

Alison Booth,
CF Fertilisers UK Ltd
PO Box 81
Billingham
TS23 1XT

21st June 2021

Our Ref: Q4175 Rev E – UK Manufacture

Dear Alison,

Re: Laboratory refurbishment, Fume cupboard replacement and associated ductwork modifications.

Thank you for your revised enquiry regarding the above, and for taking the time to explain the requirements when I visited site, I have pleasure in submitting our updated quotation for your consideration as follows:

Scope of work

Supply, deliver and install the following UK manufactured furniture and fume cupboards to the above address.

Please note we have currently included underbench furniture in this quotation.

We have also allowed for the installation of a new extract system to serve the new fume cupboard in the laboratory, and the replacement of 1 No fume cupboard and its associated ductwork in the main laboratory.

We have indicated optional costs to provide and install a small Air Handling Unit (AHU) located outside the laboratory to provide the make-up air required for the laboratory.

We have also indicated a provisional sum to redirect the internal supply air ductwork located in the room next door to the new laboratory if there is sufficient spare duty on your existing system.

Key Personnel

The following personnel will form our design team:

David Coates	HVAC Design
Bernard Coates	Design and Cost management
Joanna Speight	Lab Planning and Design
Colin Wheeler/Bryan Davies	Architectural design, spatial layouts and 3D images (If required at an extra cost)
Jane Holland	Project Admin

Professional Skills

Sanber Limited is a member of the BESA formerly HVCA and abides by its code of good practice with respect to its commercial and technical operation. In addition, the company has also been independently inspected and assessed by BM TRADA and we comply with their clearly defined business standards.

We are also members of the following organizations.

Federation of Small Businesses

- Construction line
- CIBSE
- Safe Contractor Scheme
- CHAS

We have a training policy in place for all staff and CPD courses attended in the last 12 months include First Aid, Durapipe Vulcathene Technical Course and MEWP training.

Sanber Ltd are proud to be compliant with ISO9001:2015, ISO14001:2015 and ISO45001:2018.



These form our Integrated Management System, covering quality assurance, environmental responsibility and best practice health and safety.

Together, they ensure Sanber performs its services in the safest, most consistent and professional manner.

They also provide the framework to drive our commitment to continual improvement, and for your peace of mind, we have our subcontractors vetted for regulatory compliance and supply chain risk management by Safe Contractor, Construction Line and CHAS.



Copies of all our key policies are available on request

Furniture specific allowance for;

Trespa worktops 16mm Toplab base

1 @ 1200 x 750mm

1 @ 2706 x 750mm

1 @ 2480 x 1500mm

1 @ 2535 x 750mm

1 @ 3024 x 750mm

1 @ 1500 x 750mm

1 @ 1500 x 600 Trespa Splash back

1 @ Stainless Steel inset Single Bowl Double drainer

1 @ Lab Mixer Tap

1 @ Compressed Air Tap

1 @ Fixed DCU Sink Unit

1 @ Various panels

4 @ Mobile DCU

1 @ Mobile SCU

5 @ Mobile SDU

3 @ Mobile SDL

3 @ Mobile DDL1

2 @ TSU partly Glazed

3 @ Double H Frames

13 @ Single H Frames

24 @ Interconnecting Rails

UK manufactured furniture - standard specification

Solid Grade Laminate:

16mm Trespa Toplab base work surface complete with 16mm loose upstands.

Inter Connecting Rails:

Rails are box section 40 x 40 1mm mild steel complete with fixing brackets to each end, then bolted together with machine screws, epoxy powder coated, colour to suit furniture.

Table Frames:

40 x 40 RHS metal frames welded together complete with adjustable feet, epoxy powder coated, and colour to suit furniture.

Unit Construction and Finishes

Carcass:

Ends, rails, bottom and shelf to be constructed of 18mm White melamine faced MDF Board, edged in 2mm matching PVC. Backs are 3mm or 8mm melamine faced MDF Board to match. Carcasses are doweled, pin and cam construction. Units are fitted with 4 heavy duty adjustable feet. All backs are fully removable for easy access to services.

