**Mu-Mu’s New Nebula Variable Acoustics System Relies On The Natural Sound of DPA Microphones**

*DPA’s d:dicate™ 4011A Cardioid Microphones are ideal for this system because they deliver a flat response and don’t colour the incoming audio.*

**Alleroed, Denmark. May 28th 2019**: Mu-Mu Audio, a company that specialises in location based recording and live sound hire, is using DPA microphones as part of a bespoke system that allows venues to create a variable acoustic without having to undergo expensive or complex building work.

Nebula, the system devised by Mu-Mu founders Matthew Devenish and Paul Jones, uses DSP and live processing to create the desired acoustic effect, regardless of the actual sound of the space. It does this by capturing audio using a stereo pair of DPA d:dicate 4011A Cardioid Microphones and feeding it through processing software specifically written for Mu-Mu. The processed sound is then replayed through a selection of Fohhn loudspeakers, which creates a reverb effect giving the impression of a larger, more live sounding space.

“We chose DPA for this system because both Paul and I have a long history of using the company’s microphones for recording projects and as test microphones,” Matthew Devenish says. “DPA was our first choice because its products deliver a very flat and very good off axis response, even from cardioid microphones such as the 4011. We didn’t want the microphones introducing colouration (resonances) into the reverberant field because we were not going to be just producing simple reverberation.”

Nebula, which is only available through Mu-Mu, delivers results that are very similar to more expensive DSP systems on the market, but for a fraction of the cost. It is also scalable, says Devenish, and doesn’t impact on the physical structure of the venue. Indeed, its ability to deliver a variable acoustic without requiring the venue to undergo building work was a key reason why Devenish and Jones devised it in the first place.

“We devised the system in answer to a request from Adam Munthe, the owner of Hellens Manor, an historic house in Much Marcle, Herefordshire, that we have been using as a venue to record albums since 2005,” Devenish explains. “Hellens Manor has a big barn and Adam wanted to make its acoustic more sympathetic and supportive for classical music (i.e longer reverb times with a diffuse soundfield). However, the barn is a listed building and, having taken advice from a highly respected building audio acoustics company, he was told that adapting it would require a lot of physical change to the inside of the barn.”

Apart from potentially prohibitive costs, another drawback was that it would result in an unvarying acoustic, which wasn’t what the venue needed.

“The barn is not only used for classical concerts, it also has events that require PAs, and it is used for recordings, filming, weddings and corporate meetings,” Matthew Devenish adds. “Some of these uses benefit from the very dry acoustic that currently exists. Our system is non-invasive and doesn’t permanently change the acoustic. We are running eight Fohhn speakers in an array down the beams of the barn, with each speaker individually addressable for level and delay, if needed. Our A to D system is an RME fireface 802 and our processing software is running on a rack mounted computer.”

Mu-Mu’s Nebula system has proved a huge success at Hellens Manor with both musicians and engineers commenting on how natural the reverb sound is. Devenish and Jones are now hoping to deploy it in other venues where there is a need for a cost effective variable acoustic solution.

In the meantime, Mu-Mu is focusing on its core recording and Live Sound hire businesses, which also utilise DPA microphones to achieve great results.

“We have two d:dicate 4006 and one B&K 4006 Omnidirectional Microphones, a d:facto™ Vocal Microphone and two d:vote™ 4099 Instrument Microphones with multiple clips,” Devenish says. “We have done lots of acoustic instrument and piano recordings, which DPA microphones excel at. They are also great on high SPL soprano vocals, where large diaphragm microphones tend to clip.”

To find out more about Mu-Mu’s Nebula system, please visit [www.mu-mu.eu](http://www.mu-mu.eu)

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**ABOUT DPA MICROPHONES:**

DPA Microphones is the leading Danish Professional Audio manufacturer of high-quality condenser microphone solutions for professional applications. DPA’s ultimate goal is to always provide its customers with the absolute finest possible microphone solutions for all its markets, which include live sound, installation, recording, theatre and broadcast. When it comes to the design process, DPA takes no shortcuts. Nor does the company compromise on its manufacturing process, which is done at the DPA factory in Denmark. As a result, DPA’s products are globally praised for their exceptional clarity and transparency, unparalleled specifications, supreme reliability and, above all, pure, uncoloured and undistorted sound.

**For more information, please visit** [**www.dpamicrophones.com**](http://www.dpamicrophones.com)

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**DPA Microphones A/S**

Anne Berggrein
Phone: + 45 48 14 2828
email:anb@dpamicrophones.com
Web: [www.dpamicrophones.com](http://www.dpamicrophones.com/)

**Press Contact:**

White Noise PR

Phone: +44 (0) 1666 500142

Email: sue@whitenoisepr.co.uk