

ASDA EXPRESS MANCHESTER SQUARE GARDENS

ODOUR CONTROL REQUIREMENTS OF EMISSIONS FROM COMMERCIAL COOKING ACTIVITIES

Client:

Asda

Architect:

Whittam Cox Architects



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1.00 EXECUTIVE SUMMARY

- Asda are opening a new store in the new site at First Street South, Manchester.
- Within the new store will be a small kitchen producing fresh baked produce including pastry and bread products.
- The baked goods are all of a type that produces minimal odour (not greasy or with spices) and the method of cooking is by use of a twin convection oven. No other cooking methods are used.
- The oven comes complete with it's own moisture catching condense canopy greatly reducing the amount of water vapour in the extract air.
- The extract system serving the kitchen is designed for space ventilation only and utilises an extract fan in the ceiling of the room as no fan-fouling grease, smoke or moisture should reach the fan.
- The risk assessment of the main factors contributing to nuisance from extract systems produced a significance score of 32, falling in the high band mainly due to the position of the discharge below the eaves.
- In order to mitigate any risk of odour, however inoffensive, a carbon filter unit will be installed within the extract system of the kitchen area.

Odour Risk Report

2.00 PURPOSE OF THIS REPORT

2.01 PLANNING CONSTRAINTS

This report is intended to provide information collected and produced as part of the design of the ventilation systems which will be included in the new Asda store within the mixed use development, Building A of the First street South development, at the northwest corner of the Chester Street and Wilmott Street junction, Manchester. The following information should provide a planning officer with information that is suitable to allow the sign off any planning conditions relating to the risk of nuisance odour production in the vicinity of the new store.

2.02 METHODOLOGY

This report will highlight the regulatory and industry best practice guidance and the related documentation and work through the assessment methodology included within.

Odour Risk Report

3.00 SITE SPECIFIC DETAILS

3.01 LOCATION

The new store is to be located within the Square Gardens development in the ground floor of a block adjacent to First Street. The store is opposite existing student residential properties to the south east and sits below new apartments within the development.

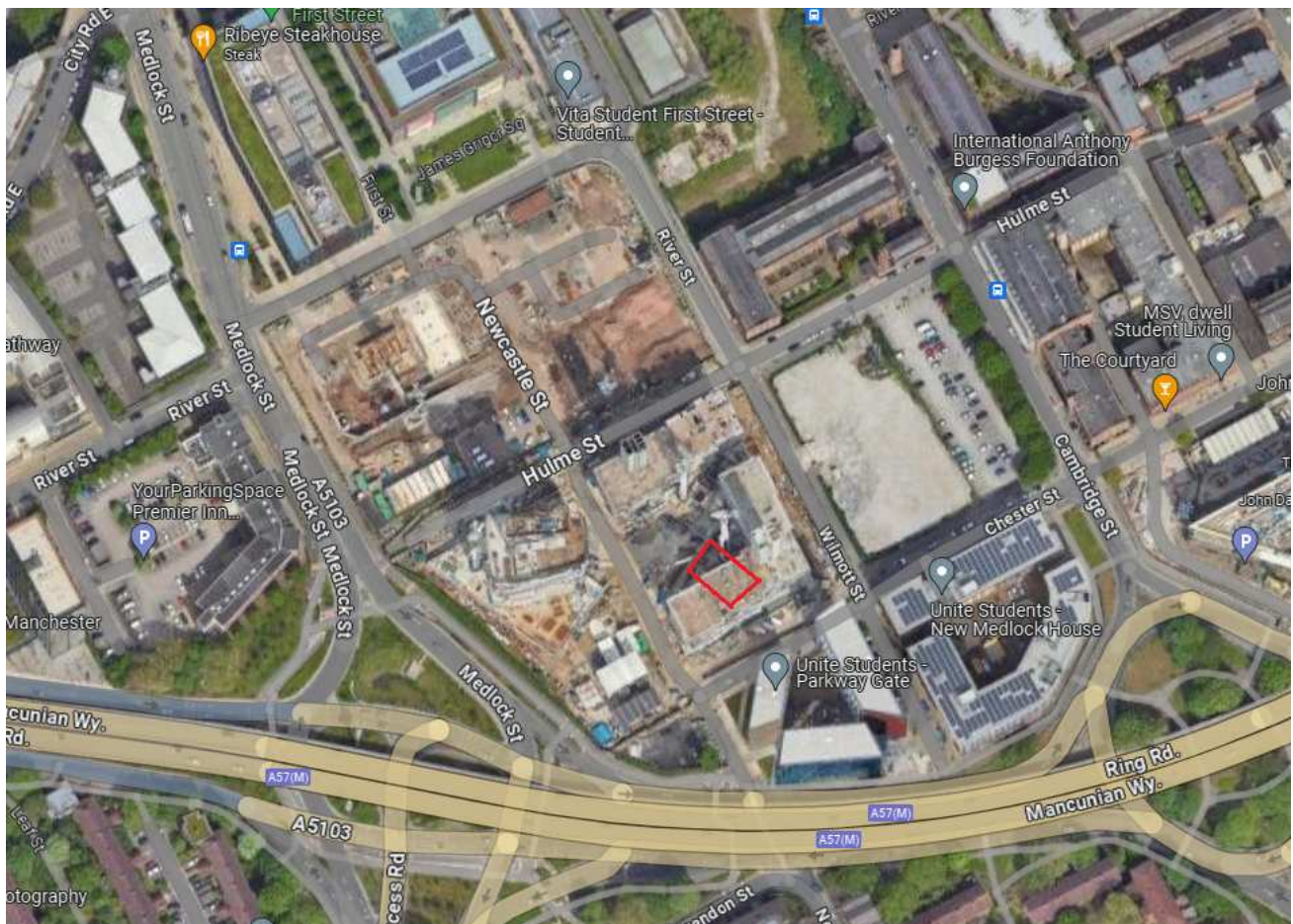


Fig 1. – Aerial Photograph of the site area with store outline highlighted in red.

A site location plan has been included in the appendices.

Odour Risk Report

3.02 SYSTEMS

The new store ventilation systems comprise the following:

- A balanced fresh air system utilising heat recovery with fresh air intake and exhaust providing fresh air to staff and customers within the sales floor area.
- A balanced fresh air system utilising heat recovery with fresh air intake and exhaust providing fresh air to staff within the back of house occupied areas.
- A WC extract system providing extract from the staff WC.
- A kitchen extract system from the food preparation room in the back of house area.
- A balance supply & extract system to the DHW heat pump unit to allow the heat pump to operate.

Odour Risk Report

4.00 ASSESSMENT

The standard method of assessment for the risk and potential severity of odour emission from cooking is the now withdrawn DEFRA document PB10527 - Guidance on the control of odour and noise from commercial kitchen exhaust systems.

