Cooper8 Ltd

New Café Kitchen Ventilation Proposals within Existing Coach House

Site:

English Heritage
Marble Hill House
Richmond Road
Twickenham
London
TW1 2NL

August 18, 2018

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East Sussex, TN34 1DJ
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Table of Contents

Introduction

The existing Coach House Café is currently leased by English Heritage to an independent operator. The proposed new cafe will be run in house and operated directly by English Heritage Catering. The new café is to be located in the existing coach house using the same areas for kitchen and servery and with an additional overflow seating area. The menu offer will include hot food and freshly baked products. It will not include griddled, char grilled or deep fried products.

English Heritage want to minimize any potential nuisance from odour and noise to neighbour's and homes adjacent to the facility and have prepared this document to inform the council of their approach and proposals.

DEFRA Risk Assessment Summary

Defra have a document entitled 'Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems.' It describes a method of risk assessment for odour, guidance on minimum requirements for odour and noise control, and advice on equipment selection.

Completed Risk Assessment

Section 1 – Background Information	
1.1 Contact Details – tell us who we need to contact for further information	**Name** *Simon C. Colley* **Position** *Catering Consultant* **Tell Number** *01424 422 784* **E-Mail** *simon@cooper8.co.uk* **Address** *2nd Floor* *7 Cambridge Road* *Hastings, East Sussex* *TN34 1DJ*

1.2 Proposed Hours of Operation	*The new café will be open 7 days a week between 09:00 to 18:00 during main season and 09:00 to 16:00 during winter season. In addition to these opening times, a facility will be provided to allow takeaway teas and coffees to be served before 9am through a serving hatch*
1.3 Type of Food to be served / Type of Catering Done	*Tea Shop / Café with Functions*
1.4 Kitchen Equipment to be used in the commercial kitchen	*Cooking Pots / Bains Marie / Steam Oven / Oven Ranges/ Electric Salamander*

2.1 Stack Dispersion – all commercial kitchens must have a chimney stack to expel odours from the kitchen. Please provide us with information on the stack you use / intend to use at your site.	**Stack Height – in metres** *N/A, Ventilation horizontal at roof level* **Efflux Velocity – in meters per second** *2.5* **Will the stack be fitted with a plate cap or cowl?** *A louvered grill*
Notes: 1. ***Stack Height – this should be in meters above ground level*** 2. ***Efflux Velocity – this is the term used for how fast air is expelled from your stack. Your equipment supplier should be able to provide these details*** 3. ***Fitting any kind of restriction at the opening of a stack is bad practice as it hinders the dispersion of odours. Many alternative duct terminators are available to address this***	
2.2 Diagram	*Drawings attached – Appendix 01*

Section 2 – Risk Assessment			
Criteria	**Score**	**Score**	**Details**
Dispersion	Very Poor	20	Low level stack discharge, discharge into courtyard of 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
Dispersion – score for your premises	*15*		
Proximity of receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge
	Medium	5	Closest sensitive receptor between 20 – 100m from kitchen discharge
	Fair	1	Closet sensitive receptor more than 100m from kitchen discharge

Size of Kitchen	Large	5	More than 100 covers or large sized take away
	Medium	3	Between 30 – 100 covers or medium sized take away
	Small	1	Less than 30 covers or small take away
Size of kitchen – score for your premises	5		
Cooking Type (odour and grease loading)	Very High	10	Pub (high level of fried food), fried chicken, burgers or fish and chips
	High	7	Kebab, Vietnamese, Thai or Indian
	Medium	4	Cantonese, Japanese or Chinese
	Low	1	Most pubs, Italian, French, Pizza or steakhouse
Cooking type – score for your premises	1		
Add up the scores for the four different sections and write the total in the box below			
TOTAL SCORE	26		

The risk assessment score is used to see if you require low, high or very high level odour control.

Impact Risk	Odour Control Requirement	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

Section 3 – Odour Control
Refer to Appendix 03 for drawing representation of proposed ventilation canopy and UV filtration.

Section 4 – Maintenance
Any system will deteriorate over time, it is important that you have a plan to maintain the equipment that you have installed to retain its effectiveness. Guidance on the maintenance of kitchen extraction equipment and odour abatement plant is contained in the DEFRA Guidance on pages 76-80, further information should also be available from your supplier. Use the space below to explain how you intend to maintain the installed system.
Grease drawers and filters cleaned on a weekly basis. Fans and UV filtration checked on a 6 monthly basis. UV tubes changed as required and to manufacturer's literature. Ductwork cleaning as required, checked on a 12 monthly basis.

Section 5 – Noise	
Due to the fact that commercial kitchen extraction equipment is often operated at sensitive times it is important that they are designed to be as quiet as possible.	
5.1 What is the predicted noise level to be emitted by your kitchen extract fan in dB (A)	Extract fan dBA = 47 less attenuation 15dBA = approx 32 dBA
Note: ***The noise level of your fan is something that your supplier should be able to provide you with. The noise level will either be a sound power level or Lw in dB or it will be a sound pressure level or Lp at a stated distance e.g. 60dB @ 1m. Please append any specification you have for the fan to this report.***	

Proposals

The risk score is 26 and indicates the need for a high level of odour control. Although the type of catering is of a ***low risk***, the extract duct will discharge below 10m. This is to avoid the visibility of any ventilation stack height rising above the building and to reduce any visibility from the neighbouring houses.

To mitigate nuisance, we are proposing to use a Jevens UV Hood that has turbo-swing filters within the canopy. The separation rate at the swing filters is 90 to 95% and with the effect of UV photolysis / ozonoysis the odour removal rate will be 95-99% and constitutes a high level of odour control.

