

How to Build a Cost Effective "Green" Home

The Six Key Systems Approach

Green Defined: Healthy, efficient, disaster resistant, mold resistant, pest resistant, low maintenance, low environmental impact, built for life.

First, Here's the Math: Mortgage + utilities is LESS in a green home - you put more money in your pocket at the end of the month, after paying your bills. The five to eight percent more on construction costs (financed by the bank) is paid for, plus extra spending money, by the 60 to 75 percent on utility and maintenance costs.

Six Key Systems:

1. Poured Solid Concrete Wall or Structural Insulated Panel: Avoids trapping moisture in walls for mold growth, stronger, better insulation, better sound resistance, better best resistance, more accurate, faster construction.

2. Sealed Attic Construction: Using either Biobased water-blown healthy foam insulation sprayed on the underside of the roof deck, or a structural insulated panel roof (such as HPRS), provides a sealed, conditioned attic space, keeping heat, dust, moisture, pests and wind out. Attic temperatures are reduced from the typical 130 to 140 degrees F to 80 to 85 degrees. Now the attic is dry, cool, usable storage space. This saves on A/C costs, improves indoor air quality, and helps protect the roof in high winds.

3. Efficient, Impact Resistant Windows: Choose windows that are both energy efficient and protect the building envelope against wind forces getting inside to lift off the roof. This completes the "green" shell of your building.

4. High Efficiency Air Conditioning, Dehumidification and Fresh Air: We recommend looking at water-cooled air conditioning, able to keep Summer A/C costs up to 50 percent lower than even the most efficient air-cooled equipment. Houses need more fresh air to flush out toxins. Fan recycler or energy recovery ventilation is recommended, along with a humidistat to keep humidity at 60 percent or lower.

5. Passive Solar Water Heating: The single most powerful energy saver of the 6 Key Systems. Reduces water heating costs by 70 to 95 percent (overall electric bill reduction of more than 20 percent). Has no moving parts, doubles the hot water supply for the house, provides hot water when power is out, and offers a 30% Federal Tax Credit to the home buyer.

6. Brac Greywater System - Self-contained system that cleans and recycles shower and laundry water to use for flushing toilets. Typical savings of 30% of household water and sewer use.

For more information, please contact:

Eco-\$mart, Inc.

888-329-2705

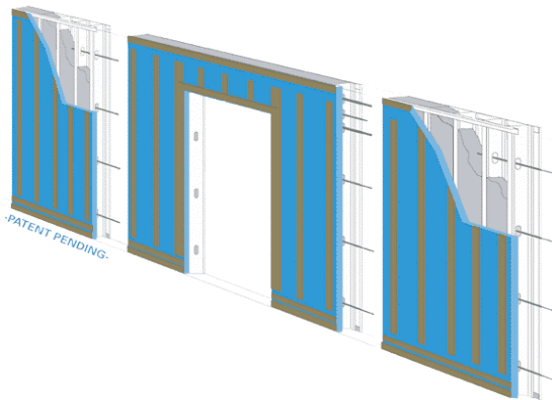
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E-Wall Stay-in-Place Forms for Poured Solid Concrete Walls

E-Wall is a patented stay-in-place form for building solid concrete walls. The form consists of an exterior fiber/gypsum board held to an interior rigid foam insulation board. Light gauge steel studs hold the interior and exterior boards together. Furring strips are provided on the interior facing side of the insulation board surface. Vertical re-bar (poured in the slab) connects the panels to the foundation, and horizontal re-bar is placed every 2' in height in the form prior to the concrete pour. Once the forms are poured, the walls are ready for conventional electrical placement and drywall installation using the furring strips provided. Conventional exterior finishes such as stucco or siding can be directly applied.

E-Wall construction creates highly insulated, low air infiltration, moisture resistant, extremely strong (250mph wind load / Miami Dade Approved), fast, and affordable (competitive with standard concrete block) construction.



For more information, call Eco-Smart, Inc. at 888-329-2705.

All Eco-Smart products are approved by the nonprofit Florida House Institute for Sustainable Development www.i4sd.org.



The Eco-\$mart Catalog

Building Envelope Systems



Healthy, Efficient, Disaster Resistant Products for Better Living

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A Testimonial

« Back **ACTech™ Panels** Next »



SIPs are a universally viable and superior alternative to conventional building materials such as lumber or bricks. **ACTech SIPs** offer more features and benefits along with favorable economic comparisons, to both builders and consumers, than any other building material we know.

