Welcome!

USGBC ALABAMA

Building Green Jobs for Alabama

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Project Director

USGBC Alabama

Today's Goals

PART ONE

- Biography
- History and Role of USGBC
- Overview of the Grant/ What this grant offers to you
- What is sustainability? Why is it important in AL?
- What is a "green" building?
- Why should buildings be green?
- What does a "green" or sustainable building look like?
  - Interior & Exterior
- Local examples of green buildings

PART TWO

- How do buildings impact the landscape and resources
- What is a green job?
- Green building credentials and rating systems
- How will environmental knowledge get you a job?

Our Mission

To transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy and prosperous environment that improves the quality of life.



© U.S. Green Building Council, 2008

USGBC

- U.S. Green Building Council Established in 1993, NP Member Organization
  - USGBC is responsible for developing LEED® Rating System, publication of LEED® reference guides, and educational programs.
  - USGBC Alabama, established in 2004
    - North, Birmingham, Central, and Gulf



Grant Eligibility

- Unemployed or underemployed
- 18 years of age or older
- U.S. Citizen/Eligible Non-Citizen
- If applicable, Selective Service Registered

- Fill out registration forms and supply all **documentation** necessary
- If you are eligible, the program is offered at **no cost**.

DOL Definition of Underemployed

The Department of Labor defined underemployed person as (1) those working below their skill capacities, (2) those who are, or will be, working on less than a full time bases in their industries or occupations, or (3) those who have received their notice that they will be unemployed because their skills are becoming obsolete.

What this grant offers…

- Understanding of sustainability
  - meaning to you personally and professionally
- Fundamentals of green building
- Green certificate training courses and testing
  - LEED® Green Associate
  - Green Advantage ®
- On-site green building experience
- Job Coaching and Small Group Mentoring

Participant Expectations

- **At the conclusion of each step, each participant will be evaluated by interest, to ensure that individuals who are enrolled in this program are engaged and can benefit from this program.**
- Please **DO NOT** use the phone inside any of the locations this program is held to avoid disturbing individuals in the building.
- Each participant must treat the Green Workforce Project Director and others with respect. If there are any issues, the participant may be asked to leave the program.

