



Going Forward City of Houston: Getting Greener



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Green Building Resource Center



Texas

STATE ENERGY PROFILES

Map & Facts

Overview

Data

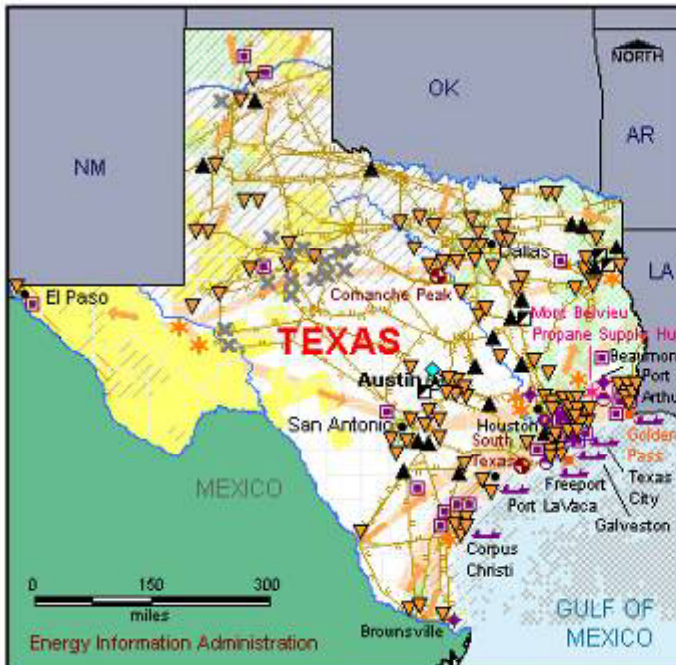
Related Reports

Data Directory

Select a State

Last Update: May 27, 2010
Next Update: June 3, 2010

[Print Full Report](#)



Energy Information Administration

Mouse over symbols for more details.

<ul style="list-style-type: none"> ■ Coal Mine, Surface ■ Coal Mine, Underground ★ Natural Gas Hub ◆ Petroleum Refinery ◆ Oil Import Site ◆ Oil Seaport — Electricity Transmission Line (>= 345 kV) — Natural Gas Flow (1 mile band width = 100 million cubic feet/day) ▨ Oil and Gas Active Leases 	<p>Major Electric Power Plants (>= 100 MW)</p> <ul style="list-style-type: none"> ▲ Coal ● Geothermal ◆ Hydroelectric ▼ Natural Gas ● Nuclear ● Petroleum ● Solar × Wind ● Wood ● Other Renewable 	<p>Renewable Energy Potential</p> <ul style="list-style-type: none"> ▨ Biomass (>= 50 tons/sq km/yr) ▨ Geothermal (>= 80 milliwatts/m2) ▨ Solar (>= 6.0 kWh/m2/day) ▨ Wind (>= 3 Power Class)
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Texas Quick Facts

- Texas is the leading crude oil-producing State in the Nation (excluding Federal offshore areas, which produce more than any single State).
- The State's signature type of crude oil, known as West Texas Intermediate (WTI), remains the major benchmark of crude oil in the Americas.
- Texas's 27 petroleum refineries can process more than 4.7 million barrels of crude oil per day, and they account for more than one-fourth of total U.S. refining capacity.
- Approximately three-tenths of total U.S. natural gas production occurs in Texas, making it the Nation's leading natural gas producer.
- Texas also leads the Nation in wind-powered generation capacity; there are over 2,000 wind turbines in West Texas alone.
- Texas produces and consumes more electricity than any other State, and per capita residential use is significantly higher than the national average.

Texas Energy

Texas Energy:



Table R1. Energy Consumption by Sector, Ranked by State, 2007

Rank	Residential Sector		Commercial Sector		Industrial Sector		Transportation Sector		Total Consumption	
	State	Trillion Btu	State	Trillion Btu	State	Trillion Btu	State	Trillion Btu	State	Trillion Btu
1	Texas	1,594.1	California	1,613.9	Texas	5,950.9	California	3,386.8	Texas	11,834.5
2	California	1,535.2	Texas	1,381.6	Louisiana	2,403.8	Texas	2,907.9	California	8,491.5
3	Florida	1,339.5	New York	1,257.4	California	1,955.7	Florida	1,614.3	Florida	4,601.9
4	New York	1,201.8	Florida	1,089.2	Ohio	1,347.8	New York	1,100.5	New York	4,064.3
5	Illinois	997.1	Illinois	780.1	Indiana	1,345.8	Illinois	1,063.5	Ohio	4,048.9
6	Pennsylvania	966.6	Pennsylvania	718.9	Pennsylvania	1,288.8	Ohio	1,037.8	Illinois	4,043.2
7	Ohio	955.6	Ohio	707.8	Illinois	1,202.5	New Jersey	1,037.0	Pennsylvania	4,006.2
8	Michigan	786.0	New Jersey	639.1	Alabama	941.6	Pennsylvania	1,031.8	Louisiana	3,766.2
45	South Dakota	66.0	North Dakota	60.9	Delaware	101.1	New Hampshire	107.1	Hawaii	343.7
46	North Dakota	63.8	Wyoming	60.3	South Dakota	74.8	North Dakota	104.5	New Hampshire	314.2
47	Alaska	54.4	South Dakota	58.7	Hawaii	68.3	South Dakota	92.7	Delaware	302.0
48	Vermont	47.5	Delaware	58.4	New Hampshire	44.6	Delaware	75.7	South Dakota	292.2
49	Wyoming	45.8	Rhode Island	57.6	Vermont	29.4	Rhode Island	64.6	Rhode Island	217.6
50	Hawaii	37.7	Hawaii	42.4	Rhode Island	23.5	Vermont	54.0	District of Columbia	187.2
51	District of Columbia	37.1	Vermont	31.2	District of Columbia	4.0	District of Columbia	21.5	Vermont	162.1
	United States	21,604.3	United States	18,278.7	United States ^a	32,494.1	United States	29,091.0	United States ^a	101,468.0

We use a lot of energy in Texas....



City of Houston Energy Conservation Measures

- ◆ Wind Energy
- ◆ Demand-Side Management
- ◆ Cogeneration
- ◆ Clinton Climate Initiative
- ◆ Building Smarter (LEED)
- ◆ Residential Energy Efficiency Program

Wind Energy



The City's innovative wind power contract results in green power at a lower rate than rising conventional power.

- ◇ The price of electricity: fixed at 7.5 cents per kWh- significant savings for taxpayers.
- ◇ The City expects to use as much as 2 billion kWh of this renewable energy in the next five years.
- ◇ This is equivalent to the amount needed to power 28,000 homes each year.
- ◇ Reducing the need to build more expensive power plants for the region's rising energy needs.



Green Power Partnership



Contact Us Search: All EPA This Area

You are here: [EPA Home](#) » [Climate Change](#) » [Clean Energy](#) » [Green Power Partnership](#) » [Top Partner Rankings](#) » National Top 50

Clean Energy Home

GPP Home

Basic Information

Green Power Market

Buying Green Power

Join Us

Green Power Communities

Partner List

Top Partner Rankings

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National Top 50

As of July 6, 2011



The Green Power Partnership works with a wide variety of leading organizations — from Fortune 500 companies to local, state and federal governments, and a growing number of colleges and universities. The following Top Partner Rankings highlight the annual green power purchases of leading organizations within the United States and across individual industry sectors.



These green power purchases help reduce the environmental impacts of electricity use and support the development of new renewable generation capacity nationwide. Purchase amounts reflect U.S. operations only and are sourced from U.S.-based green power resources. Organizations can meet EPA purchase requirements using any combination of three different product options (1) Renewable Energy Certificates, (2) On-site generation, and (3) Utility green power products.

Purchase figures are based on annualized Partner contract amounts (kilowatt-hours), not calendar year totals. These rankings are updated on a [quarterly schedule](#). Find out how your organization can [partner with EPA](#) today! To view a top partner list, select from the chart below:

- National Top 50
- 100% Purchasers
- Top 20 Retail
- Fortune 500
- Top 10 Federal Government
- Top 20 Local Government
- Top 20 College & University
- Top 20 Printers
- Top 20 On-site Generation
- Top 20 K-12 Schools

Combined, these top 50 largest purchases amount to nearly 13.7 billion kilowatt-hours annually, which represents nearly 70 percent of the green power commitments made by all EPA Green Power Partners.

- [Current and Past Partner Lists](#)

Annual Green Power Usage (kWh)	GP % of Total Electricity Use*	Organization Type	Providers (listed in descending order by kWh supplied to Partner)	Green Power Resources
1. Intel Corporation				
2,502,052,000	88%	Information Technology	Sterling Planet ^o , PNM, On-site Generation	Solar, Wind
2. Kohl's Department Stores				
1,420,080,000	101%	Retail	3Degrees ^o , Sterling Planet ^o , Nexant ^o , On-site Generation	Solar, Wind
3. Whole Foods Market				
752,257,623	100%	Retail	3Degrees ^o , NextEra Energy Resources ^o , Renewable Choice Energy ^o , On-site Generation	Solar, Wind
4. Commonwealth of Pennsylvania				
500,000,000	50%	Govt. (State)	Renewable Choice Energy ^o	Various
5. City of Houston, TX				
438,000,000	34%	Govt. (Local, Municipal)	Reliant Energy	Wind



Wind Energy

Fortune 500 Companies





Demand-Side Management

- ◆ Energy Conservation Measures (ECMs) for City Owned Buildings
- ◆ Installing energy management systems
- ◆ Lighting retrofits and replacement
- ◆ Replacement of inefficient HVAC and mechanical equipment
- ◆ Weatherproofing and insulating structures
- ◆ Commonsense



Demand-Side Management

FYI: Your City Government facilities have reduced kWh use by 5.8% from 2004 through 2007 even as services have expanded.

This was a good start.



Cogeneration Sites Under Review

69th Street Wastewater Treatment Plant

Annual Consumption - 94,222,813 kilowatt hours

Annual Electric Cost - \$ 6,732,487

6 of these plants total 30% of city purchased energy

East Water Treatment Plant

Annual Consumption - 91,026,298 kilowatt hours

Annual Electric Cost - \$ 6,299,497

IAH Physical Plant

Annual Consumption - 48,435,029 kilowatt hours

Annual Electric Cost - \$ 3,821,506



Mission: Reduce Greenhouse Gases



A partnership to reduce energy consumption by 30% in City-owned facilities: 271 buildings, totaling 5.1 million square feet
Houston, a member of the C40 (the 40 largest cities) was among the first to sign onto the program.

Siemens and Schneider Electric selected as ESCOs

80 buildings completed @ \$57 million to date
financed through energy savings



CLINTON
CLIMATE
INITIATIVE

Traffic Light Signal Replacement to LED



- ◆ 1400 of 2300 intersections completed
- ◆ 90% reduction in electricity use by new traffic light LEDs; last significantly longer (7 years versus 1 year)
- ◆ Saves the City **\$3800/day** or **\$1.4M** a year in electricity costs
- ◆ Upgrading heads from 8 inch to 12 inch as part of process

Green Building Resolution

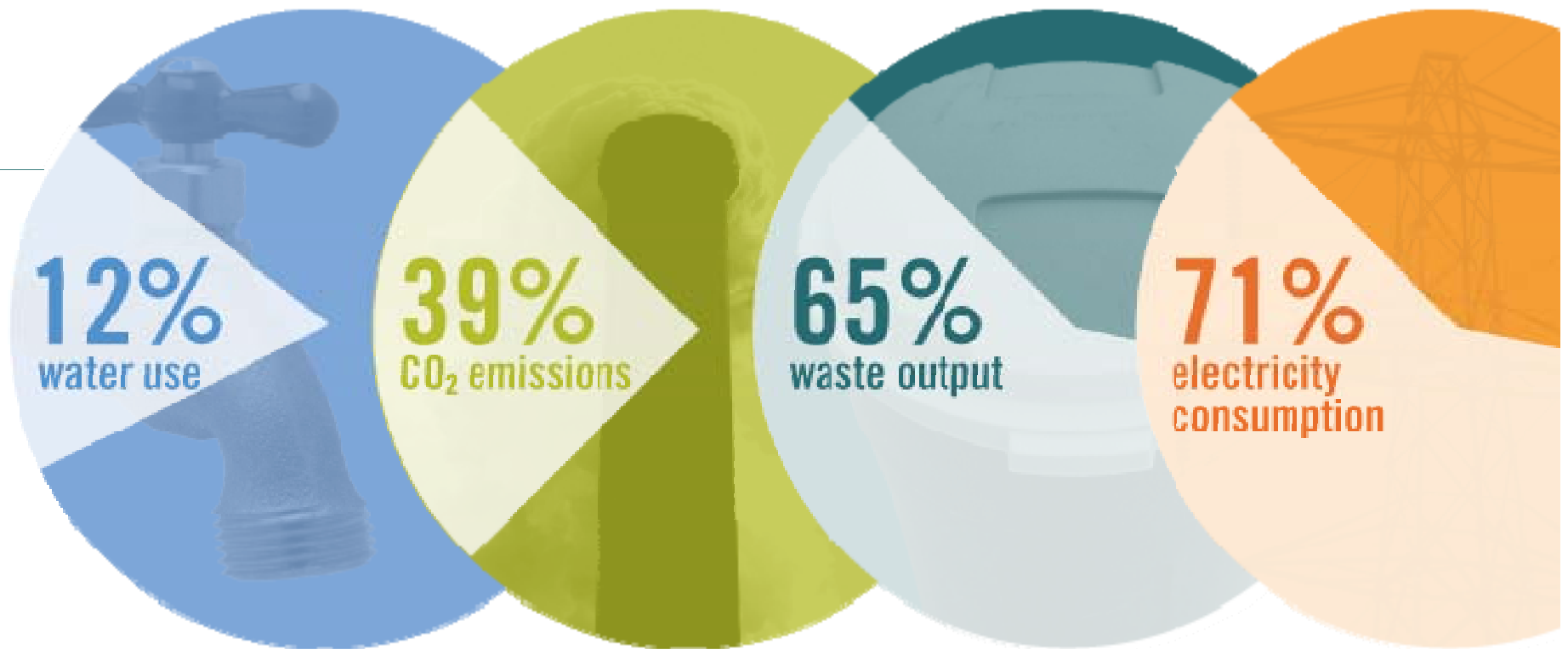


- ◆ On June 23, 2004, City Council adopted the Green Building Resolution, which set a target of LEED™ certification for new construction, replacement facilities and major renovations of city of Houston-owned buildings and facilities with more than 10,000 square feet of occupied space. The General Services Department is implementing this policy in its management of projects in the City's Capital Improvement Plan.



