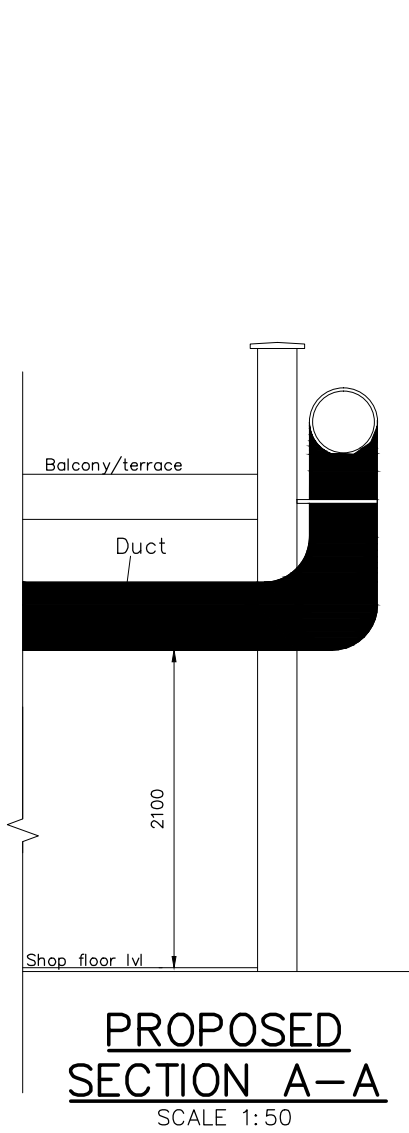
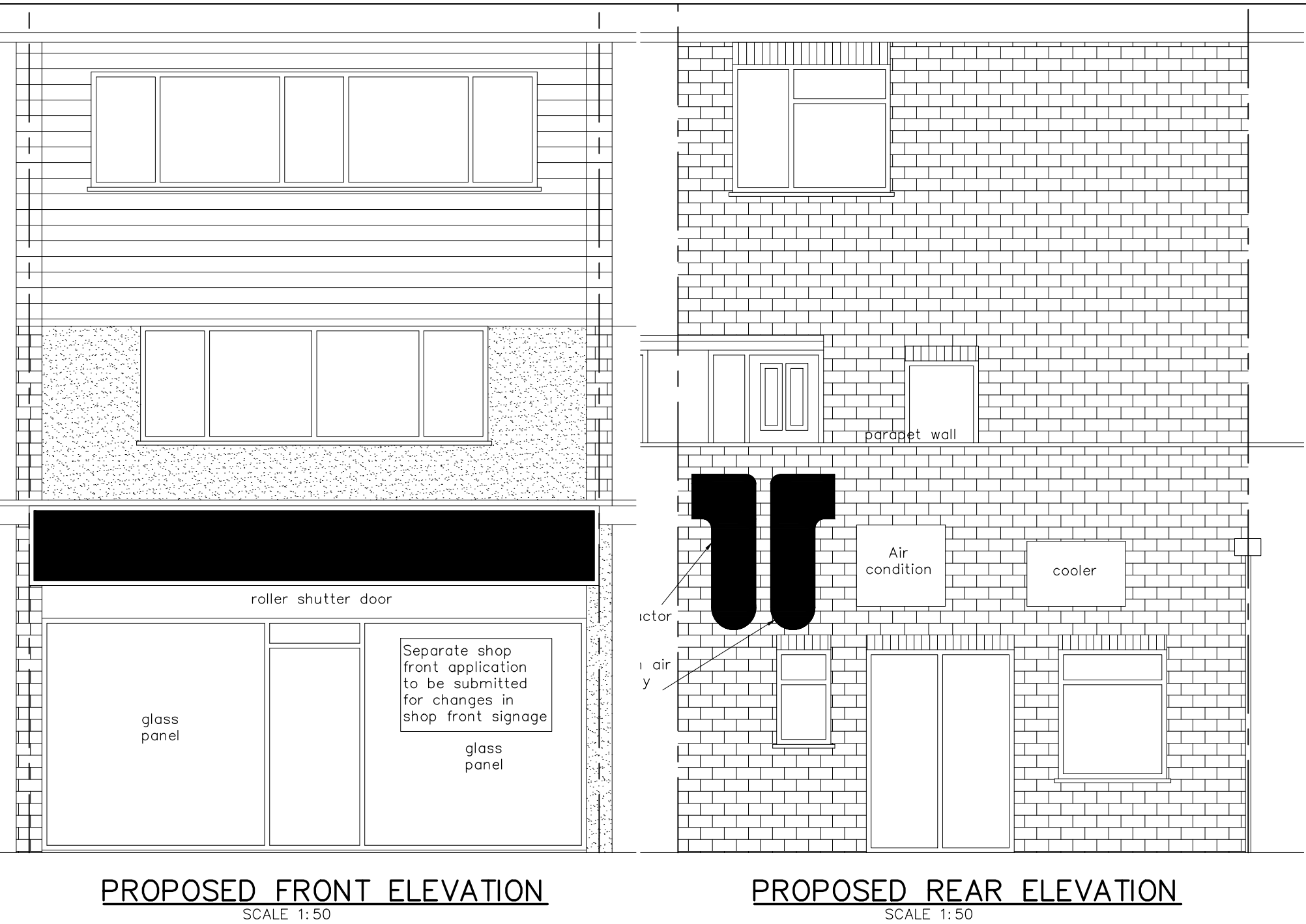
