

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

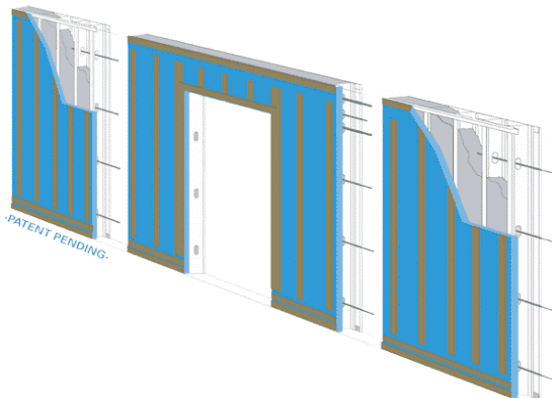
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E-Wall Stay-in-Place Forms for Poured Solid Concrete Walls

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.



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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Eco-\$mart, Inc.

Eco-\$mart Commercial Grade Impact Window



Eco-\$mart Commercial Grade Impact Windows can protect your home or building from storm damage while saving you money in energy costs. Two great benefits in one solid window.

Advantages over standard windows:

- Box frame versus Z frame for more strength and stability. Design pressures can exceed 100 psf.
- Steel reinforced aluminum versus non-reinforced aluminum frame.
- Glass extends an additional 1/4" into frame to reduce chance of glass leaving frame.
- Thicker 7/16" laminate impact glass (windows) or 9/16" versus 5/16" standard laminate impact glass. Provides greater protection, noise reduction and energy efficiency (grey low-e SHGC = 0.32 for 7/16" and 0.30 for 9/16", both 0.41 U-Value).
- Acrylic polycrystalline paint on frames, low-VOC, available in any color, 20 year warranty, versus standard, short lived painted surfaces.
- Entire window is designed for coastal living, rust and corrosion-free screws and hardware.
- Large Missile Impact Windows exceed Florida Building Code requirements and are Miami-Dade County Approved.

Four Models sized for window replacement or new construction. + More Advantages

Item Number:
WIN-ESCGW

Price: Quoted

Available Colors:

Standard finish is white
PPG Polycron III enamel.

Other Colors:

- ~ bronze
- ~ brick red
- ~ beige
- ~ dark green
- ~ silver
- ~ bone white
- ~ sage brown
- ~ custom finish

Glass Styles:

- ~ standard clear
- ~ obscure
- ~ energy-efficient bronze
- ~ gray
- ~ solex green or Low-E tinted glass
- ~ annealed glass
- ~ heat strengthened impact-resistant laminated glass.

Muntin Styles:

Classic or Custom



Casement Window

Impact Large Missile
WIN-ESCGW55

- + Corrosion free Stainless Steel & Aluminum Butt hinges and fasteners.
- + All corners joined with dual corner locks and four(4) fasteners for extra rigidity.



Single Hung Window

Impact Large Missile
WIN-ESCGW65

- + All moving parts are double weather stripped for tight seal.
- + Adjustable, pre-tensioned spiral sash balanced for smooth, effortless operation.



Fixed Window

Impact Large Missile
WIN-ESCGW38

- + Extra heavy duty construction for superior strength and performance.
- + Available in a variety of standard and special grid (muntin) patterns.



Horizontal Slider Window

Impact Large Missile
WIN-ESCGW85

- + Easy gliding sash rollers for trouble-free operation.
- + Maintenance-free all aluminum construction.

Contact your Eco-\$mart Representative for detailed specifications.

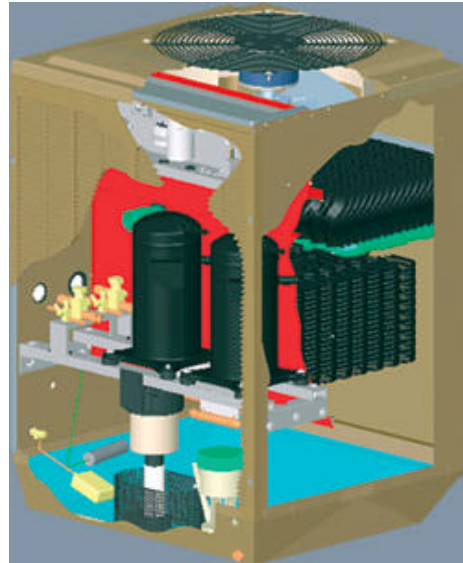
Eco-\$mart, Inc. Sarasota, Florida - PH: 888-329-2705 / FX: 941-377-9460

