

# Modern Masonry

A unique home in North Carolina conjures old-world sensibilities with some surprising details

BY CHARLES MILLER

An inconspicuous lane, paved with yellow-ochre marl, winds its way through a soybean field, past rows of fledgling Cynthiana grapevines to emerge at the entry of a house called “Broken China.” It’s the retirement home for a longtime resident of the Washington D.C. metropolitan area, a reclusive mathematician who grew up in the nearby farmlands here in eastern North Carolina. The house got its name when the owner’s nephews, visiting the freshly plowed farm, came upon bits of pottery and broken dishware. This evidence of the farm’s history slipped easily into a handle that stuck, and while its silhouette and subdued palette echo the simple farmhouses that dot the surrounding landscape, Broken China’s roots extend all the way to France.

## Make a robust, European-style farmhouse

Architect Tina Govan remembers her first discussions with the owner of Broken China. He talked about his travels in Europe, mostly France, where he has photographed and made paintings of his favorite French farmhouses. Plenty of details distinguished the houses from one another, but the common threads were clear. They all had simple gabled shapes and thick





# Farmhouse

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## EDITOR'S CHOICE

This year's editor's choice award goes to a house that embodies a host of our favorite elements. It's personal—a home years in the making that will nurture its owner's passion for the arts, cooking, and wine-making for decades. Designed by architect Tina Govan, this heirloom house is built to harvest water and power from the sky, conserve energy within its state-of-the-art masonry walls, and present for centuries a sturdy defense against the inevitable hurricane churning up the Carolina coastline.



**Building on a long tradition.** Along the north edge of a 50-acre piece of farmland, the house is oriented on an east-west axis for maximum southern exposure. The Galvalume metal roof channels irrigation water to cisterns at opposite corners of the house. Roof-mounted photovoltaic panels are in the long-term plan. The barn at the west end is offset to allow daylight into the house and to shelter the patio from the afternoon sun.



**Putting the French in the farmhouse.** From the heart of Burgundy, a Lacanche range is the undeniable centerpiece of the kitchen. It's the splurge, made possible in part by its more humble surroundings: counters and cabinets by Ikea and simple wooden shelves instead of cabinets.





masonry walls. Each house also had an attached barn, or one nearby, and room for gardens, orchards, and a small vineyard.

Those were the broad strokes—the canvas for the sturdy details that breathed life into each house. Windowsills deep enough for a 5-gal. flowerpot, thick wood doors and shutters with diagonal bracing held fast by rivets, and stone thresholds worn down by centuries of passing boots were the sorts of honest underpinnings that gave these houses authenticity. That, and the revealed structure of rafters, posts, braces, and floor joists.

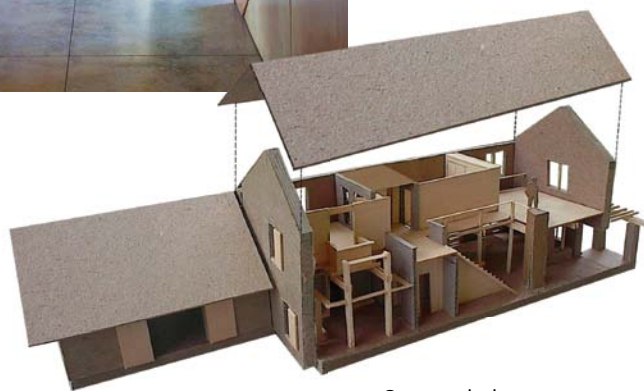
### Thick walls envelop a plan years in the making

Govan and the owner evaluated a variety of building systems to get the thick walls right. Rammed-earth and straw-bale walls were both in contention, but they never considered a double-stud-wall approach to get the look without the mass. Says Govan, “We didn’t want to fake it.” They eventually settled on lightweight concrete blocks made from autoclaved aerated concrete, or AAC (sidebar, p. 71). A mainstay in European construction, AAC was introduced in the United States in the 1960s, but it still hasn’t developed a strong following despite its many attributes and ardent supporters.

The owner’s desire to return to North Carolina for his retirement has driven this project for more than 10 years. When he finally gets to pull into the driveway and call Broken China his home, his plans for how to live in the house will have shaped its interior function as much as his European travels shaped its outward appearance.

