Is Awareness Enough?

Steve Stelzer  AIA, LEED® AP
Program Director,
Public Works & Engineering, Code Enforcement
Green Building Resource Center
Thanks Josh Owens
Can you say ‘Growth’?

And how many Stop-N-Go’s do we need?
Can you say ‘Resilient’?

And how resilient is this kind of growth?
And NOW, A word from our SPONSORS.... The Energy Capital of the World!
And how much “work” is embodied in a gallon of gasoline, our favorite substance of them all? Well, if you put a single gallon in a car, drove it away from your home until the gas ran out, and then got out and pushed the car home, you’d find out exactly how much work a gallon of gasoline can do.
It turns out that a gallon of gas has the equivalent energy of somewhere between 350 and 500 hours of human labor. Given that a gallon of gas can perform that much human work, how much value would you assign it? How much would 350 to 500 hours of your hard physical labor be worth to you? $4? $10?
This is what we mean by CHEAP FOSSIL FUEL…
Cville TimeBank Repair Cafe

Toss it? No Way! FIX IT!

At a Repair Cafe, folks bring their broken stuff to be repaired by volunteers for free. It's a fun, friendly way to keep perfectly good stuff out of the landfill and spend some quality time together as a community.

Sign up for our mailing list here
FixIt Clinic

FixIt Clinics are all about do-it-together, hands-on disassembly, troubleshooting and learning to repair.

Events

Saturday, March 24, 2018

12:00 PM  Fix-It Clinic - Bring your broken stuff and learn how to fix it!

Austin Habitat for Humanity ReStore - 500 W. Ben White Blvd.

All ages are welcome, but children under the age of 13 must be accompanied by a parent or guardian. Click below to RSVP.
About Us

iFixit is a wiki-based site that teaches people how to fix almost anything. Anyone can create a repair manual for a device, and anyone can also edit the existing set of manuals to improve them. Our site empowers individuals to share their technical knowledge with the rest of the world.

So what are you waiting for?

Start a new guide or improve an existing one!

Helpful Resources for Repair Guides
Repair Café, Palo Alto
@paloaltorepaircafe
Toss it? No way! Repair Café

A Repair Café celebrates fixing through a fun, collaborative, hands-on, fix-n-learn, community event. People bring us their broken items for assessment, disassembly and repair. Bring your toolkit and join us to have fun and learn while helping others troubleshoot and fix their broken stuff! Volunteers assess, take apart, and hopefully -- REPAIR.

Transition Houston is partnering with TX/RX Labs, the City of Houston Green Building Resource Center, Houston Complete Communities, Citizens’ Environmental Coalition, Texas Campaign for the Environment, and the Houston Peace and Justice Center in this effort!

Do you have an item in need of repair?

We invite you to bring in a broken item and meet local people who have offered to share their skills to help you make repairs. If you have nothing to repair, you can enjoy a cup of tea or coffee. Or you can lend a hand with someone else’s repair job. You can also get inspired at the reading table, by leafing through books on repairs and DIY.

Acceptable Items to Bring:
Clothing, Small Appliances, Bikes
Can you volunteer to help with repair or the event?

Calling all handywomen, handymen, handy kids, handy teens and families, tinkerers, and sewers! Volunteer to have fun and learn through helping others troubleshoot and fix their broken stuff. Volunteers are also needed on the day of the event as guides and to assist with general coordination.

Sign Up to Participate!

Online at: https://repaircafehouston.eventbrite.com use the QR code, or contact Steve Stelzer at 832.394.9050.

Why a Repair Cafe?

Our society revolves around consumption. Personal consumption of durable goods adds up to 8% of GDP, and non-durable goods add up to 15%, totaling about $4 trillion dollars annually in the USA! The more we buy, the more we throw away, often during the first year! And... most people no longer know how to repair things. For more information, visit www.transitionhouston.org.

The Fixer’s Manifesto

- If it's broken, fix it!
- Give your stuff a longer life
- Enjoy hands-on, fix-n-learn, community based discovery
- Nurture curiosity, share ideas and skills
- Fixing is good for us and good for the planet
- Disposability is a choice
- Make fixing a way of life!
House Rules & Guidelines

Please take a moment to read the house rules outlining repair cafe and safety guidelines. Participation in the event requires all attendees to agree and abide by these rules. In general,

- Local volunteers with a range of skills are available to give you ideas, suggestions or a helping hand if needed with a repair.
- Visitors carry out the repairs themselves whenever possible, but repair experts are on site and can help as needed.
- Please bring one broken or non-working item per person. *
- Carry-in items only (No stoves, refrigerators, or other large items)
- Volunteers offer no guarantee of items being repaired made by them or with their assistance, and are not liable if objects repaired do not work properly at home.
- Volunteers are not obliged to reassemble disassembled appliances that cannot be repaired.
- If you need replacement parts, such as plugs, fuses etc. you may need to pay for these or pop out and buy them from a local shop.
- Visitors to Repair Café are solely responsible for the removal of broken objects that could not be repaired.
- A voluntary donation for workshop tools and repair materials is greatly appreciated.

