



INSTALLED SOUND
TAKES CENTER STAGE
AT THE HISTORIC
PANTAGES THEATER

For a sound installation contractor, building the sound system for a historical theater renovation can be a challenging, exciting, and ultimately rewarding project. The Pantages Theater in downtown Minneapolis is a perfect example. It demonstrates how the latest sound reinforcement technology — such as linear arrays and DSP remote-controlled amps, integrated with best-in-class analog mixing console technology — can make a classic performance space sound great while helping to preserve its vintage charm.

The entire Pantages sound system was built with equipment from three of the most trusted brands in professional audio: Electro-Voice®, Midas, and Klark Teknik. Since all three are part of the Telex Pro Audio Group, product teams maintain close contact, engineering and testing products together. This creates a synergy across the brands that, in the case of the Pantages, was a major contributor to making a large, complicated sound system come together without compatibility concerns and on a very tight schedule.



X^{LC} LINE ARRAYS PUT EVERY SEAT IN THE HOUSE FRONT ROW CENTER.

The Pantages is a small gem of a theater. The house is narrow, there's not much stage width or depth, and the rear wall of the balcony is just over 100 feet from the proscenium. In such a modest space, you might expect a loudspeaker cluster centered above the stage. But the Pantages sound engineers and their contractor were determined that the quality of the front-of-house sound would match the great sight lines enjoyed by every seat in the theater. Achieving intelligibility and precise control quickly led them to one loudspeaker choice: The Electro-Voice® X^{LC}™ compact linear array system.

Line arrays are often associated with large performance venues, like 15,000-seat arenas and outdoor stadiums. X^{LC} compact linear arrays take the incredible clarity, range, and control of Electro-Voice X-Line™ linear array technology and makes it a highly versatile option for all kinds of performance spaces. X^{LC} compact enclosures deliver the full bandwidth sound of their bigger siblings, while actually improving on conventional linear array performance. The X^{LC} axis-asymmetrical design eliminates dead spots typically caused by horizontal lobing.

In the Pantages, two arrays, each with 13 X^{LC} 127 main enclosures, hang in front of the left and right sides of the proscenium. Placement was dictated by architecture as well as acoustics: the arrays couldn't obstruct the giant columns that frame the stage or cover important plaster details. Electro-Voice Line Array Prediction Software (LAPS) guided the precise placement and aiming of the array elements. Four X^{LC} 118 subwoofers are ground-stacked on each side of the house, with another eight available if an act needs more low-end power. At the rear of the facility, Electro-Voice X-Array™ Xi-1082 speakers are cleverly concealed to provide the under-balcony fill.

X^{LC} compact linear arrays open exciting new possibilities for sound system designers and contractors working in venues such as theaters, churches, and nightclubs. When intelligibility and performance are the most important factors governing an installation, linear arrays from Electro-Voice offer a no-compromise solution. They let contractors install front-and-center quality sound in every application.



THE INSTALLED SYSTEM THAT'S GOOD TO GO.

The Pantages front-of-house system has one capability not often found in fixed installations: It's easy to move. The Pantages is one of three historical theaters in downtown Minneapolis that share staff and equipment. So if the Orpheum Theater three blocks down the street needs the Pantages sound system, everything can be moved in a couple of hours. Portability is one reason why X^{LC} linear arrays were chosen for the Pantages. Not only do they offer quick, one-person rigging, they provide the high SPLs needed to fill the 2600-seat Orpheum.

ALL IN THE MIX.

The nerve center of the Pantages front-of-house system is its Midas Heritage 1000 mixing console. Everything a theatrical sound designer or concert FOH engineer would need is packed into the 48-frame package: an automation system controlling over 1500 faders and switch functions, four-band parametric EQ on each channel, ten aux sends, a 13x8 output matrix, and legendary Midas XL4 mic preamps. The Heritage 1000 is surprisingly compact, and is easily moved to one of two mix positions in the Pantages house, or even down the street to another theater.