Overview of the Grant

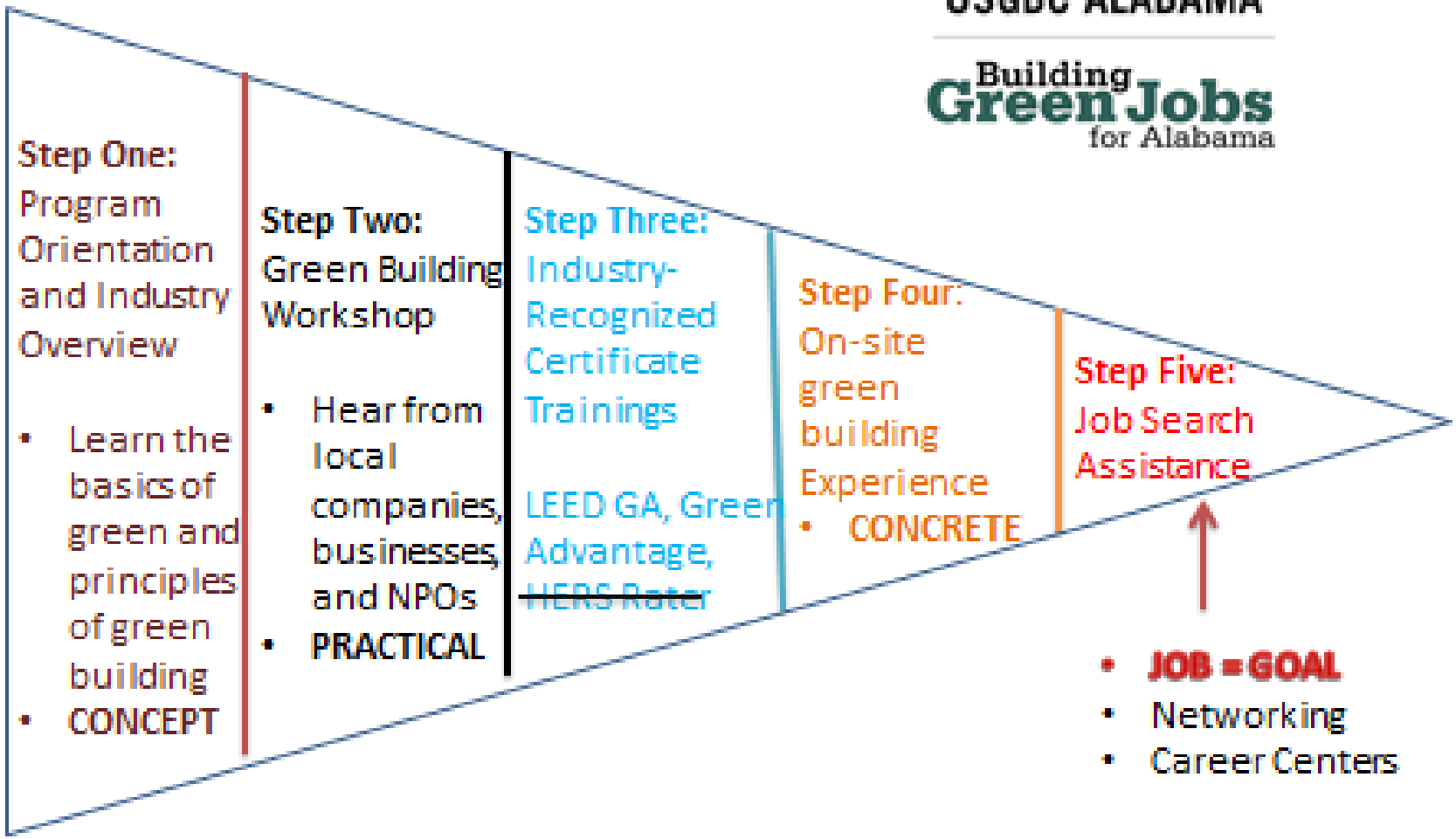
Five Step Program

- 1. Program Orientation & Industry Overview
- 2. Green Building Workshop
- 3. Industry- Recognized Certificate Training and Testing
- 4. On-site Green Building Experience
- 5. Program Graduation & Job Search Assistance

*certificates

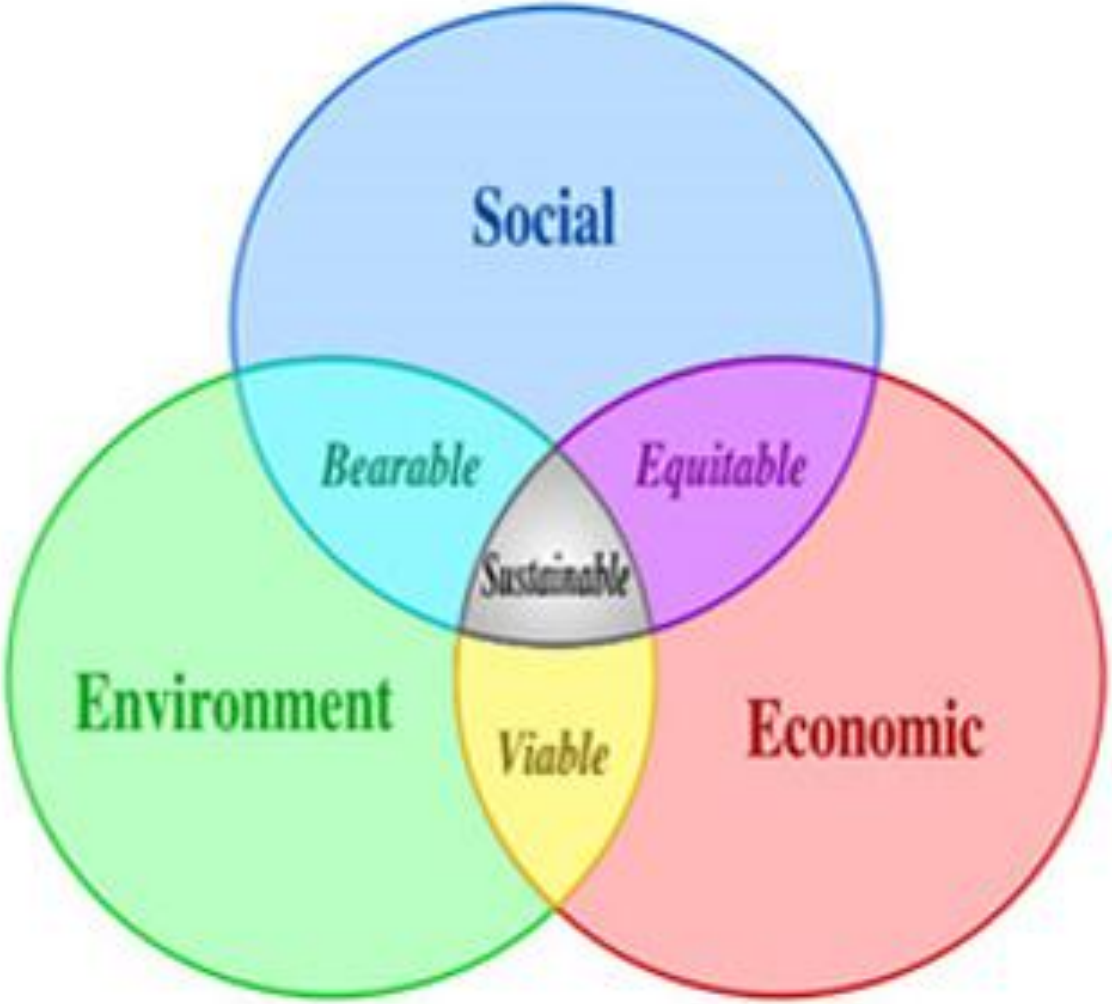
USGBC ALABAMA

Building Green Jobs for Alabama



What is sustainability?