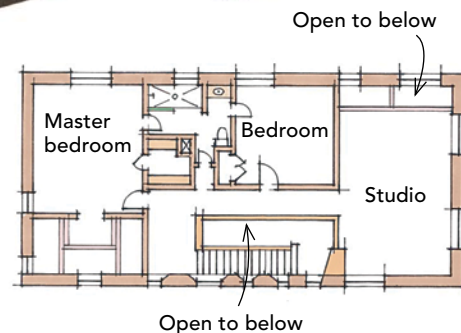
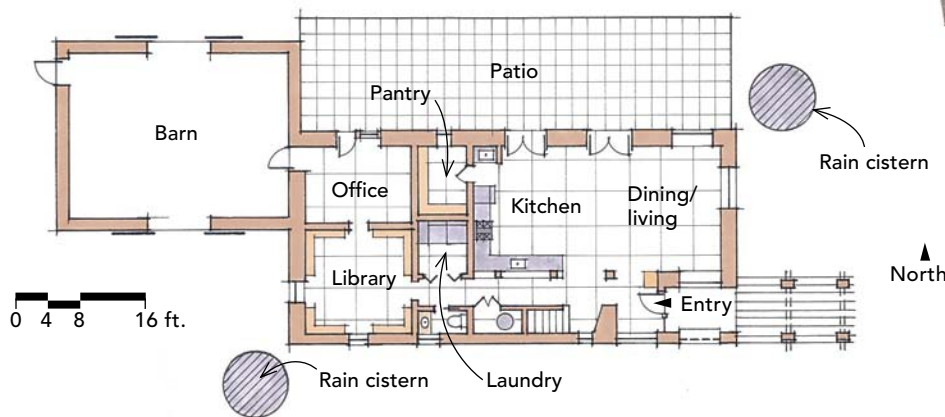


**Structure as decor.** Just inside the front door, the ceiling opens up to reveal the parade of trusses that support the roof. Throughout the house, its parts are also the finish, assembled with a precision appropriate to trimwork (note the staggered nail pattern in the column on the left). Below, a model enables Govan to get a three-dimensional sense of how the spaces relate to one another in a house. For this one, she used ¾-in.-thick Homasote for the exterior walls.



### SPECS

**Bedrooms:** 2 **Bathrooms:** 1½ **Size:** house, 2825 sq. ft.; barn, 700 sq. ft.  
**Cost:** \$150 per sq. ft. **Completed:** 2010 **Location:** Trenton, N.C.  
**Architect:** Tina Govan, Raleigh, N.C.; tinagovan.com  
**Builder:** Scott Construction, Beaufort, N.C.







**The loft upstairs.** Within its thick-walled shell, a neighborhood of rooms and spaces stretches out on the second floor. The studio space is in the foreground, the guest bedroom lies just beyond it, and the master suite is in the distance.



**You can see all the parts.** In the library, even the low-voltage cables that power the lights over the bookcases are visible. The polished concrete floor is warmed by water from an on-demand heater under the stairs. The mosaic contains patterns from an ancient Roman villa re-created in stone tesserae.

The plan weds two offset rectangles. The larger is the two-story house; the smaller is an attached barn. The spaces within the largely open plan are tailored to support and sustain the owner's varied interests. Painting, writing, gourmet cooking, and learning to make wine are all on his retirement to-do list. A well-stocked library adjacent to the office is at the ready. In the open kitchen, a Lacanche range anchors the L-shaped workspace.

The front door is at the southeast corner of the house and is framed by a quartet of columns supporting a shady trellis that leads to a protected entry. This low-ceilinged alcove bursts into a two-story space righting a wrong that has always frustrated Govan: "We build these beautiful, intricate structures, especially roofs, and then cover them up with various kinds of skins, such as drywall. It's a shame."

There's no covering up here. The scissor trusses that support the roof are fully exposed. They are seen partially from the ground floor through slots that let in daylight from the second-story windows.

On the second floor, the trusses can be seen across the entire length of the house.

### Shutters, stucco, and plaster

Rustic shutters flanking casement windows are ubiquitous in old French farmhouses. They look just as comfortable on Broken China, and not just for effect; they may be a welcome line of defense against flying projectiles in this hurricane-prone region. The casement windows (dynamicwindows.com) are in-swinging, which allows the owner to close the upstairs shutters easily from inside.

