



It's Easy to Be Green!

**Latest Cost Effective Green
Options for Home and Business**

Presented by: Eco-\$mart, Inc. – www.eco-smart.com



About Eco-\$mart, Inc.

Inspired by the Florida House Learning Center
Sarasota, Florida



The Florida House was opened to the public on Earth Day, 1994



About Eco-\$mart, Inc.

Researching, identifying and
distributing energy and
resource saving technologies
since 1993



About Eco-\$mart, Inc.

- Founded in 1993
- An EPA Energy Star Partner
- Partnership with the Nonprofit Florida House Institute for Sustainable Development (www.i4sd.org), who approves all products and programs:
 - Free Green Materials Consultation
 - One-Stop Green Construction Supply
 - Connect Consumers to Energy Efficiency Ratings
 - Connect Consumers to Energy Efficient Financing
 - Connect Consumers to Local Green Contractors
 - Educational Seminars for Public and Trades
- A Portion of Proceeds Benefit Nonprofit (FHI)



Our Proposition:

Building or remodeling a home or commercial building using available Eco-\$mart “green” construction methods, will create a structure that:

- **Avoids Risks from Mold, Fire, Insects, Hurricanes**
- **Reduces Energy Costs by 60 to 75%**
- **Costs Less to Own and Operate, Monthly**
- **Has Greatly Increased Resale Value**
- **Has Dramatically Lower Environmental Impact**



What Does it Mean to be “Green”?

- **Energy Efficient** - Saving Money on Utilities
- Built with **Disaster and Pest Resistant** Materials
- Designed to Provide Good **Indoor Air Quality**
- **Lower Environmental Impact**
- **Certified** by EPA ENERGY STAR, Florida Green Building Coalition



About EPA ENERGY STAR

Trusted government symbol
*that makes it **easy** for consumers*
to identify energy efficient products



Money Isn't All You're Saving



Did you know?
**Homes Can Now Be Labeled
ENERGY STAR**

An ENERGY STAR Home delivers ...

- ☞ At least 30% greater energy efficiency than standard homes
- ☞ Third-party verification
- ☞ Easy consumer identification



Did you know?
Green Homes Create
Extra Spending Money each Month

	Standard Home	Green Home
Home Price	\$375,000	\$398,725
Monthly Mortgage Pmt.	\$2495	\$2652
Monthly Utility Bill	\$417	\$167
Tax Savings	\$0	(\$47.35)
Insurance Savings	\$0	(\$50.00)
Total Monthly Expenses	\$2911	\$2722
Extra Spending Money	\$0	\$189

It costs less to live in a green home!



Did you know?
Green Homes Create Extra
Buying Power with Energy
Efficient Mortgages

	Standard Home	Green Home (EEM)
Housing Price:	\$375,000	\$398,725
Qualifying Income:	\$105,000	\$95,000
Actual Income:	\$100,000	\$100,000
Largest House:	\$350,000	\$430,000
Buyer Qualifies?	NO	YES

Energy savings are treated as income!



Did you know?
**Green Features Mean Higher
Resale Value**

- The Appraisal Journal Cites a **\$20.73 Increase in Resale Value for every \$1 in Annual Energy Cost Savings (\$8000 Upgrade = \$24,000 Resale)**

Plus, customers value:

- EPA Energy Star and Other Certifications
- Disaster Resistance, Pest Resistance Healthy Indoor Air Quality
- A Record of Lower Operational and Maintenance Costs



Rebates / Incentives - Residential

- PV / Water Heating / Geothermal Heat Pumps / Wind Power - **30% Federal Tax Credit, NO LIMIT**
- PV - State of Florida Rebate **\$4.00 per W, up to \$20,000.00**
- Solar Water - State of Florida Rebate, **\$500.00**
- Windows / Insulation / Reflective Roofs / A/C – **30% Federal Tax Credit, up to \$1500.00**



Rebates / Incentives - Commercial

- PV / Water Heating / Geothermal Heat Pumps / Wind Power - **30% Federal Tax Credit GRANT, NO LIMIT**
- PV - State of Florida Rebate **\$4.00 per W, up to \$100,000.00**
- PV / Solar Water / Solar Pool for Hotels / Restaurant / Condo - Suncatcher Rebate – Per BTU (**typically \$2500.00 to \$5000.00**)
- Lighting / AC / Water Heating – **\$1.80 per S.F. Tax Deduction** for 50% Savings



Green High Performance Package: 6 Key Systems for Construction

1. Poured Concrete or SIP Walls
2. Poured Concrete, SIP or Foam Sealed Roof
3. Passive Solar Water Heating
4. High Efficiency (Water Cooled) Air Conditioning
5. Low-E / Impact Windows
6. Greywater Recycling System

Applying these 6 systems to any home design will reduce energy consumption by 60 to 75 percent, and water consumption by 30 percent. Additional cost is zero to 10 percent, creating lower monthly cost of ownership and a healthier, more secure, valuable home.



Example Cost / Benefit

6 Key Systems for New Construction

<u>Eco-Smart Features / Additional Costs</u>	<u>Standard Home</u>	<u>Eco-Smart Home</u>
E-Wall Poured Solid Concrete or SIP Wall*	No	\$6,500
Biobased Soy Foam, HPRS or SIP Roof*	No	\$4,875
Passive Solar Water Heater (after Federal tax credit)	No	\$3,250
Water-Cooled A/C	No	\$2,600
Energy Star Low-E and/or Impact Windows	No	\$4,550
Brac Greywater System	No	\$3,900
Sale Price	\$375,000.00	\$400,675.00
Mortgage (@ 7.0%)	\$2,494.88	\$2,665.70
Utility Bills (60% Lower Electric, 30% Lower Water)	\$416.67	\$166.67
Insurance Savings	\$0.00	-\$50.00
Tax Benefit (Mortgage Pmt is Tax Deductible)	\$0.00	-\$51.24
Non-Combustible	No	Yes
No Mold and Mildew	No	Yes
Disaster Resistant - Hurricanes, Fires	No	Yes
Healthy Indoor Air Quality	No	Yes
Pest Resistant	No	Yes
Low Noise Transmission	No	Yes
Increased Resale Value**	No	Yes
Additional Interior Usable Footage (SF)	No	Yes
Monthly Out-of-Pocket	\$2,911.55	\$2,731.12
Savings, from Day One >>>>>>>>>>		\$180.43
MORE HOME FOR LESS MONEY!		



Green High Performance Package: 6 Key Systems for Remodeling

1. Passive Solar Water Heating
2. High Efficiency (Water Cooled) Air Conditioning
3. Low-E / Impact Windows or Eco-Flector
4. Biobased Foam Sealed Attic
5. LED Lighting
6. Atmospheric Water Generator

Applying these 6 systems to any home remodel will reduce energy consumption by 50 to 60 percent, and eliminate bottled water cost. Using mortgage financing, immediate positive cash flow is created,



Example Cost / Benefit

6 Key Systems for Remodeling

<u>Eco-Smart Upgrade Features</u>	<u>Standard Home</u>	<u>Eco-Smart Home</u>	<u>Upgrade Cost</u>
Passive Solar Water Heater	No	Yes	\$5,500
Water Cooled A/C Unit	No	Yes	\$7,500
Eco-Flector Window System	No	Yes	\$3,000
Water Blown Foam Insulation	No	Yes	\$4,000
LED Lighting	No	Yes	\$500
Atmospheric Water Generator	No	Yes	\$1,500
Rebates / Incentives	No	Yes	-\$3,650
Home Price	\$250,000	\$268,350	
Mortgage (@ 6.0%)	\$1,498.88	\$1,608.89	
Electric Bills (60% Lower w/Eco-Smart)	\$240	\$96.00	
Tax Savings (from Mortgage Pmt. Deduction)	\$0	-\$33.01	(30% tax bracket)
Monthly Out-of-Pocket	\$1,738.88	\$1,671.89	
Savings, from Day One >>>>>>>>>		\$66.99	per month



Green Performance Package Commercial Retrofit:

1. Demand Buster Water-Cooled A/C Retrofit
2. Eco-Flector Insulating / Radiant Barrier Window Retrofit
3. LED or Induction Lighting Upgrade (interior and exterior lighting)
4. Solar Water Heating
5. Photovoltaic Energy System

Applying these 5 systems to a building retrofit will **reduce energy consumption by 50 to 75 percent**. Typical payback period is three to five years. Program can be leased for **immediate positive cash flow**.



Example Green Building Retrofit Cost / Benefit

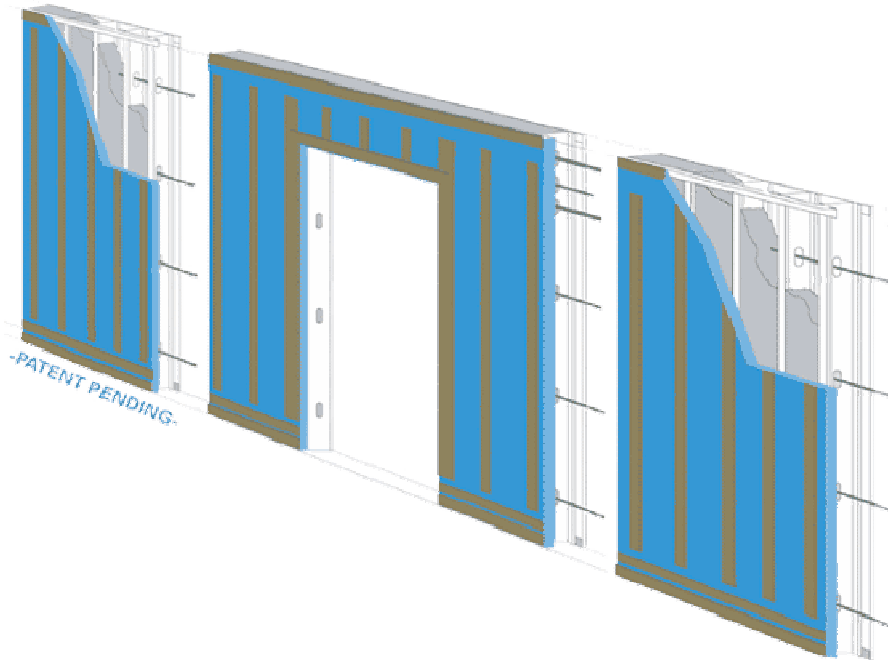
	Standard Building	Eco-Smart Retrofit
Eco-Smart Retrofit Features / Costs		
Demand Buster Water-Cooled A/C Retrofit	No	\$82,500
Eco-Flector Window Radiant Barrier / Insulator	No	\$90,000
LED / Induction Lighting, Interior and Exterior	No	\$104,000
Solar Water Heating	No	\$65,000
Photovoltaic System	No	\$150,000
Retrofit Cost		\$409,000.00
Monthly Electric Bills (50% Lower w/Eco-Smart)	\$23,800.00	\$11,900.00
Increased Occupant Comfort, Productivity	No	Yes
Low Noise Transmission	No	Yes
Enhanced Lighting Effectiveness	No	Yes
Improved Pest Resistance	No	Yes
Low Maintenance	No	Yes
Lease Option Monthly Payment (5 year lease at 12%):		-\$9,097.98
Monthly Energy Savings:		\$11,900.00
Immediate Positive Cash Flow Per Month:		\$2,802.02
Or, Cash / Payback Example: Savings, First Month:		\$11,900.00
Savings, First Year:		\$142,800.00
Payback Period (Yrs.):		2.86