- Meet or surpass the most stringent wind, projectile, and uplift codes in the nation: Miami-Dade County, FL.
- Environmentally sound: recycleable, no CFCs
- Reduced Energy consumption at 30 to 50%
- Resistant to fungus, moisture, mildew, and termites
- Quick build times even with unskilled labor.

The **ACTech Panel™** and interlocking building system is practically a stand-alone alternative construction technology. The panel is far more than a mere cladding material; it is a true structural panel capable of being used as the solitary framing material in a given structure. For residential and light commercial construction, it becomes an alternative to post-and-beam framing, not just an accessory.

The biggest advantage, however, is seen with large scale commercial projects. For industrial construction, ACTech Panels™ allow for a substantial reduction in the amount of steel or lumber needed for stanchions, beams and supports.

Item Number: BE-ACT

Price: Quoted

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Outside US: 941-377-9460

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Hand Crafted At: kwgrubbs.com



Key Systems: Hurricane Proof Roof Systems



300+ mph wind resistance, sealed attic, fire, mold and pest resistant. Can eliminate exterior roof tile (concrete is stamped)



Biobased Water Blown Foam Insulation

Water Blown Foam Insulation Benefits:

- Reduces A/C Costs by 20 to 25 Percent
- Virtually Eliminates Dust, Moisture and Heat in Attic Space
- Improves Indoor Air Quality (Endorsed by American Lung Assn.)
- Reduces Affect of High Winds on Roof System
- Eliminates Pest Access to Attic from the Outside
- Creates Dry, Cool, Usable Attic Space
- Provides a Low Maintenance Location for Air Handler
- No Off-gassing from Spraying or Foam Itself
- Lifetime Warranty for Performance
- No Food Value to Insects
- Reduces chance of Spread of Fire in Home

Product Description: Made from U.S. grown soy bean oil, this open cell, water propelled foam is sprayed directly onto the bottom side of the roof decking, creating a totally sealed attic space. Ridge vents and soffit vents are eliminated. Peak attic temperatures will drop from the standard 130 degrees (or more) to 85 degrees (or less). Air conditioning ducts will now run in cool, dry space, saving 20 to 25 percent on A/C costs. Dust and moisture that typically enters vented attics and makes its way into the living space is eliminated. The building becomes safer in high winds due to the elimination of the ridge and soffit venting, which also eliminates a major access for pests. Can be used in wall cavities as well as roof applications. Creates excellent sound reduction, as well. Suitable for commercial and residential buildings.



For Quotes and Installation Call: Eco-\$mart, Inc. 888-329-2705 www.ecosmartinc.com

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The Eco-\$mart Catalog

Windows, Doors & More

Healthy, Efficient, Disaster Resistant Products for Better Living



Wind-Pact Plus Large Missile Impact Windows



WIND-PACT PLUS windows feature specially designed heavy duty extruded vinyl frames with multiple chambers, as well as insulated laminated glass for superior strength and energy efficiency. All windows feature block and tackle balancers for smooth operation, with removable sash and removable screen for ease of cleaning. Windows over 30" wide feature double locks. All Vinyl Frame windows meet or exceed the Florida Codes and feature substantially high design pressures.

WIND-PACT PLUS vinyl large missile impact windows are manufactured with Cardinal Sea-Storm laminated glass. This glass was designed to pass the stringent Dade County protocol for windows used in high wind-speed coastal areas. It is produced by bonding a combination of plastic vinyl layers and polyester film between two panels of glass into a single sheet. Cardinal Sea-Storm laminated glass looks like ordinary glass, but protects like a shield against accidental impact, forced entry, sun damage and unwanted noise.

PLUS, Cardinal offers their patented LoE² Coatings that are virtually invisible to the eye but provide significant savings on your home energy bill. With a Solar Heat Gain Coefficient (SHGC) of 0.26 and a Winter U-Value: 0.33, glass coated with LoE² Coatings keep heat outside during summer and inside during winter. For beautiful windows that stand up to just about anything AND save energy, choose WIND-PACT PLUS with Cardinal Sea-Storm laminated insulated glass.

WIND-PACT Plus Offers Peace of Mind:

- Against Hurricanes
- Against Intruders
- Against High Energy Bills

Item Number: WN-WP-*

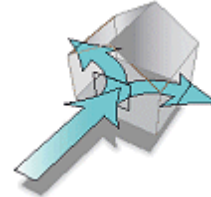
Styles:

- Single Hung - *SH
- Horizontal Slider - *HS
- Casement - *C
- Sliding Doors - *SD

Colors: White and Adobe

Price: Quoted

How will the right window protect my roof?

