

The UAE Pavilion at the World Expo in Milan has been drawing the biggest queues at the show. Paul Milligan got an exclusive tour behind the scenes to see just what it was that was attracting people to it.



For all the world to see

The UAE Pavilion at the World Expo follows the story of Sara to deal with the theme of food sustainability

The latest incarnation of one of the biggest shows on earth, the World Expo, has taken up residence in Milan from May till October this year. To get an idea of the sheer scale of the event, it's expected that 20 million visitors will walk across the 272-acre site in that time. Each one of the 145 countries present at the show is investing heavily (a survey for World Expo 2000 in Hanover found the average pavilion investment was €12 million) to make sure its country is viewed in as positive and innovative light as possible. This year those behind the creation of each pavilion had to wrestle with the theme of Feeding the Planet, Energy for Life, which tackles the subject of food sustainability. As usual with World Expos,

some followed the theme more stringently than others (the Italian pavilion for example consisted solely of hundreds of bottles of Italian wine). One country to stick closely to the theme was the UAE, and judging by the queues around the pavilion, which were by far the longest compared to any other on the site, theirs was the right approach. According to Dr

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- Graeme Bunyan, Sysco AV.

Peter Vine, the project director for this and the last seven UAE pavilions at the World Expo, it was the only approach up for consideration: “There is lots of aspiration and idealism behind the idea the Italians had put forward, and we wanted the UAE to make a genuine contribution, both to the expo and the theme itself.” This was also a crucial year for the UAE to make an impression at the World Expo, given that it is hosting the event in Dubai in 2020.

The multifaceted project draws together a number of impressive elements, including stunning architecture by Foster + Partners, featuring a ramp flanked by 12m high dune-like walls, where 60 cubes use mixed-media techniques to illustrate some of the challenges and solutions the country faces in regards to food sustainability. At the top of the ramp, visitors enter an impressive 170-degree circular cinema, to view a short

film called Family Tree which uses multiple special effects to accentuate the drama. At the end of the film, a whole side of the theatre opens up to allow visitors to move into Future Talk, where a spectacular rendition of Pepper’s Ghost technology mixed with multiple layers of projection and traditional theatre props completes the last chapter in the story. Finally, visitors make their way down to the Oasis to see Dubai’s presentation for World Expo 2020.

The systems integrator for the pavilion was UK-based Sysco, who was initially contacted to provide consultancy on the project two years ago, and went on to win the installation contract after a successful tender. So what was the brief to Sysco from the client? “The system needed to be high quality, easy to use and reliable,” said Graeme Bunyan, the company’s director of technology, “We needed to make sure that every

Tech-Spec

- Video
- Dataton Watchout v5.5 software
- Dynascan LCD displays
- Extron scaler
- Iiyama LCD displays
- Lightware video matrix
- Medialon show control software
- Panasonic projectors
- Scala 4K player



170-degree cinema



60 interactive cubes entertain visitors while they wait



The pavilion was designed by world renowned architect Norman Foster

< person through the door had the same experience. It's not a normal visitor attraction/museum experience, which lasts for five years. This lasts six months but has to work all day, every day for that time."

With queues of up to 90 minutes to get in to the UAE pavilion, two Scala-driven totems with 84-in UHD screens inside are positioned at the entrance of the pavilion to display customised messages and inform visitors of the waiting time to get inside. Land Design created 60 double-sided cubes (each one driven by Mac mini) on the ramp leading up to the entrance to give visitors an introduction to the theme that will continue inside. The cubes feature technologies such as augmented reality (the official World Expo app triggers some content via a QR code on the outside of the boxes), miniature Pepper's Ghost effects and graphics twinned with small electro-mechanical models.

Once inside the pavilion the 12-minute Family Tree film begins in a specially constructed 142-seat circular 4D cinema. The AV system inside includes Panasonic 20k projectors, with Dataton Watchout servers, blended together to fill a 170-degree screen, and 16 channels of audio which are played through 24 Fohhn speakers. The film takes its heroine, Sara, back in time to life in the 1960s when resources in the UAE were extremely scarce. As the story unfolds, we witness the massive development that has taken place in the UAE in the last 40 years. A huge 21-in bass subwoofer fitted underneath the seats makes the whole cinema shake at certain points during the story, and lighting and wind effects are added to make the show a 4D experience. The idea for the film came from a dream Peter Vine had about a family tree: "We knew we had to create a story and content that hung together, that was carefully chosen, that didn't say too much but created a memorable message."

Tech-Spec

Audio
 DVS 2U audio server
 Fohhn loudspeakers and amplifiers
 PreSonus StudioLive digital mixer

When the film is over a Medialion show control system opens the doors to the next area called Future Talk. In this area the Musion Eyeliner Pepper's Ghost system has been installed as Sara enlists the help of the audience to finish her

school project, and implores people to change their daily lives if the world is to achieve the goal of feeding the planet sustainably. The Pepper's Ghost system measures 23 metres long and 4 metres high and uses 10 20k Panasonic projectors to achieve it. Additional side and background projection layers further enhance the effects using six more 20K Panasonic projectors. Another single Panasonic 20k projector is used to map onto a 3-section hydraulic lift.

Why Pepper's Ghost? "The design called for the AV to create a virtual environment where the characters came to life in front of your eyes, rather than appear on a flat screen," said Bunyan. "It's a technically challenging product to use, because you have to treat it with care and respect. Once the screen is under tension you don't really want to be working anywhere near it to reduce the risk of damaging the foil"

Once Future Talk has finished visitors are ushered into the final section of the pavilion, which includes details on Dubai's plans for the World Expo in 2020. In this section a mix of projectors and flat panels work in-sync during the presentation, while projection mapping from ceiling to floor onto a moving (automated) surface is also used.

With a project this size, there are always going to be issues around coordination of work, but the challenges that Sysco faced with this project were exceptional, with huge delays to infrastructure and base build, and no network on site with just four days to go until the World Expo opened to the public. "The biggest challenge for us was that the site was nowhere near ready for the type of AV work that needed to be done. AV needs to be put into a clean environment where all the fundamental services – power, networking etc. are already in place," says Bunyan. "There were delays in all of these things, and that squeezed the time we had to do our portion of the installation. It's not like building a wall, we couldn't just bring in 10 more bricklayers to get it done in time; Sysco has technical engineers with very specialist skills who we meticulously allocate months in advance. They would get to site to find they couldn't do their job because other things hadn't been completed earlier in the chain, so the challenge

became finding a way to make the most out of their skills for the period they were to hand." Bunyan continues, "Networking not being installed on time has a big impact on an AV system these days. The AV system and the control system are managed over the network so without a network you just have a bunch of independent equipment which can't communicate together."

Environmental factors also created significant issues. On a sunny day the top of the cubes outside the pavilion can reach 55-degrees centigrade, and on some days there is 80 – 90 per cent humidity. The air-conditioning systems that had been installed into the pavilion were insufficient to deal with the needs of the musion foil, which demands very specific environmental conditions to operate at its optimum performance. This required Sysco to install additional systems to support these demands as well as comprehensive monitoring systems in the rack room and show spaces to ensure proactive environmental control.

Has it all been worth it? Judging by the size of the queues it seems so. At the end of the Family Tree show visitors have been spontaneously applauding, which is pretty rare in the domain of World Expos. Despite lots of AV being used, it is done with such finesse that it doesn't feel overwhelming, which was very much Peter Vine's goal: "I'm sick of technology triumphing over content. It's not about technology, it has to be in the background, so you don't notice it, its about people's hearts and minds, and how you can engage them and get your message across and give them something to feed on. I'm very happy with it, and the reaction has been fantastic." 🍷