Drawer Boxes:

Drawer sides are Metabox system epoxy coated (RAL 9001 Cream – White) mild steel, mounted on soft rolled runners. Standard depth is 450mm front to back; drawer base and back are of 12mm white melamine faced MDF board, edged as necessary. Standard drawer sides are 86mm and 135mm. Capacity 50Kg Static Load, 25Kg Dynamic.

Fronts:

Doors and drawer fronts are of 18mm Laminate faced board. 2mm PVC lips to all edges. Colours are from the Altolina Plain Colour Laminate.

**Hinges:**

Doors are to be hung on Salice UK 1700 concealed clip on hinges.

Handles:

Chrome "D" Pull type handles (100 mm)

Castors:

100mm overall height castor (rear to be braked)

Locks:

Lowe and Fletcher 2806 Cylinder Cupboard or Drawer lock

(No allowance has been made for any units to be lockable. These can be supplied at an extra cost of £10.00 per lock.)

Radius Profile Fume Cupboard Specification**Dimensions**

The Radius Profile Fume Cupboards have been selected to give the following dimensions:

1200mm to be located in the main laboratory

External: 1200mm Wide x 900mm Deep x 2375mm High (2540mm Max Sash Height)

Sash Opening: 900mm Wide x 735mm High (Max)

Internal: 900mm Wide x 655mm Deep (Baffle to Sash) x 1300mm High (Worktop to Soffit)

1800mm to be located in the new laboratory

External: 1800mm Wide x 900mm Deep x 2375mm High (2540mm Max Sash Height)

Sash Opening: 1500mm Wide x 735mm High (Max)

Internal: 1500mm Wide x 655mm Deep (Baffle to Sash) x 1300mm High (Worktop to Soffit)

Construction

The body of the Fume Cupboard is manufactured from 1.2mm thick zinc coated mild steel sheet and is polyester powder coated white RAL 9003 to a smooth finish. The front view is fully radiussed, with an aerodynamically designed air intake fascia around the top and sides. The lower edge has a fully radiussed aerodynamic cill manufactured from 316 grade stainless steel which is hinged to allow cable entry. All the above are designed to improve the airflow into the Fume Cupboard chamber.

The top front facing panel is slotted to prevent excessive velocities at lower sash openings to ensure a constant extract rate irrespective of the sash opening position. The front panel is fitted with a unique drop-down mechanism to allow access to all the items that are above the top of the chamber. This panel is polyester powder coated Silver SW263D.

Interior linings and baffles

The interior linings and baffles of the Fume Cupboard are manufactured from 6mm thick white Trespa Toplab Base panels, with all internal joints silicone sealed. At the rear of the internal chamber is a full width baffle allowing both low and high level extraction. This prevents the variation of air velocity over the working surface and encourages a scavenging action through the fume chamber. Fitted beneath the baffle is a 316 grade stainless steel tissue guard to prevent debris being pulled into the Fan Unit.

Working level

The working level is manufactured from solid epoxy resin and is dished around the perimeter to contain spillage. The working level is complete with a small circular drip cup having a 1½" BSP waste outlet for connection to the mains waste **by others**. The joint between the working level and the internal skin is sealed with silicone.

Sash arrangement

The sash is manufactured from 6mm thick clear toughened glass, running in PVC full height extruded guides which are fitted with adjustable tension springs to reduce lateral movement. The sash is counter-balanced using double stainless steel cables, a grooved ball race pulley and lead balancing weights.

Quick release sash stops are a standard safety precaution at 500mm. On lock release the sash can be raised to give a maximum clear viewable opening of 825mm, with an accessible opening of 735mm for setting up apparatus or cleaning and maintenance purposes. On lowering the sash below 500mm the sash lock automatically resets.

The sash has a bypass at high level to prevent excessive velocities when the sash is in the lower position. The full width sash finger-grip is manufactured from aluminium and polyester powder coated Silver SW263D complete with a full width handle.