While the Midas name is most often associated with concert touring systems, its mixing consoles are favorites for installed live performance and broadcasting systems around the world. Midas offers sound contractors a wide choice of consoles from the awesome Legend 3000 to the amazingly versatile and compact Venice consoles. The 16-, 24-, and 32-channel Venice boards in particular bring the legendary "Midas sound" to applications as diverse as churches, hotels, recital halls, theme parks, corporate presentation rooms, and many more.

DIGITAL INNOVATIONS.

When the Pantages opened in 1916, it was the first theater in Minneapolis to offer air conditioning — using blocks of ice — and one of the first anywhere with a second-floor mezzanine. That spirit of innovation is alive today in the signal processing and amplification sections of the Pantages sound system.

For equalization, the Pantages system uses the remarkable new Klark Teknik DN9340 Helix digital equalizer. It combines common EQ functions (such as a 31-band graphic EQ, 12-band parametric EQ, filters, and delays) with "T-DEQ" advanced real-time dynamic controls into a 2RU dual-channel device. Not only does the Helix allow stacking its different processing functions together, it can also talk to the Midas Heritage console to provide an "auto-solo" function.

At the powerhouse end of the system, the Pantages uses the new Electro-Voice DSP remote-controlled amplifiers. These amps deliver the incredibly clean and powerful performance of EV® P-Series amplifiers along with the tremendous flexibility of digital remote control. With a laptop computer, a sound engineer can sit in the middle of the Pantages house,

tweak any audio parameter, and run diagnostics on the speaker systems. The remote-controlled amps make daily system maintenance a snap: There's no climbing up to the equipment gallery (14 feet above stage left) to check an amplifier, or bringing an entire X^{LC} array down to test for a damaged cone. The amps' integrated impedance testing documents any out-of-tolerance conditions or components.

THE SOUND STARTS HERE.

It's no surprise that all three of the historic theaters along Hennepin Avenue in Minneapolis make extensive use of Electro-Voice microphones. EV mics are industry legends, beautifully capturing every type of performance— from vocals and acoustic instruments to thundering heavy metal—with clarity and hard-as-nails reliability.

The EV microphone selection at the Pantages starts with its 12-channel, frequency-agile RE-1 wireless mic system, employing six handheld and six bodypack transmitters. For wired mics, Pantages has a full complement of N/DYM Series microphones, including the superb N/D767a vocal mic and the indispensable N/D868 kick drum mic.



THE PANTAGES THEATER SOUND SYSTEM

Electro-Voice Loudspeakers

26x	X ^{LC} 127	Compact main enclosures
16x	X ^{LC} 118	Compact subwoofers
11x	Xi-1082	Xi-Series under-balcony fills
4x	Xw15	X-Array floor monitors

Electro-Voice Amplifiers

19x	P1200RL	2 x 550W @ 4 DSP remote-controlled
5x	P3000RL	2 x 1300W @ 4 DSP remote-controlled

Midas Mix Console

Heritage 1000 48-input/26-buss/13 x 8 output matrix automated console

Klark Teknik Signal Processing

1x	DN9340	Helix digital equalizer-master unit
2x	DN9344	Helix digital equalizer-slave units
3x	DN360	Analog dual-channel graphic equalizers
1x	DN300	Analog single-channel graphic equalizer
4x	DN504Plus	Quad compressors
2x	DN514Plus	Quad multi-gates
3x	DN1248Plus	12-in/48-out active signal splitters
2x	DN9848	Loudspeaker management systems
8x	LBB100	Active DI boxes

Electro-Voice Wireless Microphones

12x	RE-1	Frequency-agile wireless mic systems (6 handheld, 6 bodypack transmitters)
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Electro-Voice Wired Microphones

4x	N/D767a	N/DYM vocal mics
4x	N/D267	N/DYM vocal mics
2x	N/D468	N/DYM instrument mics
1x	N/D868a	N/DYM kick drum mic
2x	RE200	Condenser instrument mics
2x	RE510	Condenser vocal mics



For more information about all of these products, please visit our web sites:

www.electrovoice.com

www.midasconsoles.com

www.klarktechnik.com

You can also read an interview with Steve Olson, Pantages operations manager, on the Electro-Voice web site.

For more information about the historic Pantages, State, and Orpheum theaters in Minneapolis, visit:

www.hennepintheaterdistrict.com

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Specifications subject to change without notice.

