Building Paul Massey’s Dolby Atmos Mix Room—Part 4: Raising The Roof

Bruce Black, project acoustic designer, documents the creation of Oscar-winning re-recording mixer Paul Massey's personal Dolby Atmos mix room.

BY BRUCE BLACK ·

PUBLISHED: 07/14/2022 · UPDATED: 07/22/2022

In January 2022, Paul Massey, Oscar-winning re-recording mixer, began building a personal Dolby Atmos mix room near his Los Angeles home. Bruce Black, project acoustic designer, documents the process in this special ongoing series of Mix Field Reports. Don’t miss Parts 1, 2 and 3!

 Bruce Black, Project Acoustic Designer

The outer walls are now built and locked in place at Paul Massey's new mix room—that was a Herculean task. The time has now come to turn the walls into a room. So the next step in the carefully choreographed building process is to "raise the roof," giving it a lid or cap to make it into a space.

In addition to providing structural support for the inner room, this outer room is also the first component of the acoustic isolation, *a.k.a,* "sound tightness," or just "isolation." This will provide the initial barrier to sound leaking in or out of Paul's mix room. Some folks might call it "soundproofing," but this word can be so misleading I don't use it.

"Soundproofing" is a commonly used word that implies absolutely no sound gets through, and that it covers the entire audio range. This is never the case; some sound will always escape, but it's a question of how much, at what frequency, and how it affects folks either inside or outside the room. It's preferable that any sound leakage not be perceptible to the human ear, but in any case, it should reduce sound transmission to a level where at least it doesn't bother anyone. It's an important distinction.

So now our intrepid crew begins to raise the roof by installing the joists. The span of the width is longer than normal lumber, and will need to support the heavy layers of plywood and drywall. So a special type of joist is required.

What we are using is called glue laminated lumber, or glulam, often seen in more common construction as layers of 2 x 4s. Our glulam is layers of ¾-inch plywood glued together. The joints are staggered to make it like a continuous, solid piece of lumber. Glulam is stronger than traditional lumber, so you can get longer spans and more load capacity for a given cross section (e.g., 2 x 8, 2 x 12, etc.).

In our case, it needs to span nearly 24 feet across the width. We'll be asking a lot of it, but glulam has a lot to give.

Now that the wall frames are solidly cinched into position on the anchor bolts, Master Builder Craig Alexander braces them in a perfectly vertical position with ratcheting load binder straps. Our skilled team lays out the glulam joists on top of the walls, spaces them properly with blocking, and screws it all together, creating a stable work area that will support their weight while they install the plywood to cap Paul's room.

The first of 20-some sheets of plywood get slid on top of the joists through an opening in the joist layout, and our team of talented tradespeople crawls on top and begins screwing them in. There's a great deal of slapping each sheet into position, loud rattling of the clutches on cordless drills, and the screeching of screws plunging home into the joists as they drive in each of the screws. It's a pretty noisy process.

But this industrial unit's walls are thin, designed more as space demarcations and visual partitions, rather than sound barriers. In fact, these walls don't

block much sound at all. They're an excellent example of really atrocious isolation—you can not only hear, but also understand, a conversation on the other side. So much for privacy. So with all this racket from the construction, we were not surprised to receive our first noise complaint from one of our neighbors.

But good fortune is on our side. It turns out that Craig can not only choreograph like Jerome Robbins, he can also negotiate like Henry Kissinger. What a guy.

A brief conversation settled all the issues. With a friendly compromise in place, the construction can continue, the neighbor won't get annoyed during important moments of their business day, and over time Paul won't have a bitter neighbor with lingering angry feelings. Everyone wins.

With all the plywood sheets in place, the walls are locked in position, so the binder straps are removed. The seams are filled with acoustical caulk, which is non-hardening and non-drying. Well-caulked means no air leaks, which means no sound leaks, and those special attributes of acoustical caulk ensure it will stay that way for a very long time.

The final layer is screwed in on 4-inch centers. While the caulk makes things airtight, all those screws stiffen the layers and keep the panels from vibrating and making noise. Yeah, that's a lot of screws, but this gives us our first line of defense to keep inside sound in and outside sound out.

Paul's new mix room is now taking a recognizable shape. But interestingly enough, one inconvenient truth that must be dealt with is that sound travels faster and more efficiently through solid materials than air. Like concrete. Or wood. So to make sure the inside sound and outside sound aren't carried out

through the solid structure to where they aren’t wanted, the inner room must be built on a resilient floating floor.

Continue on to our next field report, Part 5: The Inside (Room) Story.