2009

SSI-Global Corp

Product Brochure

Ventilation

& Tubular Skylights

About Us

SSI-Global Corp is a privately held corporation solely committed to the development of sustainable renewable energy and products with headquarters in Sugar Land, Texas.

We are committed to offering products and services that utilize either wind or solar to effect a reduction in fossil fuel and nuclear derived energy consumption.

Our company is focused on four key ingredients:

- safety of employees and public
- dependable, durable, long life products requiring minimal maintenance and associated costs
- products that are not only affordable, but preferred over traditional non-renewable alternatives
- low carbon footprint

Energy Solutions

The typical residence in the south US employs standard construction techniques that have not changed much in the last 15-20 years, other than perhaps better, more durable building products and some foundation improvements. The typical construction is still based on wood frame on concrete slab foundation, with insulated wall space, and open attic construction that relies on soffit and ridge or other vent systems to provide attic cooling, which can be inefficient. Hot air in the summer is stagnant in most cases, because the ventilation system is not adequate.

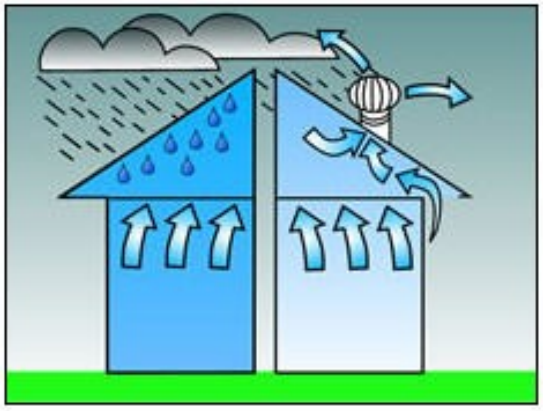
Insulation has improved, but the bulk of the electrical consumption results from cooling during summer months. The solution to reduced energy consumption is therefore made up of a number of components, and total self reliance on generating one's own energy needs takes on a different form. New houses might employ techniques such as increased insulation, heat shielding in roofs, or different roof types, but what about the millions of homes already constructed? What does the solution look like? It is obviously cost prohibitive to completely tear down and put up a near zero emissive home. Changing light bulbs to compact florescent only goes so far, and can only reduce consumption by about 5 percent, as the bulk of the energy consumption is forfeited in running the compressor for the cooling system.

The solution also has several dimensions. The solution must impact the bottom line for the consumer (wallet), and conservation will naturally flow from this. We will thus look at 2 main areas:

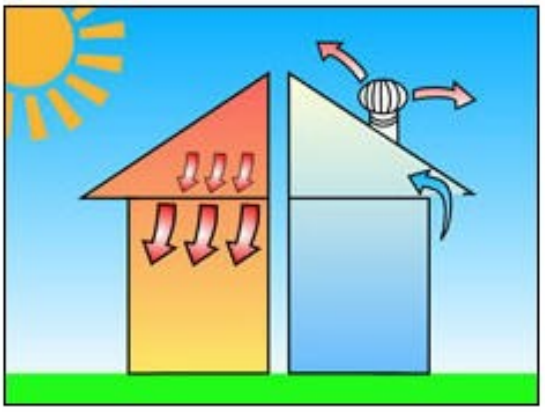
- Reduction of energy needs
- Generation of electricity to meet remaining needs after reduction

This brochure will focus on the products that help reduce energy needs through adequate ventilation of attic spaces.

These two items are the focus of Sustainable Systems Inc.