- Sustainability is not a new concept
- Often referred as : *The Triple Bottom Line*
- Defined as: "meeting the needs of the present generation, without compromising the ability of future generations to meet their needs. (WECD, 1987)
  - The intersection between the economy, environment, and society


Social
Bearable
Equitable
Sustainable
Environment
Viable
Economic

Resource Management Strategies

Conservation

- Reduce
- Cut back

- Examples: reduce your use water use

Efficiency

- Performance
- Commissioning

- Examples: use Energy Star® washer/dryer

Exercise: divide into groups of 2-3, you'll be assigned a resource

Types of pollution

- Point source
  - Localized pollution that you can follow back to confined conveyance (pipe, discharge station)
- Non-point source
  - Pollution that you cannot follow back to its' source because it is from many different sources

How do you impact the world?

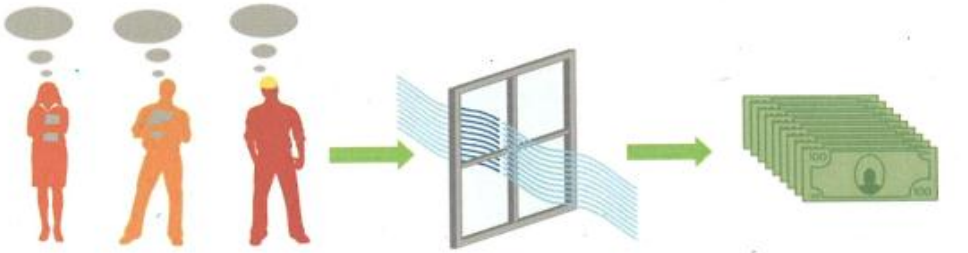
- **Role as a consumer**
  - What you buy says **A LOT…** food, cleaning supplies, electronics
  - Life cycle analysis
- **Residential/Commercial**
  - Energy use
    - Carbon dioxide emissions
  - Water use
    - Energy
    - Quality vs. Quantity
  - Materials
    - Resource depletion
    - Lack of reuse of material
      - Ziploc bags
- **Waste**
  - Waste Management Options:
    - Landfills
    - Compost
    - Recycle
      - **AL 9.9 lbs/day vs. Average is 4.5 lbs/day**
- **Transportation**
  - Urban Sprawl
  - Lack of efficient mass transit
  - Energy
- **YOUR DAILY ACTIVITIES EFFECT THE PHYSICAL ENVIRONMENT**

www.myfootprint.org/en/

What is a green building?

- A process of taking a **systems approach or integrated design process** founded on the principles of building science to create buildings that:
  - ***Minimize*** the use of resources
  - ***Reduce*** the harmful effects on the natural environment
  - Provide ***healthier*** environment for workers or inhabitants

CONVENTIONAL BUILDING PROCESS



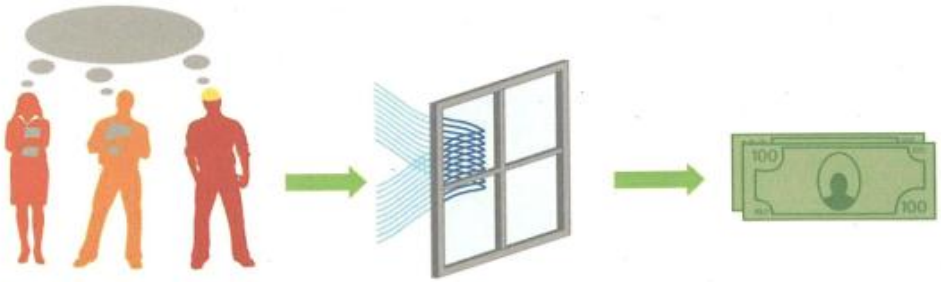
Independent design of:
- HVAC
- Insulation
- Window systems

- Large HVAC system
- Minimal insulation
- Less effective insulation

Higher first cost and operating costs

VS.

