

Greening Your Home: Rehab

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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 of these spaces.

LEED Guidelines for Green Buildings:

- Sustainable sites
- Water efficiency
- Energy conservation (atmospheric protection)
- Material and resources that do no harm and result in little or no waste
- Create a healthier indoor air quality
- Encourage innovation and design process

The Bigger Picture:

- Much of our food and building materials come from thousands of miles away which is a significant energy/carbon emission penalty.
- How can we find and create local sources?

The Bigger Picture:

- The building industry is one of the major contributors to landfills.
- What can we do to recycle building waste and deconstruct old buildings more usefully?

The Bigger Picture:

- The persons who need green building most are often those who can least afford to do it.
- How can we find ways to make this quality of housing accessible to all?

Life Cycle Analysis

- Determining what is a green product, service or system is a complicated process, but it is essential to try to find out how “green” they are over their lifetime.
- Just about every manufacturer is now claiming their products are green. Are they?? How can we decide?

The house as a system:

- Being “green” requires us to see our houses as a “system” that is shaped by structural, moisture, air movement, heat transfer and temperature issues.
- These must be carefully addressed lest we contribute to building failure and unhealthy living conditions.

The changing face of greenbuilding

- Greenbuilding is constantly changing. We should not get hung up on any product or system that becomes designated by public opinion as green.
- No sooner do we decide something is green than something else emerges as greener.
- That’s good. We need to see each of our efforts as a simple stepping stone for the next improvement and certainly not the last word.

We need to be sharing our green experiences with others.

- “No person is an island”!! We need to be sharing with others our best and, yes, even our worst, green attempts so we can grow the future effectively.
- Local efforts like “ganggreen” on Cleveland’s west side and “bioneers” a national program are some examples of this kind of sharing.

Greening The Site:

- Make use of the sun
- Control water on site: grading; rain barrels; rain gardens
- Reduce lawn volume; use plantings native to this region
- Eliminate the use of chemicals on the landscape

Greening The Site:

- Grow foods for household consumption
- Compost appropriate food waste scraps; yard waste
- Have fallen/removed trees taken to lumber mill
- Use permeable surface materials for driveways/walkways

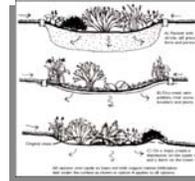
Site: Make use of the sun

- Install exterior photovoltaic lighting;
- Make use of winter sunlight on southern exposures



Site: control water

- Grade around house/flash soil to house;
- Create/use rain barrels for yard/garden use.
- Create rain gardens to keep water on site.



Site: less lawn/native plantings

- Garden surfaces hold more water on site than lawns and attract birds, bees, butterflies.
- Using native plants reduces water requirements.



Site: eliminate use of lawn chemicals

- Toxic lawn chemicals that penetrate the soils can become another soil gas that can enter through foundation walls.
- Studies show that lawn chemicals can be tracked into the home and end up in carpeting creating a hazard for infants especially.

Site: grow foods for household consumption

- The more local we can obtain our food the less carbon is deposited in the atmosphere from shipping it.
- It is estimated that much of our food comes from more than a thousand miles away. Growing our own food also increases the nutritional value of the food due to freshness



Site: compost food waste

- Composting food waste
 - provides good soil for gardens,
 - reduces demand on landfills, and
 - keeps it out of waste water stream.



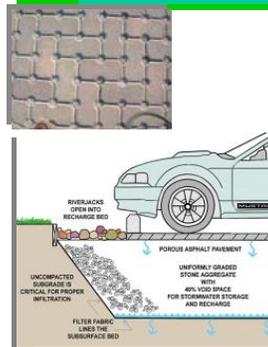
Site: make use of fallen trees

- Should a tree fall or be removed ask company doing work if tree can be taken to local lumber mill (there is one in downtown Cleveland) so better use can be made of the wood.



Site: use permeable surfaces for driveways/walkways

- Using permeable concrete, paving stones/bricks or gravel for driveways, walkways keeps more water on site.