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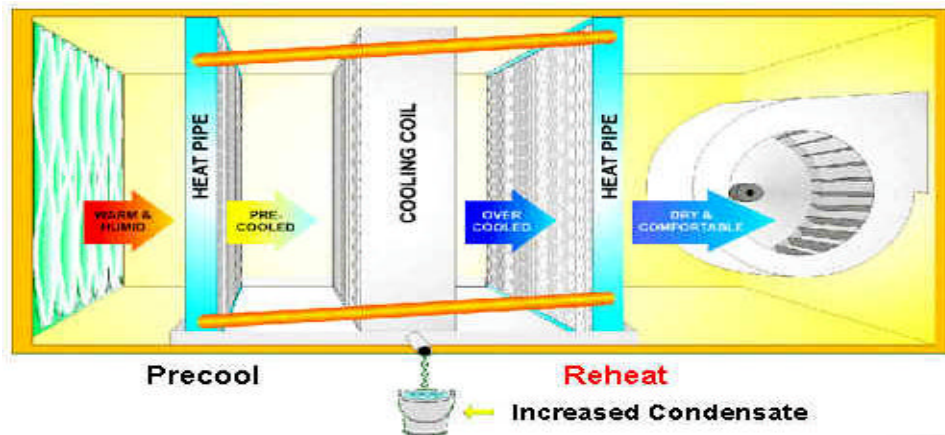
High Efficiency / Healthy Indoor Air Quality Air Conditioning Package

System Components:

18 EER / 22 SEER Freus Water Cooled Condensing Unit – Reduces energy consumption from air conditioning by 50 to 60 percent versus 10 SEER (standard) condenser. More efficient than 20 SEER air-cooled equipment. Fiberglass cabinet, 15 year limited warranty.



Heat Pipe Passive Dehumidification Air Handler – By passively pre-cooling and post-heating the air moving across the evaporator, your air conditioner becomes twice as powerful in dehumidification. Mold in ducts and wallboard is avoided and higher temperatures feel more comfortable, saving more a/c costs.



Intelligent Fan Recycler Fresh Air Controller – Installed with a 4" duct from outside air to the return of the air handler. Cycles the air handler on every 30 minutes to create more fresh air exchanges and positive pressure on the home, flushing toxins out and keeping humidity from being drawn in through air infiltration. We also recommend installing a humidistat in parallel with the thermostat, set to turn on the HVAC system any time the humidity level goes over 55%.



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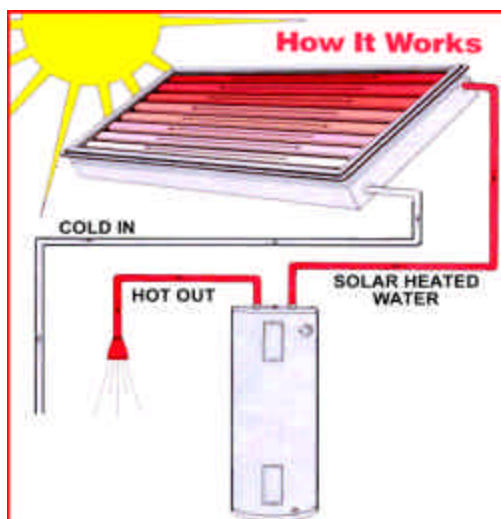
Passive Solar Water Heating



