

SLS: NEW ON THE VEGAS STRIP

LANDMARK HOTEL GETS A REDO, DESIGNED TO IMPRESS.

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BY JIM STOKES

The new SLS Las Vegas Hotel & Casino (slsvegas.com) offers an upscale gaming and hotel experience to patrons. Owned by SBE Entertainment, the venue opened its doors in fall 2014, the first Strip resort to debut in five years. In turn, our story features the AV systems that complement the sophisticated surroundings in the main casino and related areas.

Former Sahara Location

Anchored on the legendary north end of The Strip, SLS is on the site of the former Sahara Hotel & Casino, where showbiz legends like Frank Sinatra, Dean Martin and Sammy Davis Jr. crooned and cocktailed, and it's the only Vegas hotel where The Beatles would stay. More than 60 years later, SLS is rekindling Vegas' iconic past with more than 1600 guest rooms and suites, an engaging gaming experience, two expansive pools, and the venue's diverse collection of acclaimed restaurants and nightlife brands.

Much of the Sahara's old footprint remains in place, with bits of it showing through: exposed concrete ceilings in the guest rooms, low ceilings in some of the

Occupying the former space of Las Vegas' Sahara Hotel and retaining many elements of the Sahara, the SLS was completed in 2014.

STRIP



restaurant and gaming areas, the Sahara logo and images of some of its more famous guests appearing both in the carpeting and on the walls of the hotel lobby.

Although multiple integrators were used on the project, our story features National Technology Associates (NTA, ntechassoc.com), which was tasked with the AV integration for two floors of the property, including the main casino, Bazaar Casino, High Limit gaming area, hotel lobby and Monkey Bar, several retail spaces and restaurants on the main floor, along with convention spaces on the second level. Accordingly, SLS' AV includes amplifiers, DSP and a large speaker complement, along with an advanced video distribution system. First, here's some design and integration background.

NTA Background

Nevin Edwards, NTA Senior Project Manager, worked with SLS and electrical contractor Bombard Electric, Las Vegas, as the building requirements evolved. At first, the casino needed NTA strictly as a design consultant.

"The design was a team effort at NTA," said Edwards. "SLS came to me in 2011 with two drawings, floorplans of the first and second floor, and said, 'Tell me how much the AV is going to cost'," explained Edwards. "No specifics, just a floorplan. My first reaction was, 'You can't possibly be serious.' But we really did have an idea of what projects of this type would cost. We had just come off the Cosmopolitan installation, and we were able to draw from our experience on that project to put together an estimate.

"For most of 2011 and 2012, it was more or less getting the AV design from a conduit and wire perspective onto a drawing, so they could get their building permits. Then, in 2013, we moved into taking care of flushing out the AV design, specifying the amplifiers and DSP, and figuring out how they wanted to run their video distribution system, getting into more of the nitty-gritty AV integration side of it."

Edwards noted that the biggest challenge with SLS was the budget. "They would come up with a lot of interesting ideas, and I would be tasked to go back and figure out if it was something they could afford to do."



Located underneath the old Sahara convention space, the Bazaar Casino's low ceilings required the use of extra speakers to provide even coverage.



Ten 12-inch pendant speakers surround this central bar in the main casino.

Rack Fabrication

“We pride ourselves in trying to do all rack fabrication and programming in our shop,” said Edwards. “We try not to build any racks onsite because it’s a nightmare trying to maintain a clean environment and trying to maintain security in a building that is under construction.

“I was able to start the purchasing on this project early on and get my rack fabrication guys working early on. We were actually able to load the BSS audio program and test the connectivity and networking within our shop. Thus, we knew when we went onsite that, if we were to run into any issues, chances are it had to do with cabling that was installed in the field, whether it was re-terminating an RG45 or re-terminating a fiber.

“It really helped reduce our time onsite during the commissioning process, because we were able to do so much upfront work. That allowed us to have everything pretty much up and running three weeks before they were to open. That was a real advantage for us.”

