PRINCIPLES OF TECH BOOTH DESIGN

Seven Principles for Tech Booth Design

Guidance for Creating a Tech Booth Interior that will Match Your Church's Needs. *By Jim Kumorek*

SO, WE'VE TALKED about tech booth placement and the problems that the more aesthetically pleasing locations can cause.

Let's wrap up our exploration of tech booth concepts with looking at some guiding principles for the inside of the tech booth.

PRINCIPLE #1:

Tech booths are almost never large enough. When you are looking at a tech booth layout on a blueprint, they often look huge. At the church I worked at, the tech booth was about 40' wide and 10' deep. When I looked at the blueprints, it seemed ridiculously large.

And while it wasn't too small, it quickly filled up, and we really had no extra room to expand for large events or future needs.

PRINCIPLE #2:

It's easy to think about the tech booth in terms of the number of people you need to run your service. But don't forget that your tech team needs to train new people. There should be space to allow two people at every position so that one can shadow another and learn through observation.

PRINCIPLE #3:

Manuals and paperwork take up space, and if you're dealing with a crisis and need to look things up, you need some space to open the manual while you work.

PRINCIPLE #4:

Make sure you have good sight lines to the stage. Audio techs and lighting techs need to see the performers on the stage to follow what's going on. Body language of the musicians provides key information to the audio person

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as to what's happening and what instruments need to be made prevalent in the mix at any given time.

If your audio guy can't see the faces, arms and hands of the musicians, their reaction time will be slow, and the music will not be the best it can be. If you have a flat floor for house seating, you may need to get the booth up a few feet off the floor so the techs can see clearly over the heads of the congregation.

PRINCIPLE #5:

The tech booth should have good access to the room and stage. The tech booth I mentioned earlier was at the front edge of an unfinished balcony space. Round-trip time to get to the stage was about four minutes, not counting the time working on a problem. That's a lot of time lost in pre-service rehearsals if there are problems that need fixing.

PRINCIPLE #6:

The tech booth should also have difficult access for the congregation. The last thing techs need is random comments from the congregation during a service—it's distracting, and the techs probably already know there's an issue and are dealing with it. And frequently, comments are contradictory.

I've heard uncountable stories from techs about how they get complaints about the music being too loud AND too soft from the same service. Don't make it easy for the congregation to get at the techs.

PRINCIPLE #7:

If there's a way to do it, try to make the booth as distraction-free for those seated behind the booth. Keep monitor brightness turned down, and try to position things such that they are as invisible from the rear as possible. If your tech team needs to talk to one another during services, install an intercom system so they can speak quietly and still be heard clearly by the other techs across the booth.

If you have someone proficient in Google Sketchup or other 3D modelling programs, create a model of the booth you are considering, and place representations of your gear people in it. This can greatly help with ensuring your layout will work, and there's room for everyone to move about freely.

Fundamentals of Tech Booth Design

If there's one common area of contention with the technical ministries group when a church is renovating or building a new auditorium, it's probably the location and design of the tech booth. *By Jim Kumorek*

IF THERE'S ONE COMMON area of contention with the technical ministries group when a church is renovating or building a new auditorium, it's probably the location of the tech booth. Pastors generally want the tech booth invisible; the tech team wants it in the best possible location.

So, let's discuss what the options are, and what the challenges are in each location. Most of the challenges are audio related, but other positions can suffer as well. We'll start with the worse options and move upwards from there.

THE SHOEBOX

The absolute worse idea for a tech booth position is to carve out a niche in the back wall and stick the tech booth in there. The tech booth location is 90% about the audio system, and in a little room behind the auditorium with a window looking out into the sanctuary, the audio tech has no idea at all what the room sounds like.

Sound is a very non-intuitive thing. It bounces around a room, reflecting off of some surfaces and being absorbed into others. When it bounces, it interacts with the direct sound from the PA system and reflections from other surfaces. The cubic footage of the space shapes the sound due to these reflections.

If your audio person is sitting in a shoebox behind the auditorium with the sound entering through a window cut through the wall, there is no way that space sounds anything like the large, open space of the auditorium. They simply can't know what the auditorium is sounding like, and thus can't adjust the mix to sound good in the main room. Trying to work in that environment means that your sound person has to be so amazingly good (like, serious professional audio engineer good) that they know

how bad they need to make their shoebox sound so that it sounds good in the room. Most of the time, this isn't going to happen.