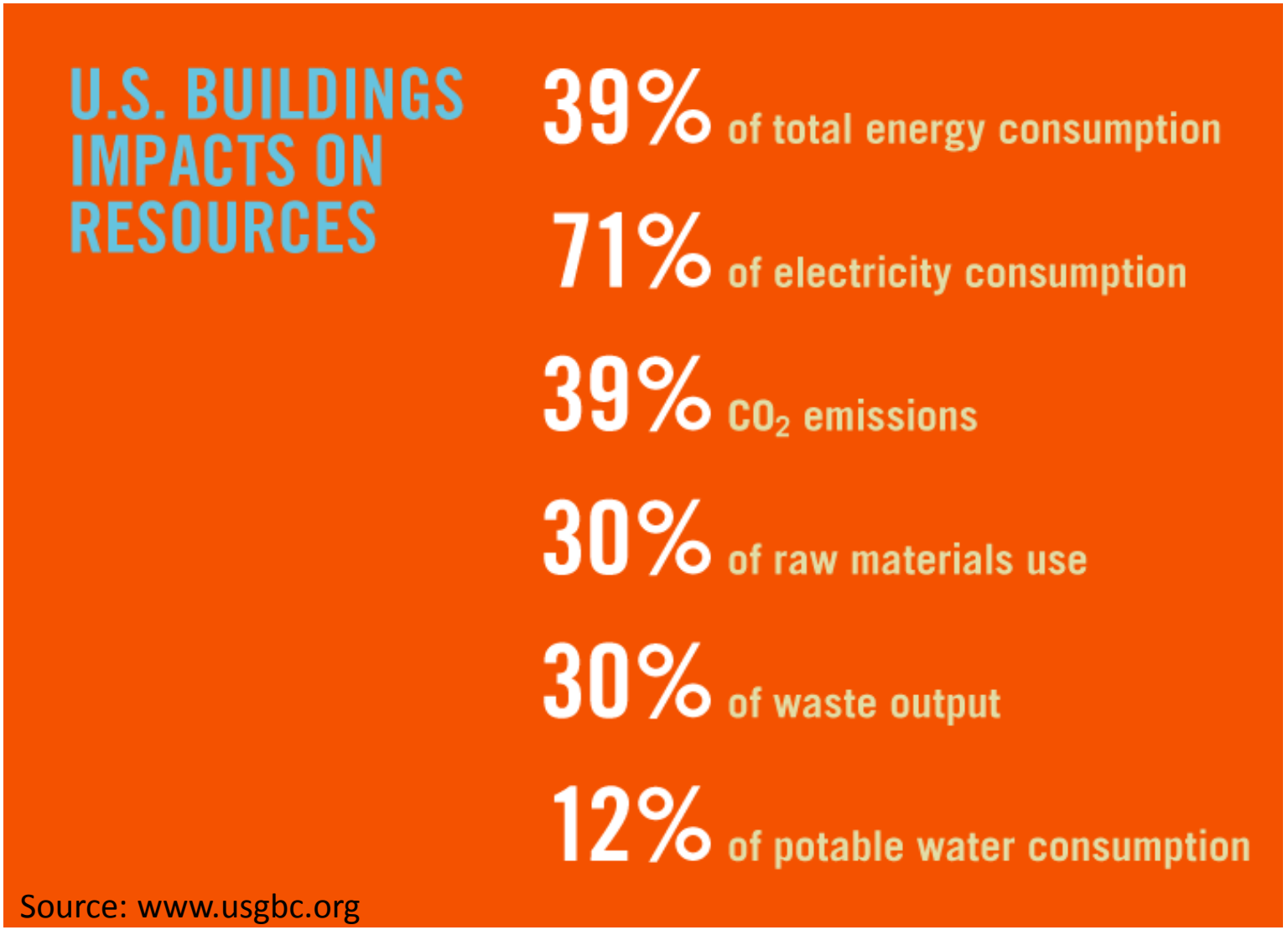
INTEGRATIVE DESIGN PROCESS



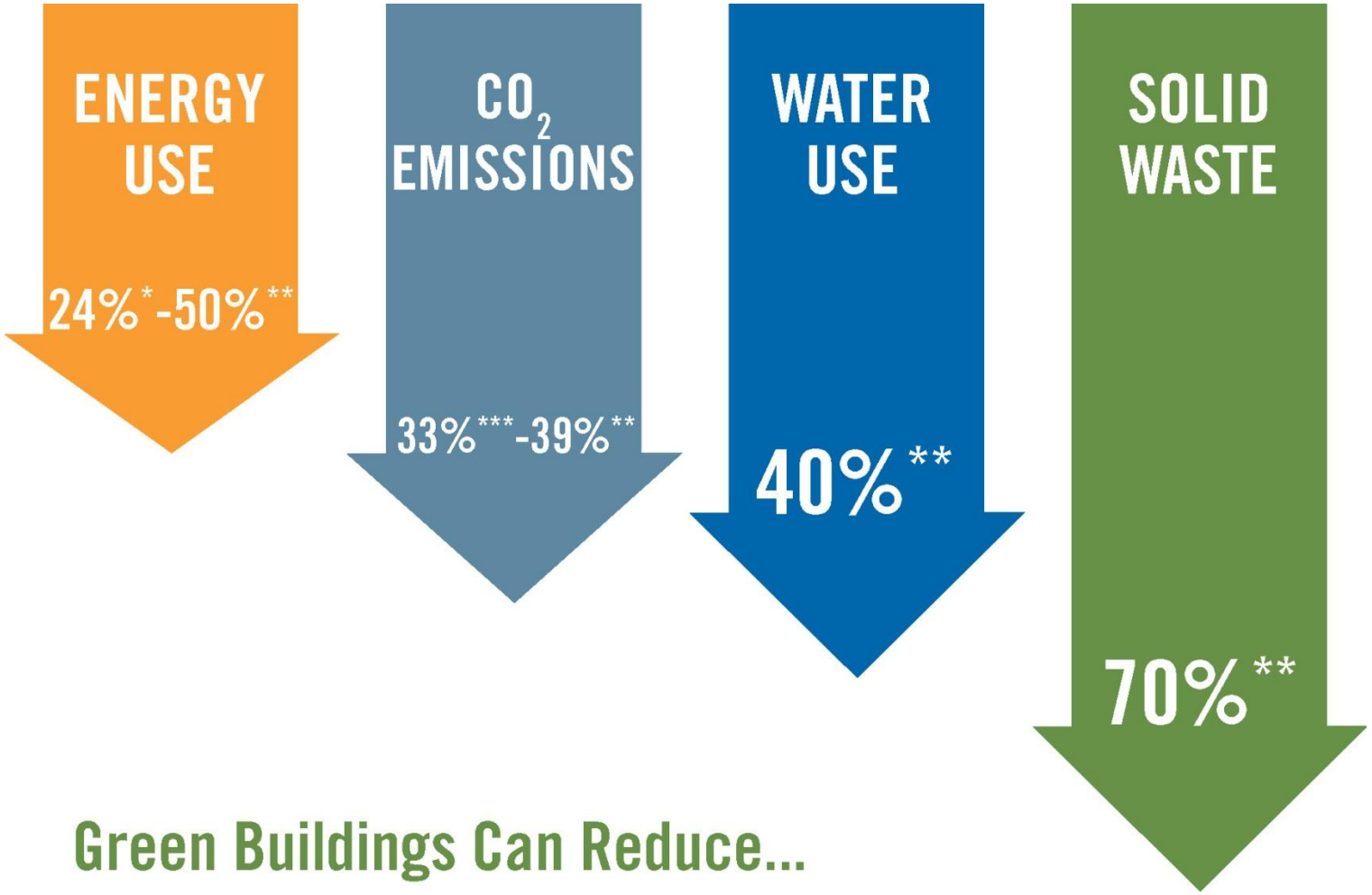
Integrative design of:
- HVAC
- Insulation