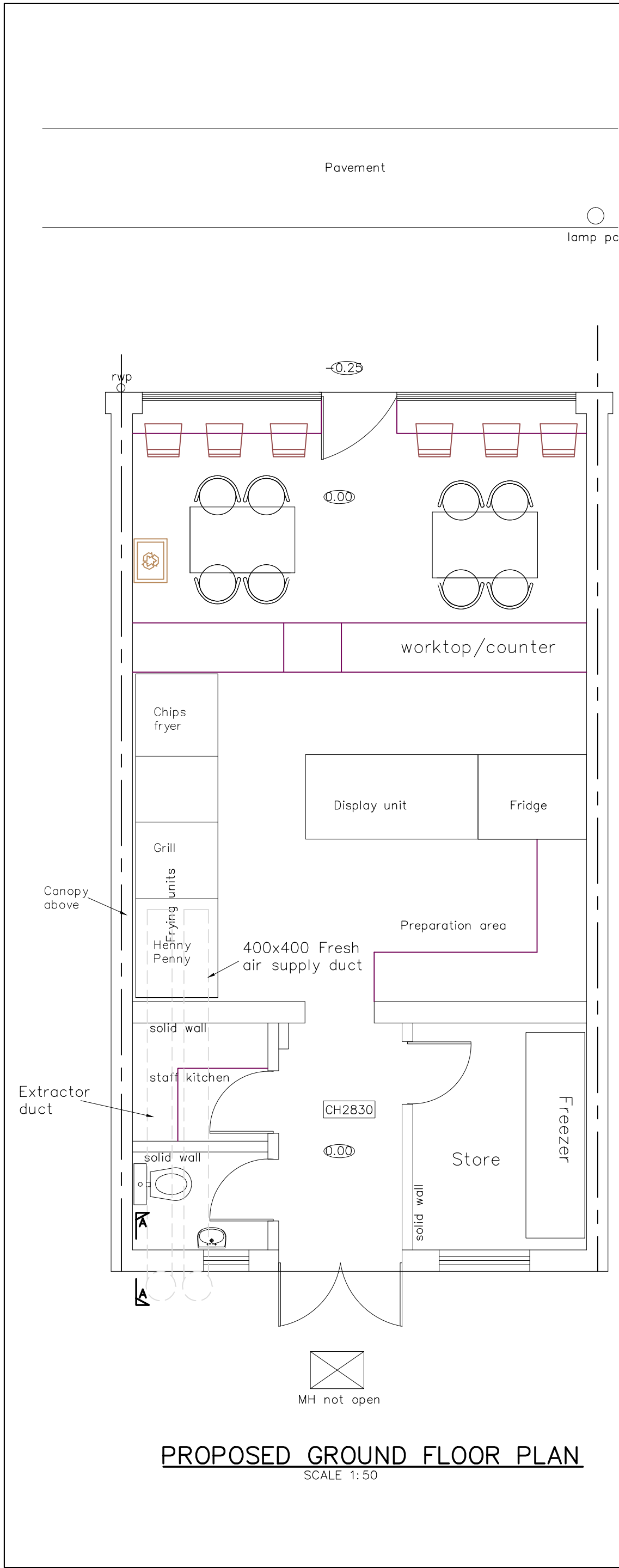