See proposed plans and equipment in Appendices.

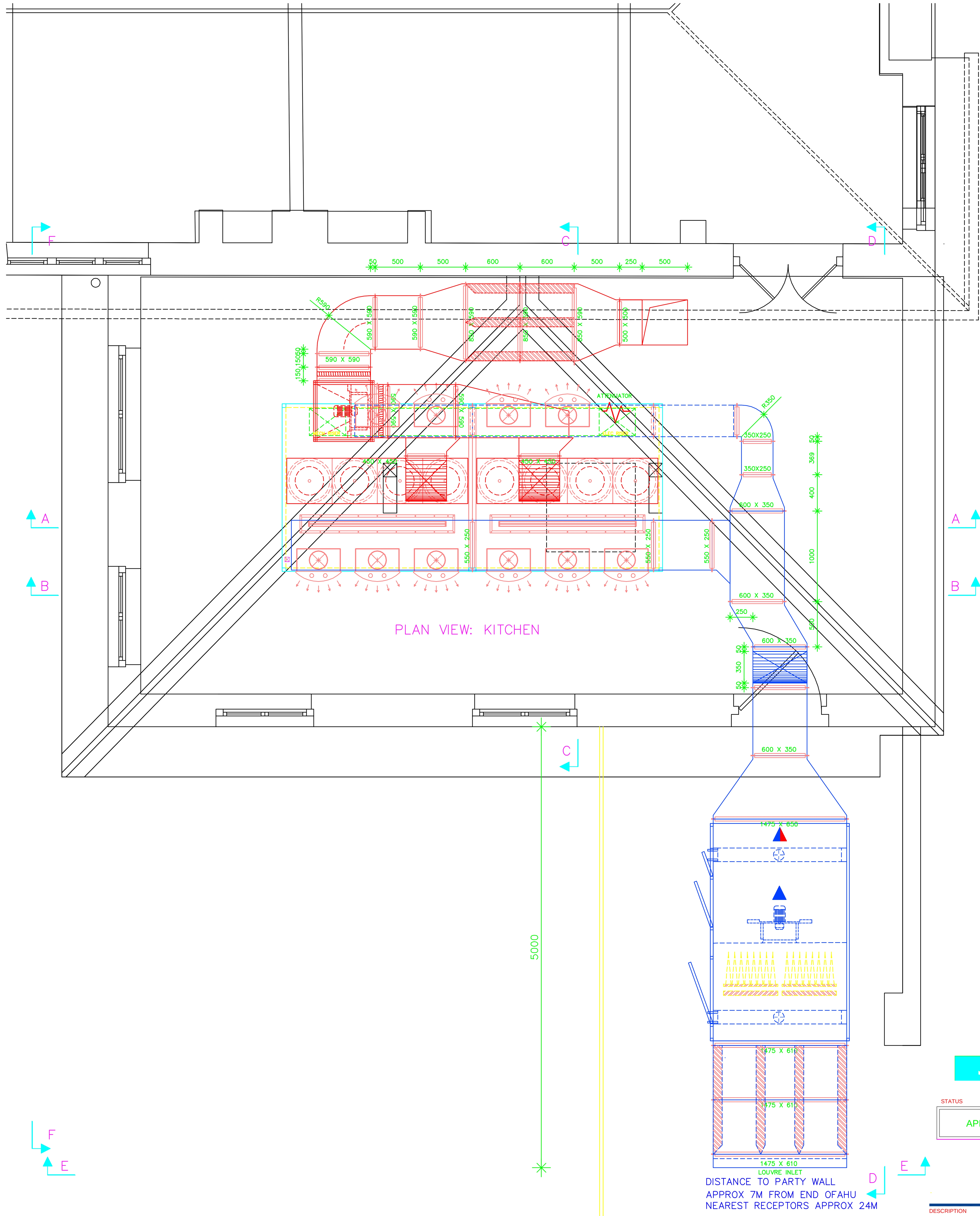
APPENDICES

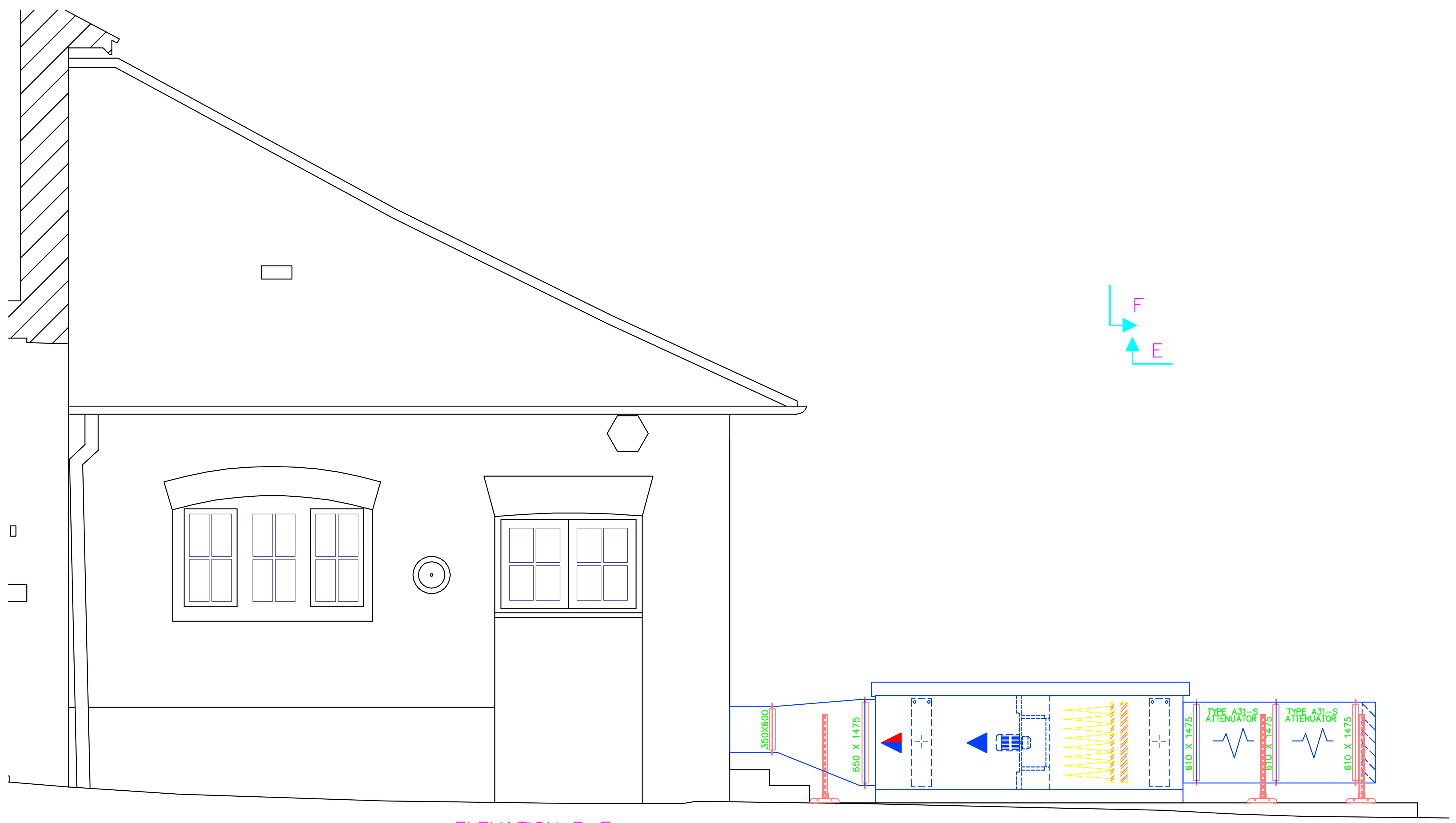
01 Ventilation diagram and distance of receptors

02 Proposed kitchen plans with equipment

03 Proposed ventilation canopy and UV filtration

04 Proposed Fans





NOTE: All dimensions are in millimetres unless stated otherwise. If in doubt ask. Do not scale from this drawing.

