SEPTEMBER/OCTOBER 1987 VOLUME 21 NO.5



## the recording engineer



## the sound contracting engineer



## the broadcast engineer



## 2 to 8 trk the smaller recording studio



## About the cover

• Shelly Palmer's state of the art studio complex and his operating philosophy is the subject of our feature story beginning on page 22. You'll learn what a "tapeless" studio is, and why it is needed.

## About the 2-8trk cover

• On page 30 we present a montage of the control room and studio of Atmosound. An article on this fine, smaller complex follows.



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# 2 to 8 trk

# Atmosound: A Construction Story

RICK SHRIVER

*No big budgets, but a desire for a good studio. So, go do it yourself. So that is what they went and did.*

A FEW YEARS BACK WE SET OUT TO CONSTRUCT AN EIGHT-track recording studio "from the ground up," as they say. Like scores of others, we also sought to accomplish this on a limited budget, but in fact, we had no real budget at all!

"So what?," we hear you saying. Obviously our results were gratifying. Would I be writing this if it were a dismal failure?

We believe our results might interest others who are embarking on similar ventures. The design methodologies employed are in keeping with recognized acoustic theory. When combined with some cost-saving techniques, the outcome can be a fully affordable recording facility which is attractive, functional and has features mostly found in the big leagues.

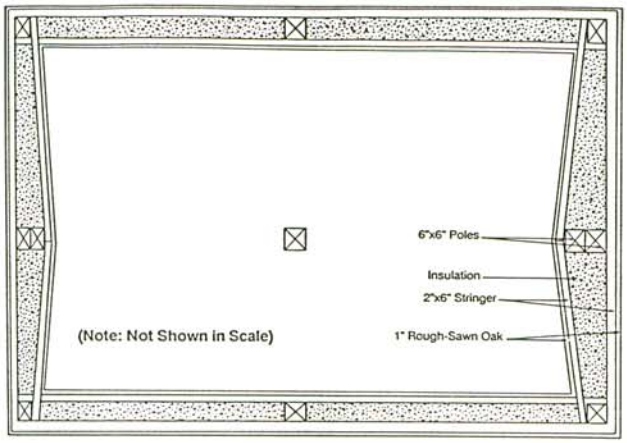



*Figure 1. Angling of interior walls. Note an additional set of poles along the sidewall.*

Our structural design is "pole-type" building, set upon a concrete slab. It is essentially a fairly roomy two-car garage. This construction method is simple enough to be successfully carried out by the home handyman type. Other advantages are economy and ready adaptation to features desired in a studio application.

In order to break up the parallel surfaces inside, we sloped the ceiling and angled the side walls. The ceiling's highest point is 12 feet, and slopes down to eight feet. Angling the walls was accomplished by setting an additional set of poles along the side walls (*Figure 1*). The frame for the ceiling is attached directly to the roof joists (*Figure 2*). Setting the building on a slab had obvious advantages over a joist-type floor. Furthermore, we could cut the slab into sections which provided more isolation between rooms, as well as to discourage cracking.

We elected to use one quarter of the building for the control room which resulted in an "L" shaped studio area. Another quarter of the space was treated with hardwood floors to provide a "live" area. The remaining half of the building is carpeted.

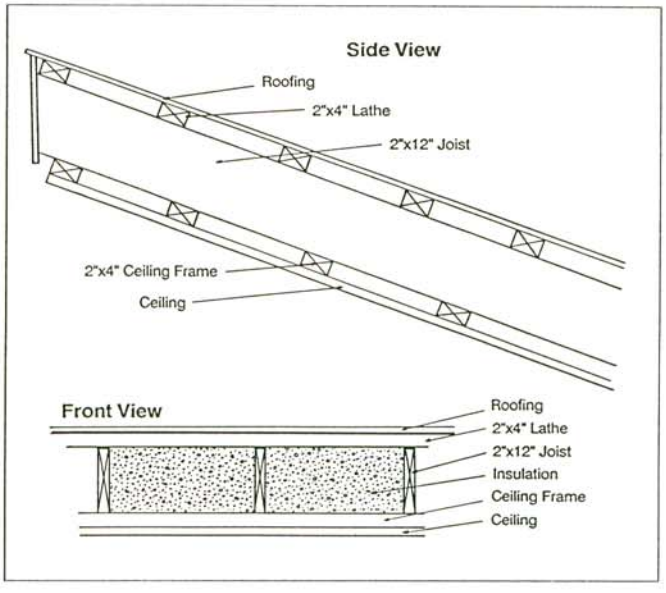
The inside surfaces of outside walls are rough-sawn oak. The vertically hung boards are randomly spaced (one-half inch to one and one-half inches). The result is that the cavity between outside walls and inside walls becomes something of a Helmholz absorber. This insulated space varies in depth from nine to fifteen inches along the side walls, providing broad-band absorption.

