NOT SO MANY YEARS AGO, Texans used to claim that in America’s Lone Star State everything was bigger, from the cars that oil barons drove to the skyscrapers they built. At the beginning of the 21st century, however, that boast is more suited to Dubai, where every new construction project is seemingly valued not only on the basis of its usefulness, but on how far it exceeds the project that came before it. Nowhere else in the world at the moment could the world’s tallest building be nearing completion, with its successor already having been announced. In the construction capital of the world, competition is everything. The same holds true of the spectacular shopping malls that are to be found all over the UAE’s most developed Emirate. Once a haven for shoppers and not much else, the concept of what a mall should be has undergone something of a revolution beneath the desert sky, transforming into a magnet for tourists, thrill-seekers and sightseers. As one enormous mall opens, another bigger, more incredible project is announced. In such an environment, it’s difficult for established malls to keep up with their neighbours.

So how does a mall continue to impress when it has no ski slope, no shark-pool, no claim to being the biggest in town to encourage visitors? In the case of Festival City’s Festival Centre, the answer lies in the details; specifically the audio. But first, let’s make no mistake: Festival Centre is already spectacular. Squatting on the Dubai Creek waterfront of the Festival City development, the 2.9m-sq-ft mall boasts 600 outlets, and will present the yet-to-be-completed ‘city within a city’ with its beating heart. Opened in March 2007, the centre won the International Shopping Centre of the year prize at the 2008 Global Retail and Leisure Awards, and just a brief visit makes it clear why; the answer lies in its water-features, its glass-and-steel architecture, and the mix of boutique shopping coupled with the super-retailer outlets such as Ikea and HyperPanda that have found a home in the Power Centre portion of the mall. Like everything else in Dubai, Festival Centre seems enormous compared to its competitors elsewhere in the world. But this is Dubai, and nowhere else in the world is quite like it.

Nevertheless, Festival Centre standings out from the other malls with which it competes at home, and the method lies with Ateis, a Swiss loudspeaker, voice-alarm and evacuation system specialist, whose innovative approach to the centre’s audio requirements could soon find itself repeated in malls across the Emirates. Rather than meeting background music requirements with a combination of concealed ceiling and wall speakers, Ateis has introduced digital beam-steering line-array technology into the shopping environment, and the results are as impressive as the building that surrounds them.

Steering audio

While digital beam steering itself is not new in the world of professional audio, the concept of fully software-controlled arrays being used in a fixed installation environment such as Festival Centre is unusual. Yet the trend within professional audio is moving in this direction. Manufacturers such as Ateis and Renkus-Heinz have pioneered the technology, and now loudspeaker brands such as Tannoy are exploring it in a more serious way than ever before, with their eyes trained firmly on the installation market. The future, it seems, is at least partially beam-shaped. All of which makes the work of Ateis-range ME in the Festival Centre more important, particularly when the extent to which DSP beam steering is being used becomes clear. Boasting not a single ceiling speaker, the mall’s Crescent Walk shopping parade nonetheless benefits from perfect audio coverage across its curving walkway, served only by 14 line arrays positioned discreetly along the outside edge of the corridor. Following the Crescent into Festival Square, meanwhile, reveals a huge open area rising up in glass, marble and metal. It is as bathed in light and reverberant as the Desert Sky, transforming into a pond that can be either wet or dry depending on the occasion. The area boasts 26m of glass-structure ceiling, with a glass facade at its far end measuring 40m wide and 65m high. Overlooking the facade are the tiered balconies of the square’s first and second floors, while on the ground level, centred in the performance area, is an artificial pond that can be either wet or dry depending on the occasion. With all of these difficulties in place, the Square has an RT60 measurement (the time it takes for a reverberant sound to drop by 60dB) of 4.5 seconds.

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but also high-end sound for events. The Messenger speakers were chosen, but they provide a mid-high range, and we needed to deliver the low-frequency response required for live performance in this area.

Thus a system of two halves was created, with single 6m Messenger 2XL arrays flown left and right at either side of the facade, offering a 50Hz to 15kHz response and a 93dB SPL at 80m, from a matrix of 48 channels of 70W amplifiers. These are augmented by eight Messenger L arrays to complete the mid-high system. The delivery of the desired low-end trump, however required Ateis ME to reach a new level of creativity that could still employ the digital beam steering that was capable of solving the Square’s acoustics. ‘As a result of all this, Ateis ME was commissioned to develop a new technology based on the Messenger line arrays,’ explains Mr Al Haddad. ‘This is how the bass array came to be.’

