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AV integration

Design Install Maintain

Saint Michael's Abbey balances tradition and technology in comprehensive AV, IT and Security system integration in partnership with Whitwam AVI

Perched atop a hill on the Hampshire-Surrey border, Saint Michael's Abbey is a small monastic community where Benedictine values and worship have been observed and preserved since the Abbey's foundation in 1895. Living a traditional life of prayer, work and study, the community of monks at Saint Michael's welcomed a recent upgrade of the Abbey's AV, IT and security systems, a project led by specialist systems integrators Whitwam AVI, experts in the intricacies of installing technology in historic and listed buildings.

Brother Michael, a resident of Saint Michael's Monastery responsible for overseeing the community's operations, reached out to Whitwam AVI following a visit he made to Saint George's Chapel in Windsor. "I appreciated the attention to detail which had been taken to respect the surroundings when installing the technology at Saint George's," recalls Brother Michael. "On seeing the custom-coloured loudspeakers, I knew this would be a great solution for Saint Michael's Abbey.

Our community has a long and very interesting history, so preserving and celebrating this heritage is important to us.

Whilst the original enquiry was focused on upgrading the Abbey's sound system, the project scope quickly grew, thanks to the commissioning of a full restoration of the Abbey. "Originally, we were designing for a new audio system, new microphones and a camera and video system to improve visibility for the Abbey's organist," recalls Ray Clarke, Operations and Engineering Manager at Whitwam AVI. "When the restoration work went ahead, our side of the project was temporarily put on hold, whilst the interior stonework was conserved and cleaned by a specialist contractor. The project was then expanded to encompass the original requirement, plus a broadcast streaming system, CCTV and the integration of a site-wide networking solution across the Abbey and the Monastery." Whitwam AVI's work at Saint Michael's would now involve IT, AV and security elements, with the aim of not only enhancing the experience

but expanding the Abbey's reach to larger audiences via a live streaming solution.

Given the historic and sacred nature of the environment and the architectural constraints of installing new technology in a heritage building, the Whitwam AVI team spent time carefully designing and commissioning various custom bracketry solutions and RAL colour-matched enclosures for both loudspeakers and cameras to ensure that the new tech would blend into the historic surroundings. Furthermore, the venue's limited cable routes required Whitwam AVI to install multiple equipment racks throughout the Abbey, some of which needed to be IP-rated enclosures due to the environmental conditions in the basement and crypt. Twisted pair and fibre extenders were utilised in the full system design to link the racks and minimise cabling, whilst custom-coloured trunking was installed along the Abbey walls to ensure any cable runs were neatly contained and discreetly hidden.

"When working onsite, it was like the Whitwam AVI team were invisible," comments Brother Michael on his experience of the installation project at the Abbey. "We didn't even know they were there, and their work was professional and accurate."

"It was not a straightforward project," confirms Clarke. "The evolving scope and natural architectural limitations at Saint Michael's posed challenges, but

by collaborating closely with the client, maintaining open communication and harnessing our own experience in similar venues, we were able to work around these constraints."

The audio system, which covers the nave, the high altar and the side chapels, consists of pairs of Bose MA12 modular column array loudspeakers, ensuring even audio coverage throughout the Abbey. For the video side, five Panasonic AW-UE50 PTZ cameras, also custom coloured, are installed at key locations throughout including the high altar, side crossings and at the rear of the nave to capture all proceedings during Abbey services. A portable camera offers an additional perspective for special events such as weddings. Aside from the live streaming functionality, the Abbey's organist also benefits from an improved view of the venue via a 10" Lilliput video monitor, improving the accuracy of timings for musical elements of services.

"We have a great relationship with Panasonic, so we are able to disassemble the camera enclosures to paint them to the desired RAL colour and reassemble them without compromising the product warranties," explains Clarke. "We also designed, commissioned and painted custom-made brackets for both the loudspeakers and the cameras, allowing us to safely fix the technology without interfering with the stonework, which is critical in heritage buildings."

"We are pleased to see our technologies installed in spaces as unique as Saint Michael's Abbey," comments Alan Head at Panasonic. "The team at Whitwam AVI have taken great care to integrate five of our AW-UE50 cameras seamlessly with the surrounding architecture. Given their skill

and expertise, we allow for their in-house customisation to ensure the integration at the Abbey not only looks great but also gives the user peace of mind in terms of system performance and longevity."

To ensure accessibility a Sennheiser MobileConnect system was chosen for its ease of use, allowing hard-of-hearing users to listen to services via a smartphone app. Given cabling constraints, a traditional hearing induction loop would not have been possible, and the choice of the MobileConnect system gives Saint Michael's Abbey a modern, scalable alternative. A combination of Sennheiser gooseneck microphones and an Audio Technica boundary mic for the high altar ensures crystal-clear speech pick-up. Bespoke T-bar brackets at the lectern and pulpit ensure that not even the microphones detract from the elegance of the worship space.

Everyday user control is streamlined thanks to the integration of audio and video technology with a Crestron control system. A wall-mounted Crestron touchscreen allows for easy system control and microphone selection.

One of the key requirements was for Saint Michael's to have the tools to stream its services online on platforms such as YouTube, as well as allow for events such as weddings to be shared with an extended audience.

"As a Benedictine monastery, we have many different practices or 'offices' each day, and there are friends and family of the community around the world, who would like to participate in some way with our life here at the Abbey," says Father Abbot of St. Michael's. "We wanted to connect with our community through broadcasting our services and make Sunday Mass available to a wider audience for several reasons. Firstly, to enable those far away to participate, secondly, for intellectual access and finally, to reach those who might be looking for a vocation within a monastery.

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The broadcast system is based on Blackmagic Design hardware and an Epiphan Pearl Nano streaming solution, which allows for the encoding of various sources and outputs directly to the desired channels or displays. To maximise the technology and save on additional resources, Whitwam AVI proposed incorporating the broadcast cameras into the CCTV system. Using Antrica video encoders, the Abbey's camera footage is sent directly to a HikVision NVR, which allows for smart monitoring of activity both within the Abbey and the wider monastery buildings. For video distribution, a networked solution via Lightware VINX encoders and decoders enables CCTV multi-view on an NEC 32" Large Format Display in key locations, such



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as the Abbot's office.

"We set up a preset so as soon as the cameras are turned off at the end of the day or after a service, CCTV mode is activated," explains Clarke.

"Incorporating the broadcast cameras into a CCTV system saves Saint Michael's time and money and limits the impact on the fabric of the building by not needing additional security cameras."

Looking to the future, Whitwam AVI will remain on hand to serve the Abbey's evolving needs. Ray and the team are the first port of call for support requests through a preventative maintenance contract, covering all AV and network infrastructure on site. "It was important to deliver a system that will serve the Abbey well into the future; therefore, having the network infrastructure in place now will allow the system to grow as the needs of the monastery evolve," says Clarke. "We're proud to have been on board since the very beginning and to have had this opportunity to work with Brother Michael on a project that encompasses many different elements, from AV to IT and security."

The feedback from Saint Michael's community of monks and worshippers has been wholly positive, especially in terms of the quality of the technology and how it is discreetly installed to

respect the architecture of the Abbey.

The services at Saint Michael's are now successfully reaching a worldwide audience, with followers in the United States, Canada, Asia and Australia regularly watching the live stream broadcast of Sunday Mass.

"We have had many contractors over three very busy years during the renovations, and Whitwam AVI have been one of the best in terms of punctuality and communication," confirms Father Abbot. "Following the upgrade, we remain one of the most traditional communities in terms of our worship here at Saint Michael's, but we are now one of the most modern in terms of the technology we use to promote that worship."

