Museums & Galleries

Audio-visual Installation in the Kitchens at Hampton Court Palace

> *Projection mapping, multi-channel sound installations, haptic feedback, and tactile interactives are utilised to recreate this world, where visitors are free to explore.*
> *Chomko & Rosier, Design & Production*

The Requirement

Creative consultancy Chomko & Rosier were commissioned to design and produce five new permanent audio-visual installations within Henry VIII's Kitchens at Hampton Court Palace.

Working directly for Historic Royal Palaces, Adlib was responsible for delivering the audio and video technology to execute the creative vision.

The Solution

The Master Carpenter's Court

Outside the building, in The Master's Carpenter's Court, Adlib installed five loudspeakers and playback equipment for an audio installation to take the audience back to life in the court of Henry VIII. Sounds of the time are mapped across the five loudspeakers to provide an immersive experience.

The Board of the Green Cloth

Within the first area of The Kitchens encountered by visitors, an early morning meeting of the Board of the Greencloth is brought to life through a projection-mapped window, table top and seat.

The visuals are supported by a soundscape which includes 7 loudspeakers, each with its own channel of carefully-mixed audio. The majority of off-the-shelf audio playback systems do not allow seamless looping so Adlib developed a custom playback solution for the audio recording that allows a sample-perfect loop to be played.

Adlib specified a Denon 8-channel installation amplifier to power the Soundtube loudspeakers and SolidDrive contact transducers specified by the designer. The audio levels were calibrated in the source files, but the volume controls for each channel allowed adjustments to be made by the team at the venue without incurring a technician call out charge.

The Boiling Pot

Inside The Kitchens, there is a giant boiling pot and the previous version of this installation had a fibre glass mould of the surface of a stew on top of the pot. As part of the exhibition refurbishment Adlib was tasked with creating a projection of a stew being stirred to replace the fibre glass mould.

This was achieved using an ultra-short throw projector underneath the pot (where the fire would have been) along with a specialist rigid projection surface from ProDisplay, fabricated into the pot.

Though some visitors to see this exhibit attempt to put their hand into the 'stew', they are invariably surprised when their hand neither goes through, nor casts a shadow and most

remain unsure as to how the illusion has been created.

A 5-channel audio installation, again using Soundtube loudspeakers and SolidDrive transducers driven by a Denon amplifier, completes this part of the exhibition.

Cooking the Meat

The audio design for the largest space within The Kitchens called for a total of 28 loudspeakers and 33 channels of audio to be installed. Each loudspeaker has its own unique mix of immersive, background elements while the additional channels handle interactive elements of the soundscape. These are triggered by the interactive solution provided by Artists + Engineers, which senses contact with the Kitchens' chopping boards and delivers extra sounds to contact transducers mounted beneath, providing a tactile experience for visitors.

The main challenge for the installation design team was achieving reliable transport of 33 channels of audio from the PC-based playback solution to the audio system's DSP. The choice of a Symmetrix Prism processor and use of Dante Virtual Soundcard became obvious and allowed all 33 channels of audio transmitted through a single cable.

Other Challenges

Being an unattended installation, without any on-site technical support, the system needed to be reliable and deal with events such as power failures gracefully. To further complicate matters, all power in visitor areas of Hampton Court Palace is turned off overnight, which ruled out the use of most conventional scheduling and automation systems.

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