



# Cineplex Renovation

Kendall 11 GDx

## Q-SYS™ Integration Drives Goodrich Quality Theaters’ Cineplex Expansion

Goodrich Quality Theaters has delivered unforgettable experiences for film lovers across the Midwestern United States and Florida for more than 80 years. Focusing on renovating traditional theater buildings, the privately-owned entertainment provider has recently updated its newest Kendall 11 GDx complex in Oswego, Illinois, to a fully integrated QSC cinema system, with its new 400-seat premium large format room becoming the very first QSC Certified Theater in North America.

### CHALLENGES

The challenge confronting QSC was to deliver a flexible and keenly cost-effective audio system configuration that would accommodate the varied nature of content at Goodrich’s newly updated Kendall 11 site, allow sound levels to be easily altered and monitored, and complete the installation within a very short timeframe while renovation work was still in progress.

### Oswego, Illinois



Most of the time when customers talk about sound, it’s generally a complaint, but here at Kendall we’re in uncharted territory hearing all the positive comments from customers about the QSC sound systems!

— **Martin Betz, Chief Operating Officer, Goodrich Quality Theaters Inc.**



## CHALLENGES

### 1 Adaptability

The wide variety of content staged at the Kendall 11 site, which ranges from business meetings to presentations, required a highly adaptable system design that could be quickly and easily reformatted from one application to another.

### 2 Delivered on time, on budget

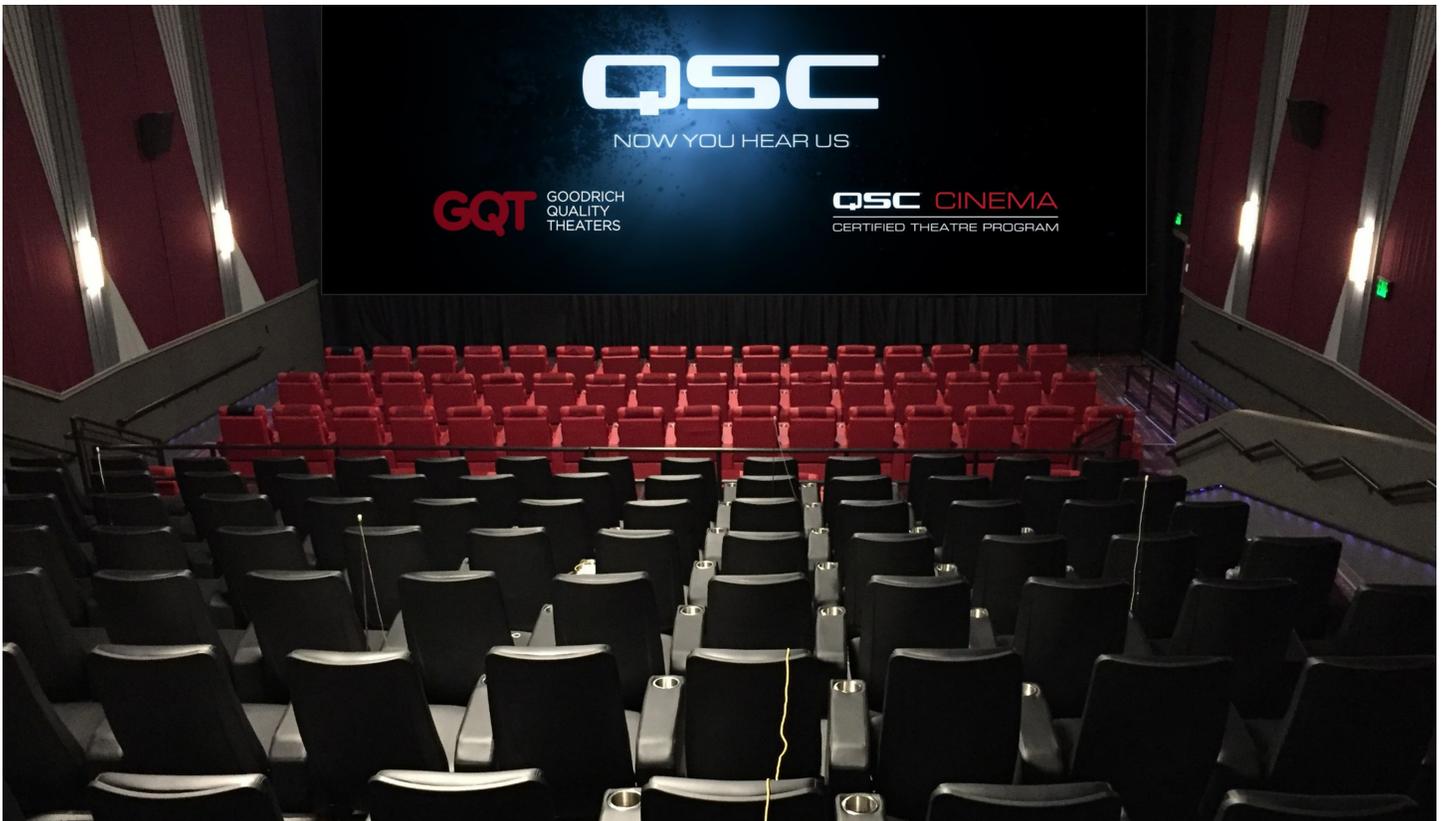
All of the equipment and supporting infrastructure had to be installed, commissioned and fully operational in less than a week, in parallel with building work that was underway as part of the general refurbishment.