- Smaller HVAC system
- More effective insulation
- High performance windows

Lower first cost and operating costs



Source: www.usgbc.org



Green Buildings Can Reduce...

* Turner, C. & Frankel, M. (2008). Energy performance of LEED for New Construction buildings: Final report.
** Kats, G. (2003). The Costs and Financial Benefits of Green Building: A Report to California's Sustainable Building Task Force.
*** GSA Public Buildings Service (2008). Assessing green building performance: A post occupancy evaluation of 12 GSA buildings.

Priorities for Green Buildings (regardless of the rating system)

- Sustainable **Sites**
- **Water** Efficiency
- **Energy** and Atmosphere
- **Materials** and Resources
- **Indoor** Environmental Quality
- *Innovation* in Design

Source: www.usgbc.org

Leadership in Energy and Environmental Design (LEED®)

- LEED® is a **tool** that helps create and encourages:
  - High performance, sustainable buildings
  - Framework for design, construction, and evaluation of buildings
  - Tool for green building professionals to use as a part of an integrated planning and design process

In short, LEED® requires a holistic integrated approach to buildings

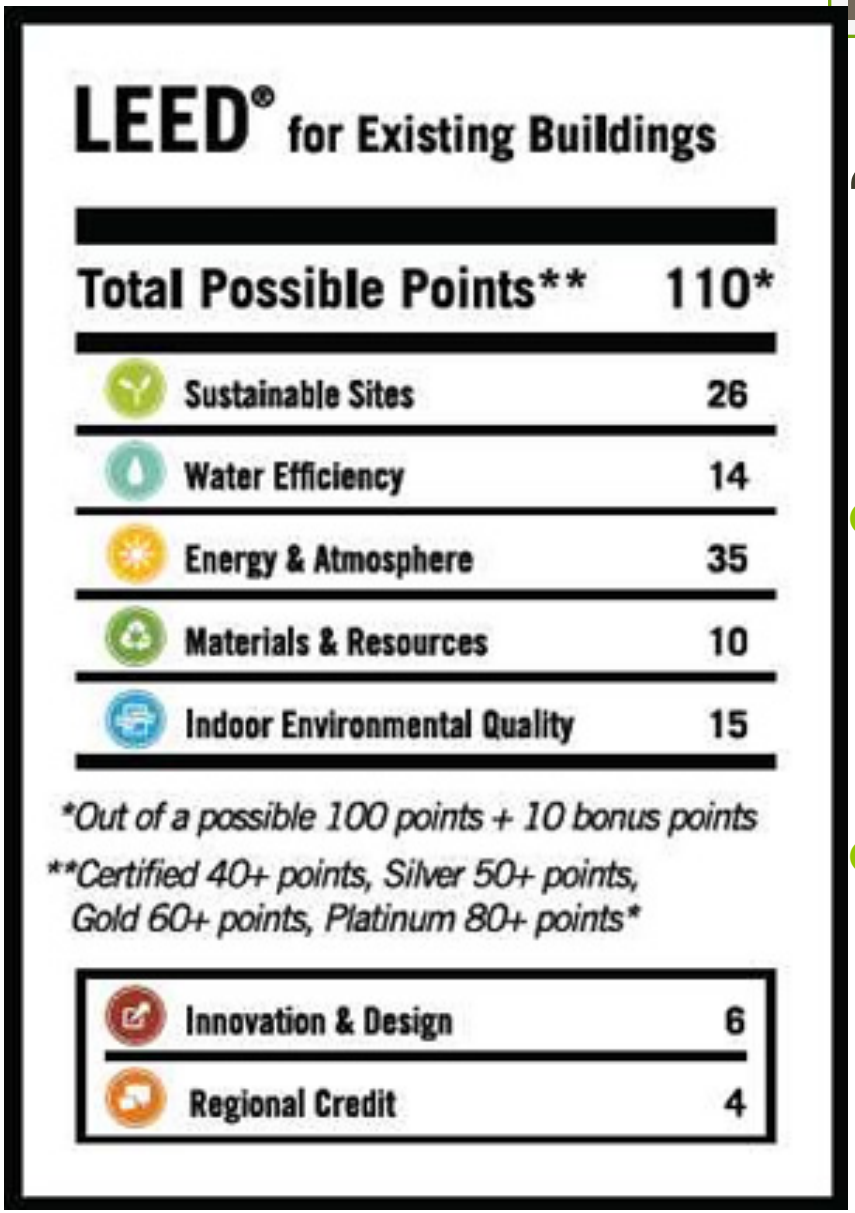
- *REMEMBER!*
  - LEED NOT L.E.E.D, NOT Leeds

