

## SUNWARM

### Consultants Specification

#### System description

The Nuair Sunwarm solar assisted ventilation and hot water system shall be in the form of a flat plate solar air collector using selectively coated absorber with minimum resistance to air flow, encased in sturdy powder coated aluminium frame structure with aluminium back capable of in roof and on roof installation. The solar air collector must incorporate an integral flashing system for in roof installation. The solar air collector shall have 2mm thick polycarbonate cover and should have passed BSEN 12975 tests. The solar air collector must be well insulated using an approved sustainable insulation material.

All external fitting components should be made of stainless steel, galvanised steel or Aluminium to avoid corrosion. The solar air collectors must be well insulated to reduce heat losses and must include an over temperature protection not to exceed 100 degrees Celsius. The weight of each collector should not exceed 50Kg.

Inlet and outlet connections are preferred to be on the back side for easier and more aesthetically pleasing connection in series.

The solar system shall use DC powered fans and low noise low wattage dampers. The electronic controls must be easy to use and not require programming and must include automated and integrated approach to provide warm air as well as fresh or conditioned air cooling. Remote data logging capability must be built in or optionally available for performance verification.

Data logging with the Datastore is an option.

The unit shall be supplied with a user control panel and interconnecting cable. The user control shall allow selection of on/off, auto/boost and target temperature. The user control shall display system temperatures, low flow mode by time or temperature, seasonal settings and engineer mode.

The solar system shall include a solar station utilising a solar rated circulating pump, a flow meter, easily accessible points for pressure filling the solar loop, temperature and pressure gauges, an air separator and a temperature and pressure relief valve. The system shall also include as a minimum an 18 litre solar rated 10 bar expansion vessel. All terminal connections from solar station must be in 15mm or 22mm compression fitting. Appropriate Glycol premixed solution must be supplied.

#### 3 Part Air Handling Unit

The unit casing shall be manufactured from thermally lined galvanised steel and shall incorporate 4 no. suspension eyelets to aid installation.

The casing shall have an easily removable panel to allow access for maintenance. The unit shall incorporate filters of G4 grade with an area of approximately 0.47m<sup>2</sup>.

The unit shall incorporate a forward curved centrifugal impeller and high efficiency brushless DC motor fitted with sealed for life, self lubricating bearings and locked rotor protection.

The unit shall incorporate 3 no. air inlet spigots, each with an integral damper, to allow air to be drawn into the unit from any one or two positions within the roof space.

The unit shall be supplied with a purpose designed polymer diffuser for efficient, directable air input using side blanking pieces supplied. The diffuser design shall minimise the accumulation of any condensate run off that may occur in the event of power to the unit being switched off. The diffuser shall have been independently assessed for behaviour in relation to fire and adjacent smoke detectors.

The ducting between the unit and the diffuser and the various roof inlet positions shall be supplied by the installer.

The unit shall be supplied with all the necessary temperature sensors and interconnecting cables. The unit shall incorporate 6 volume control settings for maximum flexibility and occupant comfort.

An internal monitor shall record the unit's operational time.

The unit shall be offered with a 5 year warranty.

For information on reducing radon egress, it is suggested that the details given in Positive pressurisation: a guide to radon remedial measures in existing dwellings may be considered.