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A Brave New World

Avolites delivers complex projection mapping for the pilot episode of NBCUniversal's Brave New World.

Currently airing on NBCUniversal's Peacock streaming service in America and Sky Atlantic in the UK, the latest adaptation of the Aldous Huxley novel Brave New World is one of the tentpole releases of the autumn TV season. Set in a future New London, and shot on location around the capital, the high budget series presented numerous production challenges throughout, not least of which was a pivotal scene in the first episode depicting an orgy shot with 200 extras in a futuristic nightclub. Described by Vanity Fair as 'the most immaculately art-directed orgy sequence on TV', the scene was shot over two nights inside a Saddlespan tent located in Battersea Park, using projection mapping technology coordinated by events and production specialist GaiaNova and powered by Avolites.

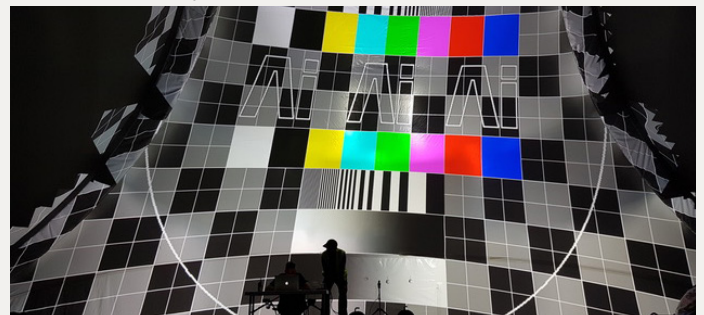
GaiaNova was tasked with the projection design, the media server and projector supply, video project management, show build, and operation during four very long days and nights. Brought into the project by the video content creators Marshmallow Laser Feast (MLF), both teams worked closely together from the pre-visualisation stage through the designing the model of the tent, to going live on set.

All of the surfaces of what was to become New London's Pleasure Garden were to be wrapped in moving images using projection mapping. The projection design called for the use of 26x 30k lumen laser projectors, which were supplied by QED, as was the fibre for the video. The sheer amount of equipment on set meant that it was essential to coordinate closely with the set designers and the director of photography to keep the vast array of projectors out of line of sight and completely hidden from view by the cameras.

To produce the display, GaiaNova turned to the Avolites R series of media servers. The installation necessitated four Avolites R6 servers driving five projectors each and two Avolites R4 servers driving three projectors each, with an additional two units running as backups. All these were run through a monstrous 64 x 64 DVI matrix switch and all 26 projectors were blended together using the Avolites Ai AutoBlend camera-based warping and blending software. The combined video content canvas size was way beyond even Ultra HD 8K specifications at 12k x 6k, or a mammoth 72 megapixels. Playback of all of the media servers was synchronised via a broadcast timecode signal.

The project was challenging in many ways, not least because the various teams only had one month to prepare the kit and a couple of days to deliver. As Philip Heard-Mayer, Technical Director at GaiaNova describes, the initial phase saw numerous technical challenges and he reveals fear of flickering to be one of his main concerns.

"Dealing with frame rates was one of the challenges," he says. "Everything was being recorded using the 'digital film' frame rate of 23.976fps, but the content had all been rendered at 25fps."



"Additionally, we needed to run the media servers at 25fps due to not having the ability to run at 23.976 through our entire signal chain. An obvious concern was that this mismatch in frame rates would cause visible flickering on the filmed content."

To overcome the challenge, the team went into camera supplier Panavision with the Avolites media server and the projector they were going to use on the job and spent a whole day adjusting frame rates, shutter speed, and every combination that could be altered to make sure the projectors were going to work without flicker. The other two greatest challenges, however, were reserved for when the cameras started rolling.

“Projection mapping inside a translucent white tent in the middle of summer meant that we were up against that most inflexible of deadlines – sunrise the following morning,” says Heard-Mayer. “On the first day we had to load in and run power and signal to all eight servers and all 26 projectors in one afternoon, as the stage set was still being built around us. We then had a mammoth overnight mapping job. Adding to our rush against the clock comes the quality. Working in projection mapping, you are used to very high-resolution images. Downloading and copying files from one place to another can already mean hours of work if you don’t have the right equipment.”



AVOLITES AI RACKS, ON SET AT BATTERSEA PARK, LONDON.

The dimensions and unusual shape of the tent for the projection combine into becoming a second issue. “Mapping the complex curved surfaces of a Saddlespan tent, with so many projectors, and such little time, would not have been possible without Ai and the AutoBlend mapping functionality,” he continues. “Media Playback from the director’s cues over the following two nights of filming all went seamlessly - even though we were obliged to avert our eyes during some of the shots!. Filming was handled very sensitively by all of the cast and crew and was supervised by a dedicated intimacy coordinator.”

GaiaNova is full of praise for the performance of the media servers and the crucial ‘Auto blend’ feature. While any number of projectors can be used together so that the image will overlap exactly over a straight surface, projecting onto a curved surface requires a few more steps and the generation of precise warp and blend files.

For GaiaNova the line of communication they have with the support and development team at Avolites along with their other go-to providers is a big influencer on the tools they choose to use.

“The support we receive from Avolites is always unwaveringly excellent,” says Heard-Mayer. “If we run into problems which, when you are pushing the technical or creative boundaries as we do, is inevitable, it’s good to know that someone has your back. The Avolites team are genuinely interested in developing the performance of their Ai (media software platform) and that’s reassuring for us.

“We would have struggled to progress through the content as fast as we did without the (Avolites) Ai media servers. It made our ideas more tangible and easier to visualise for the whole team, plus it reassured us that we were on the right aesthetic track,” he concludes.