USGBC defines LEED® as:

- The most extensive, authoritative, and well-recognized certification standard that **distinguishes** green buildings by their *design, construction, and operation*
- A design **guideline** to move building construction operation toward sustainability
- An integrated training program in green building design to encourage **best practice** and provide support to the entire real estate industry

Source: *Foundations of the Leadership in Energy and Environmental Design Environmental Rating System: A Tool for Market Transformation*


HOMES
NEIGHBORHOOD DEVELOPMENT (IN PILOT)
COMMERCIAL INTERIORS
CORE & SHELL
NEW CONSTRUCTION
SCHOOLS, HEALTHCARE, RETAIL
EXISTING BUILDINGS
OPERATIONS & MAINTENANCE
DESIGN
CONSTRUCTION
OPERATIONS



LEED® for Existing Buildings

Total Possible Points**	**110***
Sustainable Sites	26
Water Efficiency	14
Energy & Atmosphere	35
Materials & Resources	10
Indoor Environmental Quality	15

**Out of a possible 100 points + 10 bonus points*

***Certified 40+ points, Silver 50+ points, Gold 60+ points, Platinum 80+ points**

Innovation & Design	6
Regional Credit	4

- **"Score card" for buildings**
  - Must meet **prerequisites** before moving forward for credits
- Credits are **optional** and credits are points towards certification
- **Credits weighted depending on environmental impact**

LEED® Certification Levels



Cost savings of going green



How do buildings and communities impact the landscape?

LAND

- **Changes** in topography with buildings, roads, and communities
- **Construction pollution**
  - top soil removal
  - sedimentation
  - destruction of habitat
- Five major land areas mak up the Alabama landscap
- Agriculture and Heavy Manufacturing
  - Pollution



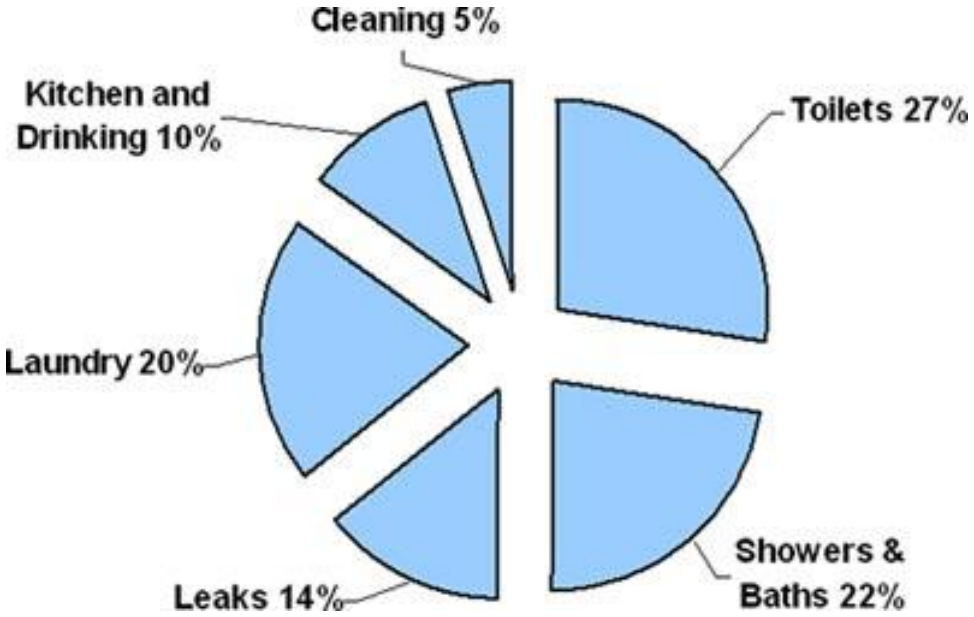
Source: http://www.netstate.com/states/geography/al_geography.htm

