

Project name	Camberwell Park School		
Design note title	Scheme of Kitchen Extraction		
Document reference	CPK-VES-XX-XX-RP-ME-0001		
Author	JB		
Revision	01		
Date	8 March 2021	Approved	✓

1. INTRODUCTION

This Technical Note has been produced to provide details of the proposed kitchen ventilation extraction scheme for the proposed new build Camberwell Park School.

2. LOCATION

The proposed new building is located off Brookside Road, Manchester, next to the existing Camberwell Park School. An approximate 30m zone from the flue termination is shown in Fig 1.

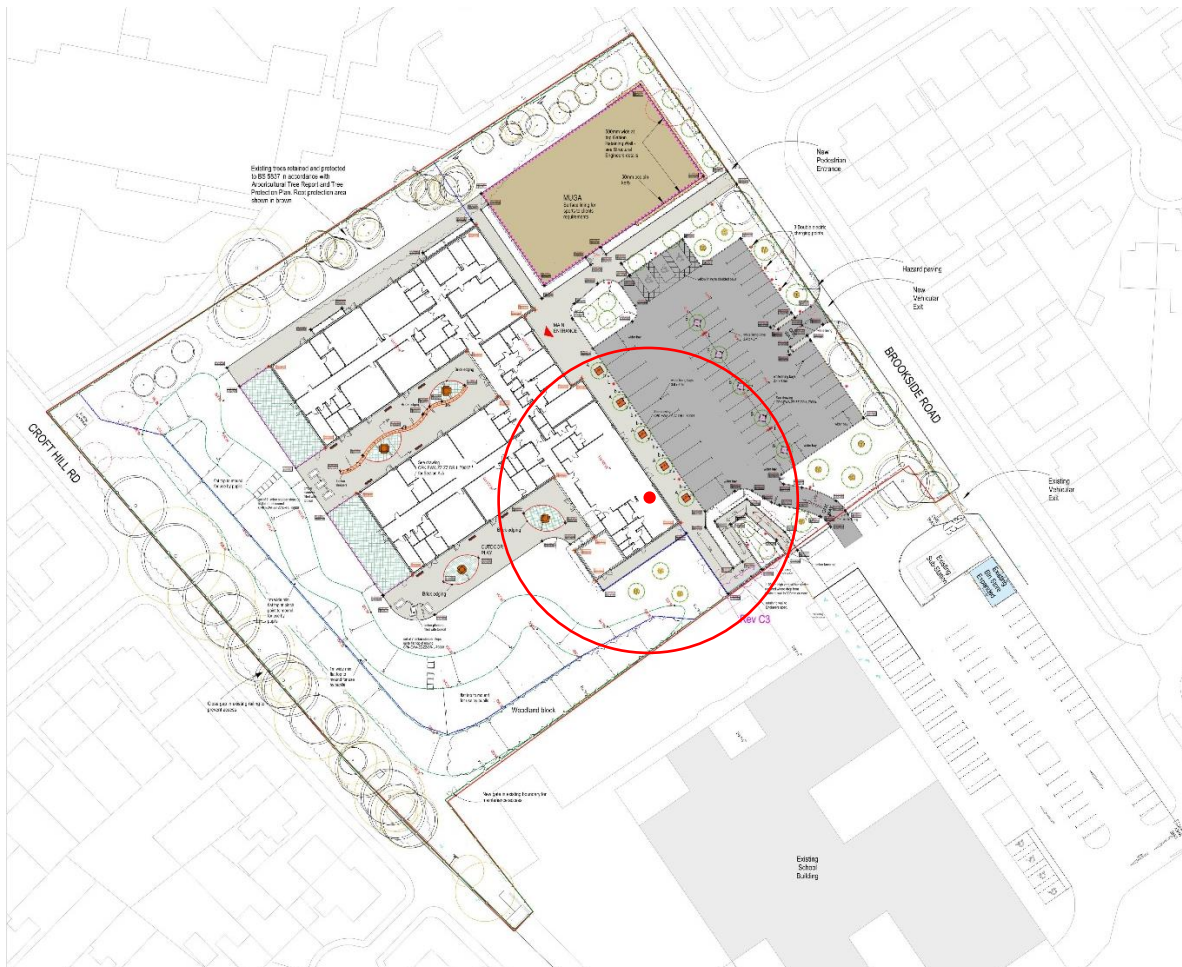


Figure 1 - Location Plan

3. KITCHEN EXTRACTION

The method of kitchen extract ventilation is to be via extract canopy arrangement, with local air capture canopy located above areas of cooking. Grease filters shall be integrated within the canopies.

Kitchen exhaust ductwork shall discharge at roof level via high velocity outlets at least 1.0m above the nearest openable window.

Kitchen ductwork installation shall be designed and installed and commissioned in accordance with DW 172 HVCA.

The following appendices detail the extraction design.