Why Buildings?

U.S. Building Impacts:



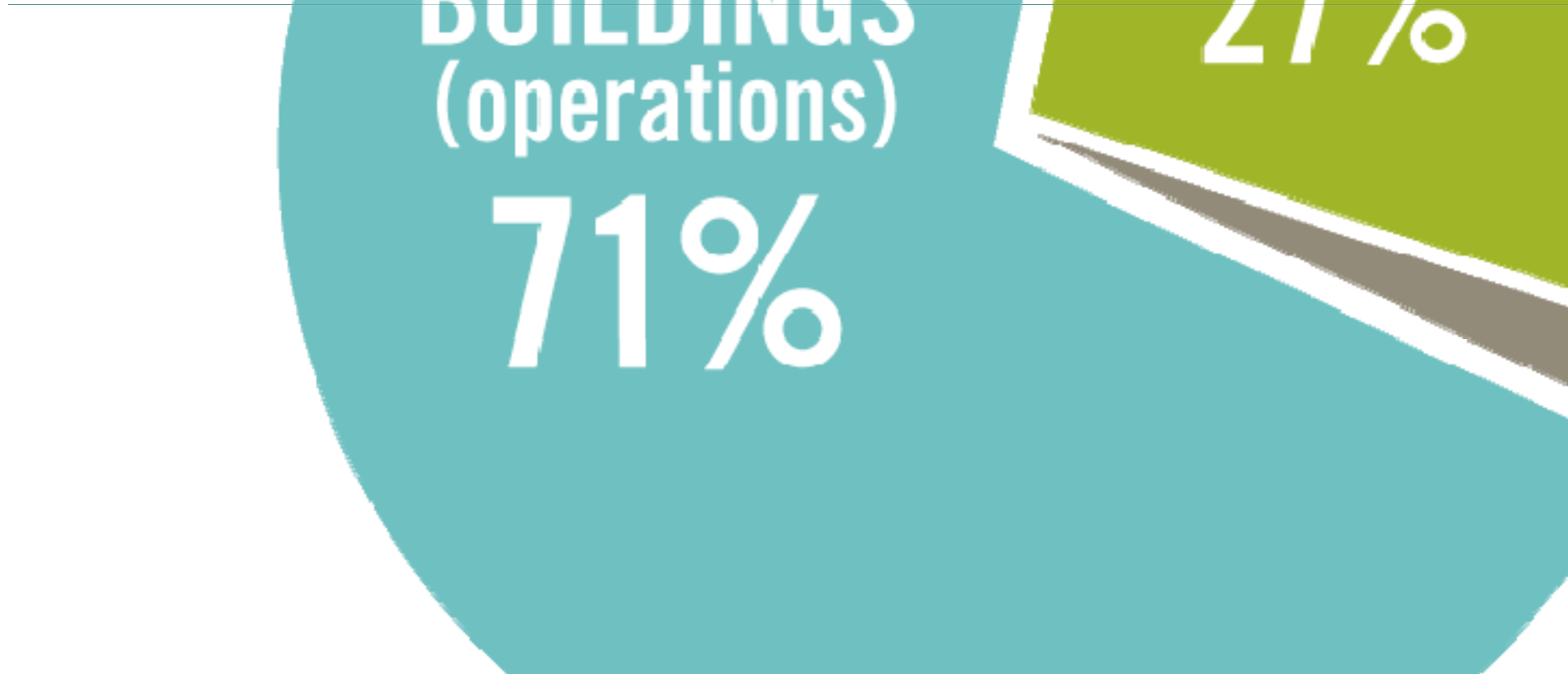
U.S. ELECTRICITY CONSUMPTION

**BUILDINGS
(operations)**

71%

INDUSTRY

27%

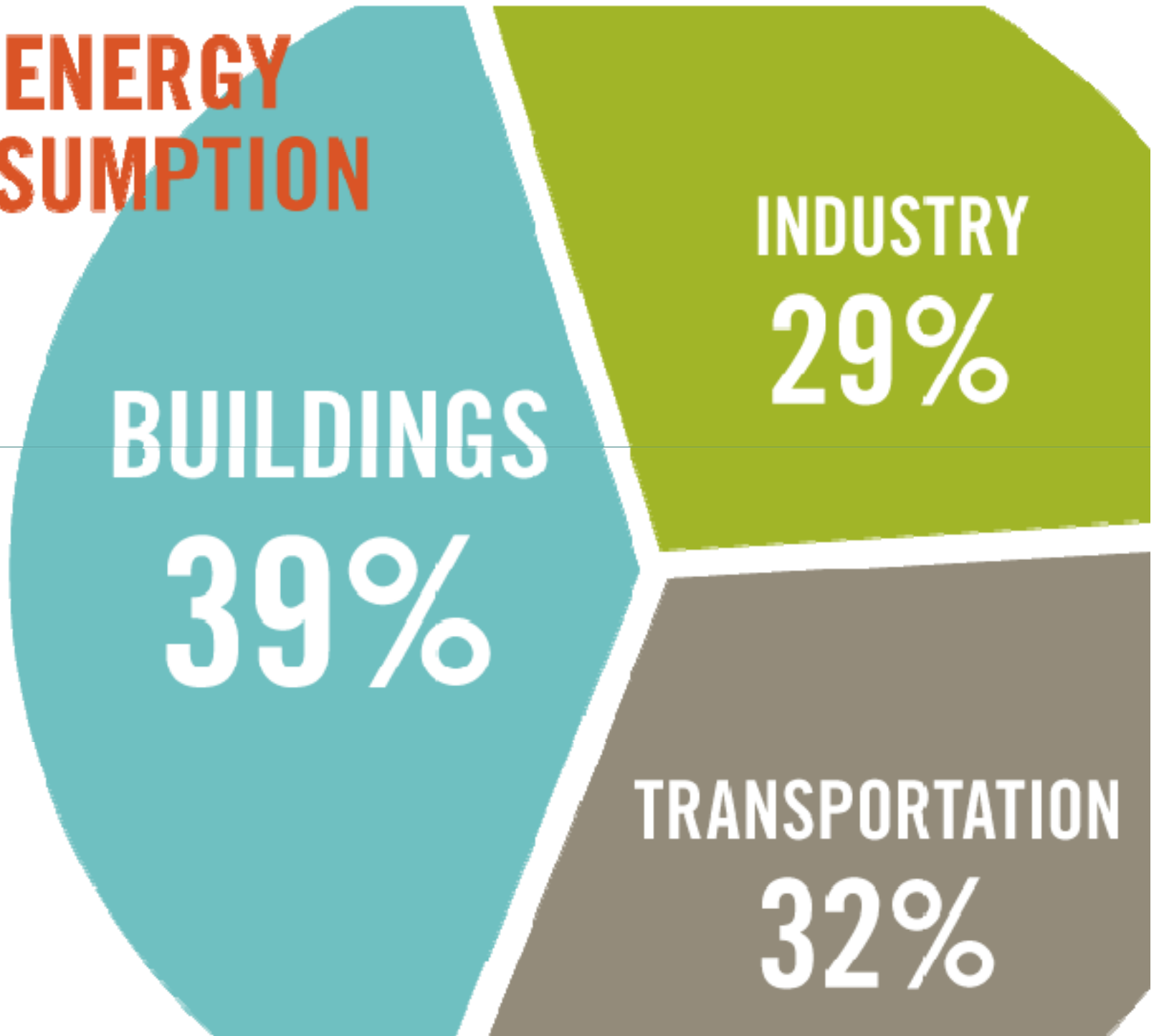


U.S. ENERGY CONSUMPTION

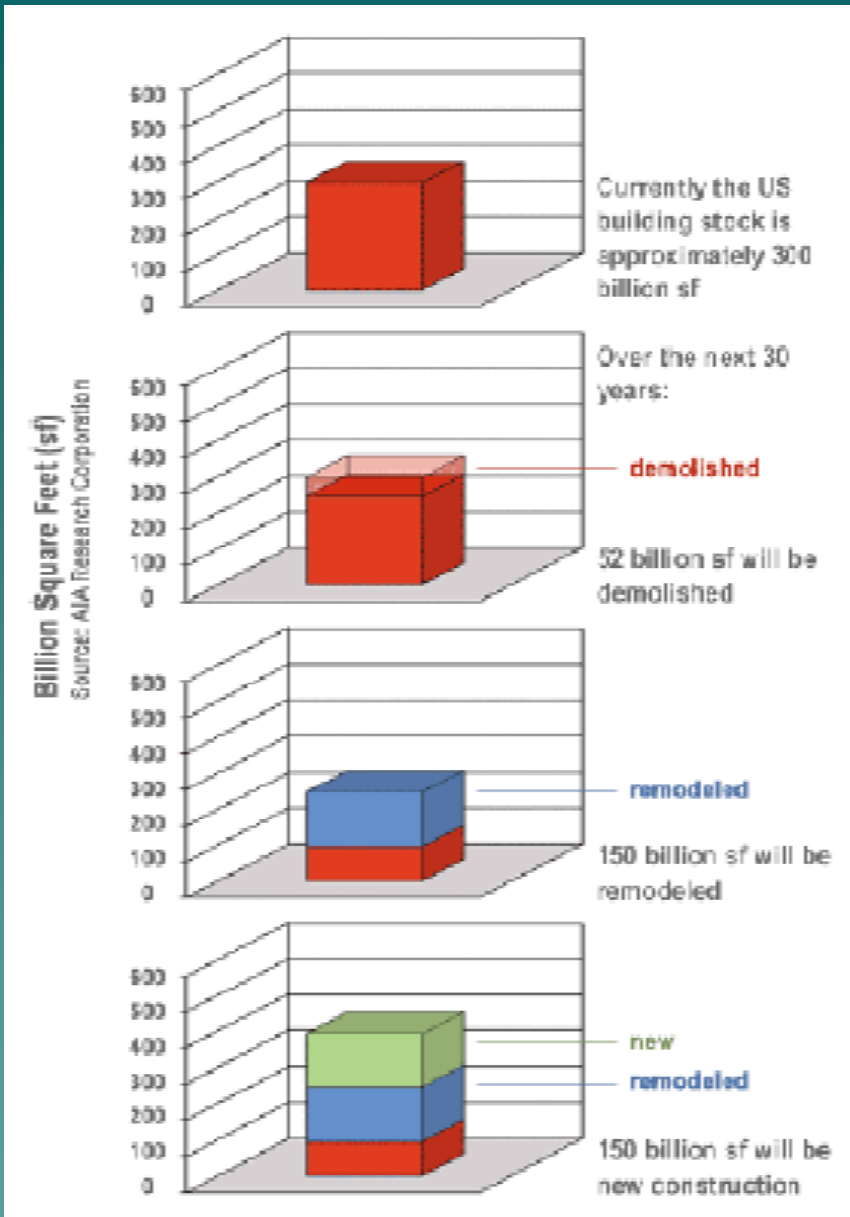
BUILDINGS
39%

INDUSTRY
29%

TRANSPORTATION
32%



AIA Data



In the year 2035, 75% of the built environment will be either new or renovated.

Current stock: 300 B Sq Ft

Demolished: 52 B Sq Ft

Remodeled: 150 B Sq Ft

New: 150 B Sq Ft

Total in 2035: 398 B Sq Ft

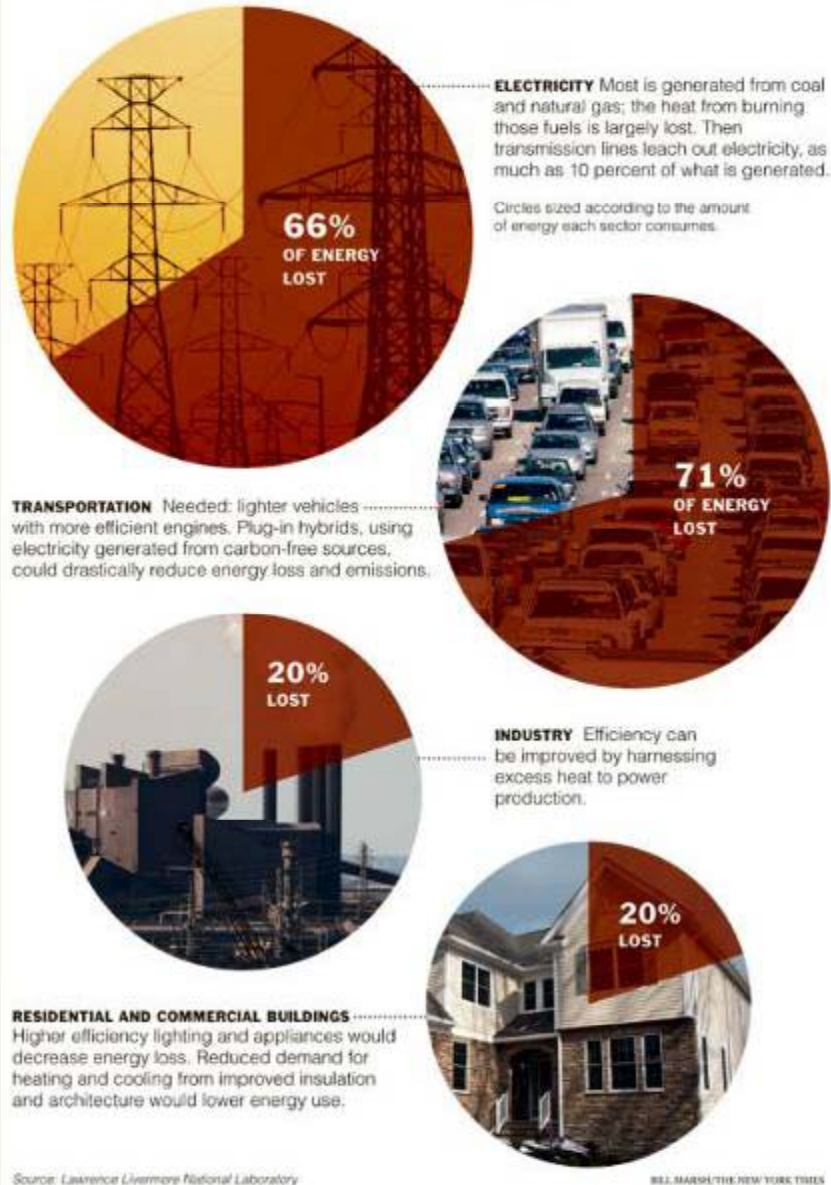
US Building Stock



Wasted Energy

About 56 percent of all energy in the U.S. economy is wasted. Some energy is always lost when fuels are burned and heat escapes. Inefficient technology and design are also culprits.