DRAWING INFORMATION

This CAD drawing is plotted from file: CV18-895-001

This CAD drawing contains the following Xref's: -

Jeven

STATUS

APPROVAL

DESCRIPTION	REV	DATE

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CLIENT
ENGLISH HERITAGE

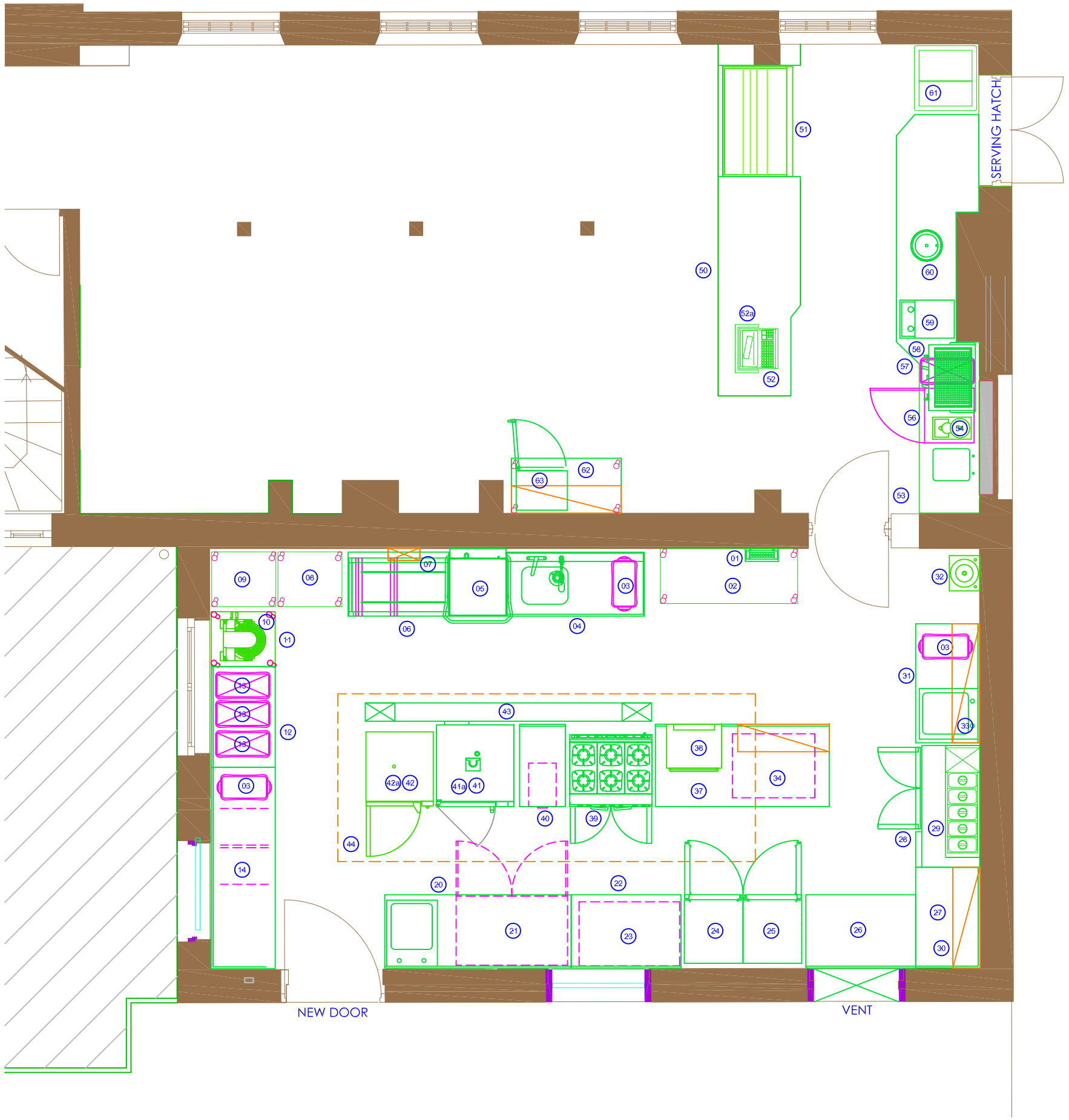
PROJECT
MARBLE HILL ENGLISH HERITAGE

DRAWING
NEW KITCHEN VENTILATION SYSTEM

SCALE	DRAWN	CHECKED	REV.
1:30@A1	CJW	RPW	

DATE.	JOB NO.	DWG. NO.
JULY 2018	CV18-895	001

Original sheet size A1



EQUIPMENT SCHEDULE

01	INSECT CONTROL UNIT	34	HOT CUPBOARD
02	DIRTIES RACKING	35-36	UNDERCOUNTER HOTCUPBOARD
03	WASTE BIN (x3)	37	ST/STL WALL TABLE WITH HEATED GANTRY OVER
04	INLET TABLING		
05	HOOD TYPE DISHWASHER	38	RISE AND FALL GRILL
06	OUTLET TABLING	39	6-BURNER OVEN
07	GREASE DOSING SYSTEM	40	ST/STL WALL TABLE WITH DRAWER
08	MOBILE RACK	41	10-GRID COMBINATION OVEN
09	MOBILE RACK	41a	STAND
10	20lt MIXER	42	CONVECTION OVEN
11	MOBILE STAND FOR MIXER	42a	STAND
12	ST/STL WALL TABLE	43	SERVICES DISTRIBUTION UNIT
13	INGREDIENT BINS (x3)	44	CANOPY
14	ST/STL WALL TABLE WITH COOLING RACKS	45-49	SPARE NO.
		50	COUNTER
15-19	SPARE NO.	51	MULTI-TIER
20	PREP TABLING WITH INSET SINK	52	CLIENT SUPPLY: TILL UNIT
21	UNDERCOUNTER REFRIGERATOR	52a	TILL SCREEN
22	WALL TABLE	53	BACK BAR
23	REFRIGERATED DRAWERS WITH BLAST CHILL	54	CLIENT SUPPLY: GRINDER
		55	SPARE NO.
24	UPRIGHT REFRIGERATOR	56	UNDERCOUNTER REFRIGERATOR
25	UPRIGHT FREEZER	57	WASTE BIN
26	ST/STL WALL TABLE	58	CLIENT SUPPLY: COFFEE MACHINE
27	ST/STL WALL TABLE	59	WATER BOILER
28	COUNTER REFRIGERATOR	60	INSET SOUP WELL
29	SALADETTE UNIT	61	ICE CREAM CONSERVATOR
30	ST/STL WALL SHELF	62	CONDIMENT UNIT
31	PREP TABLING WITH INSET SINK	63	MICROWAVE
32	WASH HAND BASIN	64	BABY WARMING (NOT SHOWN)
33	ST/STL WALL SHELF		

NOTES

REV:	DESCRIPTION:	BY:	DATE:

STATUS: PLAN LAYOUT

Cooper8 Ltd

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CLIENT: ENGLISH HERITAGE

SITE: MARBLE HILL COACH HOUSE			
TITLE: KITCHEN AND SERVERY LAYOUT			
SCALE AT A3: 1:50	DATE: 23/07/18	DRAWN: GLC	CHECKED: SC
PROJECT NO: CO_121	DRAWING NO: CO-121-001		REVISION: -

Jeven

Top ventilation for top chefs

Supply air hood JSI-UV-Turbo

Table of Contents

We want to help you in design of ventilation by offering Jeven designer service to your disposal.
Design Service helps in design and makes unique proposal solution with Jeven products.

Contact us: jeven@jeven.fi
010 231 2030

Supply Air Hood JSI-UV-Turbo

PRODUCT DESCRIPTION

The Jeven JSI-UV-Turbo hood has been designed for kitchens where exhaust hoods with high efficiency grease extraction and supply air are needed.
The JSI-UV-Turbo canopy is equipped with TurboSwing filter unit including ozone-free UV-light, supply and direction air, with damper plates and measurement taps.
In island models, the supply air units can be located on all sides of the hood.
The UV-TurboSwing filtering solution was developed for high efficient grease separation and odor removal in professional kitchens.

LIGHTS AND FILTERS

JSI-UV-Turbo is equipped with lights and UV-TurboSwings.

MATERIAL

The canopy's base material is stainless steel, AISI 304. The side panels can be made of stainless steel (JSI-R-UV-Turbo) or laminated glass (JSI-S-UV-Turbo).

ACCESSORIES

Covering boards to enclose the area between the top of the hood and the ceiling.