Locally Available, Cost Effective Green Materials



EBS Solid Concrete Walls (Poured on Site)



280mph Wind Resistance - Miami Dade Control Number - R-14 to R-24 Insulation Value
- No Mold and Mildew Problems - Faster Construction - Lower Sound Transmission



EBS Solid Concrete Walls



- In one step, E-Wall replaces: concrete block, furring, insulation, tie beams, sills, lintels
- Seamless trade integration: drywall, electrical, windows, stucco



Wind Resistant Concrete Systems Roof



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



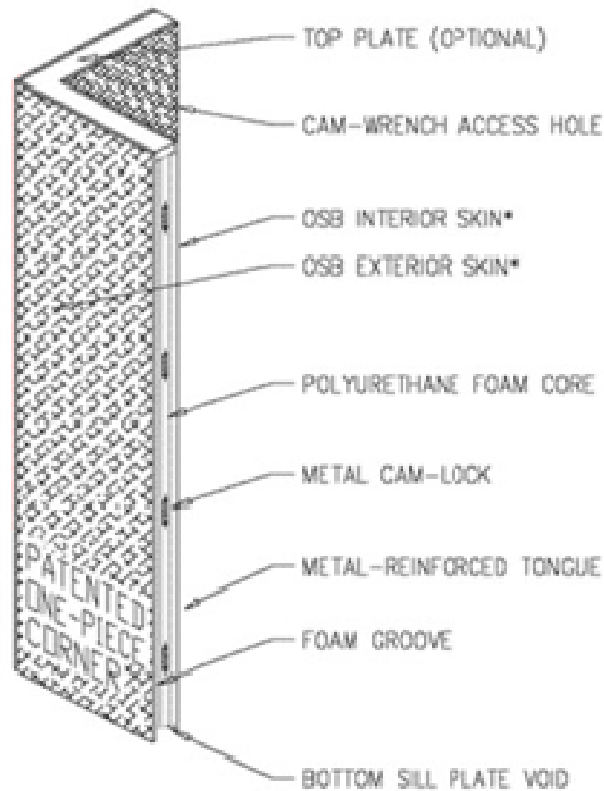
Panelized Steel Hybrid Shell



Steel stud panels with EPS insulated core. Walls and roof. HVHZ wind and impact rated. No mold. Walls and roof installed by one crew. Can eliminate or reduce truss requirements. Partially manufactured on site. Freestanding up to five stories. Very affordable.



Non-Wood Urethane Core SIP



Core is steel studs with blown urethane class-1 fire rated foam. Skin options include OSB, Fiber Rock, Magnesium Oxide Board, Steel, Composites. CAM LOCK connection between panels. Suitable for walls, floors, roofs.



Biobased Healthy Foam Sealed Attic

- **Energy efficient**
 - Creates conditioned space for ducts (20 to 25% AC savings)
- **Better air quality**
 - Eliminates dust and mold in attics
 - Controls unwanted air infiltration
 - Has no harmful emissions
 - Avoids use of fiberglass
- **Improved disaster and pest resistance**
 - Reduces pressure differentials in high winds
 - Reduces spread of fire
 - Eliminates vents for flying termites
- **Greater thermal comfort**
 - Even cooling throughout home
- **Comparable cost to radiant barrier, R30, heat recovery**





Energy Efficient, Impact Resistant Windows

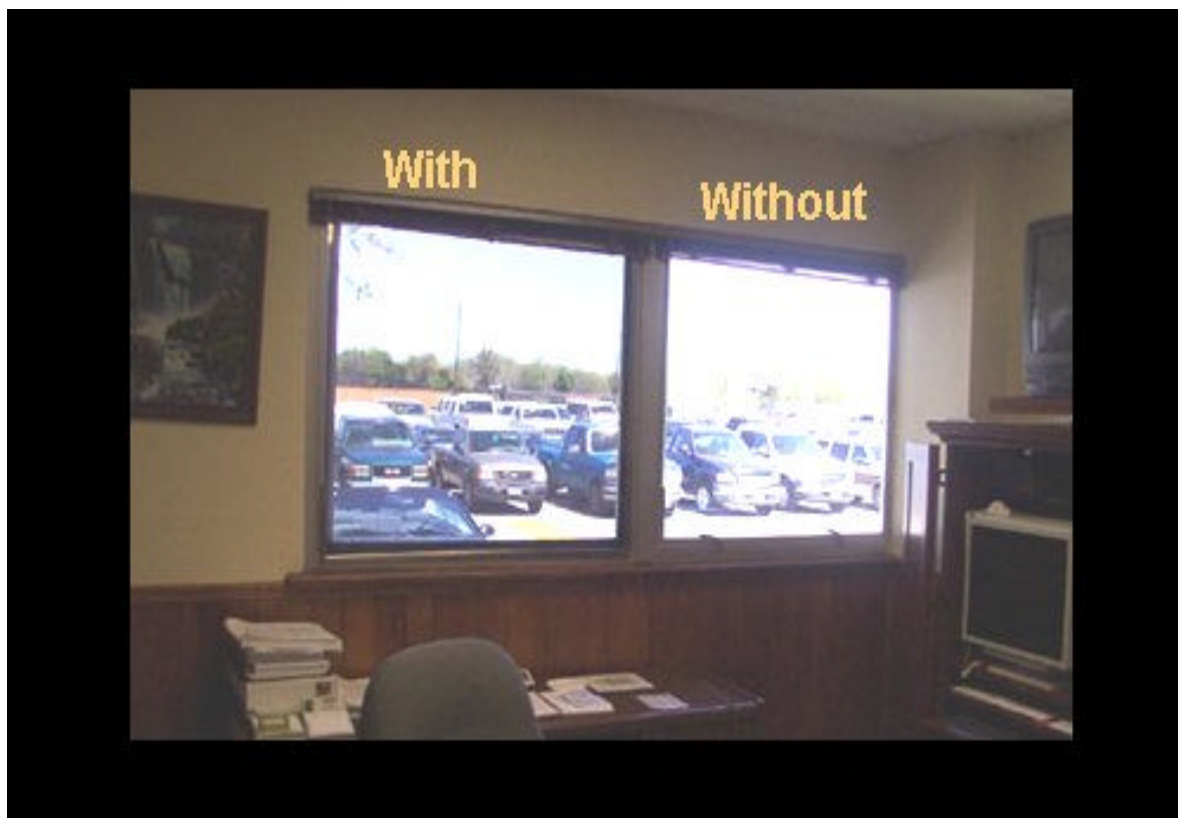


- High design pressures (over 65)
- Low SHGC – 0.26
- Coastal hardware and paint.

Available as Single Hung,
Casement, Picture Windows,
Awning, Sliding Glass doors,
French Doors



Eco-Flector Radiant Barrier / Insulating Window Retrofit



Summer
Side Out

Winter
Side Out

Insulating / Radiant Panel mounts to inside of window
with magnetic strip – reversible for winter heat trapping

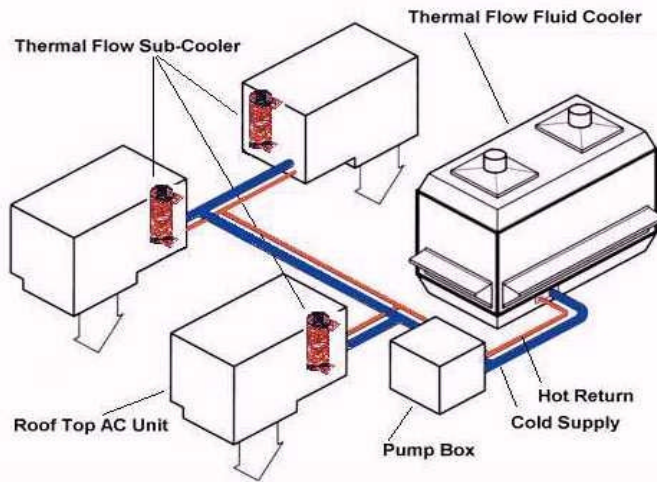


Water Cooled Air Conditioning - 50% A/C Cost Savings

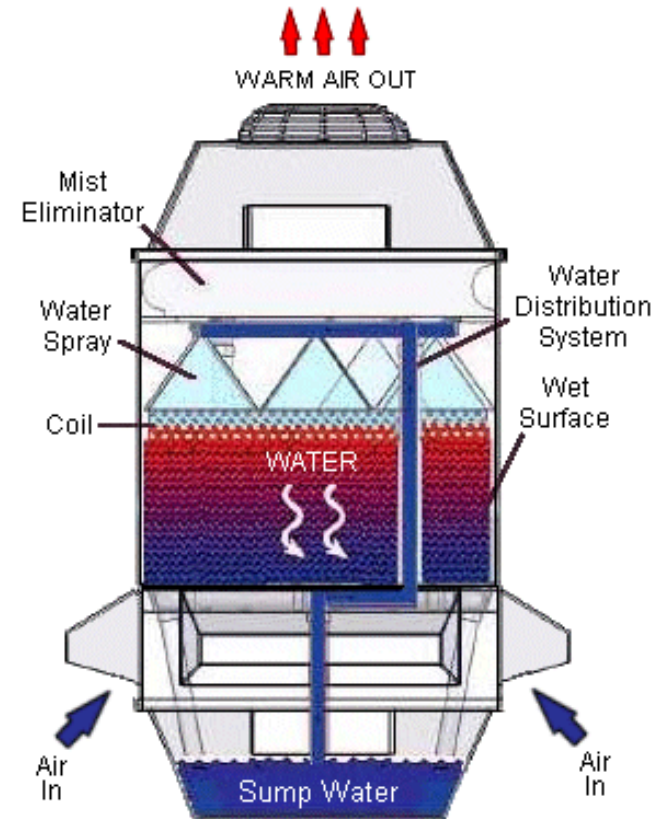
D/X Split Systems
Multi-Zone:



Demand Buster Retrofit:



Thermal Flow Demand-Buster Retrofit System





Solar Air Conditioning



U.S.N. Housing, Singapore



NOK Factory, Indonesia



TEGAEL, Portugal



MAH, Singapore

SEONA AIRE INSTALLATIONS

Newsdesk, Philippines



Senoko, Singapore

UE Square, Singapore

NUS, Singapore



- Evacuated Tube Solar Collector Heats Fluid – Applied to Absorption Compressor
- Energy Savings of 30 to 50 Percent
- Reduces Peak Demand – Performs at Highest Efficiency when Sun is Hottest
- Scalable from Small Office to Large Commercial
- Similar Cost to Standard Equipment
- Uses Latest “Green” Refrigerant R410A



Passive Solar Water Heating - Thermosiphon

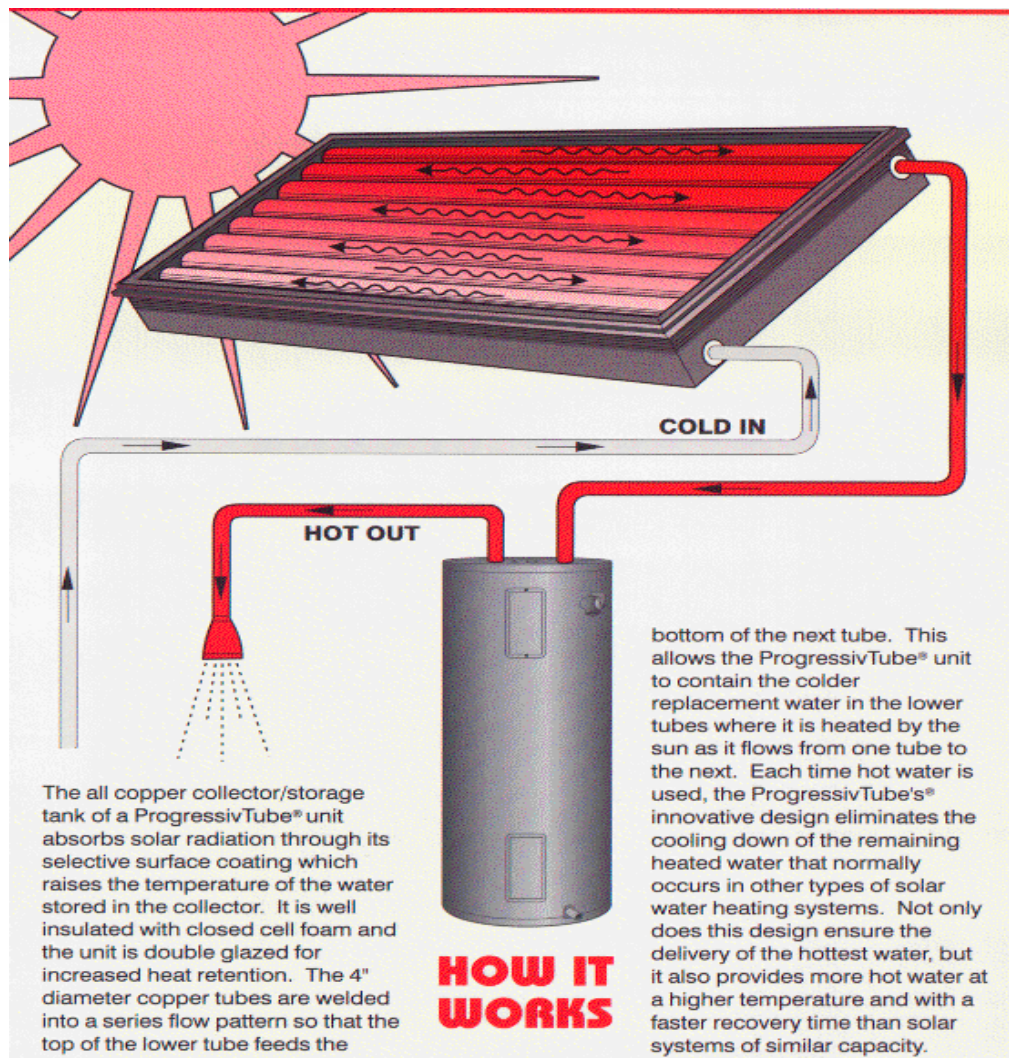


- Saves 80 to 90% of water heating costs
- No moving parts
- No storage tank required in building
- Provides hot water during power outages
- No freezing, corrosion
- Single most powerful way to reduce foreign oil dependence

The New
is availa
to suit al
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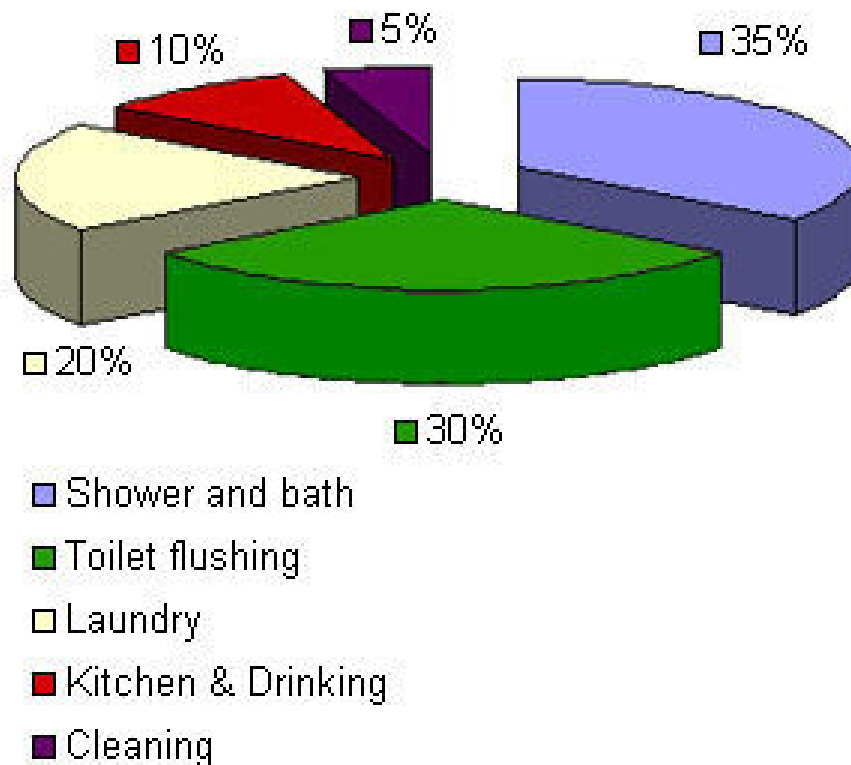
Passive Solar Water Heating - ICS



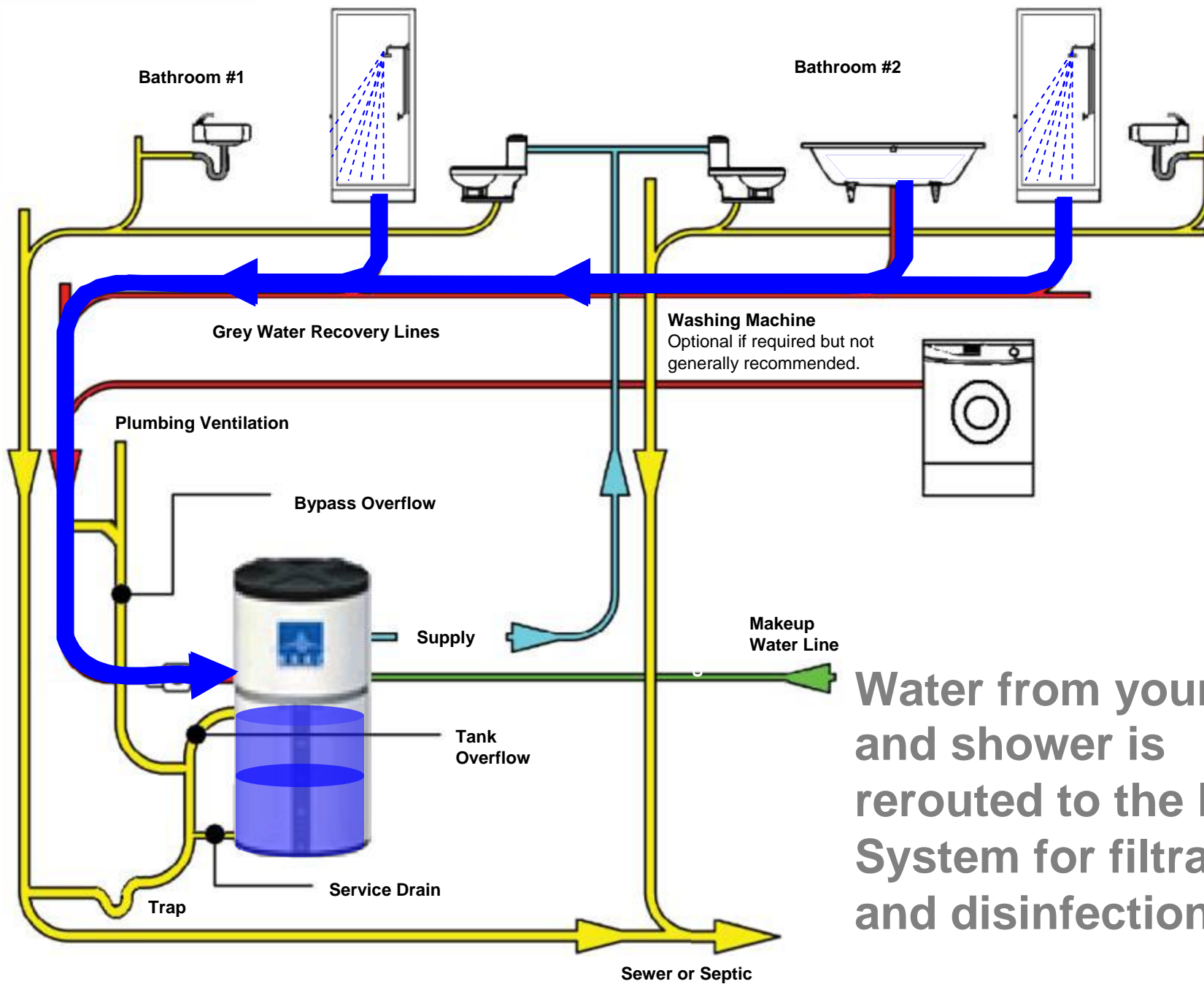
- Saves 70 to 80% of water heating costs
- No moving parts
- 10 year mfr. warranty
- Doubles building hot water supply
- Provides hot water during power outages
- Pollution reduction equal to removing one car from our highways



