

BUILDING GREEN

Comprehension

Genre

A **Nonfiction Article** in a newspaper or magazine presents facts and information.



Text Structure

Cause and Effect

A cause is an action that makes something else happen. An effect is the result of a cause.

Water-filled drums in a south-facing glass wall absorb heat from the sun and release it slowly at night to warm this New Mexico home in winter.



How can homes be made more environmentally friendly?

If Earth could talk, it might not call everyone's house "home sweet home." Instead, it would probably point out that many of our houses are not so "sweet." They can actually have an **adverse** effect on the health of the planet. Imaginative builders are out to change that by dreaming up new ways to make our homes more "green," a term that means "ecologically friendly."

HOME, GREEN HOME

Recently, a new house built near Houston, Texas, was so efficient that it didn't need a furnace. The hot-water heater kept the house warm enough in the relatively mild Texas winter. This, combined with reduced air-conditioning costs, saved enough money to offset the cost of the house's extra-thick insulation and high-performance windows.



This solar-powered house in Germany has transparent insulation and solar panels facing south to collect and store solar energy for everyday use.

Unfortunately the successful project, part of a Department of Energy program, hasn't much changed the habits of many homebuilders. "It's hard for big companies to change their way of doing things," says Bill Zoeller. He works with the firm that designed the Houston home.

But some builders are changing. For instance, Habitat for Humanity is building energy-efficient homes that rely less on **nonrenewable** sources of energy. It is working with the Environmental Protection Agency to clean up former industrial sites for affordable housing. Improved insulation and construction techniques are part of the plan. Zoeller sees significant gains in all this. He says, "In some parts of the country, even average homes are now 30 percent more efficient than a few years ago."

DRIVING HOME CHANGE

Many Californians claim they practically live in their cars. John Picard, 34, goes a step further: He lives in a lot of cars, literally.

"These are cars from the '60s that were in the junkyard," he says, indicating his 2,400-square-foot ultramodern home in Marina del Rey, California. "Now they are my house."

Picard's walls aren't made from hubcaps and fenders. They are made by a company that manufactures recycled-steel framing material from junked cars and discarded cans and washing machines. In fact, Picard's entire house—a space-age, two-story metal cube—was built using recycled material and modern technology. The result is a home that's

environmentally correct and comfortable, too. The woodless construction alone, Picard estimates, “saved about 100 trees.”

Other “ecohouse” features include filtered air and an **apparatus** that monitors the interior temperature and energy-efficient lighting. Plus there is a roof-mounted solar panel that can **generate** most of his home’s energy needs. “My house,” he notes proudly, “has the potential for zero utility bills.”

Designing Picard’s ecohouse took a year. Construction took four months. “I wanted to do an energy-efficient house that everybody could construct,” Picard explains. He hopes that his ecohouse will inspire similar construction in the future. “I know it changes people when they see and understand it,” he says. “It brings quality back into building, and it’s good for the environment.”

THE LATEST STRAW (NOT THE LAST!)

Straw seems like an improbable home-building material. After all, there is that story about the three pigs. And there’s another story about a straw house that was eaten by cows.

Judy Knox, 50, and her husband Matts Myhrman, 54, have a different view. They are spreading the news that straw-bale construction, once used on the tree-barren American prairie, is ripe for a comeback. In this building technique, straw is stacked in bales, often bound by



John Picard’s “metal cube” home



Charcoal-color flooring absorbs heat and helps warm the house.

adobe. Straw is a cheap, energy-efficient resource, say Knox and Myhrman. Plus, new straw grows every year—so it is a **renewable** resource.

In 1990, the two launched their Tucson-based company, Out On Bale, to conduct workshops for straw builders. They’ve overseen construction of 20 straw structures, from a sauna to a bunkhouse. “It’s an annually renewable

waste product,” says Myhrman, that’s “right for the planet.”

Knox is a longtime environmental activist from New Hampshire. Myhrman is a Maine native and former ecology teacher. They became excited about straw houses after visiting two of them in New Mexico in the 1980s. With their two-foot-thick walls, the houses provided “a quiet restful kind of feeling,” says Knox. “It felt friendly.” Walls can be raised in a day or two. Quick-to-erect straw houses could, say Knox and Myhrman, shelter disaster victims or homeless people.

