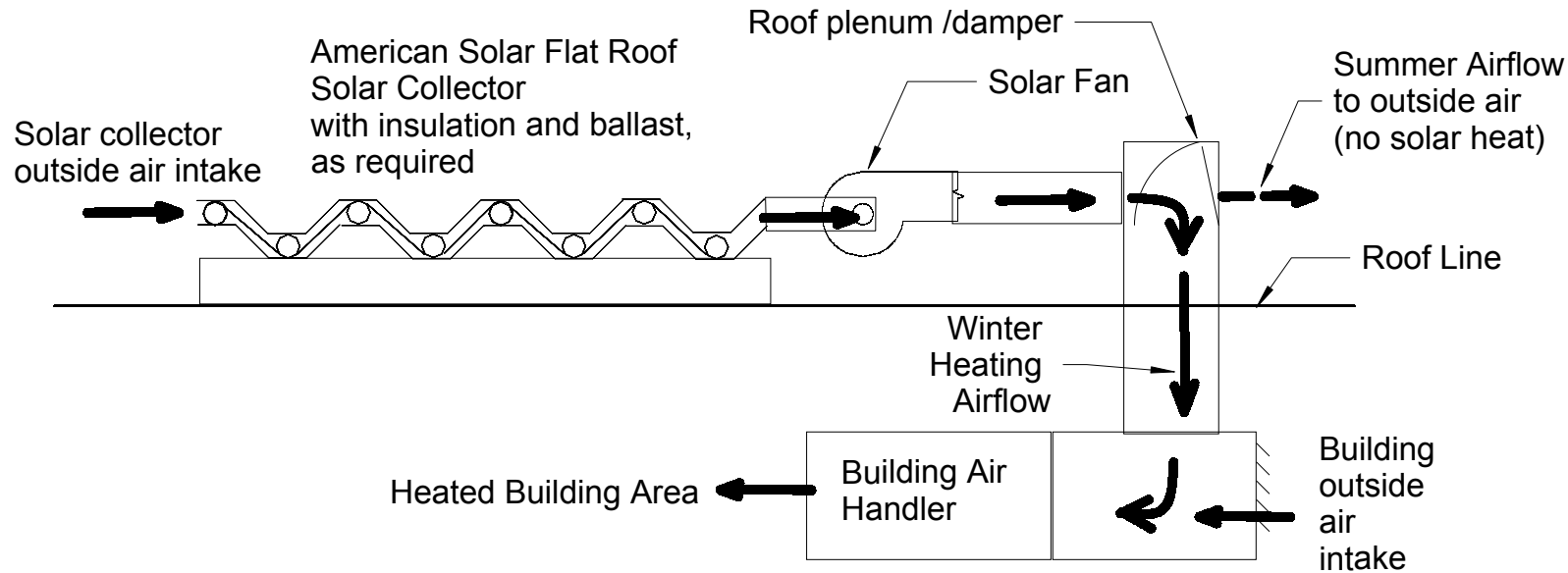


# Solar Ventilation Air Pre-heating, Mechanical Schematic



This stylized illustration of a solar ventilation air pre-heating system shows the major components and intended operation. It does not represent the final arrangement or fit and finish of the components, which are customized to the needs of each project.

For example, solar fans can be placed below the roof line and flat roof solar collector systems can be placed several hundred feet from the building outside air intakes with optional roof top ducts.

## Operation:

During the winter heating season, the solar fan draws outside air through the flat roof solar collector. Solar heated air is drawn from the solar roof and floods the area inside the existing building outdoor air intakes. Additional air, as required by the building air handler, will be drawn in through the outside air intakes. Solar heated air mixes with the cold outside air and increases the air temperature entering the building air handler. The air handler uses less energy to raising the temperature of the air delivered to the building. By delivering relatively low temperature solar heated air (~50-80 deg F), the solar flat roof collector operates at high efficiency.

In summer, a damper redirects the solar air flow from the flat roof collector to the ambient air above the roof. This reduces solar heat gains on the roof membrane below the collector, keeping the roof and building cooler during the summer air conditioning season.

The added insulation value of the solar flat roof collector reduces adverse heat flow through the roof in summer and winter.

TITLE	Solar Ventilation Air Pre-heating Schematic
DWG NO	
SCALE	
REV	
SHEET	
DATE	

American Solar, Inc.  
 8703 Chippendale Court Annandale, Va.  
 (703) 346-6053 www.americansolar.com