Appendix A - Kitchen Layout

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Bracing zone

Standard Connection Notes

- Mechanical
1. All points shown are generally the suggested points from where the incoming supplies are terminated and pipework should run. Generally, services are to be brought to within one metre of actual equipment connection point.
 2. Mechanical contractor to provide and fit all stopcocks, valves and any other fittings necessary at each floor position for water, steam and drainage services. All services to be in hot coils.
 3. All water to be run as close as possible to, and 100mm above, finished floor level unless stated otherwise. Adequate falls should be observed. Anti-vibration plates and clearing eyes to be positioned, supplied and installed by others (Not Kitchequip). All handrails and floor gullies to be supplied and installed by others (Not Kitchequip).
 4. All drainage outlets to be trapped prior to waste pipe connections, generally below floor level, by mechanical contractor. Waste pipe connections to have an adequate fall and to have a minimum of bends as possible.
 5. Waste fittings to any dishwasher, dishwasher to terminate at floor level unless otherwise stated.
 6. All waste pipework to be run as detailed in the services specification unless otherwise stated.
 7. Any surface mounted pipework from high level to be co-ordinated with architects detail and agreed prior to installation, these to be kept to a minimum. All supplies to terminate with suitable isolation valves in an accessible position.
 8. Where two or more appliances in a run call for hot or cold water services, the supply pipe sizing of the mainline must be large enough to enable simultaneous demands.
 9. All main water supplies to conform to all current local and national water regulations.
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Special Note:
It is suggested that the local water authority be contacted (by the client) to ascertain whether check valves can be incorporated instead of separate storage tanks and for fluid confirmation that any laws/regulations are being complied with for all items of equipment with water feed. This should also be done to ensure no degree of water hammer.

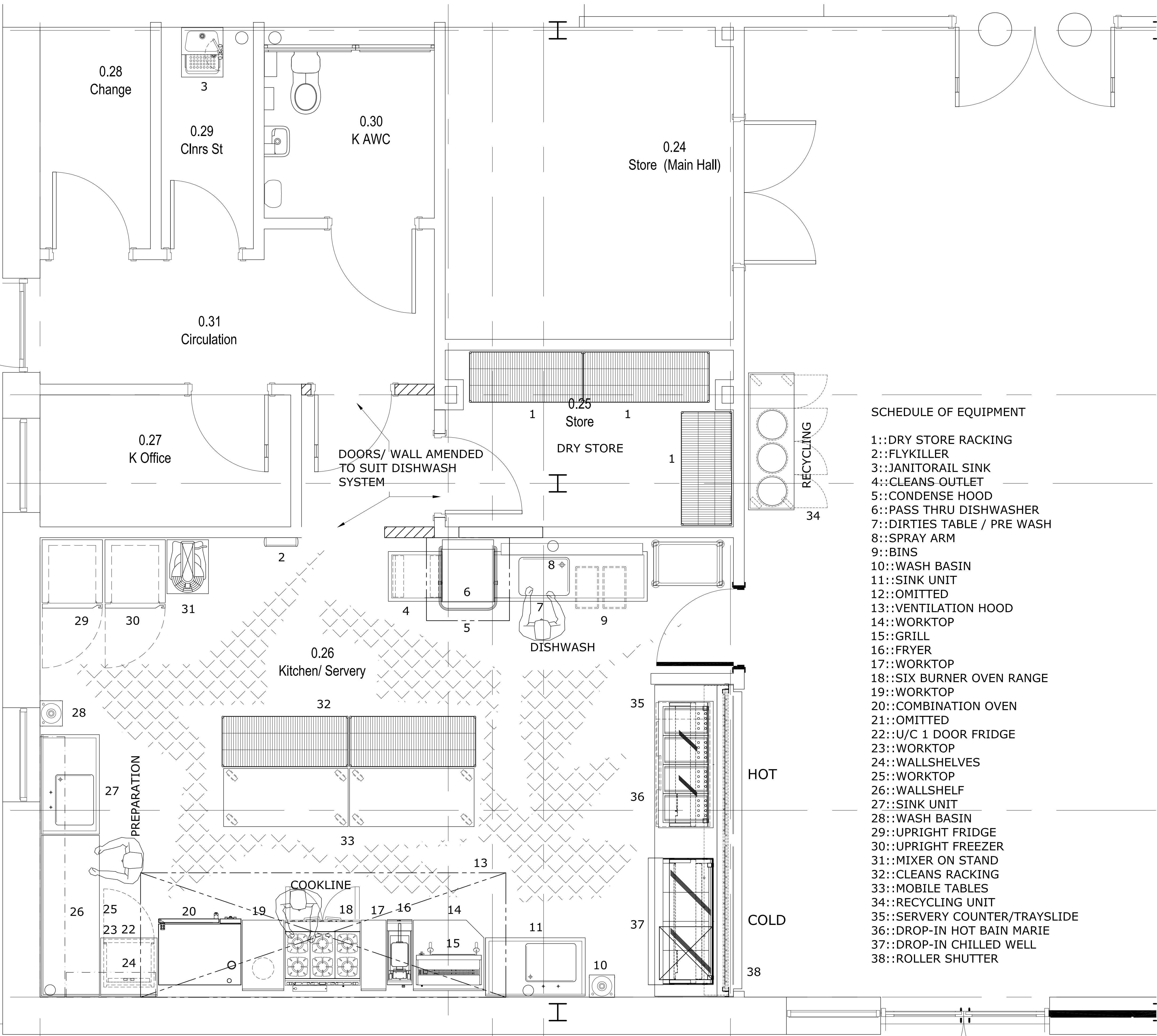
Softwares: treated water supply (not always split-based) will be required to certain equipment in combination ovens if Grate score is above 5 degrees and dishwasher if above 8degrees.