The DEFRA document has now been succeeded by a document using a similar methodology produced by the EMAQ+, "Control of Odour and Noise from Kitchen Exhaust Systems" 2018.

The EMAQ+ guidance describes factors that combine to determine the scale of the odour produced by the food preparation activities at a site. The major factors that affect the magnitude of an odour problem include the following:

- Size of the cooking facility - Influencing the intensity of the odour and the air volumes involved.
- Type of food prepared - Affecting the chemical constituents of the exhausted air.
- Type of cooking appliances used - Dictating the likely level of fat and water droplets in the exhausted air and the exhaust air temperature.

The guidance contains tables detailing the odour, grease and smoke characteristics of a variety of different types of cuisine and various cooking appliances, some of which are detailed below:

Catering Establishment	Description	Odour Potential				Grease Content				Smoke Content			
		Low	Moderate	High	Very High	Low	Moderate	High	Very High	Low	Moderate	High	Very High
Tea Shop		✓				✓				✓			
Café Serving All Day Breakfasts	Oil, Cooking Meat		✓					✓			✓		
Pizza Restaurant (Gas or Elec Cooking)	Herbs		✓				✓			✓			
Pizza Restaurant (Wood Fired Cooking)	Herbs, Garlic, Wood			✓			✓					✓	
Steak Houses	Fat		✓				✓					✓	
Italian	Herbs, Garlic		✓				✓					✓	
Most Pubs	Fat		✓				✓				✓		
Chinese	Ginger, Spices, Oil		✓					✓			✓		
Indian	Spices, Oil			✓				✓			✓		
Thai	Spices, Oil			✓				✓				✓	
Kebab Houses	Fat, Cooking Meat			✓				✓					✓
Fish & Chips	Oil				✓				✓	✓			
Fast Food/ Burger	Oil, Cooking Meat				✓				✓		✓		
Casual Dining - Burgers/Chicken	Fat, Cooking Meat, Spices			✓				✓					✓

Odour Risk Report

Appliance	Particulate (Grease/Smoke) Loading			Moisture Content		
	Light	Medium	Heavy	Light	Medium	Heavy
Cooking Pots	✓					✓
Bain Maries	✓					✓
Steam Ovens	✓					✓
Pizza Ovens		✓			✓	
Bratt Pans		✓				✓
Oven Range		✓			✓	
Flat Top Grille		✓			✓	
Chip Fryer		✓			✓	
Salamander		✓			✓	
Charcoal			✓		✓	
Open Top Grille			✓		✓	
Char Broilers			✓		✓	
Chinese Wok Ranges			✓			✓
Smokers			✓		✓	
Wood Fired Pizza Ovens			✓	✓		

The size of the cooking facility, the Hot Prep, is a small room comprising a table workstation, a sink and a pair of 5 tray convection ovens. The twin oven unit is fitted with a fixed condense canopy to catch and condense excess moisture from the oven when the door is opened. The room has extract ventilation in the form of a ceiling mounted extract fan comparable to a domestic extract system as the air is not expected to contain grease, moisture or smoke which would foul the fan, the ventilation is only provided to displace heat build up to maintain a comfortable working environment.

The food being prepared includes sweet and savoury pastry and bread products, which are only “baked-off” on site and come in a pre-prepared/ part-baked condition, frozen. The ingredients do not include strong smelling spices. The ingredients may include, for example, cinnamon on sweet pastry, and herbs such as rosemary and thyme on bread products or savoury products such as sausage rolls or pasties, none of which are typically considered offensive odours. Furthermore, the concentration of these odours would be low, and the baking times would be infrequent.

The type of cooking appliances used, the oven, would produce minimal traces of fat and water droplets which would be caught in the condensing hood of the oven. The extracted air temperature would be relatively low as the extraction is a mixture of air released from the oven on door opening and the background room temperature.

Odour Risk Report

4.01 RISK ASSESSMENT CRITERIA

The risk assessment criteria and a summary of the factors at this site determining the score within the system can be found below:

4.01.1 Dispersion

The extract systems discharge from below through penthouse turret within a greened area at first floor level, above the eaves to street level, at low velocity.

4.01.2 Proximity of Receptors

The closest sensitive receptor to the ventilation discharge point would be the apartments above the store with openable windows, approximately 10m away.

4.01.3 Size of Kitchen

The kitchen is extremely small with only the twin oven as a cooking appliance. The site does not produce meals to order so an exact correlation to “covers” is difficult, but a single bake cycle would not produce enough food to satisfy 30 equivalent covers.

4.01.4 Cooking Type

The food being prepared is purely baked pastry and bread products with an absolute minimum of odour and no grease or smoke in the exhausted air.

Odour Risk Report

4.02 RISK ASSESSMENT

Impact Risk	Odour Control Requirement	Significance Score*
Low to Medium	Low level odour control	Less than 20
High	High level odour control	20 to 35
Very High	Very high level odour control	More than 35

*Based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

Criteria	Score	Score	Details
Dispersion	Very Poor	20	Low level discharge, discharge into courtyard or restriction on stack.
	Poor	15	Not low level but below eaves, or discharge at below 10 m/s
	Moderate	10	Discharging 1m above eaves at 10-15 m/s
	Good	5	Discharging 1m above ridge at 15 m/s
Proximity of Receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge.
	Medium	5	Closest sensitive receptor between 20 and 100m from kitchen discharge.
	Far	1	Closest sensitive receptor more than 100m from kitchen discharge. ¹
Size of Kitchen	Large	5	More than 100 covers or a large sized take-away.
	Medium	3	Between 30 and 100 covers or a medium sized take-away.
	Small	1	Less than 30 covers or a small take-away. ¹
Cooking Type (Odour & Grease Loading)	Very High	10	Pub (high level of fried food), fried chicken, burgers or fish and chips. Turkish, Middle-Eastern, or any premises cooking with solid fuel.
	High	7	Vietnamese, Thai, Indian, Japanese, Chinese, Steakhouse.
	Medium	4	Cantonese, Italian, French, Pizza (gas fired)
	Low	1	Most pubs (no fried food, mainly reheating and sandwiches etc), tea rooms. ¹
		32	

Note ¹: A planner may take a pragmatic view when assessing whether certain low risk kitchens require an odour abatement to be fitted. In reaching this decision the planer may consider the nature of the food being cooked and/or the size of the kitchen and/or its location.

5.00 CONCLUSIONS

With a significance score of 32, a high degree of filtration is required. Due to the absence of grease or smoke, carbon filters are best suited to this application. A carbon filter cassette unit shall be installed in the hot prep area extract duct, local to the area to provide with the longest recommended residence/dwell time of 0.4 seconds. Details of the proposed system are included in the appendices.

