

The Howard Theatre Renovation

The completed theatre offers comfortable seating with excellent sightlines.

A Historic Jewel is Reborn

By George Petersen

Built a century ago, Washington DC's historic Howard Theatre is back to life. Located near the corner of 7th and T Streets in an area known as "Black Broadway," the historic arts landmark that launched the careers of Duke Ellington, Ella Fitzgerald, Marvin Gaye and The Supremes, reopened in April after a \$29 million renovation.

Abandoned for 32 years, the building came close to being slated for demolition. Then, in 2006, a group of concerned citizens intervened, forming the non-profit Howard Theatre Restoration organization and raising the needed funds to bring the venue back to life. The project was headed up by Chip Ellis and Malik Ellis of the Ellis Development Group. The facility is operated by the Ben-susan family, who own and operate various clubs and theaters worldwide, including the Blue Note Jazz Club, B.B. King Blues Club and The Highline Ballroom in New York.

The recreated original 1910 regal windowed facade combines elements of *Beaux Arts*, Italian renaissance and neoclassical design. The balconied interior is designed to provide flexibility including supper club-style seating for approximately 650, which can be quickly removed via elevated hydraulic platforms to allow standing room for 1,100.

No Easy Project

FOH

The Howard Theatre was placed on the National Register of Historic Places in 1974, but the degradation of the neighborhood forced the theatre to close in 1980. "The difference in the way it looked and the way it looks now is unbelievable," says Amit Peleg of Peltrix (peltrix.com), the contractor responsible for the audio and video installation/design. The acoustical contractor on the project was Richard Talaske of Talaske (talaske.com).

"The Howard Theatre was abandoned for 30 years," Peleg recalls. "When I walked in there the first time, it was a complete ruin — a pile of rubble with the roof caving in and animals living in the building. It didn't look very promising. It was hard to foresee what would come out of it, but looking at it now — it's a jewel."

There were some false starts during the renovation process. Originally, it was decided to re-do the Howard as live theatre for plays and musicals, which was the building's original purpose. This direction changed later, and the Howard Theatre relaunch was then planned as a music venue, more in keeping with the facility's roots and the pivotal role it played in the development of music history.

"The original revitalization design didn't really fit what they wanted to do with the venue," says Peleg. "I was brought in once it was decided that it would be 90 percent music and 10 percent for meetings and corporate events." Another key part of the design includes a world-class kitchen for dinner theatre and fundraising events.

From the Ground Up

FOH

"Eventually they gutted the entire inside of the building down to a shell and — except for the steel that supported the mezzanine — all the steelwork is brand new," adds Peleg. "They dug out a new basement that didn't exist before and raised the floor. All of that had to be coordinated with HVAC to accommodate all the AV wiring."

Accommodating and adding support for modern production is sometimes a problem in historic venue renovations, according to Peleg. "The Howard Theater restoration is tied in with historical society guidelines on what had to remain. The shell remained as it was,



The theatre interior before renovation, above. Below, after extensive renovations, the JBL gear could be flown. Construction was still underway, so the crew used coverings to protect against dust.



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but the interior had to be rebuilt from the ground up — yet at the same time, maintain the original design of the Howard Theater.

This is the third reincarnation. The second one was done in the 1970s, and it was changed a little bit. This new construction went back to the original construction of 1910. So, yes, it had to look as it did in 1910, but we needed to make sure the structure could support modern line arrays, rigging, lighting and everything else, while fitting within the confines of a space that was never really meant for that purpose."

Obviously, there were no sound systems back in 1910. Was there a concern about conflicting with the original look? "The owners of the building wanted to keep it looking as original as possible. There was compromise on both ends. We compromised by not adding delay speakers for the mezzanine area in exchange for us being able to hang longer line arrays right at the proscenium," Peleg says.