Greening the Foundation/Basement:

- Assess and correct any foundation failures: settling, cracks, buckling, and efflorescence of walls and concrete floor
- Look for and remediate any pest infestations (termites, ants, etc)
- Remove any wood materials directly fastened to foundation walls or floors that is not protected from moisture penetration.

Greening the Foundation/Basement:

- Design basement remodeling layout so mechanical equipment cannot back-draft or create moisture issues
- Finish basement walls and bandjoists so they are insulated and all building materials used are not moisture vulnerable
- Air-seal all foundation air leakage locations (sill plate, etc)

Greening the Foundation/Basement:

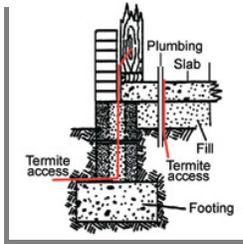
- Treat all basement crawlspaces as conditioned or heated spaces.
- Avoid using carpeting on basement floors
- Test for soil gases; install sub-slab ventilation to resolve problems
- Create storage areas/shelving that will protect all contents from moisture.

Foundation: correct wall/floor failures

- Foundation wall failures are caused by stresses that must be relieved before seriously finishing a basement area.



Foundation: check for pest infestations; remediate/repair



- Termites can make their way into foundations in many ways and eventually find wood they can consume.
- Sealing openings is one way to address the issue.

Foundation: remove moisture vulnerable wood framing from basement walls/floors.

- Many older homes have wood framing attached to the side walls and floor of damp basements.
- Mold grows on this wood and spores can become airborne. The wood can rot causing structural issues.

Foundation: avoid creating backdrafting of gas appliances

- Remodeling in basements can cause backdrafting of gas appliances if not done properly.
- Moisture issues can also be generated by careless remodeling or improper use of ventilation equipment.

Foundation: insulate perimeter walls/avoid moisture in building materials

- There is no such thing as a permanently dry basement.
- Remodel defensively so no finish materials are in direct contact with moisture sources.



Foundation: air-seal all air leakage points



- A major source of heat/cooling loss in a home is air leakage.
- Sealing all seams and holes with caulking can help reduce this problem.

Foundation: treat all crawlspaces as conditioned spaces.

- Making a crawlspace into a conditioned space makes all spaces above it much more comfortable,
- with some energy savings as well.



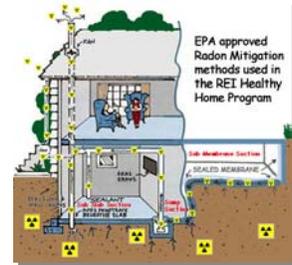
Foundation: avoid carpet on basement floors



- A backed up storm or waste sewer can bring moisture into a basement living space and destroy carpeting.
- It makes no sense to put it there in first place.

Foundation: soil gases

- There are several soil gases (radon, lawn fertilizers, moisture vapor) which can easily leak into the house creating health issues.
- Subslab ventilation is the most effective remediation measure.



Foundation: moisture-free storage



- All basement storage should protect its contents from potential moisture damage.
- Plastic, open shelving seems to provide the best options.

More Info

- Certification Programs
 - U.S. Greenbuilding Council
www.usgbc.org/LEED/homes
 - National Association of Homebuilders
www.nahb.org
- Local Resources
 - EcoCity Cleveland:
www.ecocitycleveland.org
 - Cleveland Greenbuilding Coalition
www.clevelandgbc.org
 - Environmental Health Watch
www.ehw.org

More info

- Environmental Building News
www.buildinggreen.com
- Selecting products and materials:
 - Pharos Project
www.pharosproject.net
 - Consumer Report's
www.greenchoices.org
 - Energy Star
www.energystar.gov/

More Info

- Healthy Homes
 - National Center for Healthy Housing
www.centerforhealthyhousing.org
 - American Lung Association
www.healthhouse.org/
 - Environmental Health Watch
www.ehw.org