

The Brian farm

Main house: Construction was started in 2008. I contracted a metal barn builder to build the two round barns. However, I wanted to engineer added strength into the design, with schedule 80 pipe, instead of schedule 40, (half inch wall instead of $\frac{1}{4}$ wall pipe). I also asked that no screws or bolts be used to attach any purlins, or beams but they all be welded. I also asked that the vertical support members be sunk into the ground 3.5 ft, and the 5.5ft pipe be sleeved with 6 inch pipe and welded, so that there is $\frac{3}{4}$ inch wall pipe cemented into the ground 3.5 feet. All the pipe is primed and cemented. The vertical supports are then rocked in with 2x2 ft. rock columns. This makes this house very well grounded, and resistant to wind and earth quakes. I believe this house would withstand a direct hit by a medium size earth quake and maintain its structural integrity. The slab is 5 inches. The footings are two feet deep. The house has experienced two large earth quakes when they were drilling around here. No cracks appeared in any of the walls or the fireplace. I built this house to resist the 3 things that destroy homes in Oklahoma. Fire, wind and rot. The load bearing red cedar is sleeved with $\frac{1}{4}$ inch single ply torch down roofing, 3ft in the ground to prevent rot. All the cedar beams were milled by Norval Gooch and timber-framed together. All the rock in the fireplace came from this farm, and almost all the red cedar did too. The porch that surrounds the house is 11ft at least, and gives the same square footage as the interior of the home. The home reflects the horizontal lines of the Oklahoma prairie, and looks like a couple of cedar trees up on a hill. The porch represents the path through this world that we all walk, the lines in the porch at different intervals represent the death and birth of our lives as we travel along the path through this world and others. The philosophy represented here is that the end is the beginning, and the beginning is the end. (sorry about the religious sermon, but it is an important part of the design). The wine bottle windows lighten up at different times of day, giving one a sense of time as the sun moves. The garden around the porch accepts rain water from the roof, and will grow everything that we eat. The walls are covered in stucco $\frac{3}{4}$ inches thick inside and out, and uses the same recipe as an adobe home, 3 parts sand, one part Portland cement and $\frac{1}{4}$ part lime. This seals in the walls keeping air out and wicking out any moisture. The wheat straw walls breathe like an adobe, keeping moisture from building up inside the walls, and engendering a gradual temperature change from inside to outside. The walls sit on a double row of cinderblock cemented to the slab. The walls are bound to the slab with $\frac{3}{4}$ inch metal banding going around the entire wall ever 3 or 4 feet. The roof is heavy gage metal roofing. Along the base boards, the seasons are depicted in carved designs throughout the home. The electric is in commercial conduit. This engineers out any risk of electrical fire. There is radiant heat flooring in the slab, but the design was never finished with plumbing to the porch and to a wood fired boiler. There are electrical hot water heaters, but using only these is not cost effective. The central wood stove is very good at heating the entire home with wood if one chooses. The heat pumps are very cost effective. There is a 15kw solar system tied to the grid. This design was meant to be finished with lithium batteries giving an off grid capability, but the technology is not yet available in Oklahoma with Tesla power walls. The cinder block building was originally constructed to house the lithium batteries as well as all the electrical boxes for the location. The grid tied solar gives most of the year (depending on the sunlight) a zero carbon footprint, and a very low if not zero electric bill. It runs backwards during the day and forwards at night.

The rock cabin:

The rock cabin is built again to eliminate the 3 risks to homes in Oklahoma. Rot, fire, and wind. This cabin was built with 4 inches of rock on the outside, 3 inches of foam board, and 4 inches of rock on the inside. It has 5 solar panels and a solar generator, and is off grid. There is propane stove and hot water. The water is fed by a solar well, and gravity fed to the house. The trusses are white oak and timber framed. There is a wood stove for heat. The cabin rents out almost every weekend on Airbnb.

The barnominium:

The barnominim is 30x50 built by Ruggs construction. The living quarters is 25x30 with a loft. It is very efficient and is heated and cooled by one window unit.

The red cabin was built by Scott Hagggar several years ago, and is 22x33 with a aloft. It is nice traditional construction with 6 inch walls.