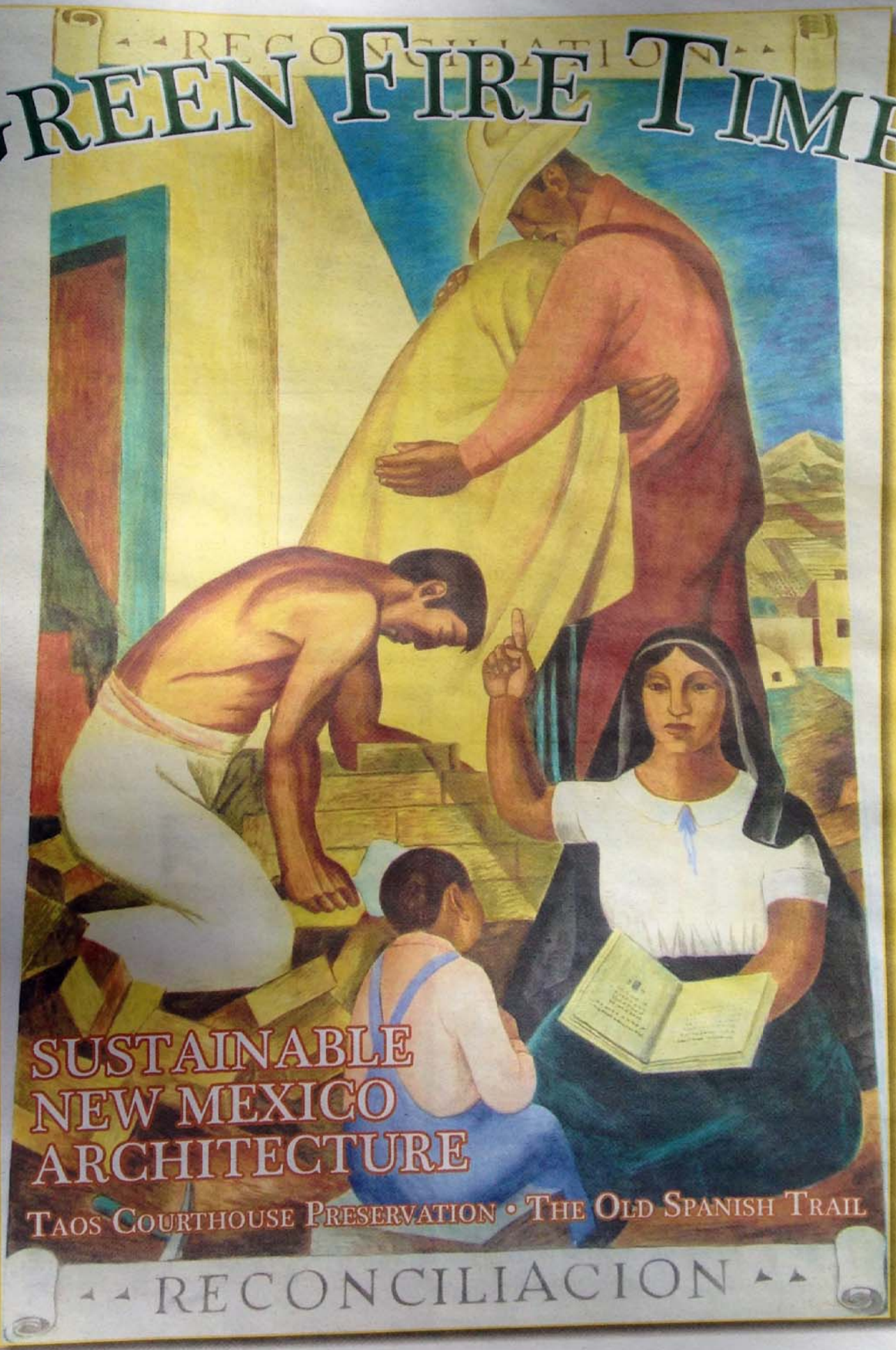
GREEN FIRE TIMES



SUSTAINABLE NEW MEXICO ARCHITECTURE

TAOS COURTHOUSE PRESERVATION • THE OLD SPANISH TRAIL

RECONCILIACION

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GREEN FIRE TIMES provides useful information for community members, business people, students and visitors—anyone interested in discovering the wealth of opportunities and resources in the Southwest. In support of a more sustainable planet, topics covered range from green businesses, jobs, products, services, entrepreneurship, investing, design, building and energy—to native perspectives on history, arts & culture, ecotourism, education, sustainable agriculture, regional cuisine, water issues and the healing arts. To our publisher, a more sustainable planet also means maximizing environmental as well as personal health by minimizing consumption of meat and alcohol.

