

## CONSULTANTS SPECIFICATION

### SYSTEM SPECIFICATION

The ventilation fan Unit shall be configured and arranged as detailed on the drawings and in accordance with the schedule of equipment and shall be of the Airmover type as manufactured by Nuair. The units shall be manufactured from a highly rigid pentapost framework with 25mm double skinned infill panels. The panels shall contain inert high density infill. Panel materials are heavy gauge Aluzinc corrosion resistant steel. The units shall provide exceptional thermal and acoustic insertion. The very low breakout noise level through the unit casing must not be exceeded. The general construction is to class A leakage.

The fan impeller and motor shall be selected to provide the most energy efficient solution conforming to part L regulations and shall be direct drive with IE2 high efficiency motors to EN60034-30 as standard. The fan impeller shall be a high efficiency backward curved centrifugal design, manufactured in galvanised steel.

The contractor shall allow for all necessary ductwork transformations to and from the fan unit and any associated components in accordance with the manufacturers recommendations, DW 144 and general good practice.

All other components shall be in accordance with the manufacturer's specification.

The unit and ancillaries shall be of the Airmover type as manufactured by Nuair Ltd.

### CONTROL SPECIFICATION

The fan unit shall be supplied with one of the following control options:-

#### 1. ECOSMART CONTROLS

The compact Ecosmart control system complete with all necessary controls to facilitate the operation of the ventilation system. It shall be come complete with an integral factory fitted Ecosmart PCB which will control the fan unit within the desired design parameters and provide the interface between all external control devices and the unit itself.

The fan unit shall have the following energy saving components integrally mounted, pre-wired to interface with the purpose made PCB, all components pre-wired, configured and factory fitted by the manufacturer: -

- Integral Frequency inverter/speed controller.
- Integral maximum and minimum speed adjustment for commissioning.
- Integral adjustable run on timer.
- Integral BMS interfaces – 0-10V speed adjustment.
- Integral BMS interfaces – Volt free failure and status indication.
- Integral background ventilation switch (trickle switch).
- Multiple IDC sockets for interconnection of sensors or fans using pre-plugged 4-core low voltage cable.

The Ecosmart controls will enable the unit to automatically vary its speed as it receives signals from one of the interconnected sensors. When the signal is received the fan shall either increase speed gradually until the required level is achieved or it will work on a trickle and boost principle. This will then move the fan duty point from trickle/background ventilation rate to the required boost ventilation rate. Both the trickle and boost rates are infinitely variable, easy to adjust and remove the need of a main balancing damper.

#### 2. BMS INTERFACES

The fan unit shall be provided with the following integrated BMS interfaces

- 0 - 10 volt contacts to provide a full BMS interface. This will enable the following functions:-
  - Switch the unit on/off.
  - Switch from low speed to high speed.
  - Full speed control facility.
- 2 No. Volt free contacts to provide fan run and failure indication to provide system status.
- An integrated commissioning/speed control to accurately commission the system, with minimum and maximum speeds easily adjusted via a miniature dial, as recommended in Part L. This will enable the unit to be configured to run between set parameters thus saving motor power and limiting noise.

#### 3. COMMISSIONING SET UP

The fan unit shall be provided with an integrated commissioning/speed control to accurately commission the system, as recommended in Part L, minimum and maximum speeds easily adjusted via miniature dial. The commissioning set up facility directly controls the integrated speed control/frequency inverter.

#### 4. STANDARD CONTROLS

The unit shall be provided with a standard speed control or starter in accordance with the manufacturer's recommendations.

The Fan unit shall have a 3 year warranty.

Ecosmart Airmover shall have a 5 year warranty.

All equipment shall be as manufactured by Nuair Ltd.