For anyone who visited Plasa 2008, the Ateis bass array may already be familiar – not only was it exhibited at the London trade show, it also won rave reviews in the press following the event. It is a stand-out example of the new R&D effort being poured into

Ateis engineers had to work through the night to install the sound system, avoiding daytime shoppers.

Ateis developed its bass array technology in part to solve the difficult acoustics in Festival Square

But it is only upon entering the building, the true challenge becomes clear, and why the company is taking such pride in the installation – as visitors to Dubai Festival City’s Festival Centre mall are an impressive sight in glass and steel.

According to Mr Al Haddad: ‘with so many spectacular shopping malls in Dubai, it takes something special to separate one from the pack. Focusing on the Festival of sound, the Mall is being used becomes clear. The future, it seems, is focused firmly on the installation of concealed ceiling and wall speakers, as impressive as the building that surrounds it suggesting sounds remarkable, despite the materials surrounding it suggesting.

A hard to spot Ateis Messenger XL array

Ateis engineers had to work through the night to install the sound system, avoiding daytime shoppers

Boasting not a single ceiling array, the Dubai Festival City’s Festival Centre mall is an impressive sight in glass and steel. The same holds true of the materials surrounding it suggesting. sounds remarkable, despite the problems of an acoustic space more akin to a haven for shoppers and not a fixed installation environment, and the results are important, particularly when the me in the Festival centre more of which makes the work of Ateis at least partially beam-shaped. All key is sunlight – a challenge for the project.

The future, it seems, is focused on exploring it in a more serious way, and we have been exploring it in a more serious way, and now loudspeaker technology, and now loudspeaker renkus-heinz have pioneered the digital beam-steering line array of concealed ceiling and wall speakers. The concept of fully software-controlled arrays being used in a fixed installation environment, and the results are even more impressive, than meeting background music announcements and evacuation, as well as improving the overall sound quality.

The biggest challenge for the client was to ensure that the system could provide intelligibility for all customers within the mall. The system had to be designed to meet the requirements of the mall, as well as the requirements of the surrounding area.

The system was designed to provide a consistent mid-high SPL over a distance of 100m, with a maximum SPL of 113dB. The system was also designed to provide a maximum SPL of 120dB at eye level, measuring 3m in front of the speakers.

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The same principle is applied to the background processing, where Ateis’ ME has completed the installation with a wall-concealed input box to the side of the main performance area, leading into a secure digital network that runs the entire Festival Centre installation, not only covering Crescent Walk and Festival Square but also the Canal Walk and Marina Walk outdoor locations, into which more conventional ceiling and wall speakers have been installed. These include 1500 Ateis RS60TS ceiling speakers, 800 Sennheiser wireless microphones, 22 SM500 Sound Tube wall-mounted speakers, 110 RS6000 wall-mounted Sound Tube speakers, and 400 MSH01TC horn speakers in the Centre’s mammoth car parking area.

The DFC public address, voice evacuation and pro-audio system is operated over the Ateis secure digital network LAP (Linked Audio Processor), enabling 48 audio channels over a 4km run of fibre-optic cable,” enthuses Mr Al Haddad. The system connects 20 nodes of LAP units and integrates with the IDA – the heart of Ateis voice evacuation – to cover more than 480 speaker circuit zones.

Arguably more remarkable than the system itself, is the speed with which it was achieved. From commissioning to handover for soft launch, Ateis International’s Michael Weckesser was confronted with just 45 days to achieve a difficult install, with all of the work having to be done at night so as not to conflict with the mall’s daily opening hours. More impressive still is the fact that Festival Centre was the first project with which Ateis ME became directly involved, having previously always relied on its distributor network. Nevertheless, Mr Weckesser worked alongside technical manager Harder Al Attar and systems engineer Yasser Al Ani to hit the tight deadline. In total, the completion of the project’s first phase took only 70 days.

But all of this, from the hard work that went into developing the Festival Square system to the long nights spent installing it, will remain a lost secret to the thousands of shoppers who pour through Festival Centre now, and the millions who follow later as Dubai Festival City continues to grow around the mall.

Not that it matters – in the none-more-competitive atmosphere of Dubai, all that really counts is the reaction those shoppers will have to an impressive audio system that is helping this mall to keep up with its neighbours.

www.ateis.com
www.festivalcentre.com

**Discreet processing**

A significant part of the appeal of the both the Messenger range and now the Bass Array is its ability to blend in with its surroundings. Within Festival Centre, each column is open to view, but visitors are unlikely to pay them much attention, no matter whether they visit Crescent Walk, where the eye/height arrays seem no more out of place than the tasteful decor into which they are integrated, or in Festival Square, where the much bigger flown system is at first hard to spot against the imposing steel and glass construction to which it is attached.

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