Winter

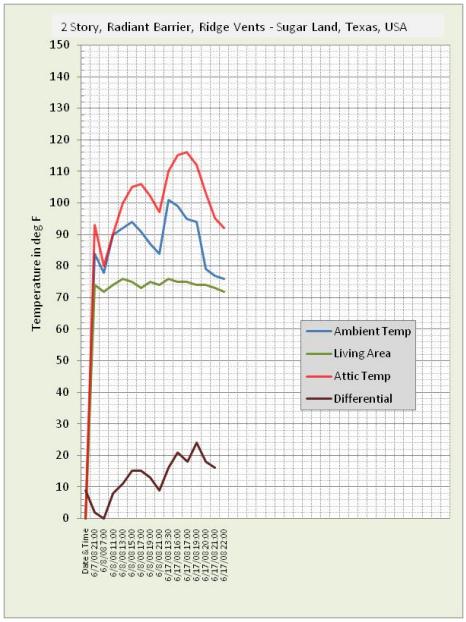


Summer

The above figure illustrates the heat and cold losses in a typical residence. During summer months temperatures in roof spaces can reach as high as 140°F. This heat radiates downwards causing discomfort in living areas and forcing air conditioners to work harder. Even the effectiveness of ceiling insulation can be reduced by the additional heat load. We all know that the cost of air conditioning during summer is the largest contributor to the residential electricity bill.

During the colder months, water vapor from showers and cooking is drawn into roof spaces and can condense to form up to three gallons of moisture per day. This can render insulation ineffective, cause mildew and mold on walls and ceilings, and contribute to a damp environment.

Currently, the new homes built typically install either ridge vents, pop vents or simple louver design. At first glance, these products seem to offer an economical solution to attic ventilation. Typical design code though mandates less than adequate ventilation for energy savings. A study conducted by SSI shows that attic temperature is on average 15-25 degrees hotter than ambient temperature using the ridge vent system, even late in the day with breeze blowing. It also showed that attic temperature was 10 degrees F warmer than ambient after the sun went down for a prolonged period of time and did not return to within 5 degrees until early morning, before sunrise. The home used for the case study had a radiant barrier installed in roof sheathing under asphalt shingles. This data tends to suggest that the ridge vent system currently installed is inadequate for the size of attic space, especially so since the temperatures are expected to be 10-20 degrees warmer without a radiant barrier.



The data in this chart is actual data collected from the test case home - recent build, two story 3000 sqft residence with radiant barrier and ridge vent system. It can be concluded that without the tech-shield radiant barrier and extra insulation in attic, that the attic temperature would be considerably higher using ridge vents only. It illustrates the inadequacy of standard ridge vent design used in most modern house construction. Electricity usage would decline with adequate ventilation.

Turbines vs. Other Ventilation Systems

Ridge Vent Comparison

Ridge vents, although not a direct competitor to the turbine system, are a common ventilation system and seems to be a "mindset" in modern USA construction. A comparison on a performance level was made to determine how the turbine stacked up against the current trend. The case study home was used for comparative purposes as it currently has ridge vents that were installed per code to meet minimum spec. A temperature study during June 2008 showed some interesting results. Bear in mind that the home has a radiant barrier and extra attic insulation installed. The case study home has 40 feet of ridge vent installed, plus one pop vent.

Over a period of several days, the attic temperature was measured during the day and after the sun went down. Average differential temperature showed an average of 15 degF warmer than ambient, and more than 20 degF during the hottest part of the day. Based on specifications from two providers, it was determined that an average of 78 feet should have been installed, but remember that the home is equipped with a radiant barrier. The radiant barrier and ridge vents were "sold" to the homeowner using the marketing strategy that the system was superior for energy savings. The temperature survey clearly indicates that the system in place is very much inadequate for effective cooling, but does meet code minimum standards.

Aside from the under design, a comparison was made product to product using performance data published by two established suppliers of ridge vents. The standard footage of 78 feet (average) was used in a case study 18,000 cuft attic space for a 3000 sqft home. Performance of the ridge vents for both the turbine and ridge vents were used at 7 mph wind speed. The comparison showed that the ridge vent underperformed by a factor of 5.6 compared to the turbine Supavent. The ridge vent system supplied only 0.3 air exchanges per hour compared to 1.7 for the turbine. Air exchanges greater than one are recommended for good ventilation.

A price comparison was also made on an equal footing basis. It showed that while ridge vents at the recommended footage of 78 feet was only $303, it would actually cost over $1,700 to have an equal ventilation system compared with three turbines at a total cost of $450. Internet pricing was used.