Efficiency's role in cutting emissions is a matter of debate. Most scientists agree that both cleaner fuels and greater efficiency are needed. Here is how much energy goes unused, by sector.



Let's not forget...

What Is Green Building?



USGBC has four levels of LEED:





LEED Certified Projects

- ◆ Since the adoption of LEED in June 2004, the City has initiated 18 LEED projects representing approximately 700,000 SF of occupied space and a construction value of \$90 million.

Pursuing LEED Certification



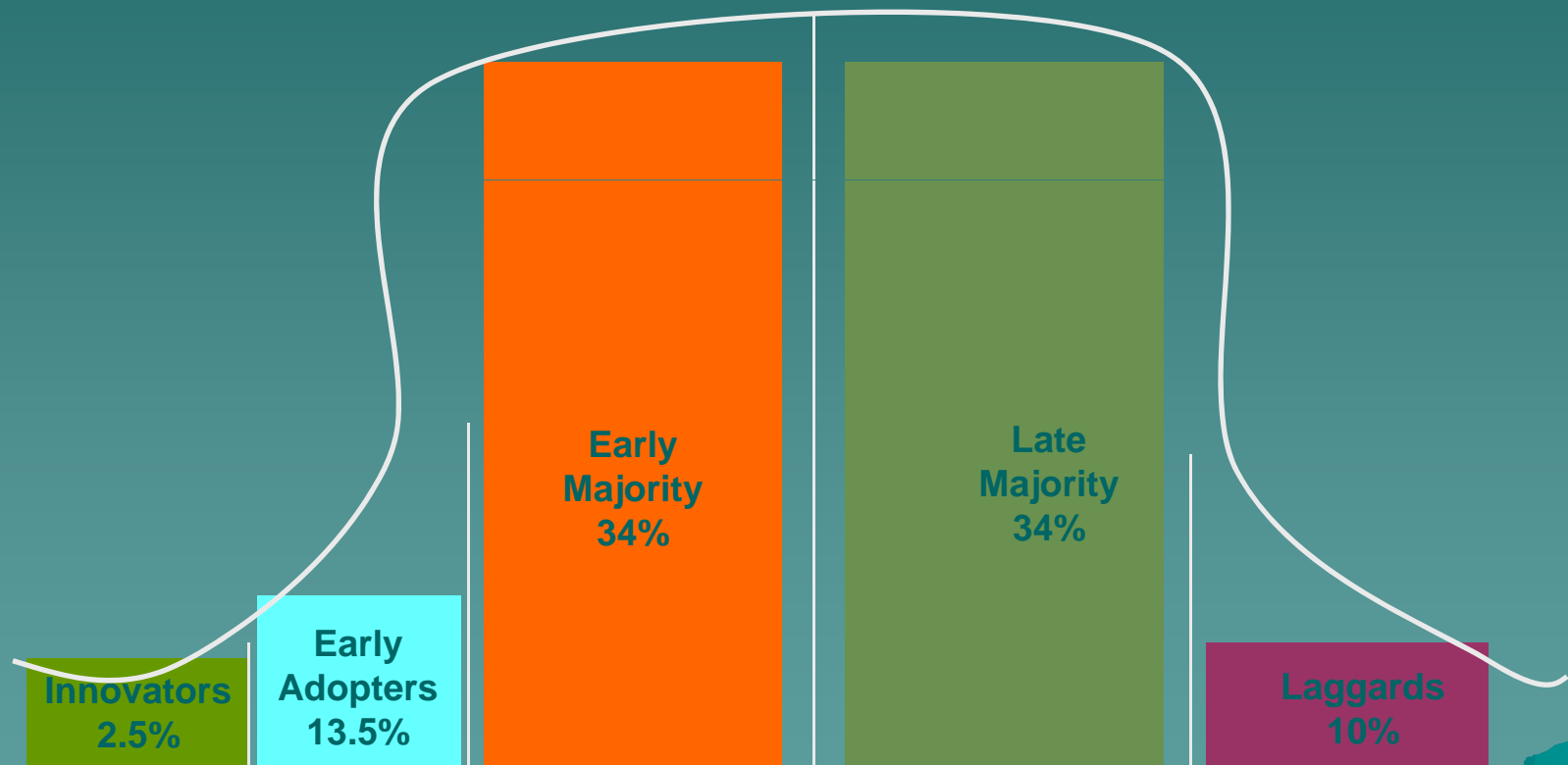
1. Looscan Neighborhood Library: Certified
2. Fire Station 8: Certified
3. HPD Property Room: Certified
4. HPD Midwest Police Station: Silver
5. Fire Station 37: Silver
6. Parks Department Headquarters : Gold
7. South Right-of-Way Fleet Maintenance Facility - programming commencing; schedule TBD
8. Clayton House Library Complex : Silver
9. African-American Library at the Gregory School: Gold
10. Kendall Library: Silver
11. Bracewell Library - Completion 2009
12. Green Building Resource Center: Gold

Looscan Library





Adopter Categorization on the Basis of Innovation



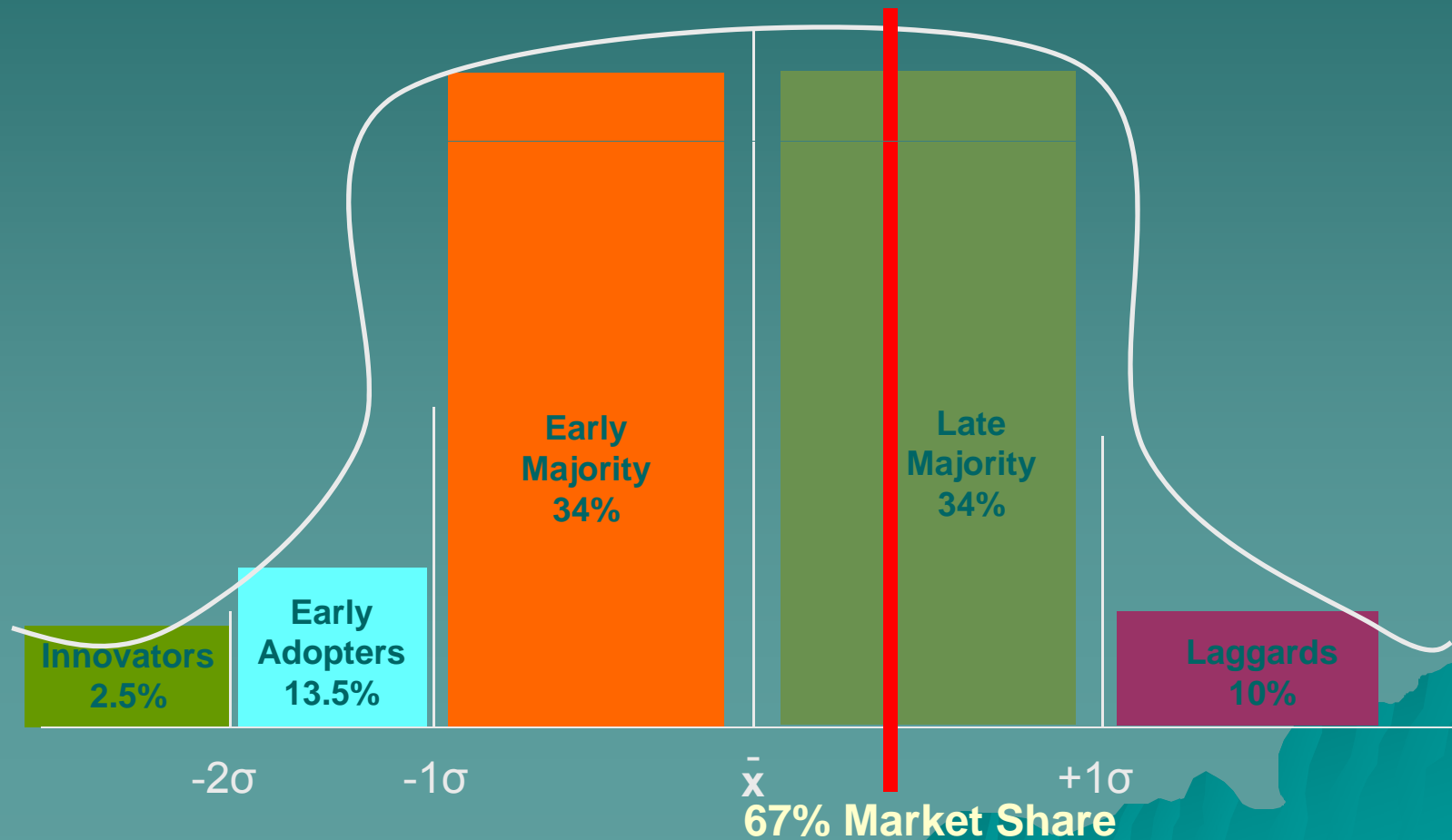
Adoption of LEED for New Class A/B Office Buildings