Standard Connection Notes

- Electrical
1. Electrical contractor to provide all necessary isolators, switches, spurs, connection boxes and socket outlets and is responsible for earth bonding of equipment, unless otherwise stated. Electrical contractor to be responsible for supply and fitting of backboxes and covers to all isolators, sockets etc., together with any interconnection wiring generally as detailed in the services specification.
 2. All 13 amp switched socket outlets and switched fused spur outlets to be fitted 1200mm above finished floor level unless otherwise stated. Heights of sockets / spur outlets for refrigerators, freezers and inset telephones to be 2100mm above finished floor level unless otherwise stated. All connection boxes from isolators to be fitted 200mm AFL unless otherwise stated in the schedule. Heights specified AFL are to base (center) of base.
 3. All 13 amp switched socket outlets and switched fused spurs must be installed in a safe and accessible position. They must not be connected to a ring main. Note: There is no diversity factor applied to the kitchen electrical load.
 4. Supplies and must not be connected to a ring main. Note: There is no diversity factor applied to the kitchen electrical load.
 5. The service / utility changing above appropriate connection points to equipment and are not final positions for isolators. The final location requires co-ordinating with the electrical contractor and Kitchequip's installation engineers. All wiring must be final and confirmed by the electrical contractor and Kitchequip's installation engineers at the final completion of the installation. All equipment to be installed in accordance with the relevant regulations or any local or international codes applicable to the equipment to be installed. The electrical contractor to be responsible for the final confirmation of the installation to these regulations.
 6. Electrical site voltage: Single phase : 230 V. Three phase : 415 V. (Note : Phases may not split equally to items of equipment).

- General
1. All builders works and scaffolding for the installation of the kitchen equipment is to be included by the main contractor or as detailed in the most current preliminary.
 2. Refrigerators / Deep Freeze Cabinets and all areas containing refrigerators only, or freezers must be adequately ventilated to allow sufficient air flow around compressors (by others). All equipment to be rated to an ambient temperature of 90 Deg F (32 Deg C). 50 CLIMATE 5.
 3. Sectional Coldrooms / Deep Freeze Rooms compressors to be positioned remote / integral as specified. Adequate ventilation must be provided to allow sufficient air flow around compressors (by others). All equipment to be rated to an ambient temperature 90 Deg F (32 Deg C). 50 CLIMATE 5.
 4. A clean level floor is required with all walls finished.
 5. Condense water to discharge over landing or finished floor level or floor gully unless stated otherwise.
 6. Services and dimensions for all specially fabricated items (ie food service counters, fanextractor, extractor canopy etc.) must be taken from manufacturer manufacturers construction drawings which have been (or will be) provided. Do not use this drawing.

Extraction Systems
An adequate system compliant with DIB72 system is required above cooking and deepwash areas if supplied and fitted by Kitchequip (then (unless otherwise stated) then the following are excluded:
1. Wiring of canopy lights
2. Wiring of grease controller/regulator
3. Wiring of extract and make-up air fans to speed controls, please see extraction specification on separate sheet.



SCHEDULE OF EQUIPMENT

- 1::DRY STORE RACKING
- 2::FLYKILLER
- 3::JANITORAIL SINK
- 4::CLEANS OUTLET
- 5::CONDENSE HOOD
- 6::PASS THRU DISHWASHER
- 7::DIRTIES TABLE / PRE WASH
- 8::SPRAY ARM
- 9::BINS
- 10::WASH BASIN
- 11::SINK UNIT
- 12::OMITTED
- 13::VENTILATION HOOD
- 14::WORKTOP
- 15::GRILL
- 16::FRYER
- 17::WORKTOP
- 18::SIX BURNER OVEN RANGE
- 19::WORKTOP
- 20::COMBINATION OVEN
- 21::OMITTED
- 22::U/C 1 DOOR FRIDGE
- 23::WORKTOP
- 24::WALLSHELVES
- 25::WORKTOP
- 26::WALLSHELF
- 27::SINK UNIT
- 28::WASH BASIN
- 29::UPRIGHT FRIDGE
- 30::UPRIGHT FREEZER
- 31::MIXER ON STAND
- 32::CLEANS RACKING
- 33::MOBILE TABLES
- 34::RECYCLING UNIT
- 35::SERVERY COUNTER/TRAYSLIDE
- 36::DROP-IN HOT BAIN MARIE
- 37::DROP-IN CHILLED WELL
- 38::ROLLER SHUTTER

C

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All dimensions must be checked on site prior to project commencement.

It is the clients responsibility to provide a minimum 900 mm width for access of the largest item of equipment.

