

Association Building Compliance 2017 Conference

Raising the Bar



Fume Cupboards – The next generation

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Agenda

- TPE Pedigree
- Fume Cupboard Systems
- What Makes Good Design
- A Changing Environment



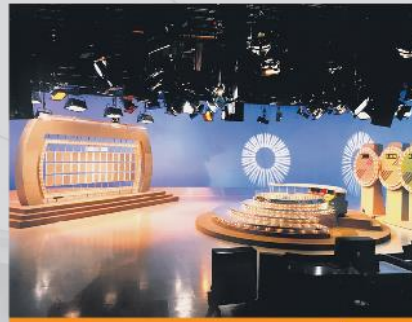
TPE Pedigree



Where it all started - 1970



The TPE Team - 1995



Wheel of Fortune



Early TPE Fume Cupboard



Laboratory Fit Outs



Large Scale Projects



Fume Scrubbing



Early Manifold System



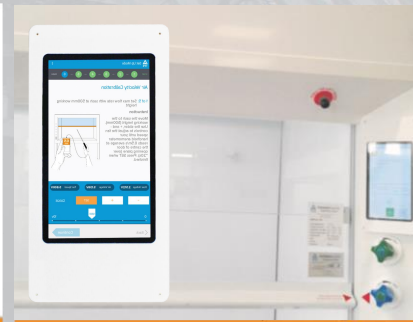
EcoSash Auto-Sash



Advanced Air Heat Exchanger



Energy Saving Technology



Touch Screen VAV Controller

TPE Pedigree

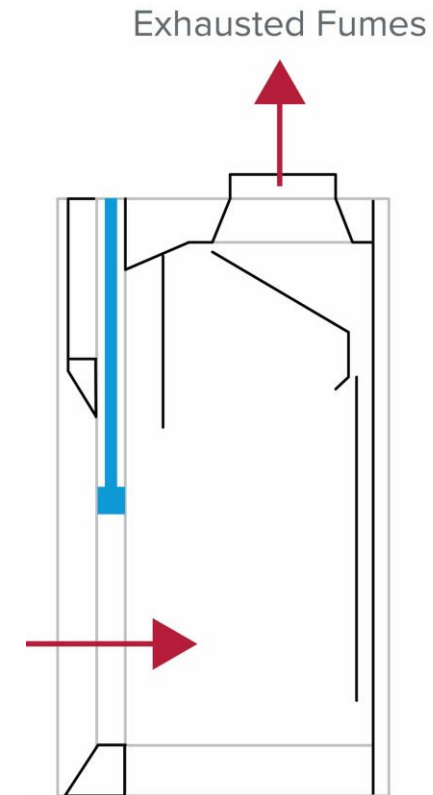


Fume Cupboard Systems

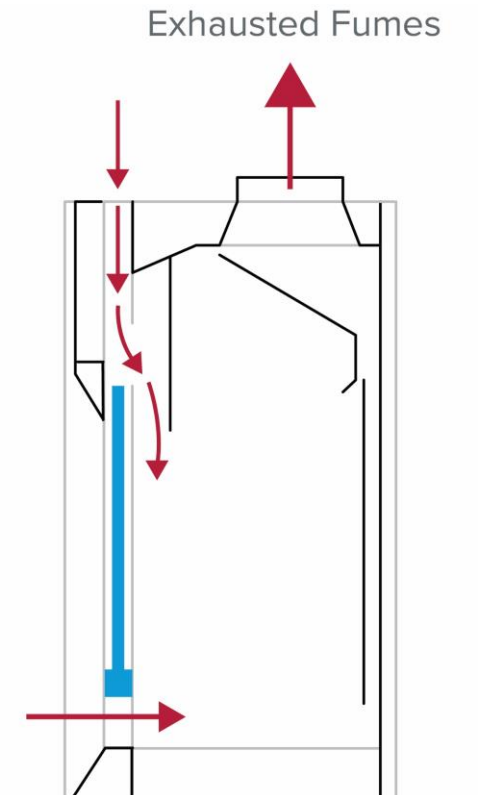
- Constant Air Volume (CAV) Cupboards and Systems
- Variable Air Volume (VAV) Cupboards and Systems
- Integrated Manifold Systems