Greater Houston Area – January 2008

Total SF under const – 7.1M SF; Total LEED – 4.8M SF

LEED NC v1.0 – 2000; 1st LEED BLD in HST - 2004

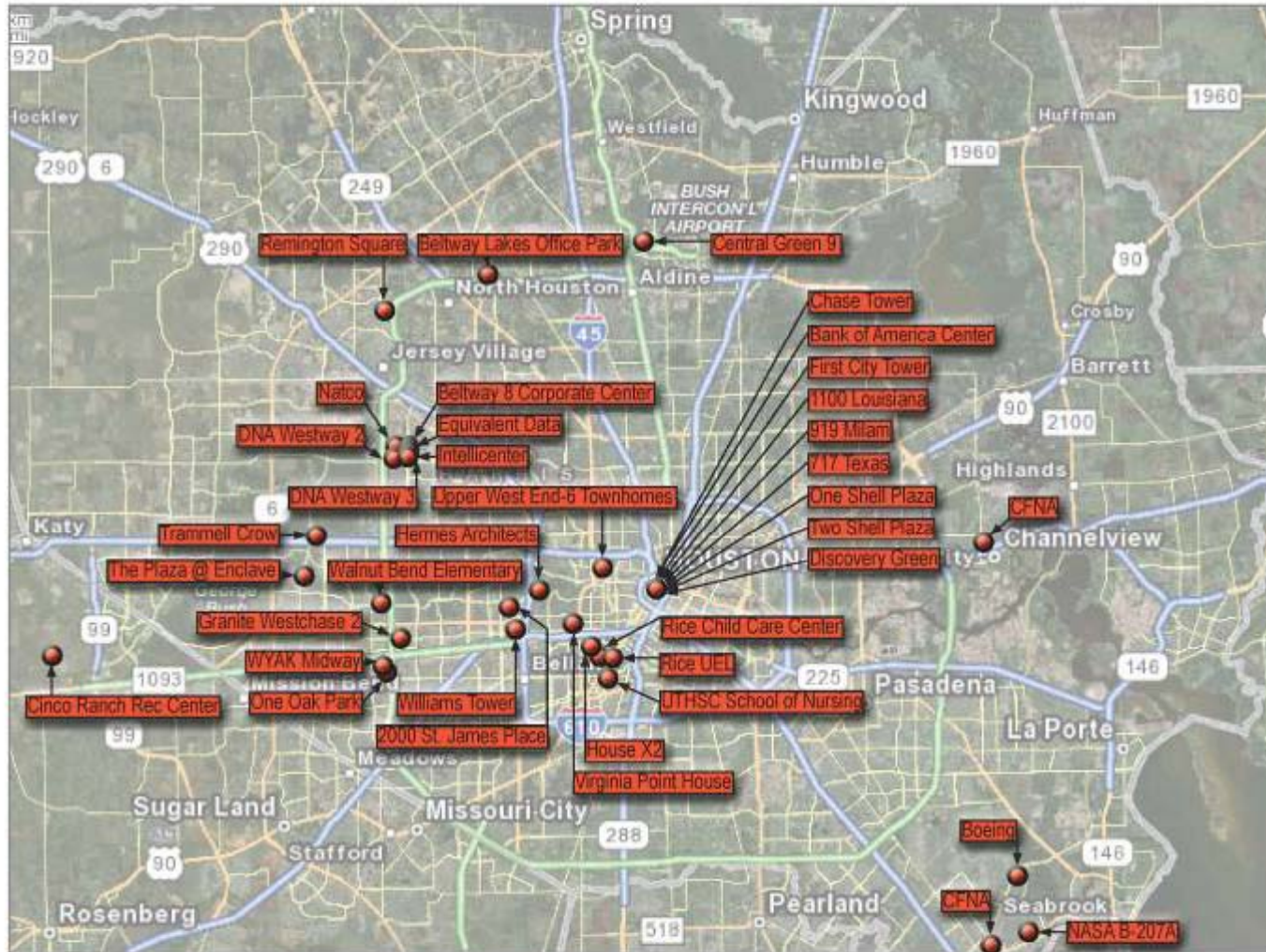




2008 LEED Certified Buildings



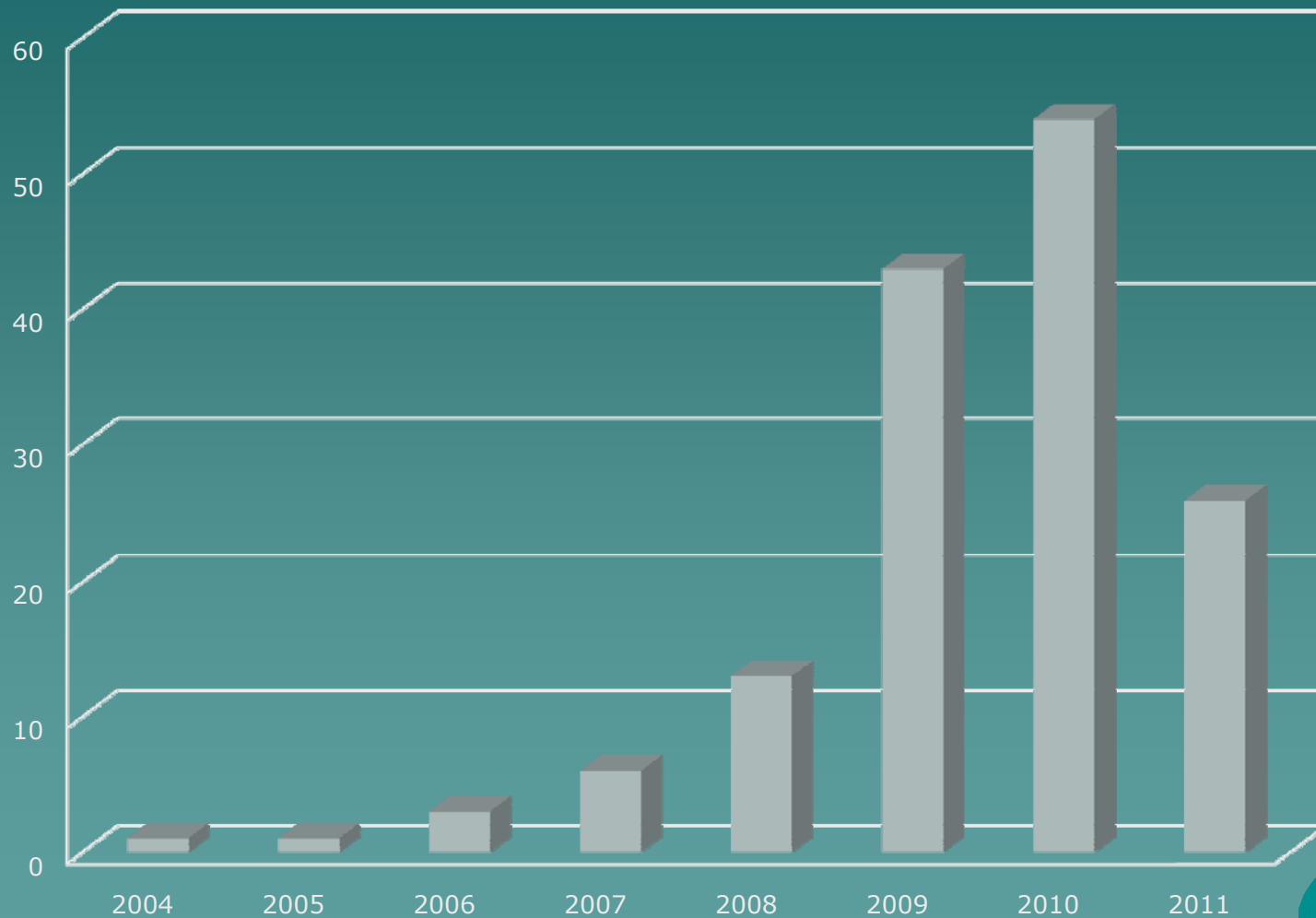
2009 LEED Certified Buildings



LEED Certified Building Growth

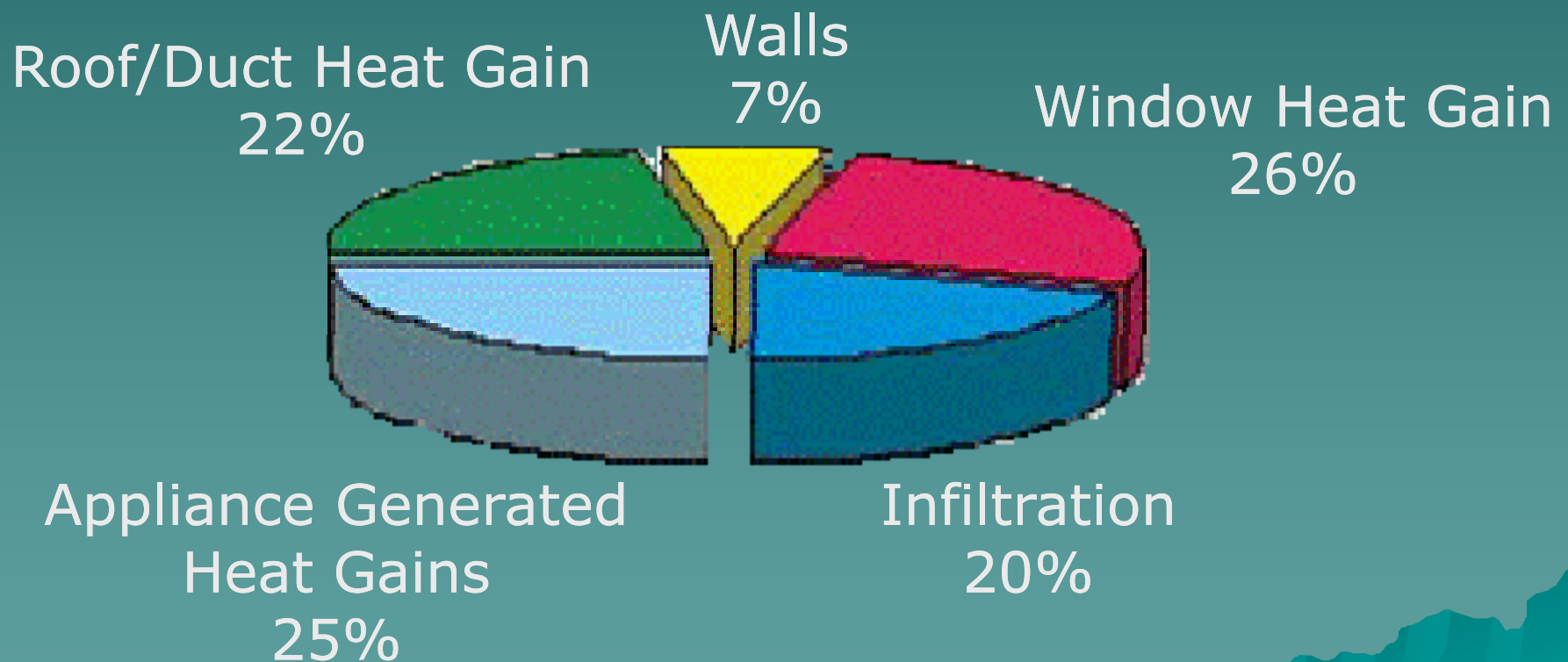


147 Current Houston LEED Buildings



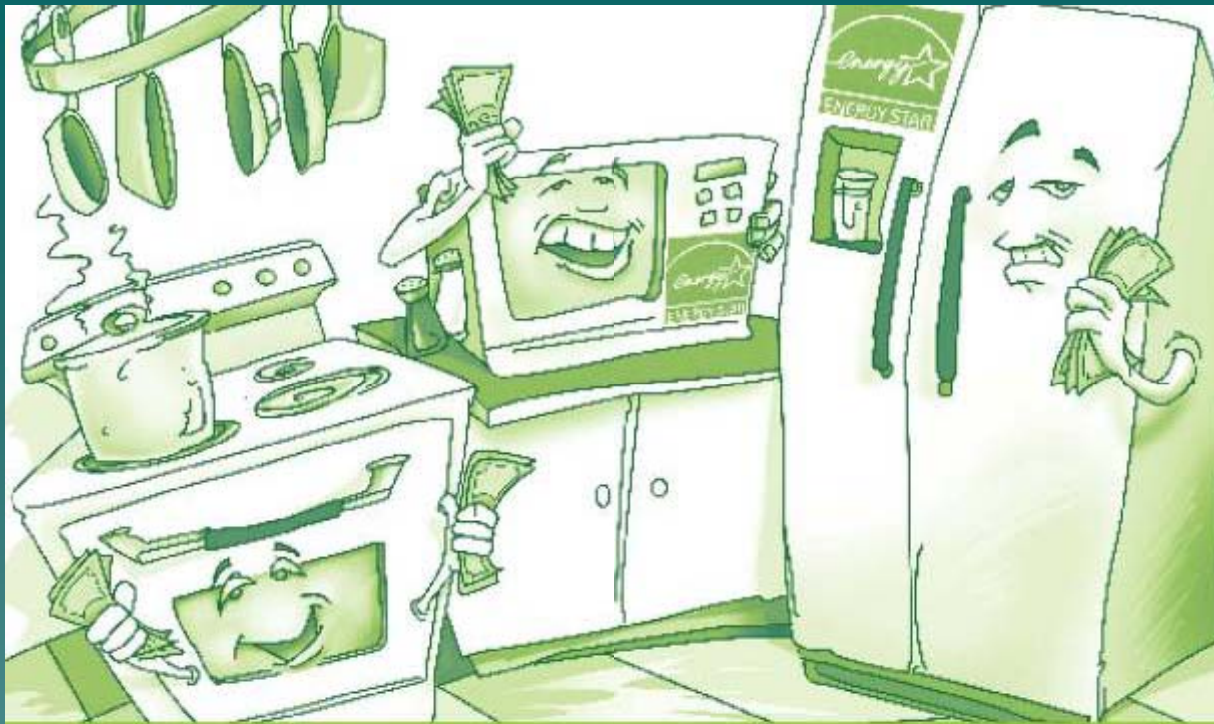


Why Buildings? Residential AC Load





Why Buildings? Inside Energy



HOME COOKING

The kitchen uses a big chunk of your home energy budget. Your refrigerator alone—which is on 24 hours a day—accounts for about 10 percent of the total home electricity bill. So where can you apply energy efficiency in the kitchen?

Shopping for a major appliance before the old one breaks down gives you the best chance to find a higher efficiency model with the features you want. The typical refrigerator sold today has more features yet uses less than half the electricity of a comparable model sold in 1980. Choose ENERGY STAR® appliances to ensure greatest efficiency and energy savings.

Power\$mart Tips : Put the Power in Your Hands

- ★ Buy a new fridge that is the right size for your needs to avoid wasting energy cooling nothing.
- ★ Use a microwave or toaster oven to cook small portions and a conventional oven or stove-top for larger items.
- ★ A watched pot will eventually boil—but putting a lid on it reduces cooking time and energy use. Also, match the pot size to burner size to avoid energy waste.

FACT Refrigerators in the U.S. alone use the equivalent of the output of about 60 300-MW power plants. If all of the nation's households used the most efficient refrigerators, electricity savings would eliminate the need for about 20-30 power plants.

www.ase.org

Why Buildings?

Inside Energy

www.ase.org



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And that second 'fridge in the garage: Bad idea



Why Buildings? Inside Energy



TOO 'PLUGGED IN'

Our consumer-oriented society, the growth of new technologies, and the fact that more people are working from home have dramatically increased the number of products that require power in the average home. The average home has roughly 2 TVs, a VCR, a DVD player and 3 telephones. Replacing these items with ENERGY STAR® models—which use as much as 50 percent less energy—would save more than 25 billion pounds of greenhouse gas emissions, the equivalent to taking 3 million cars off the road for one year, according to EPA.

Many idle appliances—TVs, VCRs, cable boxes, DVD and CD players, cassette decks, cordless phones, burglar alarms, microwaves—continue to consume energy when switched off. This energy keeps display clocks lit and memory chips and remote controls working. Lawrence Berkeley National Laboratory calculates that these energy “leaks” account for 5 percent of total domestic electricity consumption, cost more than \$4 billion annually, and spew 12 million tons of carbon into the atmosphere.

Power\$mart Tips : Put the Power in Your Hands

- Buy ENERGY STAR®-labeled electronics. Make sure you are using the power management or “sleep” feature on ENERGY STAR®-qualified home office equipment (PC, fax, printer, scanner) so that they automatically power down when not in use to save up to \$70 annually in electricity bills and improve product longevity.
- Turning off your computer and electronics during long periods of non-use cuts costs and improves longevity.

FACT Each year, Americans spend more money to power home audio and DVD products when turned off than when actually in use.

FACT By 2015, consumer electronics and small appliances will be responsible for almost 30 percent of all household electricity use.

