

# Teacher Tool 130: Building Green Study Guide

Study Guide for Environment 14: Earth Day: Building Green Program 1

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## Building Green

**Original Air Date: April 22 2010**

**Grade Levels: 7-12**

### **Program Description:**

Learn what it means to “build green.” Tour the headquarters of Alberici Constructors, the world’s only LEED® Platinum and 4 Green Globes certified building. Interact with corporate personnel to find out how the building was constructed and how its “green” systems operate.

Program 1 focuses on the external aspects of the building. Find out how the headquarters was constructed utilizing recycled and re-used materials. See how the building’s site orientation and window choices utilize the position of the sun to enhance natural light inside the building and energy efficiency as well. View the natural prairie restoration project that forms the grounds of the headquarters site. Learn how the site collects rainwater and utilizes it for the building’s water systems and how the company produces some of the energy needed to run the building through their on-site wind turbine.

Program 2 delves into the internal aspects of the building. Find out how the building’s ventilation systems utilize natural air flow, reduce energy costs, and enhance indoor air quality. See how the use of natural daylight and air ventilation and the building’s “white noise” system affects worker productivity. Learn about the unique “flushing” equipment utilized in the building as part of its water systems. View the variety of easily renewable materials such as cork and bamboo that are used in the building’s interior and learn how “green practices” also extend to the company’s cafeteria operation and employee lifestyle choices during their workday.

### **Program Objectives:**

1. The participant will explore what it means to “build green” and see examples of systems utilized to meet this goal.
2. The participant will interact with experts involved in planning and executing a “building green” operation.
3. The participant will gain knowledge about the environmental, practical and financial challenges and benefits of “building green.”

### **Program Format:**

The program focuses on the process and materials used to “build green” at Alberici Constructors world headquarters in Overland, Missouri.

#### **Program 1:**

1. Welcome and Introduction—Student groups and experts are introduced and welcomed to the program.
2. Construction Process—Students see images of the site prior to construction of the new building as well and during the construction process and learn how elements already on the site were utilized in the new construction.

3. **Site Orientation**—Students explore how the building’s “sawtooth” element enhances the use of natural light for the building and tour the grounds of the site restored to a natural prairie environment.
4. **Water and Energy Operations**—Find out how the site utilizes natural rainwater runoff for its water systems, how the company’s on-site wind turbine contributes to energy cost reductions, and how the building’s window design also affect energy costs and worker productivity.
5. **Summary and Closing**—We’ll summarize the major concepts learned today, seek final questions from students.

### **Program 2:**

1. **Welcome and Introduction**—Student groups and experts will be introduced and welcomed to the program.
2. **Ventilation and Water Systems**—Find out how the building utilizes natural airflow patterns in its ventilation systems and how it operates in an enhanced cost-effective manner. View examples of the building’s low flush and no flush toilet system and other methods used to reduce water consumption on site.
3. **Use of Interior Materials**—See how easily renewable resources such as cork and bamboo are used throughout the building along with other “greener” decorative and architectural materials.
4. **Lifestyle Operations**—Find out how the building’s various systems (white noise, ventilation, climate control, etc.) enhance worker productivity and view the company’s cafeteria operation and other practices that enhance “green” living in the building.
5. **Summary and Closing**—We’ll summarize the major concepts learned today, seek final questions from students.

### **Featured National Standards (Science):**

Science in Personal and Social Perspectives

### **Featured National Standards (Social Studies):**

- Content Standard 5 – Individuals, Groups, and Institutions

Social studies programs should include experiences that provide for the study of interactions among individuals, groups, and institutions.

- Content Standard 8 – Science, Technology and Society

Social studies programs should include experiences that provide for the study of relationships among science, technology, and society.

### Program-Related Activity Suggestions:

1. Show students a video story from KETC's program "Living St. Louis" on the construction of the Alberici headquarters. The video provides information on the LEED rating system and shows construction of the Alberici Headquarters in process including examples of the building's water systems, and the reuse/recycling of materials from the original building on the site. The video can be found on KETC's You Tube page at <http://www.youtube.com/watch?v=moNVEC5wgDw&NR=1>.
2. Have students learn more about the concepts of reduce, reuse and recycle and seek examples of how those concepts can be applied to building construction and operations.
3. Have each student journal about their experience while viewing the program. What new concepts did they learn? What new questions about "green practices" emerged for them? How would they react to working in a "green building"?
4. Have students think about their school building and how it is similar to, and different from, the Alberici headquarters. Are there "green practices" happening in their school now? What are they? Are they emphasized enough? How could they be emphasized more? How might the school incorporate more "green practices" into its daily operation, site, etc?

### Supplemental Resources:

<http://www.youtube.com/watch?v=pIMrooGI9js&feature=related>

View the finished project at Alberici's Headquarters and learn how its "greenness" is yielding positive results.

<http://www.youtube.com/watch?v=moNVEC5wgDw&NR=1>

The video provides information on the LEED rating system and shows construction of the Alberici Headquarters in process including examples of the building's water systems, and the reuse/recycling of materials from the original building on the site.

[http://www.greenhabitats.org/cgi-bin/index.cgi?FILE=green\\_building%2Fhow\\_to\\_design\\_a\\_healthier\\_planet.htm](http://www.greenhabitats.org/cgi-bin/index.cgi?FILE=green_building%2Fhow_to_design_a_healthier_planet.htm)

Newsweek article from March 5, 2007

<http://www.alberici.com/>

Alberici website including info on Vertegy, their green building division