Illumination

Above the external soffit of the Fume Cupboard are energy saving LED lights. The lights are vapour sealed from the chamber above 6mm thick clear toughened glass panels.



Services to fume cupboard

The Fume Cupboard will be fitted with the following services:

- 1 x airflow control panel
- 1 x cold water
- 1 x light switch
- 1 x circular vulcathene 501 drip cup
- 4 x single socket outlets
- 1 x pre-wired
- 1 x compressed air
- 1 x pre-plumbed

Airflow control panel – TEL master AFA1000/2

The TEL control panel is mounted on the front face of the Fume Cupboard and has the following features as standard:

- 3 Push Buttons – Configurable as Fan On/Off, Lights On/Off, Purge On/Off, Pump On/Off.
- 3 Relay Inputs – Configurable as Night Setback, Alarm Disable, Sash High, External Alarm, High/Low.
- 3 Programmable Relay Outputs – Activated by any of the 3 Inputs, 3 Pushbuttons or any of the Alarm Conditions.
- Digital Display – Showing Airflow Velocity (m/sec), Alarm Timeline & Control Pushbutton Functions.
- Audible Alarm and LED for Air Safe, Air Fail & Sash High.
- Push Button Calibration & Configuration.
- BACnet MS/TP & Modbus RTU available – Comms adaptor required at an additional cost.
- Proximity Switch – For Detecting Sash High.
- SM7 Hot Wire Sensor – To Accurately Monitor Airflow.

PVC vent spigot

Fitted to the soffit of the Fume Cupboard will be a circular PVC vent spigot (Excluding balancing damper) to allow connection to the fume extract system **by others**.

Support frame structure

The full width one-piece support frame is manufactured from 38mm square zinc coated mild steel box section which is polyester powder coated white RAL 9003 to a smooth finish. At the base of each leg is an adjustable foot for site levelling of the Fume Cupboard.

Mechanical services

The BROEN mechanical services are pre-plumbed with 'Uniflex' hoses to terminate either 150mm below the working level to the rear of the Fume Cupboard or rising through the side panels above the top of the Fume Cupboard for connection to mains supplies **by others**. Operating valves are located on the front service plates with the outlet connectors located on the side walls of the Fume Cupboard chamber.

Electrical services

Electrical services are pre-wired to a metal consumer unit positioned above the soffit of the Fume Cupboard for connection to a 32A, 1Ph mains supply **by others**. The consumer unit is fitted with a 20A RCBO for the sockets, a 6A RCBO for the lights and a 6A MCB for the control panel. We could wire a 2m flying lead complete with a 32A male commando socket to the consumer unit, allowing a simple connection to the mains supply at a cost of **£70 per Fume Cupboard**. Please note that on-site earth loop impedance testing is excluded.

Installation

Our works are based on a continuous installation, with continuous site access in normal working hours for our engineers to complete their works. No out of hours or weekend working has been allowed for in this cost.

Cosmetic infill panels

The Fume Cupboard could be fitted with cosmetic infill panels to hide the ductwork and damper. The infill panels can terminate 25mm below false ceiling height or can protrude into the false ceiling to allow fixing of the ceiling grid/trim. The infill panels are manufactured from 1.2mm thick zinc coated mild steel and are polyester powder coated white RAL 9003 to a smooth finish. To supply cosmetic infill panels up to 600mm high will be at a cost of:

Please note if the panels are greater than 600mm high, then please advise the height required so we can price accordingly

Storage cupboards

Standard vented steel storage cupboards

The storage cupboards are manufactured from 1.2mm thick zinc coated mild steel which is polyester powder coated white RAL 9003 to a smooth finish. Each unit has hinged door/s, adjustable internal shelf and a 50mm deep mild steel drip tray. Castors with the front two being lockable ensure the unit can be removed for access to services or for cleaning and maintenance purposes. At the back of the storage cupboard are flexible hoses which will be connected into the main extraction. The hoses are secured at each end using stainless steel clips and screws.