### 3 Ease of use

All functions of the Q-SYS system had to be easily accessible and intuitively operated by non-Q-SYS trained theater staff.

### 4 Step up to Giant Digital Experience

Goodrich wanted to capitalize on the significantly superior audio delivered by the newly installed massive scale Giant Digital Experience with its 4K resolution and immersive sound technology.



Goodrich Quality Theaters sought a fully integrated and networked audio solution for its newly renovated 11-theater Kendall cineplex that would guarantee stunning sound quality using the most efficient possible deployment of loudspeakers, amplifiers and hardware. QSC's reputation for superior sound, not only in cinema applications but also in auditorium and business conference settings, proved to be a deciding factor in Goodrich's choice of QSC as technology provider.

In addition to its program of mainstream movies, the Kendall site also plays host to business meetings and presentations, a strategic initiative which allows Goodrich to develop and expand its client base. QSC ably satisfied this requirement with a design that was flexible enough to accommodate all these applications and more with one networked multi-room audio system.

The staff at Goodrich were highly appreciative of QSC's unparalleled level of customer service, both during the installation phase and post-commissioning. "QSC is phenomenal to work with," recalled Martin Betz, Goodrich's Chief Operating Officer, "and any technical questions were answered quickly and thoroughly."

The fact that the Kendall 11 complex is an all-QSC site guaranteed equipment compatibility, robust connectivity, and QSC's legendary ease of set up and use. In addition, acoustical tuning of the systems in all 11 theaters was accomplished very quickly – taking only two hours per room – which allowed plenty of time to move the measurement rig from room to room.

Achieving consistently high sound quality at Kendall 11 was directly attributable to the application of Cinema Intrinsic Correction – a QSC methodology developed specially for the cinema environment that combines tight manufacturing tolerances, rigorous quality control, individual characterization of loudspeaker models, and the delivery of reliable set-up tools for predictable results using the easy-to-use Q-SYS network platform.

A fundamental element of this methodology is Directivity Matched Transition (DMT), which played a key role in ensuring consistent audio quality for all listeners in every seat in every theatre. By matching the coverage angle of the woofers and high frequency components at the crossover frequency in the loudspeaker models used in the cineplex, all the critical midrange vocal detail is retained and therefore everyone experiences the same superior intelligibility.

The Kendall site boasts a brand-new premium 400-seat GDX theatre equipped with luxury rocking seats and flagship Dolby Atmos immersive audio, as well as ten additional screens. All theatres are equipped with SC Series three-way and four-way screen channel loudspeaker systems with asymmetrical vertical dispersion to optimize room coverage, SR Series surround loudspeakers, and SB Series dual-driver subwoofers for the lowest octave and low frequency effects.

Centralized processing played a key role in ensuring that the entire complex is served by just three Cores – a Q-SYS Cinema Core 110c is located the Atmos room, and two Core 500i Integrated Cores running five rooms each from House 1 and House 6 – resulting in the most cost-effective deployment of hardware. QSC's powerful, IT-friendly and ultra-stable Q-SYS platform provides the backbone of the Atmos system and enables superior performance across the whole site, also taking care of the automation and content playback to all theatres from TSC Series touch-screen controllers in booths throughout the complex. The Q-SYS interface is so intuitive that it allows theatre staff to routinely change and monitor sound levels without the need for specialist training.





