

Projection Mapping St. Louis Union Station



▲ The intricate details of St. Louis Union Station's historical architecture brought to life

'The Grand Hall Experience' delights visitors

St. Louis Union Station originally opened its doors in 1894. At its peak, the station offered services to 100,000 passengers a day via 22 railroads – the most of any single terminal worldwide at that time. Today, Union Station serves its patrons in a different way: as an opportunity to experience its iconic, magnificent and historical architecture through its hotel, shopping mall, restaurants and food court.

In May 2014, Union Station premiered a new attraction designed to accentuate the intricate architecture of the venue's Grand Hall while putting on a show for guests that both wowed them and told them a story through cinematically and dimensionally created art.

The result is 'The Grand Hall Experience' at Union Station, the largest permanently-installed, indoor, immersive projection mapping show in the United States. Created by Technomedia Solutions in partnership with Jack Rouse Associates,

the vibrant light show spans the Hall's 65-foot vaulted, barrel ceiling and two curved walls using a 10.1 surround sound system, LED accent lighting, an automated control system, and innovative multi-media content.

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John Miceli,
President and Chief Creative Officer,
Technomedia Solutions

"Our goal was to create an attraction that didn't disturb or compete with this amazing architecture, but brought the space to life in an engaging manner," said Shawn McCoy, Vice President of Marketing and Business Development, Jack Rouse Associates.

Customer:
St. Louis Union Station

End User:
Lodging Hospitality Management

Location:
St. Louis, Missouri

Industry/Market:

- Entertainment and leisure
- Hospitality
- Tourism

Partners:

- Technomedia Solutions
- Jack Rouse Associates

Requirements:

- High brightness
- High resolution
- 3D capabilities
- Flexible and discreet installation capabilities
- Reliable performance

Summary:
St. Louis Union Station implements a one-of-a-kind projection mapping attraction to its Grand Hall that complements the historical architecture of the venue, while drawing visitors to the space.

Products:
Christie D4K2560 high frame rate 3DLP 4K projector (2)

Results:
Overcoming several hurdles, including the limitations of installing technology in a historically preserved facility and the ambient light that floods the building, Technomedia Solutions uses Christie technology to help create the largest permanently installed indoor immersive projection mapping show in the United States.

While the intricate architecture of the building made it an appealing project for projection mapping, it also made it a challenging one.

The first step was to bring in a laser scanning team to take a virtual survey of the space that would allow the design team to build accurate content for the projection mapping show. The resulting 3D point cloud of the system included over 6 million points. With the point cloud simplified and refined, the team at Technomedia then mapped photographs to the geometry of the scan to create a working model that included the geometry, color and detail of the actual space.

With the model in place, Technomedia turned to the next challenge: implementing and installing the new technology into the historically preserved Grand Hall in such a way that the technology is hidden. Since screwing into the brick and having wires running the length of the space wasn't an option, the team had to find clever ways to camouflage the technology, including the installation of custom platforms, so that visitors would be left to wonder where the magic was coming from.

To meet this requirement at the two ends of the Grand Hall, the team needed discreetly, required very little maintenance, provided very high brightness levels to overcome the ambient lighting of the space, and high resolution to display the detailed filigree content onto the Grand Hall's ornate end walls. The Christie D4K2560 3DLP® projectors met all these prerequisites, offering 4K resolution and high frame rates.

"The biggest appeal of the venue is that people come and see something they cannot see anywhere else in St. Louis, or even the country," said John Miceli, President and Chief Creative Officer, Technomedia Solutions. "We had many hurdles to overcome to achieve this level of seamless experience and an immersive environment, but our biggest challenge by far was light, which practically floods the entire space all day and tends to bleed its way into the space in so many ways at night. In addition to a varied combination of AV technology, we knew the Christie 4K projectors were the right choice from the start to light up the two ends of the Grand Hall. They are the optimal size for the space, with powerful 4K resolution and, with 35,000 lumens, superior brightness levels to overcome the ambient light."

The result is an award winning and revenue-generating projection mapping display. In 2015, 'The Grand Hall Experience' at Union Station won the Themed Entertainment Association's Thea Award for 'Outstanding Achievement – Live Show, Limited Budget' and the IAAPA 'Brass Ring Award for Excellence'. As well, the Grand Hall's use as a convention and event center has become a thriving revenue source since the show's premiere, seeing weekly revenues increase by more than 500%.

Learn more about [projection mapping](#).

Contact Christie

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▲ The Grand Hall, as captured in the early 1900s



▲ Performing a laser scan of the end wall of the Grand Hall

Photo credits: Technomedia Solutions

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