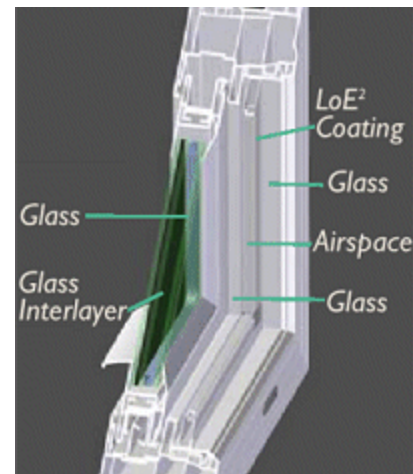


Wind enters a broken window, lifting the roof and stressing the walls.

Solid laminated impact window helps preserve building integrity.



Energy Efficient LoE² Coatings reduce solar heat gain in laminated glass.



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Air Conditioning and Dehumidification



Healthy, Efficient, Disaster Resistant Products for Better Living

Commercial and Residential Water Cooled Air Conditioning Residential Water Cooled Split Systems



Three Zone System

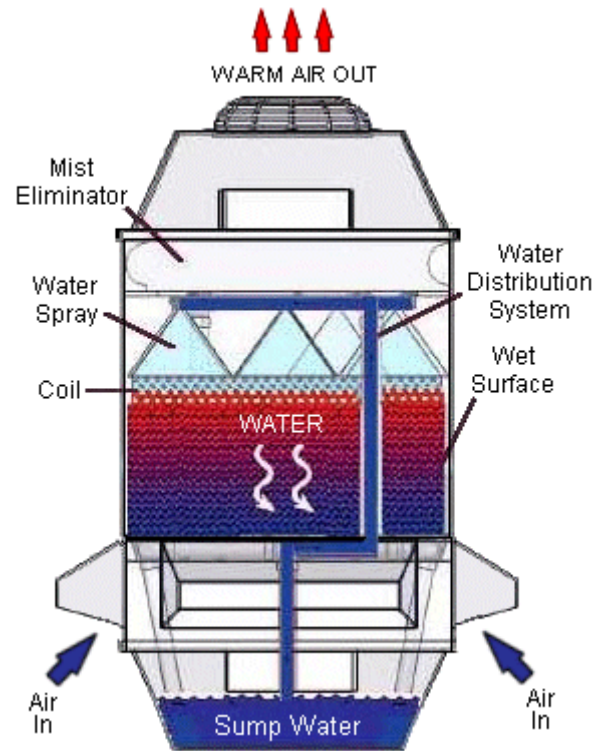
Utilizing technology normally associated with the industrial sector (evaporative condensers). Allied has perfected the ultimate in energy efficient water-cooled air conditioning. The Thermal Flow system combines the superior water-cooled condenser with the newest Scroll compressor technology, the most efficient fans and pumps available. The Thermal Flow system utilizes two refrigerants, and nature's own water is used to cool the Refrigerant up to 60 degrees cooler than what is possible with an air-cooled system. By reducing the heat in the refrigerant circuit, the operating efficiency of a water-cooled unit is dramatically enhanced, providing an unparalleled efficiency advantage over conventional air-cooled units.

[Benefits](#) [Product Data](#) [Specifications](#) PDF [3D View](#)

The Thermal Flow system is designed and built to the highest standards, utilizing durable industrial grade components. The unique design combines function and form in a very attractive and compact unit only 54 inches tall. The system is designed to be compatible with all conventional systems. Systems can be fitted with a variable speed fan controller to conserve water. This also provides a quieter operation and lowers the fan energy required. An auto purge self-cleaning feature is included to handle the hard water in some regions. All of the components are available through the W.W.Granger parts network. Manufacturer warrants the cooling tower for fifteen years, the compressors for ten years, and the cooling tower fan and pump for three years.



Three Zone Compressor Box



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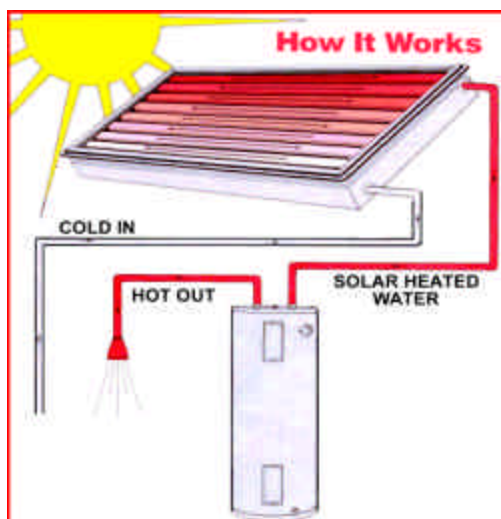
Passive Solar Water Heating



