

## Greening Your Home: Rehab - Greening Interior Surfaces

Jim LaRue

Presented by  
the **Nature Center**  
at **Shaker Lakes**  
and  
**Environmental Health**  
**Watch**



## Greening Your Home: Rehab

Green or sustainable building means construction or rehab of our living spaces so there is little or no harm done to the natural environment or to the health of the residents.

## Buildings that Connect People to Nature

- Biophilia which means “love for nature”; human beings have an innate and evolutionarily based affinity for nature.
- It is the connections that human beings subconsciously seek with the rest of life.
- We connect to nature via our windows, our landscape, our gardens, our buildings.
- **The Biophilia Hypothesis - Designing and Understanding the Human-Nature Connection**, Island Press, 2005

## Greening Interior Surfaces

- What if each interior surface material had a “sustainability facts” stamp on it like our foods have nutrition facts listed?
- What should a sustainability profile cover?

## Nutrition Facts Label

- |                           |                  |
|---------------------------|------------------|
| ■ Serving Size:           | ■ Cholesterol %  |
| ■ Servings per container: | ■ Sodium %       |
| ■ Calories: %             | ■ Total Carbs. % |
| ■ Fat Cal. %              | ■ Fiber %        |
| ■ Total Fat: %            | ■ Sugar %        |
| ■ Sat. Fat. %             | ■ Protein %      |
| ■ Vitamin #1 %            |                  |
| ■ Vitamin #2 %            |                  |
| ■ Calcium %               |                  |
| ■ Iron %                  |                  |

## Sustainability Facts - Size

- Dimensions of material, if a solid
- S/f of surface it will cover, if a coating.

### **Sustainability Facts - *Transportation***

- Raw material extraction site
- Production site
- Distribution mode

### **Sustainability Facts - *Production***

- Raw material extraction environmental impact
- Production environmental impact
- Occupation health and safety issues
- Components

### **Sustainability Facts – *Installation and Use***

- Cautions in installation
- Cautions in use

### **Life Cycle Analysis Factors**

(LCA Information Created by Environmental Building News, see Green Building Products, the Green Spec Guide to Residential Buildings, by Alex Wilson and Mark Peipkorn, New Society Publishers, 2005)

- Products made with salvaged, recycled or agricultural waste content
- Products that conserve natural resources

### **Life Cycle Analysis Factors**

- Products that avoid toxic or other emissions
- Products that reduce environmental impacts during construction, demolition or renovation

### **Life Cycle Analysis Factors**

- Products that save energy or water
- Products that contribute to a safe, healthy indoor environment.

## How can we consumers know what is safe to use?

- MSDS: Material Safety Data Sheets:
  - provide list of potential chemical risks
  - of some use
  - difficult to interpret

## How can consumers know about product emissions?

- Many governmental programs are now requiring Emissions Testing.
- Emissions Testing is extremely controversial because so much is at stake if companies have to make significant changes.

## Emissions Testing - key players

- ASTM: American Society of Testing Materials
  - test all manner of materials especially for strength, durability, etc
  - emissions is a new game for ASTM

## Emissions Testing - key players

- Testing groups currently leading this work and competing with each other:
  - Air Quality Sciences: [www.aqs.com](http://www.aqs.com).
  - Greenguard: [www.greenguard.org](http://www.greenguard.org)
  - Scientific Certification Systems, Inc. [www.sccertified.com/iaq](http://www.sccertified.com/iaq)

## Emissions Testing - key players

- Industry Testing Groups:
  - Carpet and Rug Institute: [www.carpet-rug.org](http://www.carpet-rug.org)
  - Resilient Floor Coverings Institute [www.rfci.com](http://www.rfci.com)

## Surface Sustainability Choices



- **Best:** +s with almost no -s.
- **Better:** some +s and some -s
- **Good:** a few +s and more -s
- **Avoid:** severe -s

### Drywall: a changing face

- New drywall materials are moisture resistant,
- but not easily recycled due to new surface materials.



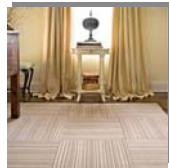
### Walls: agricultural waste

- Made of wheatboard.
- Panels can serve as non-bearing wall partitions in residential construction.



### Flooring: floor tiles

- Made of mostly recycled material.
- Can be easily removed when worn.
- Almost 100% recycled except for PVC backing.



### Flooring: ceramic tile

- Made with 50% post industrial and post consumer recycled material.
  - 47.5% broken window panes and glass bottles.
  - Lead free glaze.



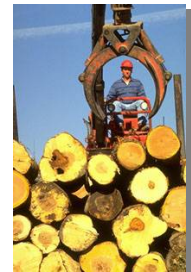
### Flooring/Walls/Other Surfaces: rejected tile

- Tile seconds can reduce landfills and reduce cost for remodeling.
- About \$1.25 s/f.
- Nearby supplier

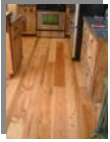


### Flooring: certified wood

- Wood harvesting certified by the FSC means using sustainable means to do so.
- Kane Hardwoods in PA is nearest source.



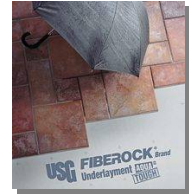
### Flooring: reclaimed wood



- Recycled wood for flooring and other purposes reduces demand on existing forests and reduces landfill.

### Flooring: underlayment

- Do not use **luan** underlayment, a tropical forest product.
- There are preferred products that have lots of post-consumer and industrial recycled content.



### Flooring: Marmoleum



- Marmoleum is a sheet flooring made of renewable materials including wood flour, jute, linseed oil, etc.

### Flooring: carpeting from plastic bottles

- Mohawk makes a carpet in which all surface fibers are from recycled plastic bottles.
- It can all be recycled again at end of its useful life.



### Flooring: sealed concrete



- Decoratively finishing and sealing a concrete floor can eliminate need for additional surface material.

### Countertops



- This countertop is made of recycled paper products.
- And is completely recyclable.

## Fiberboard and Particleboard Panels and Molding

- These materials are 100% recycled/recovered wood fiber.
- No urea formaldehyde bonding agents.



## Recycled Paneling



- All the cabinetry in this kitchen is made from recycled wormy chestnut paneling.

## Reclaimed Wood Stair Parts

- There are many old homes in the Cleveland area that have lots of reclaimable/salvageable staircases that could be saved.



## Wall Coverings



- A glass textile wall covering that will hide wall imperfections and can be painted.
- Avoids use of vinyl wallpapers.

## Paints

- AFM company has produced the most environmentally friendly paints over many years and with higher quality.
- Not cheap.
- Milk paint is another alternative.



## Paints

- Goal is to find no-VOC paints
- **Environmental Building News** recommends no more than 50 grams of VOC per liter and this number will be reduced further over time.