Walls between the control room and studio are constructed of staggered double sets of studding. Attached to this are layers of builders board, "masonite" and gypsum wallboard. The cavity is, of course, insulated. Surface treatment in the control room is a backless type of carpet, intended for hanging rather than laying. The studio side is painted wallboard.

The control room windows are double layers of half-inch glass, set into a cork-lined frame. This is surprisingly easy to build and provides excellent isolation (*Figure 3*).

The heating plant is located "outside" the studio. We poured another concrete pad four-feet square, and attached an enclosure to one of the rear corners of the

*Figure 2. The ceiling frame showing the attachment to the roof joists.*




*Photos by Rick Shriver and Jeff Mercer*

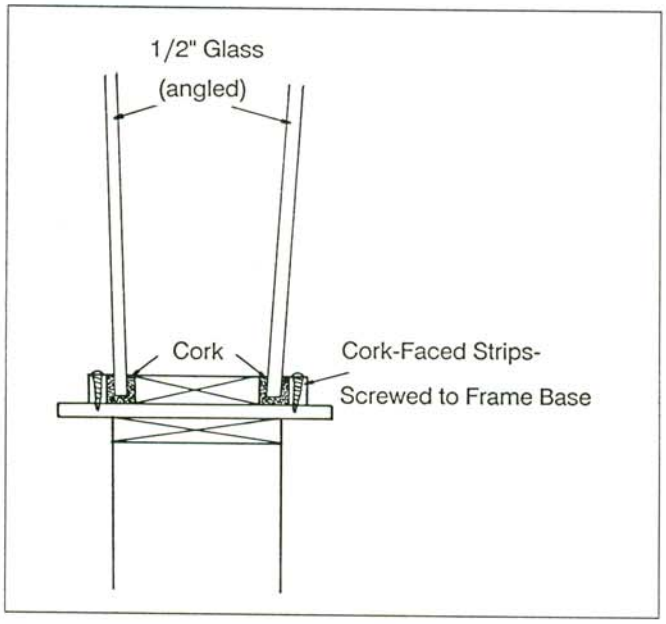



*Figure 3. A side view of the control room window construction.*

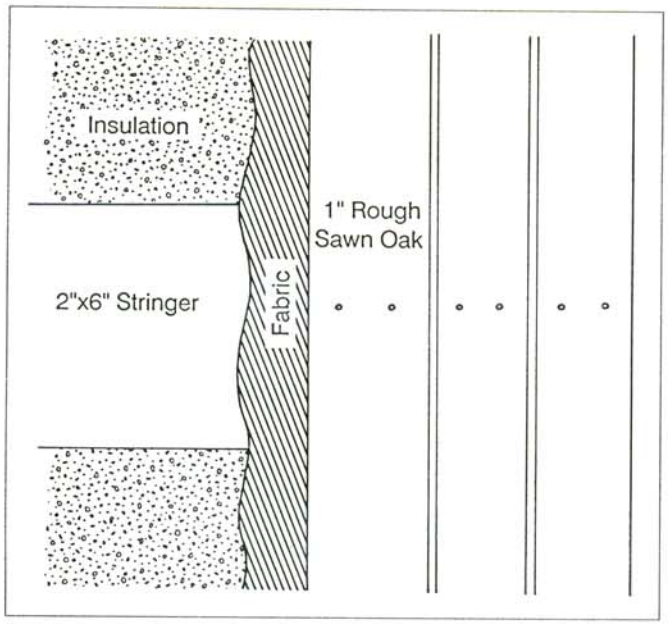
building. Insulated ducts carry heated air into the control room and studio.

Now, you may be thinking that this is beginning to sound as if more than someone operating with "no budget" might hope for. I must confess, proximity to materials and infinite patience are prerequisites for the success of this endeavor.

Nevertheless, we will present here some of the "circumstances" that have made this project accomplishable for us. First, the material for exterior and interior walls, rough-sawn oak, is available locally at saw mills for less than twenty-five cents per square foot.