Revisions

- | | | |
|---|----------|----------------------------|
| A | 16.04.20 | SERVERY MOVED INTO KITCHEN |
| B | 15.09.20 | UPDATED TO NEW BACKGROUND |
| C | 21.01.21 | UPDATED FOR M&E LAYOUTS |



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CATERING EQUIPMENT & DESIGN SERVICES

Client

CAMBERWELL SCHOOL

Project

CAMBERWELL SCHOOL

Drg Title

FOODSERVICE LAYOUT

Date	14.03.2020	Scale	1:25	Drawn By	DH
Drwg No	KE/1964/FS	Issued		Rev No	C

TECHNICAL DESIGN NOTE



Appendix B - Kitchen Hood



- ALL ELECTRICAL CONNECTIONS BY OTHERS.
- ALL FANS AND DUCT WORK BY OTHERS.
- ALL SPIGOTS WILL BE FIXED IN POSITIONS SHOWN READY FOR FINAL CONNECTION TO MAIN DUCTS BY OTHERS.
- HOOD IS MANUFACTURED TO SUIT A MAX SUSPENDED CEILING HEIGHT OF 2450MM. HIGHER CEILINGS WILL REQUIRE VALANCE TO TOP OF HOOD AT EXTRA COST.
- STAINLESS STEEL WALL CLADDING REQUIRES A FLAT DRY SURFACE FOR BONDING TO.
- ALL SERVICES MUST AVOID CANOPY HANGING POINTS.
- STRUCTURAL CEILING HEIGHT TBC PRIOR TO MANUFACTURE.
- NO ALLOWANCE HAS BEEN MADE FOR: CANOPY EMERGENCY LIGHTING, POWERED ACCESS EQUIPMENT, SECONDARY SUPPORT STEEL WORK, KITCHEN AREA LIGHTING, ODOUR CONTROL, ELECTRICAL WORKS.

KEY

IMAGE

VENTILATION CANOPY FLOW RATE CALCULATION SHEET							
Project:		CAMBERWELL SCHOOL				Job No:	5945
Drawing Ref		KITCH EQUIP KE/1964/FS REV B				Rev	
Equipment To Ventilated:					Date	20/01/2021	
Item	Description	Width (mm)	Depth (mm)	Power	Area	TCC	Flow Rate
14	BENCH	420	780	N/A	0.33	0.03	0.0098
15	GRILL	785	360	Gas	0.28	0.75	0.2120
16	FRYER	300	770	Gas	0.23	0.5	0.1155
17	BENCH	300	780	N/A	0.23	0.03	0.0070
18	OPEN TOP RANGE	900	770	Gas	0.69	0.4	0.2772
19	BENCH	600	780	N/A	0.47	0.03	0.0140
20	10 GRID COMBINATION OVEN	997	800	Electric	0.80	0.32	0.2552
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Theoretical extract volume required						0.8908	
Canopy Factor						1.25	
Extract Flow Rate M3/SEC						1.113	
Supply Flow Rate (85%) M3/SEC						0.946	
The above calculation is to allow ventilation of equipment under the canopy only, it does not allow for general ventilation to the kitchen, and is based on DW/172 Extract Flow Rate Calculation, Method 1.							

The image displays four logos. At the top is the INOX logo, featuring a stylized diamond icon composed of four smaller diamonds in blue and white, followed by the word 'INOX' in a large, bold, white sans-serif font. Below this is the ceda logo, which includes a graphic of three interlocking loops in blue, green, and red, followed by the word 'ceda' in a large, bold, black sans-serif font, and 'SILVER PARTNER' in a smaller, bold, black sans-serif font. The third logo is for FEA, with the letters 'FEA' in a large, bold, orange sans-serif font, followed by 'Foodservice Equipment Association' in a smaller, black sans-serif font. At the bottom is the cedabond logo, featuring the word 'cedabond' in a large, bold, black sans-serif font, followed by a graphic of four interlocking loops in red, blue, green, and yellow.

PROJECT NAME

**CAMBERWELL
SCHOOL**

PROJECT ADDRESS

**BROOKSIDE
ROAD
MOSTON
MANCHESTER
M40 9GJ**

TITLE

KITCHEN HOOD
PLAN

CLIENT

KITCHEQUIP

PROJECT NUMBER		REV
5945		P01
DRAWING NUMBER		SCALE (@ A1)
001		As indicated
DRAWN BY	CHECKED BY	DATE
MP	LP	06/05/20

HOOD DETAILS									
Item Number	Manufacturer	Description	Number of Canopy Sections	Hood Length	Hood Depth	Front Hood Height	Hood Floor Offset	Hood Weight	Hood Notes
IFESW_1	Inox	Wall type extract and supply air hood	2	4400	1600	480	2000	197.12 kg	
IFCH_1	Inox	CONDENSE HOOD		1160	1160	480	2000	30.95 kg	NON MECHANICAL