And most audio engineers who are that good would take one look at this situation and walk away.

Some churches add monitor speakers in the tech booth so the audio tech can hear better. However, this does not take into account the physics of the sound bouncing around the auditorium. It will make the shoebox sound better, but not the mix for the main room.

For your lighting person, they can't see what the stage looks like from the perspective of someone attending the service. They can't walk around the room easily and return to make adjustments. And for all the people serving in the shoebox, they are completely cut off and isolated form the members of the church.

These people are usually introverted; physically cutting them off from the congregation makes it a spiritually poor environment to serve in. And it also makes it that much harder to recruit new team members because no one sees them or what they do.

And lastly, the shoebox often has poor access to the room. If there are issues to resolve and the tech needs to make repeated trips between the stage and tech booth to resolve them, this position will inhibit quick resolution of those issues.

So what are the better options? We'll cover that next time.

Why AVL Infrastructure Needs to Come First in Sanctuary Design

An explanation of why value engineering infrastructure from a design can result in tragic technical limitations.
By Jim Kumorek

LET ME LAY the groundwork for what infrastructure refers to in the AVL arena. First, all technical systems require an infrastructure to work properly and to be accessible.

Imagine talking to your architect and designing the layout of your new facility. The facility you've planned out, however, is getting more than you can afford. What do you do? Here's a thought. You really need the rooms, so to cut costs, let's just remove all the hallways, corridors, closets and the foyer. People will just walk outside to get between the rooms.

It could work, right? Unless it's raining. Then you need to buy umbrellas and provide to all the people at your services to get their children to their classroom and visit while waiting for the previous service to end. And you'd need to recruit a volunteer team to hand out the umbrellas, collect the umbrellas, dry the umbrellas and store the umbrellas—in the closets you no longer have.

And when you do your ministry fair, you can just set your tables that you store in the closets you don't have up outside between the rooms.

The hallways in your building are like electrical conduit and catwalks in your auditorium. Conduit lets you run new electrical, audio, video and lighting cabling to and from different locations in your room and enable you to easily expand in the future. And it's really easy to put in when you build or renovate your building; it's almost impossible, or very expensive, to add in later, because it runs within the concrete floors or within the finished walls and ceilings of your facility.

Catwalks are the hallways that let your tech team easily access the technical systems that need to be out over the heads of the people attending your service, and over the heads of those on stage. This is where your lighting equipment that requires regular maintenance is. It's often where

your video projectors are. And it's where your tech team need to be able to get to when a house light is no longer working because the lamp (not bulbs) burn out.

At the church where I was technical director for two years, the church did install catwalks over the house seating area. If a house light burned out, I could have it changed between services in about 5 minutes, by grabbing a spare lamp, walking up the ladder into the catwalks, over to the fixture, and simply stand next to the fixture 20' off the floor and replace it.

When I moved to North Carolina, when a lamp burned out that the church we started attending, it was left burned out for months. There were no catwalks. We had to borrow a one-man lift, clear out the chairs, take out best guess as positioning the lift, install the outriggers that keep the lift from falling over when extended, ride up to the ceiling—oops, I can't quite reach the fixture! Go back down to the floor, loosen the outriggers, move the lift, tighter the outriggers, go back up to the ceiling, change the lamp, come back down, remove the outriggers, and return the lift. Elapsed time: 4-6 hours. That's a LOT of volunteer time to change one lamp. 7,200 percent more. We waited until several were burned out and people had a hard time reading their bibles before we took the effort.

Want to move the piano to a different part of the stage? Your lighting may need to be re-aimed as well, with the same effort comparison.

Catwalks and conduit are some of the first things that are cut when "value engineering" a design. And they can typically never be added in later.

Conduit isn't that expensive, but yet, catwalks are. But so is your volunteer's time. Remember that 7,200 percent? What else could those volunteers be doing with that time that would make a significant impact on your services if they could easily get at the equipment needed to run your services?

Before you cut conduit and catwalks, cut back on other things in that room. Drop all the moving lights out. Cut back to the bare minimum on lighting fixtures. Go with a more basic lighting controller. Because all of those things can be easily added in later. Infrastructure cannot.

And before you cut catwalks, go find a one-man vertical lift (not a scissor lift), and ride it up 20 feet. It's like standing in a basket at the end of a long, wobbly pole. It's scary. Would you want to do that every weekend as a volunteer? Many won't do it. And you may end up limiting your volunteer base.