

EUROPE, MIDDLE EAST & AFRICA

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In the first of a new series of articles that focuses in on specific areas of InAVate case studies, we look at how integrator Feris used audio technology to create an immersive experience at the Lava Centre.

Ready to erupt

Feris took immersive technology to a new level to encourage visitor interactivity and create volcanic realism at Iceland's Lava Centre.

The integrator installed 14 Ottocanali (8-channel) and Quattrocanali (4-channel amplifiers), with DSP onboard, to drive 72 channels of zonal ceiling and surface mount loudspeakers. The units - comprising Powersoft Ottocanali 1204 DSP+ETH, Quattrocanali 4804 DSP+D and Quattrocanali 2404 DSP+D - were installed in four racks in the centralised Lava technical room.

In an ingenious application of technology, Feris's project designers Jakob Kristinsson and Bergthor Leifsson decided to use only Powersoft's sonic M-Force to simulate a volcano erupting. Two M-Drive amplifiers power two 15kW M-Force moving magnet linear motor transducers to imitate a 3.7 magnitude scale earthquake, or bigger. The units physically move a floor measuring 150cm by 300cm in both X / Y axes in an application that sees M-Force used for mechanical movement for the first time.

There are 15 multi-channel audio zones in use at Lava Centre, located in 10 rooms/spaces, including an outdoor one - variously triggered by MediaMatrix and Presonus sound cards. This includes 80 Audac speakers, 13 Audac subwoofers, 2 Danley subwoofers, 3 Panphonics flat panels in the ceiling for spot audio, 8 one point audio speakers, a 632 x 360cm Stewart Filmscreen Phantom HALR screen coupled with

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- Jakob Kristinsson, Feris

a 7.1 surround system from PC Asus 7.1 sound card, via Peavey MediaMatrix NION n3, for the movie theatre.

The movie theatre audio is controlled by Peavey MediaMatrix Nion n3 via Powersoft amplification to the 7.1 speaker setup, using OnePointAudio speakers and a Danley TH2121 subwoofer.

Kristinsson said: “We did not have a clue about what audio would be used until very late. All speakers and Powersoft amplifiers had already been installed when the audio files started to be available. We solved this dilemma by carefully choosing ‘big enough’ speakers and amplifiers.”

He says there were two aspects of the audio design worth drawing attention to. “In Room 00, Eruptions in Iceland, we have built eight Audac speakers close to the ceiling above the LED wall, divided along the corridor. When guests enter the corridor, a PIR sensor detects and sends a message from PLC via LAN to the computer running the LEDs. The computer does two things; it produces a wave of light moving along the wall into the room and also does the same with the audio, sending eight channels of audio signal, via 8-channel Presonus USB sound

card, using eight Powersoft amplifier channels, thus producing a sound wave to follow the wave of light. The idea of doing this came from Feris audio specialist Bergthor Leifsson and the actual program that makes the effect was made by Kristian Ross, who has a PhD in adaptive music in interactive media.

“And of course the other special aspect of the audio design is for Room 10, Earthquakes. Under the quake floor is a Danley DTS10 subwoofer, measuring 140cm x 100cm x 45cm, with frequency response capability down to below 10Hz. At the same time, in the ceiling in the corridor are four Audac PX110MK2 speakers. The combined effect of the Powersoft M. Force, the Danley subs and the ceiling speakers give a ‘true’ representation of an earthquake.”

Finally, the integrator also selected Powersoft amplifiers for their green credentials. Kristinsson adds: “Because Powersoft amplifiers deliver the best power to size ratio, fewer amplifiers (with smaller footprints) are required to run the same PA system, which directly impacts CO2 emissions.”

A full case study on the Lava Centre was published in the November edition of InAVate EMEA. 