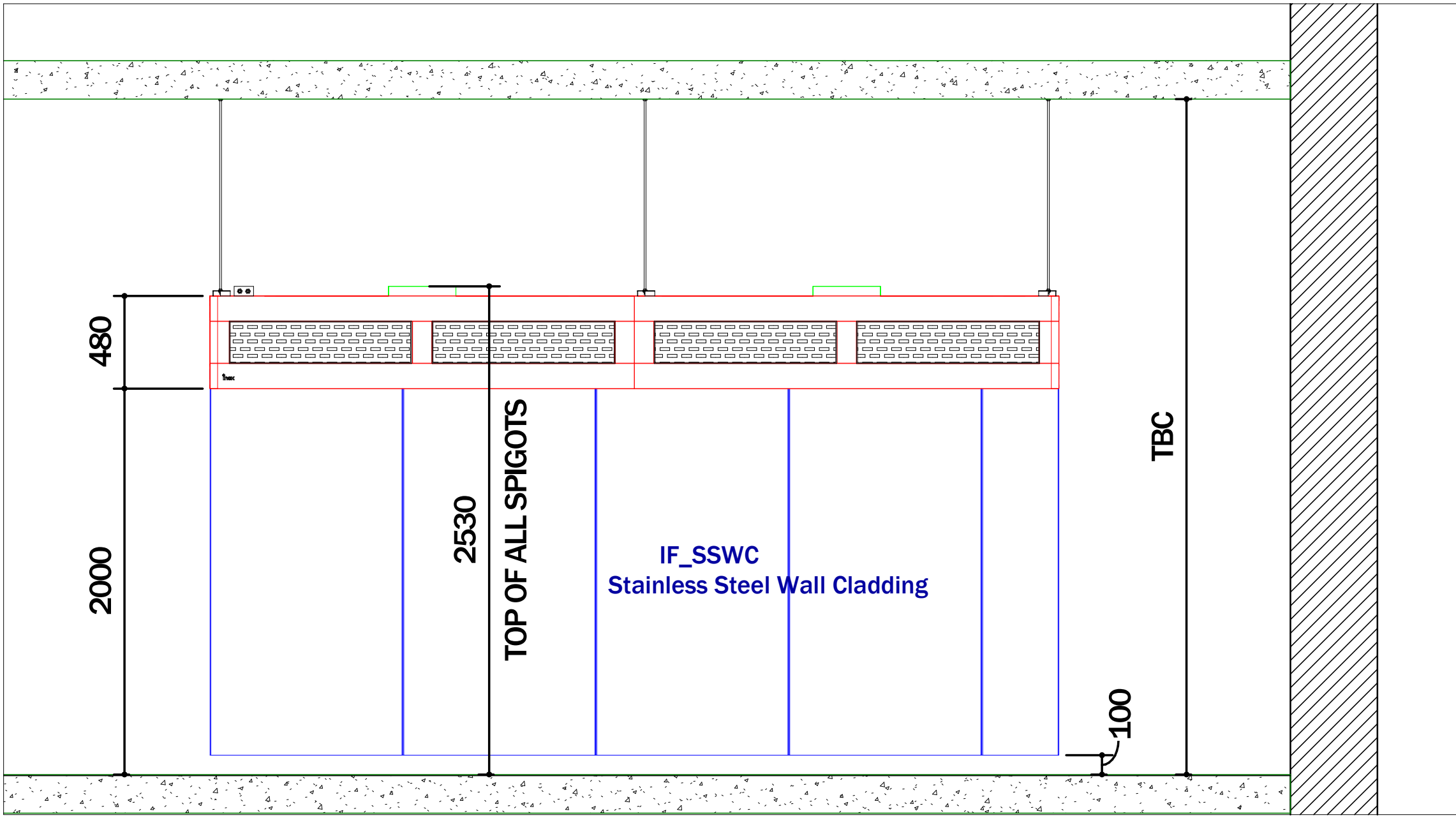
EXTRACT VOLUME						
Item Number	Extract Volume	Extract Pressure Drop	No of Extract Spigots	Extract Spigot Width	Extract Spigot Depth	Extract Spigot Velocity
IFESW 1	1.113 m³/s	120.0 Pa	2	350	300	5.300 m/s

SUPPLY AIR VOLUME						
Item Number	Supply Air Volume	Supply Air Pressure Drop	No of Supply Air Spigots	Supply Air Spigot Width	Supply Air Spigot Depth	Supply Air Spigot Velocity
IFESW 1	0.946 m³/s	80.0 Pa	2	350	300	4.505 m/s