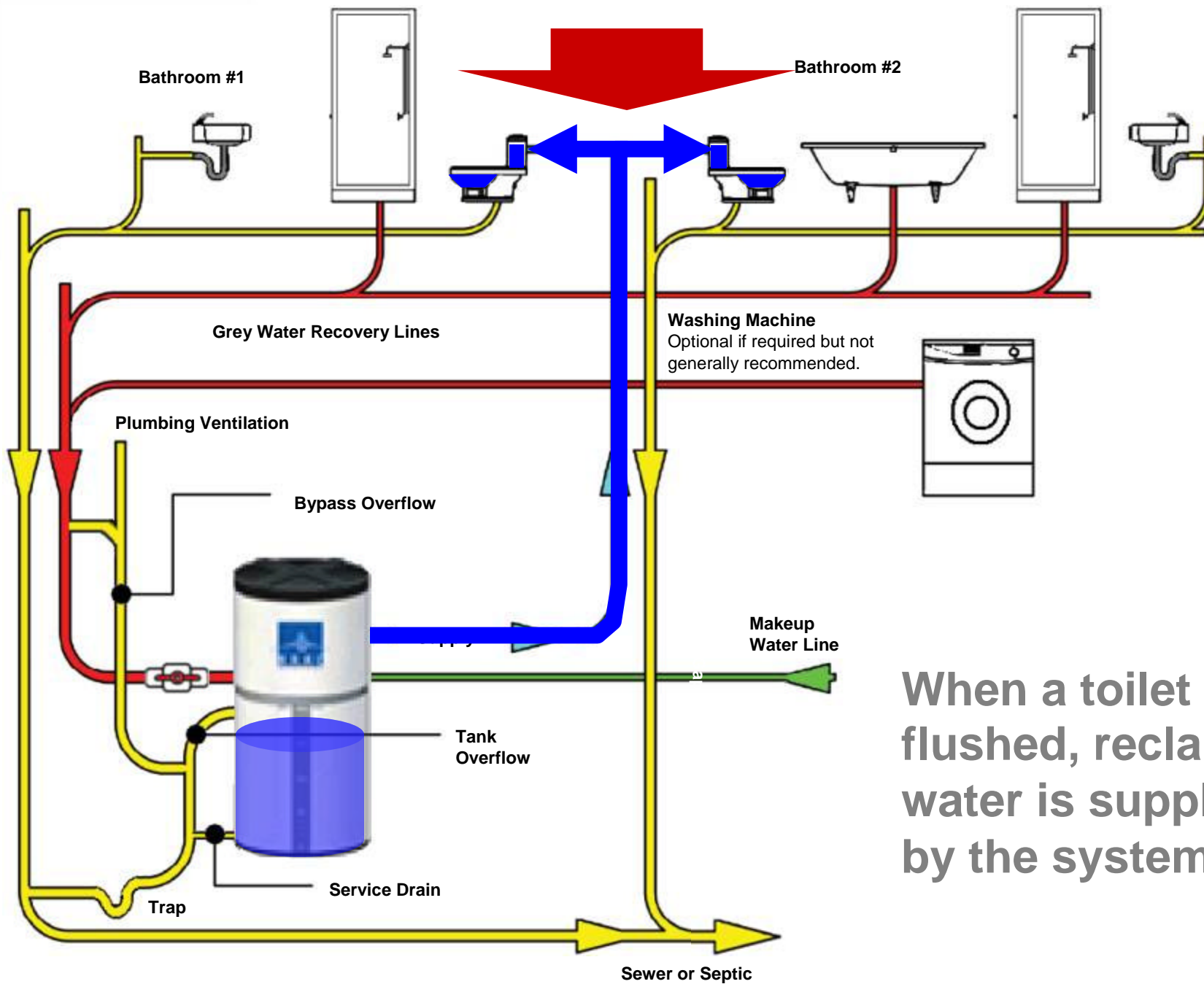
Brac Greywater System



- Reuses shower and laundry water to flush toilets.
- Can save over 30% of water and sewer costs / usage.



Water from your bath and shower is rerouted to the Brac System for filtration and disinfection



Washing Machine
 Optional if required but not generally recommended.

When a toilet is flushed, reclaimed water is supplied by the system.



Brac Greywater System (Commercial Install Photos)





Atmospheric Water Generators



Takes 5 to 8 gallons per day of water from the air (reducing humidity)

Typical \$0.12 per gallon for purified water

Electrostatic Air Filter - Removes harmful dust and particles from the air.

Double-Pass Ultra-Violet Sanitizer and Reverse Osmosis - Eliminates all harmful bacteria, viruses and micro-organisms.

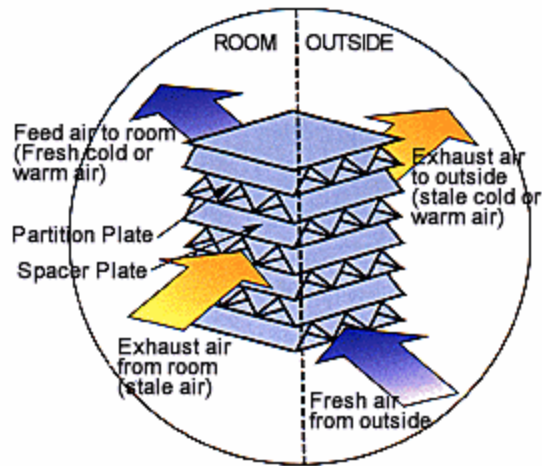
Activated Carbon Filter - Removes harmful chemicals and odors to assure great tasting water.

Monitored Recycling - Guarantees your water reserve is always fresh and pure.

No Plastic Bottles – Saving waste and transportation



Membrane Energy Recovery Ventilator (ERV)

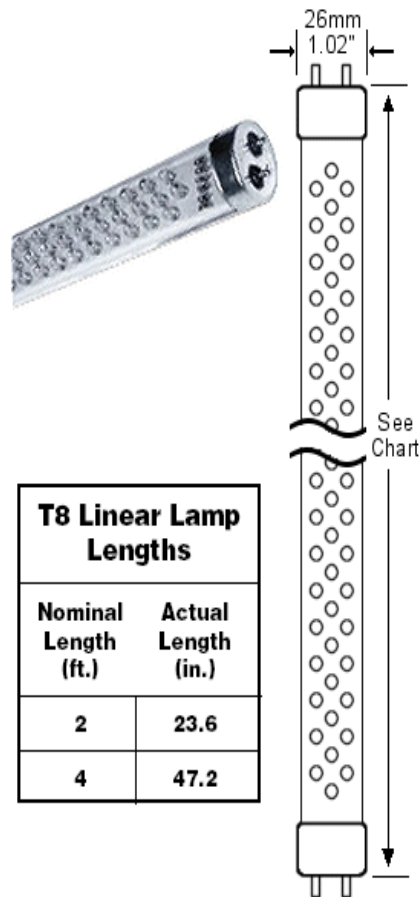


- 70% Sensible (Temp.) AND 70% Latent (Moisture) Reduction of Fresh Air Entering Building
- Outperforms Dessicant Wheel, with No Parasitic Power Use
- Can Reduce A/C Sizing by 20 to 30 Percent
- Passive Device - No Moving Parts
- No Condensation - Moisture Exchange Occurs at Vapor State
- Custom Sizes Available for Any Application
- Effective Efficiency of up to 50 EER!

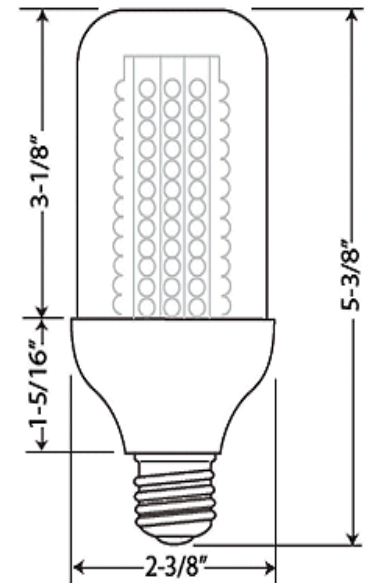
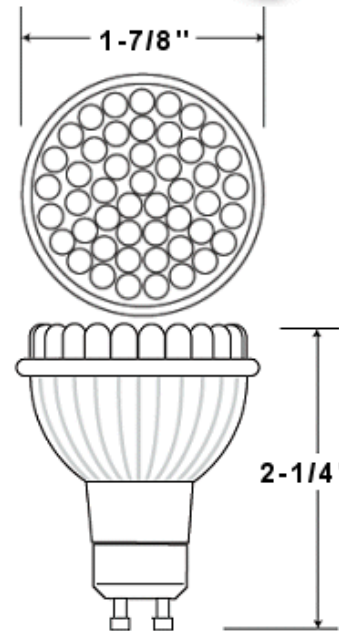


LED Replacement Lamps and Custom Fixtures

- No ballasts, no mercury.
- 50,000 hour life
- Available in warm white and daylight colors
- 3W LED = 15W CFL = 60W Incandescent



