Northamptonshire County Council – Hot School Meals
25th July 2011

Northgate School & Arts College
Design Statement

Justification for the Scheme

By way of explanation, the Hot School Meal Plan is an NCC initiative to introduce into the Schools of Northamptonshire the opportunity to provide a hot school meal to all students/pupils in the county. There is an ambitious programme of works to target approx. 226 Schools over a 3 year programme that began in 2010. We are currently concentrating on Year 2 Schools in 2011, of which there are approx. 104 Schools being considered.

The internal kitchen refurbishment for this School consists of refurbishing the existing kitchen within the School. It is proposed to upgrade the current catering equipment and appliances, improve the overall working environment and ensure that the ventilation system for the Kitchen meets current legislation guidance.

Design

The plant is weather proof where fitted externally and the normal finish is galvanised steel. This particular AHU plant will be installed at ground floor level adjacent to the kitchen and surrounded by ‘hit and miss’ type timber fencing. The kitchen is approximately 15m away from the site boundary which then backs onto a recreational park.

The kitchen ventilation systems have been designed to comply with current Health and Safety legislation and Building Regulations Approved Document Part F requirements.

Current legislation requires the safe removal of fumes and other gases/vapours that may pose a health issue to the operatives or be harmful to the building and its contents with regards to moisture etc.

The size of the ventilation equipment is dependent on the equipment being used within the kitchen and is closely controlled.

Associated plant also has to comply with noise limitation for the operatives (Noise at Work Act) and the efficiencies of the plant have to comply with Approved Document Part L of the Building Regulations legislation to ensure that fan energy is optimised to reduce lifetime running costs.

Relevant Planning Policies

The proposals for the external AHU plant feeding the new Kitchen ventilation comply with Local Plan Policy E20 of Northampton Borough Council in the following ways:

- The AHU plant is situated at ground floor level and will be surrounded by ‘hit and miss’ type timber fencing to deter vandalism and view of the plant.
- The units are specified as one of the most energy efficient and quieter models on the market. The data for the noise generation can be seen within section 10 of the Ventilation and Extract Statement document supplied.
- Material finishes of the units are galvanised steel and powder coated grey to be sympathetic with the character of the building.
- The existing kitchen ventilation is non-compliant with current Regulations and the AHU plant has been designed and specified to meet these Regulations and improve the kitchen working environment for staff.

**Smells**

With regards to odours, we would assume that the catering loads in each instance have not altered and so odours leaving the kitchen should be no worse than previously experienced.

We would advise that the new plant will be more effective at removing the building up of fumes and odours and these will inevitably create a smell. The distance and prevailing wind will carry these to any adjacent location.

If necessary, we can fit raised exhaust ducts that will discharge the odours to a higher level. This obviously will have an impact on the aesthetics which is also a consideration.
Ventilation & Extraction Statement

Refurbishment Kitchen

Northgate School Arts College,
Queens Park Parade, Northampton
NN2 6LR
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Section 1 – Information on Premises

Number of meals per day: TBC

Methods of preparation & cooking: The methods of cooking will be predominantly gas fired oven/hob and Steamer.

Types of meal served: The kitchen will be required to prepare fresh food for cooking.

Proposed hours of operation: 1000 – 1400hrs

Section 2 – Plans & drawings

See attached for plans and elevations of proposed kitchen services.

Section 3 – Pre Filters

Not applicable to this site

Section 4 – Electrostatic Precipitators

Not applicable to this site

Section 5 – Carbon Filters

Not applicable to this site

Section 6 - Odour Counteractant or Neutralising System

Due to the nature of cooking, based on the equipment being installed, the occurrence of odours will be minimal. The velocity of the extracted air will be such that any odours that are produced will be dispersed and mixed into the surrounding air.

Section 7 – Cooker hood

A supply and extract cooker hood is proposed to extend over the full length of the equipment, overhanging by a minimum of 250mm. Dimensions of the hood are 2425x2900x490. The hood has the following:

Full length double sided triangulated grease filter housing to retain Superstream baffle type grease filter panels handling a total extract volume of 0.62m³/sec against a resistance at the duct connection spigot of 110N/m². The housing has integral grease collection system with removable drawers. The filter panels are suitable for cleaning within most commercial dishwashers.

Internal sloping skin on two sides forming insulated supply air plenum chambers with Britannia stainless steel diffuser panels to deliver 0.52m³/sec externally at low velocity. The diffusers are fitted with synthetic dust filter media and the panels are easily removed for maintenance.

Section 8 – System Operation

Extract rate: 0.62m³/s
Supply: 0.52m³/s

The velocity of the extracted air leaving the system is 6.44m/s.
Section 9 - Flue Design
The kitchen exhaust is located on the roof in a similar location to the existing extract fans. The final discharge is horizontal with a 45° louvre.

Section 10 – Noise

Extract Fan

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<th>Fan Power</th>
<th>Fan Speed RPM</th>
<th>Sound Spectrum dB re 10^(-12) w PWL Centre Frequency Hz (63 125 250 500 1k 2k 4k 8k)</th>
<th>Sound Pressure Level dBA @ 3 metres from outlet</th>
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Insertion Loss Table

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Supply fan

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<tr>
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Section 11 – Maintenance
Filters for the AHU and kitchen canopy will be cleaned/replaced in accordance with the manufacturers’ recommendations.

Section 12 – Additional Information
The make up air for the kitchen will be supplied via a roof mounted AHU. This will be directly supplied to the kitchen canopy.