Constant Air Volume - Fume Cupboard System

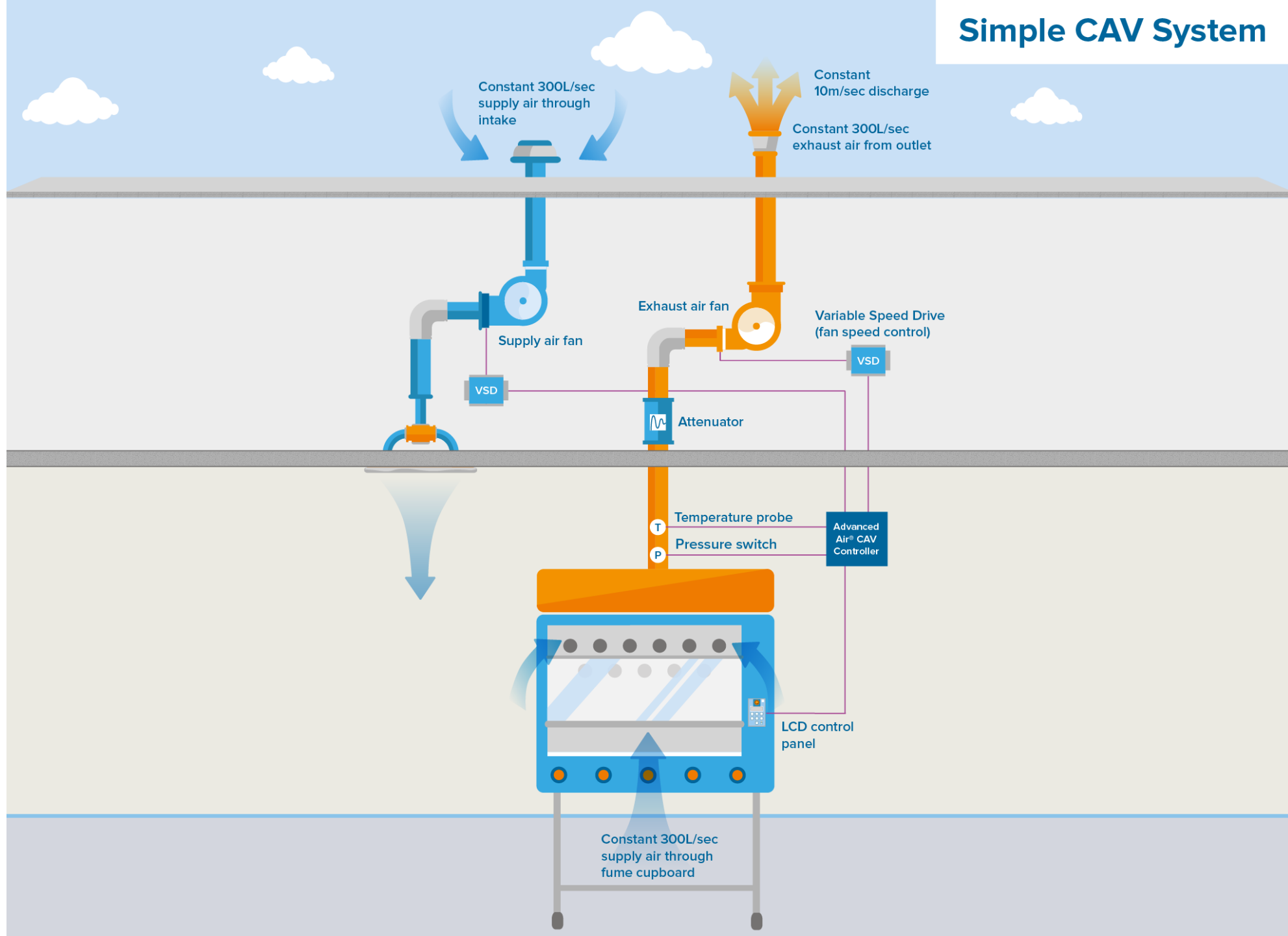


Sash in raised position
Normal working height



Sash in lowered position

Simple CAV System

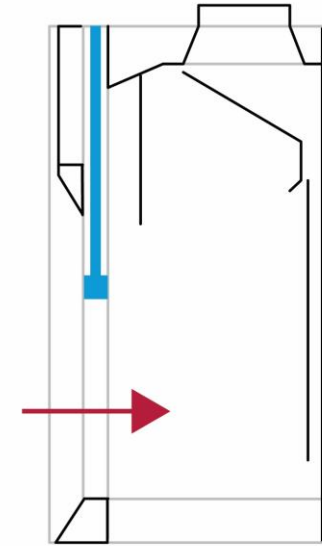


Variable Air Volume - Fume Cupboard System