"The building is not that deep. It's only 75 feet from the front edge of the stage to the back of the mezzanine. So we're able to push audio from the front array all the way to the back, yet not have our new technology be too intrusive to the original character of the room. At the same time, the bookings planned for this building demand the heaviest and most modern equipment."

There were also changes made to the stage itself. Designed for theatre sets, the original stage at the Howard was very deep — so deep, in fact, that there were line of sight problems from the corners of the mezzanine; patrons seated there would be blocked from seeing the farthest areas in the back of stage.

"For the kind of shows [mostly music performances] we're going to do, we only needed 20 feet of depth on the stage," Peleg explains. "I recommended putting up a wall along the back and using the space for set storage, empty flightcases — or simply to provide a way to move from one side of the stage to the other without being seen. We also installed a 27.5-foot screen on the back wall for video projection, which would not have been useful given the original size of the stage."

The fly gallery was retained, but was reduced from the original 60-foot height and lowered to 40 feet, which provided much-needed space for upstairs offices, while still



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accommodating most set pieces and lighting requirements.

High Performance Audio

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For an absolutely authentic restoration of the Howard Theatre, the sound system would probably consist of some carbon microphones, a four-input/rotary knob RCA mixer and some Western Electric horns — items that don't typically show up on most performance riders. Fortunately, the restoration organization gave Peleg the go-ahead for a more modern approach, with an all-JBL

VerTec rig.

The mains consist of 20 VT4888DP-DAs (10 per side), with six VT4880ADP-DA flown subwoofers and four ground-stacked ASB7128 subs. Two VT4887ADP-DAs are used as a center downfill cluster. JBL VRX928LAs and custom shop 7315/64-DPDAs handle under-mezzanine and front dance fill duties.

Stage monitors are 13 JBL VRX915M 15-inch wedges, with a VP7215/64DPDA and VPSB7118DPDA sub for drum mixes. All speakers are self-powered except the floor subwoofers and monitor wedges. Supplementing the monitors are six channels of Sennheiser 2000-series IEMs.

Rather than onstage mic preamps with MADI or Ethernet feeds, a more traditional approach with copper wiring is employed.

"There is about two-and-a-half tons of copper in the building — audio and video. We decided to go with a system that would

be as rider-friendly as possible to appeal to a large number of concert-hall type artists that don't play smaller venues. We went with Yamaha PM5D consoles for front of house and monitors, and that kind of dictated we'd go with analog snakes, because the 5Ds have built-in mic preamps. And 48 channels was enough for us, so we didn't need extended channel counts or the need to use a stage box," says Peleg.

"A lot of the copper is onstage for creating a very flexible wiring scheme that can accommodate anything, no matter what setup the coming artist is. Usually these are one-night performances without too much time for load-in and sound check. So there are stage pockets and tie lines everywhere. In fact, we also have a panel that allows us to bypass the monitor console for shows where we want to mix monitors from the front of house position.

"I don't believe in patch bays in venues like this — they don't hold up and fail pretty quickly with intermittent connections that are hard to trace down," Peleg continues. "So the monitor bypass patching here is done using XLR cables. You just jump the monitor amplifier inputs from whichever console you want to feed them from, or patch directly to any tie line or stage pocket for using in-ears. It's very flexible in that regard."

Almost all the facility wiring was done offsite, and most of the wiring was pre-terminated and custom-made to spec by Link USA.



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Since opening, the Howard Theatre has hosted all styles of music, including Blue Öyster Cult.

"They do a superb job," says Peleg.

The system is flexible, yet anything but old fashioned. "The rest of the system is digital, with signal distribution straight out of the console. We have AES cards in the PMSD, and we go digitally directly to the DSP to the amplifiers. The amps are built into the speakers — they're JBL DPDA [Drive Pack Digital Audio] series. And since the amps are built-in, there's no copper from amps to speaker," Peleg notes. "It's just a signal run and a network run to each cabinet. As the DPDAs have a built-in network switch, you don't even have to run a dedicated network cable to each — you can just jump the network cable from one speaker to the next one in the array."

