Feature Story

GALAXY SOUND AND COMMUNICATIONS INSTALL MULTIPLE ELECTRO-VOICE® LINES AT NEW PENN STATE UNIVERSITY THEATRE

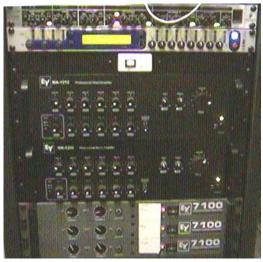
State College, PA (October 10, 2003): Galaxy Sound and Communications completed an extensive sound reinforcement installation at Penn State University last April, outfitting the college's new 150-seat Citizens Bank Theatre with a number of Electro-Voice loudspeaker and amplifier lines. The new off-campus facility occupies what used to be a local department store building, empty for around 8 years, now the home to a theatre dedicated to both live performance and theatre arts education. The building was converted into a complex complete with dressing rooms, lobby, green room and ticketing office. Galaxy Sound and Communications owner Mike Riling designed the system, which features a Midas™ 320 mixing console with external power supply at FOH; (6) EVID 6.2 compact loudspeakers - 3 hung down each side of the auditorium as effects monitors - driven by (3) EV 7100 amplifiers; (3) FRX 122 loudspeakers at left, right and center stage driven by (3) CPS2 amps; (23) EVI 209-4TWB ceiling speakers on a 70V system powered by an (1) EV MA1212 and (1) MA1206 mixer amplifier; (1) CPS3 contractor series amp driving (2) QRx 118 subs; (3) CPS1 amps for six channels of (6) patchable Sx80 effects monitors on the stage and in the audience. The house system uses a Klark Teknik DN9848 loudspeaker processor and (2) Klark Teknik 360 equalizers. Galaxy worked closely with EV reps CL Pugh and Associates throughout the process.



Citizens Bank Theatre

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Mike Riling: "Dave Will, Facilities Coordinator in the Department of Arts and Architecture at Penn State, called me and we discussed the space from an acoustical perspective. Dave sat on the board of USITT for a while, so was able to communicate the details really well. The first thing we did was have an acoustical engineer look at the building and do some treatments when they built the new sidewalls for what would become the theatre space. This was to ensure there wouldn't be any serious reflection issues. The space was designed with a steep rake in order to fit in 150 seats. We also have very little room outside of the stage and seating areas. This means live music performances require the orchestra to be in the green room. The green room is behind the stage across a hallway. The orchestra obviously needs to see the performance, so there's an extensive video system incorporated into the audio system that has its own modulators to run modal channels. This allows people in the green room and dressing room to see what's going on onstage, compensating for the lack of wing space. There's a patch panel in the green room that brings mic lines to the front of house position as well as a bunch of sends back for monitoring. There are also four channels of intercom throughout the whole facility and all the dressing rooms. From the front of house position to the control operator to the green room to the dressing rooms there's a run of show paging system run by the MA1206. The MA1212 system (below) runs with the front of house system to allow latecomers to see and hear the performance on video monitors until intermission."



"One of the main criteria was that communication could take place throughout the theatre. Due to size constraints, we used over 90 tie lines between backstage and front of house. A second criterion was that professors could use the space for lectures, requiring a second, offshoot system for quick setup, allowing the teacher to plug in and talk. We also managed to keep within budget constraints by using microphones and front of house processing the school already

owned. It was good to work with Curtis and Dave – professionals who knew what they wanted. Through the design process we were able to get them what they needed and create a versatile, workable system. For example, the six EVIDs – three on each sidewall – provide subtle reinforcement that is so effective the FRX boxes on the stage can be removed if necessary, and easily replaced for full performance. We initially fixed the FRX boxes, but modified them as things began to

change. This means the speakers don't interfere with two story sets, and the EVIDs take on the sound duties without compromise. The response from people at a professional level – theatre consultants, etc. has been one of amazement at how well the six EVIDs are performing."

"Another criterion was that the system would be designed to be computer controlled. With this in mind, we selected a KT DN9848 as it would easily interface to the school's SMAART™ training program. Also, the subs are patchable to the front of the stage, left and right as well as at the rear left and right for effects. There's also an infrared hearing-impaired system in there, which is also a two-channel system that allows performances to be described for visually impaired patrons."

Jason Jacquemain (CL Pugh & Associates) worked with me in the design, checking box parameters through several revisions over as four-month period. We concluded that the only solution was to use all EV product, and stop playing games! I really can't over emphasize how helpful Jason was: I certainly don't mind using multiple vendors, but working directly with CL Pugh and the engineers at EV meant that professional input and suggestions could be extended from speaker issues to DSP issues and so on, meaning the system could be addressed as a whole, bringing individual components together as part of a unified system with no weak links. We used an EASE™ model with several different types of speakers, both EV models and other vendor's models, before arriving at the FRX. The transparency is amazing in there. The coverage is amazing, and the wide dispersion of the FRX boxes is ideal. Dr. Howard F. Kingsbury, P.E. a retired professor from the acoustics department at Penn State, consults with the university on their new spaces. He worked with us in designing a triangle of reflection-controlling build-outs on one side of the room. Aesthetically it looks fine, and it works well too. The physics of the room on paper and what we wound up with are pretty close. The construction people did a great job in a tight timeline. In the same sense EV made sure the product was delivered on time."



