

BYU-Idaho Center Sound System Delivers a Full, Rich Sound Through Bag End Subwoofers

When the Brigham Young University - Idaho Center was opened, it made the school home to one of the largest production theatres in North America built for the primary purpose of supporting weekly student devotional services. The theatre space itself is large, with 15,000 seats and a stage measuring 108' in width and 60' in height. Yet the sound system is able to deliver a warm, intimate sound experience to every member of the audience.



BYU - Idaho Center during graduation ceremony

Essential to the success of the space was the performance of the new center's five-manual Rodgers digital organ. The organ was installed by **Heritage Church Organ Company**, and the sound system was provided by **Diversified Systems**. The sound system includes eight **Bag End Infra-MXB** dual integrators, 16 **Bag End S21E-CUS** self-powered subwoofers with loop-through XLR Inputs, and **Power-con** loop-through on the cabinet. Completing the system are two **DiGiCo SD7** mixing consoles, **NEXO GEO D10** line arrays, fill speakers, and amplifiers, and **Yamaha DME-64** processors.

"We had a specific vision in mind when we chose these Bag End subs," says **Ken Fause**, principal audio-video consultant from **Auerbach Pollock Friedlander**, who worked very closely with Diversified's project engineer **Andy Prager** and resident BYU-Idaho engineer **David Mann**. "We were looking for a wave front of sub-frequency energy that would go down to 8Hz."

To place the subs in an optimal location to produce that "front wave" of organ sound, yet not be visible to the audience, they were installed in a cavity created along an existing concrete bulkhead beneath the stage.

"Challenges that faced Diversified in this project," says Prager, "included ensuring that the processing equipment ahead of the self-powered subs would be capable of passing 8Hz and ensuring that the considerable sub-frequency energy under the stage would not cause the platform itself to vibrate."

"This entire project entailed an enormous amount of planning and precision execution," says Fause, "and I can't speak highly enough of the degree of collaboration and teamwork among all involved that resulted in such great success."

The success of the project was confirmed shortly after completion when a retired organist from the university stopped by unannounced, played the instrument, and commented that it was the closest to a pipe organ that he had ever heard. This was strong praise from him, considering that the University is also home to a world-class Ruffati pipe organ.

"In addition to organ concerts and devotional services," Mann points out, "The theatre has also hosted events like *Pioneers and Patriots*, which included an F-16 flyover. At these special times, we can access the subs for that extra depth of sound that brings the event to life."

The state-of-the-art venue at this Church of Jesus Christ of Latter-day Saints' university provides seating for the entire student body and community guests at regular weekly devotionals, as well as special interest events of a secular nature including guest speakers, commencement services, and the performing arts. All of these may also be recorded or broadcast live over the BYUtv network, which has an international reach through many leading cable and satellite service providers.