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IMMERSED IN ART

The first digital art centre in Paris aims to completely immerse its visitors in sound and light, using projection mapping and the work of the world's most famous painters. **Paul Milligan** explores L'Atelier des Lumieres.

The world of art is often seen as stuffy, old fashioned and only for the rich. A new digital concept by Culturespaces is trying to change all that. Culturespaces specialises in delivering engaging experiences and management for museums, exhibitions and art centres. These experiences lead it to wonder if the appreciation of art could be digitised and therefore available to a wider audience. Augustin De Cointet, who is the multimedia project director at Culturespaces, explains: "Approximately six years ago, we started to develop a digital exhibition in order to increase the number of visitors to museums we managed and to promote the mass appreciation of art. We wanted to make the art more accessible and available to people who wanted to experience it."

De Cointet was responsible for the creation of the very first site to attempt this, the Carrieres de Lumieres in Provence. He was there for five years before taking charge of this project in Paris, and will oversee a new project in Bordeaux (opening 2020). Another site has just opened in Jeju, South Korea, and others are planned in the US and Mexico. De Cointet describes his role as thus; "I'm responsible for technical issues, I'm not an engineer, but in charge of the coordination of the control rooms and the choice of products. I'm also responsible for the production of exhibitions so I work with the artistic director and advise on the content."

The success of the Provence site drove De Cointet and Culturespaces to expand its AMIEX (Art and Music Immersive Experience) concept, which it developed for the opening of Provence in 2012. AMIEX is for the virtualisation and high-resolution projection of works of art on large surfaces, to deliver projection-mapping at its artistic best.

The latest site to benefit from the AMIEX concept is a former ironworks foundry in the 11th arrondissement of Paris. Inside this huge 19th century space, visitors have been able to experience the digitisation of great works of art by Gustav Klimt and more recently Vincent Van Gogh.

'Van Gogh - the Starry Night' is a visual and musical creation realised by Gianfranco Iannuzzi, Renato Gatto and Massimiliano Siccardi. In the same presentation is a short programme by Danny Rose dedicated to the imagery of Japan. Animated images of Van Gogh's work are projected on the floor, on the walls (who can reach up to 12-metres) as well as on the ceiling. Images flow in rhythm to the music and are moulded precisely to the Atelier's architecture.

French AV specialist Cadmos was chosen as the integrator for the project, designing and installing AV technology to show

the portraits and landscapes of Van Gogh on 35,000 sq ft of projection surface. The Halle de l'Atelier is an already complex space of angles and divisions, the designers have expanded it to 360 degrees across all four walls, and extra surfaces like a floor-to-ceiling cylinder (the foundry's former chimney) which houses a circular display area.

What were the biggest challenges on this project for De Cointet and Culturespaces? "It's time, it's always urgent. The techniques we use are complicated, and the artwork can be a complicated subject, so it's a pragmatic challenge for us. The first challenge is an artistic one, it is to preserve the identity of the place. Because our exhibition is a mix of the artist, Klimt for example, and the subjective feeling we want to share about this artist in this place, so if we don't respect the particular place, it won't work. It's very important to manage the technical issues you will have, the audio, where to hang the projectors etc. Sometimes the technical solution could break the identity of the place, so you must be very careful."

Faced with the technical challenge of equipping such a venue to achieve 300 million pixels of projection, Culturespaces and Cadmos opted for Modulo Pi's systems from the project study phase. Relying on his experience in Provence, De Cointet explains: "The site in Provence was achieved (in 2012) with a lighter AV system since the remarkable venue was already doing the show. With the media system we used before, there was a real lack of stability. One show uses 8TB of data, so it's very, very heavy. We had to find a good media server which is able to run the show without any problems, and there weren't a lot of products that could do that." The media server also offered the time-saving ability of allowing multiple access, as Roman Hatala from Cadmos explains; "Modulo Kinetic allows shared and mutualised work on geometry. It helped us save a great deal of time by having someone working on a wall on one side, a second person on another side, and a third person working on the floor. To achieve all the fine-tuning in a shortened time was a real advantage."

De Cointet adds that the Modulo Pi's media servers were key to the initial set up; "We load a 3D plan of the venue, fill in the type of projector we'll be using and what we want for each wall in terms of image pixel size and luminosity. Then, the Modulo Kinetic tells us where the projectors should be positioned, what the image distortion will be, the luminosity rendering on each area. Once this simulation phase is done, we move on to the venue."

When at the venue, the installation and fine-tuning stages are done to complete the impression of one single image over the whole surface. Modulo Kinetic helped handle the overlaps and soft edges, and warping.

Installation and fine-tuning had to be done within a limited time frame as Roman Hatala explains: "The AV work comes at the very end. That was a real challenge to have everything set up and adjusted while the renovation work of the venue was still going on."