Ridge Vent Performance

Product	Model	Description	Colors	Size	Net Free Area
ShingleVent II	SHFV203, 12"wide	Shingle-over ridge vent	Black, Brown, Gray, Charcoal	4'	18 sq. in. per ft.

3000 sqft House Attic Vol cuft	Time for 1 Exchange, min (1 unit)	Exchanges per Day (1 unit)	# of Units	Exchanges per Day	Exchanges per Hr
18,000	205	7	1	7	0.3
Cost for same Performance	Old Cost	Factor	New Cost for same performance		Cost Diff
	$303	5.64	$1,709		($1,259)

SUMMARY:

This comparison is based on equivalent volume exchanges to compare to the turbine system, and is drawn from published data for airflow out of ridge-vent. This data is actually for one top of the line product, so over estimates the airflow in most systems. To obtain the same effect and exchange of air, about 5.6 times the amount of specified ridge vent would be required. The cost comparison above uses this factor to adjust the cost for a comparable system, which is about 5.6 times the estimated cost of $303 for a sub-equivalent system. It clearly shows that the ridge vent system would actually cost about three times that of three turbines to obtain an air exchange equivalent.

SupaVent (& TurboBeam)

A 3000 sqft house of modern construction was used as base case for comparison. The calculation was based on the rating shown at left for the turbine vent capability. It can be seen that 1.7 exchanges per hour (1 attic volume) can be achieved with 3 turbines (recommended) and 2.3 per hour with 4 turbines. Cost shown is total product cost w/o installation for 3 units and 4 units respectively. The other consumer products were compared against this standard.

Size - 9.8", rated at 75 l/sec @11 km/h, 159 CFM at 6.8 mph, 85 l/sec at 16 km/h, 180 CFM at 10 mph, average: 245,000 cuft/day, 15 year warranty

3000 sqft House Attic Vol cuft	Time for 1 Exchange, min (1 unit)	Exchanges per Day (1 unit)	# of Units	Exchanges per Day	Exchanges per Hr
18,000	106	14	3	41	1.7
18,000	106	14	4	54	2.3
Total Cost @ $150/ea		$450	3		
		$600	4		

Pop Vent Comparison

Pop vents are similar in nature to ridge vents in that they are open and rely on draft to work. Attic cooling is then dependent on adequate opening space, so a higher number would be required. Based on performance estimates similar to that of ridge vents, the manufacturers recommended number of one unit per 600 sqft installation value was used for our 18,000 cuft, 3000 sqft home. For a house of this size, 5 units would be required. Based on this value, it was shown that there were still only 0.38 exchanges per hour and the number of units required to compare to the turbine performance would be 14-15 units.

Quick look costing showed these type of vents to be in the $30 - $40 range, and would typically have 4-6 units installed for a house the size of the case study house, which equates to about $175 for a system that relies solely on hot air rising. It was shown that this is inadequate in theory, so the cost for a comparable installation would be 4.4 times higher, or about $770, about 1.5 times higher than turbine vents. Please note that performance data used for the analysis was generous, so the conclusion is that it is a cost comparable system, provided that a large number of units are employed. The installation of a large number of units on a house is not only space prohibitive, but unsightly for most neighborhoods.

Power Vent Comparison

The product selected for comparison is a good performance vent from an established manufacturer. It was rated at 1600 cf/min and 300 watts. The manufacturer recommended one vent per 1650 sqft, so two units were used for the performance analysis. The power vent clearly outperformed any natural vents - turbine included - providing up to 8.7 exchanges per hour. But – it draws power from the grid, thereby using a resource that we are trying to reduce the use of.

Since the system uses electricity and incurs cost, a cost analysis was made to see just how much a power vent system actually costs the homeowner. On an equal footing basis, for the 18,000 cuft case study, it was shown that the power units would only have to operate about 8 minutes per hour to be comparable to the turbine system based on air exchanges. Using 2 x 300 watt vents, the homeowner would expect to pay about $1,700 for his power vent system over the life of the product, about 3 times higher than the turbine system, which uses only natural resources to run for the same timeframe.