T8 Linear Lamp Lengths	
Nominal Length (ft.)	Actual Length (in.)
2	23.6
4	47.2





Green Options: LED Retrofit for HID Lighting



- 450W MH replaced with 88W LED
- 50,000 hour life
- Lowers maintenance costs



Induction Lighting (Electrode-less Fluorescent)

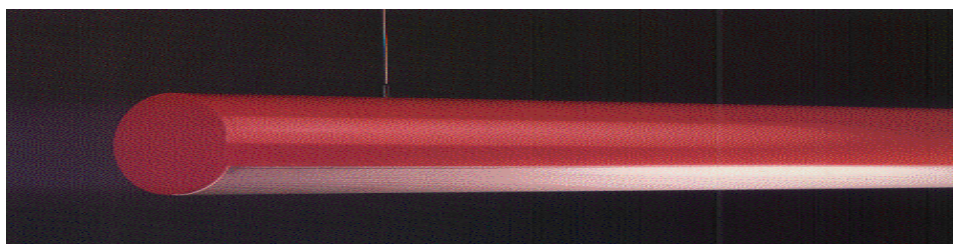


SPECIFICATIONS	Induction Lighting	Metal Halide
Watts - Electrical Usage	200w	450w
Kelvin Temp	5000k	3700k
CRI	90+	65
Rated Lamp Life	100,000 hours	20,000 hours
Fixture S/P Factor	2.0	1.26
Fixture Lumens - Photopic	20,500	28,800
Visual Acuity Lumens	41,000	36,288
Visual Acuity Lumens Per Watt	191	79
Operating Temperature	200° F	900° F
Annual Operating Cost	\$183.96	\$478.21

450W HID is replaced by 200w Induction fixture (up to 1000W HID equivalent).
 100,000 hour rated lamp, 60,000 hour ballast, 90 CRI, dimmable, instant re-strike,
 visual lumens greater than new HID fixture



T5 Electronic Ballast High Output Lighting



- **Saves 40 to 50 percent of energy costs vs. Metal Halide High Bay**
- **Higher color rendition (82 CRI), best lumen maintenance (95%)**
- **Instant re-strike, lightweight, affordable fixture**



Commercial Daylighting Systems



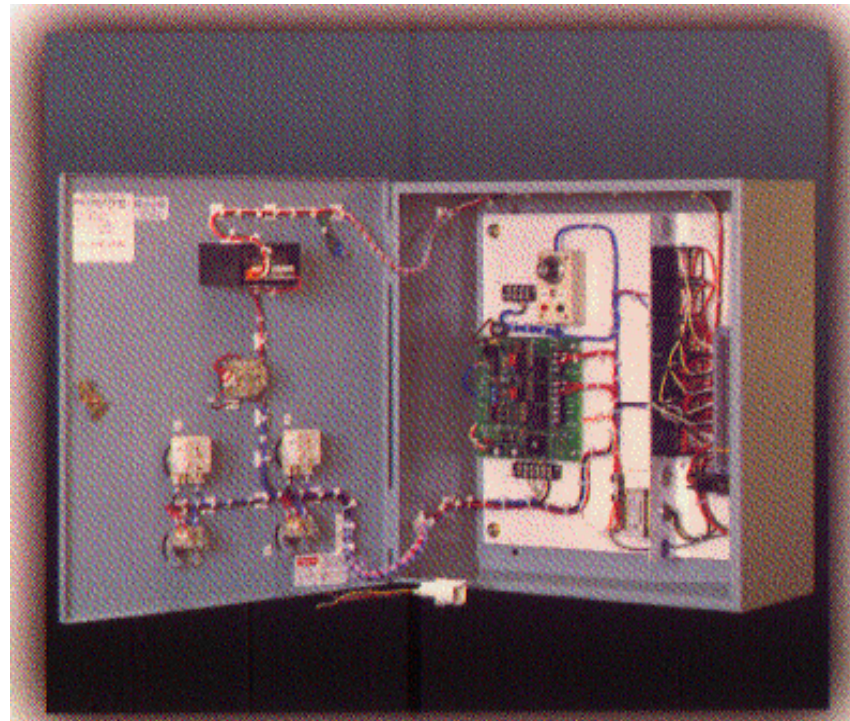
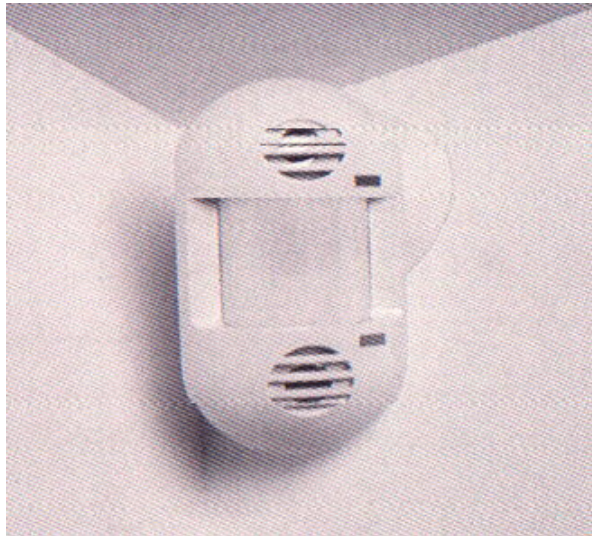
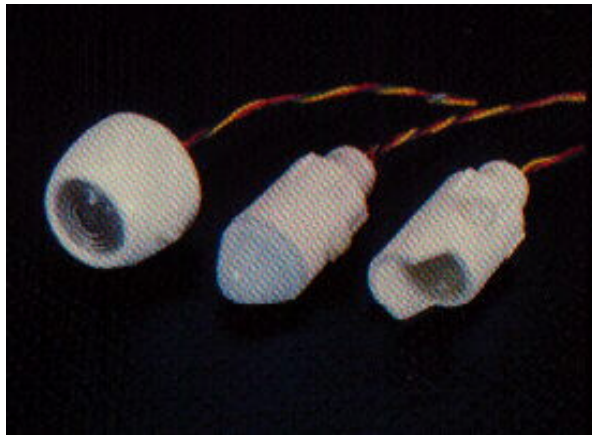


Commercial Daylighting Eliminating electric lighting for six to ten hours per day





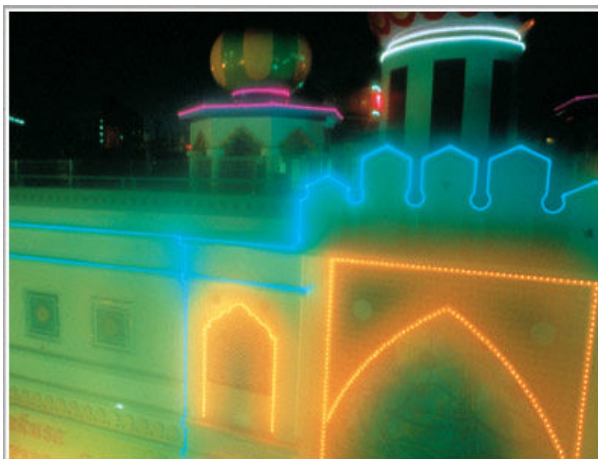
Sensors and Controls



- Automatically control lights based upon occupancy, daylight



Fiber Optic / LED Lighting



Remote Light Source, Low Energy Use, Long Life, Color Changing



Zero VOC Paint



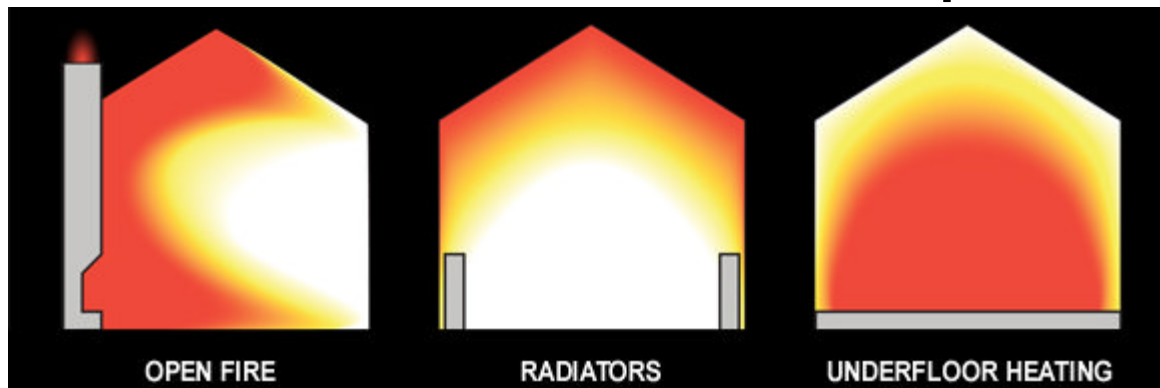
- Top Quality Paint
- Zero VOC, Including Most Tints
- Very Low Odor
- Durable, Washable
- Mold and Mildew Resistant
- Available in 1890 Colors from PPG (can Match other Mfrs.)