DW172 requirements for Kitchen Extraction Ducting
Kitchen Extraction DuctingThe correct standard of ductwork selected to complete a canopy installation is as important as the selection of the canopies themselves. All ductwork shall be in accordance with DW/144 specification.

When designing a kitchen supply/extract system the duct velocities shall be followed.
Eg: Main Run
-Supply: 6-8m/s
-Extract: 6-9m/s
Branch Run
-Supply: 4-6m/s
-Extract: 5-7m/s

Discharge points shall be positioned such that extracted air cannot be entered into a supply system. The ductwork shall discharge at least 1.0m above any openable window. The discharge terminal shall be open without mesh and designed to achieve an exhaust or efflux velocity of 12-15m/s, or as required by the local authority. The use of cowls which have the potential of downdraught and risk re-entry of the extracted air back into the building should not be used.

Canopy specification
Kitchen ventilation canopy shall be to specialist design, measuring 4000x1200x600. The canopy is designed in generally in accordance with DW/171. The canopy contains full length stainless steel grease filter housing. The canopy will be constructed from 1.2mm(180) thick, grade 304 stain finish stainless steel and have an all welded construction with a 50x25 perimeter condense channel. All joints and beams shall be fully welded and/or liquid tight. 5 off 500x400 heavy duty washable aluminum type grease filters are provided and drain holes punched in the bottom leading edge. Removable stainless steel grease collecting draws shall be provided within the apron of the filter housing.

For Carbon Filter details, refer to attached Airgard Type B Carbon filter specification.
Noise level to be kept to low by installing a silencer and fan will be mounted on anti-vibrant mounts and canvas connections to remove transmission noise.

Fresh Air supply to kitchen will be achieved by installing 400x400mm duct with a 1400 rpm centrifugal fan along with an air filter. Heating mechanism is required to temper the air in winter.

Sizing Canopies
Typically, the underside of a canopy should be between 2000mm and 2100mm above fixed floor level (AFFL). Note: Instances where canopies are to be mounted higher than this, the overhang dimensions should be increased by 100mm for every 100mm above 2100mm AFFL. When determining the plan dimensions of any canopy, it is important that it is large enough to provide adequate overhang to the cooking equipment. Typically, overhangs to allow are 300mm to each free side. Note: For certain types of steaming appliances and baking ovens, this should be increased to a minimum of 600mm to cope with the opening arc of the appliance door.

Calculating Extract Duties
According to HVCA DW/172 Specification for Kitchen Ventilation Systems 'The Thermal Convection Method' of calculation should be the only method used. Other methods have been included in this document (DW/172) for use only when insufficient information is available at the 'design stage'.

Thermal Convection Method
This method follows the procedure covered in the CIBSE "Guide B" expanded to include a wider range of equipment and works on the principle of each appliance having an allocated thermal convection co-efficient (air to be extracted in m³/s per m² of appliance) which are then totalled and then 'factored' for the type of canopy proposed.

Face Velocity Method
This is a provisional method when there is insufficient information to enable a calculation by the Thermal Convection Method. This method works by multiplying a 'notional' capture velocity, in m/s, to the total plan area of the proposed canopy, in m².

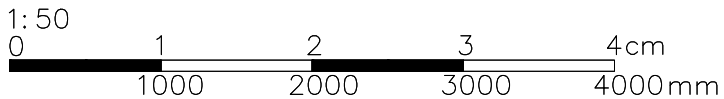
Light loading - 0.25m/s
Typically steaming ovens, boiling pans, bains marie & stock-pot stoves.

Medium loading - 0.35m/s
Typically deep fat fryers, bratt pans, solid & open top ranges & griddles.

Heavy loading - 0.5m/s
Typically chargrills, mesquite & specialist broiler units.

Air Change Method
This is a provisional method when there is insufficient information to enable a calculation by the Thermal Convection Method. These can vary widely dependent on a number of factors and therefore not recommended as a method of calculation. Whilst 40 air changes per hour should be taken as a minimum for comfort, in the absence of any other information, it is not unusual for rates as high as 60 to 120 to be encountered when high output equipment is densely located into a relatively small kitchen area.

Materials
According to HVCA DW/172 Specification for Kitchen Ventilation Systems "The only material to be used in the fabrication of canopies, in accordance with this specification shall be type 304 ultra fine grained stainless steel".



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