APPENDIX 1 – GROUND FLOOR SITE PLAN & LOCATION DRAWING



Co-living Apartments

1 Bed Apartment

2 Bed Apartment

Studio Apartment

Amenity/ Circulation

3 Bed Apartment

4 Bed Apartment

5 Bed Apartment

Planning boundary

Storage/Parking/Corridor

Office/Study

Plant/BOH

First Street South

PLANNING

GA Site Plan - Ground Floor Plan

10266-ZO-A-G100-PL-00-99001

October 2023

10266

P03

1 : 750@ A3

simpsonhaugh

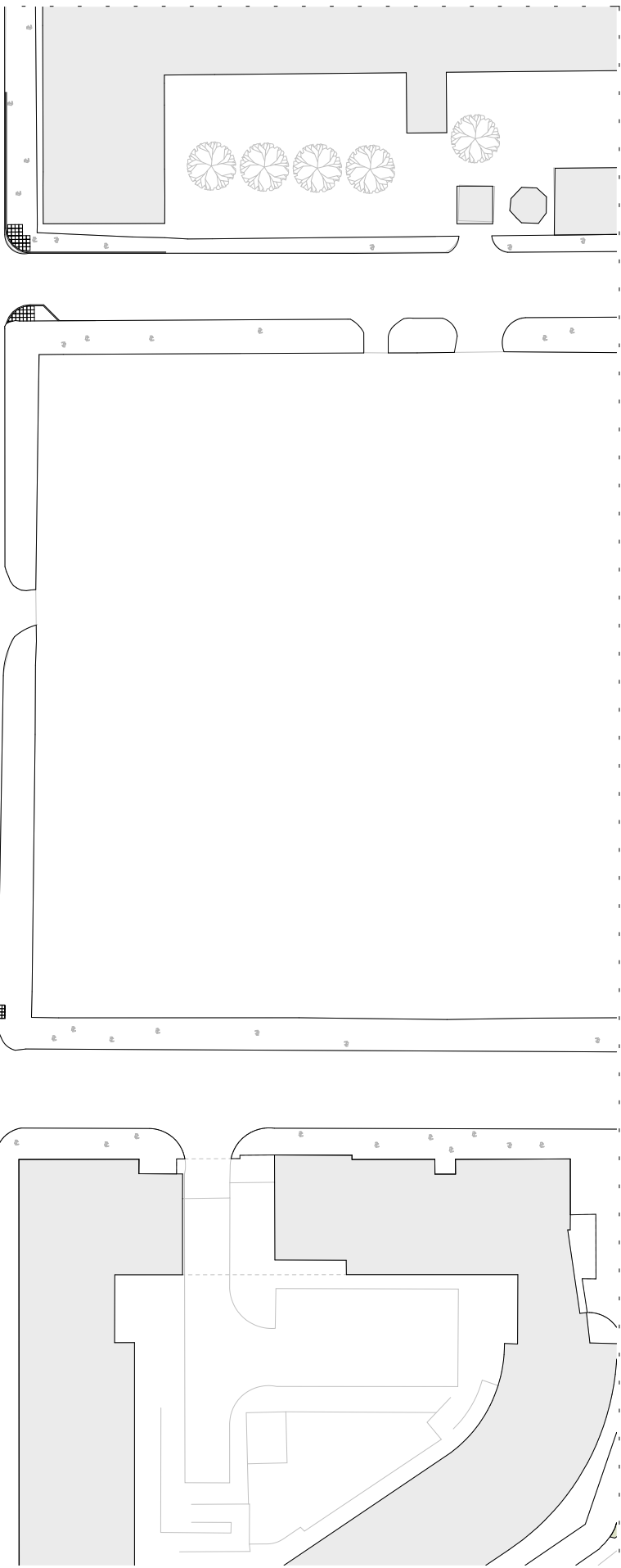
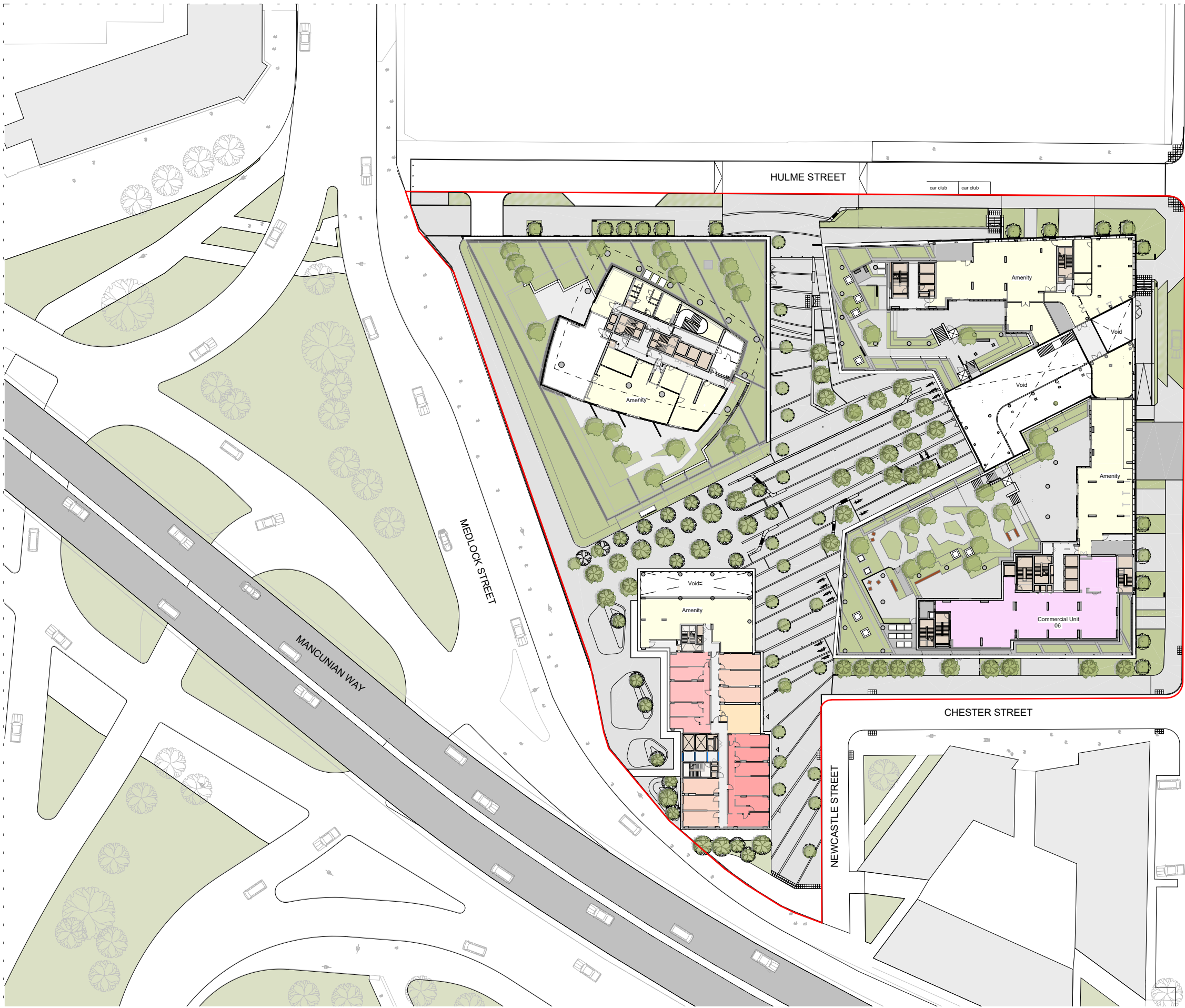
Manchester
+44 (0)161 635 2345