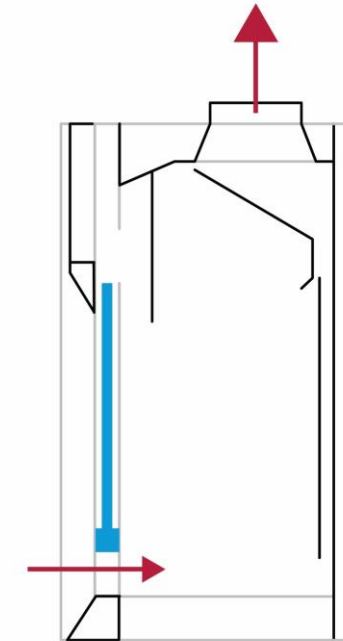


VAV system

Exhausted Fumes



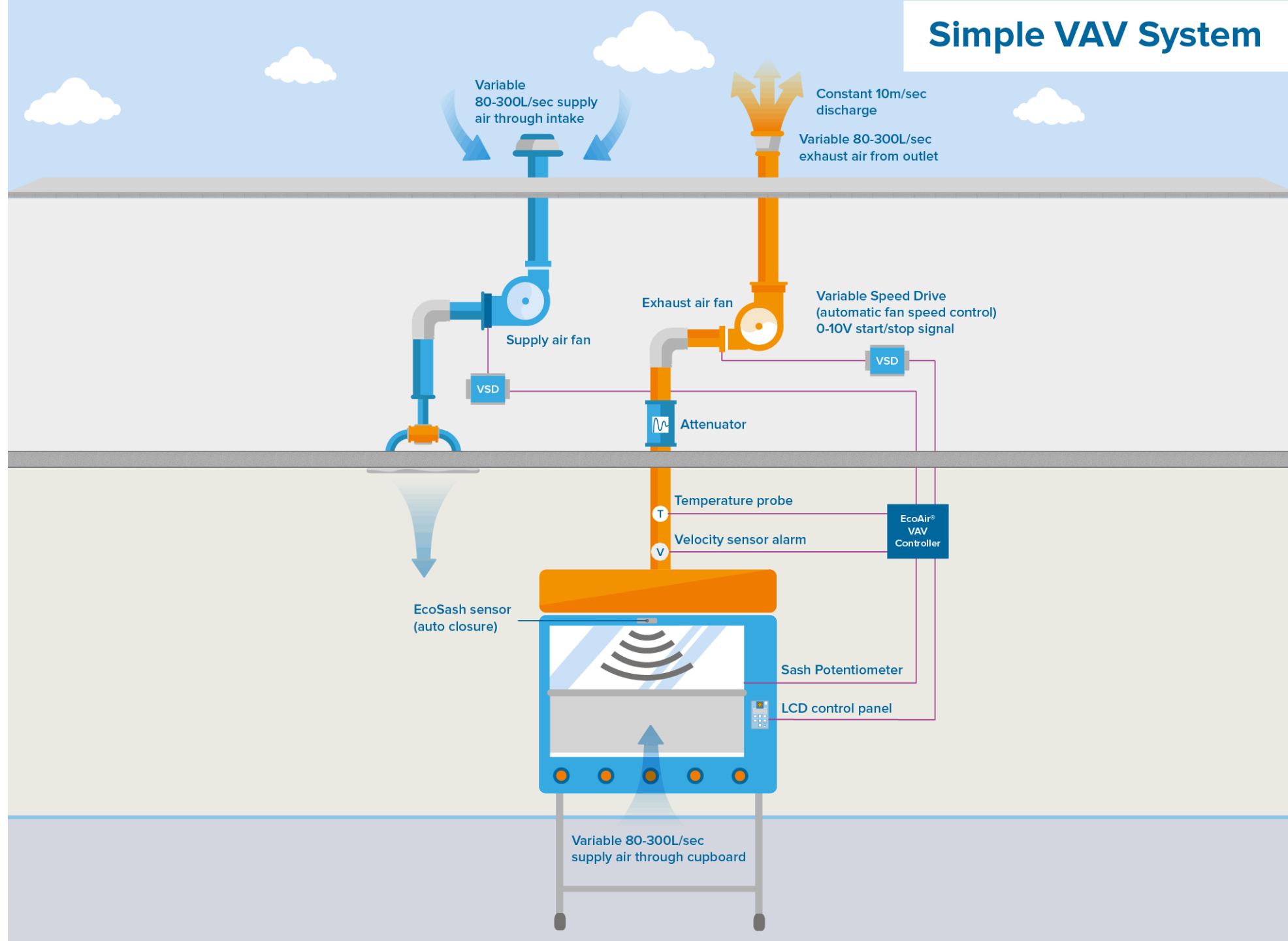
Sash in
raised position



Sash in
lowered position

Fan speed continually adjusts to suit sash height, so the required 0.5m/s face velocity is maintained.