Source: Energy Information Administration (EIA)

www.ase.org



Why Buildings? Inside Energy

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Source: Energy Information Administration (EIA).

www.ase.org

Residential Energy Efficiency Program



- ◆ Pressurize homes to determine energy leakage points and inefficiencies
- ◆ Weatherization protocol included
 - Installation of weather stripping
 - Caulking windows
 - Installing attic insulation
 - Installing insulation on exposed hot water piping
 - Insulating water heaters
- ◆ Approximate cost per house: \$3,500
- ◆ Free to Residents within income zone

Residential Energy Efficiency Program



www.houstontx.gov/reep/





Residential Energy Efficiency Program



- ◆ Approximately 11,000 homes weatherized across 12 different neighborhoods since 2006
- ◆ Participation rates approach 50%; home owner satisfaction high
- ◆ 12 – 18% “weather adjusted” kwh reduction; high as 20% over summer months
- ◆ Average Savings: \$50 - \$100 per month
- ◆ Efficient implementation model; contractors go house to house
- ◆ After securing \$23 million in Federal stimulus funding, the program has expanded city wide
- ◆ Anticipating additional funding, so tentative applications are being taken for a waiting list.



5-Star Energy Program

- ◆ Builder incentive (up to \$50K) to provide energy efficiency measures and renewable energy
- ◆ Program for new affordable housing in Houston Hope Neighborhoods (now closed)
- ◆ Baseline home energy rating (HERS) of 60 or lower

◆ HERS 45-36	*	\$25,000
◆ HERS 35-31	**	\$35,000
◆ HERS 30-26	***	\$40,000
◆ HERS 25-21	****	\$45,000
◆ HERS 20-0	*****	\$50,000





Houston: Solar City

- ◆ **HOUSTON** -- The U.S. Department of Energy on Monday (6/9/08) recognized Mayor Bill White and the city of Houston for its commitment to producing electricity and saving money through the use of solar panels, KPRC Local 2 reported.
- ◆ Houston has been chosen as one of 25 cities in the Solar Americas Cities program, which is designed to promote and increase the use of solar technology.
- ◆ "When Houston says its ready to go solar, you know that America is ready to go solar, and that's an exciting thing for all of us," said Charlie Hemmeline, with the U.S. Department of Energy.

Houston: Solar City

Future vision of GRB Convention Center

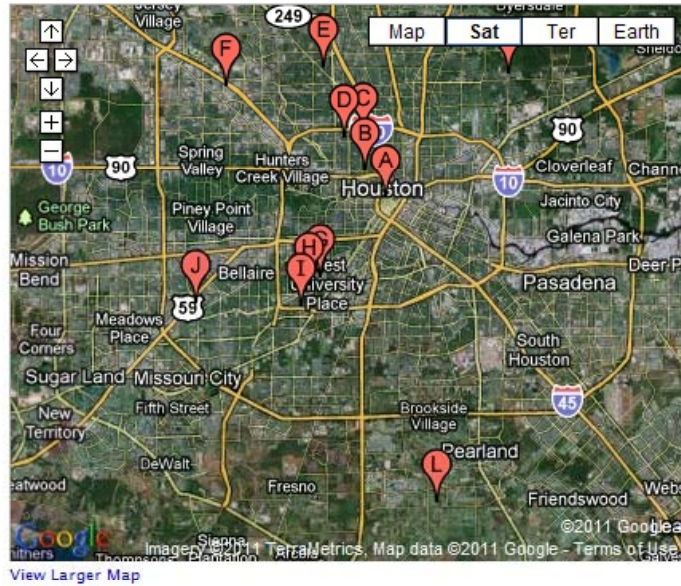




Houston: Solar City

Project Sites

2011 TOUR SITES



Join Us!

**2011 8th Annual Self-Guided
HOUSTON SOLAR TOUR**

OCT 15, Saturday

FREE / Open to the Public

Self-Guided Tour 9 am - 1pm

Green Energy Fair 1 - 5 pm

Real Solutions for Real People

[+
more info](#)

Houston: Solar City



2008: \$8.00 per watt installed
Today: \$5.00 per watt installed
38% Price Drop in 3 years.
Tomorrow?

Hybrid Vehicles

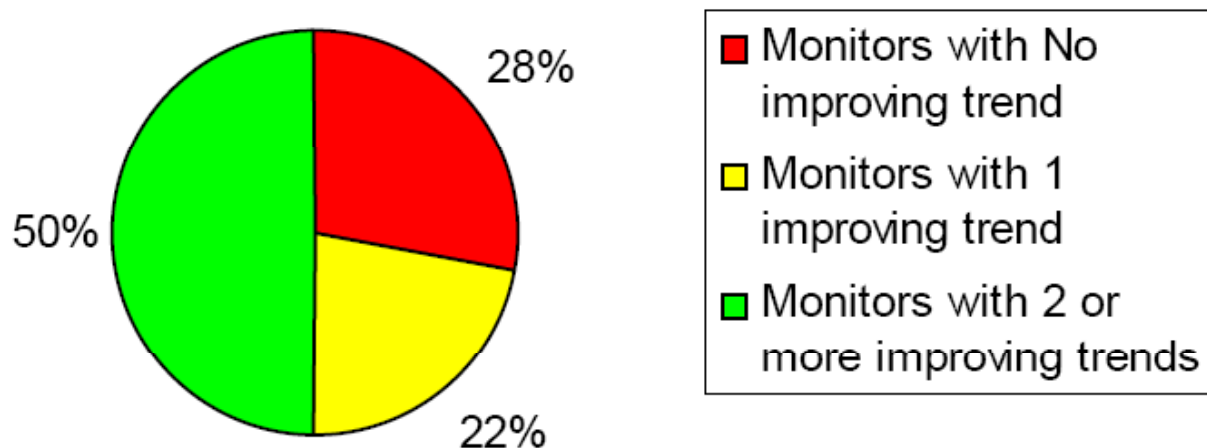


- ◆ Currently 3rd largest municipal fleet with over 755, with 10 converted to plug-ins, our goal is to have 1,500 hybrid vehicles in the city fleet. Two Nissan Leaf electric vehicles.
- ◆ Installed 30 municipal & 35 public charging stations throughout the city

Air Quality Trends



Five Year Trends of Ozone at Individual Monitors (2005-2009): average, maximum, number of days above unhealthy levels



Note: This figure is based on all 32 monitors

Water



Conserve



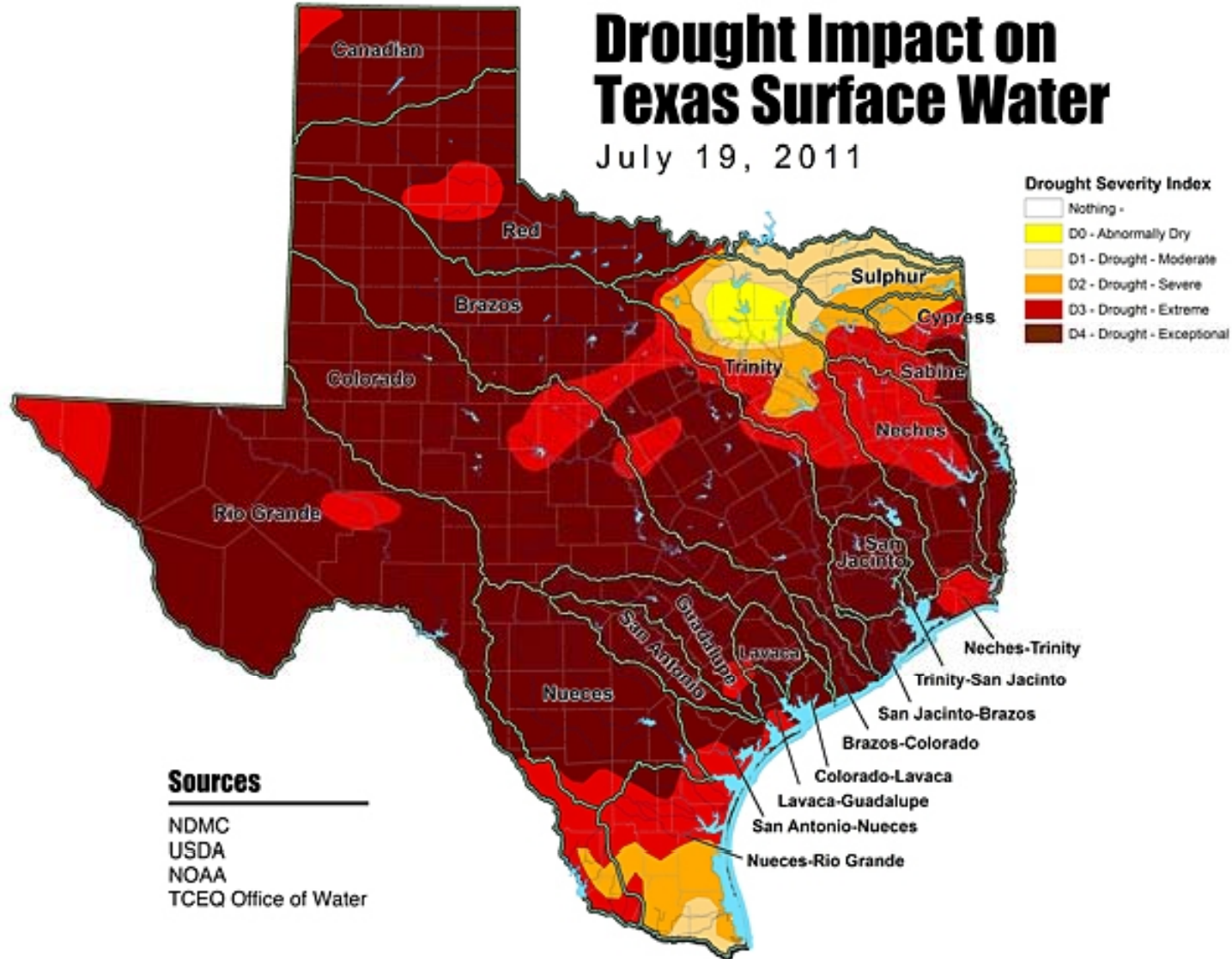
Mayor Parker orders mandatory water conservation

Water



Drought Impact on Texas Surface Water

July 19, 2011



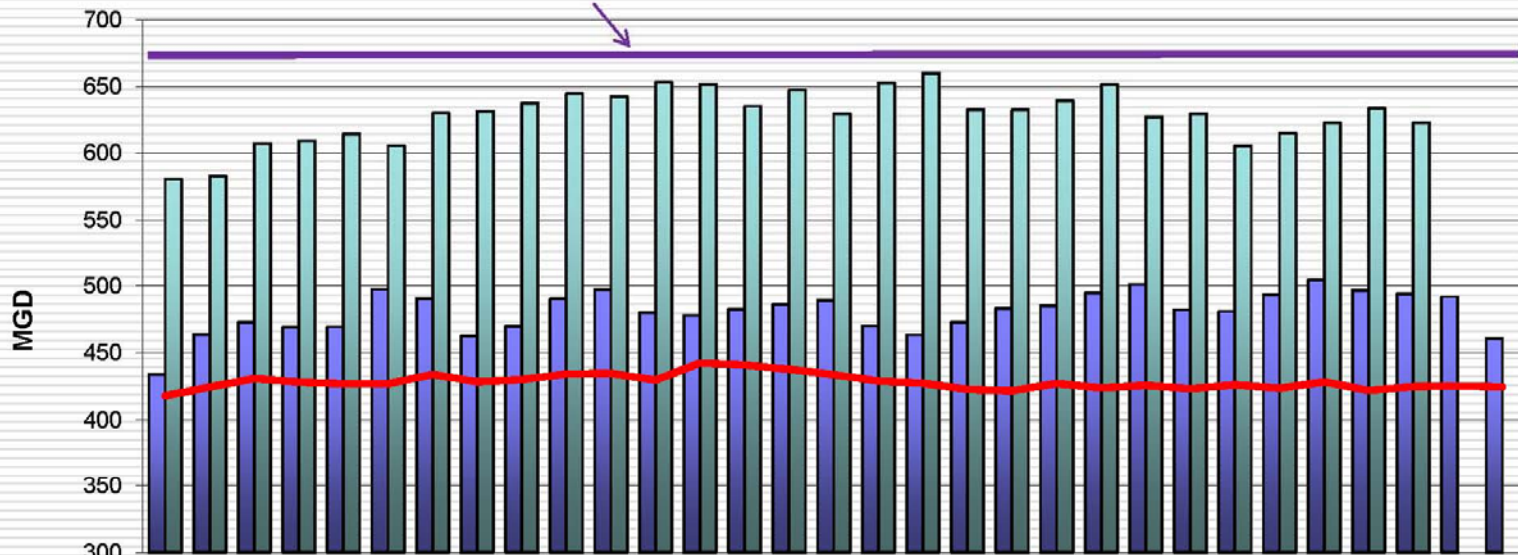
Water



August 2011 Total Water Production

August Month-to-Date Average = 628 MGD
 Historical Same Month Average (2005-2010) = 428 MGD
 New Max Daily = 660MGD (8/18/2011)

