SAMUEL RUBIO

Once-in-a-generation Swiss spectacular

An event, held once in a generation, every day for almost a month in a temporary stadium at the edge of Lake Geneva demanded standout technology to help mark the celebratory occasion. *Zoe Mutter* reports from the landmark event, the Fête des Vignerons.

The Fête des Vignerons is a production with a difference. As well as entertaining a vast arena audience with a captivating show, the event is a treasured tradition that has been passed down from generation to generation since the 18th century, celebrating the winegrowers in a region stretching from Lavaux to Chablais in Switzerland.

Organised by and paying homage to the traditions of the official Brotherhood of Winegrowers – la Confrérie des Vignerons - the show featured a vast troupe of performers donning elaborate costumes, animals and vehicles to represent a year in the life of the vineyard through 21 action-packed scenes. This year's event also received a technological boost in the form of a gargantuan LED floor and complex sound system.

As two decades have passed since the last event took place the pressure was on to create an impression with a production that would stay with the audience for the next 20 years. To mark the momentous occasion a temporary 20,000-person arena was constructed in a space normally occupied by an open-air car park in the Swiss town of Vevey at the edge of Lake Geneva.

More than 5,500 volunteer performers and 900 singers and musicians from the area rehearsed for months to prepare for the 23 shows taking place between mid-July and mid-August. "About a third of the city gets involved and every 20 years we get a chance to be an actor for a month," Reini Bachmann, one of the volunteer performers, tells us before we enter the arena to witness the results of the extensive preparation. "It's a family affair. I know people who have appeared in three generations of the show."

A unique celebration

In the production office technical director, Francois Mottier gives us an insight into the story behind the record-breaking, once in a generation event he has been developing since 2016 alongside his 200-strong technical team: "I grew up in the area and everybody around this region knows about the Fête des Vignerons because it is so unique. Before selecting which audio and visual solutions to rely on, the first task was planning where tents and infrastructure could be set up around the site."

The beginning of Mottier's three-year journey-producing CHF 100 million event also saw him work with a specialist mast company to ensure the most suitable structures were chosen to support eight tonnes of audio equipment per mast.

"When construction of the arena started at the end of 2018, we used the whole available area for the production, but as there were no rooms at the side of the stadium structure, we built the arena on beams five metres above the ground to create space underneath," he says. "Environmental considerations were also vital. We didn't want to use any diesel machines so the show is powered by three city power transformers of 1,000kVA each and connected to each other for backup."

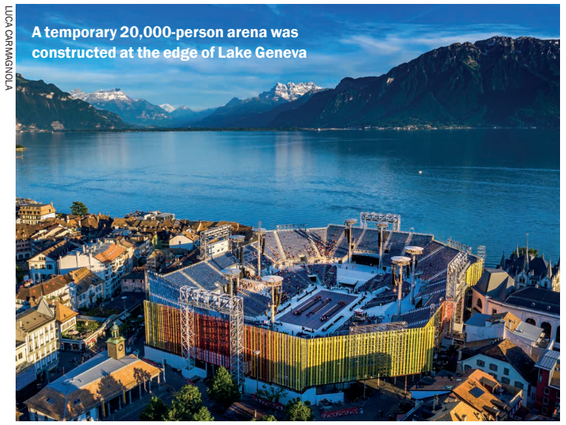
After the installation of the first technical elements in May 2019, the project evolved for budgetary reasons as well as from a creative perspective to guarantee it was in line with the vision of artistic director, Daniele Finzi Pasca - the designer behind the Olympic Games opening and closing ceremonies in Turin and Sochi as well as some Cirque du Soleil productions. To allow the technical team to understand the key themes and narrative, workshops were carried out alongside event organiser, Confrérie des Vignerons.

During this early stage ideas of flying large balloons across the arena were quashed due to a lack of room backstage and the possibility of high winds and replaced with the concept of a 2D flight system between the towers, allowing performers to soar »

JULIE MASSON

The show featured a vast troupe of performers donning elaborate costumes

LUCA CARMAGNOLA

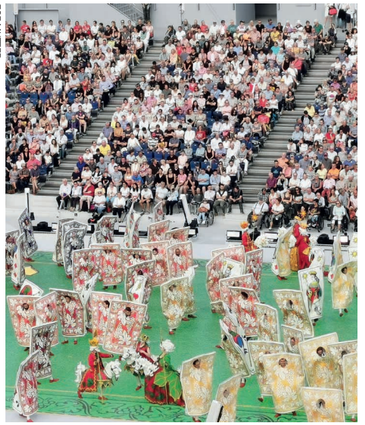


A temporary 20,000-person arena was constructed at the edge of Lake Geneva

JEAN-CALUDE DURGNAT

A 2D flight system between the towers allowed performers to soar above the LED floor

ZOE MUTTER



above the LED floor.