* Disclaimer – Please know you bring your items to be repaired at your own risk. Because repairs are made by unpaid volunteers there may be risks. Neither the facilitators of Repair Cafés nor the repair volunteers are liable for any loss or damage that may result from advice or instructions, for the loss of items handed over for repair, for indirect or consequential loss, or for any other kind of loss resulting from repairs made by Repair Café.

Our Sponsors
House Rules

✓ Acceptable Items to Bring:
   Clothing, Small Appliances, Tools/blades for sharpening
✓ Carry-in items only (No stoves, refrigerators, or other large items)
✓ Please bring one broken or non-working item per person.*
✓ Local volunteers with a range of skills are available to give you ideas, suggestions or a helping hand if needed with a repair.
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General Shop Safety

✓ While in the shop areas, eye protection is required. Safety glasses will be provided.
✓ Closed toe shoes are required.
✓ Do not work alone, use the buddy system.
✓ Clean up after yourself.
✓ If you see something unsafe, say something.
✓ Do not work while intoxicated.
✓ If you have any concerns or questions, ASK.
Mary Lee Johns: This looks really cool. When, where, how join, etc?

Peggy Walton: Looking forward to our next one. Thanks for sharing Gabriella Nissen.

Monica Elizabeth Luna: When is the next one?

Carol Hendrix Burrus: I was there! It was amazing. I will now plan to save things that break instead of figuring out how to recycle them. This service is a welcome return!
At Houston's first "repair cafe" today -- with volunteers who are lending their expertise to help extend the life of non-working items. Getting one of my not-quite-working vintage lamps looked at. (Carl, pictured, advises me to get a different socket.) Fun stuff!

Kudos to Steve Stelzer for coordinating this project -- a good thing for Houston! 🎉
HPL plans to stay involved with and support the Repair Café program. We would like to pursue outreach opportunities and host a Repair Café in the near future.

Carmen P. Abrego
Assistant Manager
Library Events & Community Programs
500 McKinney | Houston, TX 77002

We link people to the world.
<table>
<thead>
<tr>
<th>Date: 10/28/17</th>
<th>Male / Female</th>
<th>Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>0-20</td>
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<tr>
<th>Zip Code</th>
<th>77009</th>
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<table>
<thead>
<tr>
<th>Repair Number:</th>
<th>A 4</th>
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<table>
<thead>
<tr>
<th>Repair made to:</th>
<th>Toaster Oven</th>
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<table>
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<tr>
<th>Defect / Issue:</th>
<th>Belt down stairs</th>
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<table>
<thead>
<tr>
<th>Were you helped?</th>
<th>Yes. What was repaired?</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Perfectly workable</td>
</tr>
<tr>
<td></td>
<td>Plus 2 women did it</td>
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<table>
<thead>
<tr>
<th>To a degree. Advice?</th>
<th>No. Reason?</th>
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<tr>
<th>Helped By:</th>
<th>Ely &amp; Peggy</th>
</tr>
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<thead>
<tr>
<th>Comments / Suggestions</th>
<th>Bridge detached from inner spring. Left pin on door missing. Substituted a screw &amp; glue.</th>
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<tbody>
<tr>
<td>Date:</td>
<td>10/28/17</td>
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</tr>
<tr>
<td>Name</td>
<td>Lindos Foss</td>
</tr>
<tr>
<td>Email Address</td>
<td><a href="mailto:LindosFoss@gmail.com">LindosFoss@gmail.com</a></td>
</tr>
<tr>
<td>Repair Number:</td>
<td>Repair made to:</td>
</tr>
<tr>
<td>Defect / Issue:</td>
<td>Fans Don't Turn</td>
</tr>
<tr>
<td>Were you helped?</td>
<td>Yes. What was repaired?</td>
</tr>
<tr>
<td>To a degree. Advice?</td>
<td>Antique - Bearings Seized</td>
</tr>
<tr>
<td>No. Reason?</td>
<td>Helped By: Curtiss Wade</td>
</tr>
<tr>
<td>Comments / Suggestions</td>
<td>Other:</td>
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<td>Date:</td>
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<tr>
<th>Name</th>
<th>Email Address</th>
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<tbody>
<tr>
<td>Quincy Antonio</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Repair Number</th>
<th>Repair made to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. L.</td>
<td>Stuffed toys (dog)</td>
</tr>
</tbody>
</table>