Stage 2 Conservation Capacity Trigger (3 day average) = 674 MGD



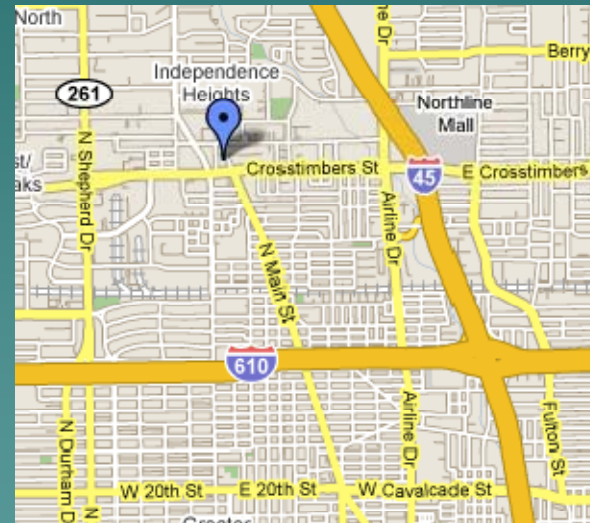
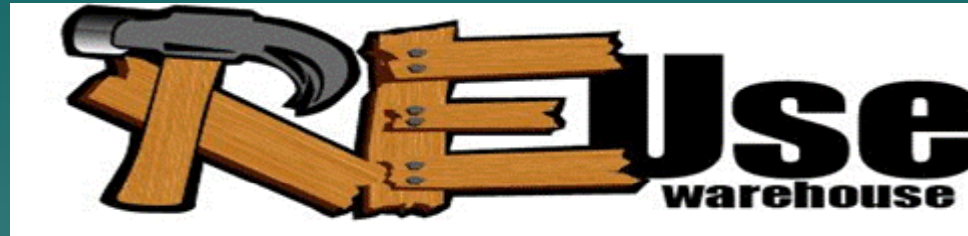
	1- Aug	2- Aug	3- Aug	4- Aug	5- Aug	6- Aug	7- Aug	8- Aug	9- Aug	10- Aug	11- Aug	12- Aug	13- Aug	14- Aug	15- Aug	16- Aug	17- Aug	18- Aug	19- Aug	20- Aug	21- Aug	22- Aug	23- Aug	24- Aug	25- Aug	26- Aug	27- Aug	28- Aug	29- Aug	30- Aug	31- Aug
2010	434	464	473	469	469	497	490	462	469	490	497	480	478	482	486	489	470	463	473	483	485	494	501	482	481	493	504	496	494	492	460
2011	581	583	607	609	614	605	630	631	637	644	642	653	651	635	647	629	652	660	632	632	639	651	627	629	605	615	623	633	623		
Avg 05-10	418	424	431	428	427	427	434	428	430	434	435	429	442	441	438	434	429	427	423	422	427	424	426	423	426	423	428	422	425	425	424

Water

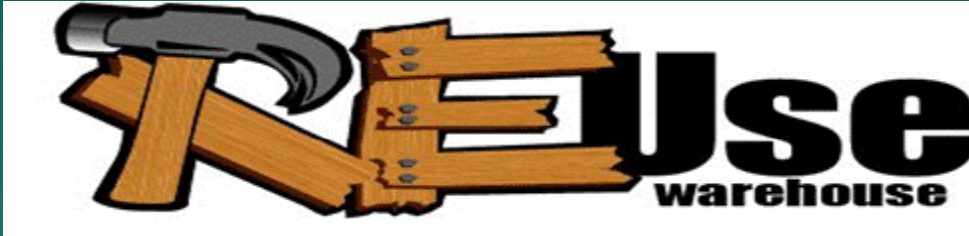


- 1) Irrigation is 60% of household water use
- 2) Grass is a water hog

Solid Waste Department



Building Material REUSE Warehouse
www.houstonreuse.org



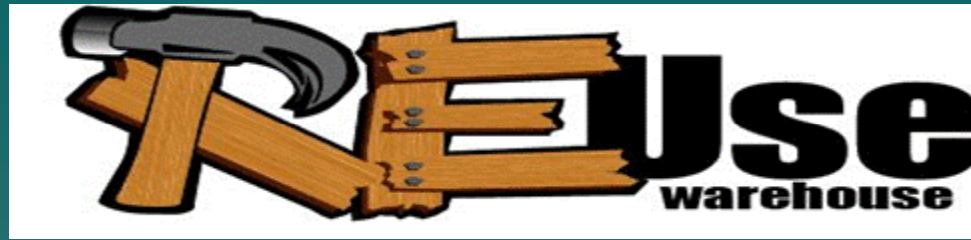
Guiding Objectives



To create a culture and nurture a demand for reclaimed housing materials because of the value they offer.

To provide a model of opportunity for using this material stream in housing through a pilot initiative which fosters partnership between community stakeholders.

To examine how the City of Houston may help support a community organization in addressing the storage of reclaimed material.



Awarded \$150,000 H-GAC Solid Waste Reduction Grant, 2008

Utilizing surplus City of Houston property
– 9003 N. Main Houston, TX 77022

Partnering with Living Paradigm

Officially opened for operation June 23rd,
2009

700+ Tons Diverted as of September 1st,
2011



- ◆ Accept reusable building materials, flooring, windows, doors, cabinets, plumbing fixtures, electrical fixtures, wall covering, furniture
- ◆ Will store and distribute material, track inventory, provide documentation for LEED diversion goals
- ◆ Will NOT accept materials of a hazardous nature – i.e. paint; some older appliances, chemicals





Residential Waste Diversion

- ◆ Yard Waste Program has potential for diverting 150K tons per year or approximately 20% of our waste from area landfills.
- ◆ Lower tipping fees of \$12.45 per ton at mulching facility versus \$32 per ton at landfill results in overall annual savings of \$1.7 million to the City.
- ◆ Compostable Bag Program began 4/5/10, diverting 25,526 tons and saved \$1.5 Million in the first year



Residential Waste Diversion



- ◆ 105,000 homes Single-Stream Recycling – 96 gallon bins
- ◆ 150,000 homes Dual-Stream Recycling – 18 gallon bins
- ◆ Paper, cardboard, plastics 1-7, aluminum, tin, magazines



Municipal Facilities Recycling



- ◆ 300 City facilities (partnership w/ Abitibi)
- ◆ Paper, cardboard, plastics 1-7, aluminum, tin, glass
- ◆ Big Belly Solar Powered Cans with wireless monitors that signal when full to reduce collection trips



Waste Diversion



- ◆ 3-6 loads per week dropped off at Solid Waste Dept warehouse to be palletized
- ◆ 8 pallets per truck delivered to recycler
- ◆ \$40 per ton INCOME instead of paying \$32 per ton landfill fee
- ◆ No more damage to trucks at landfill



Green Building Resource Center



Original



Green Building Resource Center



Renewed



Green Building Resource Center



Renewed

Houston Permitting Center



On track for LEED Gold



SEVEN THE SIX SINS OF GREENWASHING™

Green-wash (grĕn'wōsh', -wōsh') – verb: the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service.

SIN OF THE HIDDEN TRADE-OFF

A claim suggesting that a product is 'green' based on a narrow set of attributes without attention to other important environmental issues.

Example: Paper is not necessarily environmentally preferable just because it comes from a sustainably harvested forest. Other important environmental issues in the paper-making process, such as greenhouse gas emissions, or chemical use in bleaching may be equally important.



SIN OF IRRELEVANCE

An environmental claim that may be truthful but is unimportant or unhelpful for consumers seeking environmentally preferable products.

Example: "PC-Free." This is a frequent claim despite the fact that PCs are banned by law.



SIN OF NO PROOF

An environmental claim that cannot be substantiated by easily accessible supporting information or by a reliable third-party certification.

Example: Facial tissues or toilet tissue products that claim various percentages of post-consumer recycled content without providing evidence.



SIN OF FIBBING

Environmental claims that are simply false.

Example: Products falsely claiming to be Energy Star certified or registered.



SIN VAGUENESS

A claim that is so poorly defined or broad that its real meaning is likely to be misunderstood by the consumer.

Example: "Biodegradable," "organic," "natural," and "hypoallergenic" are all naturally occurring, and pervasive. All natural isn't necessarily green.



SIN OF LESSER OF TWO EVILS

A claim that may be true within the product category, but that risks distracting the consumer from the greater environmental impacts of the category as a whole.

Example: Organic cigarettes and fuel-efficient sport utility vehicles.



SIN OF WORSHIPPING FALSE LABELS

A product that, through either words or images, gives the impression of a third-party endorsement where no such endorsement actually exists; fake labels, in other words.

Example: Manufacturers who add their own label to a product with images and statements such as, "the product fights global warming."



WWW.SINSGREENWASHING.ORG



What Green is, and what Green isn't

What we show on the Display



The screenshot shows the website for the Green Building Resource Center. At the top left is the logo for the Green Building Resource Center, which includes a stylized green leaf and the text "Green BUILDING RESOURCE CENTER". Below the logo are the logos for the City of Houston and the Texas Department of Transportation. To the right of the logo is a photograph of the interior of the resource center, showing a modern, well-lit space with wooden accents and a reception desk.

Below the header is a navigation menu with the following items: Home, About Us, News, Links, Focus on Reports, FAQs, Top Incentives, Media, Green Books, and Calendar.

The main content area is divided into two columns. The left column features a "Donors" section with a grid of logos for various companies. Below this is a "Green Building Resource Center - Welcome" section with a heading and a paragraph of text. The right column contains a search bar with the text "Search our site..." and a "Go" button. Below the search bar is a "GBRC Calendar" section with a heading and a calendar for April 2010. The calendar shows the following dates: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30.

Below the calendar are four logos for Green Houston, POWER, REEP, and REUSE.

At the bottom of the page is a section titled "Links to the 5 Components of Green Building" with a list of links.

Our Website



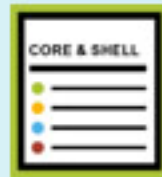
City of Houston: Filling a missed opportunity In the LEED portfolio



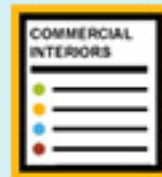
LEED for
New
Construction



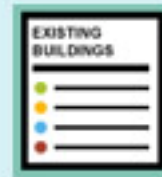
LEED for
Schools



LEED for
Core and
Shell



LEED for
Commercial
Interiors



LEED for
Existing
Buildings:
Operations &
Maintenance



LEED for
Neighborhood
Development



LEED Italia



Green Office Challenge Overview



More Partners

- Management Districts
- Sponsoring Companies
- Energy Service Companies
- Green Building Professionals
- Property Owners & Managers
- Tenant Companies
- Nonprofit & Academic Experts
- Specialty Service Vendors
- METRO

A Houston-Wide Challenge



Program Goals

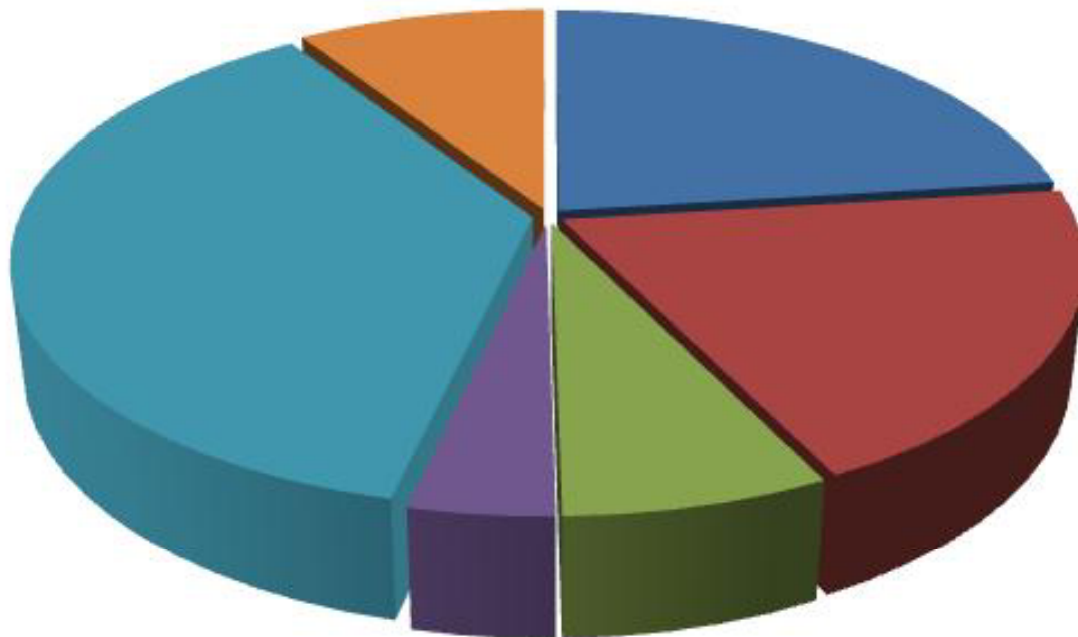


- Improve environmental performance of commercial buildings and business operations
- Engage at all levels of influence:
Tenants, Property Managers, Building Owners, and Management Districts
- Lead towards third-party certification (such as LEED, Energy Star)
- Ensure energy use reductions align with goals of City of Houston's Climate Action Plan (coming soon)

Houston's GHGs



Houston GHG Emissions



- Residential Energy, 23%
- Commercial Energy, 19.7%
- Industrial Energy, 7%
- T&D Losses, 3.8%
- Transportation, 37.2%
- Waste, 9.2%

Tenants/Property Managers



- ◆ Both can sign up and take the Green Office Challenge – but the “way they play” is different.
- Tenants participate via behavioral change
- Property managers improve building systems
- Together, a holistic approach to conservation and efficiency can be achieved
- Separate metrics for tenants/property managers according to the things that each can control

Criteria For Tenants



Self-evaluation in 5 Categories

- Outreach
- Waste
- Energy
- Transportation
- Property Manager Engagement

Levels of Achievement

- Tier 1: 76 - 100 points
- Tier 2: 51 - 75 points
- Tier 3: 26 - 50 points
- Tier 4: 15 - 25 points

Green Office Scorecard



How "green" is your office?

Read and respond to the questions below.
There's no need to type.

Just click the Response box and then click on the arrow to the right to get a list of choices.