The images are moving around the walls and the sound must move in the same rhythm. Image serves sound and sound serves the image.

Augustin De Cointet, Culturespaces

All images: © Culturespaces / E.Spiller

Above: artist's impression of the Bordeaux Lumieres site, opening in 2020

Once the set-up was over, Modulo Kinetic was then used as a show controller to handle and sequence all the media in the show: videos, music, images etc. The show control and remote maintenance system was programmed by Cadmos' teams.

The projection at l'Atelier des Lumières is handled by 135 Barco PGWU-62L laser projectors, plus 12 F50 panoramic WUXGA projectors with short-throw lenses across 3,300sq m of walls, floor and ceiling. "Using the same technology the venue can effectively reinvent the space every six months," says Leander Werbrouck, segment lead for ProAV at Barco. "L'Atelier des Lumières is a great example of the way the entertainment industry now regards technology as fundamental to creating a true 'wow experience' and telling a story that every audience member can engage with and feel part of."

While it is easy to look at the images and be wow'ed by the visuals, the audio plays a vital part in making the experience truly immersive. Audio is supplied by the Nexo ID Series of loudspeakers, and audio is a key element here, as De Cointet is keen to point out; "It's not just a visual experience, it's video and sound. The images are moving around the walls and the sound must move in the same rhythm. Image serves sound and sound serves the image. In Provence the audio was not great, there was a lot of reverberation, so we had to change it. When the Paris project came up we decided we needed to have the best audio we could have, and Nexo was a good solution for us."

Nexo engineer Carole Marsaud worked with Cadmos to perfect the immersive audio design delivered by Nexo loudspeakers hidden in the metal truss work overhead. The audio system offers 120- x 60-degree HF coverage, and the loudspeakers are mounted both horizontally and vertically. Twenty-nine ID24s are used in the main room, supplemented by 11x ID S110 10-in subwoofer units. In total, 11 Nexo NXAMP4x1 amps are used to power the systems. Speaker locations are evenly spaced throughout the warehouse venue in order to get homogenous and consistent SPL coverage. "The ID24s are ideal for this environment because they can be precisely positioned to eliminate reflections, and produce ample coverage without having to be driven hard. The objective here was to provide immersive audio with a high degree of clarity, detail and balance. The most impressive aspect of this installation is that, as one walks around the large space, one doesn't have the experience of walking in and out of sound zones," adds Marsaud.

The content involves a year-long process to pull together as De Cointet explains. "It's quite long because it's not just a catalogue you project onto the walls. For the first months you must think about the picture you're working with and to ensure the artist's life, and their life's work are represented. The second part is to make sure you have covered all the major artworks, we need about 500 images for each show. You will find the painting, then you must ask for the rights to use those images. And after that you must find the music, you must mix it to the images, then you need six months of realisation."

The shows are open 10 months a year, seven days a week, with a two-month closure for maintenance and upkeep of each site. The AV on each site is handled by a two or three-man team, with a central AV command centre based in Paris.

The final word goes to Barco's Werbrouck, who sums up what this type of installation has come to represent; "Technology isn't an afterthought any more. In the last couple of years, it's become part of the blueprint. And as technology becomes ever more flexible and accessible and reliable, venues and their designers can really focus on creativity so that the experience takes centre stage."

L'Atelier des Lumières is a great example of the way the entertainment industry now regards technology as fundamental to creating a true 'wow experience'.

Leander Werbrouck, Barco

Kit List

- Barco PGWU62L, F50 projectors
- ModuloPi Kinetik VNode, Kinetik designer
- Nexo ID124T speakers, UD8
- 110E subwoofer, DTDIN processor, DTDAMP amplifier
- Yamaha MRX7D processor

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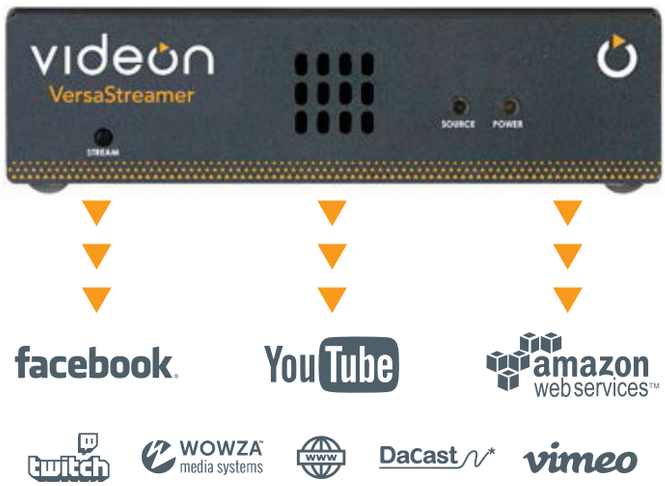

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