

## 'Passive' Homes Save Energy, Money

This is the VOA Special English Economics Report.

Heating and cooling equipment are the biggest users of energy in American homes. And homes are responsible for about one fourth of the nation's total energy use. But there are surprisingly simple ways to deeply cut energy use, its effect on the environment and its cost.

David Peabody and his team at Peabody Architects design passive homes. He says the design of a passive house aims to reduce energy demand to its lowest possible level. Passive houses use no solar, geothermal or wind energy equipment. But they are extremely energy efficient.



Mr. Peabody says passive houses cut heating and cooling costs by about ninety percent. But what sets his design apart from other "green homes" is that it looks like any other home.

DAVID PEABODY: "That is the beauty of the passive house approach is that you don't have to build in a particular way with any particular materials or to any particular style. That's why in our case we decided to try to do something to prove that point to make something that was very traditionally American."

Peabody Architects says it is building the first passive home in the Washington, DC, area. But it will not be the last. In Arlington, Virginia, Roger Lin and his brother Eric are also building one. Roger Lin of Southern Exposure Homes explains that windows are sealed against leaks and have three layers of glass.

ROGER LIN: "And these are triple-paned."

The windows are airtight. On a cold winter day, the temperature inside the unfinished home is a comfortable twelve degrees, or fifty degrees Fahrenheit.

ROGER LIN: "In here it's above fifty actually. It's above fifty right now."

David Peabody says you can find passive homes all over the world.

DAVID PEABODY: "North Africa, for example, has a passive house community designing for very hot dry climates and that's a whole other area of exploration for passive house."

The first passive design was an apartment building in Darmstadt, Germany. Two physicists helped develop it about twenty years ago.

Passive houses use some specialized materials. These include precast concrete panels and insulation. They also need to have special air treatment systems. Supporters say they cost only about five or eight percent more than traditional homes. But they use ten percent of the energy for heating and cooling.

The designs are passive because they do not use geothermal, sun or wind energy for power. But Passive House Institute US says even greater savings can be reached with additions like solar water heating systems. They might call that an active passive house.

**Level: beginner - intermediate**

**Time: 20-30 minutes**

**This worksheet will help you learn new vocabulary about passive homes. You will answer questions about energy efficient homes, and write a short paragraph about your dream home.**

1. What does *energy* mean in this article?  
 usable power that comes from heat or electricity  
 the physical or mental strength that allows you to do things
2. What does *efficient* mean?  
 able to do something without wasting materials, time, or energy  
 able to do something with a lot of hard work  
 not able to do something
3. What does *specialized* mean?  
 unable to be used  
 made or used for many different purposes  
 made or used for one particular purpose
4. Look at the title of the article: '*Passive' Homes Save Energy, Money*. What is this article about?  
 an old kind of home that is worse  
 a new kind of home that is better  
 a new kind of home that is worse

5. What two things use the most energy in American homes?

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6. Read the following sentence. Is it true or false? If it is false, correct the mistake.

It is very difficult to decrease the use of energy in homes today.

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7. What does David Peabody do?

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8. What is the aim of a passive home?

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9. Does a passive home have to look different from a regular home? What does David Peabody say about the way a passive home can look?

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10. What are some examples of specialized materials that are used in passive homes?

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### **OVER TO YOU**

Use the information about passive homes from the article to describe your dream passive home. What materials does it use? How efficient is it?

Write 5-8 sentences explaining your answer.

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## ANSWER KEY

1. usable power that comes from heat or electricity
2. able to do something without wasting materials, time, or energy
3. made or used for one particular purpose
4. a new kind of home that is better
5. heating and cooling equipment
6. false; There are surprisingly simple ways to deeply cut energy use, its effect on the environment and its cost.
7. David Peabody and his team at Peabody Architects design passive homes.
8. A passive house aims to reduce energy demand to its lowest possible level.
9. no; David Peabody says: "That is the beauty of the passive house approach is that you don't have to build in a particular way with any particular materials or to any particular style. That's why in our case we decided to try to do something to prove that point to make something that was very traditionally American."
10. students' own answers [specialized materials include precast concrete panels and insulation. They also need to have special air treatment systems.]