As the Confrérie des Vignerons requested daytime shows as well as evening productions, a more powerful visual solution than high-end video projectors was required which sparked Mottier's suggestion to incorporate an LED floor.

"I was already in contact with French event specialist Alabama so I asked for its product recommendations," he says. "We pushed to move in the direction of LED because we wanted to use something different and believed it was capable of adding plenty of visual power to the show. Plus, at 800 square metres, it would become the biggest LED floor ever deployed for an event."

Projection was ruled out as an option as the team felt LED would be more cost effective for the task at hand, easier to replace and brighter. Bashiba's Roberto Vitalini, the content creator responsible for the stunning visuals displayed on the LED floor and LED screens around the arena perimeter, has designed the videos for the productions directed by Finzi Pasca since 2009. A decade later, the Fête des Vignerons saw them collaborate creatively once again; this time around Vitalini began by presenting Finzi Pasca with a 3D simulation of the arena and a view from the top featuring LED floor and led stairs.

"I favoured the LED floor solution to avoid contaminating the superb costumes of Giovanna Buzzi with colours created by the video projectors," says Vitalini. "Another advantage of having an LED floor was creating dynamic overlays that were only visible to the performers and would help them in finding the rights spots when acting out complex mass choreographies. We suddenly had a surface of light that would illuminate, entertain and inform at the same time."

Landmark LED

With heavy vehicles such as tractors being driven on the surface while cows, horses and carts and goats were led around the arena, it was essential the 3,132-panel LED floor was robust. Extensive tests were carried out in extreme conditions such as high temperatures to ensure the floor would be hardwearing and perform well in the sun before the team opted for 66 tonnes of LF7 Pro 5,000 nits LED floor panels from VISS Display, a subsidiary of Absen.

The product was co-developed with Alabama, which supplied all video equipment for the arena. As well as covering almost the entire floor area with outdoor LED the company supplied 150 sq metres of Absen AT5 Pro outdoor LED screens in the form of columns at the top of four stages; provided a visual technical control system based around Barco's E2 system and several Smode media servers; and installed a camera system and return monitoring to ensure a smooth running show was delivered to all screens.

Headed up by Alabama's CEO and project manager for the Fête des Vignerons, Dominique Lassarat, the process of developing the product involved creating LED technology that would guarantee images could be clearly seen even during performances taking place in daylight as well as offer controlled electricity consumption. Working closely with VISS Display engineers, Alabama followed the manufacturing stages in China.

"The stage is effectively a screen and is completely integrated into the show," says Lassarat. "When we started work on the first concepts in October 2017 the main challenge was to study and master the expansion of materials under the effect of heat, not only the LED floor, but also the structure that supports it. It was also essential to develop a resistant product capable of accepting all the loads that were going to be used on the LED floor during the show."

An exciting new era

A large fan pushing cold wind from the lake underneath the floor helped cool the surface by using small micro particles of water that evaporate to reduce the heat. Additional fans were positioned above ground around the edge of the floor to control fog used in the production.

"The system was efficient and even on the hottest day which brought the LED floor temperature to around 75-degrees we had no problems," says Mottier. "I've only worked with LED floors on a smaller scale so this was something really special. We built a slope at the edge to drain the water and constructed a 20-metre long LED platform which could be raised and lowered using a hydraulic system, allowing performers and elements featuring in the show to enter and exit the arena."

Using LED also allowed the production team to display markers for Finzi Pasca and the choreographers, indicating where performers should stand and objects such as trampoline mats should be placed. "If we marked the positions using paint, we could see the marks in the daytime but not at night," explains Mottier. "This was a big problem so we opted for digital marking on the LED which produces a cleaner image."

To guarantee the floor would perform in the most demanding condition, direct sunlight, tests were carried out in an outdoor theatre using a 3,000 nits version of the VISS product. "I was concerned it »

JULIE MASSON

More than 5,500 volunteers performed in the event

JEAN-CLAUDE DURGNAT

As well as covering the floor with VISS Display LED, Alabama supplied Absen AT5 Pro LED at the top of the stages

JULIE MASSON

ZOE MUTTER

Organised by the Confrérie des Vignerons, the show celebrates winegrowers in the region; during the evening productions the LED is run at 40 per cent power

wouldn't be bright enough so a 5,000 nits version was developed which is waterproof and can hold five tonnes per square metre," says Vitalini. "A horse managed to crack the concrete floor around the edge of the LED floor which stayed intact. This really shows how durable the product is."