PRODUCT CODE

JSI - R - UV-Turbo - 3000 x 1500 x 540 - 4 x 250 - 3 x 315 + 480 l/s - 550 l/s - CB - UV-SC

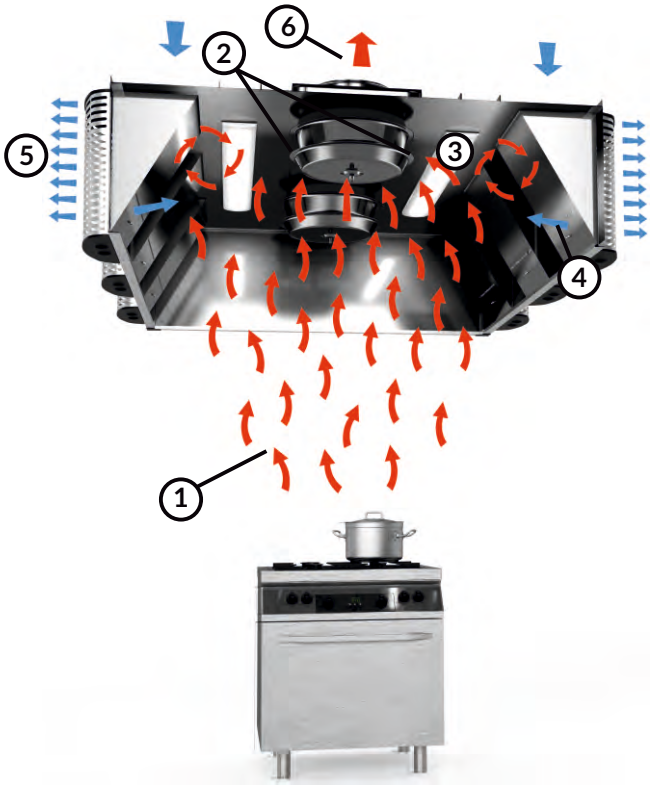
Material
R=Stainless steel
S=Glass
Filter
UV-Turbo=UV-TurboSwing
Length
Width
Height

Number and size of the supply air connections
Number and size of the exhaust air connections
Supply air flow, l/s
Exhaust air flow, l/s

Accessories
CB=Covering boards
UV-SC=UV-SwingControl

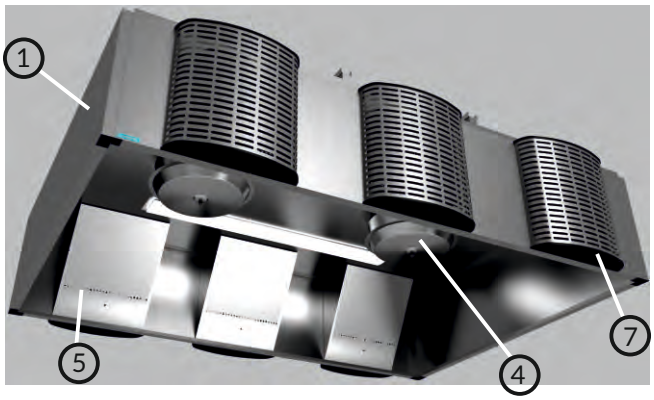
Supply Air Hood JSI-UV-Turbo

FUNCTIONING PRINCIPLE

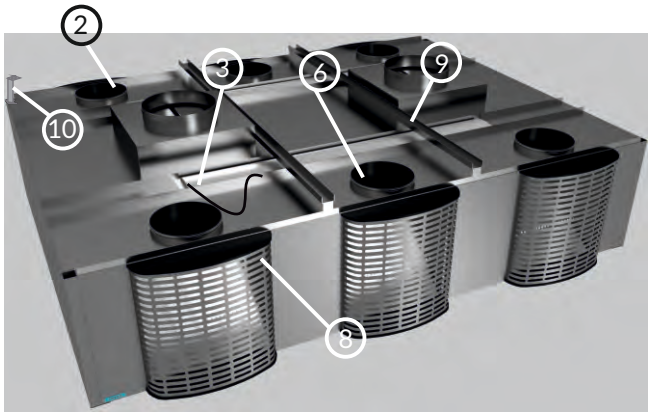


1. Dirty air rises due to temperature differences against the ceiling of the hood.
2. Dirty air is exhausted immediately through the TurboSwing unit.
3. Since TurboSwing's air intake is placed close to the ceiling, the warmest dirty air is always exhausted through it. Ventilation efficiency is of the highest rate because of the correct position of TurboSwing with respect to the kitchen equipment.
4. Direction air prevents leakage and directs steam and impurities towards TurboSwing.
5. Fresh and draught-free supply air is brought into the kitchen through the supply air columns placed on the outside walls of the supply air hood. This results in very effective ventilation in the kitchen.
6. The purified air flows in the catalyst-coated chamber where UV-light transforms remaining grease to carbon dioxide and water. Clean air is exhausted into the ducts.