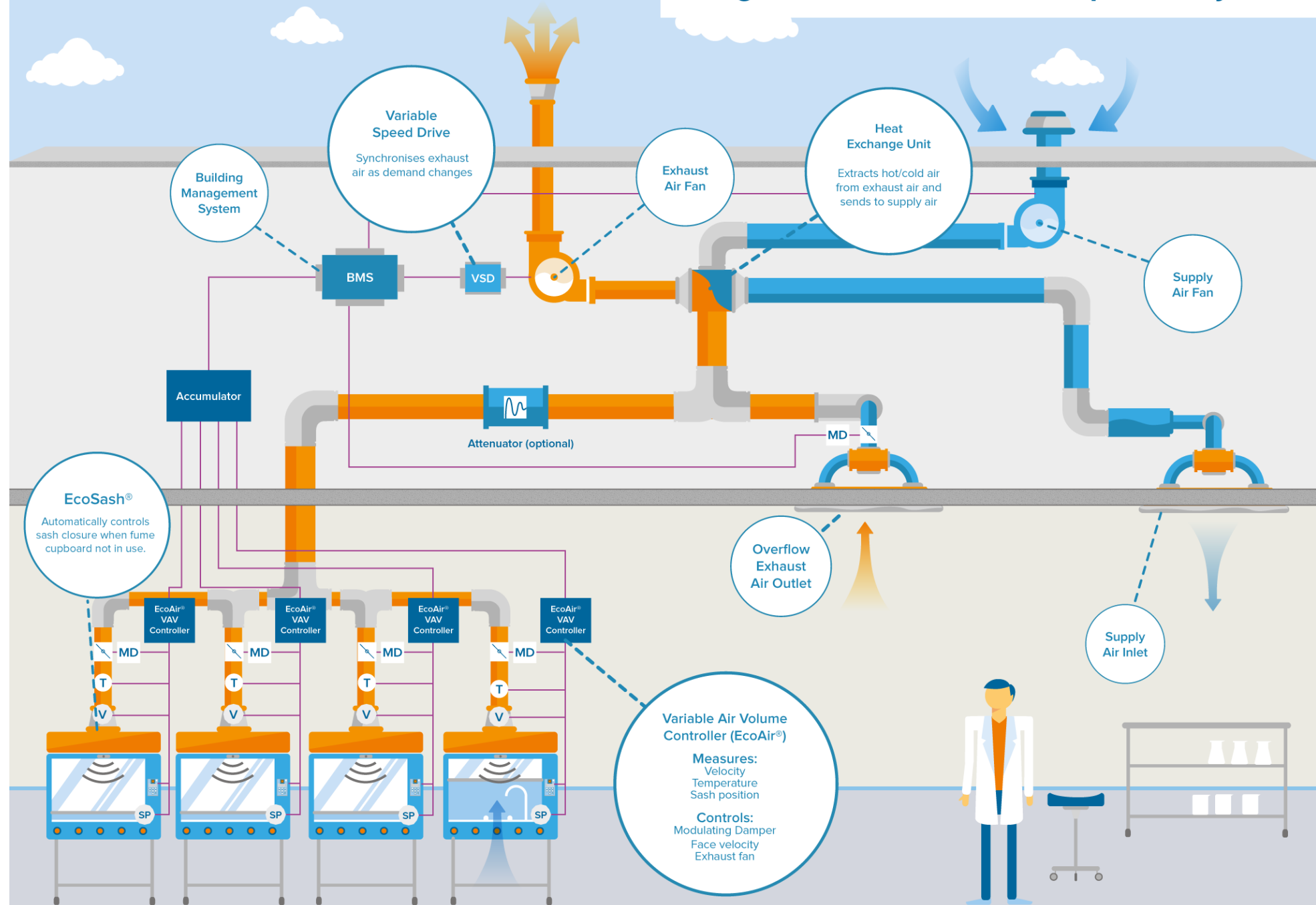
Simple VAV System



Integrated Manifold - Fume Cupboard System

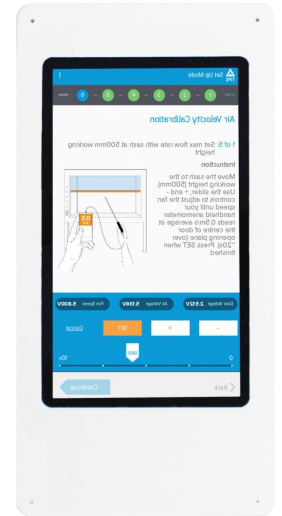


Integrated Manifold Fume Cupboard System



What Makes Good Design

- Fume Cupboard design
- Controller Design
- Best Practice Install
- Best Practice Fume Extraction System



What Makes a Good Fume Cupboard?

Minimum lighting of 400 lx at work surface

Manufactured from fire resistant & chemical resistant materials (FRPP)