| Defect / Issue: | |
|-----------------| chawed + . dangerous |

| Were you helped? | |
|------------------| Yes. What was repaired? |
|                  | holes dogs chawed in them |
|                  | stuffed animals - important because |
|                  | the filler is carcinogenic if they |
|                  | swallow the particles |

| Did you help?    | |
|------------------| No. Reason? |

| Helped By:       | |
|------------------| 2 sewing ladies, Judy + Karen |

<table>
<thead>
<tr>
<th>Comments / Suggestions</th>
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</thead>
<tbody>
<tr>
<td>The 2 seamstresses were so very nice and very enthusiastic about repairing the animals</td>
</tr>
</tbody>
</table>
Date: 10.23.17  | Male / Female

<table>
<thead>
<tr>
<th>Age Group</th>
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<tr>
<td>0-20</td>
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<tr>
<td>21-40</td>
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<tr>
<td>41-60</td>
</tr>
<tr>
<td>61+</td>
</tr>
</tbody>
</table>

Email Address

I agree to abide by the House Rules

Zip Code 77005

Repair Number:

T-2

Defect / Issue: Weed wacker string breaks constantly

Were you helped?

☐ Yes, What was repaired? Weed Wacker (wound the wrong way)

☐ To a degree, Advice?

☐ No, Reason?

Helped By: Wade / Curtis

Comments / Suggestions
# Repair Café Houston

Saturday, October 28, 2017  
TXRX Labs

<table>
<thead>
<tr>
<th>Role</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteer Fixers</td>
<td>10</td>
</tr>
<tr>
<td>Volunteer Guides</td>
<td>13</td>
</tr>
<tr>
<td>Pop Up Table Folks</td>
<td>4</td>
</tr>
<tr>
<td>Reception/Closeout Folks</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Success/Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repairs</td>
<td>16/20</td>
</tr>
<tr>
<td>Appliance</td>
<td>8/10</td>
</tr>
<tr>
<td>Tools/Sharpen</td>
<td>4/5</td>
</tr>
<tr>
<td>Sewing</td>
<td>4/5</td>
</tr>
<tr>
<td>Not recorded, but fixed</td>
<td>4 to 6</td>
</tr>
</tbody>
</table>
Questions?

Green Building Resource Center

Welcome

The City of Houston’s Green Building Resource Center, a project of the Department of Public Works and Engineering, offers economical, sustainable building solutions for the public.

Over 50 educational displays, a library of information, and samples of recycled materials provide strategies for green building and in-home energy conservation. Visit the showroom to learn about the impact of recycling, green building materials, solar panel installation, low-impact development techniques for stormwater runoff, energy-efficient windows and lighting strategies, heating and cooling technologies, and water conservation methods.

The Green Building Resource Center is located on the first floor of the Houston Permitting Center, which was constructed to green building standards to reach LEED for New Construction to the Gold level. The building embodies innovative ideas for energy conservation, featuring a raised floor system that provides future flexibility, water efficient plumbing fixtures, energy efficient light fixtures and AC equipment, recycled content acoustical insulation, and recycled artwork. In addition, the HPCC boasts the following features:

- A vegetated roof, watered with harvested rainwater and condensate from the air-conditioning system
- A bioswale alternative to a traditional storm sewer, demonstrating permeable pavement, vegetated bioretention, and turf-covered biotrification
- A rooftop array of 387 solar panels

BOOK A GBRC SPEAKER

GREEN INITIATIVES
So What?
Are we reaching a TIPPING POINT?

*Silent Spring* by Rachel Carson

*The Soil Will Save Us* by Kristin Ohlson

*The Tipping Point* by Malcolm Gladwell

NATIONAL BESTSELLER

How Little Things Can Make a Big Difference

*“A fascinating book that makes you see the world in a different way.”* —FORTUNE
LET’S SEE: the Early Majority, given Houston’s population, the **Innovators** in Houston add up to 70,000 people.
Then again...
But we need YOUR HELP!

SILENT SPRING
Rachel Carson

THE TIPPING POINT
Malcolm Gladwell

DRAWDOWN
THE MOST COMPREHENSIVE PLAN EVER PROPOSED TO REVERSE GLOBAL WARMING
EDITED BY PAUL HAWKEN
Historically, this is what we do.

And at that very moment, we heard a loud whack! From outside in the fields came a sickening smack of an axe on a tree. Then we heard the tree fall. The very last Truffula Tree of them all!
What Else Can YOU Do?
Watch the Story of Stuff YouTubes
THE STORY OF STUFF
Then read the book
This is what we do to make Stuff for us to buy
This is what we do to make us buy Stuff
This is what we do for Stuff
This is who we are
This is the story now.....