Green Fire Times is widely distributed throughout north-central New Mexico. Feedback, announcements, event listings, advertising and article submissions to be considered for publication are welcome.

GREEN FIRE TIMES

NEWS & VIEWS FROM THE SUSTAINABLE SOUTHWEST

WINNER OF THE SUSTAINABLE SANTA FE AWARD FOR OUTSTANDING EDUCATIONAL PROJECT

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INTERSECTIONS OF ARCHEOLOGY, ARCHITECTURE, CULTURE AND PLACE

Much of the Sustainable New Mexico Architecture focus of this edition of *Green Fire Times* was written by Rachel Preston Prinz, an architectural researcher and preservationist. Rachel loves to share her passion for discovering the *genius loci*—the "Spirit of Place." After having been a project manager in traditional architecture firms for more than 10 years, she founded the Albuquerque-based firm *Archinia*, in 2007, and its nonprofit offshoot, *Built for Life*, in 2012. Rachel has given multiple TEDx and Pecha Kucha talks on sustainability and historic preservation and is a well-regarded designer and architectural researcher. She served as a preservation commissioner in Taos and has led groundbreaking research into traditional and modern means of earth sheltering. In 2014, she launched a television project, *Built for Life*, to celebrate New Mexico's 1,000-year building tradition of no-tech sustainability.

COVER: **RECONCILIACION**
A mural by Emil Bisttram in the Taos County Courthouse **(See page 13)**

HOW ARCHAEOLOGY AND ARCHITECTURE HISTORY CAN TEACH US ABOUT TRULY SUSTAINABLE DESIGN

RACHEL PRESTON PRINZ

When this photo was taken 18 years ago, I had no idea how prophetic it would become. I was traveling to Europe's mysterious ruined places, like Paestum and Pompeii, and fell in love—with the bones of architecture. I would marvel over details like this elaborately laid column. That was the beginning of a career where I would get to play on the edge that separates architecture and archaeology. I figure out the puzzles, patterns and underlying systems that made old architecture work and then apply that knowledge to modern design. I will share with you some of the things I have learned that I think can help you make your space work better for you.

One of the things I have puzzled over the most is this stuff called "green," like this award-winning "green" gas station. It has no place. It could be anywhere. It is made of lots of metal. That metal had to be mined, transported and brought to an extraordinarily high temperature to be workable, using huge amounts of resources through every step in the process. All those surfaces have no point but decoration and require an unbelievable number of connections.

What the past tells us about green design is that it is local, simple, natural and efficient. The majority of things we do today to make ourselves feel green actually are not. Double-thick walls mean double the wood. Rigid board insulation is made from petroleum. And the super-insulated home idea often means windows you cannot open windows because air is delivered to you via a power-driven system. Besides the fact that New Mexico is ideal for open windows nearly six months a year, design based on power-driven systems is just not smart. Because, as we learned with the Super Bowl freeze a few years back, the sun goes down, storms pop up, and power and gas go down. And then what?

Truly sustainable buildings have to work at a suitable baseline without depending on mechanical systems to function. The mechanical system has to be an accessory, not the primary source of heat, water or air. Guided by 5,000 years of documented building history, here is how I know this idea can work.

On the chart below we see the far left is when we started building structures for permanent habitation. Stonehenge happened not long after that. The founding of Rome, in about 700 B.C.E., happened a little over halfway along our timeline. The last quarter or so of the line shows when we built Gothic cathedrals, and people in the Southwest moved into cliff houses some 100 years later. It was not for another 600 years that we introduced any kind of mechanical system to try and control our environment. Of our entire building history, we have had mechanical systems for less than 4 percent of that time, meaning that, for 96 percent of our time, our buildings worked with the environment, instead of despite it.