Straw, however, does have one drawback: When wet, it attracts fungi, so builders must take care to keep bales dry. And sometimes during construction “the straw bales break up, like shredded wheat,” notes local architect Tom Greenwood, who recently designed a straw cabin. What then? Greenwood jokes, “Don’t add milk.”

Building a straw house



Think and Compare



1. What does the term “building green” mean?
2. What makes the building techniques described in this article environmentally friendly?
3. If you were building a “green” house, which building technique would you want to use? Why?
4. “Sources of Energy” on page 304 outlines the consequences of relying on nonrenewable energy sources. How do the people in “Building Green” avoid these drawbacks?



Test Strategy

Think and Search

Read on to find the answer.
Look for information in more
than one place.

LEARNING TO GO WITH THE FLOW

The Kennebec River flows freely now.

Dams are a source of energy in the United States and around the world. But damming rivers also causes environmental damage. In 1887, the Edwards Dam was built across the Kennebec River near Augusta, Maine, to generate electricity. Even back then, there was concern that the dam would interfere with the life cycle of fish in the area.

The concern was justified. It wasn't long after the dam was built that salmon, herring, shad, and other fish pretty much disappeared from the river. The dam blocked the fish from swimming to the upstream areas where they reproduce.

In 1997 the government concluded that the benefits the dam provided were outweighed by the environmental damage it caused. In 1999 the old dam was destroyed and the Kennebec came roaring back to life. Within weeks, native fish species returned by the hundreds. Edwards was the first U.S. hydroelectric dam ordered destroyed against its owners' wishes. It signaled the start of a successful campaign to remove other river dams around the country that were causing environmental damage.

Restoring rivers to their natural paths is hard work. But environmentalists say the effort always pays off—in expected as well as surprising ways, it turns out. The Edwards Dam had trapped hundreds of logs at its base that were salvaged and recycled into musical instruments, furniture, and other products.

Directions: Answer the questions.

1. What environmental damage did the Edwards Dam cause?

- A** The dam changed the water temperature in the river.
- B** Fish were unable to swim upstream, which affected their life cycle.
- C** The electricity produced by the dam killed the fish.
- D** The dam was a source of pollution that killed the fish.

Tip

Look for information in more than one place.

2. For how long did the Edwards Dam exist?

- A** just over 100 years
- B** two years
- C** two decades
- D** more than 150 years

3. What were the benefits of removing the Edwards Dam?

- A** Fish returned, and logs were retrieved and reused.
- B** Tourism and fishing increased in the Augusta, Maine area.
- C** The local electric utility received an increase in revenues.
- D** The Kennebec River became a source of energy again.

4. What was the significance of the decision to tear down the Edwards Dam for other hydroelectric dams over rivers in the U.S.?

5. The article refers to the benefits of the Edwards Dam as well as the damage it caused. Explain what you think the benefits were and why the government decided to tear down the dam. Use details from the article in your answer.

Write to a Prompt

In “Learning to Go with the Flow” you read about the government’s decision to tear down the Edwards Dam because of the environmental damage it caused. Do you agree or disagree that preventing environmental damage is more important than projects designed to help people? Write a persuasive essay stating your opinion and supporting it with details and reasons.

The Good Side of a Dam

Sometimes people do things to the environment that are just wrong. But sometimes scientists make demands that are unreasonable. Tearing down a dam is an example of what I'm referring to.

People have protested and done all kinds of things to prevent damage to wildlife in certain areas. The reason? They want to protect a fish or a wild plant.

I'm all for protecting the environment, but I'm not for letting a fish cause the destruction of a dam. In this case, people's rights are “righter” than animals' rights. A hydroelectric dam generates much needed electricity for an area. We need electricity to keep people working and help the economy.

So I say, yes, let's take care of the environment. But I say no, let's not sacrifice dams and our economy to help plants and animals.



I used details to support my opinion.

Writing Prompt

Some environmentalists believe the government should ban certain kinds of cars that use a lot of gas because they increase air pollution as well as our dependence on oil, a nonrenewable resource. Other people think the government should not restrict the kind of cars people buy. Write a persuasive essay on this topic. State your opinion and support it with details and reasons.

Writer's Checklist

- Ask yourself, who is my audience?
- Think about your purpose for writing.
- Choose the correct form for your writing.
- Form an opinion about the topic.
- Use reasons to support your opinion.
- Be sure your ideas are logical and organized.
- Use your best spelling, grammar, and punctuation.