Extraction  Production  Distribution  Consumption  Disposal
U.S. Energy Consumption by Sector

Buildings 48.7% (47.8 QBtu)

Industry 23.2% (22.7 QBtu)

Transportation 28.1% (27.5 QBtu)
The BIG Waste Story

Waste to make Stuff. What we don't see!

GROSS NATIONAL TRASH

INDUSTRIAL WASTE

76%

SPECIAL WASTE

18%

CONSTRUCTION & DEMOLITION WASTE

3.5%

MUNICIPAL SOLID WASTE

2.5%

GARBAGE
Compost Opportunity!

- **Food Scraps**: 12.5%
- **Yard Trimnings**: 12.8%
- **Containers & Packaging**: 30.9%
- **Durable Goods**: 17.9%
- **Non-Durable Goods**: 24.5%
Compared to Others

Per Capita Garbage Production

Average Pounds per Person per Day

- U.S.A.: 4.6
- Australia: 2.70
- Japan: 2.58
- Canada: 1.79
- China: 0.70
Bring Your Green to Work - Full download from GBRC website...
75% say they are doing a great job recycling. But only 34% of municipal solid waste is recycled.

18% in Houston
KEEP THE DIRTY DOZEN

FOOD
HOUSEHOLD HAZARDOUS WASTE
NEEDLES
CHORDS/WIRE
CLOTHING
DIAPERS
CUPS & DISHES
PLASTIC BAGS
FOOD SOILED PAPER/BOX
FOAM PACKING
SNACK BAGS & WRAPPERS
GARDEN HOSES

Out of Your Recycling

Go to www.wm.com to learn where they belong.

Seriously
I am emotionally scarred from WM’s need to tell people that disposable diapers aren’t recyclable.
HOUSTON'S SHADE OF RECYCLING

10 Largest U.S. Cities Recycling Rates

Los Angeles
San Jose
San Diego
Chicago
Philadelphia
Dallas
New York
HOUSTON
San Antonio
Phoenix

Recycling Rate %

HOUSTON is the 4th largest city, AND in 8th place!
Houston has had recycling since the 80’s....

The SWMD operates two types of recycling collection services for participating areas of the City of Houston. Both programs allow residents to conveniently recycle at their curbside on a bi-weekly basis.

Why is HOUSTON still so far behind?

10 Largest U.S. Cities Recycling Rates

<table>
<thead>
<tr>
<th>City</th>
<th>Recycling Rate</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. New York</td>
<td>27%</td>
<td>8,491,079</td>
</tr>
<tr>
<td>2. Houston</td>
<td>19%</td>
<td>2,239,558</td>
</tr>
<tr>
<td>3. Chicago</td>
<td>58%</td>
<td>2,722,389</td>
</tr>
<tr>
<td>4. Philadelphia</td>
<td>49%</td>
<td>1,560,297</td>
</tr>
<tr>
<td>5. Philadelphia</td>
<td>49%</td>
<td>1,560,297</td>
</tr>
<tr>
<td>6. Phoenix</td>
<td>17%</td>
<td>1,537,058</td>
</tr>
<tr>
<td>7. San Antonio</td>
<td>18%</td>
<td>1,436,697</td>
</tr>
<tr>
<td>8. San Diego</td>
<td>65%</td>
<td>1,381,069</td>
</tr>
<tr>
<td>9. Dallas</td>
<td>29%</td>
<td>1,381,069</td>
</tr>
<tr>
<td>10. San Jose</td>
<td>71%</td>
<td>1,015,785</td>
</tr>
</tbody>
</table>

> 50% = Dark Green
25 - 49% = Medium Green
< 24% = Light Green

ARE YOU HELPING or HURTING HOUSTON RECYCLE?
EMBODIED ENERGY & MATERIAL TO LANDFILL

EPIC FAIL!
It is clear that the challenge for humanity today is no longer anything like what it faced in the 1960's and 1970's, when developing pollution abatement technologies and lessening the degree to which resources were wasted provided a more-or-less adequate answer to the most pressing problems of the day.
The world now needs to adopt solutions that change the entire system of production and consumption in a fundamental manner, that move societies from conditions of energy and materials surplus to scarcity, and that develop the foresight needed to recognize still-hidden threats to sustainability.
This goes far beyond the realm of technical adaptations, and instead requires large-scale social, economic, and political engineering - in an effort to create the foundations for a more sustainable human civilization.

[State of the World 2015]
More questions?