London
+44 (0)20 7549 4205

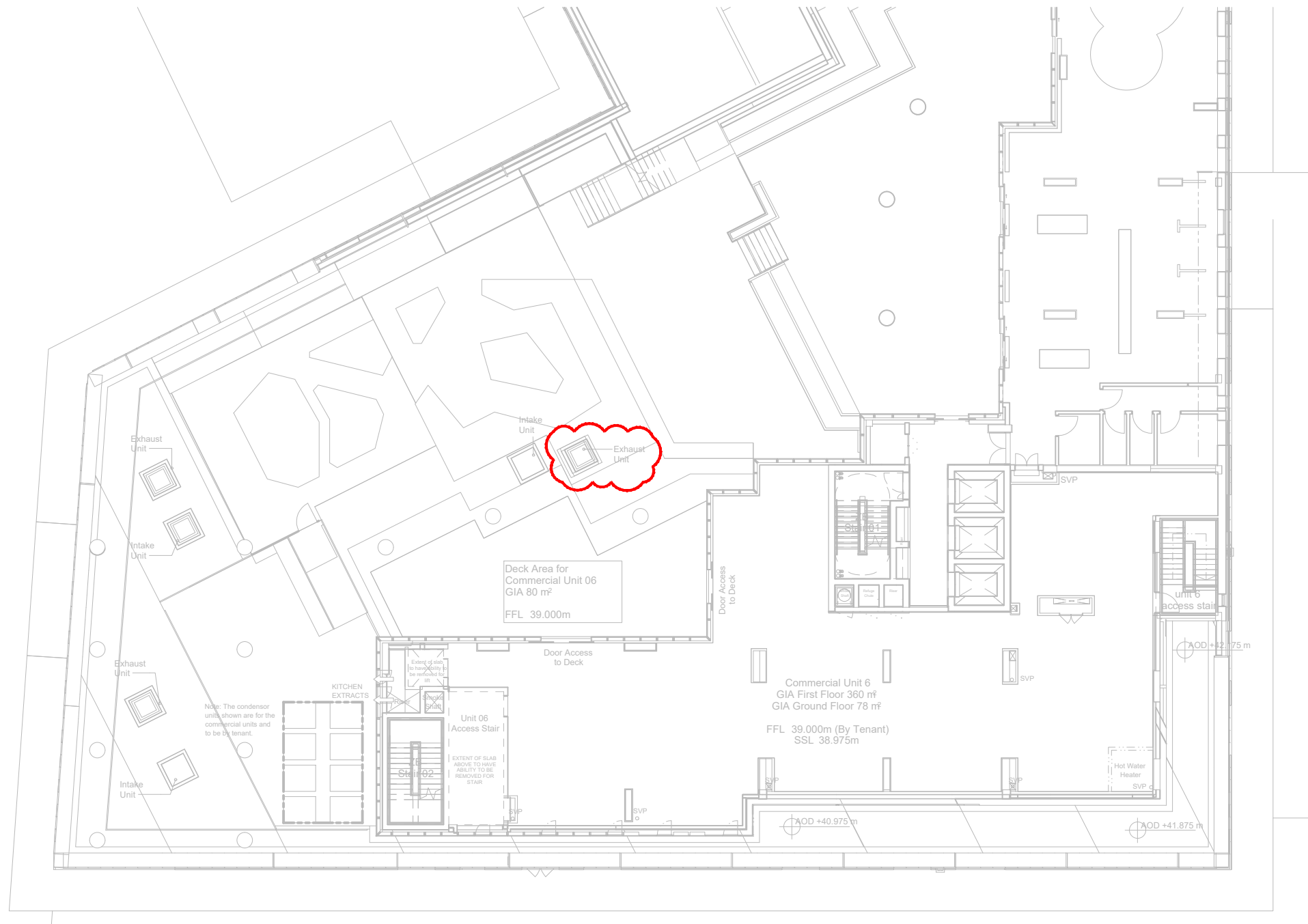
APPENDIX 2 – FIRST FLOOR SITE PLAN

SHEET 1 – FULL SITE PLAN

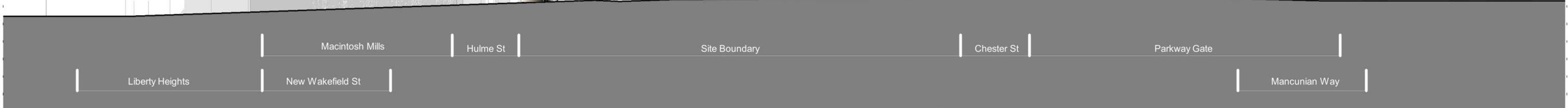
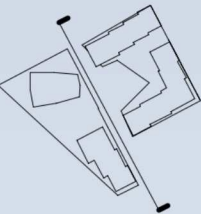
SHEET 2 – EXHAUST LOCATION HIGHLIGHTED



Planning boundary	Co-living Apartments		Amenity/ Circulation			First Street South		10266-Z0-A-G100-PL-01-99001			
	1 Bed Apartment	3 Bed Apartment	Core	Storage/Parking/Corridor		PLANNING		October 2023 P03			
	2 Bed Apartment	4 Bed Apartment	Amenity/Entrance	Office/Study		GA Site Plan - First Floor Plan		10266 1 : 750@ A3			
	Studio Apartment	5 Bed Apartment	Retail/Restaurant	Plant/BOH						Manchester +44 (0)161 835 2345	London +44 (0)20 7549 4000

