

# Bush Library, Texas, USA

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David Niles, Media Artist,  
Niles Creative Group



## Barco solutions:

- 2,560 customized Barco LiveDots C5 LED tiles
- 8 Barco LiveDots DX-700 video processors
- Proprietary media and content delivery system (Niles Creative Group)

## Key benefits:

- Ultra-high contrast LED compensates for high ambient light
- Customized LED enables clear viewing at extreme angles
- Redundancy ensures continuous, fail-safe operation

Located on the edge of the Southern Methodist University campus in University Park in Dallas, Texas, the new 226,565-square-foot, \$250 million Bush Center is home to the nation's 13th Presidential Library and Museum. The institution commemorates the George W. Bush Administration, offering in-depth access to Presidential materials including thousands of artifacts and millions of electronic records.

Offering a grand entrance to the exhibits, Freedom Hall is home to a revolutionary new LED concept developed by Barco LiveDots and Niles Creative Group.

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The experience begins as visitors gather in Freedom Hall, surrounded by what appears to be a 360-degree, elevated mural depicting an epic tableau of American life. But wait – images suddenly come to life, animating the photo-realistic painting which morphs from vignettes of everyday people, to time-lapse views of Texas landscapes and ultimately to a surreal flyover over Washington DC. Thanks to the combination of a Barco LiveDots ultra-high resolution LED display and a proprietary media and content delivery system conceived by media artist David Niles of Niles Creative Group, art truly imitates life at the newest presidential library in America.

### **An inspiring introduction**

Conceived as a way to immediately engage visitors upon entering the venue, the seven-minute vignette, entitled “We the People,” sets a nostalgic, Americana tone for introducing the stories and artifacts showcased in the Bush library and museum. Running every 15 minutes as a prelude to the tours, the show conveys an emotionally uplifting American journey featuring a theatrical tribute to the nation’s people and hallowed institutions. The visually spectacular and inspiring experience is also interactive, with a surprise element that celebrates the concept of democracy.

### **Another pioneering achievement**

In 2008, David Niles virtually changed the digital signage movement with a project for the Comcast Center in Philadelphia, using dynamic projected elements as inherent components of a building. So, when the task arose to create an innovative video show presented on a 200’ x 21’ screen elevated 27’ in the air and wrapping all four walls of a 50’ x 50’ room, Niles seemed like the perfect choice and he was eager for the challenge.

“Everyone in this business said it couldn’t be done,” comments Niles. “So, I went to Barco LiveDots with my list of requirements: to create an LED product capable of presenting a photorealistic display of seamless imagery wrapping the interior of the room with viewers standing directly underneath, presented in broad daylight with no distortion. As usual, Barco LiveDots worked its quintessential magic, and the result speaks for itself!”

### **Conquering the challenges**

What ensued was the genesis of a specialized, high-performance version of Barco LiveDots C5 LED display tiles, comprising four individual surfaces, each 40 x 60 tiles in area, and mounted with 90-degree corner joints to form a giant, seamless video screen. The design had to be painstakingly finessed to prevent any visual distortion resulting from the steep angles and bright daylight – formidable challenges where LED technology is concerned.

“When viewed too much off-axis, you begin to see color shifts or diminishing brightness levels. Barco’s new LED tile concept eliminated these issues to create a very uniform, consistent representation of the imagery,” continues Niles. The contrast ratio in the 4000 to 1 range also renders images more rich, colorful and saturated.

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Carl Rijsbrack, VP Sales and Marketing for Barco LiveDots

Carl Rijsbrack, VP Sales and Marketing for Barco LiveDots adds: "We worked to maximize the viewing angles so you can walk pretty close underneath the screen and still be able to see the image. Before this project, the best displays of this kind in the world were +/- 60 degrees; now we are in the 70-75 degree range, which is significant."

Weight and heat also posed significant challenges with a display of this magnitude. Rijsbrack continues: "Each tile is just over 12 pounds, totaling 35,000 pounds across all four sections just for the tiles. Most of that load is carried from above the tiles, with special mechanics keeping everything flat and tying back to the wall behind it, with the weight bearing part supported by steel."

"Because heat rises, we had to create a way of modulating the temperature across the display to ensure uniform aging of the LEDs to maintain consistent image reproduction. We worked closely with the architect to design a method of air circulation behind the screen to achieve this, without affecting the climate of the entire room."

#### **Low maintenance, failure-free**

In addition to a uniform appearance, the Freedom Hall installation needed to be a virtually maintenance-free operation. "We designed and built a content delivery system that is totally redundant and cannot fail," comments Niles. "Over time things do fail, individual LEDs will fail, but it can never be apparent to the viewer – otherwise it ruins the illusion." The system monitors itself continuously using Niles' proprietary software, so that if a failure occurs, it is automatically masked from view. Three racks of servers supply the video content and an additional two racks include the Barco LiveDots DX-700 multi-window video processors and fiber transmitters that bring the information down to the wall itself.

#### **Harnessing a new medium**

Niles enjoyed the opportunity to explore the boundaries of kinetic architecture and create a kind of "living frieze" with the Bush Library project. "There are bricks, mortar, glass, wood...and, now this new element which enables us to make parts of buildings almost chameleon-like, without it looking like a screen or digital signage, while remaining aesthetically in keeping with the architecture. This intersection of entertainment and communication is happening everywhere now, on a large and a small scale," adds Niles.