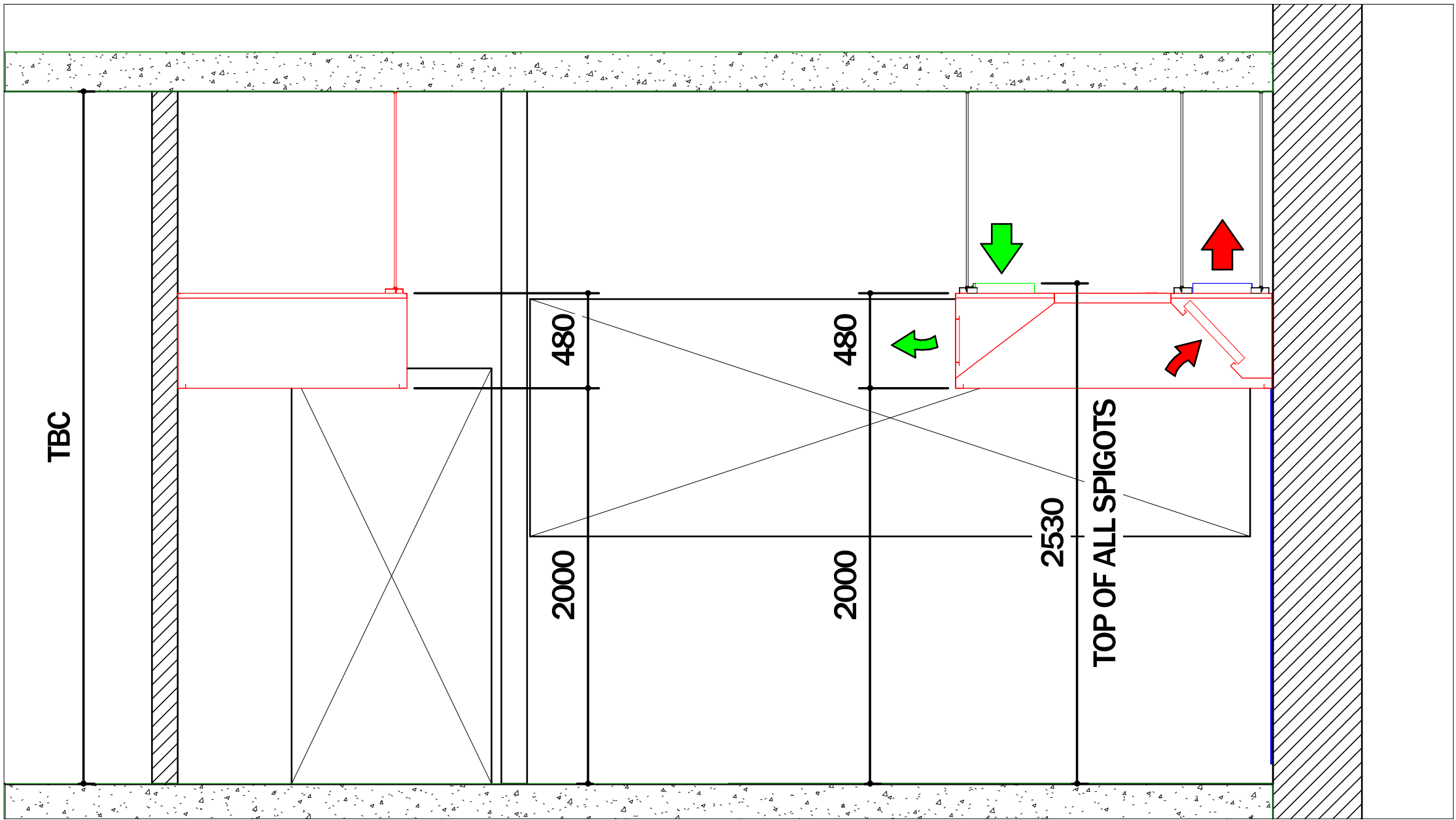
LIGHTS							
Item Number	Light Manufacturer	Light Model	Number of Lights	Lights Volts	Lights Watts	Lights Amps	Lights Notes
IFESW 1	Scolmore	Nano Inceptor	6	230 V	29 W	3.000 A	Pre-wired to single connection point

FILTERS				
Item Number	Filter Manufacturer	Type of Filter	No of Filters	Filter Size
IFESW 1	Longar	Baffle Filter	6	500mm x 400mm

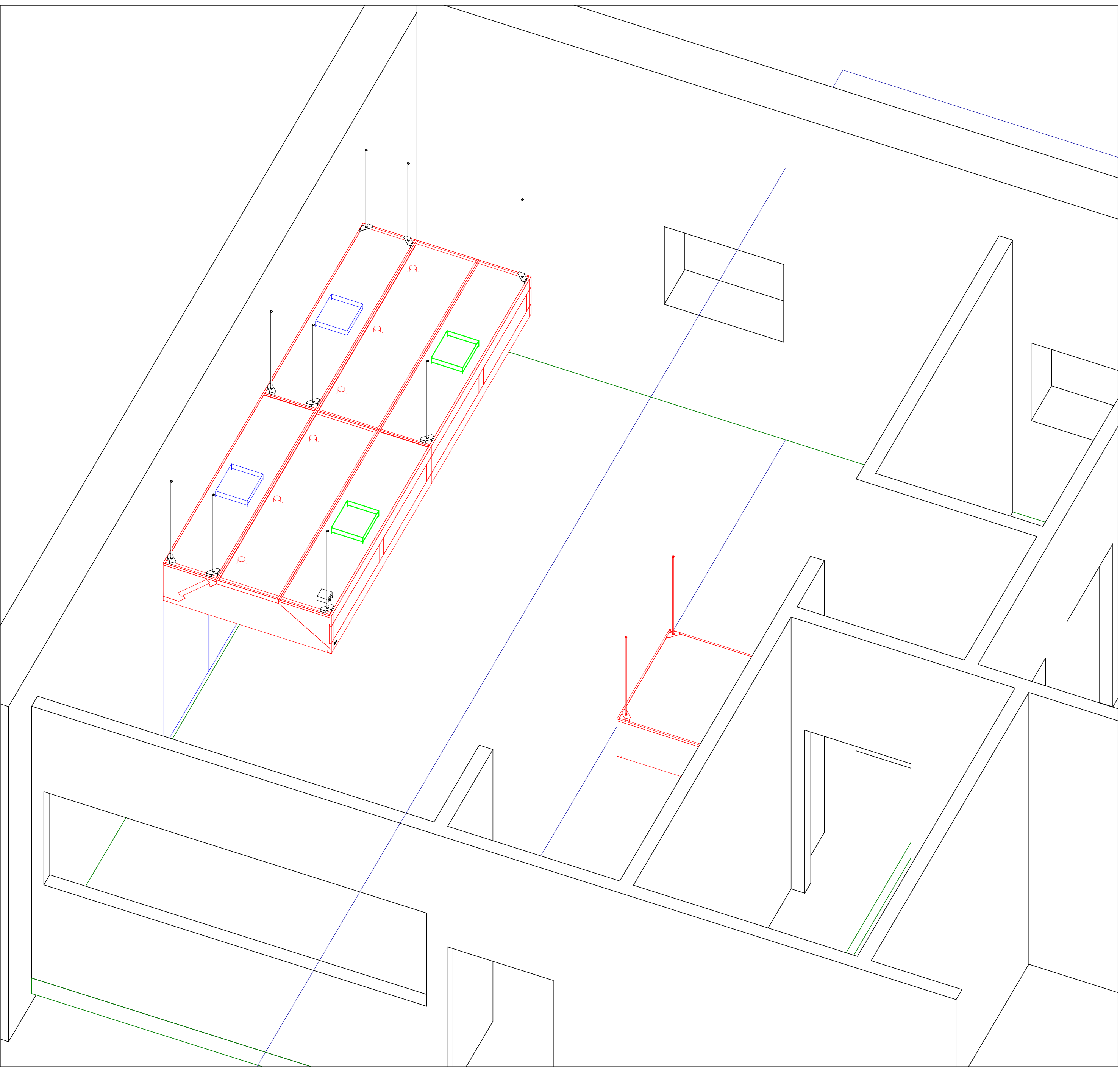
CLADDING SCHEDULE						
Item Number	Manufacturer	Cladding Length	Cladding Height	Cladding Floor Offset	Number of Cladding Sheets Required	Cladding Notes
IF_SSWC	Inox	4400	2000	100	4.4	Edge and flatten edges