Score:	0
Tier:	

50 Strategies to Green your Office	Help	Response Click in each cell below for a response menu.	Points Achieved	Points Available	How did you achieve this strategy? Please provide a short description of the action taken.
------------------------------------	------	---	-----------------	------------------	--

Waste						
W1	Have you conducted a waste stream audit, established a waste diversion/reduction goal of at least 50%, and assessed progress against goals?	Help	Click here. Then click arrow on right.		3	
W2	Have you developed a green purchasing policy to procure green products where feasible and circulated the policy to employees electronically?	Help	Click here. Then click arrow on right.		2	
W3	Have you established a recycling policy that codifies all office recycling practices in coordination with your building's recycling provider?	Help	Click here. Then click arrow on right.		2	
W4	Are all employees given a recycling bin to use at her/his desk? Have you verified that the cleaning staff separates the recyclables from the trash?	Help	Click here. Then click arrow on right.		2	
W5	Have you found out how much copier/printer energy your office uses and established	Help	Click here. Then click arrow on right.		2	



Outreach Strategies

- Create a "Green Team"
- Attend a training session
- Designate a "Green Week"
- Update staff with quarterly progress reports
- Encourage companies in your building to join the challenge
- Implement innovative green practices



Energy



- Determine your energy usage baseline
- Conduct a lighting audit
- Purchase CFLs
- Assess HVAC efficiency strategies
- Inventory your office appliances/ equipment
- Write an ENERGY STAR purchasing policy
- Use power-saving mode for office equipment
- Purchase emissions offsets



Waste



- Audit your waste stream
- Write a green purchasing policy
- Start a recycling program
- Purchase post-consumer recycled copy paper and paper products
- Use both sides when printing
- Say "no" to junk mail
- Think before you print
- Donate/recycle unused electronics
- Purchase reusable kitchen supplies and refillable beverage containers



Transportation

- Conduct a commuter survey
- Permit alternative work options
- Install EV infrastructure in building garage
- Park and Ride
- Partner with a car sharing company
- Create a carpool program
- Start a bike sharing program
- Find "green" rental car companies
- Offset business travel emissions
- Post METRO route map in break room



Property Manager Engagement



- Determine your water usage baseline
- Install water conserving devices
- Install timers or occupancy sensors for lights
- Install energy-efficient exit signs
- Accommodate bicycle commuters
- Use Green Seal certified (or equivalent) cleaners
- If remodeling, use Green Seal certified (or equivalent) paints
- Help educate your neighbors!





Login

Challenge Goals

Office Tenants

Property Managers

Green Office Challenge HOUSTON

Take the Challenge!

What is the Challenge?



Mayor Annise Parker and the City of Houston are challenging management districts, commercial property owners, property managers and office tenants to participate in improving the environmental and economic performance of their business operations.

The Houston Green Office Challenge helps participants achieve strategies that reduce energy use, waste and water use and provides an exciting way for businesses to make Houston a greener place to live and work.

Your participation in the Challenge means more than curbing climate change. We'll link you to resources that will make it easy to improve the energy efficiency of your building or office space - and save you some real green.

[What is the Green Office Challenge?](#)

For Office Tenants

Would you like to work in an office that has a successful recycling program, uses green products and makes going green fun? If you do, here's your chance to improve your office's "greenness" and be recognized for it.

The challenge invites commercial office tenants in Houston's business districts to increase their environmental and economic performance in the areas of outreach, energy conservation, waste reduction, cleaner transportation choices, and property management engagement.

[Information for Office Tenants](#)

For Property Managers & Owners

Do you want to save money, please your tenants and be a green building leader?

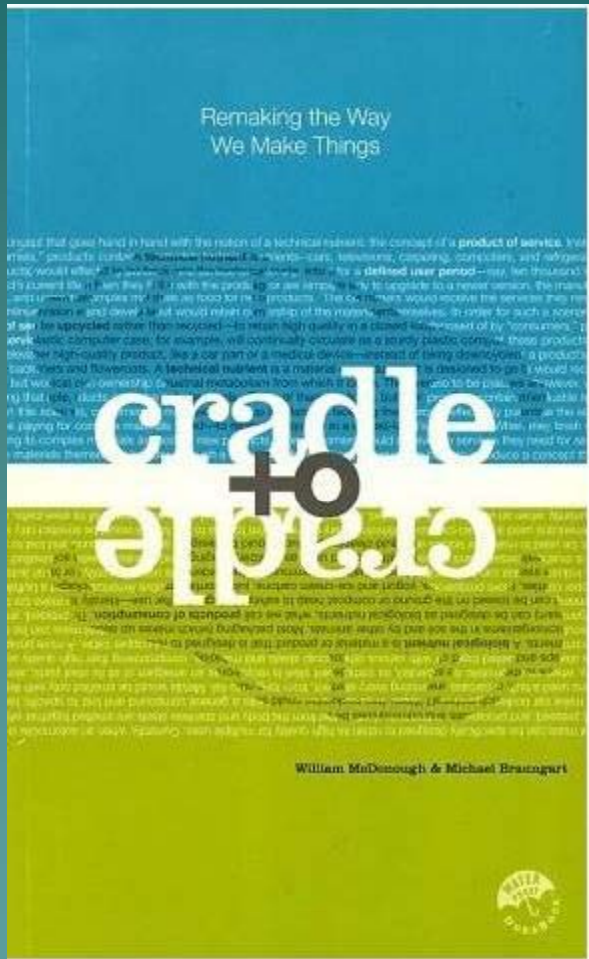
Join us in taking the Houston Green Office Challenge.

Property owners and managers of commercial buildings in Houston are invited to take part in the Houston Green Office Challenge. The City of Houston will facilitate the achievements of property managers and owners by providing training and resources for reducing energy consumption, waste generation and water use as well as tenant engagement.

[Information for Property Managers & Owners](#)