Audio Distribution

In addition to SoundTube speakers, the Crestron-controlled SLS AV system uses Crown amplifiers and BSS audio processing. The MDF (main distribution frame) room houses the Prescriptive Music services player that sends out 32 channels of CobraNet via the internet to various restaurant destinations in the casino. “We’re using about 22 channels so far,” explained Edwards. “We take each channel of CobraNet and distribute it throughout the various TR rooms (Telecommunications Rooms) that take feeds to a handful of restaurants or a section of the casino. The CobraNet channels are received in each of the TR rooms where we have a BSS BLU-800 signal processor that distributes those channels via BLU Link to the Crown amplifiers.

“What’s nice about the Prescriptive Music service is that the manager in each of seven different restaurants gets his own channel.” For example, the Katsuya by Starck, which specializes in Japanese Sushi, has its own music playlist. The manager has the ability to change the music for any specialized occasion via a Crestron in-wall touchpanel.

Furthermore, Ken Catron, Director of IT Telecommunications and Audiovisual

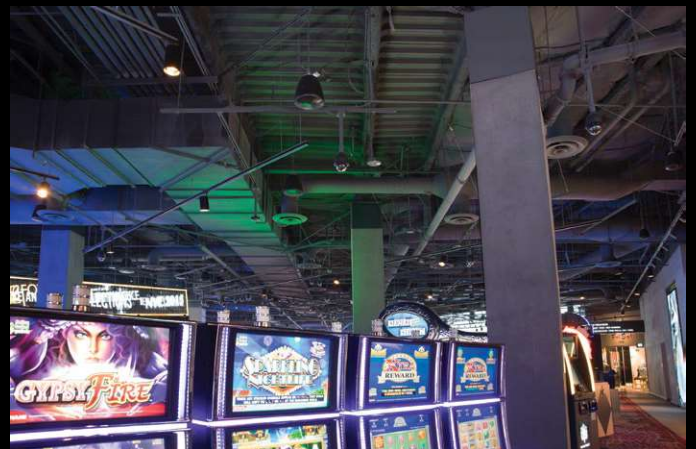


Steeply vaulted ceilings and tile floors made zoning a challenge in this restaurant just off the main casino. NTA set up this space with two lower and two upper zones.



Speakers are set up in two zones in this room designed to provide an exclusive gaming experience for patrons. Local sources including a DJ can be inserted at control points in the gaming pit.

A total of 106 speakers bring a high level of energy to the casino. Five-inch pendant speakers are used above the slot machines.



at SLS and Assistant Keith Phelps, have iPads set up so they can stroll the areas and adjust volume or change sources at the request of a restaurant manager. They don't have to be in a remote TR room to make adjustments.

Regarding daily management, Catron said, "The Crestron is easily integrated with personal devices, such as the iPad, with the various controls right at your fingertips."

Phelps added, "The BSS controlled system allows us to do a wide variety of things throughout the property, whether it's the utilization of a wireless microphone or additional inputs for local connection in different areas of the casino. It's a very user-friendly system that was designed with the user in mind."

"The SoundTube product line proved to be a fantastic choice," said Catron. "The innovative design gives them great sound quality and wide dispersion. The enclosure is attractive and capable of being installed next to many types of décor."

Speaker Choice, Placement

SoundTube and JBL speakers were specified in different areas. We'll start with an overview of SoundTube speaker use. Working around the old Sahara footprint proved to be a challenge for NTA in certain areas. "Ceilings were a lot lower than we would have liked in some of the restaurants and the Bazaar Casino," said Edwards. "This made it challenging to provide full speaker coverage in those areas because the dispersion pattern is barely opening up before you hit the floor. We solved this by putting lots of speakers in those rooms."

There were no issues in the open-ceiling casino, but Edwards pointed out that the speaker plans were altered at the last minute. "Originally, there were not going to be any speakers above the slots," he said. "Slot machines these days are really loud; they can have 50 watt amplifiers and they turn them up to Ten. However, SLS came to us and said, 'We'd like a little audio over the slots for ambience.' It turned out that RS500i speakers were perfect for those areas."

In contrast, the hotel wanted anything but subtlety in the casino bar, so NTA installed HP1290i pendant speakers in that area. "There's a lot of energy there, and we have them barely turned up to 30%!" said

Edwards. "There's a lot of room to crank up the volume when they want it."