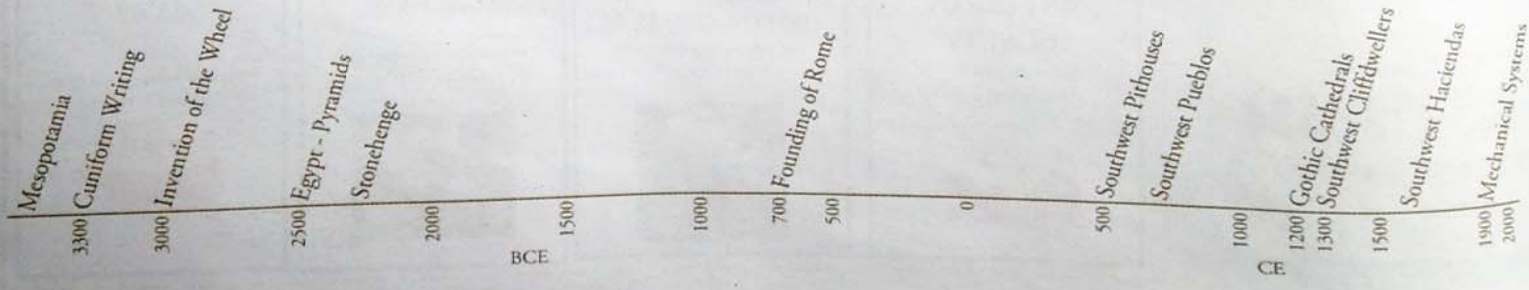
Understanding this was the first part of my paradigm shift. Then, one day, I was hanging over the edge of a ruin taking this photo of a kiva/pit house in Chaco Canyon:

Precariously balanced, I was trying to get the shot right, and I had one of those ah-ha moments. I saw that the same levels of the kiva/pit house are the skeleton—the bones—of this Navajo-inspired Moon Lodge, in Taos, where my girlfriends and I met for women's group once a month.

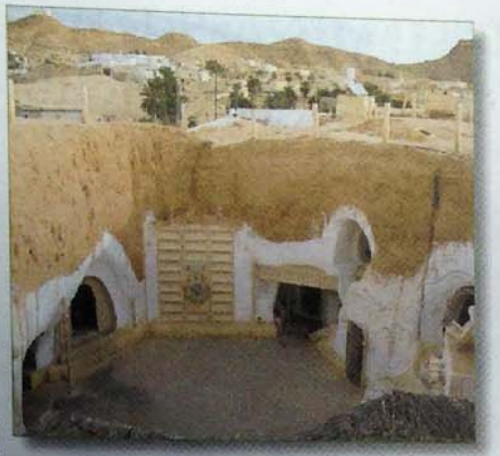
It's super comfortable and warm, has great light and feels like "home."

I finally got it. By looking at archaeology as an applied science, instead of just a recording of history, we can take lessons from the old ways to make the new work better. We can look at what lessons our region has to offer us in archaeological building. The first lesson was from my ah-ha moment. Earth shelters work. Have you been to Mesa Verde or Bandelier and climbed down into a kiva on a hot summer day? The kiva is at least 20 degrees cooler than outside and, in winter, it can be 20 degrees warmer. And it can be warmed even more with just a small fire.

And we were not alone. Just about every culture in every time period around the world utilized earth-sheltering techniques. From the Jomon houses in Japan to Viking pit houses in Denmark to the Vaodong complexes in China to the troglodyte complexes in Guadix, Spain. And even to the Hotel Sidi Driss, designed as a traditional, Berber troglodyte underground building in Matmata, Tunisia.