# EQUIPMENT LIST

## House 1, 4, 5, 6, 11

Model	Pcs Used	Description	Image
<a href="#">DPA4.3Q</a>	<b>2</b>	4 x 1400 watt Class D amplifier	
<a href="#">DPA4.2Q</a>	<b>2</b>	4 x 700 watt Class D amplifier	
<a href="#">SR-1020</a>	<b>12</b>	10" two-way surround loudspeaker	
<a href="#">SC-423C</a>	<b>3</b>	Three-way screen channel loudspeaker system	
<a href="#">SB-5218</a>	<b>2</b>	Dual 18" cinema subwoofer	
<a href="#">I/O Frame</a>	<b>1</b>		
<a href="#">Core 500i</a>	<b>1</b>		

## House 2, 3, 7, 8, 10

<a href="#">DPA4.3Q</a>	<b>2</b>	4 x 1400 watt Class D amplifier	
<a href="#">DPA4.2Q</a>	<b>1</b>	4 x 700 watt Class D amplifier	
<a href="#">SR-8200</a>	<b>12</b>	8" two-way surround loudspeaker	
<a href="#">SC-2150</a>	<b>1</b>	Three-way screen channel loudspeaker system	
<a href="#">SB-2180</a>	<b>1</b>	Dual 18" cinema subwoofer	
<a href="#">I/O Frame</a>	<b>1</b>		
<a href="#">Core 500i</a>	<b>1</b>		



# EQUIPMENT LIST

## House 9

Model	Pcs Used	Description	Image
<a href="#">DPA8.4Qn</a>	<b>3</b>	8-channel network amplifier	
<a href="#">DPA8.8Qn</a>	<b>7</b>	8-channel network amplifier	
<a href="#">SC-444</a>	<b>5</b>	Four-way screen channel loudspeaker system	
<a href="#">SB-7218</a>	<b>4</b>	Dual 18" cinema subwoofer	
<a href="#">GP-218sw</a>	<b>4</b>	Dual 18" cinema subwoofer	
<a href="#">SR-5152</a>	<b>6</b>	15" two-way surround loudspeaker	
<a href="#">SR-1290</a>	<b>38</b>	12" two-way surround loudspeaker	
<a href="#">TSC-3</a>	<b>1</b>	Touch screen controller	
<a href="#">TSC-8</a>	<b>1</b>	Touch screen controller	
<a href="#">I/O frame</a>	<b>1</b>		
<a href="#">Cinema Core 110c</a>	<b>1</b>		





## RESULTS

### Powerful, clear, intelligible sound

Not only have the staff and management been impressed with the audio quality delivered by the QSC systems in every theatre, but the public have also noted and commented in a positive way on their clarity and power. **“Most of the time when customers talk about sound, it’s generally a complaint,”** explained Betz, **“but here at Kendall we’re in uncharted territory hearing all the positive comments from customers about the QSC sound systems!”**

### Cost effective solution

QSC’s unique software-based DSP platform allows the Q-SYS Cores to control the audio signal processing for all loudspeakers, with monitoring and control of all amplifiers across the entire 11-theater complex. It also enables a cinema auditorium to be used for alternate purposes such as business meetings and conferencing applications. **“From our perspective the powerful sound quality of QSC paired with a one-of-a-kind networking and monitoring solution throughout the whole complex at Kendall 11 GDx is simply amazing,”** confirmed Betz.



## ABOUT QSC

Founded over five decades ago, QSC is a globally-recognized leader in the design, engineering and manufacture of award-winning high-performance loudspeakers, digital mixers, power amplifiers, audio processors, digital cinema solutions, and the Q-SYS™ software-based audio, video and control platform. Offering reliable, scalable and flexible solutions for professional installed, portable, production, corporate and cinema applications, QSC puts customers first with its highly-acclaimed sales, service, and support networks worldwide.



+1.800.854.4079 or +1.714.957.7100  
Outside the U.S. +1.714.754.6175  
Fax: +1.714.754.6174

QSC, LLC  
1675 MacArthur Boulevard  
Costa Mesa, CA 92626 USA