There are always wrinkles that crop up in any installation. "We needed side fills, but

there was a conflict between having space to fly the lighting truss and the correct positioning for the side fills," says Peleg. "So every time the truss drops down, the side fills would have to be moved out of the way for clearance."

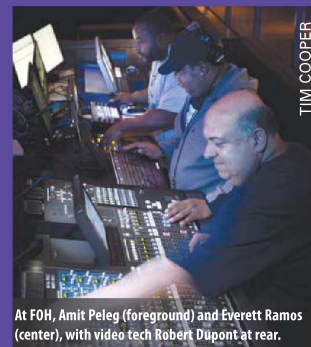
The side fills could have simply been flown from the lighting truss, but this would have required realigning the side fills for each show. "Mike (Akrep) at Polar Focus (www.polarfocus.com), who also did all our rigging, came up with this custom bracket," Peleg explains. "This lets the side fills swing out of the way with locking notches for three different positions. You just push the arm out of the way, lower the truss and, later, move it back into precise position."

The Time Squeeze

FOH

Deadline and time constraints are a major part of large projects, and the Howard Theatre was no exception. The first show was booked and tickets were sold when the building was only half completed. "We were dealing with a hard deadline, and there was no way we could be late," says Peleg. "There are always construction delays, yet we couldn't install any sensitive equipment until the building was dust free — although we could run some cables, hang the speakers and cover them. This essentially gave us two weeks for the entire installation, and we had to work 14- to 17-hour days to get everything ready on time. We finished the job two hours before the opening show." **FOH**

Balanced Power



At FOH, Amit Peleg (foreground) and Everett Ramos (center), with video tech Robert Dupont at rear.

One interesting — and somewhat unusual — aspect of the Howard Theatre installation was its use of balanced AC power to supply the audio gear. More often found in high-end audiophile home theaters and recording studios, a balanced AC power system works similarly to a balanced audio circuit, but obviously at a higher amplitude. Both balanced audio and balanced AC incorporate phase cancellation or common mode rejection to eliminate noise. When 120-volt AC power is balanced, one side of the circuit has +60 volts to ground while the other has -60 volts to ground. Across the circuit, the usual 120 volts is still present.

Based on his success in using balanced power in the system he installed at the B.B. King Blues Club in New York City 11 years ago, Peleg decided to use balanced power in the Howard Theatre as well. "What it does is unbelievable — it's such a quiet system. It's expensive, but worth every penny," he notes. "We ended up using an Equi-Tech (equitech.com) system with a toroidal transformer and 10 two-pole circuit breakers for the main important power needed for the sound system. This includes the consoles, the monitor amps and the stage pockets that feed the backline. The main power for the line arrays is conventional, although it's on an isolation transformer."

The main problem Peleg encounters with balanced power is not the system itself, but the fact that most electrical contractors — and electrical engineers — have never heard of it. "When I mention a balanced power transformer, they think I'm making an error and referring to an isolation transformer. Then I repeat it again — 'balanced power transformer,' where you have two legs of 60 volts each and no neutral. They shake their heads, and look it up later and find out it does exist. Electrical contractors are always confused about this, but this particular product is actually very easy to install, because they don't have to interface with the transformer directly. If the budget allows it, I highly recommend it. It saves so many problems with noise. First of all, the system is so much cleaner than it would be with conventional power. And anywhere you are used to the expected background noise of analog backline equipment, people are surprised when they plug in and the noise is not there."

A balanced power installation can also present surprises to audio pros. "A lot of the time, when touring engineers come in, they'll use a voltmeter to check the power at a electrical receptacle and shout 'Stop! Don't plug anything in — something's wrong with the power!' They check between hot and ground and expect to see 120 volts, but measure 60 instead, and think there's something wrong — until it's explained. The majority of people in the industry don't know about it!" — **GPE/FOH**

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