

PROFILE

NAME: Livonia Public Schools

LOCATION: Livonia, Michigan

NUMBER OF SCHOOLS: 26

NUMBER OF STUDENTS: 13,400

WEBSITE: www.livoniapublicschools.org/

CHALLENGE

The performing arts program at Livonia Public Schools was looking to add innovative approaches to set design using the technology found in professional theatre productions.

SOLUTION

Livonia Public Schools utilized Epson PowerLite displays to enhance the set design for its high school performing arts productions of *Shrek* and *She Kills Monsters*.



Innovating Theater Sets with Projection Technology

Performing arts programs are an excellent way for students to grow as individuals, collaborate with their peers, and gain access to opportunities in the arts. Churchill High School, located in Livonia, Michigan, has a robust visual performing and applied arts program to inspire students and introduce them to various career opportunities in the industry. Classes include art fundamentals, photography, and technical theater courses.

The school's program was looking for more innovative approaches to set design, so they turned to projection technology. "Projectors are becoming more and more common to augment scenic design," said Jared Cole, performing arts center manager for Livonia Public Schools. "It's a great answer to a design challenge, as it expands what you can do."

Choosing Projection Technology to Enhance Set Design

The district installed two Epson [PowerLite® 800F](#) displays for its virtual set design initiative at the high school. "Epson's quality and reliability makes it a clear choice over any competitors," said Tim Klan, administrator of information and instructional technology for Livonia Public Schools. "The PowerLite displays were a great fit because of the high lumens and the ability to place them close to the projection screen."

"The traditional approach would be having a dozen painted backdrops...[but we are] blending the two realms of physical designs with the projected images to augment each other."

— JARED COLE, PERFORMING ARTS CENTER MANAGER, LIVONIA PUBLIC SCHOOLS



The PowerLite 800F is a budget-friendly projector for high-quality, ultra bright displays. A durable and flexible solution, the PowerLite 800F provides ultra short-throw technology for convenient projection and includes a virtually maintenance free 20,000-hour optical laser light source¹ engine with no lamps to replace for lasting reliability. "Going back to the quality and reliability factor, we had very little if any need to contact support," said Klan. "The few times we have had to speak to support or customer service they were very helpful."

With ultra-short throw projectors, shadowing is avoided and bright images are brought to life. "Projection technology is a nice tool to have when you need it for shows," said Cole. "It's blending the two realms of physical designs with the projected images to augment each other. This was something I taught myself and now I'm excited to teach students how to utilize the technology too."

During the 2023-24 school year, the high school put together two productions, *Shrek the Musical* and *She Kills Monsters*. Technology was utilized for both shows and students had the opportunity to learn more about virtual set design outside of class hours.

Shrek the Musical

For *Shrek the Musical*, the projectors were set up on the fly rail about eight feet away from the projection surface and were incorporated in the three-dimensional set. With the ultra-short throw projectors, images were coming down from a nice, high angle and they were able to avoid shadowing. Cole used the software Q Lab and a Mac® laptop for edge-blending, and was able to share with students how he was using the technology.

"Students were amazed by it," said Cole. "They were very excited to learn how to use the technology and how it would be incorporated into the set design."

Projectors displayed about a dozen different scenic backdrops throughout the show, including a swamp and a dungeon. "The traditional approach would be having a dozen painted backdrops which would be a lot on the line sets and take a lot more time to prepare," said Cole. "With projectors, not only does it save time and effort creating the set, the stage crew is able to change scenes quicker during the show."

She Kills Monsters

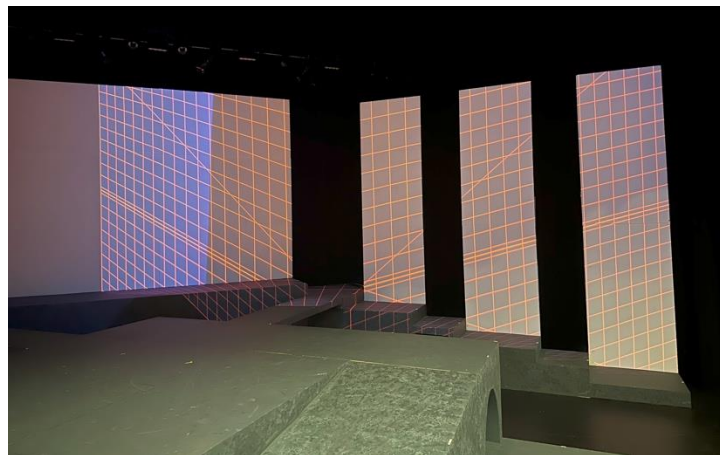
In the spring, the program was looking to do something different and more creative beyond utilizing the projectors for their convenience benefits. Ultimately, the team decided to





break the stage up and have different panels spaced apart on the stage. With the panels, there was a lot of negative space which created a lot of opportunities for different things to project.

Scenes either had seven different images throughout the stage or one big image projected. This brought hundreds of scenes to life, as well as helped the director utilize the set design for staging. “We had some more time for this production to really develop and build out the plan,” said Cole. “Our design with the panels and using the projectors opened up the opportunities to elevate the scenic style of the show.”



Future Productions and Bringing Opportunities for Students

Looking ahead, Cole is eager to find more ways to incorporate projection technology for the program’s set design, as well as more opportunities for students to learn about virtual set design. This includes working it into the program’s curriculum for future years and offering students more hands-on experiences.

“The theater world is evolving and virtual set design is becoming more and more popular,” said Cole. “There are so many things you can do with projection. Whether it’s projection mapping or using a different lens, the opportunities are endless.”

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¹No required maintenance for the light source for up to 20,000 hours. Approximate time until brightness decreases 50% from first usage. Measured by acceleration test assuming use of 0.04 - 0.20 mg/m³ of particulate matter. Time varies depending on usage conditions and environment. Replacement of parts other than the light source may be required in a shorter period.

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