Radiant Floor Heating (Amorphous Metal)



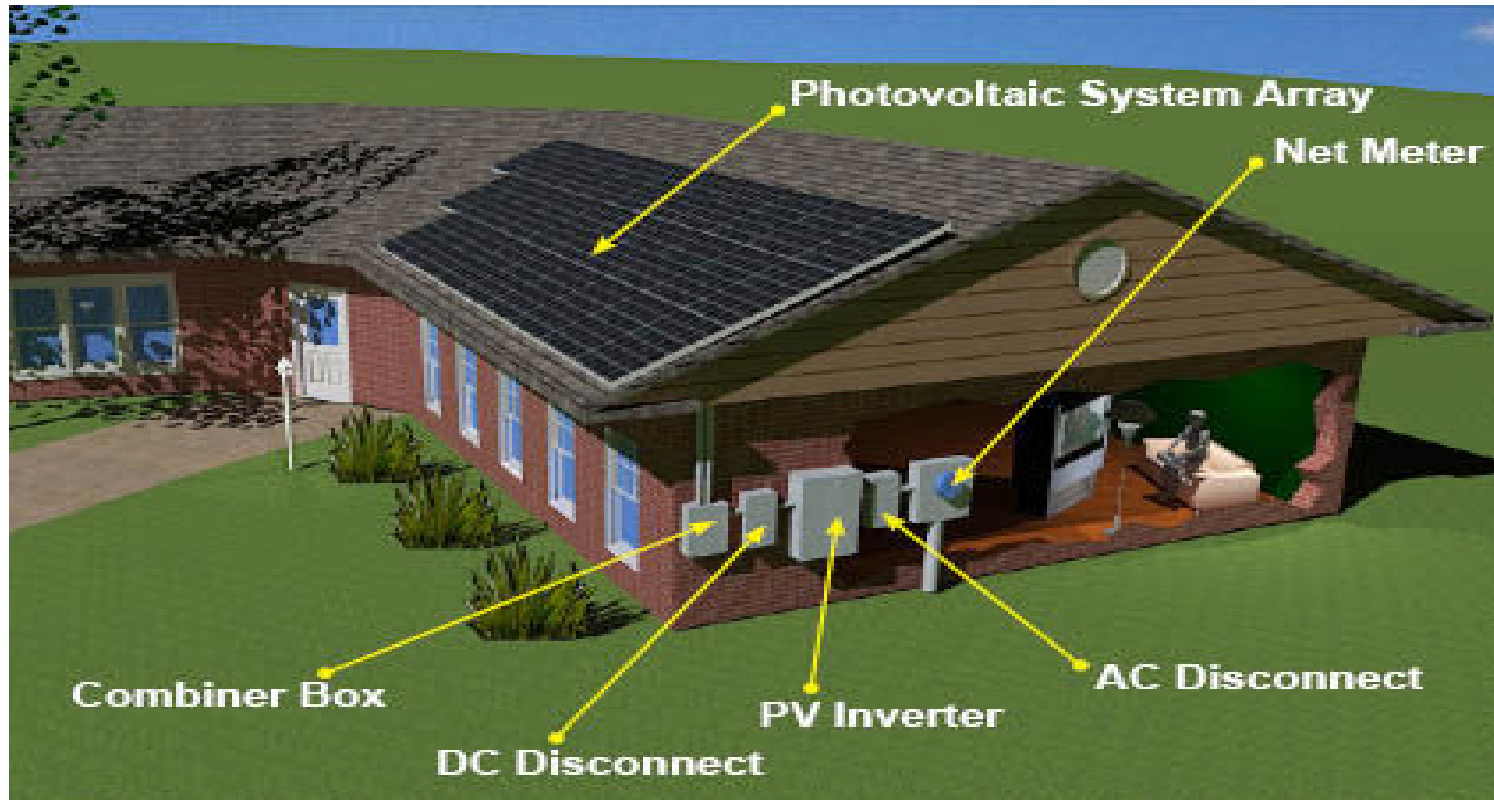
- Patented Flat Wire Evenly Heats Floor
- Reduced Delta-T Between Indoor / Outdoor
- Heat Only Occupied Rooms
- Time of Day Controls are Standard
- Can Lie Directly on Concrete Slab
- Works with Tile, Wood, Laminate, Carpet



- Better Occupant Comfort



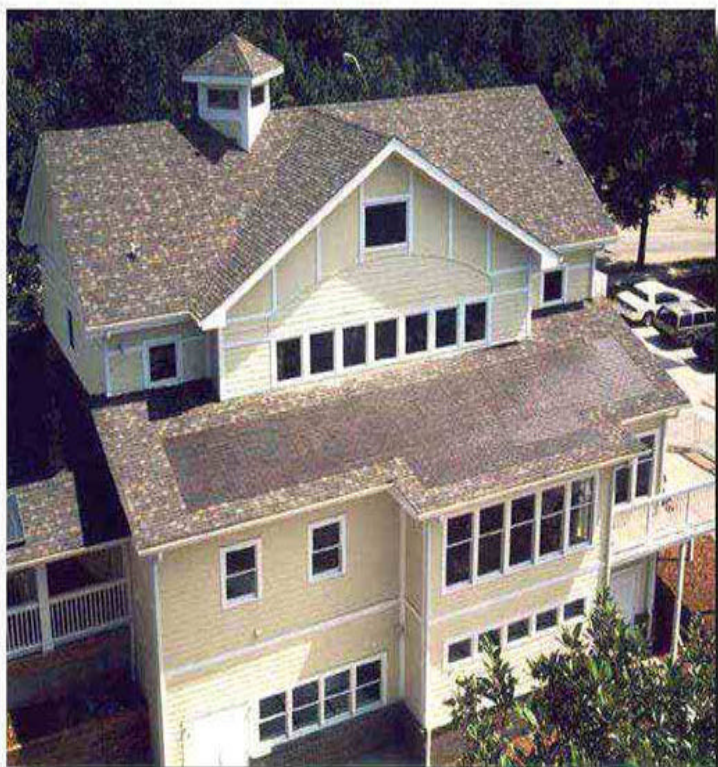
Roof or Ground Mounted Photovoltaics



- Convert sunlight into electricity
- Federal tax credit of 30%, no limit
- Florida rebate of \$4.00 per Watt, up to \$20,000 / \$100,000



Building Integrated Photovoltaics



- Roof shingles or standing seam panels that turn sunlight into electricity
- Flexible, no glass, 20 year warranty
- Crystalline framed panels and balance of systems also available



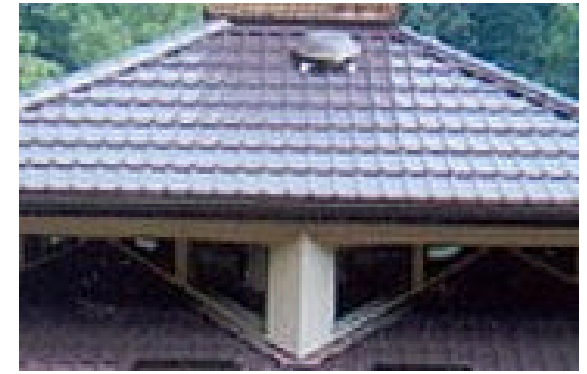
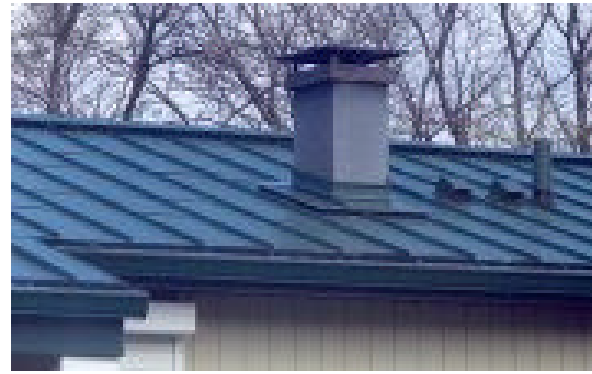
Utility Scale Photovoltaics – Dual Axis Trackers



- Reduces capital cost for power generation – least cost per kWh generated
- Protects modules – goes into horizontal “stow” position at 43mph wind
- Dual Axis Tracking - Increases power generation by 40% versus fixed



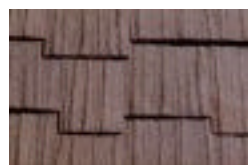
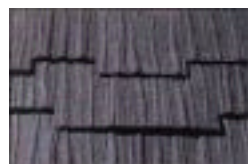
Metal Roofing - Efficient, Durable, Recyclable



Metal roofing that looks like tile, shingle or shake, but with half the maintenance. Energy efficient, disaster resistant, low maintenance, 50 year residential warranty.



Eco-Shake Recycled Plastic Composite Roofing



50/50 composite recycled plastic and recycled wood. 50 year non-prorated residential warranty. Class A fire rating.



Removable Fabric Storm Panels



Easy to install, put up, take down and store. Provides protection for the building envelope against high winds.



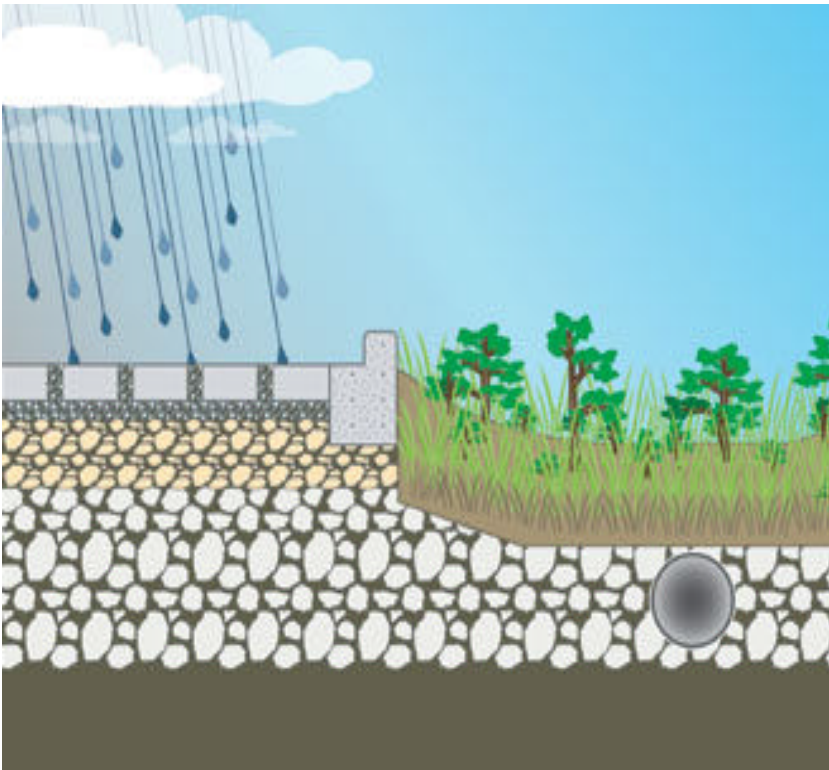
Recycled Plastic Composite Decking



Zero Maintenance - Never Seal or Stain - 20 Year Warranty



Permeable Brick Pavers



Allows storm water to permeate, reducing retention / detention requirements. Can be directed to cisterns. Engineered for roadways, driveways, sidewalks.