WATER

- 97% of the water on the planet is salt water. Just 2.5% of the planet's water is fresh. Less than 1% is readily available for human consumption because most of it is stored in glaciers.
- Many people in the world exist on 3 gallons of water a day, that's how much it costs to flush an average toilet (before EPAct 1992)



Source: Water: Green Guide



- We use 127% more water today than we did in 1950
- Overall, only 3% of water used in the average home is used for drinking water
- **Opportunities for harvesting and reuse of water to save energy, money, and resources**

Source: Water: Green Guide

WATER

- Types of water in a building:
  - **Indoor**
    - Toilets, sinks, showers
  - **Outdoor**
    - Irrigation
    - Storm water runoff
  - **Process**
    - Cooling towers



What are ways we can…

- Collect/Reuse?
- Conserve/Cutback?

AIR

- As a result of past heavy industry- air pollution is a problem!
- **Outdoor:**
  - Sulfur Dioxide and Nitrous Dioxide
- **Indoor:**
  - wood-burning and unvented stoves
- **Transportation**
  - Average Alabamian commutes 35 miles/day



Environment vs. Economy

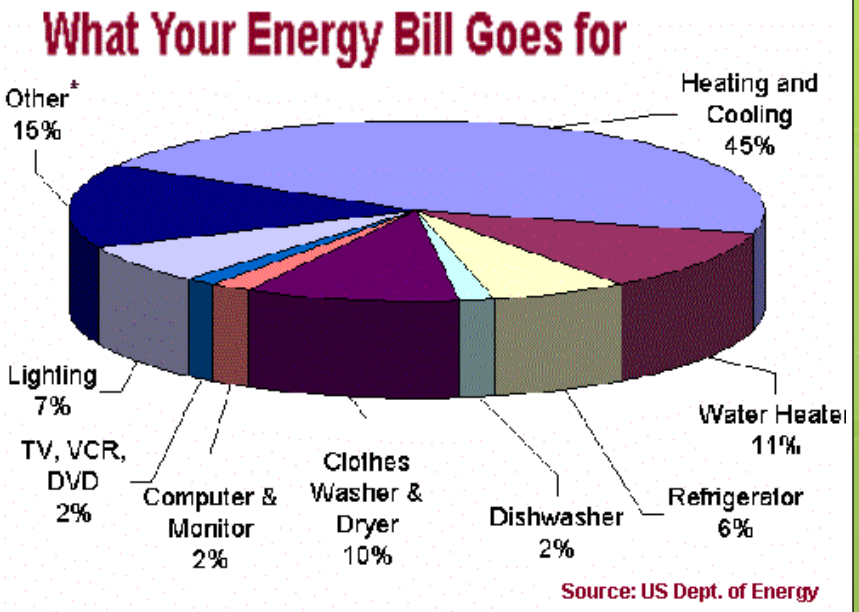
non-attainment

Source: http://www.msnbc.msn.com/id/30476335/

ENERGY

- Americans consume 26% of the world's energy, 5% world population
- We largely use nonrenewable resources for energy(e.g. coal)

- **Green buildings are significantly more energy efficient due to material, site orientation, design, and operation**



Source: Energy: Green Guide

ENERGY

- **Reduce**
  - Cut back on energy use
    - daylighting
- **Conserve**
  - When using power use it sparingly
    - use powerstrips
- **Efficiency**
  - When buying new appliance/bulbs buy Energy Star®
- **Commissioning**
- **Cost savings!**
  - **Triple Bottom Line**
  - Cost of green building
- **Changing habits**
  - Ex: light switches vs. motion sensors
  - Ex: energy conservation campaigns

WILDLIFE

- 79 endangered plant and animal species in Alabama
- Alabama has the most species-rich aquatic ecosystems in North America
- **Site selection of a building**
  - Topography



http://www.outdooralabama.com/public-lands/stateLands/foreverWild/

INDOOR AIR QUALITY

Conventional buildings are continually off-gassing harmful odors and chemicals

- Chemical sensitivity
- VOCs
  - Paint, adhesives, glues, furniture
- Cleaning products

- **Poor IAQ Causes:**
  - Sick Building Syndrome
  - Headache
  - Nausea
  - Allergies
  - Fatigue

- **Solutions:**
  - Low VOC paints, furnitures, add indoor plants, CO2 monitoring

HUMAN HEALTH

- **Sick Building Syndrome**
  - Inadequate Ventilation
  - Chemical Contaminants
    - Indoor and Outdoor
  - Biological Contaminants

Solutions: Based on fundamentals of green building… increase ventilation, education and communication of pollutants

- **Smart Growth**
  - Walkable Communities
  - Reduce the need to drive
- 1 in 10 people in Alabama has asthma
  - A need to clean up the air, water, and soil is necessary to make us all healthier

"Human health is directly connected to environmental health"

Source: NEW490Final.ppt

Why is sustainability important?