Polypropylene storage cupboards

The storage cupboards are manufactured from 9mm thick white polypropylene. Each unit has hinged door/s, fixed removable internal shelf and a 50mm deep mild polypropylene drip tray. Castors with the front two being lockable ensure the unit can be removed for access to services and maintenance.

At the back a flexible hose is provided which is to be connected into the main extraction. The hose is secured at each end using stainless steel clips and screws.

Fire rated storage cupboards

Chemisafe branded 90-minute fire rated storage cupboards. Each cupboard has winged door/s and is complete with a bottom collecting sump. The units are Light Grey RAL 7035 as standard but can be supplied in Yellow RAL 1021 if required.

At the back a flexible hose is provided which is to be connected into the main extraction. The hose is secured at each end using stainless steel clips and screws.

Please note I have changed the allowance so that as requested you now have a standard ventilated storage cabinet below the 1200mm wide FC and 2 No Polypropylene cabinets below the 1800mm wide Fc in the new laboratory.

1200mm wide Fume Cupboard

Standard mild steel vented cupboard x 1110mm wide £ 308 each (1 No required)

1800mm wide Fume Cupboard

Polypropylene acid vented storage cupboard x 835mm wide £ 587.00 each (2 No required)

The optional widths above will give you scope to mix and match sizes and types.

Extract system

We have allowed to design and install a new extract system to serve the single fume cupboard in the new laboratory, the fan will be located externally on a frame or on a bracket on a wall, to allow access for maintenance.

The fan will serve the 1 No 1800mm wide fume cupboard the positioning of the HVAC plant will all be checked and marked on the drawings if we are successful and proceed to that point.

The fume discharge stack will be fixed to the external walls of the building and will terminate as close as possible to approx. 3 metres above the apex of the roof. Discharge velocity will be checked and increased if required if the stacks needs to be lower in height.

All new ductwork will be fabricated from grey UPVC sheet and ventilation tube and will be manufactured and installed in accordance with HVCA Specification DW 154 for Plastic Ductwork.

On circular ducts the joints will be of the socket and spigot type which will be hot gas / filler rod welded for maximum integrity. Joints on the larger rectangular ducts will be jointed as detailed in DW154 Table 2 and will include an appropriate gasket material.

We have costed the systems with the assumption that they will be constructed from UPVC only.

Fume Extract Fan.

The fan units would be manufactured with polypropylene cases and impellers for maximum corrosion resistance. The fan will be supplied with flexible connections to the duct system and anti-vibration mountings.

Fan Type: Centrifugal

Volume: 0.375m³/sec for the fume cupboard

Resistance: 350 pa (TBC)

Voltage: 3ph/415v/50Hz

Drive type: Direct

Ancillaries: Anti vibration mounts, flexible duct connection.

Each fan will be sized for the design volume plus 10%

Options:

Extras such as standby motors or inverters can be provided but have been excluded at this stage.

We have currently assumed that the AHU can be mounted on big feet supports in the external area we have not currently allowed for a concrete cast slab, we will quote for this if it required.

Supply Air System

Our current proposal is for 1 No AHU to serve the laboratory new area.

- Unit Location: Externally Mounted.
- Unit Arrangement: Horizontal.
- Supply Air Volume: 0.375 m³/sec at 350 Pa external pressure.
- Control: Thyristor
- Pre-Filters: G4 Panels (ISO 16890 Coarse>65%)
- Secondary Filters: F7 Synthetic Bags (ISO 16890 ePM1>65%)

We will allow for the interconnecting ductwork from the AHU into the laboratory with supply grilles to be mounted on the ceiling. As there is no suspended ceiling grid we will surface mount a box for the duct to feed into and then out through a grille.