1 Section 1
1 : 25



2 Section 2
1 : 25



3 [3D]



Rev	Description	Date
P01	FOR COMMENT / APPROVAL	20-01-21

PROJECT NAME
**CAMBERWELL
SCHOOL**

PROJECT ADDRESS
**BROOKSIDE
ROAD
MOSTON
MANCHESTER
M40 9GJ**

TITLE
SECTIONS AND 3D

CLIENT
KITCHEQUIP

PROJECT NUMBER 5945	REV P01
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DRAWING NUMBER 002	SCALE (@ A1) 1 : 25
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DRAWN BY Author	CHECKED BY Checker	DATE 01/20/21
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Appendix C - External Extract Fan Layout

Appendix D - Kitchen Extract Fan Details

Nuaire, Western Industrial Estate, Caerphilly, CF83 1NA, United Kingdom. email:info@nuaire.co.uk

UK Commercial enquiries T:029 2085 8200 UK Residential enquiries T:029 2085 8500 International enquiries T:+44.29 2085 8497

Whilst the information given on this data sheet is fan specific, it is in summary and reference to the product selection catalogue and installation & maintenance documents is recommended.

This data sheet produced on 18 Feb 2021 13:34 using software version 4.7.3785.0

Project Details

Location: EF 11 - Kitchen Extract - External

Technical Data

SQF - Squif Single In-line Fans

Fan Code: **SQFA43-3ES**
Installation Manual Links: 671175

Required duty: 1.113 m³/s at 250 Pa
Addition for ancillaries: +37.78 Pa
Actual duty: 1.355 m³/s at 427 Pa
Actual at required flow: 1.113 m³/s at 499 Pa

When speed controlled to required duty (82.12%):

Fan Input Power: **0.565 kW**
Motor Input Power: **0.763 kW**
Specific Fan Power: **0.7 W/(l/s)**
Velocity at required duty: 2.283 m/s
Fan Total Efficiency: 57%

At full speed:

Fan Input Power: 1.021 kW
Maximum Fan Input Power: 1.043 kW
Motor Input Power: 1.356 kW
Specific Fan Power: 1.0 W/(l/s)
Fan Total Efficiency: 39%

Maximum Fan Speed: 4 pole, 1,450 RPM
Electrical Supply: 400V 3 Phase 50 Hz
Nominal Motor Rating: 1.1 kW
Motor current (flc): 2.5 A
Motor starting current (sc): 2.5 A
Motor Efficiency: IE2 / High Efficiency

Max. operating temp: 90°C
Weight: 102 kg
Starting currents are nominal for D.O.L. starting.

Sound Data

Acoustic performance to ISO 13347 and AMCA 300.

Noise calculated speed controlled to required duty (82.12%)

Sound Power Levels re 1 pWatts (Hz):								
Hz	63	125	250	500	1k	2k	4k	8k
Induct Inlet	87	93	80	76	72	73	73	66
Induct Outlet	84	94	76	74	77	78	74	68
Breakout	81	87	72	68	63	64	58	44
For 100% speed:	+2	+2	+3	+3	+5	+5	+5	+5

dBA is spherical at 3 metres. For hemi-spherical add 3 dBA.