We purchased the oak flooring directly from a factory located in the midwest. It was "second" run, meaning it was checked and irregular in places. The factory representative advised that we order twice what we would need

*Figure 4. A cutaway view of the room interior showing the fabric barrier between the insulation and the room.*



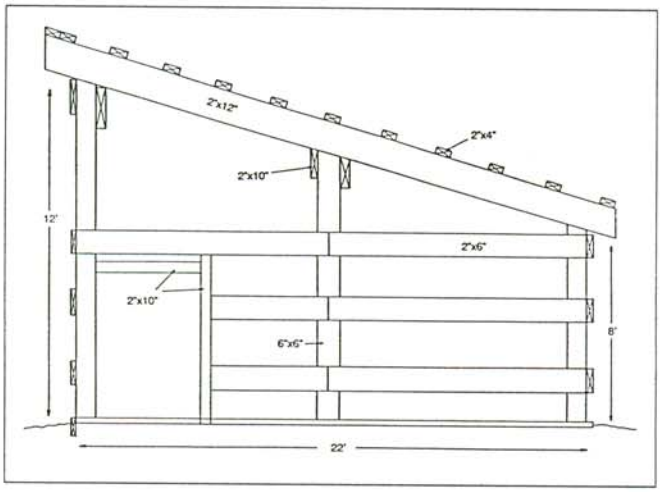




*Figure 5. The framing plan for the "load in/out" side of the studio.*

to cover that area. Even with that, the total cost of the materials was under $50.00. After having completed the project, we feel that buying twice the amount of flooring was necessary. We used more than three-quarters of the wood, and for the price, it was a good investment.

The carpet which covers two walls of the control room is far less expensive than backed carpet. This is only the pile, with no jute or rubber. Since it has no backing, it is much lighter and easier to hang. We found this at a local carpet outlet. The carpet was used on the walls upon which the monitors are located, so that side of the room is more dead than the rear of the room.

All the insulation we used in the exterior walls was purchased directly from the factory. The excess trimmed

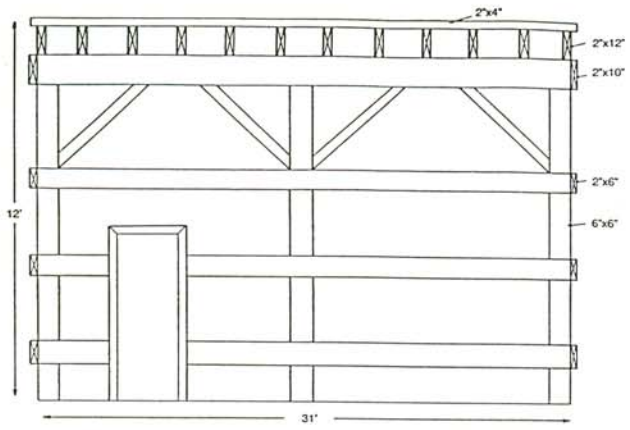



*Figure 6. The framing plan of the front of the studio.*

from rolls of glass fiber is baled into half-ton bundles and sold. It is more difficult to work with, but the savings make it worth the hassle. It is also necessary to place a fabric barrier between the insulation and the room interior, to prevent the glass fibers from becoming airborne *(Figure 4)*.

Windows for the exterior of the building were purchased from a factory outlet locally. We were able to find vinyl-clad triple-glazed windows (earth-tone, no less) for about fifty percent of the retail price. Again, these are "blemished" and may have cracks in the vinyl or other