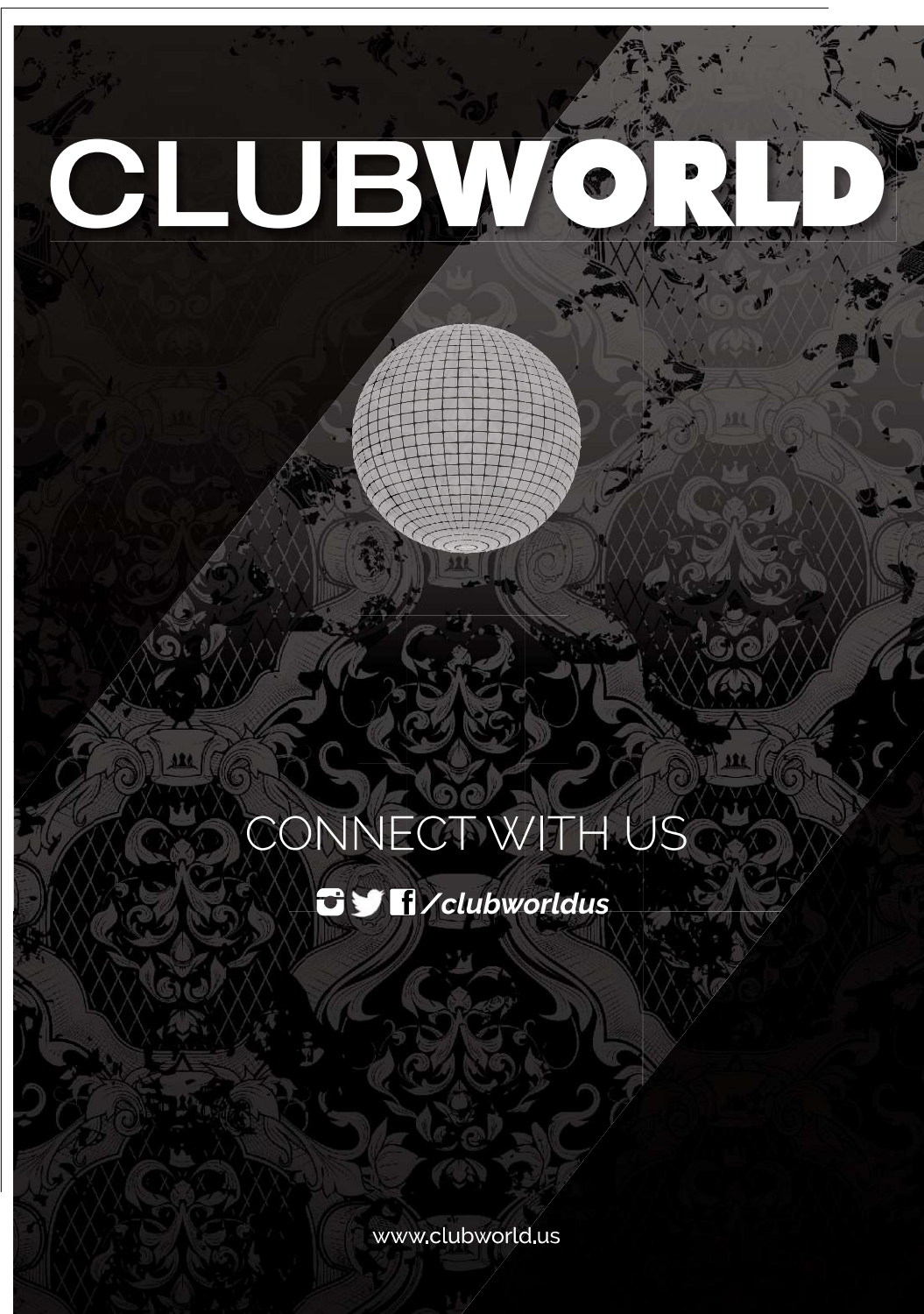
Main Casino

In order to integrate some of the old Sahara structure into the main casino, the ceiling was left open. All fixtures, overhead HVAC conduit and beams are exposed and painted black. SoundTube pendant speakers are used throughout the casino to create a high energy level and provide a high-end music experience. More than 100 HP890i speakers are placed above the

gaming areas, with 10 HP1290i speakers located around the Center Bar in the middle of the casino.