Good visibility through toughened glass sash

Functional rapid sash response <10sec

RCD Protection

Clearly located emergency stop

User-friendly controller design

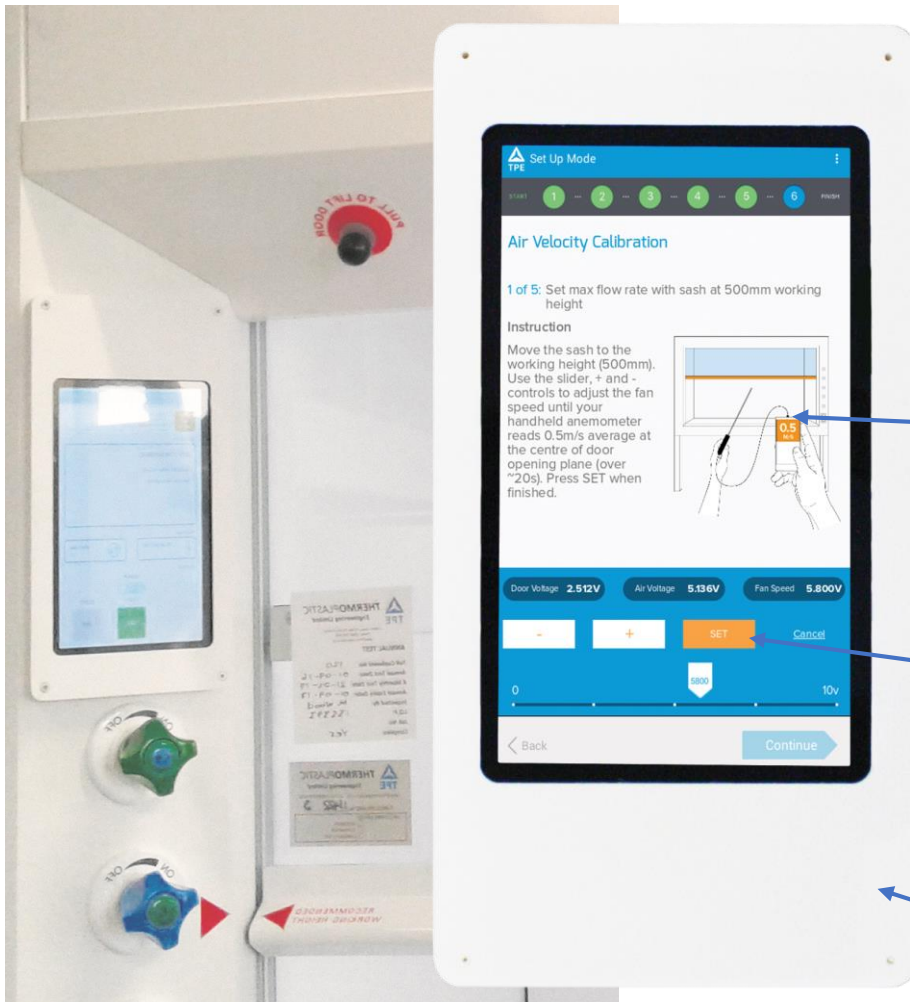
Recommended working sash height of 500mm

Well labelled FMC

Non-turbulent airflow – Minimum average face velocity of 0.5m/s at any sash position

Good results from smoke testing with minimal turbulence

What Makes a Good Controller?