Due to the distance the audience would view the floor from a pixel pitch of 7.8mm was decided upon. "The smaller you go, the more fragile it becomes and the bigger you go, the less brightness and power you get, so we needed to balance that," adds Lassarat.

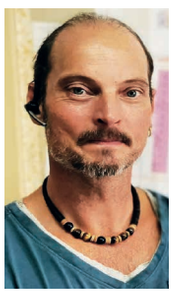
Using a floor made up of 13 million LEDs – supported by another five million LEDs around the edge - the team could guarantee an impressive show, even during the day. When used as an effect in combination with lighting the floor could also backlight the performers. "During our evening productions the LED is at 40 per cent power whereas in the day it is operating at 100 per cent. It's the beginning of an exciting new era where screens are visible during bright daylight," says Vitalini.

A visual perimeter

Around the edge of the stadium, 200 panels of the Altaire AT5 Series - Absen's 5.5mm, 4,500 nits ultra-lightweight touring LED - displayed content which complemented or mirrored the visuals on the floor or close-ups of performers. The product was selected in part due to its Common Cathode Technology which requires low power, offers low heat dissipation, high refresh rates and reduces pixel failure. Alabama worked alongside Absen once again during the R&D stages to ensure it was strong and light and helped develop a back frame to speed up rigging.

"On each stage, five panels were used instead of a single screen to reflect the external architecture of the stadium which is made up of coloured panels," says Vitalini. "In the early stages I'd hoped to create an immersive environment using LED stairs to illuminate from below and more LED panels around the outside which would move, but this didn't make the final cut."

In the control tower the Smode media server offered advanced control and easy adjustment of the LED floor and bordering panels' content brightness during the day and night shows. "The integrated modules allow us to experiment during the creation process and to be reactive in rehearsals to make changes," says Lassarat. "It's one of the servers that creates the least latency and we already knew it had performed well on very large events. I'm really into realtime content and Smode lets us change the visuals to suit the situation. I've been evolving the media content the whole way through and Daniele likes to adapt shows as he goes along, so this system is perfect."



"We pushed to work with LED because we wanted to use something different and believed it was capable of adding plenty of visual power to the show."
Francois Mottier
Technical director, Fête des Vignerons

Accentuating with light

Although lighting played a less central role in the daytime shows, competing against the bright sunlight, it came into its own for the evening productions, accentuating elements of the scenery and performance. Lighting designer, Alexis Bowles teamed up with Finzi Pasca to design the light show, using the LED surface as a light source as well as a 2,000-strong lighting fixture line-up including models from Clay Paky, Elation, Robe, SGM, Studio Due and TMB fixtures, all controlled using an MA Lighting grandMA2 console.

"It's a combination, not a competition and the LED floor was great for lighting people from below," he says. "There are lots of areas to illuminate and multiple stages but not a lot of lighting positions in the arena. The large masts are mainly for the audio equipment, so we didn't have much room for lots of lights. Almost everything is on timecode, so out of around 600 cues we might have 15 manual cues which are needed because we're dealing with animals and you can't always predict where they're going to go."

One of the productions was broadcast live so Bowles worked with the team at RTS to ensure everything was balanced for the broadcast as well as the event team.

Flexible and dynamic sound

The production excelled in its sonic presence as well as visual innovation. Head of audio, Martin Reich from Swiss company Audioconsulting AG and his team began technical planning in the summer of 2017, implementing an audio and comms infrastructure that included 300 channels of wireless microphones, 40 surround channels of sound effects, 612 loudspeakers and 11 Yamaha Rivage PM10 and PM7 digital mixing consoles on twin Dante networks.

A highly flexible and dynamic network infrastructure was required to connect the audio sources and to handle the vast cast of actors, singers, musicians and pre-recorded score by the Gstaad Festival Orchestra. As a result, more than 150 Dante units were connected to the network, representing around 6,000 Dante input channels and 5,000 output channels. »

SAMUEL RUBIO

ROBERTO VITALINI

The eagerly anticipated event is held every 20 years; digital networking was essential in giving each of the five stages its own PA system to cover the arena

Once he had been presented with the plans of the arena, Reich set to work ensuring his team had the ability to play audio on all five stages simultaneously. "After discussing the issues surrounding the sound coverage, we developed a simulation software that allowed us to test solutions before entering the arena," says Reich, who worked closely with head of IP networks, Gregor Baumann during the audio concept and system design. "Immersion was also a challenge, but due to the size of the arena and the distances involved we had to stay realistic."

