

Santa Fe

MAGAZINE

ISSUE 2

HOW TO:
BUILD A GUITAR
UNDERSTAND THE STARS
QUIT THE FBI
BE A RAIN CATCHER
SAVE YOURSELF WITH AN ICE AXE
HIRE A GHOSTBUSTER
MACGYVER YOUR LIFE
BE A SAINT





Will's collection of early sustainable building books, including New Mexican author William Lumpkin.

SUSTAINABLE BUILDING: NOT ALWAYS WHAT IT SEEMS

The History of Sustainability

The Solar Home Book by Bruce Anderson came out in 1976. This caught my attention. It was amazing, full of home-built solar panels and homemade boxes of rocks with aluminum panels to capture solar heat. It contained the Van Dresser house, which was the first solar house in Santa Fe (in 1957)!

By the 1980s, people were using passive solar technology, thermal storage wall design, fixed pieces of glass, south-facing concrete walls – this is how I began building in Eldorado. We installed early versions of a solar hot water heater: an insulated metal box, with a black water tank inside and a glass cover. It circulated and provided 85-90% of the solar hot water for an Eldorado home. We put it on every house we built.

By the 1990s, we had the healthy house movement. This was due to the low energy homes that could be heated with the light bulb and the refrigerator. It worked, except they had terri-

ble condensation and mold problems, and carpets and particle boards and paints putting out formaldehyde. Hence, the sick home syndrome.

People think energy efficiency is a new thing, but we've been talking about solar sustainability since the 1950s. New Mexico has been in the forefront of sustainable technology since the beginning.

Is it Really Green?

Just because something looks "green" doesn't mean it really is. A great example is the compact fluorescent bulb. Everyone thought, *We're going to cut energy consumption by 75%!* Well, it turns out they're toxic to create, even more toxic to dispose of, and there's probably no more hideous form of light. So was that green? Was it sustainable? At the end of the day, it was a lost technology.



The
boar
wood
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The ultimate Leeds Platinum home with exterior concrete board panels, rammed earth (interior and exterior), reclaimed wood (interior and exterior), composite decking, energy saving lighting and heating, and many other features not visible to the eye.

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Will and Jodi Prull planning a rammed earth and reclaimed wood interior.

ARCHITECT: ARKIN TILT ARCHITECTS, BERKELEY, CA
LANDSCAPING: DESIGN WITH NATURE

Another example is very tight, super-insulated homes, with very low air exchanges. Even though you use non-VOC paints, non-added formaldehyde particle board, you still don't want it to be completely tight. You need an energy recovery ventilator so that the house breathes constantly, pulls stale air out of kitchens and bathrooms, moves it through a heat exchanger, expels it out of the house, turns around, and breathes in clean, filtered air. It's like having the windows open without the dust. So it's about more than just a tight house, it has more to do with healthy air exchanges.

Think of the example of Canadian Durasol. It's basically a building block of concrete and leftover lumber waste. Great! Its green, its recycled! But...what about the fact that you're going to burn hundreds and hundreds of gallons of diesel to bring it from Ontario to New Mexico? Is that green?

You can build out of pumice, another option. But keep in mind that it comes from a very fragile landscape in New Mexico, and there's not enough of it to be sustainable on a large scale. A sustainable alternative would be to build with adobe or mud/clay/straw wall systems. All of these materials can be sourced locally, sometimes even on site. The key is to think about how you can resource your materials locally so you cut down on the carbon footprint transportation. Another great example is lumber that is FSC certified. These come from forests that are certified that they're planting enough to recover what they're cutting. Now these are the kind of practices that are truly sustainable. Ideally, we want to employ new building sciences and technologies that are low impact and low energy, and have less toxicity for the environment.

In my history of building in New Mexico for 42 years, there have been incredible leaps in energy production, solar, water harvesting, water conservation, low energy LED lighting, PV – it's been fabulous to see the development of building science, insulated materials, window treatments, and glazing that are



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all more energy efficient and sustainable. And this is important on a large scale since buildings use 50% of the energy in the country.

Thinking Green in 2022

Santa Fe has a green build code in the city and the county which requires houses to have a certain HERS rating. They are getting very strict about this, and new houses with lots of glass doors and windows struggle to meet it. So we're looking at things like triple-paned glass, new films, and new gases between the panes.

We have increased the insulated values of our wall systems and our ceilings above the model energy code, so we do over-performance in these areas to increase HERS ratings. We also work to make homes as tight as possible but with energy recovery ventilators. Additionally, we put in standard water purification: the water goes through a sediment and carbon filter, then through a descaler or potassium softener.

Santa Fe's green code is great and means all homes built here are on the right track. But we go beyond that, identifying sustainably forested hardwood flooring products and heating and cooling equipment and appliances with the highest possible energy saving ratings. On almost every home, we install solar PV as well as plug-ins for electric vehicles.

We build a sustainable lifestyle into every home that we do. And we find that homeowners are truly mindful of the products they are buying and the homes they're building. Its heartening to see the manufacturers responding to these consumer desires. Since the beginning, Santa Fe has been a pioneer in sustainable building; we are lucky and proud to work here.

Sustainable features include (left to right): rain water harvesting cisterns, mud/clay/straw walls, soapstone wood-burning masonry heater, and bio-fuel or gas fireplaces.



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