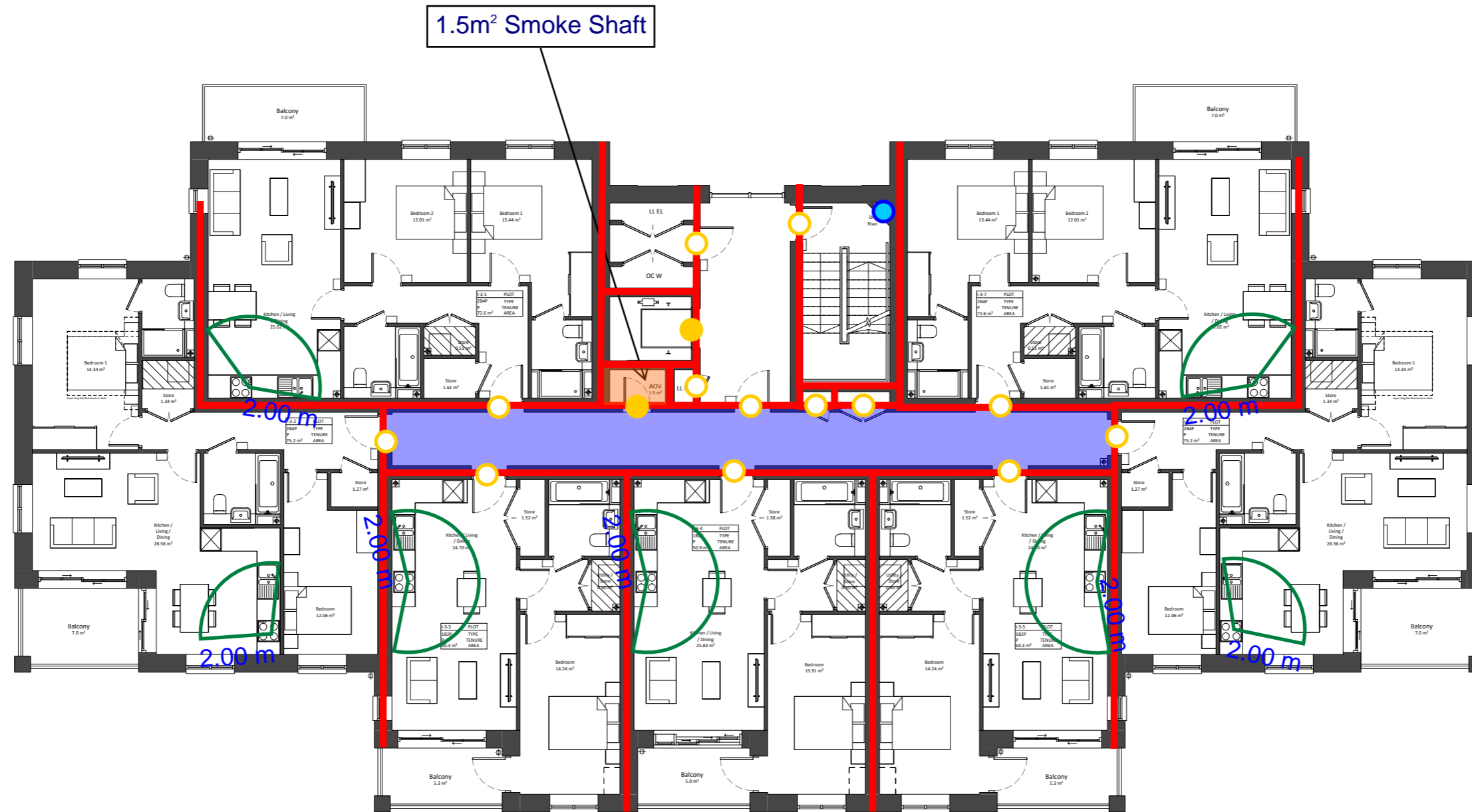
Location Plan



Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block I - Second Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:							
	Alternative Exit		FD30 Door		FD30S Door		30/30/30 FRR
	FD60 Door		FD60S Door		60/60/60 FRR		Dry Riser Outlet
	FD90 Door		FD90S Door		90/90/90 FRR		Dry Riser Inlet
	FD120 Door		FD120S Door		120/120/120 FRR		Fire Hydrant





1.5m² Smoke Shaft

2.00 m

2.00 m

2.00 m

2.00 m

2.90 m

2.90 m

2.90 m

2.90 m

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block I - Third Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

Legend:		Alternative Exit		FD30 Door	FD60 Door	FD90 Door	FD120 Door	FD30S Door	FD60S Door	FD90S Door	FD120S Door	30/30/30 FRR	60/60/60 FRR	90/90/90 FRR	120/120/120 FRR	Dry Riser Outlet	Dry Riser Inlet	Fire Hydrant
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1.5m² Smoke Shaft

2.00 m

2.00 m

2.00 m

2.00 m

2.00 m

2.00 m

2.00 m

Legend:

- ▼ Alternative Exit
- FD30 Door
- FD60 Door
- FD90 Door
- FD120 Door
- FD30S Door
- FD60S Door
- FD90S Door
- FD120S Door
- 30/30/30 FRR
- 60/60/60 FRR
- 90/90/90 FRR
- 120/120/120 FRR
- Dry Riser Outlet
- Dry Riser Inlet
- Fire Hydrant

Project Name:		Ham Close, Richmond - Residential					
Drawing Name:		Block I - Fourth Floor					
Drawing Reference:		AFF_20700_01_Ham Close, Richmond - Residential_FSD_03					
Date:	07/04/2022	Drawn By	QC	Checked By	ED	Approved By	JO