Passive Solar Water Heating Benefits:

- Reduces Water Heating Costs by 70 to 90 Percent
- Can Lower Overall Electric Bills by 20 Percent or More
- Doubles Hot Water Supply
- No Moving Parts, Maintenance Free, 10 Year Warranty, Made in Florida
- Creates Positive Cash Flow / Tax Free Return on Investment (5 to 20% annual)
- Acts as an Emergency Source of Hot Water
- Reduces Environmental Impact of Utility Power Generation
- Why Buy Oil from Overseas to Heat Water? Solar Water Heating is the Single Largest Step We Can Take Toward Energy Independence

System Description: A 4' x 8' collector holding 40 gallons of water is installed on the roof, typically facing South. Domestic water is plumbed directly into the collector where it is heated by the sun. The roof-mounted collector is piped to feed a standard gas or electric water heater inside the home, which acts as a backup heater. When hot water is used in the house, the solar heated water comes from the collector into the standard water tank, reducing or eliminating the need for the standard element to operate. One 40 gallon Passive Solar Water Heater will typically reduce water heating costs by 70 to 90 percent for a family of four in Southwest Florida, saving 20 percent or more on overall electric bills.



For information on the SunBuilt Program (free solar for builder models) call: 1-800-59-SOLAR

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Thermosiphon Passive Solar Water Heating

Thermosiphon Passive Solar Water Heating Benefits:

- Reduces Water Heating Costs by over 90 Percent
- Can Lower Overall Electric Bills by 20 Percent or More
- Can Act as Stand Alone Water Heater – No Garage Storage Required
- No Moving Parts, Virtually Maintenance Free
- Creates Positive Cash Flow / Tax Free Return on Investment (10 to 20% annual)
- Acts as an Emergency Source of Hot Water
- Reduces Environmental Impact of Utility Power Generation
- Why Buy Oil from Overseas to Heat Water? Solar Water Heating is the Single Largest Step We Can Take Toward Energy Independence

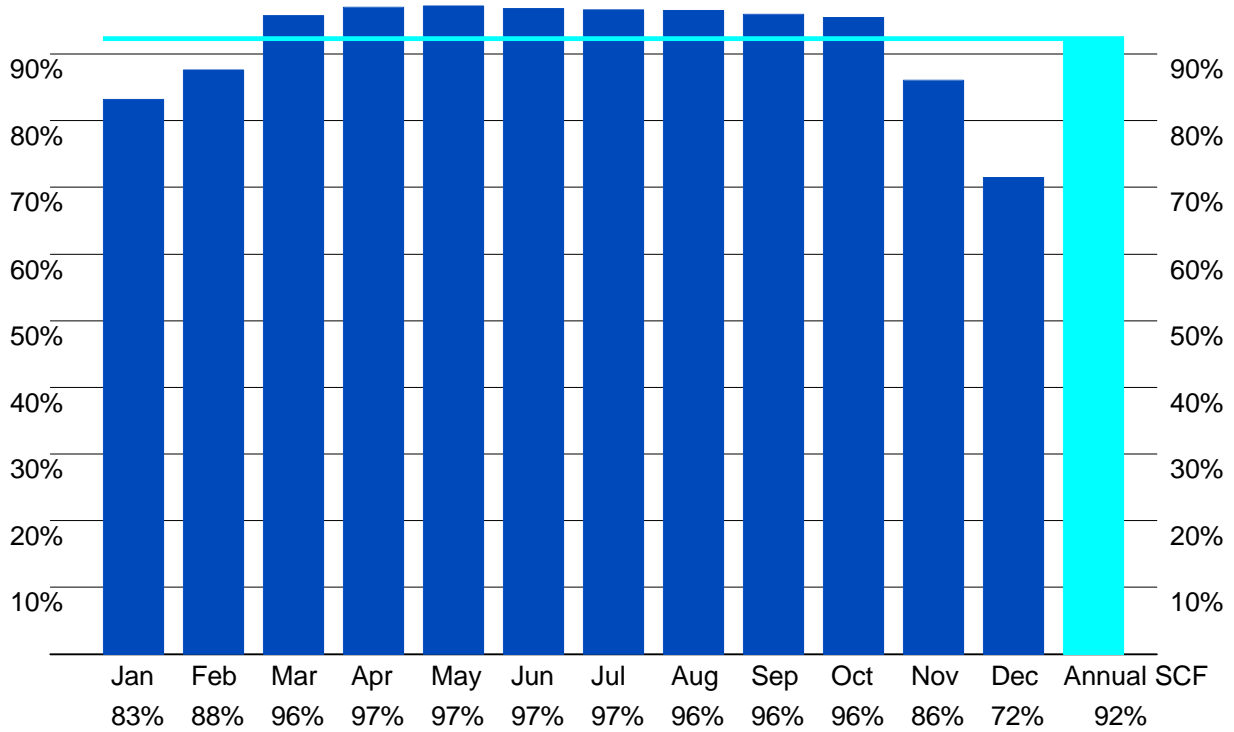
System Description: Two 4' x 5' panels with an 80 gallon storage tank are installed on the roof, typically facing South. The panels contain food grade glycol, which, when heated by the sun, rises up to circulate through the ceramic lined water tank, heating the water. The system can act as a stand alone water heater, as the tank contains its own heating element, or the system can act as a non-electric pre-heater to a standard electric or gas water heater in the home. Savings in water heating cost exceed 90 percent in Florida, saving over 20 percent of the typical electric bill. This system does not freeze, and corrosive water will not damage the collector copper tubes, as only the glycol comes into contact with the copper.



