

## Learning to Build (With Straw) and Power (With Solar) a Home by DVD

By Katherine Salant  
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If you will sit for several hours to read a book about home building, will you sit for several hours to watch a book-length DVD on the subject? After watching "Building With Awareness" and "Green Building," two recent DVDs, I would say yes.

I predict that DVDs will make an important contribution to the education of both home builders and homeowners because so many aspects of building can be confusing when reduced to words but straightforward when you can see them.

"Building With Awareness: The Construction of a Hybrid Home" is the work of Ted Owens, who is both a filmmaker and a designer. For the viewer, it is a happy combination. Owens not only knows his subject well, but also knows how to present it in a way that will capture his audience and hold its attention for two hours and 42 minutes -- the running time of his DVD.

As Owens takes you through the design and construction of a straw-bale, solar-powered house that he built for himself in Correles, N.M., an Albuquerque suburb, his camerawork makes you feel as if you're right there at the job site. (He shot most of the DVD himself.)

He realized that a small house would be easier to build and easier for an audience to follow, so his design is very modest -- one story with 650 square feet of living area plus a 100-square-foot sleeping loft overhead.

Owens's other passion -- sustainable design and the use of renewable and recycled building materials and renewable energy -- is clearly presented and explained.

To meet all his electricity needs, he installed high-tech solar photovoltaic panels on his roof. To meet his heating needs, he incorporated low-tech passive solar solutions into the design of his house. He used both passive solar heating (the winter sun pours through the south-facing windows and heats up the living areas) and thermal mass (the thick internal wall absorbs



Exterior walls are insulated with bales of straw; the framing is of salvaged lumber.  
(Photos By Ted Owens)

heat during the day and releases it at night, helping to stabilize the indoor temperature).

Owens's choice of building materials was similarly low-tech. He used straw bales to insulate the exterior walls and adobe bricks for his interior walls. Both interior and exterior walls are finished with earth plaster.

These materials do not require a high skill level; indeed, as you watch this DVD, it's easy to start imagining that you and a few buddies could build a similar house.

With his professional bias toward sustainability, Owens used recycled materials where possible. Most of the wood framing is salvaged lumber, the ceiling insulation is made of recycled newspaper and his rubble foundation is topped with a concrete mix that includes recycled fly ash, a waste byproduct produced by coal-fired electric generating plants.

Owens assembles a colorful cast of characters to tell his story. For example, the straw bales are installed by a group of Owens's friends under the supervision of Steve Bell, an alternative materials expert who shaves his head, wears unusual dangling earrings and speaks in a folksy manner. He makes a return visit to the job site to instruct another group of friends in the fine points of making the earth plaster used to finish the walls, both inside and out.

As the house is finished, we see the beauty in its hand-made imperfection and its gorgeous colors. The DVD makes a strong case for straw bale construction, but it makes an even stronger case for using simple, locally produced materials and traditional building styles that evolved in response to local climates.

Owens does not discuss the cost of his house in the DVD, but the information is available on his Web site, <http://www.buildingwithawareness.com/>. The total for the house was \$88,000. This may seem high, given his extensive use of natural materials, but, as he explained in an e-mail, this sum was actually low because he did much of the labor himself. A neighbor's house of similar size that was built with conventional materials under the supervision of a contractor was \$120,000.

The second DVD, "Green Building: Your Edge in the Home Building Marketplace," is a series of four taped lectures produced by What's Working, a green building consulting firm based in Boulder, Colo.

The first two lectures are given by David Johnston, the president of What's Working and a green building expert, the third lecture is by indoor air expert Mark Richmond, and the fourth is by mold expert David Berman. Each lecture is about two hours -- a bit long -- but they are well edited and the speakers are entertaining. I also found that watching a lecture on a DVD has its upside -- you can rewind the disc as many times as you need to absorb all the material and take notes.

The lectures were prepared for a professional audience, but a nonprofessional who knows some home construction basics will find them easy to follow.

In Johnston's discussions about home building, he touches on many aspects of construction that homeowners never think about -- including the waste stream generated by the construction of a new house. A 2,000-square-foot, conventionally built house produces about 13 tons of waste. There is so much reusable material, you can go dumpster diving and build an entire house with it, as Johnston's friend did in Colorado. Despite this amusing anecdote, it's no joke -- nationally, construction waste accounts for about 12 percent of our entire waste stream. But, Johnston says, as much as 60 percent of the construction waste could be recycled if the builder took the time.

Richmond's presentation on indoor air quality includes many interesting facts about commonly used synthetic building products. Many of these slowly release gases or vapors into the air of a newly completed house. This process is called off-gassing and the volatile organic compounds that are emitted are called VOCs. In many cases, the VOCs contain formaldehyde, which is now classified as a confirmed human carcinogen by the World Health Organization. In response, manufacturers are increasingly offering low-VOC or zero-VOC products. These are heavily tested to ensure that they perform well. In many cases, Richmond says, their new chemistry makes them a better product than the older, higher-VOC ones.

In his mold and moisture lecture, mold specialist Berman explains that molds are "nature's garbage men whose job is to digest organic plant and animal waste and break it down." Molds can grow almost anywhere and thrive, as long as their host is a carbon-based material. Suitable hosts include such seemingly inhospitable media as petroleum and paper. To gain a toehold, molds require water, but only a minuscule amount (Berman calls it a "water film") and not for very long. Once started, mold can survive with the moisture that it draws from the air, even though its host may have dried out. Mold growth is not instantaneous, however. If the water film dries out within 12 to 24 hours, the mold growth is stopped. To keep moisture and mold out of your house, Berman offers numerous strategies.

The visuals of "Green Building" cannot compete with those in "Building With Awareness," but both are welcome. One offers visual explanations that would be impossible in a book format while the other offers a huge amount of information, which is easy to digest in a format that is similar to a college lecture.

The two DVDs are available through book stores and at Web sites that sell DVDs. *Questions or queries? Katherine Salant can be contacted at <http://www.katherinesalant.com>.*

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