After the hotel requested audio above the slot areas, NTA ordered 136 RS500i speakers and placed those in the mix on their own zones. As patrons move through the casino, the consistent-coverage music brings a high energy level to the venue but does not interfere with the slot machine sounds or the gaming areas.

Designed to provide an upgraded gaming experience, the Bazaar Casino is located



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Equipment

- 50 Allied Electronic 70126440 null modems
- 5 Anchor Audio AN-1000X powered monitors
- 2 Anchor Audio AN-1000x+ 30W active monitor speakers
- 6 APC SMT1500RM2U UPS for EQ racks
- 6 ATEN 2L5202UP 6' PS/2 to USB
- 3 ATEN 2L520P 6' PS2 LVM Cable
- 7 ATEN CL1008M KVMs w/monitor
- 6 ATEN UC10KM PS/2 to USB adapter
- 10 ATEN UC232A USB to serial interface
- 1 Belden 9913F7 RG-8 Cable, 250'
- 8 Bittree B48DC-HNOST/E3 M20U12L chassis
- 4 Bittree LPC1800-110 18" ¼" patchcords
- 10 Bittree LPC2400-110 24" ¼" patchcords
- 1 Bittree LPCXF7200-110 72" ¼" patchcord
- 1 Bittree LPCXM26-110 1/4 to XLR
- 1 Blonder Tongue QAM RF HD encoder
- 9 Blonder Tongue SCVS-2 2-way splitters
- 3 Blonder Tongue SCVS-3 3-Way splitters
- 7 Blonder Tongue SCVS-4 4-way splitters
- 12 Blonder Tongue SCVS6 6-way splitters
- 17 Blonder Tongue SCVS-8 8-way splitters
- 1 BSS BLU-160 (12x4) networked signal processor (no CobraNet)
- 4 BSS BLU-160 (16x0) networked signal processors (no CobraNet)
- 6 BSS BLU-160 (8x8) networked signal processor
- 1 BSS BLU-800 networked signal processor
- 1 BSS BLU-800 (12x4) networked signal processor
- 3 BSS BLU-800 (16x0) networked signal processors
- 3 BSS BLU-800 (8x8) networked signal processors
- 54 BSS BLUCARD-IN input cards
- 9 BSS BLUCARD-OUT 4 analog output cards
- 12 BSS BLUCARD-OUT 2 analog output cards
- 2 BSS SW9012US volume/selector switches
- 50 C2G 02445 3.5mm to DB9 Velocity audio/video cables
- 15 C2G 26886 1½' USB TO DB9 serial adapter cables
- 10 C2G USB to RS232 DB9 adapters
- 14 Contemporary Research QDA4-45 RF distribution amps
- 8 Crestron BB-6L wall mount back boxes
- 10 Crestron C2N-DB8-W-S 8-button keypads
- 2 Crestron CNTBLOCK termination blocks
- 8 Crestron CP3 3 Series control systems
- 1 Crestron DM-RMC-SCALER-C DigitalMedia 8g receiver/room controller
- 1 Crestron DM-TX-201-C DigitalMedia 8G+ transmitter
- 2 Crestron PWE-4803RU PoE infectors
- 2 Crestron RMK-9L rack mount for 9" touchpanels
- 2 Crestron TPMC-9LB-T 9" wall mounts
- 1 Crestron TPS-6L Isys 5.7" wall mount touchpanel
- 5 Crestron TSW-1050-B-S 10" touchpanels
- 9 Crestron TSW-750 B-S 7" touchscreens
- 33 Crimson A34 articulating mounts
- 33 Crimson AD400 adapter plates
- 3 Crown DCi-2 600N 2-channel amps
- 5 Crown DCi2-1250N DriveCore 2-channel amps