Stuccos and plasters that have the same permeability and compressive strength as the AAC blocks are recommended finishes for the material, and they impart the hand-troweled look of a plastered French farmhouse. Two coats of stucco, mixed to match the earthy color of the driveway, finish the exterior and tie it visually to the landscape. On the inside, two coats of plaster with enough sand in it to give it some texture unify the masonry walls into a surface that resembles a soft fabric, such as flannel or chamois. The splayed window openings

and the sine-curve intersections of the first- and second-floor walls showcase this sensuous touch.

### Putting the vin in vintage

The owner is almost ready to start the next phase of his life. Building this house has been an adventure without a deadline. His goal of making wine from his own grapes is echoed in the mosaics in the library floor. The patterns re-create those found in the ruins of a Roman villa on the island of Cyprus celebrating Dionysus, the Greek god of wine.

Next to the office is the barn, with a heavily reinforced slab floor under the area marked *future wine cisterns*. The vines are in the ground and are starting to bear clusters of fat, scarlet grapes. □

Charles Miller is an editor at large. Photos by Tina Govan, except where noted.

**Design video:** Scan here or visit [FineHomebuilding.com](http://FineHomebuilding.com) for an inside look at this home and those behind its design.





# Why can't this near-perfect material get a date?



It's called AAC, an abbreviation for autoclaved aerated concrete, and its attributes make it sound almost too good to be true. Invented by a Swedish architect in the mid-1920s, AAC is made of readily available, inert materials. AAC is rotproof, it won't burn, termites won't eat it, it has insulating properties (a little better than R-1 per in.), it can be shaped with woodworking tools, it limits sound transmission, it doesn't grow mold or mildew, and it accepts stucco and plaster without requiring any lath. It's also 80% air, so it weighs 80% less than concrete,

making it much easier to lift and transport.

So why don't we see more buildings made with AAC? Kelly Finch, who has built with AAC for 15 years, chalks it up to the inertia of the familiar. Unlike Europe, where AAC is popular and the forests were cut down long ago, North America still has plenty of trees and carpenters.

## WORKING WITH AAC

It's hard to find builders knowledgeable about AAC who are neutral about the material. Finch was the AAC subcontractor on this project. He calls AAC "the best building product in the world." He also says, "Your plumber and electrician will hate it." More about that in a minute.

Finch likes the precise dimensions of the AAC blocks and the ease with which they can be shaped. They can be cut with carbide-tipped sawblades, drill bits, and routers. Finch also likes the simplicity of the material. Unlike ICFs (insulated concrete forms), AAC has no petroleum-based foam to worry about in a fire. Finally, he likes the way AAC walls moderate the summer sun in North Carolina. By the time the day's heat makes its way through the wall, the sun is setting. Interior temperatures remain tempered through the night as the walls slowly release their heat.

## START LEVEL, STAY LEVEL

Finch says, "Working with AAC is more like working with tile than typical concrete blocks because the AAC blocks are so uniform in size. You use a notched trowel to spread a 1/8-in.-thick layer of thinset mortar between the vertical and horizontal joints. If a block is too high, use a rasp to grind it down." Given the close tolerances, it's really important that the footings be cast absolutely level. Finch points out that AAC lends itself to being shaped, so it has inherent sculptural possibilities, such as those presented where first- and second-floor walls intersect. Finch used a bandsaw to shape a gentle, ogeelike curve into a row of blocks that merge the 24-in.-thick walls of the first floor to the 16-in.-thick walls of the second floor.

One person's sculptural opportunity is another's nuisance, however. The electricians used carbide-tipped router bits to carve channels in the laid-up blocks for the flex-conduit electrical runs. This is a noisy, dust-cloud-inducing exercise in using a router on a vertical surface. It made the electricians nostalgic for stud walls and nail-biter drill bits. Finch, however, gave the material the kind of endorsement that is hard to ignore: When he built an addition to his own house, he made it out of AAC.

*Gentle curves where the walls change thickness. The first-floor walls are 24 in. thick: two rows of 12-in. blocks side by side. The second-floor walls are 16 in. thick: two rows of 8-in. blocks. The curved blocks shown here create a gentle transition between the two, made more seamless with two coats of plaster.*