Permeable Brick Pavers

Elmhurst College – 3.3 ac-ft of water storage under 80,000 sf parking lot (no storm sewers required)



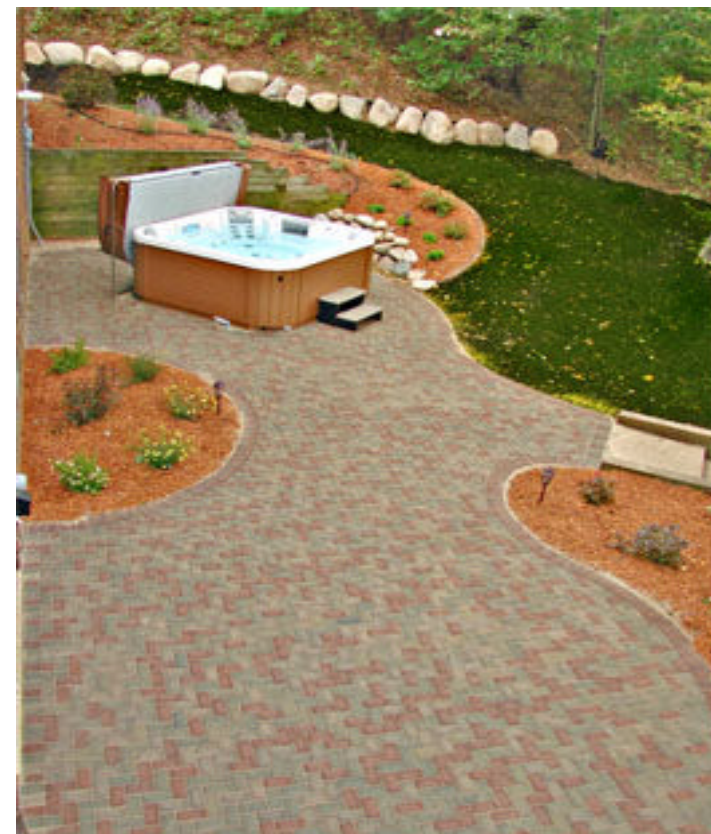
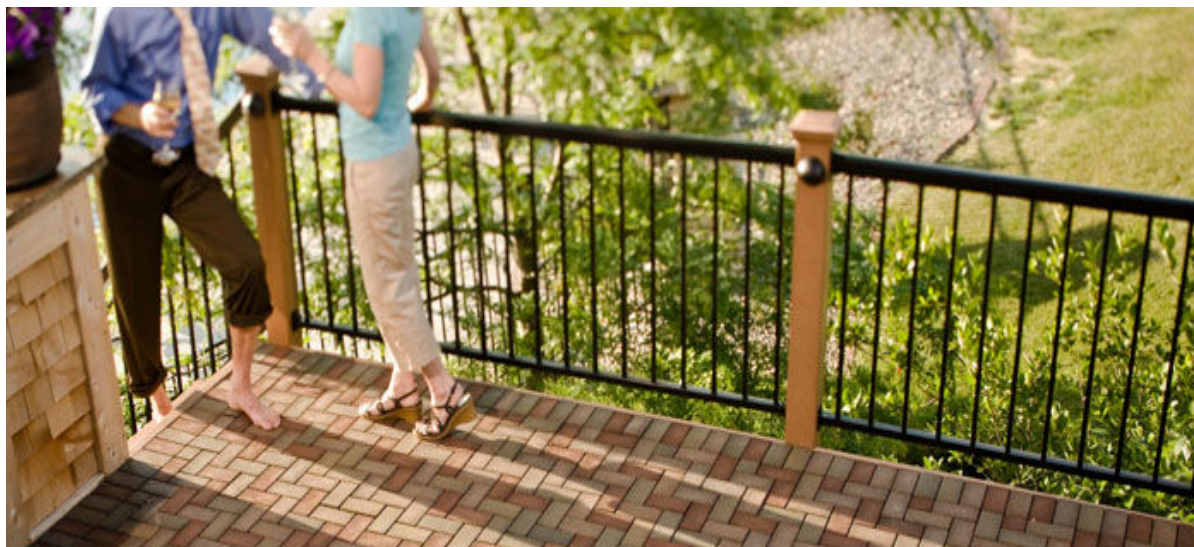
APT provides turn-key design, engineering, interface with local water management and installation services.



Wildwood subdivision - all roads, sidewalks and driveways to be APT



VAST Composite Recycled Permeable Pavers



95% Recycled Content (Tires and Plastic Bottles). Uses include decking, driveways, parking lots, sidewalks, pool decks, storm water management, rooftop patios. Can cut with wood saw, no sealing, no cracking.



Ozone / UV Water Purification

Under-Sink Ozone / Filtration



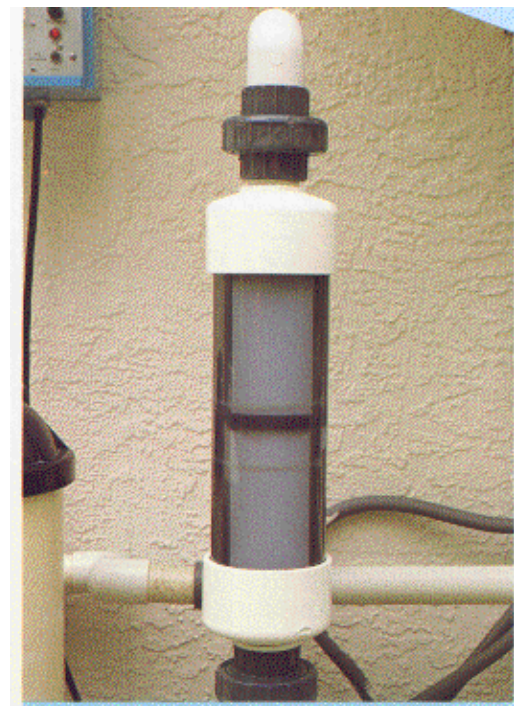
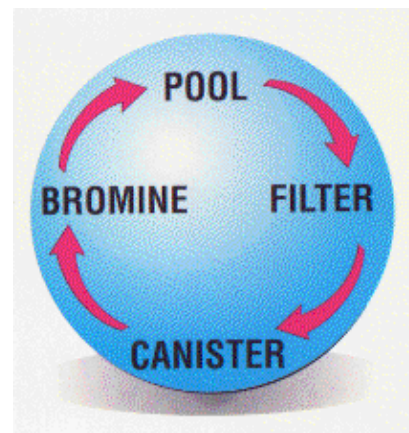
Whole House UV / Media Filter



No Wasted Water (as with R/O) - Removes Metals, Chlorine, Kills Bacteria and Viruses on Contact



Electro-Brom Chlorine-Free Pool



Never Use Chlorine - Effective at Wider PH Range - Kills Algae - No Burning of Eyes, Drying of Skin - Triples Pool Surface Life - Lowers Maintenance Costs



Stealth 0.8 GPF Toilets



- Lowest Water Use on the Market
- Saves 20,800 Gallons per Year
- Patented Vacuum Assist Flush
- ADA Compliant – Standard
- Round or Elongated

(Annual Savings: versus 3.5 GPF, 4 people, 5 flushes per day)



Flapperless Toilets

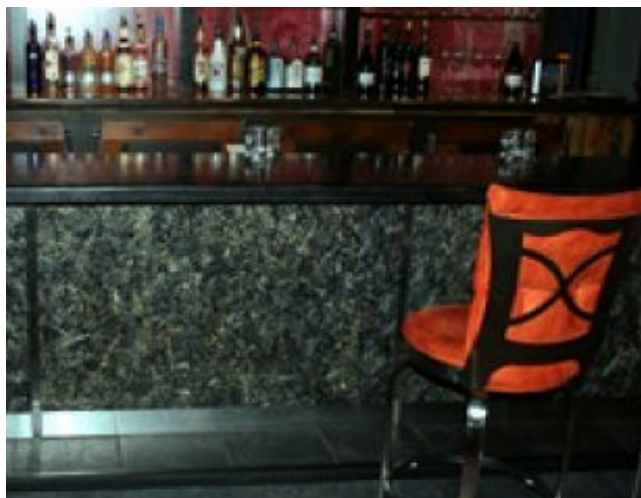


Features:

- Tamperproof 1.6 Gallon Flush
- No Flapper to replace
- No Double Flushing
- No Leaks
- No Maintenance
- All USA trim. Fluidmaster Fill valve
- Meets or exceeds all ANSI/ASME/CSA low consumption water requirements



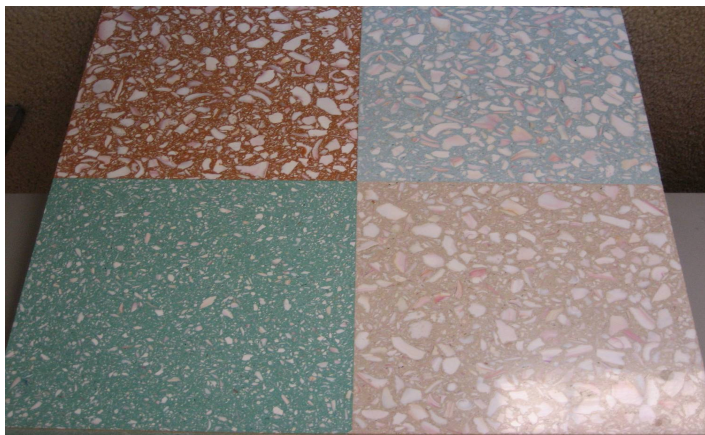
Torzo Green Countertops



Recycled wheat straw, sunflower husks, wood chips or wood fiber, blended with nontoxic acrylic. Durable, yet workable with standard wood tools (D, D, S, O, I, I).



Recycled Conch Countertop



Made from waste conch shells from Turks & Caicos conch farms. Low VOC binder.
Custom materials and colors including lamps, bowls, counters, sinks, etc.