Ventilation Products

To contact us call: (1) 281 313 1933

Toll Free: (1) 866 673 8902

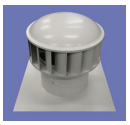
SSI-Global Corp has the exclusive USA national distributorship for CSR Edmonds residential ventilation & solar products. All products come in a wide range of colors— please see color chart.

SupaVent

A new generation wind powered ventilator which provides superior starting torque in light breezes. Designed in Australia. This product comes in a wide variety of colors.

TurboBeam

TURBOBEAM is the first turbine ventilator to provide roof space ventilation and enable natural light to enter the attic.



ecoPOWER® HYBRID VENTILATOR

The world's first, true hybrid ventilator. Combining reliability and performance.

Small Area Ventilation

The TurboVentura turns in the lightest of breezes to exhaust air from small areas. Small 6" throat diameter.

Solar Lighting

SolaBrite Plus Series

The Tubular Skylight that brings natural light and ventilation into your home.

SolaBrite 400 Series

The SolaBrite 400 is the perfect way to illuminate an average sized room.

SSi-Global.com

SupaVent is a 9 7/8" (250 mm) throat polycarbonate ventilator which has been specially designed for harsh conditions.

- Vertical vane design
- Sealed stainless steel bearings
- Malleable base fits most roof types
- Adjustable throat suits slopes up to 45 deg
- Presently available in 16 colors
- 15 year warranty available

SupaVent Turbine

A lightweight roof mounted, turbine ventilator. The Supavent is constructed from a UV stable engineering polymer with a highly efficient vertical vane design. It incorporates top and bottom precision stainless steel bearings.

This unit is attractive and has an aerodynamic profile that complements most homes. The bearings are capable of resisting salt spray environment suitable for installation along coastline areas. The SupaVent is hail resistant and tested to 144 mph wind speed, and rated to 134 mph wind speed. It has been tested for rain penetration by CSIRO and passed with no water penetration.

TurboBeam is a clear 9 7/8" (250 mm) throat polycarbonate ventilator which has been specially designed for harsh conditions.

- 10 year warranty available
- Same performance as SupaVent
- Same size as SupaVent

TURBOBEAM is the first turbine ventilator to provide roof space ventilation and enable natural light to enter the attic space. These dual features provide the following benefits for homeowners:

1. Better summer comfort. TURBOBEAM removes very hot air from the attic space enabling it to be replaced by cooler, ambient air. This effect is particularly pronounced at night. The result is reduced roof space temperatures and less radiation of heat into the home.

2. Illumination of the attic space. TURBOBEAM uses a clear, acrylic turbine head and a highly reflective aluminum throat. This enables sunlight to be captured and focused into the attic space. The sun drenched attic space assists visibility and creates an environment non conducive to termites.

TURBOBEAM combines unique vertical vane technology with clear polymers to create a major advance in roof turbines.

1. The technology leader. Sturdy UV stable acrylic construction, vertical vanes and permanently lubricated stainless steel bearings ensure long life and efficient operation.
2. Attractive design. Its smooth, aerodynamic profile with translucent features complements almost any home.

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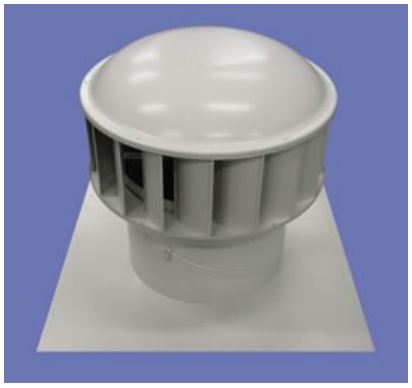


ecoPOWER® HYBRID VENTILATOR

The world's first, true hybrid ventilator. Combining reliability and performance

- Option for solar powered
- High efficiency level
- Lower operational noise
- Advanced German motor technology
- Vertical vane design
- Optional custom internal metallurgy for corrosive & odorous environments

ecoPOWER® HYBRID VENTILATOR

The design allows the vent to spin freely under wind load and provide the same exhaust rate as the traditional Hurricane vent. The free area of the throat is NOT impeded, unlike current vent/fan combinations. When required the vent can be powered which provides a huge boost to the flow rate, at an extraordinarily high efficiency; 110m3/hr/watt of energy – far more energy efficient than any conventional powered fan.