PARTS



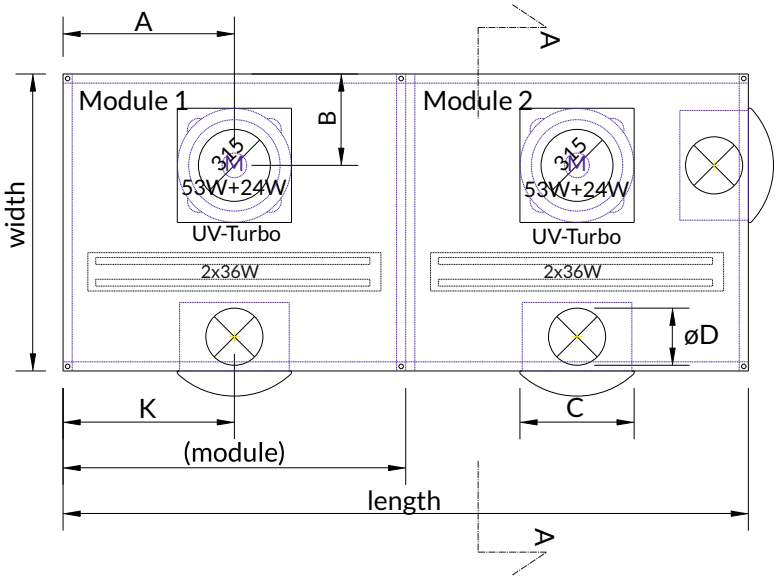
1. Outer casing
2. Supply air connection and damper unit
3. Light fixture with cable
4. UV-TurboSwing filter unit
5. Direction air unit with measurement tap for the supply air
6. Exhaust air connection and damper plate
7. Personal supply air nozzle
8. Supply air unit
9. Ceiling console
10. Hanging bracket