At the last event in 1999, the audio system was mounted on a single tower in the middle, meaning all of the sound came from one point. This year, Mottier wanted to resolve any sound localisation issues. "We needed a sound system that allows you to feel where people are singing from," he said. "We were working with many stages with multiple desks on each, so the audio team drove the sound of the stage plus the main PA in front of them."

As any part of the PA could be 130 metres from audience members, digital networking was essential in giving each of the five stages its own PA system to cover the whole arena. This was achieved with eight main PA towers, plus surround speakers and fills around the outside and the centre of the arena and subwoofers under the seating.

All audio, lighting and electrical distribution equipment was supplied by French company Dushow including a loudspeaker line-up comprising 128 Meyer Sound LEO-M, 72 LYON-M, 24 LYON-W, 96 LEOPARD, 56 LINA, 16 UPQ-1P, 40 UPA-1P, 20 UPJunior-1P, 48 CAL32 column array loudspeakers, 56 1100-LFC low frequency control elements, and 20 Galileo GALAXY 816. Other audio kit included a Timax Soundhub, Wisycom matrix combiners and Clear-Com intercom and FreeSpeak wireless belt packs.

With five stages and a 360-degree audience a special set-up was required to localise the source acoustically. To avoid sightline obstruction the team used a powerful system each side of the stage at level 5.50 that would cover the whole arena without additional speaker positions. "For the centre stage we went for electronically steerable column speakers due to their slim design. We used two rings of column speakers – the first ring on stage level 0 and a ring of delays at the level 5.50," says Reich.

"We have to shoot up to 130 metres with 40 omnidirectional mics in front of the PA because the PA towers are 10m behind the stage lip. Therefore, we had to go for very long arrays," he adds. "The logistics to handle and monitor 324 wireless mics is not off the shelf either. There was no product on the market that would allow us to send eight IEM signals over a single fibre so we had to develop this."

RF over fibre optic technology

The team heavily relied on RF over fibre using a system developed in-house to allow them to connect from multiple locations in the city to the Shure receivers in the arena. "This meant we could do the line checks directly end to end over a long distance," says Reich. "Additionally, now IP is finally stable enough to implement useful low latency networks the cost of manpower during this project shifted towards IP specialists with profound knowledge in audio."

"The LED floor allowed us to create dynamic overlays that were only visible to performers, helping them find the right spots when acting out choreography."
Roberto Vitalini
Content creator, Fête des Vignerons

Signals could be sent from any console to destinations such as loudspeakers, IEMs or comms using a 512x512 matrix, the outputs of which were monitored using a QSC Q-Sys based system with a touchscreen at each console. The nine consoles received feeds from the 324 wireless mics and 70 cabled mics including Shure's Axient digital wireless system (with AD1 bodypacks and AD2 transmitters), Shure's KSM9 condenser, and DPA 4060, 4066, 4099 and 4088 models which captured the sound of the choir and actors.

The three PM10 consoles located in an acoustically treated container were used to premix large groups such as the brass band and choirs while the stereo Stems, playback tracks, solo singer mics were sent to the six PM7s in the arena. "This meant the engineer listening the loudspeakers could achieve the right balance," says Reich.

Two independent Dante networks were implemented to make it possible to achieve a useful latency of 250 micro seconds. Network A was used as a production network and managed by the administrator, while network B was used for virtual soundchecks and recordings and could be accessed by all engineers connecting with their laptops using Dante DVS. During the show the networks were linked, meaning the team had 288 Dante channels available at each console. Two Yamaha Nuage systems and the four 128-track recorders were used as a recording pool, which could be assigned dynamically per production day.

Reich and the team also provided Dante Switches for the broadcaster which provided access to every mic and all the premixes and console outputs at all times. Using a Stagetec Nexus environment allowed them distribute the signals internally for the UHD production.

Since the last incarnation of Fête des Vignerons in 1999 the production has evolved into an event with even greater impact, elevated by advanced audio techniques and record-breaking visual technology. "Although the capacity at the previous event was still quite extensive at around 16,000 and the narrative was captivating, the technology was minimal, just a single mast for the speakers and no lights or an LED floor as all the shows took place in the daytime," says Mottier.

"It's now comparable to an opening or closing ceremony but even more extensive than some as this is taking place every day for almost a month. In the last 20 years the advances in fibre optic technology, LED and the capabilities with sound make working in a space such as this incredible." ■

CONTACTS

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- www.alabama-media.com
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