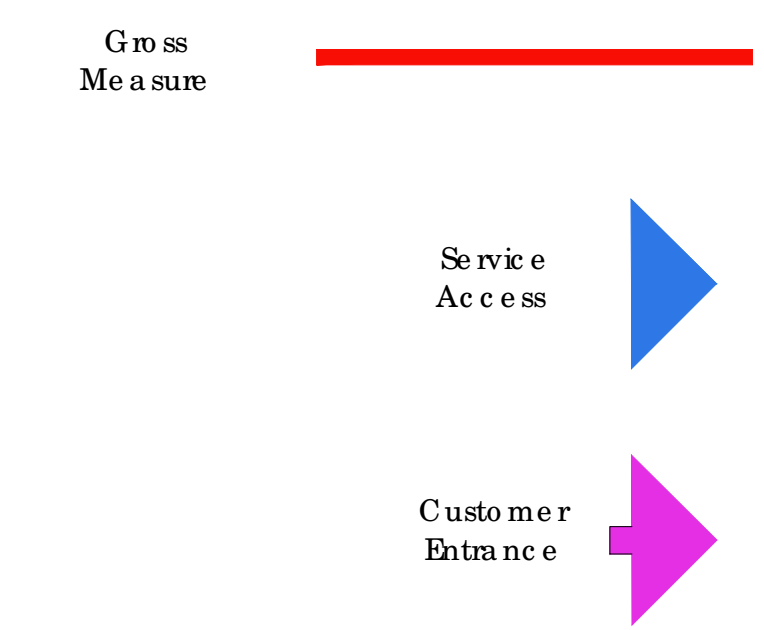


APPENDIX 3 – ARCHITECTS PROPOSED ELEVATIONS



	First Street South	10266-Z0-A-G100-EL-EW-99002 P03		simpsonhaugh Manchester +44 (0)161 835 2345 London +44 (0)20 7549 4000
	PLANNING	December 2022		
	Central West Elevation	10266	1:750@ A3	

APPENDIX 4 – ASDA FITOUT DRAWING



Project

First Street, Manchester

scale

1:50 @ A1

drawing no.

APPENDIX 5 – PROPOSED VENTILATION DRAWING

HEAT RECOVERY UNIT SCHEDULE

REF	LOCATION / SYSTEM	MANUFACTURER	MODEL	AIR FLOW (m³/s)	RESISTANCE (Pa)	DIMENSIONS (mm)			ELECTRICAL DETAILS			LOCAL CONTROLLER	INTERFACE CARDS	ACCESSORIES	WEIGHT (kg)	COMMENTS	
						W	H	D	V	Ph	Hz	A					
HR 01	MASSHALLING/ SALES	DAIKIN	VAM650J8	0.150	55	1354	368	920	230	1	50	2.8	BRC1H52W	KRP2A52	UK.FB2	61.5	EXTRACT RATE TO BE 95% OF SUPPLY TO POSITIVELY PRESSURISE THE SALES FLOOR
HR 02	WAREHOUSE / ADMIN	DAIKIN	VAM150FC9	0.040	75	776	265	525	230	1	50	0.9	BRC1H52W	KRP2A52	UK.FB2	24	-

EXTRACT FAN SCHEDULE

REF	LOCATION / SYSTEM	MANUFACTURER	MODEL	AIR FLOW (m³/s)	RESISTANCE (Pa)	ELECTRICAL DETAILS				LOCAL CONTROLLER	ACCESSORIES	WEIGHT (kg)	COMMENTS
						V	Ph	Hz	A				
EF01	WC	NUAIRE	XSPCL	0.031	15	230	1	50	1	MFC	-	5.5	RUN ENABLE FROM SWITCHED LIVE LIGHTING FEED.
EF02	HOT PREP	NUAIRE	SZE-150	0.081	150	230	1	50	1	ONBOARD PCB	-	7.4	RUN ENABLE FROM SWITCHED LIVE LIGHTING FEED.

EXTRACT GRILLE SCHEDULE

REF	LOCATION / SYSTEM	MANUFACTURER	MODEL	AIR FLOW (m³/s)	RESISTANCE (Pa)	DIMENSIONS (mm)			CONNECTION (mmØ)	ENTRY/PLENUM	ACCESSORIES	COMMENTS
						W	L	L				
EG 01	COLLEAGUE	GILBERTS	DG4	0.020	5	225	225	125	125	SEB	-	FINISH TO RAL 9010
EG 02	OFFICE	GILBERTS	DG4	0.020	5	225	225	125	125	SEB	-	FINISH TO RAL 9010
EG 03	HOT PREP	GILBERTS	DG4	0.081	5	225	225	150	150	SEB		FINISH TO RAL 9010

