HOT SCHOOL MEALS ADDITIONAL DESIGN
INFORMATION STATEMENT

for

Proposed Extension and internal alterations to Existing Primary School to establish a permanent extended services provision, hot meals service and new Children’s Centre

at

Wootton Primary School, Farm Close Road, Wootton, Northampton, NN4 6HJ

for

Northamptonshire County Council

prepared by

PHP Architects

19 April 2011
Supporting Statement

This statement supports the enclosed updated Elevations and plans 3814/01 T2 and 3814/02 P3 which reflect the addition of the Hot School Meals Kitchen Fitout and associated Mechanical design requirements. These drawings also reflect part of the details required under conditions 9 & 10 of the Planning Approval.

The final kitchen design has resulted in a roof mounted galvanised kitchen extract fan unit.

Visual - From certain aspects this may seem to be a prominent addition, however within a school environment and relative to the existing school buildings and existing services, it does not sit completely out of context. If in the future further treatment is required a solution would be to paint the unit grey to match the roof membrane or install louvred screens.

Noise External -
The roof fan has been set to an optimum running level to reduce the noise generation in order to prevent potential disruption to the neighbourhood. From an actual on site running condition and site assessment, the noise at the school boundary is well within any existing background noise such as passing traffic.

The enclosed fan data sheet giving the db rating of 46 dba @3m is generally based on worst case or ‘raw’ levels. Fan speeds, ductwork design, height above ground all help to reduce these levels at source.

If in the future it is found there is a problem with noise then a survey would be required to compare against background noise and further attenuation and/or louvred acoustic screens could then be provided.

Noise Internal –
An additional fan is situated internally within the extract hood / ceiling void. At maximum/worst case levels (46db), a minimal sound outbreak into the adjacent tea kitchen and corridor could result, based on the internal walls achieving a min 42db rating.

At the optimum set running conditions, noise generated will be below 42db and contained within the room. Based on an actual site running condition assessment, there was no apparent noise outbreak.

It should also be noted the operation of the Kitchen/extract will be at certain times and only during school hours.

Odour – The operation of the Hot Meals Kitchen utilises 2 regeneration ovens as the only ‘cooking’ equipment. There is no requirement for stove top / griddle frying or deep fat frying which would produce more rancid fumes.

The extract will cater primarily for heat extract, odour from the ovens, and general room ventilation.

If in the future it is found there is a problem with odour a solution would be to install a Plasma Neutraliser Unit within the kitchen space that is connected to the main duct.
It should be noted the Kitchen requirements formed part of an ongoing design with the exact Mechanical requirements unknown at the beginning of the project. While all efforts were undertaken to retain all Mechanical elements internally within the building, the final Mechanical design required the one air extract fan to be located upon the roof.

The building design still however retains the design ethos as outlined in the statement below.

‘Design approach:
Under the Northampton Local Planning Policy E20 the design approach to the project has been carefully considered in order to minimise the visual impact of the new build within the context of the local surroundings regarding scale, form and use of materials whilst still providing for the specific needs of the Extended Services provision, hot meals kitchen and Children’s Centre. While this new provision has resulted in services to ventilate and provide extract to the new kitchen, they have been designed to minimise noise and odour emissions.
The design ethos also takes into account the core strategy as outlined in the East Midlands Regional Plan Policy 2 which promotes better design to reduce CO2 emissions and the use of sustainably sourced materials. Under Policy 45 - Traffic Growth Reduction, means to reduce vehicle traffic and promote alternate means of transport have been addressed to minimise the impact within the surrounding community.

The new extension consists of matching brick and flat roof elements, while providing interest and uplift with additional rendered panels in 2 contrasting colours. This creates a modern and contemporary focal point upon entry to the site distinguishing the Children Centre from the school buildings while still complementing the existing buildings.’
Technical Data

**AX - Axus Circular, GRP Blades**
Circular Cased Axial Fan

**Fan Code:** AX40D-411
**Installation Manual Links:** 671220

**Required Duty:** 0.33 m³/s @ 100 Pa
**Actual Duty:** 0.37 m³/s @ 125 Pa
**Actual at Required Flow:** 0.33 m³/s @ 134 Pa
**Nominal Fan Speed:** 4 Pole 1,400 RPM
**Electrical Supply:** 1 Phase
**Nominal Motor Rating:** 0.12 kW
**Motor Current:** flc: 1 A, sc: 2.9 A
**Overload Setting:** 1.1 A
**Max. Operating Temp.:** 55°C
**Weight:** 17 kg