Galaxy's Steve Boyles discussed the challenges of building the system after the initial design: "The gear is in one large rack to save space in the 54-inch wide control room. which holds both audio and lighting equipment. We simply had to be creative about putting all the gear in one rack. One of the main concerns I

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had when I was field engineering the equipment was that that using so many amplifiers in such a confined space would lead to serious heat issues. There are 200 amps of AC power in that rack. Due to the location of the rack, we had to bring all the cables in through the sidewall of the room – all the returns from the front of house, all the intercom lines and all the speaker ins and outs. One of the primary considerations in doing that is 'where are we going to pick up a buzz', but the system is incredibly quiet with no signal running through it."

Penn State Assistant Professor of Sound Design Curtis Craig ran the system for the summer programs at the theatre. He offered an enthusiastic response to the new equipment: "It's performing incredibly well. All 3 shows we did this summer had student board operators, and each show was different from the last. This reflects our initiative towards having students design all the shows we do throughout the school year, using programs like SMAART™. The first show we did this past summer was 'Broadway Bound', a play with music. We were really happy with the quality of playback, and especially with the choice of the Midas Venice at FOH. The second show was 'I Love You, You're Perfect, Now Change', a smaller four-person musical. For that one we used a couple of room mics to provide a little voice lift and reverb. As far as microphones go, the theatre has pretty good natural acoustics and it's relatively small, so, due to construction budget constraints, we decided to use mics from other departments with a/v resources. The last show this summer was about a girl group from the '50s. This play was all about amplified music, so we were a little worried about how things would be in a 150-seat theatre. We were able to get really nice clear, dynamic sound out of the system without it being overpoweringly loud."

Craig continued: "The short-throw FRX boxes performed exceptionally well in this space, with even, reflection-free coverage in a relatively small room. The precise high-end dispersion (the FRX's asymmetrical horn aims 40-degrees downwards) makes all the difference at the front of the seating area where front fills would usually be used, and its wide, full-range coverage capacity (110-degrees horizontal x 55-degrees vertical) fills the rest of the room with great control across every bandwidth, using the KT 9848. This makes these speakers the ideal choice for this room, which is only about 32-feet wide by 60-feet deep with a pretty steep rake. In this sense, having such effective control of the FRX boxes at moderate volumes means a lot in terms of clarity. Even with a 3-piece band on stage it probably didn't go above 95dB, but you could still tell we were hearing processed and compressed live music and voices through live microphones."

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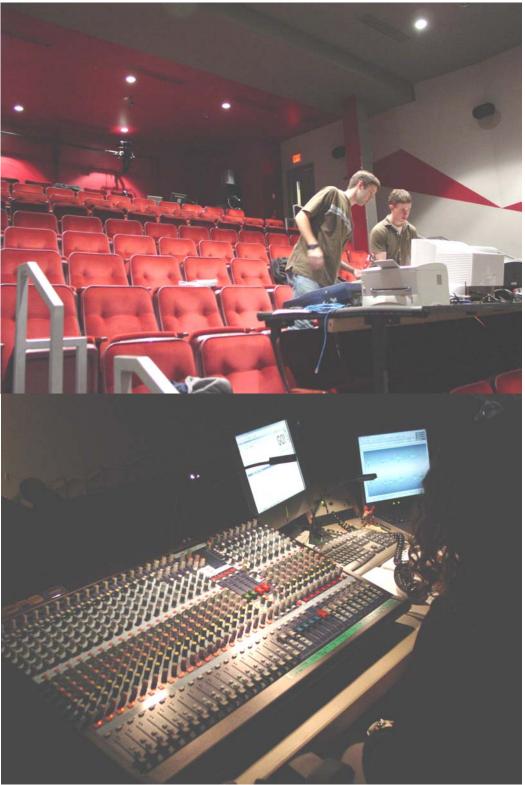




Craig continued:
"The students and I spent a lot of time with SMAART™ in preparing for the shows. We holed ourselves up in the FOH booth for a couple of days tweaking and setting delay times, learning how to reach a happy medium with the building. We spent the time to dial

in both a relatively flat playback setting and a more musical setting with delay and a centered, voice friendly EQ on the DN9848, allowing the left and right FRX boxes to be freed up for full range. We've got full control over the speakers, and they can perform precisely to our different needs. In terms of the live mix, the Venice (above) sounds great, warm and musical, which helps a lot. There's nothing quite like those EQs and preamps! The Sx80 spot fills come into play when we get into offstage environmental sounds and voices, and we're using EVIDs to help create a kind of wash with the reverb returns in a cinema arrangement. They sound really great in that capacity. So, we're essentially using these smaller speakers for subtle acoustic enhancement in a small space to big effect. We have two upcoming plays in the fall and two in the spring, and I think people are going to be seriously impressed."

(more)



Top - EVIDs: Side Fills with Style. Bottom - Midas Venice 320 at Front of House.



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