- 3 Crown DCi2-300N 2-channel amps
- 2 Crown DCi4/1250N DriveCore 4-channel
- 6 Crown DCi4-300N DriveCore 4-channel amps
- 12 Crown DCi8-300N DriveCore 8-channel amps
- 4 Crown DCi4-600N 4-channel amps
- 6 Crown DCi8-600N DriveCore 8-channel amps
- 1 Da-Lite 37580L Contour Electrol motorized projection screen (87"x139")
- 1 DirecTV AU9-SL5-SWM-B-PWS Slim Line dish
- 1 DirecTV DSPI-6-T power inserter
- 20 DirecTV H24 receivers, HD satellite
- 1 DirecTV PI-29 inserter
- 2 DirecTV SWM-16 multiswitch w/power inserter, 2 8-way SWM splitters
- 4 DirecTV SWS2WB 2-way splitters
- 3 DirecTV SWS-8 8-way satellite splitters
- 2 Evertz 7705DS-4+AP+SC+3RU 4-channel optical splitter/combiners
- 12 Evertz 7707CATVRA+AP+SC+3RU CATV fiberoptic receivers
- 2 Evertz 7707CATVTA13-110-11+AP+SC+3RU CATV fibers
- 4 Evertz 7708LRA+3RU+AP+SC 1RU multiframes
- 8 Evertz 7708LT55+3RU+AP+SC RF fiber transmitters, wideband
- 1 Evertz 7801FR 1RU multiframe
- 16 Evertz 7801FR+781PS 1RU multiframe
- 4 FiberPlex SFP-SC24X-3131-B line level stereo audio transceivers, multimode
- 8 FiberPlex TD-6010 fiber interface boxes
- 4 FiberPlex TD-7280 fiber audio transceivers
- 8 HP J4858C Pro Curve transceivers
- 13 HP J4859C Pro Curve transceivers
- 4 HP J8177C SFP module
- 1 HP J9777A 8-port switch
- 1 HP JC102A expandable switch
- 5 HP JD089B RJ45 transceivers
- 14 HP JD119B SFP transceivers
- 12 HP JE007A 24-port POE switches
- 2 HP JE008A 24-port POE switches
- 2 JBL Control 25T 5¼" 2-way transformers
- 2 JBL Control 28T-60-WH 2-ways w/horn
- 48 JBL Control 321CT ceiling speakers, 70V multi tap transformer
- 84 JBL Control 328CT 8" ceiling speakers
- 16 JBL Control 47CT wide-coverage, extended-bass ceiling speakers
- 24 JBL Control 47HC speakers, 60W TAP
- 48 JBL Pro MTC-300BB12; speaker back cans
- 84 JBL PRO; MTC-300BB8; 1 cubic foot back boxes for 8" models
- 2 Leviton 6910G-U24 24-port patch panels
- 1 Leviton 6910G-U48 48-port patch panel
- 6 Liberty AV 22-1P-EZ-BLK 22 Ga shielded audio cables
- 12 Middle Atlantic WRK-44-32 44-space, 32"-deep racks w/accessories
- 25 Moxa CBL-RJ45F9-150 custom DB9 to RJ45 cables
- 1 Moxa Nport 6150 1-port serial device
- 1 Moxa Nport 6610-16 16-port RS232 serial servers
- 44 Moxa NPort P5150A PoE RS232 servers
- 20 MuxLab 500025 MonoPro XLR audio baluns
- 1 Panasonic PT-DZ770ULK 7000 lumen projector w/ET-DLE080 lens
- 20 Pasternack PE4378 50 ohm BNC connectors
- 4 Peerless-AV CMJ 300 ceiling adapters
- 15 Peerless-AV ST635 Security SmartMount universal tilt mount for 13"-37"
- 95 Peerless-AV ST650 tilt mounts for 32"-56"
- 8 Peerless-AV ST660P universal plasma mounts
- 4 Peerless-AVPLCM-UN1 ceiling mounts
- 1 Premier Mounts PBL-UMS projector mount
- 4 Pro Video Instruments VeCOAX-Pro 4-HD 4 HDMI to DVB-T modulators



