NAPIER CATERING
ENGINEERING
OF GRIMSBY

FLUE AND EXTRACTION DETAILS

Site Address:

1 Hawthorne Bank, Spalding PE11 1JJ

Proposed Hot Food Premises

Introduction

This report has been prepared in response to the details as requested from South Holland District council in connection with the mentioned premises address.

This report has been prepared for the purpose of the Design Criteria as set out by the Environment and Planning Department of South Holland District Council for takeaway premises to gain planning consent.

The client or his specialist contractor prior to installation of these works will submit a detailed design and full specification and certification will be provided after installation as required by the Planning Department.

The proposed submitted scheme required installation of 2 flue pipe for a canopy system and a fish frying range.

Ventilation Duct Design

Please see a breakdown below of the basic functionality of the ventilation design spec as follows:

• A good-engineered duct design should be used at all times.

• The number of bends in the ducting should be minimised.

• The ducting should have smooth internal surfaces.

•The ducting should be leak free to prevent air ingress or discharge of odours.

•Circular duct cross-sections produce less drag than angular duct cross-sections and are preferred.

•If the ducting utilises an existing or new internal flue in a building, the flue should be lined with impermeable ducting.

The ducting should be well insulated to minimise heat loss, thereby maximising thermal buoyancy of the discharge.

The flue should be positioned and fixed to minimise the generation and effects of vibration and noise. Such fixings should include anti-vibration mounts and incorporation of flexible couplings, silencers etc. in the ductwork to control noise.

The ducting to be used will be a maximum size of 400mm and 250mm.

PROPOSED SPECIFICATION FOR THE EXTRACTOR SYSTEM

The Extractor System for canopy to be used at the given site will be as follows:

• **EXISTING NOISE LEVELS**: The existing site location at the rear/roof top and given the junction will have an ambient back ground noise level in the region of 50dBA. The extractor fan will sit internally; therefore half via the installation of 2 x silencer will reduce all noise levels. Thus bringing the noise levels to 32dBA.

• **DUCTING**: Provision for future access or amends to be provided. Size to be used will be 355mm and 500mm for the large canopy system.

•**FAN:** 500mm inlet and outlet 500mm short case fan. RPM 1450 with a noise of 45 dBA. Air flow rate in excess of 3.32 m3 per sec @ 320pa to produce 50 air changes per hour within the given areas.

There will be 2 x silencer required as the motor is internally mounted onto ducting. The owner can box in the shell afterwards to reduce noise even more if required – but not recommended because its internally housed.

• **NOISE CONTROL**: Connection of 2 x 2D approved silencer (Attenuator) efflux cowl. The silencer will be manufactured from galvanised steel, lock formed and lined with 50mm thick high-density sound proofing insulation and perforated galvanised steel. Along with the Fan in the acoustical housing and the 2D silencers the sound reduction will be 32 – 34 dBA, thus giving a reduction of 26-28dBA opposed to a min requirement of 10-12dBA below the surroundings.

• **CLEANING AND MAINTANENCE**: Fortnightly deep clean of the canopy system as well as visual inspection of the ducting system. The same applies to the extraction system, deep clean weekly of steelworks and filters.

Visual inspection of the ductworks required at all times and a yearly ducting clean required.

Proposed extractor system for the fish range:

EXISTING NOISE LEVELS: The existing site location at the rear/roof top and given the junction will have an ambient background noise level in the region of 50dBA. The extractor fan will sit internally. Thus bringing the noise levels to 32dBA.

DUCTING: Provision for future access or amends to be provided. Size to be used will be 300mm all the way.

FAN: Centrifugal fan. RPM 1450 with a noise of 45 dBA. Air flow rate in excess of 3.32 m3 per sec @ 320pa to produce 50 air changes per hour within the given areas.

NOISE CONTROL: Fan will be sat internally, therefore the system is least likely create any external sound as its sat towards the front of the shop. The fan will not be required to be housed.

CLEANING AND MAINTANENCE: FWeekly deep clean of the fish range pans, and weekly cleaning of the sump box. Alsovisual inspection of the ducting system. The same applies to the extraction system, deep clean weekly of steelworks and filters.

Visual inspection of the ductworks required at all times and a yearly ducting clean required.