**Sound Data**
Acoustic performance to BS848 Part 2.2 and AMCA 300.

**Breakout Noise (dBA):** 46 dBA @ 3m
**Breakout level is spherical. For hemi-spherical add 3 dBA.**

**Sound Power Levels re 1 pWatts (Hz):**

<table>
<thead>
<tr>
<th>Hz</th>
<th>63</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1k</th>
<th>2k</th>
<th>4k</th>
<th>8k</th>
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</thead>
<tbody>
<tr>
<td>Induct Inlet</td>
<td>76</td>
<td>78</td>
<td>80</td>
<td>68</td>
<td>64</td>
<td>61</td>
<td>56</td>
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<tr>
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<td>57</td>
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<tr>
<td>Open Inlet</td>
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<td>71</td>
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<td>72</td>
<td>77</td>
<td>66</td>
<td>63</td>
<td>61</td>
<td>57</td>
<td>51</td>
</tr>
<tr>
<td>Breakout</td>
<td>73</td>
<td>73</td>
<td>74</td>
<td>61</td>
<td>52</td>
<td>49</td>
<td>41</td>
<td>27</td>
</tr>
</tbody>
</table>

**Noise calculated at actual duty of fan.**
Above noise calculated speed controlled to required duty (89.2%)
**For 100% Speed:** +1 +1 +1 +2 +2 +2 +2 +2 +2
**Breakout Noise (dBA):** +1

**Values shown are for inlet Lw and outlet Lw sound power levels for:**
Installation Type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

**Wiring Information**
For complete wiring details please refer to the Installation & Maintenance Manual reference 671220 on our website.

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**Project Details**

**Location:** - option 2

**Selected Ancillaries**
- 1 x NAV2 - Anti-vibration mounting kit
- 1 x CMB40 - Mounting bracket (pair)
- 2 x CMF40 - Matching flange
- 2 x CFC40 - Flexible connector
- 1 x SPCON3.5 - Auto transformer speed control single phase

**SPCON3.5 - Auto transformer speed control single phase**

**Specification**
Axus circular inline axial flow fan manufactured from pre-galvanized mild steel for sizes 250-1250 diameter. 1400 diameter and above are manufactured from mild steel with hot dip galvanized finish. Fan incorporates inlet and outlet flanges with pre-drilled bolt holes, and an external terminal box to IP55. The motor is totally enclosed and protected to IP55, foot mounted class ‘F’ insulated and has sealed for life ball bearings. Blades manufactured from injection moulded GRP mounted in a die cast aluminium alloy hub as standard.

**NOTE:** This unit cannot be inverter speed controlled.

**NAV2**
Resilient rubber anti-vibration mountings, supplied as a set of 4.

**CMB40**
The mounting brackets are manufactured from heavy gauge galvanised steel and supplied in pairs.

**CMF40**
The matching flanges are manufactured from galvanized steel and are supplied individually.

**CFC40**
Circular flexible connector without flanges. Flexible duct material is flameproof and resistance to heat up to 132°C, chemicals, ozone, oil and grease. The material is airtight, waterproof and tested to BS476 Part 7. Supplied complete with fixing straps.

**SPCON3.5**
Auto transformer speed control with ‘F’ insulation used to provide discrete voltage steps. Fitted with suitable fuses for short-circuit protection. The controller casing is manufactured from plastic pre-coated steel or impact resistant polycarbonate. Suitable for indoor installations only. Controller meets LVD and EMC directives for safety and electromagnetic compatibility.
Technical Data

AX - Axus Circular, GRP Blades
Circular Cased Axial Fan
Fan Code: AX40D-411

| Required Duty: | 0.33 m³/s @ 100 Pa |
| Actual Duty:   | 0.37 m³/s @ 125 Pa |
| Actual at Required Flow: | 0.33 m³/s @ 134 Pa |

Performance Curve

Volume Flow Rate (m³/s) vs. Static Pressure (Pa)

- Curve speed controlled to required duty (89.2%)

Project Details

Location: option 2
Technical Data
Circular Cased Axial Fan
Fan Code: AX40D-411

Project Details
Location: option 2

F = No. of G dia holes equi-spaced
On H p.c.d.

Unit shown supported on optional mounting
brackets and A.V. mounts

Ancillary Dimensions

NAV2 - Anti-vibration mounting kit
B=45  C=75 mm

CMB40 - Mounting bracket (pair)
G=270  H=290 mm  Weight: 2 kg

CMF40 - Matching flange
A=65 mm  Weight: 2 kg

CFC40 - Flexible connector
B=150 mm  Weight: 0.5 kg

SPCON3.5 - Auto transformer speed control single
phase
A=315  B=185  C=105 mm  Weight: 3.8 kg

The drawing is for dimensional purposes only. Dimensions in mm.