SUPPLY DIFFUSER SCHEDULE

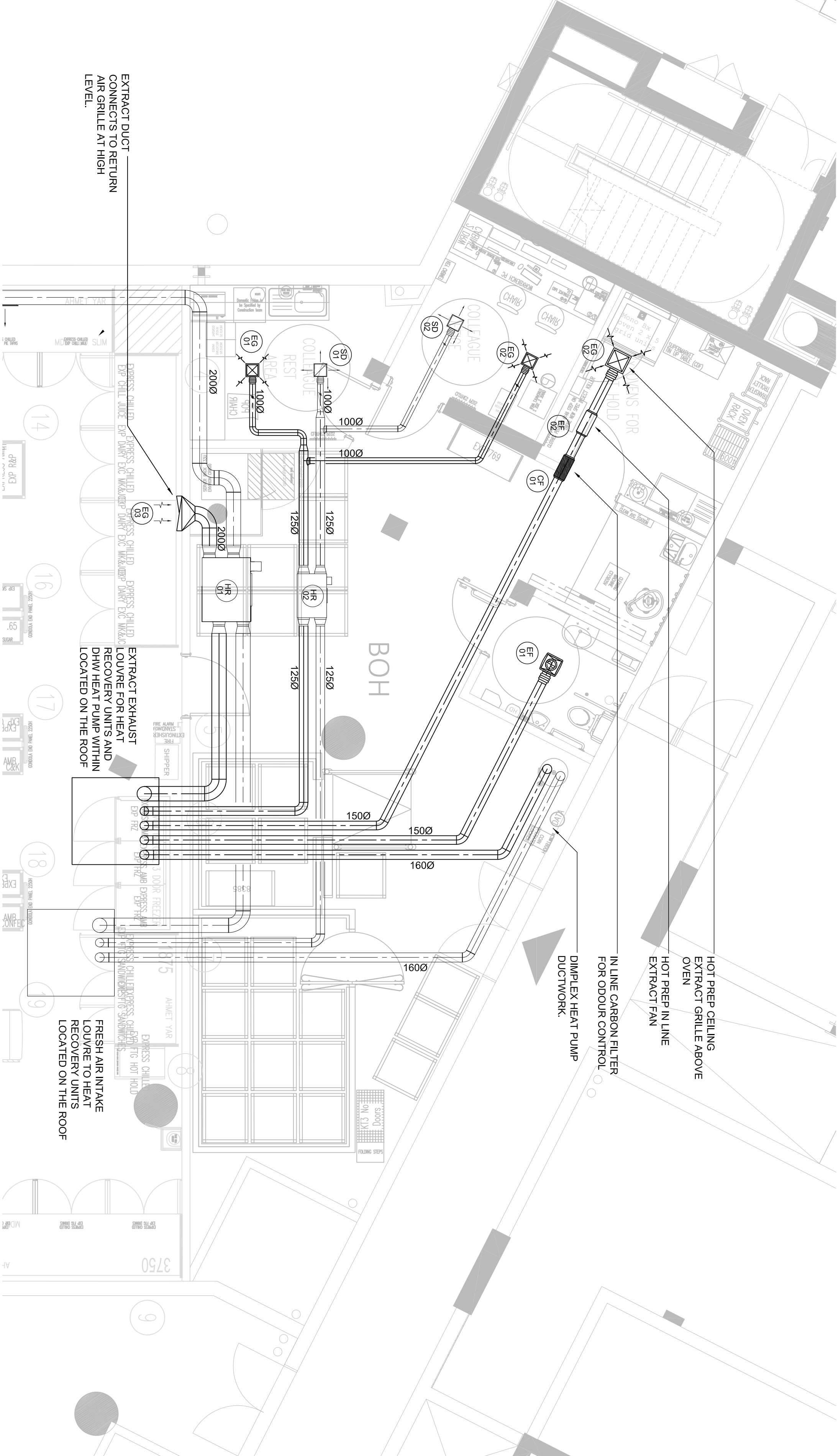
REF	LOCATION / SYSTEM	MANUFACTURER	MODEL	AIR FLOW (m³/s)	RESISTANCE (Pa)	DIMENSIONS (mm)			CONNECTION (mmØ)	ENTRY/PLENUM ACCESSORIES	COMMENTS	
						W	L	L				
SD 01	COLLEAGUE	GILBERTS	DG4	0.020	5	225	225	100	100	SEB	-	FINISH TO RAL 9010
SD 02	OFFICE	GILBERTS	DG4	0.020	5	225	225	100	100	SEB	-	FINISH TO RAL 9010

EXTERNAL LOUVRE SCHEDULE

REF	LOCATION / SYSTEM	MANUFACTURER	MODEL	AIR FLOW (m³/s)	RESISTANCE (Pa)	DIMENSIONS (mm)			COMMENTS
						H	L	L	
L 01	FRONT ELEVATION/ FAI	GILBERTS	WG38	0.190	10	600	600	850	FINISH TO SHELL ARCHITECTS SPECIFICATION
L 02	FRONT ELEVATION/ EXHAUST	GILBERTS	WG38	0.301	10	600	600	850	FINISH TO SHELL ARCHITECTS SPECIFICATION
L 03	REAR ELEVATION/ EXHAUST	-	-	-	-	300	700		BY DEVELOPER

CARBON FILTER SCHEDULE

REF	LOCATION / SYSTEM	MANUFACTURER	MODEL	DIMENSIONS (mm)			COMMENTS
				H	L	D	
CF 01	HOT PREPHOT PRER EXTRACT	PLASMACLEAN	DSC180912-7C	445	220	297	-



GENERAL NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL ASSOCIATED SERVICES DRAWINGS, ARCHITECTS AND STRUCTURAL DRAWINGS TOGETHER WITH THE SCHEMATIC DRAWINGS AND ALL MECHANICAL, ELECTRICAL AND OTHER RELEVANT SPECIFICATIONS.
2. ALL SERVICES INSTALLATIONS SHALL BE CO-ORDINATED AND FULLY INTEGRATED WITH THE MECHANICAL AND ELECTRICAL SERVICES, ARCHITECTURAL FEATURES, SPECIALIST PLANT AND STRUCTURAL ELEMENTS.
3. THE SERVICES CONTRACTORS SHALL FAMILIARISE THEMSELVES WITH THE MECHANICAL AND ELECTRICAL SERVICES, ARCHITECTURAL FEATURES, SPECIALIST PLANT AND STRUCTURAL ELEMENTS.
4. THE INSTALLING SUB-CONTRACTOR SHALL ISSUE FULL WORKING DRAWINGS IN LINE WITH THE SPECIFICATION PROVIDED. THE WORKING DRAWINGS SHALL BE ISSUED TO ALL DESIGN TEAM MEMBERS FOR THEIR COMMENT PRIOR TO INSTALLATION. THE WORKING DRAWINGS SHALL BE ISSUED TO ALL DESIGN TEAM MEMBERS FOR THEIR COMMENT PRIOR TO INSTALLATION. THE WORKING DRAWINGS SHALL BE ISSUED TO ALL DESIGN TEAM SERVICES. THIRD PARTY SUPPLIERS AND THE BUILDING FABRIC IS THE RESPONSIBILITY OF THE INSTALLING SUB-CONTRACTOR.