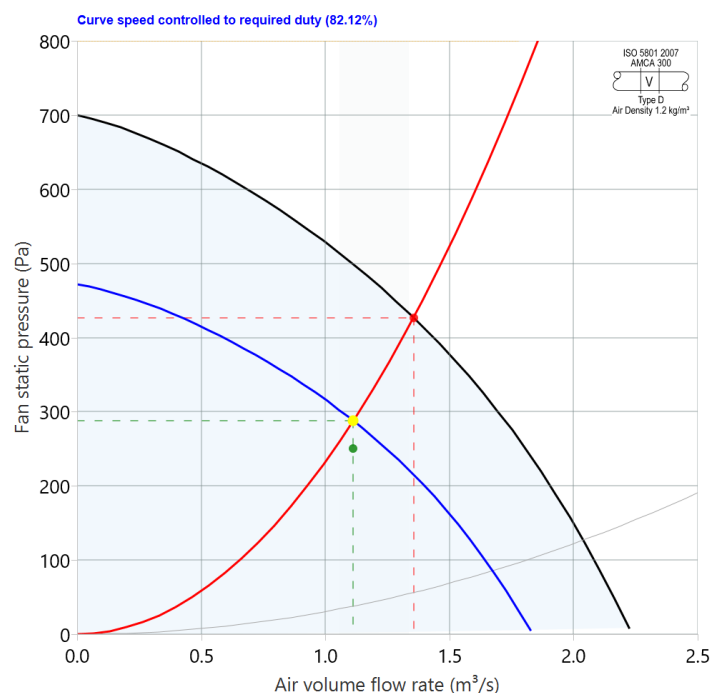
Values shown are for inlet Lw, outlet Lw sound power & breakout levels for Installation Type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

SQFS3S

At all volumes 0 -4 -8 -18 -24 -19 -16 -11

Please note that the noise data stated on this data sheet for the unit and/or silencer is tested in accordance with UK, European and International industry laboratory standards. However onsite conditions may vary and we would recommend that this information is verified by an acoustic specialist in order to ensure its suitability for the intended application.

Performance Chart



Additional Notes

Selected Ancillaries

1 x NAV5	Anti-vibration mounting kit
1 x ES-LCD	Ecosmart LCD Touch Screen User Control (White)
1 x SQFS3S	Standard silencer
2 x SQFF3	Square flexible connector double flanged
SQFS3S - Standard silencer	
Resistance at required duty	37.78 Pa @ 1.11 m³/s
Size:	900 mm (L) 810 mm (W) 710 mm (H)
Weight:	32.0 kg

Specification

In-line centrifugal fan suitable for both vertical & horizontal mounting. The unit casing shall be heavy gauge galvanised steel. The fans shall be of high efficiency backward curved centrifugal design, manufactured in galvanised steel. Fans shall be direct drive with IE2 high efficiency motors to BS5000 as standard, where appropriate. The unit motor shall be positioned outside the ventilation airflow path. The unit shall be capable of continuous operation at 90°C.

Unit fitted with full Ecosmart controls, BMS interfaces and commissioning controls. Ecosmart fans incorporate (in a convenient separate enclosure) a control package providing full Ecosmart functionality. The fan shall have the following energy saving functions integrally mounted within the fan unit on a purpose made PCB, all components pre-wired by the manufacturer: integral maximum and minimum speed adjustment/setting; integral adjustable run on timer; integral BMS interfaces, 0-10v and volt free failure indication.

NAV5

Resilient rubber anti-vibration mountings, supplied as a set of 4.

ES-LCD

LCD touch screen ventilation user control panel in white compatible with Ecosmart system. Control has built in time clock. Supplied with pre-plugged 10m length of communication cable.

SQFF3

Double flanged flexible connector manufactured from flame proof material. Heat resistant to 400°C with excellent resistance to chemicals, ozone, oil and grease. The connector is air-tight, waterproof and tested to BS476 Part 7.



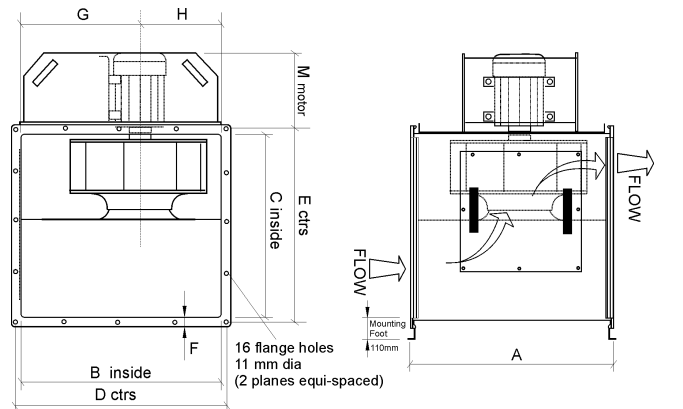
SUMMARY FAN DATA SHEET

Nuaire, Western Industrial Estate, Caerphilly, CF83 1NA, United Kingdom. email:info@nuaire.co.uk

UK Commercial enquiries T:029 2085 8200 UK Residential enquiries T:029 2085 8500 International enquiries T:+44.29 2085 8497

Whilst the information given on this data sheet is fan specific, it is in summary and reference to the product selection catalogue and installation & maintenance documents is recommended.
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Fan Dimensions



A	B	C	D	E	F	G	H	M
750	750	650	780	680	32	412	338	231

kg

102.0

Length: Width: Height:

750 780 911

Drawing is for dimensional purposes only. Dimensions in mm.