Controller located at comfortable working height

Clearly located and operated emergency stop button

Full set-up and VSD adjustment possible from Fume Cupboard

Touch screen technology allows for a simplified set up and commissioning phase

Fault detection and auto shut-down

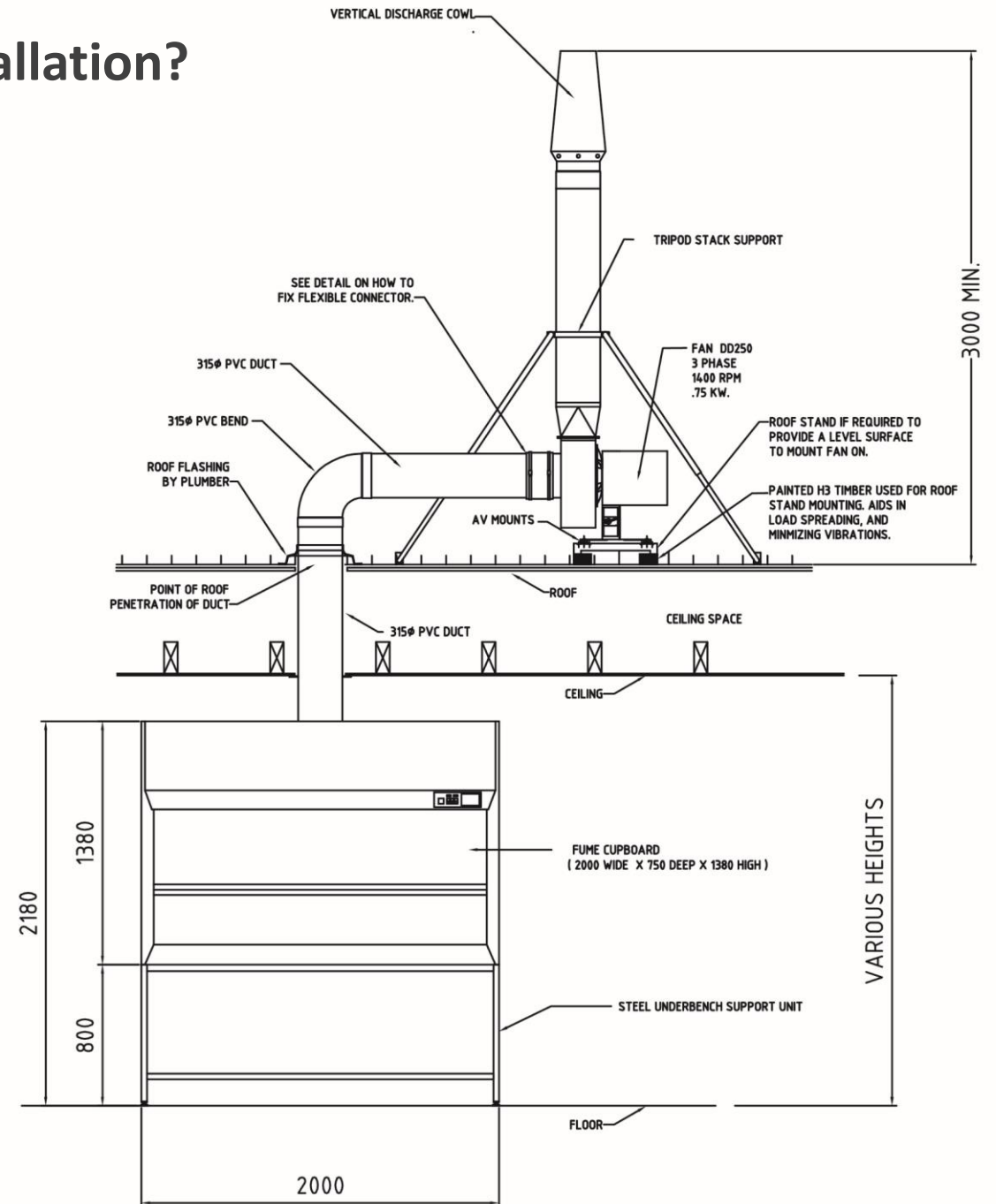


Sensitive to room pressure

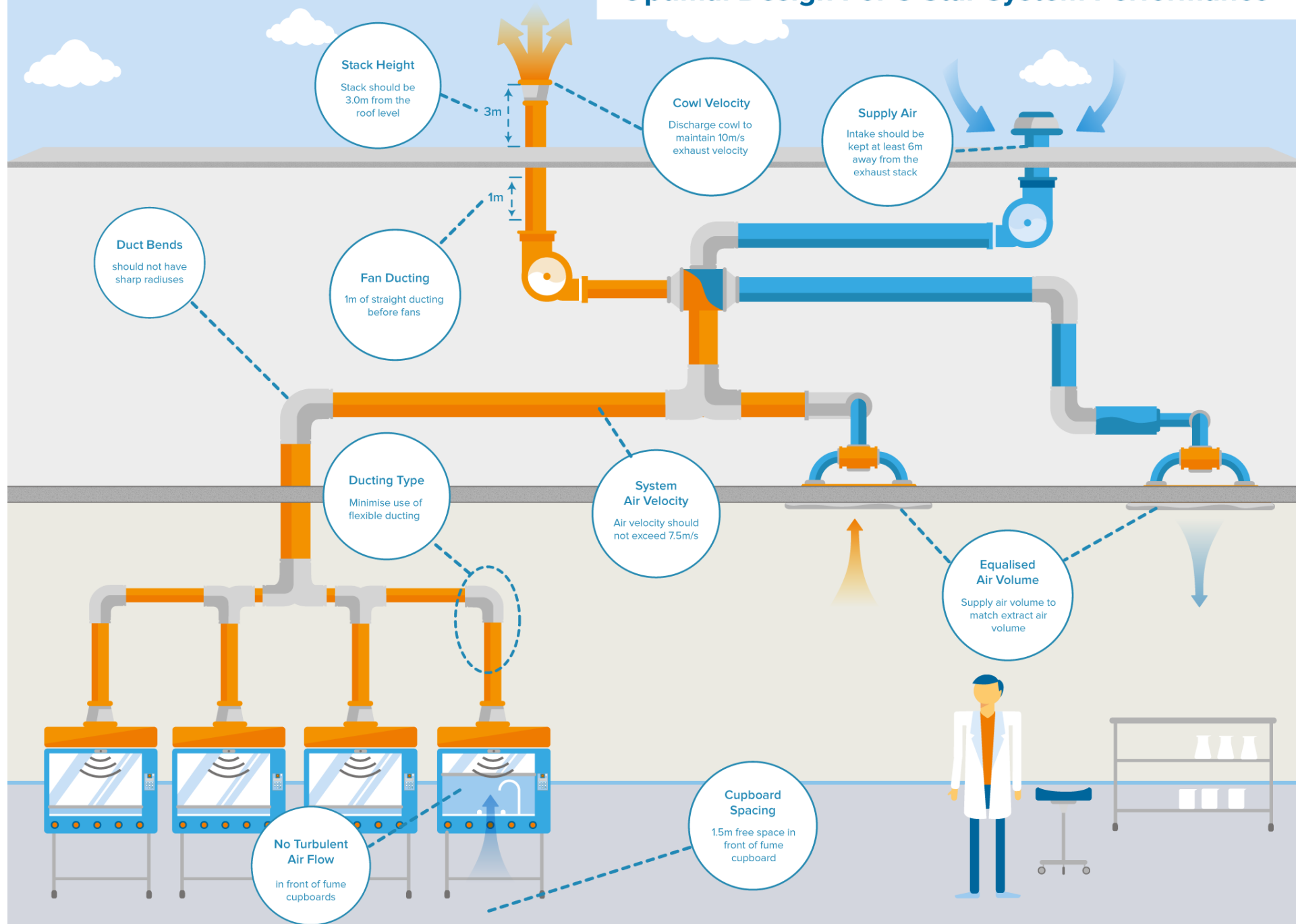
User focused functional design

Offers accurate and quick signal to BMS/VSD

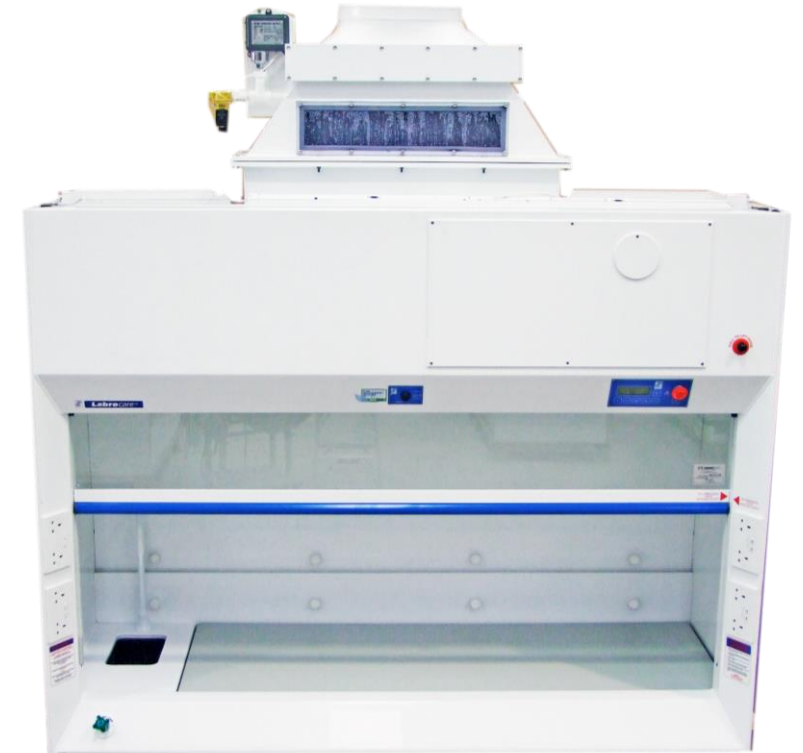
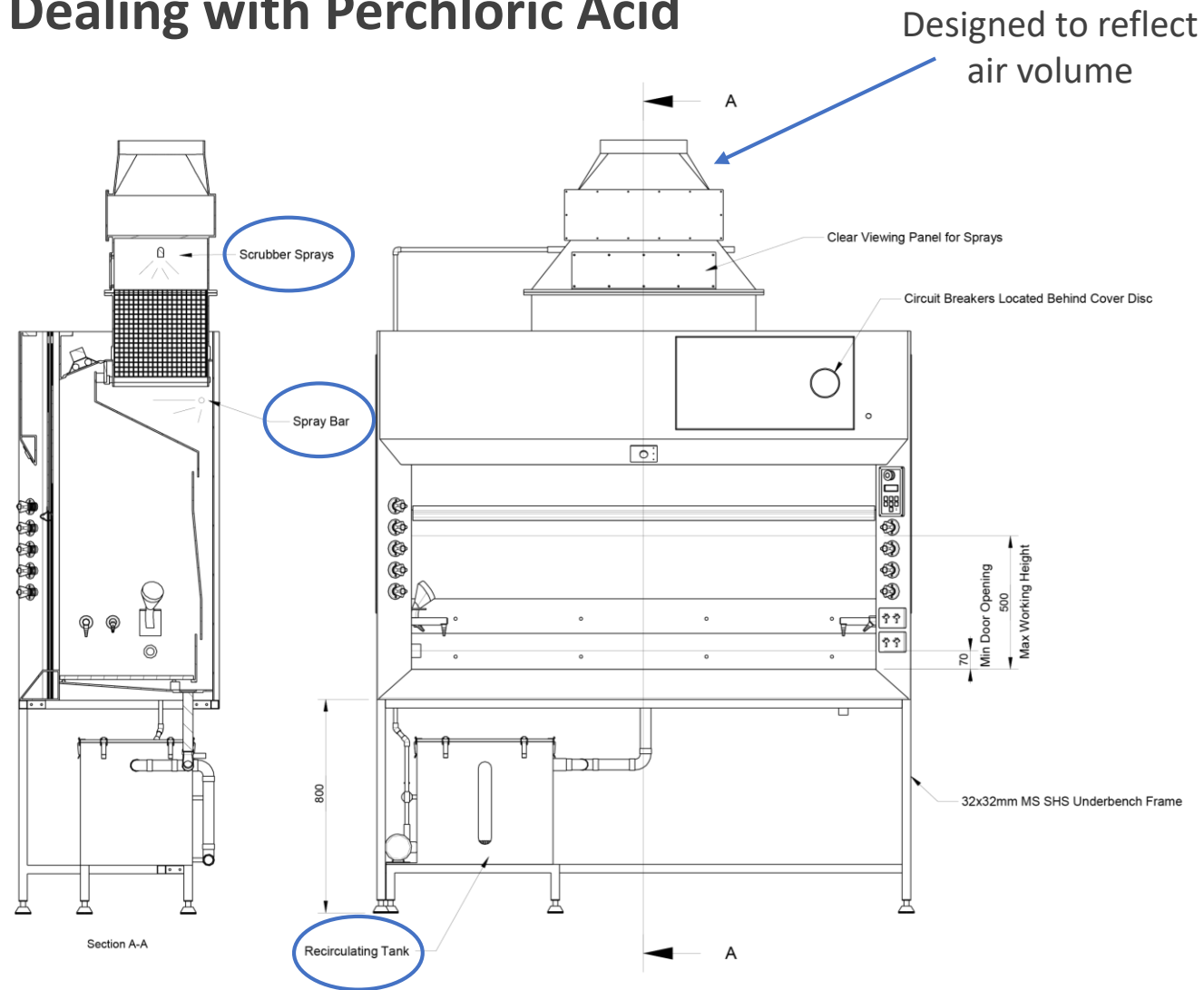
What Makes a Good Fume Cupboard Installation?