www.houstongoc.org

Top 10 **Green** Reading List Number 1



Cradle to Cradle: Remaking the Way We Make Things

Wm. McDonough & M. Braungart

Intro: This Book Is Not A Tree

1: A Question of Design

2: Why Being “Less Bad” Is No Good

3: Eco-Effectiveness

4: Waste Equals Food

5: Respect Diversity

6: Putting Eco-Effectiveness into Practice

Top 10 **Green** Reading List



THOMAS L.
FRIEDMAN

*Hot, Flat,
and Crowded*

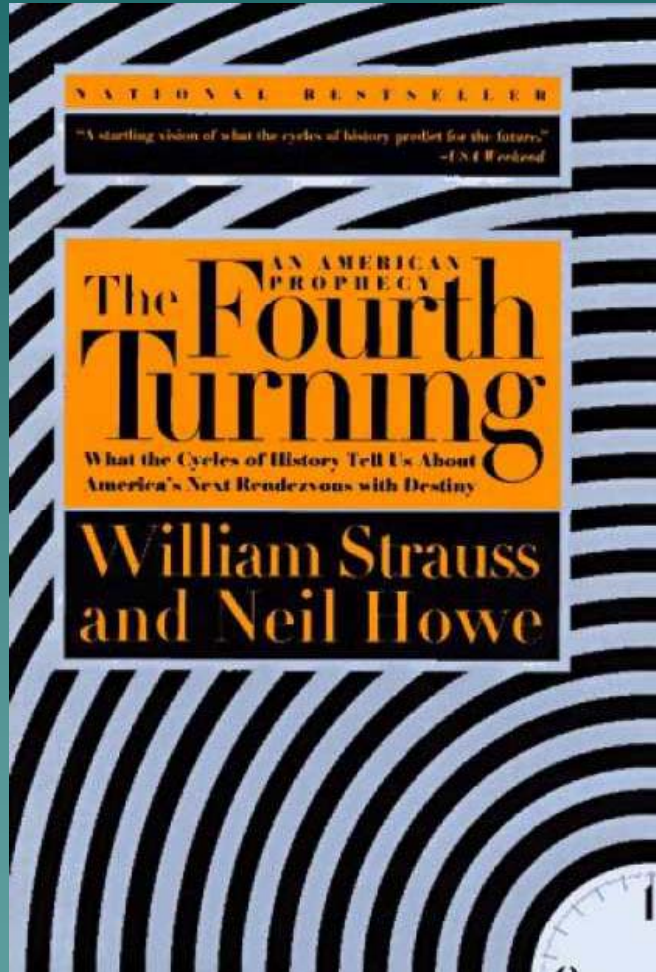
WHY WE NEED A GREEN REVOLUTION —
AND HOW IT CAN RENEW AMERICA



Hot, Flat, and Crowded v.2

Tom Friedman

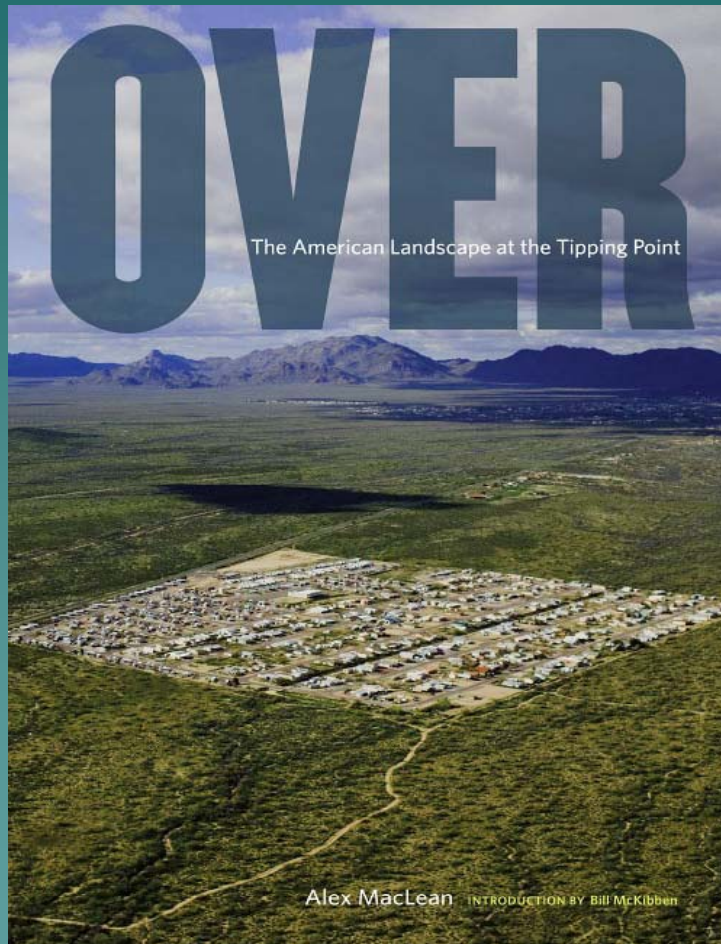
Top 10 **Green** Reading List



The Fourth Turning
Wm Strauss & Neil Howe

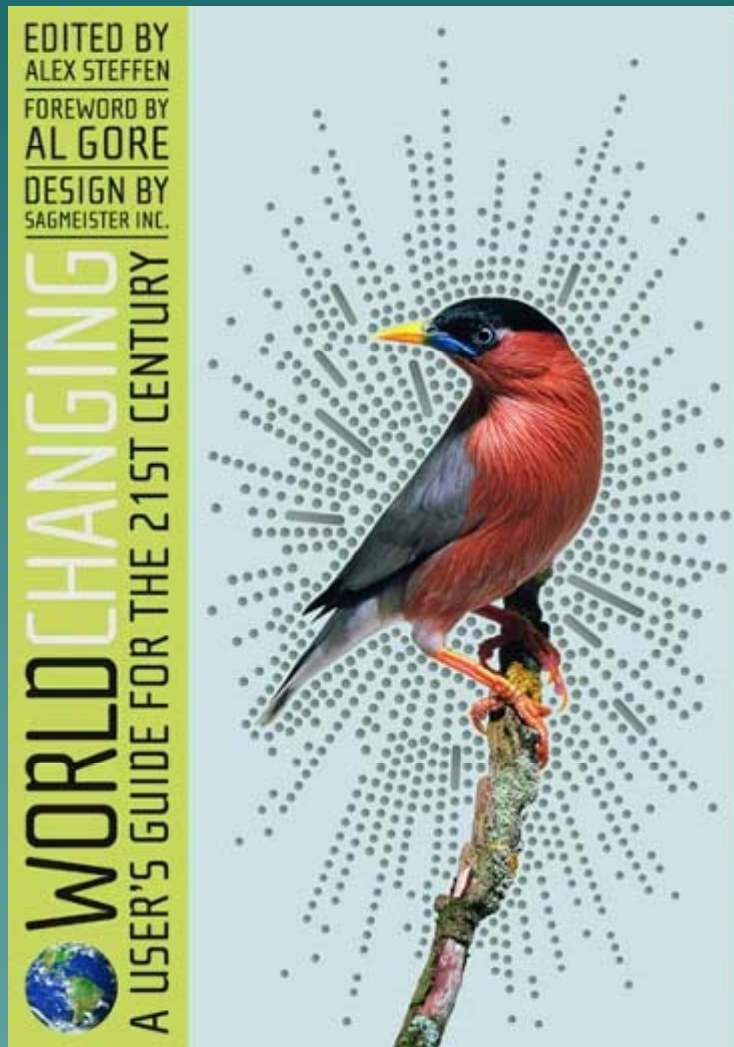


Top 10 **Green** Reading List



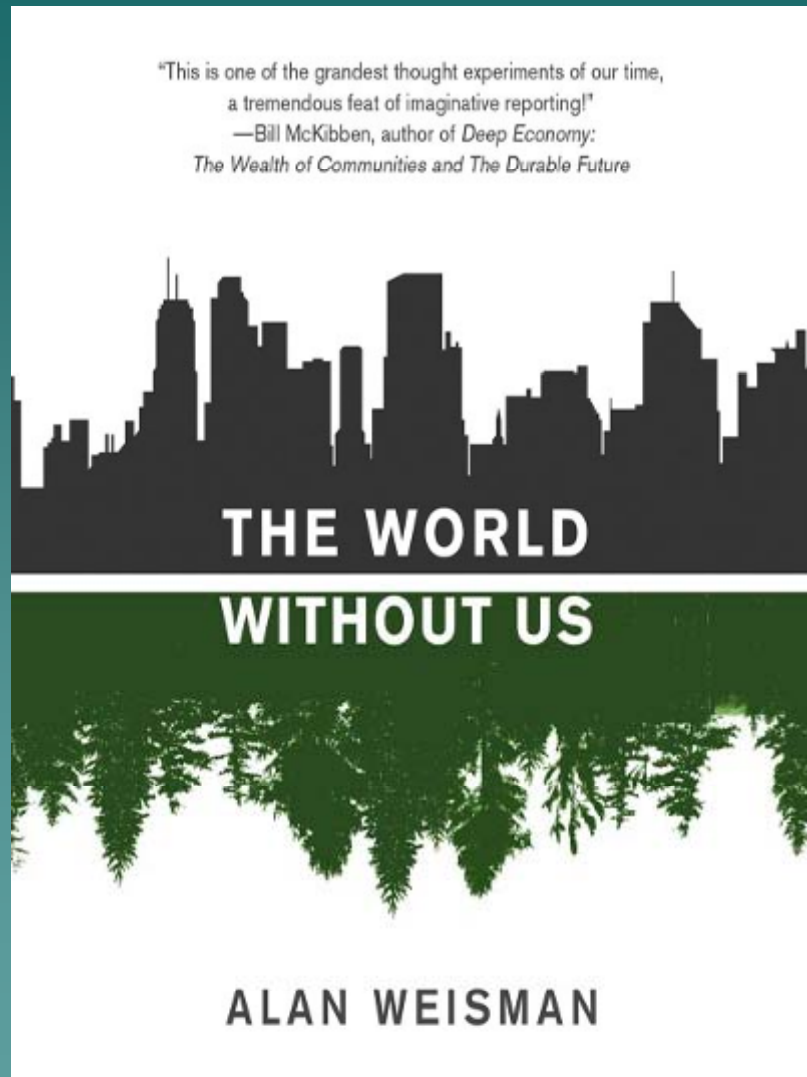
Over
Alex MacLean

Top 10 **Green** Reading List



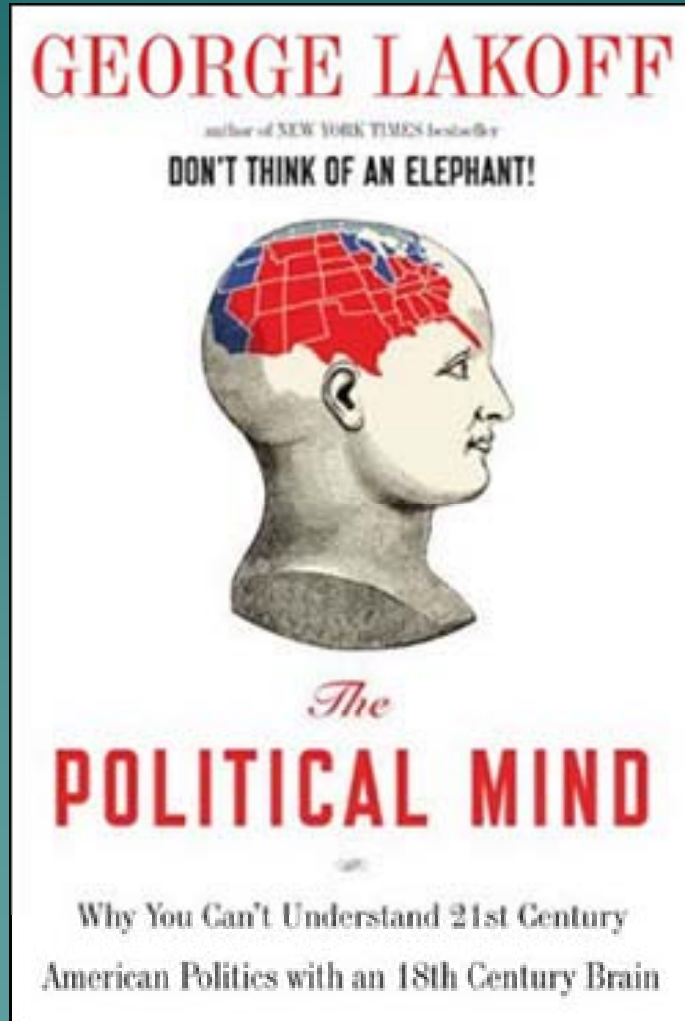
WorldChanging Alex Steffen

Top 10 **Green** Reading List



The World Without Us Alan Weisman

Top 10 **Green** Reading List



The Political Mind George Lakoff

Top 10 **Green** Reading List



THE IMPENDING WORLD ENERGY MESS

What It Is And What
It Means To *YOU!*

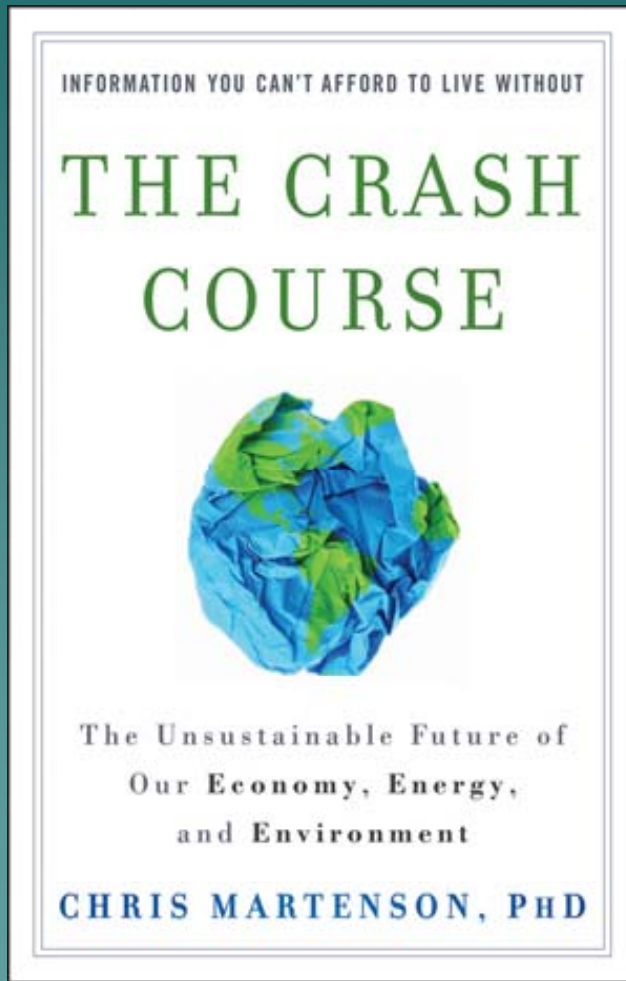


ROBERT L. HIRSCH
ROGER H. BEZDEK
ROBERT M. WENDLING

The Impending World Energy Mess

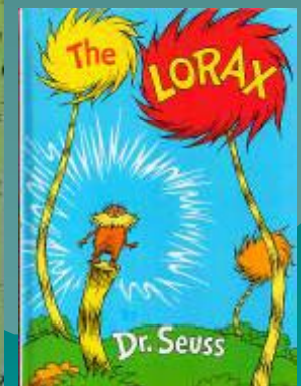
Robert Hirsch, Roger
Bezdek, Robert Wendling

Top 10 **Green** Reading List



The Crash Course Chris Martenson

Have you ever read this?



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[Home](#) / [Blog Home](#) / [Energy Efficiency](#) / Plumblines Energy Savings Tip of the Month

Plumblines Energy Savings Tip of the Month

Lifestyle Habits to Improve Energy Conservation

There are many things you can change in your day to day life that can dramatically cut down on the amount of energy you use. Many of them will not even make a noticeable impact in your day.



- **Take Showers** – Showers require less hot water than baths. Install a water-saving shower head to reduce additional water consumption.
- **Change Timing of Appliance Use** – Use appliances that generate heat, such as the washing machine and dryer, and the oven, during the cooler times of day – early morning or later in the evening. This reduces the amount of air conditioning you will need to use.
- **Be Oven Conscious** – Electric cook tops use a lot of energy. If possible, do not use an electric cook top. Also make sure to use the right size burner for the pan you are cooking with. When selecting a pot or pan, use one with a flat bottom, as it will make better contact with the stove top, and will heat up more efficiently.
- **Try Using Compact Fluorescent Bulbs** – Instead of buying incandescent bulbs on your next shopping trip, try buying compact fluorescent bulbs – these put out four times as many lumens per watt. They also last about ten times as long.
- **Strategically Close Drapes** – In the hot summer months, pay attention to the areas of the house where the sun pours in, making it extremely hot. Close these drapes during the hottest times of the day. Then, in the winter, open the drapes on these windows to maximize the amount of heat from the sun filtering in the house. On winter nights, close all blinds and drapes to keep as much cold air out as possible.
- **Set Your Thermostat** – Set your thermostat to 78 degrees in the summer, and 68 degrees in the winter – this will save a ton of energy, and money on your next energy bill!

Categories

- [Air Conditioning Denver](#)
- [Do it Yourself Projects](#)
- [Electrical Denver](#)
- [Energy Efficiency](#)
- [FAQs](#)
- [Furnace sales and Maintenance Denver Colorado](#)
- [Health and Wellness](#)
- [Heating Denver](#)
- [New Technology for Your Home](#)
- [Plumbing Denver](#)



Lot's of
people
getting
on board

Lot's of people getting on board



The screenshot shows the homepage of Computers Off.org. At the top left is the logo "Computers OFF.org" with the tagline "Saving the planet, one idle computer at a time". To the right is a search bar with a "SEARCH" button and a "DONATE" button. Below the search bar are links for "Watch Videos", "Certify Now", and "Login". A navigation menu includes "Home", "Consumers", "Corporate", "Education", "Government", "Learn More", "About Us", and "News".

The main banner features a green field with a tree and a city skyline. Text on the banner reads: "International Green IT Awareness Week, brought to you by ComputersOff.ORG" and "www.greenitweek.org". A graphic on the right says "GREEN I.T. INTERNATIONAL GREEN IT AWARENESS WEEK 1-7 JUNE 2010" with a green leaf icon.

Below the banner are three columns of content:

- Computers Off Campaign:** "The Computers Off Campaign is a simple but important initiative designed to educate home, business and government users on how to reduce our carbon footprint by enabling power management on our home and work computers. Implementing power management will substantially reduce your carbon emissions -- and make a real difference to the planet. Working together we CAN make a difference!"
- Computers Off Labeling:** "The Computers Off Label is the computer industry's guide to help business, government and individuals quickly and easily identify organisations that are doing their part to reduce their power consumption and in turn reducing their CO2 emissions." Below this are three logos for Computers Off.org.
- Our Licensees:** The Lenovo logo.

At the bottom right, under "Latest News", there are two entries:


- 26/04/2010: [Trailer for International Green IT Awareness Week campaign...](#)
- 15/04/2010: [ComputersOff.ORG prepares to launch the first ever Green IT Week...](#)

At the bottom left are Facebook and Twitter icons. At the bottom center is the copyright notice: "Copyright © 2005-2010. All rights reserved. • [Site Map](#) • [Privacy Policy](#) • [Purchase Terms](#) • [Contact](#)"

Yesterday's Green Building Tour



PROJECT PROFILE



LEED® Facts
Life Science Plaza
Houston, Texas

LEED® for Existing Buildings; Operations and Maintenance Certification awarded January 25, 2010

Gold	35
Sustainable Sites	8/15
Water Efficiency	3/5
Energy & Atmosphere	6/16
Materials & Resources	6/10
Indoor Environmental Air Quality	7/11
Innovation in Operation	5/5

LIFE SCIENCE PLAZA
2130 WEST HOLCOMBE BOULEVARD
HOUSTON, TEXAS - 315,000 GSF

- 100%** Indoor Environmental Quality was Primary Focus of Design & Material Use
- 100%** Green Power Purchased for this Building's Core Operation
- 86%** Construction Waste Diverted from Landfill
- 39%** Savings in Water Use

Friday,
October 14, 2011

Next GBRC Event



City of Houston—Public Works & Engineering
Code Enforcement Green Building Resource Center



Presents an Education Seminar

Holistic Energy Conservation: Houston Methods

Houston has a tough climate for energy conservation. Learn from the design side and the construction side of real methods to keep your homes comfortable in the context of affordability, safety, and sustainability. With a focus on the building envelope and the equipment inside, we will hear from an engineer and an HVAC installer that have real know-how and experience with Houston climate challenges, and not only with new projects. We will hear about an "extreme makeover" residential project that will detail the host of retrofit techniques that changed an energy "hog" home to a high performer.

Guest Speakers.....

Gary Beck, PE, SECB, LEED AP,
Eco-Holdings LLC



Gary Parr, HVAC specialist,
Home Energy Consultants,
thirtygreen radio show host



When.....
 Thursday, October 20, 2011: 6:00 p.m. – 7:30 p.m.


Free and open to the public

PLEASE RSVP:
Steve.stelzer@houstontx.gov or phone 832-394-9050

Visit The Green Building Resource Center at
www.codegreenhouston.org
 or on
facebook **twitter**
Facebook.com/HoustonGBRC twitter.com/houstonGBRC




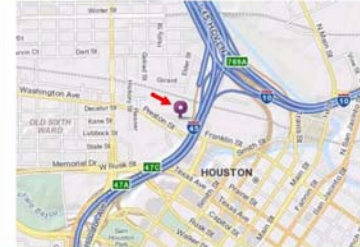

Held in the new Green Building Resource Center located in the new Houston Permitting Center on track for a LEED Gold Certification, the GBRC is Houston's best location for seeing displays of green building materials and strategies.



Location Details ↓
 City of Houston
 Houston Permitting Center
 1002 Washington Avenue
 Houston, TX 77002

Parking Details ↓
 Free parking in lot just east and north of the building, meters on Washington & Elder.
 Bus Stop: Preston @ Elder



Thursday,
 October 20, 2011
 6:00 pm to 7:30 pm
 Free

News You Choose



CitizensNet



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