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

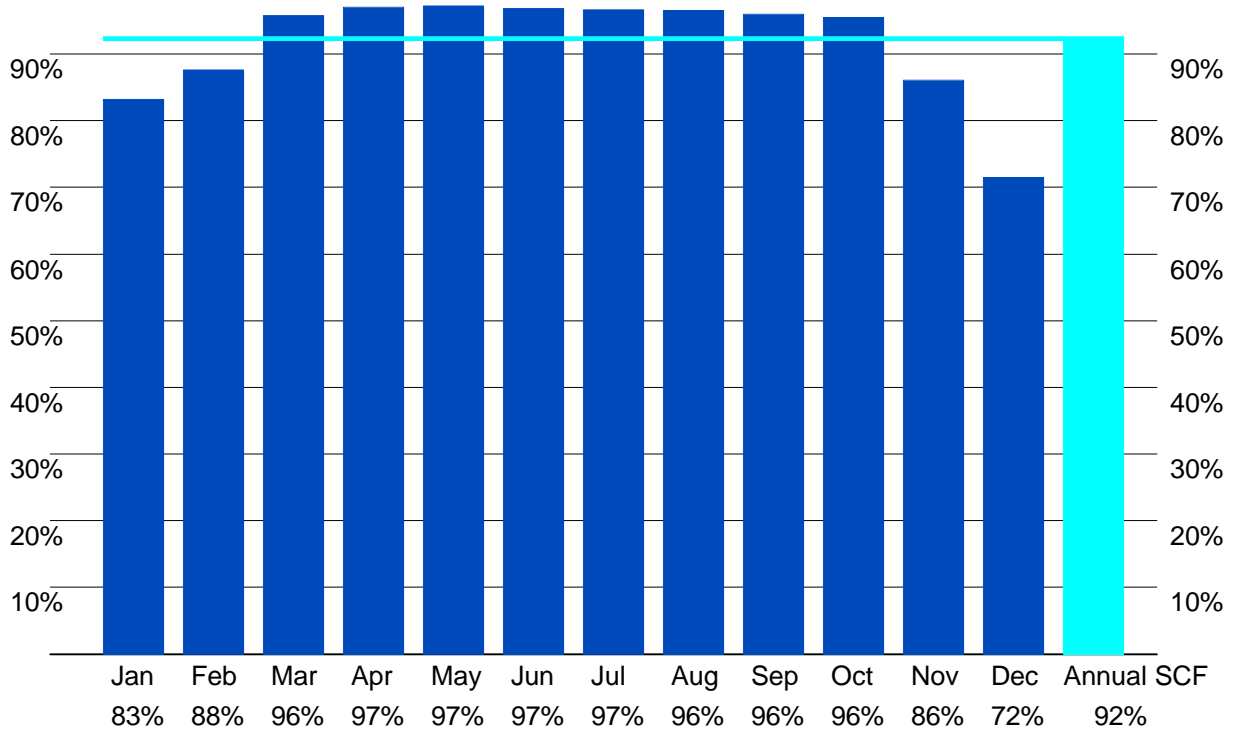
System Description: Two 4' x 5' panels with an 80 gallon storage tank are installed on the roof, typically facing South. The panels contain food grade glycol, which, when heated by the sun, rises up to circulate through the ceramic lined water tank, heating the water. The system can act as a stand alone 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	382208	384755	384652	381407	210268	408887	311179	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

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ACN 064 945 848



The Eco-\$mart Catalog

Water Saving



Healthy, Efficient, Disaster Resistant Products for Better Living

Brac Greywater System



Brac Systems can reduce your home's water use by 30%. This saves you money while helping to save the environment. A Brac System will pay for itself, and pay dividends in the future with a clean, abundant water supply for our children and their children to come.

Global water consumption has risen almost tenfold since 1900. Many parts of the world are now reaching the limits of their supply. World population is expected to increase by 45% in the next thirty years, while freshwater runoff is expected to increase by 10%. UNESCO has predicted that by 2020 water shortage will be a serious worldwide problem.

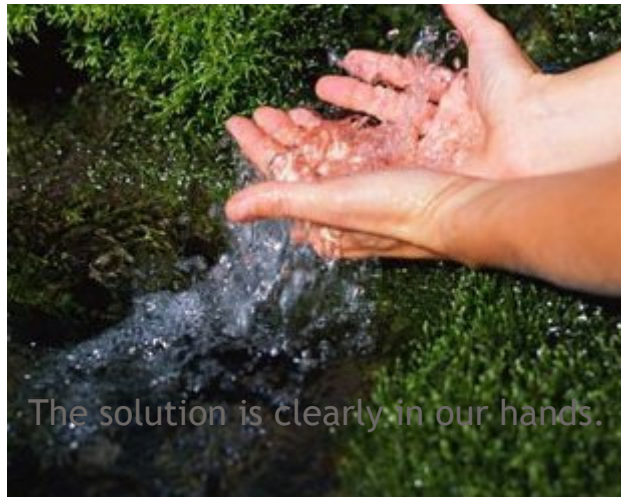
Item Number:
WatSav-BracW200
WatSav-BracW325
Unit of Issue: System
Price: Quoted

IAMPO Certified to meet plumbing standards in the US and Canada



It is obvious that we cannot increase demands for water much more without detrimental effects to the environment, society and the economy. **It's time to become water efficient!** This involves reassessing our relationship with water, and learning to use it more sparingly. On the most basic level, it requires a behavioural change, and assigning a value to water that truly reflects its worth.

The Brac Greywater System is the solution. It is composed of patented, state-of-the-art components that filter used water from your shower, bath and laundry, and then reuses it for your toilet's evacuation system.



The Brac Greywater Systems W-200

The W-200 is the smallest and most affordable water system made by Brac Systems. This is the perfect solution for homes with 5 or less people who want to save money on their water bill, while helping the environment.