The guaranteed exhaust rate regardless of wind speed or 'stack effect' can be controlled by digital measurement of a range of physical properties or chemical entities including temperature, humidity, carbon dioxide, etc.

TurboVentura Ventilator

- Attractive
- Unique design—vertical vanes
- Won't rust, corrode or crack
- Withstands severe weather
- Fits almost any roof
- Easy to install

Stylized ventilator that removes heat and moisture from roof spaces efficiently.

6" throat makes it ideal for ventilating small areas where the removal of moisture laden air is required

Solar Lighting

The Tubular Skylight that brings natural light and ventilation into your home.

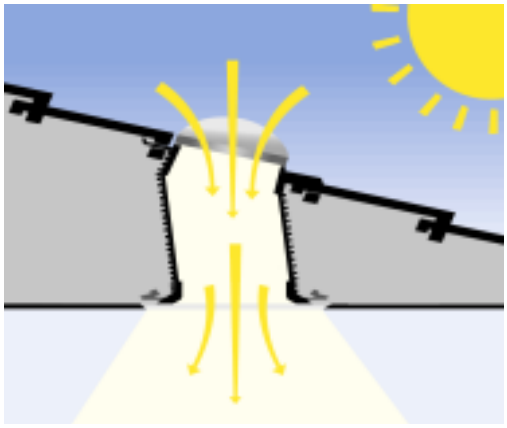
Available in 14”, 16”, 20” (350mm, 400mm and 500mm) throat sizes.

SolaBrite Series

Tubular skylights are a cost effective and energy efficient means of using natural light to brighten any room in your home. They are economical to install and introduce less heat than conventional square or rectangular skylights.

SOLABRITE PLUS incorporates vent tabs to reduce condensation and heat build up in the tube making it suitable for use in bathrooms, kitchens and laundries.

THE FEATURES OF SOLABRITE PLUS
• Available in three throat sizes to suit any sized room.
• High impact acrylic roof dome with insect proof vent tabs.
• Two high grade, metal reflectors within the throat to maximise the capture of the sun’s rays.
• 6’feet of high quality, flexible, reflective foil tubing manufactured for long life.



The SolaBrite 400 is the perfect way to illuminate an average sized room.

- The SolaBrite 400 offers a 7 year warranty against defects due to workmanship or parts
- Easy to install
- High impact acrylic low profile dome

The SolaBrite 400 is the perfect way to illuminate an average sized room.

It allows natural light to enter through a roof mounted, high impact acrylic dome. Highly reflective flexible foil tubing in conjunction with upper and lower reflector rings carries the light to a prismatic diffuser. This allows the natural light to appear from the ceiling diffuser giving a similar effect to that of a powered light. The SolaBrite 400 can easily be installed by a home handy person. The design of the flashing and dome allows the unit to be installed on most roofs from 0° to 45° pitch.

Services

Our current services are based around installation and maintenance of our products with specialized cooperative companies in certain areas of the USA.

We also can provide a temperature and humidity survey of your attic space which compares this temperature profile to your living area and ambient outside temperature profiles over a period of several days. We can perform this survey for a modest fee before and after installation of ventilation products to ensure performance matches expectations.

Please call us or email us to discuss your needs in this area.

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Color Chart

Most colors are available for most product lines. However, some colors may be special order and require extra time for manufacture & shipping. Please confirm color availability with your sales representative.

We will do our best to provide a color that you desire.

play nice, and look after the playground

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