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Energy Savings with Solahart 302J

Location.. Tampa Latitude.. 30.38° N Inclination.. 20° Orientation .. South



Total energy from the sun.....3353 kWh/year under average conditions.***

Savings relative to a 150 litre electric water heater.**

Average use 72 US Gal./day at 120.2°F (28434 Btu/day)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Radiation	1015	1268	1617	1966	2029	1934	1839	1744	1554	1395	1141	983	Btu/sqft.day
Ambient	78.1	61.5	66.4	71.2	77.2	81.0	82.0	82.0	81.0	74.8	67.6	62.2	°F
Cold Water	77.0	60.8	66.2	69.8	77.0	80.6	80.6	80.6	80.6	73.4	66.2	60.8	°F
Solar Input	8.24	9.2	9.87	9.8	9.62	9.49	9.37	9.36	9.41	9.55	8.87	7.51	kWh/day
Boost input	5.98	4.68	1.56	1.09	1.0	1.13	1.19	1.23	1.41	1.62	5.14	10.74	kWh/day
Electric HWS*	9.2	13.6	12.1	11.1	9.2	8.3	8.3	8.3	8.3	10.2	12.1	13.6	kWh/day
Energy saved	7.6	12.3	11.6	10.8	9.0	8.0	8.0	8.0	8.0	9.7	10.6	10.6	kWh/day
	80165	711704	562301	781050	254793	82208	84755	84652	81407	210268	40887	811179	Btu/day

Total Annual Savings on Energy Use vs. an Electric water heater.....3470 kWh/year

* 150 litre electric water heater container loss of 1.98 kWh/day.

** Estimated savings are calculated with hot water use distributed throughout the day.

2/1/2003

Solahart Industries Pty Ltd

A Southcorp Company.

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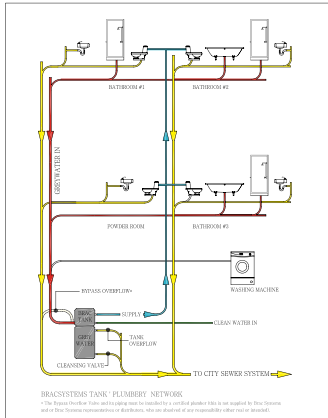
ACN 064 945 848



BRAC SYSTEMS

Greywater Recycling System

Save 30% On Water Usage

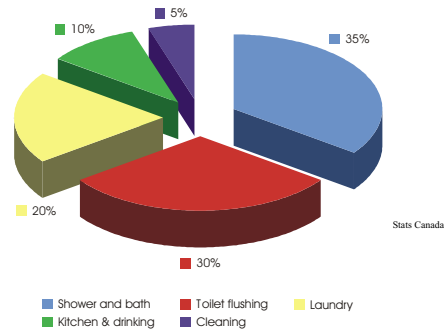


The Brac Systems Greywater Recycling Tank is designed into the plumbing system of new construction and existing residential homes.

Drains from showers, bathtubs and optionally the laundry, are routed directly to the Brac System. The grey water entering the tank is filtered through a quality-controlled ISO 9001 Registered 100 Micron filter bag. In the tank is a tri-chlorine tablet of the type used in swimming pools that keeps the grey water free of any bacteria and odours. The disinfected water is then pumped on demand by a jet pump and pressure tank system, through dedicated supply lines to supply grey water to household toilet tanks for flushing.

Where Does Your Water Go?

On average, a family of four uses 63,408 gallons of water per year. Well over half of our water is being used shower, bathe and do the laundry, while nearly a third is being used to flush the toilet. A mere 10% of our home water supply is used in the kitchen and as drinking water.



For more information, call:

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