Optimal Design For 5 Star System Performance



Dealing with Perchloric Acid



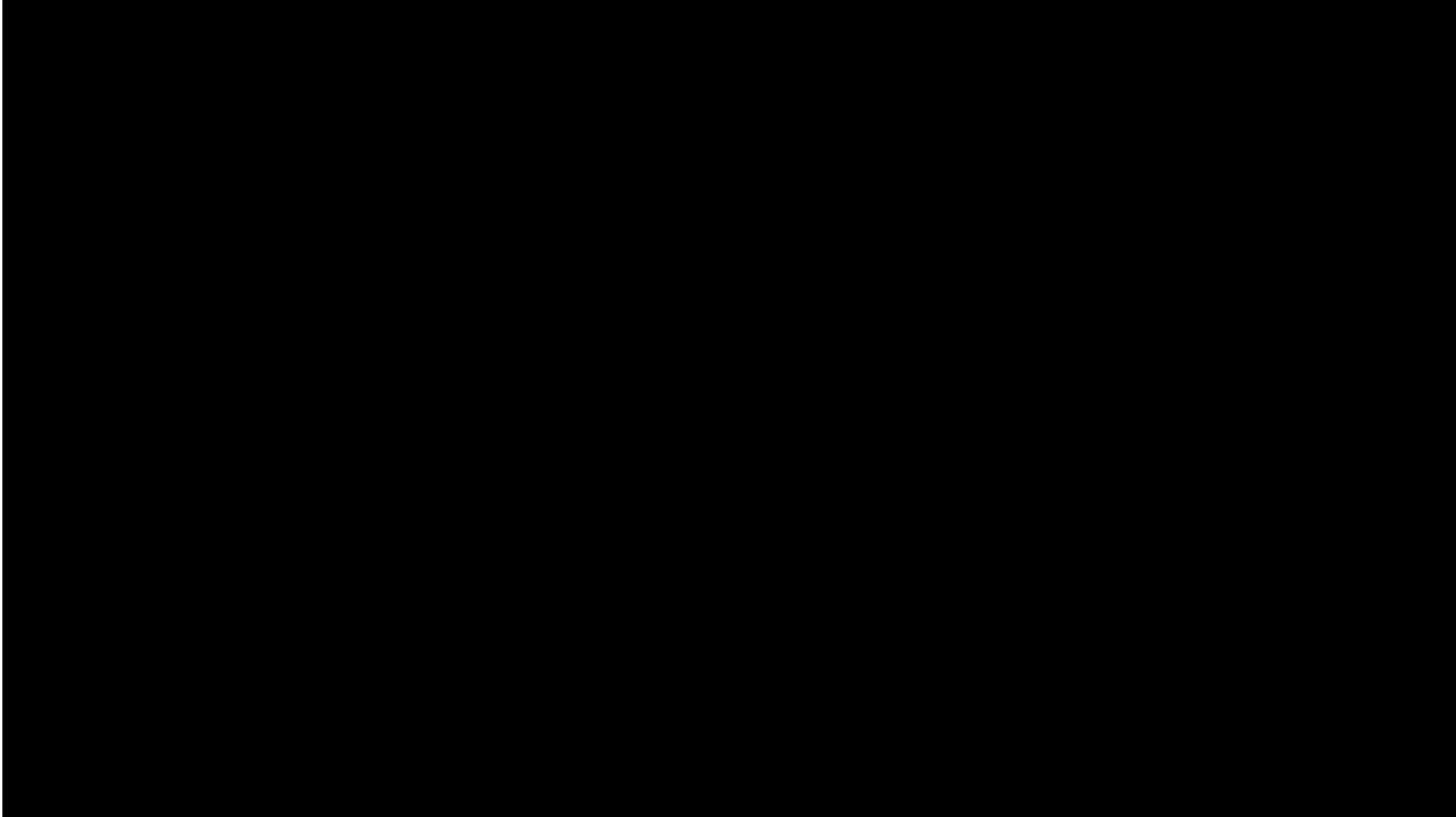
A Changing Environment



A Changing Environment - Ecosash



Where do we want to be on the world stage? - University of Auckland Video



Thank you, any questions?

