



WW1 MUSEUM AND MEMORIAL CASE STUDY



PROJECT OVERVIEW



At the National WWI Museum and Memorial, history isn't just remembered—it's brought to life. The new Encounters exhibit, along with a technological transformation of the museum's galleries, demonstrates how immersive storytelling can deepen emotional connections to the past. The integration of LED video technology is central to transforming the narrative experience. More than just a visual element, it creates true immersion. Dynamic LED displays surround visitors, pulling them into the story and intensifying its emotional resonance. At the heart of Encounters is a Nanolumens 1.25mm LED display, presenting 16 authentic personal stories with stunning clarity. Paired with spatial audio and immersive media, the display creates an intimate, one-to-one connection that allows visitors to truly feel the experiences of those who lived through the Great War. Across the museum, advanced audiovisual systems further enhance the impact. In Horizons Theater, a blend of projection, lighting, and scenic design recreates the harsh conditions of trench warfare. In Battlescapes, guests step into a crater and experience the intensity of artillery fire all around them. Together, these spaces transform history into a visceral, lived experience. By combining our display technology with powerful media servers, workflow platforms, and a talented team of integrators and designers, Nanolumens helps the Museum and Memorial deliver a journey that honors the struggles, resilience, and human stories of WWI in unforgettable ways.

BACKGROUND



BACKGROUND Since 1926, the National WWI Museum and Memorial has stood in the heart of Kansas City as a symbol of remembrance, education, and democracy. Dedicated to interpreting and understanding the Great War and its lasting impact on the global community, the Museum expanded in 2006 with the opening of its award-winning underground facility. Nearly two decades later, even as one of the world's leading institutions on World War I, the Museum and Memorial recognized the need to evolve. Guided by a strategic plan, leaders prioritized refreshing and expanding the galleries to create richer, more immersive experiences and broaden access to the collection. This latest transformation uses technology to enhance the way visitors engage with history—supporting multiple learning styles and deepening personal connections to the past. By seamlessly updating the Main Gallery and integrating interactive, immersive media throughout, the Museum and Memorial continues its legacy of offering world-class exhibitions and educational programs that resonate with diverse audiences.





PARTNERSHIP

This project required far more than a standard display provider—it called for a true creative partner. Nanolumens stepped into that role with unmatched expertise and a history of collaborative success. From the earliest design concepts through schematic development and final execution, they proved indispensable.

Their custom-engineered solutions—tailored screen dimensions, ultra-slim profiles, and elegantly integrated mounting systems—were not just technical achievements, but essential enablers of the project’s creative vision. Chris Wyche, the Museum’s Vice President of Technology, had already witnessed the impact of Nanolumens displays on a previous project. Confident in their performance and reliability, he personally championed their involvement in Encounters. His endorsement carried weight in the decision-making process—and the outcome has more than validated his trust.

ENCOUNTERS: WHERE TECHNOLOGY BECOMES A WINDOW TO HIS TORY

Encounters is an interactive exhibit that uses immersive technology to bring the Great War to life, sharing the compelling stories of 16 individuals drawn from their own historical accounts. Diaries, letters, and photographs inform the portrayals, ensuring that the actors seen on screen remain as authentic as possible. Spread across four alcoves, the exhibit presents diverse perspectives from all walks of life affected by the war—including combat soldiers, women munitions workers, colonial troops, children, dissenters, and more—allowing visitors to experience the personal realities of the conflict from multiple viewpoints.



Sensor technology activates an interactive experience, bringing visitors face-to-face with one of the 16 individuals. As the character approaches the screen, LED light strips along the side walls flash, casting realistic shadows and enhancing the sense of presence. Once the story begins, projection creates a forward shadow on the floor, extending the illusion and transforming the space into a dynamic, lifelike environment.⁷

The 2D NanoLumens LED display transforms into a 3D portal, giving visitors the sensation of looking through a window into history. Using a HOLOPLOT sound system, each alcove creates a personal sound bubble that surrounds guests, fully immersing them in the experience while allowing multiple stories to run simultaneously without interference. As one story concludes, the ISAAC platform and PIXERA media servers seamlessly transition to the next. Visitors witness one character exit the screen before the next begins their journey into the portal, offering perspectives rarely heard in traditional accounts of the war. By exploring these diverse stories, visitors gain a deeper understanding that the impact of conflict extends far beyond the front lines.



ABOUT NANOLUMENS



Nanolumens is a U.S.-based LED design and manufacturer headquartered in Atlanta, Georgia. Nanolumens offers world-class screens across multiple market segments, adding wonder to physical spaces. We're pioneers of the True Curve™ technology and are committed to being better. With a bold and visionary team of experts, we take your project, in all shapes and sizes, from concept to reality. We bring creative visions to life, leaving a first and lasting impression

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