Jazz Concert, Studio Orchestra. Matthew Ferguson.

Guildhall School makes new connections with NewTek and NDI® Mix

CUSTOMER
London's Guildhall School of Music and Drama

SYNOPSIS
When Covid restrictions kicked in, the school had a major question to answer: how to enable live ensemble performances that could be both safely performed and effectively viewed.

To make that happen, the Guildhall team utilised an NDI and Dante workflow with a NewTek TriCaster live production system at its core and opened a world of opportunities.

OPENING A WORLD OF POSSIBILITIES, CREATIVITY AND REACHING VIEWERS ACROSS THE GLOBE.

The Guildhall School delivers world-class professional training in partnership with distinguished artists, companies and ensembles of musicians, actors and production artists.

"We've got performance venues split across two buildings including two world-class concert halls," says Sam Ziajka, Recording and AV - Network and Systems Manager. "On any given day, we could have up to five gigs happening simultaneously across the school that needed to be recorded and broadcast."

"We previously had an SDI-based system with cameras and a vision mixer connected point to point," he continues. "Without spending a lot of money drilling holes into walls to run more fiber cables, in grade2-listed buildings, there was no option of interconnecting all these spaces, putting more cameras in extra rooms and easily accessing them."

Gold Medal, Guildhall. Clive Totman

Then Covid struck. Social distancing, requiring at least three metres between musicians, became mandatory. "Our concert hall which can usually take a small symphony orchestra would only be able to fit 15 players," says Julian Hepple, Head of Recording and Audio Visual. "All of a sudden, we had no way of providing a facility for large ensemble performance."

With group performance a crucial part of training practice, it had huge implications for both actors and musicians. Then there was the Gold Medal, the Guildhall School's premier music prize founded in 1915. The final for this competition had never been cancelled in its history despite world events, yet there looked to be no way to run it safely.

"We needed a system that allowed performances to play simultaneously in multiple rooms, yet have performers feel as if they're playing together," says Ziajka. "We needed something flexible, to allow us to scale up and add rooms as and when we needed."

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PROTOCOL PERFORMANCE

The Guildhall team started investigating IP video options. Working with technology solutions reseller and workflow design firm Altered Images, the Guildhall invested in NewTek's TriCaster live video production system and other components using the NDI video-over-IP protocol, such as BirdDog NDI PTZ cameras and SDI-to-NDI converters, plus upgrading existing Panasonic PTZ cameras with NDI.

 "We had to allow all our performers to play synchronously across the buildings," says Ziajka. "We found that NewTek could offer us a low latency system with sensible data rates, which was high quality and was easy to operate. We decided to go with the VMC as it's NewTek's flagship product at the time. With its support for up to 40 NDI inputs and outputs, we could route a large number of cameras across the network to deliver the experiences we wanted."

With the help of NewTek and Altered Images, Ziajka's team devised an entirely new campus-wide NDI network to cover four buildings in different parts of the campus, working seamlessly with the existing, now expanded Dante Audinate audio-over-IP network.

"We can log into any machine on our network and route the picture and sound to where we need it," says Ziajka. "We got latency down to about two frames on the devices across the network."

The orchestra was split across rooms, each equipped with PTZ cameras and screens on the NDI network, showing live feeds from other rooms. "We put the strings in one venue, the brass and percussion in another, and then the woodwinds in the third venue," explains Ziajka. "We put the conductor in a [networked] booth to allow all the performers to see them at the same time. It felt like being an orchestra again."

"It was the only way to allow large ensemble teaching to continue, and I think students were grateful for that experience." adds Ziajka.

Under this new system, the Gold Medal Final which has been held continuously for more than a century, managed to take place safely in September 2020.

The Guildhall has since produced hundreds of public-facing productions, two entire seasons of digital content with multi-camera, multi-room performances that are recorded or broadcast live.

> **"** We can simultaneously record and live stream for multiple performances, painlessly. Support for 1080p50 lets us deliver Full HD content of all our concerts.

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LET'S WORK TOGETHER

With the Newtek TriCaster system sitting at the heart of a single NDI and Dante-powered network, the whole building can act as one venue. The four mix engines in the VMC means the Guildhall can run four full gigs simultaneously.

"We have over 400 NDI endpoints across four buildings in a complete environment," says Hepple. "I can turn up with three cameras and a couple of CAT5 cables and be shooting within five minutes in any of our rooms on campus. Adding to the network is easy – a graduation ceremony took place with students and parents on 120 Zoom Breakout Rooms in 18 different Zoom calls using NDI Virtual Input for beautifully choreographed sequences."

Staff configure the IP video workflow to suit their needs through NewTek's LivePanel browser-based interface. IP connectivity also allows staff to work remotely if required, able to control the cameras and whole lighting sessions from home in some cases.

"We don't have to worry about extra equipment because it's all contained within the VMC," says Annie Smith, Recording & AV Technician "With NDI we can broadcast from anywhere."

""We put on a Guildhall 'Live Lounge' event in a space which we've never streamed from before," she adds. "The NDI capabilities made it easy to quickly add cameras, contain them within our system and put on a professional gig."

"After the first performances in September 2020 we had to scale up the number of cameras and endpoint devices just to meet the demand," says Ziajka. "We built another control room, with touchscreens that work fantastically with the Live Panel system."

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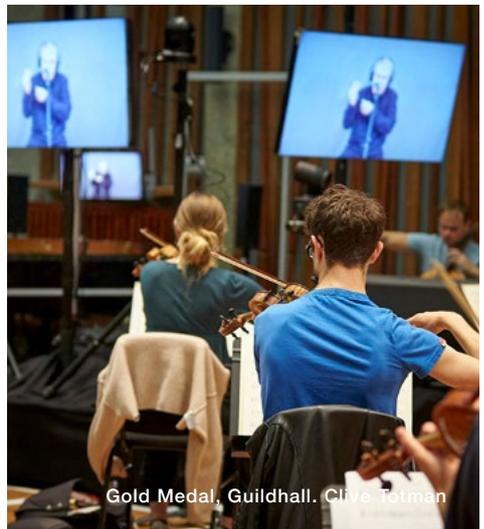
> **"** We've linked up live performances between multiple buildings and multiple studios. We can record as many streams as we want, allowing us to capture multiple performances at multiple angles.

WHAT'S NEXT

The next step is to link with partner organisations and satellite schools around the country to enable world-class teaching and to deliver meaningful, high-quality real-time performances."
Julian adds, "Our whole building is now just alive! Anywhere with a CAT5 connection in it now gives us a world of opportunity".