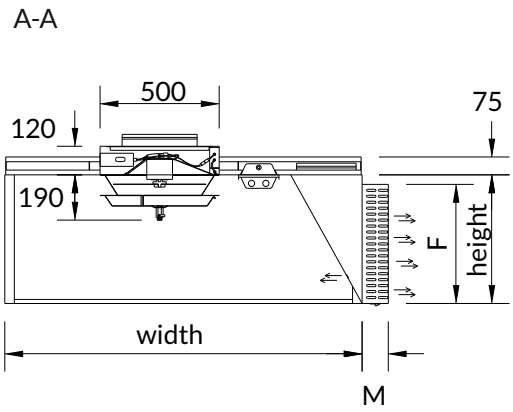


Supply Air Hood JSI-UV-Turbo

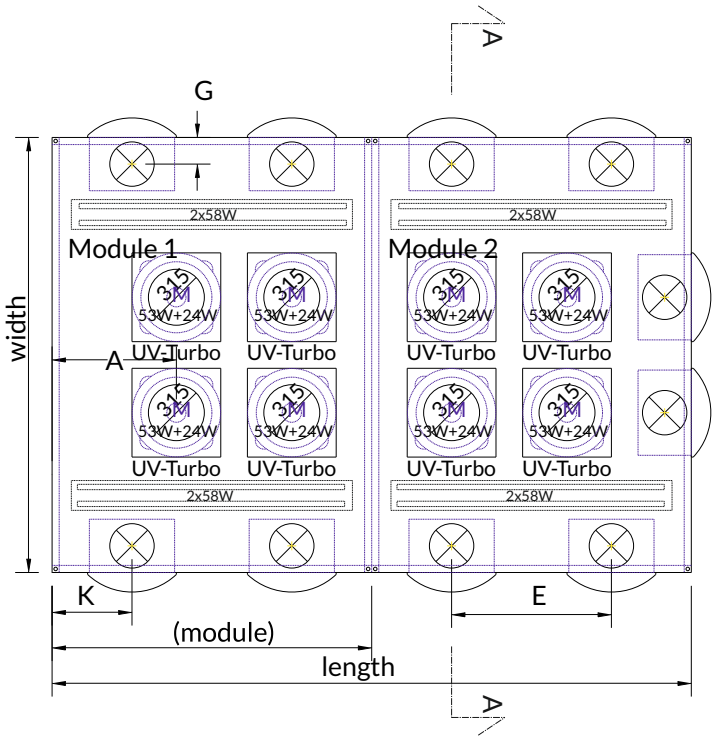
DIMENSIONS

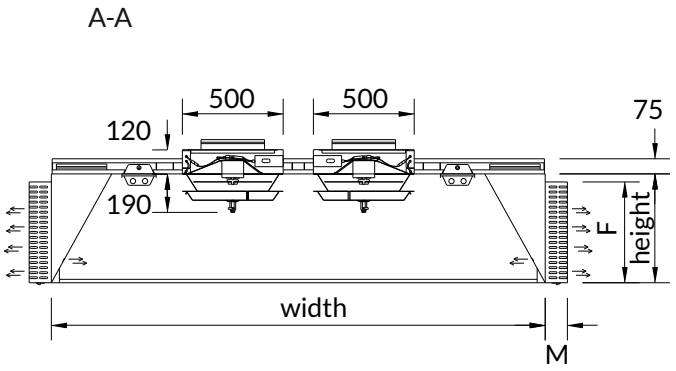
Wall hood





Island type hood

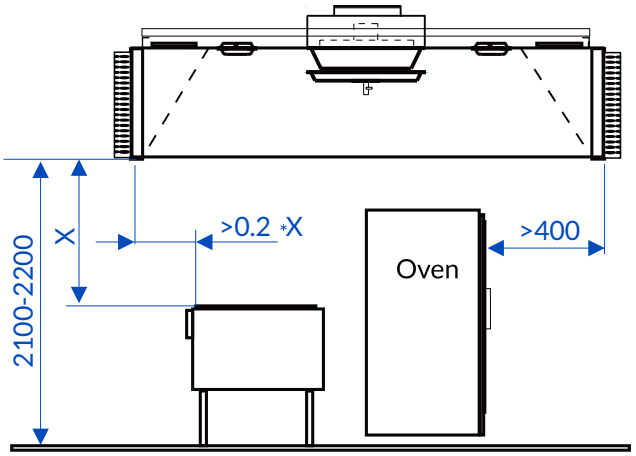




Supply Air Hood JSI-UV-Turbo

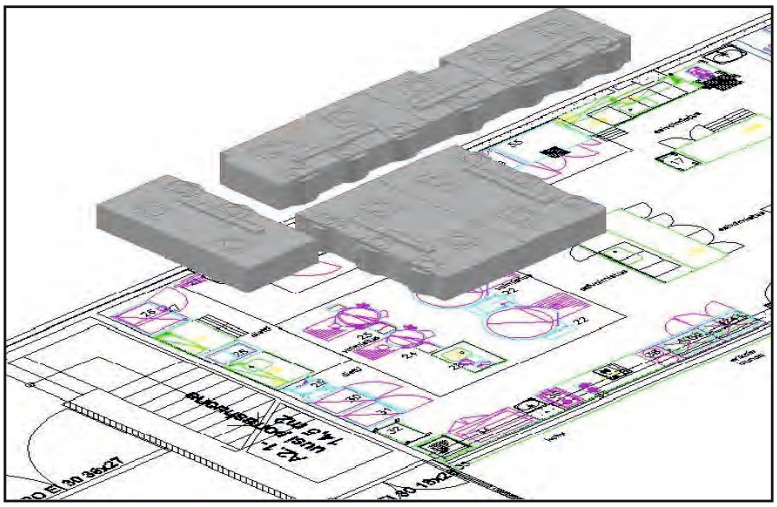
POSITIONING

The size of the canopy is determined by the size of the kitchen equipment. The overhang depends on the type of equipment and the distance between the hood and the equipment.
For this type of equipment, the overhang should be at least 300 mm.
The typical distance between the hood side and the floor is 2100-2200 mm.
If the equipment has any doors that open upwards, make sure there is enough distance to the canopy.



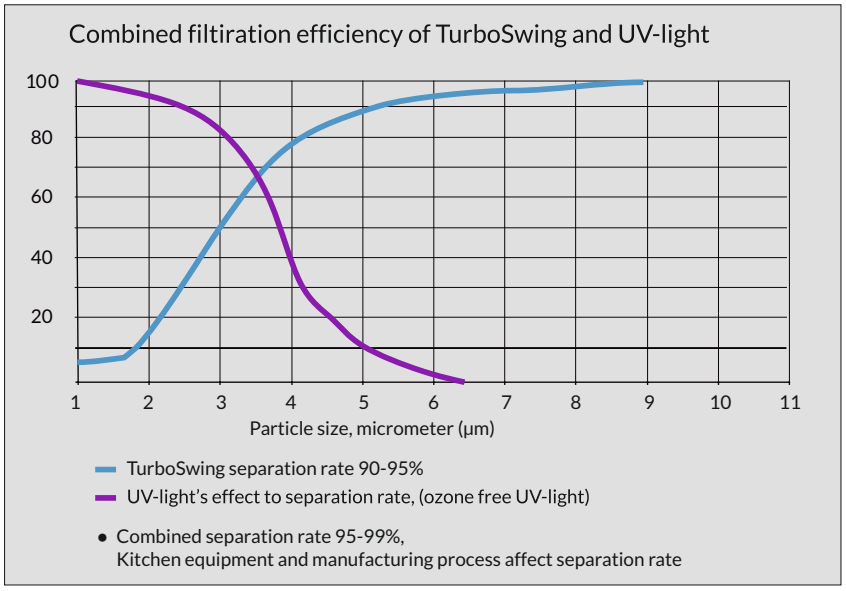
DESIGN SERVICE