VENTILATION NOTES

1. ALL DUCTWORK SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE SPECIFICATION AND IS TO BE INSTALLED BY A SPECIALIST DUCTWORK SUB-CONTRACTOR. THE ENTIRE DUCTWORK INSTALLATION SHALL BE IN COMPLIANCE WITH DW144, BS2486, BS4929 AND DW122 GUIDE TO GOOD PRACTICE INTERNAL CLEANLINESS NEW DUCTWORK INSTALLATIONS 1991. VOLUME CONTROL DAMPERS SHALL BE INSTALLED IN THE POSITIONS INDICATED ON THE DRAWINGS.
2. THE DUCTWORK AND EQUIPMENT SUPPORT SYSTEM SHALL BE DESIGNED TO COMPLY WITH THE SPECIFICATION FOR SHEET METAL DUCTWORK DW144. MATERIALS, CONSTRUCTION, METHOD OF FIXING TO THE BUILDING FABRIC, PRACTICABILITY AND APPEARANCE SHALL BE CAREFULLY CONSIDERED FOR EACH OCCURRING SITUATION. THE MECHANICAL SERVICES CONTRACTOR SHALL TAKE ACCOUNT OF THE VARIOUS NATURE OF THE BUILDING STRUCTURE AND THE NEED FOR ALTERNATIVE FIXING METHODS IN DIFFERENT AREAS OF THE BUILDING.
3. GRILLES AND DIFFUSERS SHALL BE INSTALLED IN THE POSITIONS INDICATED ON THE DRAWINGS. THE FRAME AND FIXING DETAILS SHALL BE SELECTED TO BE COMPATIBLE WITH THE CEILING TYPE.
4. DUCT MOUNTED ATTENUATORS SHALL BE SUPPLIED AND FIXED IN THE POSITIONS INDICATED ON THE DRAWINGS. ATTENUATORS SHALL BE PURPOSE BUILT UNITS CONSTRUCTED BY A SPECIALIST MANUFACTURER AND SHALL BE SUITABLY MATCHED TO THE EQUIPMENT TO BE INSTALLED. CASING THICKNESS AND FLANGE CONSTRUCTION SHALL BE IN ACCORDANCE WITH HVAC SPECIFICATION DW144 BUT CASING THICKNESS SHALL NOT EXCEED 0.8mm.
5. ALL DUCTWORK SYSTEMS SHALL BE FULLY ACCESSIBLE FOR CLEANING. REMOVABLE ACCESS DOORS SHALL BE PROVIDED, AS REQUIRED, TO ENABLE FULL ACCESS TO EACH ITEM OF DUCTWORK MOUNTED EQUIPMENT. ACCESS DOORS SHALL BE IN ACCORDANCE WITH DW144.
6. TESTING AND COMMISSIONING - THE MECHANICAL SERVICES CONTRACTOR SHALL DEMONSTRATE THE AIR FLOW OF THE VENTILATION SYSTEMS IN COMPLIANCE WITH THE EQUIPMENT SCHEDULES TO THE SATISFACTION OF THE ENGINEER.
7. THE MECHANICAL SERVICES CONTRACTOR SHALL SUPPLY AND FASTEN PVC/POLYESTER LAMINATE FLEXIBLE DUCT WITH A MAXIMUM LENGTH OF 1000mm TO ALL GRILLES AND DIFFUSERS, AS INDICATED ON THE DRAWINGS. BENDS FORMED SHALL BE LONG RADIUS WITH FULL SECTIONAL AREA FORM MAINTAINED THROUGHOUT.
8. THERMAL INSULATION SHALL BE CARRIED OUT BY A SPECIALIST SUB-CONTRACTOR. INSULATION TO BE FOIL FACED MINERAL FIBRE WITH A DENSITY 45-48 kg/m³ THERMAL CONDUCTIVITY NOT EXCEEDING 0.04 W/mK.

PRELIMINARY

4808-M02-P2

ASDA

Project
ASDA EXPRESS MANCHESTER
SQUARE GARDENS

Drawing Title

PRELIMINARY VENTILATION

Scale at A1
1:50
DL
Rev
P2
Date
20.02.2024

RMD

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Owlpen Road, Dukinfield
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www.rmdcontract.com

APPENDIX 6 – PROPOSED CARBON FILTER UNIT DETAILS

2.0 Enquiry Details

To select the most suitable odour control solution it is important to establish the site requirements and parameters. Whilst it is not always possible to provide all the information requested below, the more information we have available the more accurate our proposal will be to meet your commercial kitchen exhaust requirements.

- Is this a new installation or retro fit:
New
- Extract Volume Flow Rate:
0.081m³/s
- Is there a designated plant space for odour control equipment:
Internally In-duct mounted.
- Where does the exhaust duct discharge to atmosphere:
Horizontal discharge through the façade of the store.
- Proximity of receptors from the discharge point:
<10 metres
- Type of cooking:
Small Bakery Application
- Estimated volume of cooking (daily covers):
TBC

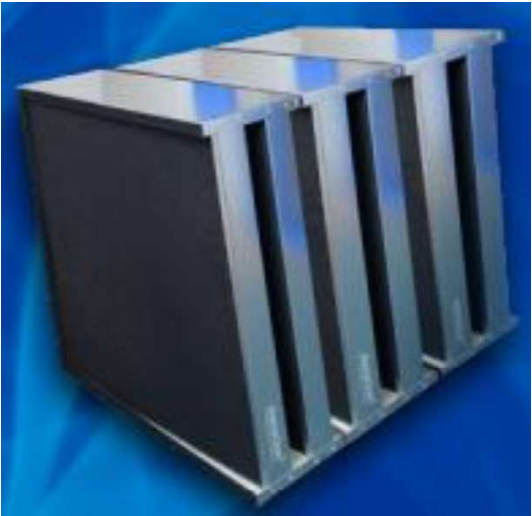
3.0 Product Selection

The following odour control products have been selected:

- Activated carbon used as an alternative to ozone injection or ultraviolet light for effective gaseous odour removal. 0.4 second residence/dwell time.

4.0 Products Overview

Activated Carbon Discarb Filters



Activated Carbon Discarb Filters are traditionally used in Kitchen Extract systems to absorb gaseous odours from the air before discharging to atmosphere. Metal cased carbon discarbs hold multiple bonded panels in a “block” which can then be easily installed into the duct.

Technical Specification and Data

Technical Specification and Data:	
Size (H x W x D)	594 x 196 x 597mm
Gross Weight	17.95 kg
Carbon Weight	16.6 kg
Rated Airflow	1,266 m3/hr
Pressure Drop	120 Pa @ design air volume
Recommended Dwell Times	Ozone Control - 0.1 – 0.2 Second Low-Medium Odour Control – 0.1 Second High Odour Control: 0.2 – 0.4 Second Very High Odour Control: 0.4 – 0.8 Second

Accessories

Custom in-duct mounted filter housing, manufactured from galvanized steel complete with 30mm mezz flanges.

Maintenance

Minimum 600mm side access required at the filter housing door to allow the door to open fully to safely remove carbon filters and install new ones. Carbon filters cannot be cleaned, and need to be replaced with new when they are no longer effective. Replace discarb filters every 4 – 6 months when used as the primary method of odour control.