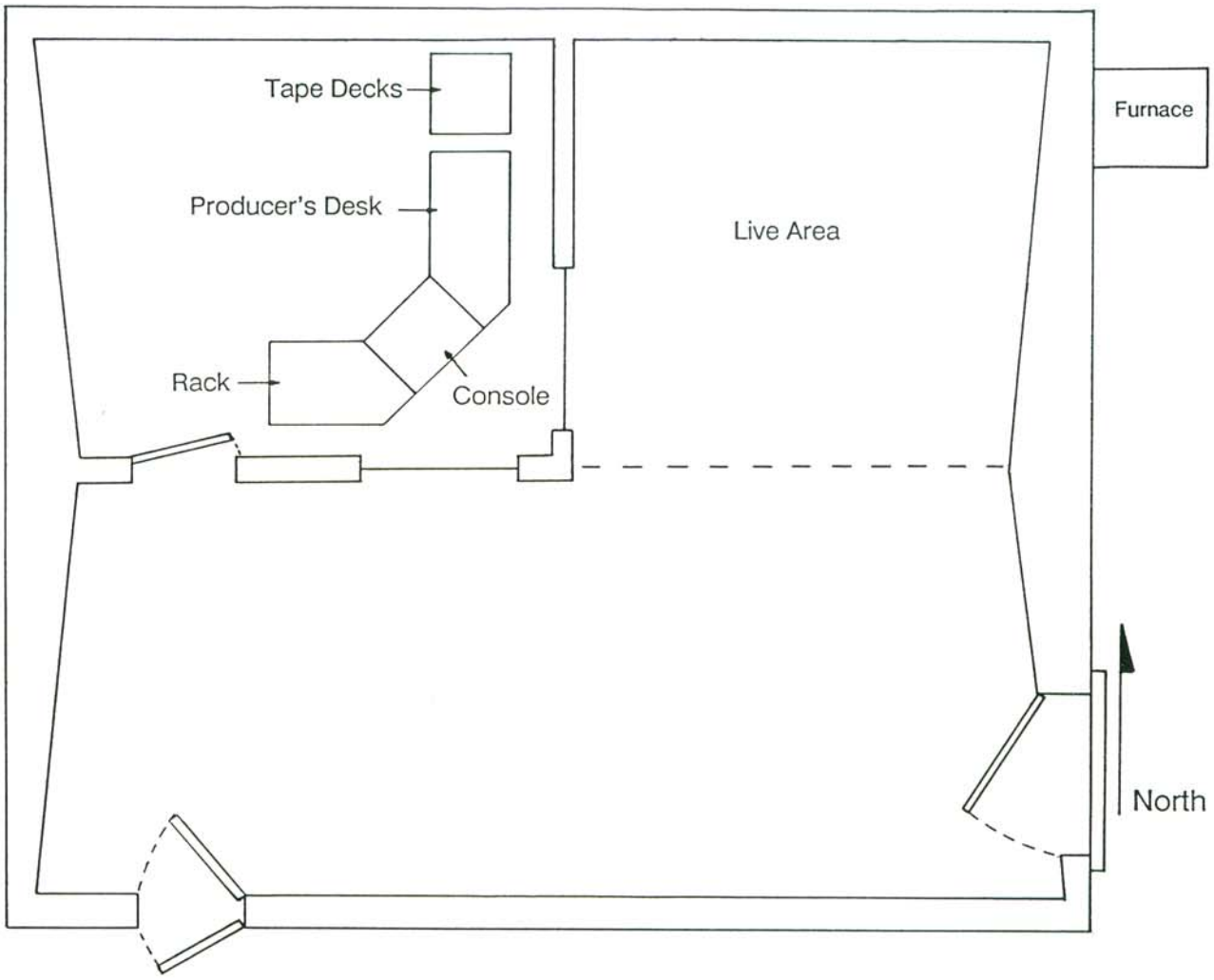



*Figure 7. The studio floor plan.*

minor defects. We found them to be more than adequate for our purposes.

We found shielded cable in the form of snake ends and other random length excess cable pieces from an OEM assembler. This was used for cable runs between studio and control room. Finally, we watched the auction listings in our local paper closely. Thus, we were able to locate a furnace, interior doors, furnishings and some excellent pieces of used gear.

The concrete finishing was contracted out, but everything else was fairly easily done on weekends and evenings with friends. The total project cost for the building was about $6,000, not including equipment. The room is free of ringing and resonances as a result of the angled surfaces and absorptive wall cavities. The "live" area is sonically bright due to its hardwood floor and wallboard surfaces. The control room is deadened by use of carpet on two walls, while the two with slotted-absorber characteristics are just slightly more reflective. Isolation from room to room, and from the outside is very good.

A part of what makes the design work is also our rural location. The barn-like appearance of Atmosound suits the environment. Our clients enjoy the relaxed atmosphere and are pleased with the quality which narrow-gauge eight-track recording can offer the budget-conscious recordist.

The equipment arsenal at Atmosound includes:

Consoles: Carvin MX 1688, Biamp 1221, Tascam Model II

Tape Decks: Tascam 32, Tascam 38, Tascam 3340, various cassette and two-track

Microphones: AKG, Electro-Voice, Sennheiser, Shure, Sony

Monitoring: JBL, Fostex, driven by Phase Linear

Outboard: dbx, Lexicon, Yamaha SPX90, graphic EQ

Extras: console piano, drum kit, guitars, basses, synths, Gaines Audio patch bays.

Rick Shriver has offered to provide additional information to anyone interested in specifics about the factories and businesses that Atmosound was created from. Drop a line to : Rick Shriver, c/o db Magazine, 1120 Old Country Road, Plainview, NY 11803. db