- 14 RDL D-CIJ3D consumer input jacks, stereo
- 10 RDL TX-J2 unbalanced input transformers
- 50 Show Me Cables 112 F-type male to female-type male adapters
- 50 Show Me Cables 184 F-type male right angle to F-type female adapters
- 2 Shure UA221 passive antenna splitter/combiners
- 4 Shure UA806 50 OHM 6' cables
- 6 Shure UA820J antenna whips U4D & U4S in the J5
- 6 Shure UA830USTV in-line antenna amps for remotes
- 3 Shure UR2/BETA58 transmitters
- 2 Shure UR4D+ wireless receivers
- 1 Sonora LA146R-T 6-input DBS ATSC amp
- 7 SoundTube CM1001dT in-ceiling subwoofers
- 14 SoundTube CM500i in-ceiling speakers, 33W/70V
- 7 SoundTube CM52s-BGM-WH in-ceiling speakers
- 268 SoundTube CM600i-WH ceiling speaker
- 28 SoundTube CM690i-WH ceiling speakers
- 408 SoundTube CM890i-WH ceiling speakers
- 10 SoundTube HP-1290i-BK pendant speakers
- 106 SoundTube HP890i pendant speakers
- 136 SoundTube RS500iBK in-ceiling speakers
- 3 SoundTube SM500i-II-WH surface mount speakers
- 1 SoundTube RS500I-BK 5¼" coax w/broad beam 11 tweeter system
- 7 Superlogics SL-2U-Q77LL-BA 19" 2U rackmount cases
- 1 Totevision 1212TR rackmount monitor
- 37 Whirlwind AV801, 0.125" aluminum custom plates
- 29 Whirlwind custom plates, line out XLR
- 1 Whirlwind custom rack panel

List is edited from information supplied by National Technology Associates.

next to Bazaar Meat and offers tapas and appetizers from the restaurant at the gaming tables. This room also has low ceilings. "The old Sahara convention space is directly above this room, so we couldn't do anything about the ceiling," said Edwards. The SLS asked NTA to set up the audio as an "exclusive party space" with high energy music. NTA used a mix of CM890i speakers and CM1001d-T subwoofers. "There's some nice bass response in here," said Edwards.

High Limit Gaming Room

Just off the main casino but providing an exclusive gaming experience, the High Limit area offers completely different décor from the main casino. It's a mix of whites and reds, and is outfitted with CM890i speakers in two zones. The hotel has the ability to bring in local sources here, if desired, including a DJ, and can route that audio into the speakers. "We used CM890i because we wanted high-end audio to match the high-end theme of the room," said Edwards.

"We usually always specify JBLs for all the meeting spaces," Edwards added. "We found that JBL works best for meeting-type spaces because you have a lot of voice reproduction that has to happen in there."

On the video side, a customer entering the main casino is greeted by monitors displaying sports channels such as ESPN. Notably, there's a large GLIC LED over the center bar, which is about 20'x15' and 2½ feet tall. All screens and signage were provided by SLS.

However, NTA provided video distribution. "We went with a Blonder Tongue QAM RF system to give different areas HD over RF because the users weren't in the position to be able to pay for a Crestron DM system or an AMX," Edwards pointed out. "One of the advantages of using the QAM RF is it doesn't require extenders. You can just run that out there, and if you start to get low on signal you can drop an amp in and bring your signal level back up." The Contemporary Research RF DA is part of the system.

Umami Restaurant

An example of the QAM RF system in use is in the Umami restaurant, an SLS-leased space that contains the William Hill US Race & Sports book, which is one of the world's leading betting and gaming companies. "Umami didn't want to pay the large sums to distribute DirecTV throughout the property. So we had to break off some of the QAM RF and distribute DirecTV."

In summary, the installation and commissioning went smoothly. Audio was first turned on in late May 2014 and NTA finalized the fine-tuning and EQ of the various rooms in July and August. NTA provided the design and specified the AV components. However, union electrical contractor, Bombard Electric, actually pulled the cable and installed all the AV devices because of union contract regulations in Las Vegas. The hotel opened the weekend before Labor Day, 2014. ■