Jeven Design Service helps you choose the best solution for your professional kitchen project.
Simply email us a drawing of the kitchen lay-out and a list of the cooking equipment to jeven@jeven.fi
We will do all the calculations and prepare all the necessary drawings of the canopies.
This service is always free of charge to you.



Supply Air Hood JSI-UV-Turbo

EXHAUST AIR

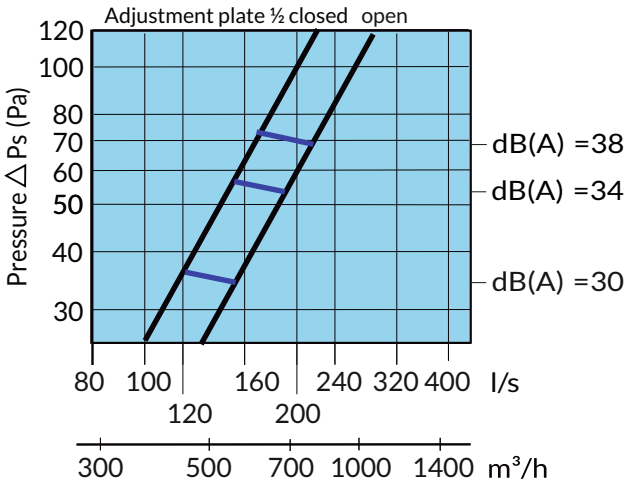


Recommended exhaust flow / spigot

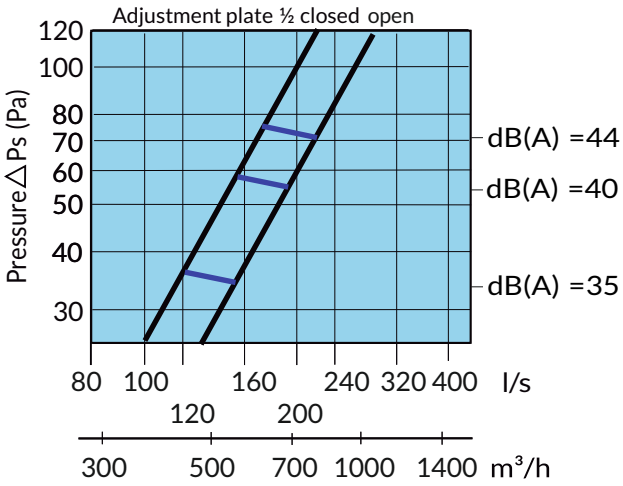
Spigot size ø	Exhaust flow		Pressure loss
mm	l/s	m^3/h	Pa
315	100-200	360 - 720	20 - 60

PRESSURE LOSS AND SOUND DATA

TurboSwing 750 rpm



TurboSwing 1100 rpm



Sound power level Lw in each octave band is computed by adding the corresponding factor, Kok to the sound power level LpA. Lw= LpA+Kok.