APPENDIX 7 – OVEN DATASHEETS

Technical Specifications

eco-touch Model No	4/5 Tray							10 Tray			
	FG189T	FG159T	FG153T	FG158T	FG173T	FG180T	FG150T	FG149T	FG170T	FG180C	FG150C
Classic Model No	FG189C	FG159C	FG153C	FG158C	FG173C	FG180C	FG150C	FG149C	FG170C		
Tray size (mm unless otherwise stated)	18" x 26"	18" x 30"	400 x 600	600 x 400	400 x 800	18" x 26"	18" x 30"	400 x 600	400 x 800		
No of trays	4	4	4	4	4	10	10	10	10		
Distance between trays (mm)	93	93	93	84	93	100	100	100	100		
No of trays (option)	5	5	5	5	5						
Distance between trays (option, mm)	74	77	69	62	70						
Height (mm)	525	525	525	570	525	1,170	1,170	1,170	1,170		
Height of oven on base (mm)						1,870	1,870	1,870	1,870		
Width (mm)	840	840	780	1,000	780	840	840	780	780		
Depth, door closed incl handle (mm) *5	1,164	1,269	1,103	890	1,303	1,209	1,309	1,109	1,309		
Depth, door fully open (mm)*5	1,729	1,828	1,610	1,610	1,810	1,770	1,870	1,609	1,809		
Weight (kg) approx.	145	165	115	110	160	192	290	250	262		
Total power required (kW)	7.5	8.5	7.5	7.5	7.5	17	17	15	17		
Water Supply	1	1	1	1	1	1	1	1	1		
Modularity											
Landscape tray orientation											
Portrait tray orientation											
Eco-Touch controller											
Classic Controller											
Right hand hinged											
Left hand hinged											
Bottom door hinged											
Power - 1 phase electrics	2	2	2	2	2						
Power - 3 phase electrics	3	3	3	3	3	4	4	4	4		
Steam facility											
Internal Light											
Stackable											
Optional Extras:											
Calcium Treatment Unit											
Water Condenser											
Valance											
300 mm high base											
595 mm high base											
745 mm base unit											
920 mm high base											
Ovens Suitable For:											
UK											
Europe											
commonwealth											
USA & Canada											
ROW											



Available Optional Extra

¹ Oven is supplied with a 1 metre long flexible hose with 3/4" B.S.P. female connectors on both ends. Water pressure required is 2 Bar - 6 Bar. (standard domestic water pressure is within these parameters). Customers are strongly advised to fit a water conditioning unit to the supply for this equipment. This unit should remove and not suspend water hardness. No drain is required for this oven. See Optional Extras for water conditioning unit.

² 50 Hz: fused at 40 Amps. Single phase ovens will be supplied with LEGRAND model 587-00 plug (or equivalent) fitted to 2.5 metres of cable. Customers should ensure that a LEGRAND model 587-40 socket (or equivalent), and isolator is fitted at the position of installation.

³ 50 Hz: fused at 15 Amps per phase. Three phase ovens are supplied with a single LEGRAND model 574-29 plug (or equivalent) fitted to 2.5 metres of cable. Customers should ensure that a LEGRAND model 0553-53 socket (or equivalent), and isolator (or model 0592-11 'dead fronted') is fitted at the position of installation.

⁴ 3 phase and neutral + earth; fused at 32 Amps; 415v; 50 Hz. Customers should ensure that a LEGRAND model 0553-53 socket (or equivalent), and isolator (or model 0592-11 'dead fronted') is fitted at the position of installation.

*5 excluding services

Please contact MONO Equipment for USA electrical details.

Specifications correct at time of publication. MONO Equipment reserves the right to amend the specification without prior notice.

BX Eco-Touch 5-Tray Convection Oven

One of the Most Energy Efficient Ovens Ever Produced



MONO Equipment's BX Eco-Touch Convection Oven provides the perfect bake-off solution and is used by many of the UK's leading supermarket chains, restaurants and food-2-go outlets.

One of the most striking aspects of the Eco-Touch Ovens is the innovative Colour-Touch Screen Controller which is packed full of innovative programmes and energy-saving features. The touch-sensitive screen provides a colourful, user-friendly interface via an icon-driven menu system which provides the baker with a visual update of each stage of the baking process. A total of 240 bake programmes can be stored across 12 product categories, with each programme containing up to 6 distinct phases.



Features and Benefits

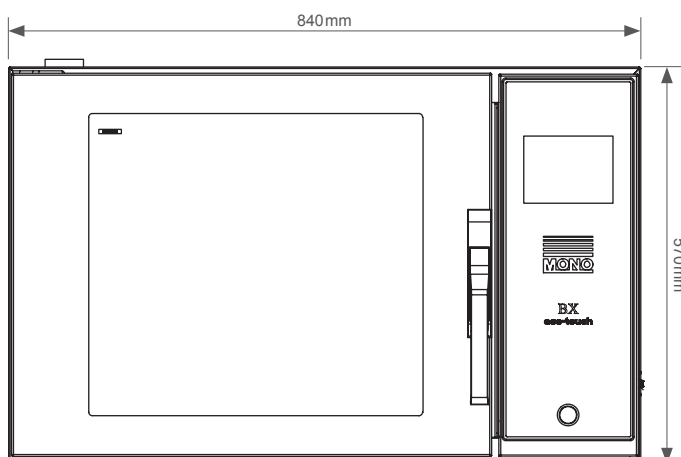
- Each oven holds up to 5-trays
- Suitable for 18" x 30" trays
- Colour touch-screen controller
- Eco-Touch Energy Saving Technology
- Stores up to 240 bake programmes
- Favorites menu programmes quickly and easily
- Multi-Bake facility
- Energy saving sleep modes reduces energy consumption by up to 66%
- 7-day timer function
- Auto Shutdown facility prevents the oven being left on by mistake
- USB programmable
- Bi-directional fan
- Integrated steam system
- Clear voice prompt with verbal instructions
- Diagnostics function constantly monitors ovens performance
- Overlapped and sealed, foil-fronted solid slab insulation
- Illuminated bake chamber
- Stainless steel construction
- Can be double-stacked
- Clear glass door
- Twin-pane, vented glass
- Double catch door handles
- Ovens available in left or right hand orientation
- 2-year warranty
- Available in single or 3-phase electrical power

Options

- Single or double stacked ovens
- Stainless steel stand
- Proofer cabinet

Specifications and Dimensions

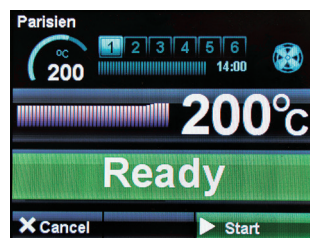
Specifications	BX Eco-Touch 5-Tray Convection Oven
Tray Size (mm)	18" x 26"
Distance between trays (mm)	93
Height (mm)	525
Overall height (mm)	2,052
Width (mm)	840
Depth, door closed including handle (mm)	1,269
Depth, door fully open (mm)	1,828
Weight including base (kg)	245
Electrics	
Power Supply	Single Phase - 240v, 1 phase, 50Hz Three Phase - 415v, 3 phase + N+E, 50Hz
Water	
Water supply	1 metre flexible hose ¾" BSP both ends
Water pressure required	2 - 4 bar



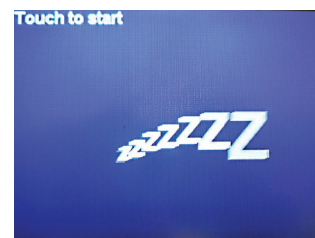
User-friendly colour touch controller.



The heating screen shows the temperature progress.



When the oven reaches the correct temperature the ready screen will show.



Putting the oven into sleep mode between bakes help save energy.