Bamboo and Strand Woven Bamboo Flooring



- 5 years growth = 40 years of hardwood forest growth
- Durable, stable, can be sanded and refinished
- Available in narrow and wide plank
- Glue down or floating floor



Strand Woven Coconut Palm Flooring



Vertical Grain



Horizontal Grain

- Made from coconut palm lumber - otherwise burned, typically
- Strand woven = very dense and dent resistant (2500 to 3000 Janka)
- Available as “vertical” or “horizontal”, engineered over strand bamboo back



Cork Flooring

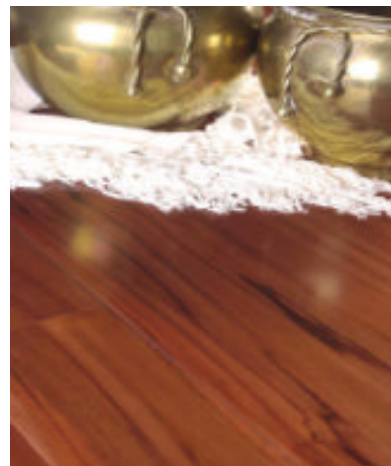
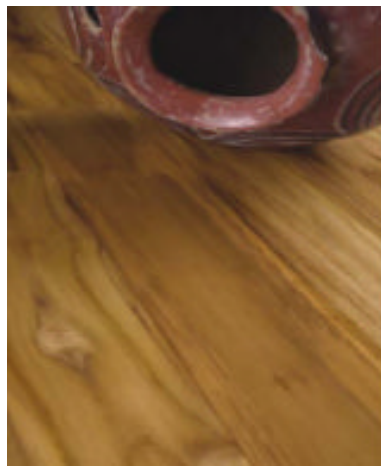
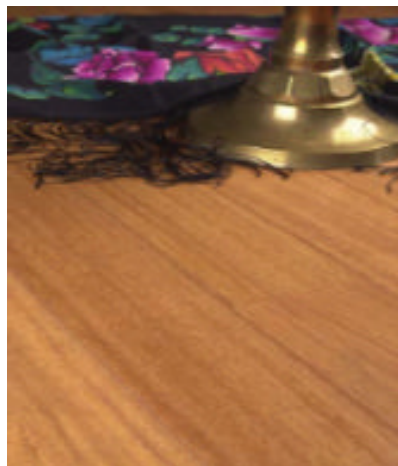


- Made from bark of Cork Oak tree
- Bark grows back in 9 to 14 years
- Hypoallergenic, soft under foot - tiles or floating floor





FSC Certified Teak Flooring

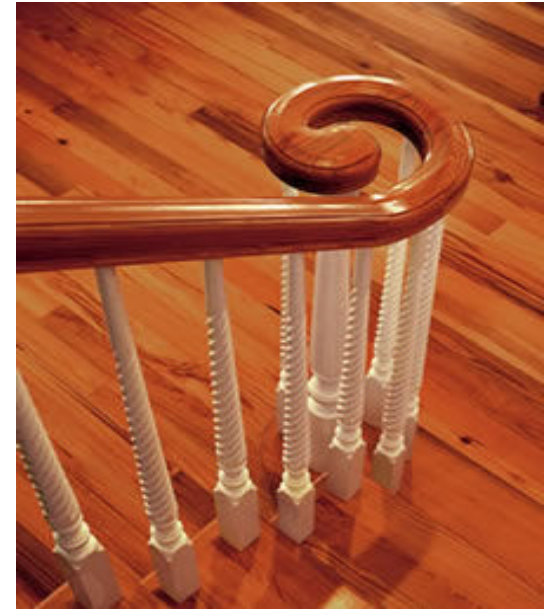


- Sustainably Plantation Grown in Costa Rica
- Certified by Forestry Stewardship Council (FSC)
- Reduces Harvesting from Old Growth Forests





River Recovered Heart Pine and Cypress



- Preserved in River Beds since 1800's
- Dense, Durable, Beautiful
- Available in Several Styles





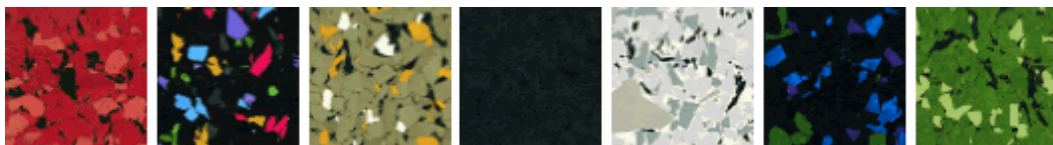
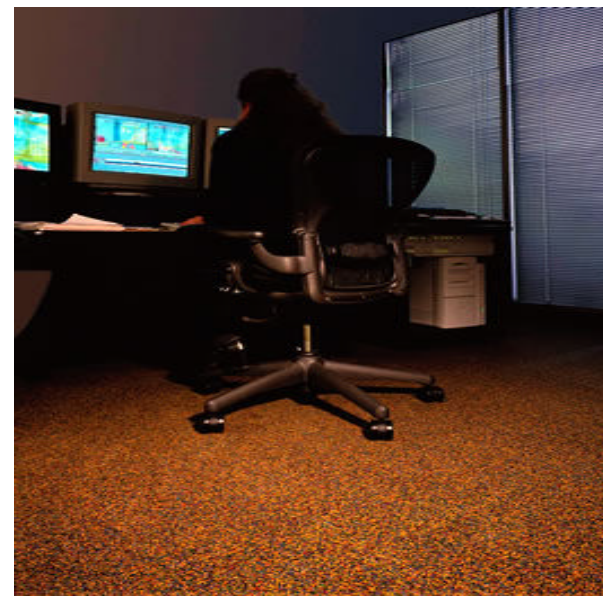
Marmoleum Click



- Durable, easy to clean
- Made from linseed oil, rosins, wood flour
- Available in sheet goods or tiles



Recycled Rubber Flooring



- Very durable, 100's of colors and styles
- Made from recycled tires, epdm

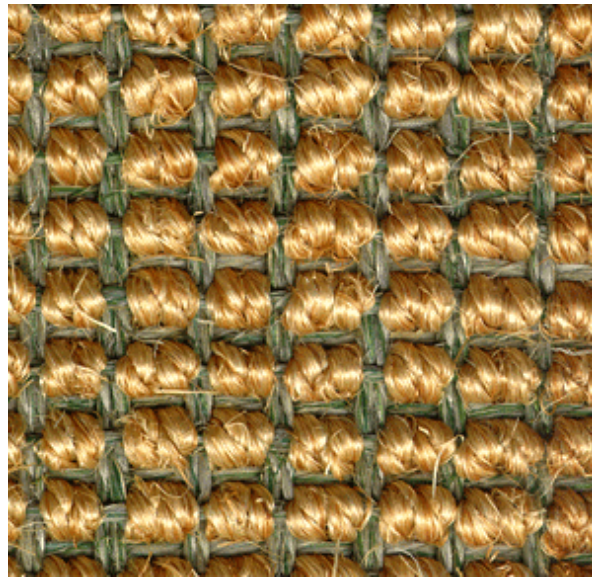
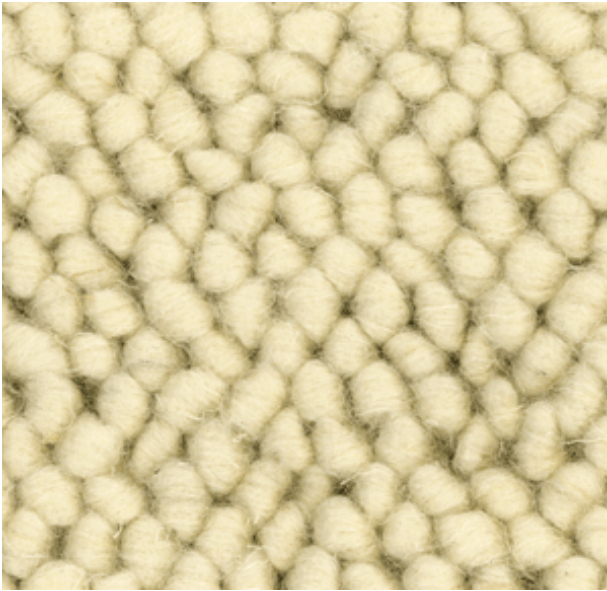


Recycled Rubber Outdoor Surfaces





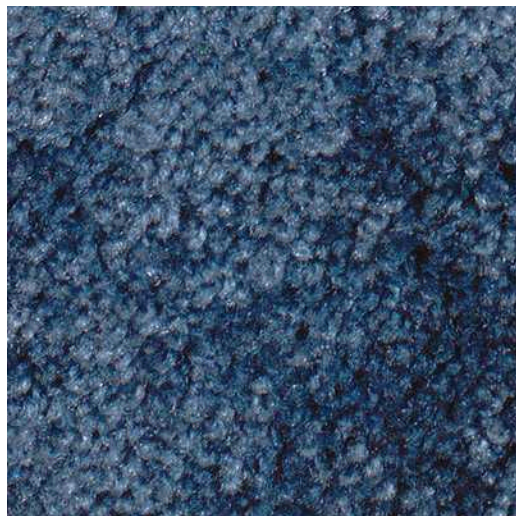
Wool, Sisal and Seagrass Flooring



- Renewable fibers
- Less mold growth potential
- Long lasting warmth of colors, textures



100% Recycled Plastic Carpet



- Made from 100% recycled plastic soda bottles
- More stain and wear resistant than nylon
- Available in 24 colors - several styles



Renewable Cabinetry Wood



FSC Teak, Bamboo, Palm



Kirei Renewable Cabinet Board



- Renewable, attractive material made from recycled Sorghum Wheat



Florida Friendly Landscaping





Recommendations Overview

- **Include the following key systems:**
 - Alternative Wall System (Poured Concrete or Structural Panel)
 - SIP or Poured Concrete Roof or Foam Sealed Attic
 - Water Cooled Efficient A/C
 - Passive Solar Water Heating
 - Efficient, Impact Resistant, Low-E Windows
 - Brac Greywater System
- **Consider Green Options: lighting, PV, green flooring, cabinets, water saving fixtures, water purification, nontoxic paints**
- **Have the home / building certified as:**
 - EPA ENERGY STAR
 - Florida Green Building Coalition



What you get...

- **A more valuable building due to:**
 - Energy efficient, disaster resistant
 - Quieter, more comfortable
 - Healthy indoor air quality
 - Lower maintenance
 - Higher resale value
 - **Extra spending money every month**
 - Certified by independent sources
 - Faster construction, fewer errors
 - Lower environmental impact
 - Reduced dependence on foreign oil



What Are the Next Steps?

- 1. Contact Eco-\$mart for a free consultation about your project.**
- 2. Work with a “Green” architect or builder, or connect us to your design / construction team.**
- 3. Have the building certified by an independent energy rater.**
- 4. Please tell your friends and associates what is possible.**

888-329-2705

www.eco-smart.com