The Brac Greywater Systems W-325

The W-325 is our biggest yet still very affordable non custom tank by Brac Systems. This is the perfect solution for homes with 6 or more people who want to save money on their water bill, while helping the environment.

Contact Eco-\$mart for more information.

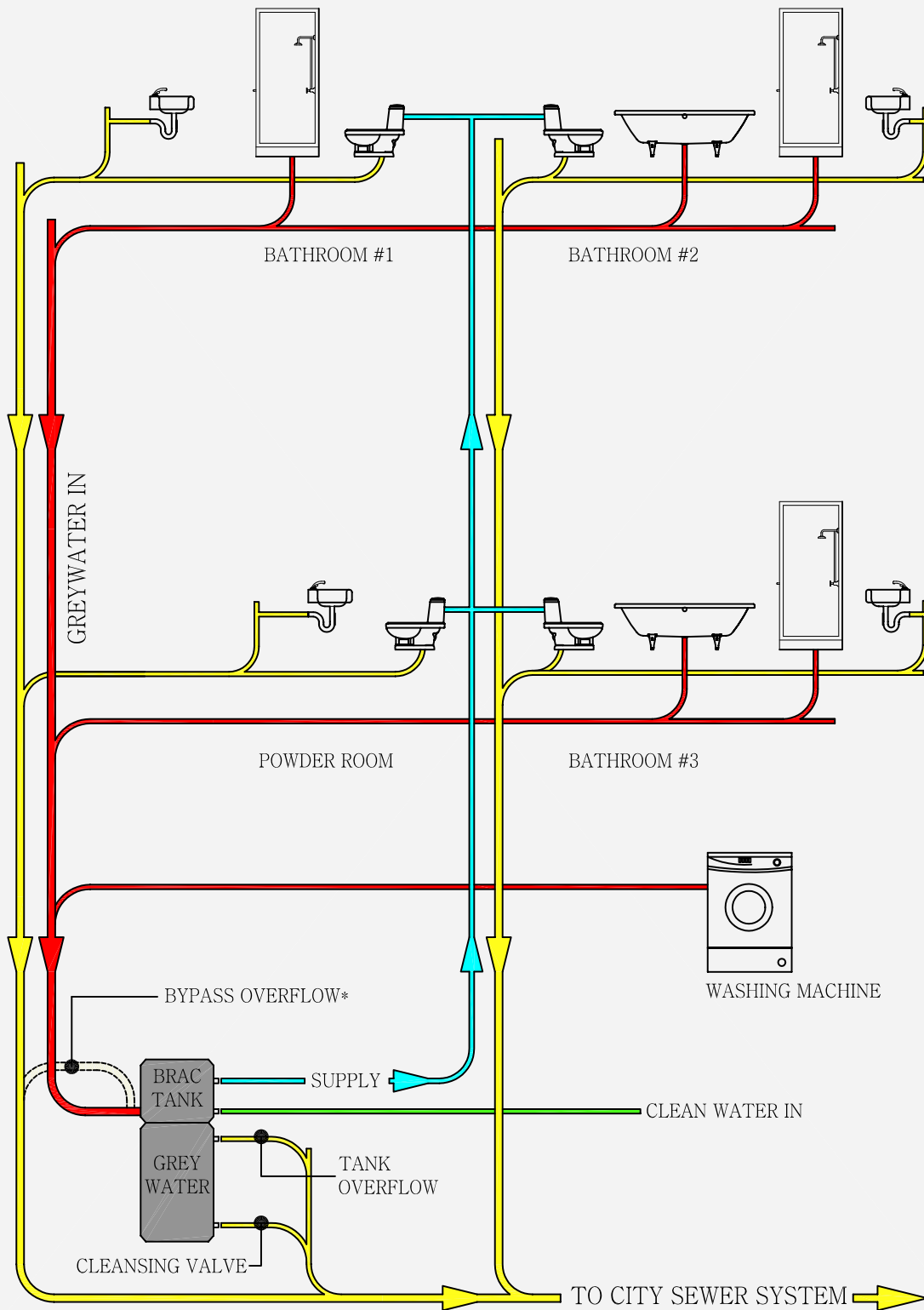
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Toll-free Phone:(888) 329-2705

Outside US: 941-377-9460



BRACSYSTEMS TANK ' PLUMBERY NETWORK

* The Bypass Overflow Valve and its piping must be installed by a certified plumber (this is not supplied by Brac Systems and or Brac Systems representatives or distributors, who are absolved of any responsibility either real or intended).