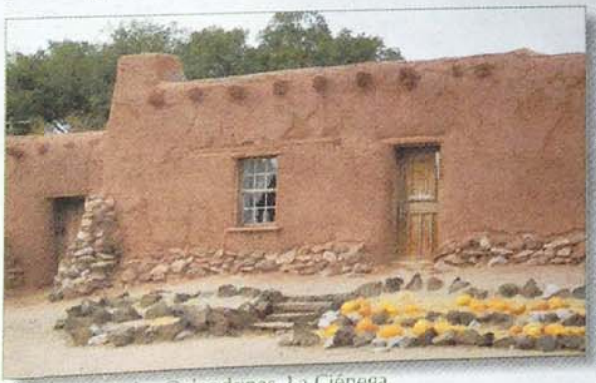
Do you recognize that building? Does it look familiar? You have probably seen it, but it might have been a while. It is the Skywalker family home from Star Wars! Yep, it is a real place in Tunisia. If Luke Skywalker can live in a "primitive" earth shelter and still drive a spaceship and save the galaxy, then what is stopping us from doing that? I am only half-way joking.



The lesson is twofold: study and learn from the past, and apply the lessons.

This is a modern pit house—the Black Pyramid House in Saijo, Japan, designed by Suppose Design Office. There is nothing "granola" about this pit house; it is sleek and modern and full of light. Imagine what we could do if we married these old building ideas with the new forms our great local architects and designers are using today.

Another lesson that New Mexico archaeology can teach us about building is about adobe; it's just a handful of mud and a dash of clay, some water and straw, and add some sunshine and you have a variation on sun-dried mud brick made first in Mesopotamia some 4,000 years ago. First, we plastered our pit houses with mud; then, we figured out we could pour it in lifts and make walls. Later, we started mass-producing adobe bricks.



© Seth Roffman

El Rancho de las Golandrinas, La Ciénega

Today, we can google "adobe and stone structures" and find examples from around the world that show new ways of building—ways that other cultures finessed for their place and time. We can take a little of this good idea and a little of that good idea and put them together in new ways that reflect our values and our access to information. New Mexico has evolved. We can invent new architectures, based on traditional buildings, and honor the past by leaving it intact.

The hacienda—a courtyard house—was a gift to us from the Spanish, who got the idea from the Moors, who got it from the Romans, who got it from the Egyptians, who got it from the Mesopotamians. It was an idea that was used everywhere. Courtyard houses are great because they are easy to build; you can start with one room and build new rooms as your family grows until you enclose the central space. The wrap-around portals are cool in summer and will keep your boots dry in the winter. The courtyard, with its trees and wells, is a form of natural evaporative air-conditioning. The Hispanic settlers who built these spaces knew they were creating an ecosystem and building microclimates to help facilitate living and working in the less-than-hospitable desert. That is why the first thing built in an area was the acequia system.

It was not just about growing food. It was about creating a place to live that worked for the people.

And, again, we can learn from the past and embrace change along the way.

A hacienda

This is a modern courtyard house in a high-rise designed by Korean architects IROJE KHM. The tiny courtyard is a lightwell. Another designer—like me—might install flower boxes and planters into the edges of the space to grow fruits and veggies, or they might have a roof catchment and collect water and then use aquaponics to clean the water and grow veggies. Really, there are all kinds of ways to make this small space a green asset.

There is another lesson we can learn from our past, too.

Old New Mexico buildings used earth roofs. Builders worked, although sometimes they would leak and grow weeds. They did not realize then that they could harness that. But in other places around the world, they did and still do. Today, green roofs are a staple of great green design. They can take many different forms, depending on where they are. They can be modern or ancient. They can even be colorful, depending on the climate you live in. In New Mexico, we have learned how to make modern versions work for us, too.

What the past tells us about green design is that it is local, simple, natural and efficient.

The reality is, we can have truly green design without technology. We can honor our roots without only copying the old. And, if we choose to, we can find a way of being that we can honestly call sustainable.

If you would like to figure out one thing you can do today to use old ideas to improve your own space, go out and get five healthy deciduous trees, as large as you can afford. If they are native heirloom fruit trees, that's even better. Plant them far enough away from the south and west corner of your building so the roots will not bother the foundations when they are fully grown. Love them, water them, sit with them, watch them grow, harvest their fruit and see what happens. I bet you will love the difference you feel. And when it comes time to pay the bills, your pocketbook will love the change, too.

If you would like to see more archaeologically inspired architecture, please check out the Archinia Pinterest board we created for this project, titled Archaeo-Architecture at https://www.pinterest.com/archinia/archaeo-architecture/