Example AHU Installation

Constructional Specification;

- All equipment would be designed & manufactured in accordance with our standard constructional specification.
- Unit construction to be fully weatherproofed & c/w pitched roof & inlet louvre/cowl.
- Unit casing constructed from 50mm thick double-skinned panels with galv. steel inner skins & plastisol outer skins (colour TBC)
- Panels insulated with rigid glass fibre slab (density of 65kg/m³ min)
- Unit sections mounted on galvanised steel base-frames c/w lifting points
- Manually operated damper fitted to unit inlet.
- Electric heating coil to be suitable for thyristor control (by others)
- DX (heat-pump) coil to be copper/aluminium (poly-coated) construction within galv. steel casing.
- Cooling coil fitted with removable (PVC) eliminator blades.
- Cooling coil section fitted with stainless steel drip-tray c/w side drain outlet connections (22mm diameter)
- Fan to be direct-drive (EC) type suitable for 0-10-volt signal control (by others)
- Motor fitted with thermistors & pre-wired to externally mounted isolators.
- Pre-filters to be G4 grade panels (ISO 16890 Coarse>65%) and arranged for side withdrawal.
- Bag-filters to be F7 grade synthetic bag-filters (ISO 16890 ePM1>70%) and arranged for front withdrawal.
- All filter sections fitted with "Dwyer" minihelic pressure gauges & test points.
- Spare filters supplied loose.

Heating and cooling would need to be provided for the laboratory or on the AHU, air conditioning units in the laboratory would be the simplest and most cost effective way of heating and cooling, we have currently not allowed for these but can indicate a provisional sum.

If the existing supply air system can be reused and diverted this would be the most cost effective solution for you.

Galvanised ductwork systems will be installed and connected to the plant items.

All new ductwork will be supplied and installed in accordance with HVCA Specification DW154

The ductwork will be insulated using Class 'O' foil wrap insulation.

Costs

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No	Item	Cost Price
	Extract system including labour and prelims	£ 10,459.01
Total Ductwork Cost (A)		£ 10,459.01
Miscellaneous Items		Cost
	Lab Furniture and installation	£ 21,773.70
	Fume Cupboard for new lab	£ 6,760.00
	Fume cupboard for main lab	£ 5,980.00
	Polypropylene cabinet for the 1800mm wide FC in the new lab	£ 1,174.00
	Standard vented cabinets for 1200mm FC in the main laboratory	£ 308.00
	Supply air system for the new laboratory	£ 14,343.75
	PC sum for AC for heating and cooling in new laboratory	£ 6,502.50
	PC sum to divert existing supply air system and install ductwork and grilles	£ 3,315.00
	Replace galvanised duct to the existing FC in the main laboratory, FC on lower level and up to the fan	£ 7,196.00
Total Misc. Cost (B)		£ 67,352.95
Control Items		Cost
	Commissioning Sanber	£ 350.00
Total Misc. Cost (C)		£ 350.00
Project Total = A + B +C		£ 10,459.01
		£ 67,352.95
		£ 350.00
		£ 78,161.96
Optional cost replace the internal sections of galvanised ductwork, on the ground and first floor connected to the 2 FC's and the bench mounted instrument		£ 3,632.82

Please note I have indicated a cost to replace the internal and external duct on the existing ductwork pictured below, I have excluded the fan however, and we can revise our quotation if this is required.



I have also shown an optional cost to only replace the internal ductwork connecting one FC on the ground floor and a FC and bench mounted instrument on the first floor with PVC welded fabricated ductwork.



Exclusions

VAT

Any work not detailed above
Mechanical and electrical works and connections.

Retention

Any wall/floor protection.

Any builders work or making good same.

Any additional taxes or costs imposed due to Covid 19 regulations

On site containment testing.

Fire suppression system on the fume cupboards.

Mechanical/Electrical connections.

On-site earth loop impedance testing.

Field wiring.

Requirements

Purchase Order

Agreed programme of works

Access during normal working hours

Terms and Conditions

Sanber Ltd standard terms and conditions to apply - 30% on placement of an order, interim monthly payments for works completed.

Validity

This quotation is valid for a period of 60 days from the date of issue.

I trust the above is of use, please do not hesitate to contact me if you require any further information.