Factor, Kok

Hz	125	250	500	1000	2000	4000
Kok	7	-1	-5	-5	-7	-6
tol.	±3	±3	±2	±2	±3	±4

Supply Air Hood JSI-UV-Turbo

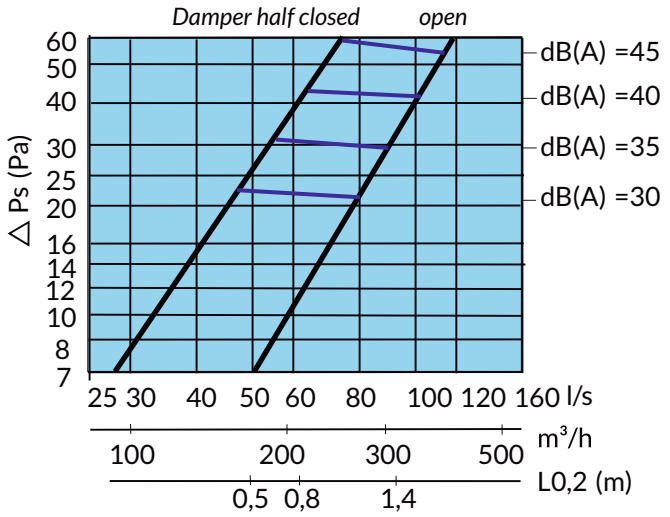
SUPPLY AIR

The canopies are supplied from the factory with suitable air flow rates for a pressure level of 25-35 Pa.

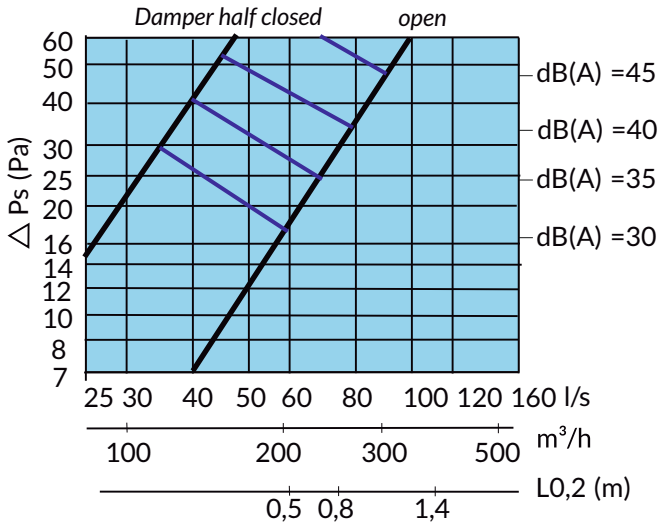
Hood height	Supply air unit width	
mm	200 mm	500 mm
330	-	50-90 l/s
540	40-70 l/s	100-150 l/s

PRESSURE LOSS, SOUND DATA & THROW LENGHT / SUPPLY AIR UNIT

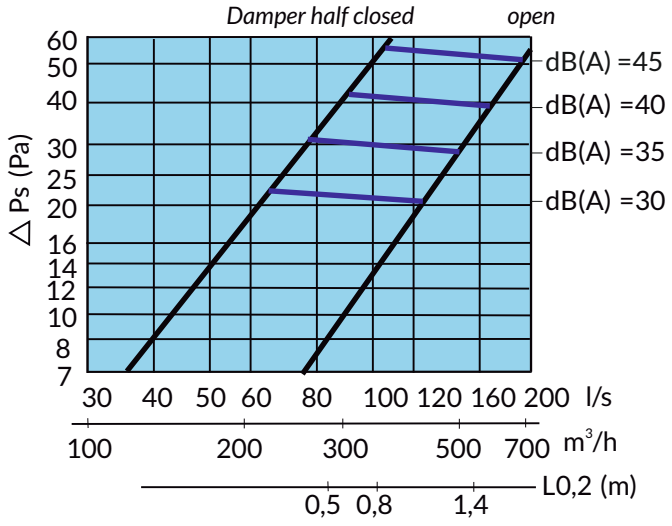
Spigot ø200 mm. Unit width 500 mm. Hood height 330 mm.



Spigot ø160 mm. Unit width 200 mm. Hood height 540 mm.



Spigot ø250 mm. Unit width 500 mm. Hood height 540 mm.



Spigot ø200

Hz	125	250	500	1000	2000	4000
Kok	-2	7	4	-5	-19	-26
tol.	±6	±4	±2	±2	±3	±5

Spigot ø160

Hz	125	250	500	1000	2000	4000
Kok	-2	1	2	1	-7	-16
tol.	±3	±3	±2	±2	±3	±4

Spigot ø250

Hz	125	250	500	1000	2000	4000
Kok	6	8	4	-5	-10	-18
tol.	±3	±3	±2	±2	±3	±4

The sound power level (Lw) in each octave band is computed by adding the corresponding factor Kok to the sound pressure level (LpA), as in Lw= LpA+Kok