

## Clear-Com, Jaffe Holden, and BTS Pull of “Miracle” Communications Upgrade for Houston’s Wortham Theatre Centre



### – Complex Integration of Cue Lights and Intercom Systems Redefines Production Workflow

One of the biggest challenges for a theatrical stage manager is eliminating missed cues during a performance. Integrating a theater’s cue light system with new digital communications technology – while repairing severe hurricane damage – proved to be equally challenging for Houston-based systems integrator, Broadcast Technical Services (BTS). But together with Jaffe Holden, the consulting firm brought in to provide AV systems design and acoustic consulting, they were able to pull it off for the Wortham Theater Center. Working with Clear-Com®, they also installed a complex wireless intercom package that has helped the venue’s technical crews work more efficiently, save time and reduce production costs.

Opened in 1987 in downtown Houston’s theater district, the Wortham Theater Center is one of many major opera houses in the United States. Home to the Houston Ballet, Houston Grand Opera and a diverse schedule of chamber music performances, touring acts and recitals, the performing arts complex houses two theaters: the 2,423-seat Alice and George Brown Theater and the 1,100-seat Lillie and Roy Cullen Theater.



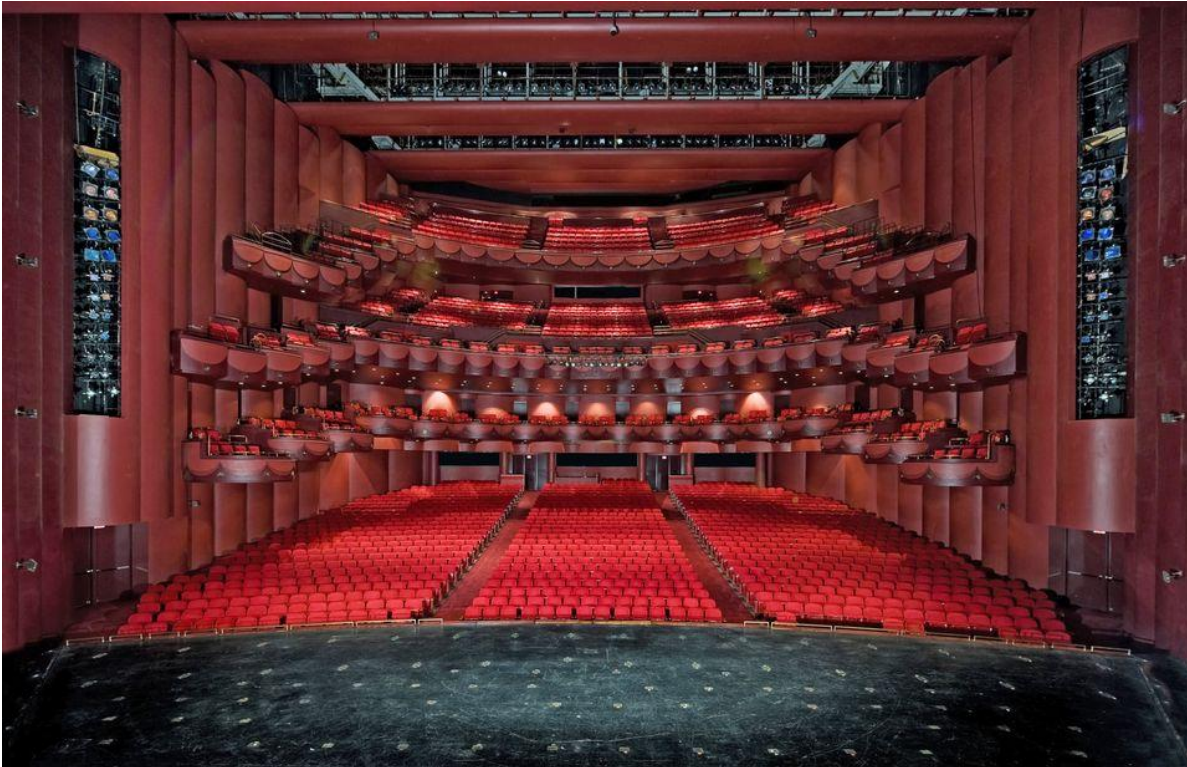
Wortham had already been planning communications system upgrades to the Brown and Cullen venues when Hurricane Harvey hit the area in 2017. The flooding of the basement along with portions of the first floor shut down its electrical infrastructure and damaged a vast amount of cabling for the AV systems, including the existing Clear-Com and cue light systems and most of the Clear-Com equipment.

Being a FEMA restoration project, the systems were required to be replaced by the same equipment that was existing before the flood. For the Clear-Com system, however, some of the critical original equipment was no longer manufactured, so a new design had to be created to provide the same functionality.

“It was a massive effort just to assess the damage despite our extensive background in AV consulting, and we relied heavily on the support of BTS to conclude what exactly needed to be replaced,” said Garth Hemphill, Associate Principal for Audio Visual Systems at Jaffe Holden.

“No equipment would work because it had been sitting in high humidity for several months. To install the new technologies, we had to start from scratch, pulling out the majority of the original cabling in both theaters,” added Michael Hobart, BTS Vice President of Sales. Part of the Jaffe Holden design included maintaining the cue light system that had been previously controlled via the Clear-Com system. In addition to the FEMA replacement work, Wortham was looking for a new wireless communications system that would work independently in both theaters, ensuring their intercom was future-proof to keep them technologically current for years – a major undertaking considering the damage sustained.

“When I heard what they wanted to accomplish (under stringent time limitations), my first thought was, ‘they’re asking for a miracle!’” said BTS owner Bill McKee.



That miracle has since been enabled through a combination of FreeSpeak II® Digital Wireless Intercom System purchased separately by Wortham Center Operating Company, Eclipse® HX-Delta Digital Matrix, LQ® Series IP interfaces, Helixnet Digital Network Partyline and the Agent-IC® Mobile App for remote productions. The Wortham cue light systems, a network of 65 cue lights, also runs through Clear-Com’s IP-based V-Series Iris panels featuring full-color, 10-character OLED displays that allow users to quickly identify calls, groups, and functionality with color-based messaging. The cue light systems are supported with 30 relays in the Brown and 24 relays in the Cullen.

“The Wortham holds theatrical and operatic productions, each with different sets of needs and styles of operation,” said McKee. “They wanted to make sure everyone was in constant communication in full duplex mode in an environment where 2-way radios are not practical.”

Supporting the digital communication system are 75 HelixNet® stations including belt packs, remote stations and wall panels with 13 deployed network switch locations connected via fiber allowing crews to easily tap into

each theater. The theater's LQ system has 96 ports per system, 64 on one card and 32 on another, with the HelixNet Digital Network Partyline System supporting up to 190 drop locations.

"They couldn't do what they're doing now efficiently without these technologies," said Hobart at BTS. "From the basement to the 6th floor, you're always on the intercom. BTS and Clear-Com engineering were able to facilitate all their requests, and that wouldn't have been possible without Clear-Com's 24/7 support."

"What they have now is a flexible system that lets their crews talk to each frame in each theater over a merged control system. It will definitely meet their current production requirements, and it's also robust enough to grow as they expand," concluded Hemphill.