Yours faithfully,

Joanna Speight

GENERAL TERMS AND CONDITIONS OF SALE

Except where expressly agreed to in writing by the directors of Sanber Ltd (hereinafter referred to as the "The Company) every quotation, receipt, invoice, price list or other documents issued by the Company and all sales and other supplies made by the Company to any purchaser, are deemed to be and/or are on and subject to the following terms and conditions

OFFER

- 1) All prices and estimates quoted by the Company are exclusive of VAT and carriage unless otherwise stated.
- 2) All orders are accepted on the understanding that goods/services will be invoiced at the price ruling at the date of dispatch, and are subject to carriage charges and the rate of VAT applicable at the date of receipt of order

PAYMENT

- 3) All prices are net and no settlement discount is allowed. Except where otherwise agreed to in writing by the Company, payment in full shall be made no later than the time when the goods are delivered to the purchaser. Proforma invoices will be raised where no credit facility is in place or has been exceeded by the purchaser.
- 4) In such cases where credit is agreed to in writing by the Company, the debtors account shall be settled in full not later than 30 days from the date of the invoice. Any accounts unpaid when due shall carry interest at 3 % per month above the Bank of England base rate until paid in full including as well after any judgement obtained in respect of the amount outstanding from the purchaser.
- 5) Where contract works go beyond 30 days interim payments are to be made by the purchaser at maximum 30 day intervals.

SALE AND PURCHASE

- 6) Goods/services are only supplied on a definite sale and purchase basis. Unless otherwise agreed in writing, the Company will not supply goods/services on either sale or return, guaranteed sale, consignment or approval.
- 7) Where work is to be fulfilled in separate installments, delivery of part shall be made as if the same constituted a separate contract

RETURNS

- 8) In the event that a purchaser shall return goods which have been ordered, the Company may elect at its absolute discretion to permit the cancellation of the order subject to payment by the purchaser of 20% of the total order value together with the costs of the return carriage. The company in its discretion shall refuse to accept any goods returned in a condition other than the condition in which they were dispatched to the purchaser

DELIVERY

- 9) Except where otherwise agreed, goods/services will be supplied to the purchaser at its trading premises in the United Kingdom. The purchaser shall be solely liable for the costs of delivery.
- 10) The Company will seek to supply the goods/services ordered by the purchaser within the time requested by the purchaser. However, such time shall not be liable for any losses incurred by the purchaser (whether directly or indirectly) as a consequence of any late delivery of goods/services, or an inability to supply goods
- 11) The Company reserves the right to withhold or suspend delivery of goods/services to a purchaser if any account has not been paid by a purchaser when due.

CLAIMS FOR DAMAGES

- 12) Any damage caused to the goods prior to delivery to the purchaser, or short or mistaken delivery, must be notified to the Company in writing within 24 hours of the goods being delivered to the purchaser

RESERVATION OF TITLE AND TRANSFER OF OWNERSHIP

- 13) Property and/or title in the goods/services ordered by and delivered / installed to a purchaser shall remain vested in the Company and all such goods/services shall be held by the purchaser as bailee for the Company until all monies owed by the purchaser to the Company on any account whatsoever have been paid in full.
- 14) Sales by the purchaser of goods in respect of which property and/or its title to such goods has not passed to the purchaser and which the purchaser holds as bailee for the Company (in accordance with clause 13 above) shall be held by the purchaser as trustee for the Company and all such monies shall be held separately from any other monies and funds, and shall be paid immediately to the Company

LIABILITY OF THE COMPANY

- 15) No warranties or undertakings or representations are given by the Company in respect of the goods/services other than those quoted or otherwise imposed by law
- 16) The Company shall not be liable for any statement or expression of opinion by its staff or agents to representatives or agents of the purchaser with respect to the uses to be made of the goods/services
- 17) Save as may be imposed by the law the Company shall not be liable for consequential damages / losses due to the failure of or any defect in the goods/services and shall not be liable for any damage whether or not consequential, arising from the use of the goods or the ability of the Company to deliver the goods or materials as requested or at all.

TERMS

- 18) These terms and conditions shall prevail over any conflicting provisions sought to be imposed by a purchaser.