- **Choices that we make today affect the future.**
- Making sound, sustainable decisions now will prevent a great deal of stress on the planet, natural resources, the economy, and society in the future.
- **Buildings are going to keep being built!**



Green Jobs

- See your booklet for resources about examples of green jobs and specific green collar job websites.
- "*work in **agricultural, manufacturing, research and development (R&D), administrative, and service** activities that contribute(s) substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to **protect** ecosystems and biodiversity; **reduce** energy, materials, and water consumption through **high efficiency strategies**; de-carbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution.*"

What do certifications do for a building?

- Allow various parties to **collaborate** in building projects to earn points for certification
- Give **credibility** to claiming a building green through third party recognition
  - Building will stand apart from others
- Give a market-recognized **'brand'** to the building project and general public
- If it's a new building, set out clear **standards** to achieve in the building project

How does green building translate to green jobs?

- Building owners, facility managers, investors, and tenants see the cost savings of green economically and environmentally
- Demand for green building has weathered the recession
  - Green building accounts for 1/3 new construction in the U.S.
- Project specs call for managers and workers with green credentials for points

✓Green credentials in project specs and job ads

- **Check out your booklet for Green Jobs Resources and work trade organizations in your area**

Manager, Corporate Sustainability: "...**LEED** certification and/or previous sustainability, consulting, travel industry experience..."

Commissioning Technician: "...ideal candidates will hold a **LEED**, CEM or CX Certification..."

Building Inspector: "...HERS rater certification, and an understanding of Green building practices are a plus..."

Site crews: "...all field and administrative personnel to be **Green Advantage** Certified Practitioners."

- Construction, Demolition

Exterior Landscaping/Plant Design: "…must have a passion for sustainability and environmental health"

What do green credentials do for job seekers?

- **Demonstrate your knowledge** in green building rating systems and sustainable construction
  - Shows dedication, expertise, and education
- Allows them the **opportunity** to work on green/sustainable projects
- **Networking** opportunities through membership and meetings
- Increase **marketability** (add to resume)

Find the right credential for you…

Worker's Credential	Best suited for…
LEED ® Green Associate	All trades and professions who support green building
Green Advantage ®	Contractors, trades on site, skilled labor (e.g. carpenters, welders)

LEED GREEN ASSOCIATE™

GREEN ADVANTAGE® ENVIRONMENTAL CERTIFICATION COMMERCIAL

LEED® Green Associate

- Appropriate for non-technical fields
- "**For professionals who support green building design, construction, and operations, the LEED Green Associate credential denotes basic knowledge of green building principles and practices and LEED.**"
- Well known credential (internationally)
- Best comprehensive introduction to green building in…
  - **Design***
  - **Construction***
  - **Operation***

Source: www.gcbi.org

LEED® Green Associate

Test Details:

- 2 hour time limit, 100 questions
  - multiple choice
  - Passing score is **170/200**
  - Take at a Prometric Testing Facility
- First step to becoming a LEED® Accredited Professional (LEED® AP)
  - *REMEMBER! People are accredited, buildings are certified*
- **GRANT:** LEED® Core Concepts, LEED® GA Study Guide, & Training Provider Manual, GBCI website printout

Green Advantage®

- Great for those who have **experience** in on site trades and building experience
- Emphasizes the role of construction design and management teams, and skilled personnel
  - Audience: Project Managers, Superintendents, Contractors, Tradespeople, Architects, Engineers, Property Managers, etc.
- Documents knowledge of green building and sustainable design concepts and field practices

Source: http://www.greenadvantage.org/building-building.php

Green Advantage

- Similar principles as LEED® Rating System, responsive to multiple systems
- Recognized by: USGBC-LEED, GBCI, NCCER, ABC, AIA, etc.
- Offer three types of certifications and you will receive:
  - Commercial/Residential
- Open-book exam policy with the OBER, broad accessibility one year to take the test
- Timed 90 minute test
- **GRANT**: OBER, Training Provider Manual, Green Advantage Exam Content & Workbook

Quick Overview of Credentials



- All trades and professions
- Holistic (Design, Construction, and Operation)
- 2 hours, multiple choice, closed book



- Contractors, trades on site, project management
- Conceptual and field experience
- Multiple choice, 90 minutes, open book

Important Testing Information

- You are allowed to take **ONE** test.
- Your credential test is determined by an evaluation provided by GWPD and your background.
- The fees associated with rescheduling your exam fall on you.

Cancellation Policy for Step Three

- Each of these courses will be offered to you in preparation for the actual exams
- You will be given all of the study material when you attend this course
- You will be expected to sign a test disclosure form ensuring you will take the test and tell GWPD your results
- If there are less than 10 people signed up for the class or less than 10 people attend the course, we have the right to cancel the course.

Criteria to Receive Certificate of Completion

- **Individual MUST:**
  - Take his/her credential test (LEED® Green Associate or Green Advantage®).
    - Provide Green Workforce Project Director with test results
  - Attend all five steps of the program*
  - Agree to answer job retention questionnaire on a monthly basis for nine months

Contact Information

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