Optoma

Case Study

Oxford University installs future-proofed AV systems in major refurbishment

Industry: Education

Region: Oxford, UK

Type of Solution: EH7700 ProScene projectors with ST1 lenses

CONFEREX

Conferex Communications

Founded in 1986, Conferex offers AV equipment for hire or sale and a full installation and maintenance service. These well-established and reliable AV experts based in Somerset, near Bristol, can oversee all sound and imagery equipment for conferences and events and provide a video production service including company video and programme making, live event videography and editing.

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UNIVERSITY OF OXFORD

Challenge: As part of complete refurbishment, The Department of Zoology at the University of Oxford needed to overhaul its lecture theatres with reliable, future-proofed AV equipment including a central control room and lecture capture functionality.

Solution: Conferex Communications installed two Optoma ProScene EH7700 projectors in each lecture theatre together with audio equipment, cameras for lecture capture and the central control room solutions. It used fibre optic cabling that will allow the university to easily replace components and eventually upgrade to 4K projectors without having to change the whole system.

Results: Ivan Constable, Director at Conferex, said: "The projectors work seamlessly with all the control equipment and the image quality is spot-on. The cameras can record the lecture from multiple angles to show the presentation, the blackboard as well as the lecturer and/or students. Having a central control room means the university can now increase its seating capacity for popular sessions by broadcasting the lecture across all theatres."

Simon Ellis, IT Manager at the University, said: "There is nowhere else in the university where the AV equipment is done so well. Our time spent in planning this has certainly paid off!"

The Challenge

The Department of Zoology at the University of Oxford needed a complete overhaul of its three main lecture theatres as part of a wider project to refurbish the entire Tinbergen Building.

Despite this being the premier teaching site of the university, the lecture theatres had not changed in over two decades.

The refurbishment would improve the seating, carpets and decor, as well as upgrading the AV equipment. This included replacing the old XGA and WXGA projectors and control room equipment and installing cameras and audio equipment that could be used to record lectures. Lecture capture enables students to repeat lectures for revision and can help dyslexic students, for example, follow sessions at their own pace.

Each lecture theatre had its own dedicated control room. The project needed to create a central control facility for all three.

It was imperative that all equipment is reliable and would have longevity in terms of future proofing the technology and infrastructure installed.

Finally, there was a tight budget and timescale for the whole refurbishment with only a couple of months in the summer to complete it.

The Solution

The seats, ceiling and old equipment were removed and contractors for the carpets, seating and AV equipment were co-ordinated over the following two months.

Conferex Communications was appointed to supply and install the entire AV solution including projectors, audio, cameras for lecture capture and control room equipment.

It installed two Optoma EH7700 ProScene projectors in each lecture theatre. These WUXGA projectors boast a brightness of 7,000 ANSI lumens and use BrilliantColor™ technology to produce stunningly bright images with perfectly balanced, lifelike colours.

ProScene projectors are engineered for reliability. The dust-sealed, filter free design prevents dust and dirt from affecting the system ensuring optimal image quality with minimal maintenance. They use DLP® technology pioneered by Texas Instruments, which uses millions of mirrors to produce high quality imagery which does not suffer colour degradation over time, as sometimes experienced in other projector technologies.

The EH7700 has a dual lamp system, which adds to its reliability. Both lamps can be used together to achieve maximum brightness, while still providing redundancy should one of the lamps fail. Alternatively a single lamp can be used in Relay Mode.

The projector can be managed and monitored remotely with Crestron RoomView®, Extron IP Link, AMX and PJ-Link, which allow almost all aspects to be controlled across a network. It has extensive connectivity supporting a wide number of computer and video inputs including VGA and two HDMI ports.

Motorised lens shift, focus and zoom combined with the extensive lens options, 360° operation and interchangeable colour wheels guarantees flexibility in installation.

EH7700

The image from each projector is projected directly onto the walls in each of the three lecture theatres. The walls were painted with Screen Goo, a high resolution acrylic water-based paint designed specifically for the video projection industry.

Each projector was connected to an SY Electronics Apollo multi-format matrix switcher. Having two images available allows the lecturer to show multiple sources including imagery from visualisers, cameras, Powerpoint presentations and video. It also enables them to broadcast webcasts and show Skype communications with presenters that are not necessarily based at the university.

The cameras can record the lecture from multiple angles to show the presentation, the blackboard as well as the lecturer and/or students.

For audio, the largest theatre was installed with two powerful Martin Audio Mini Line Array Speakers. Smaller Tannoy VLS Column Array Speakers were perfect for the other two and these are focused to take into account the lecture theatre's tiered seating and transmit sound across the whole space.

Sennheiser Omnidirectional remote paddle antennas were installed to improve the audio received from wireless roaming microphones.

The video capture system has four inputs plus audio and each input goes into the recording software. This ensures high quality audio and HD video from the lectures would be captured and saved for future viewing.

It also will enable the university to increase its seating capacity for popular sessions. For example when there is not enough room in one lecture theatre, the audio and visuals from this theatre can be broadcast across all three.

A new central control room was built that serves all three lecture theatres. Lecturers can control almost all aspects from the podium control panel including lighting, audio and what is shown on each projector.

Conferex future-proofed the system by using fibre optic cabling that will allow the university to easily replace components and eventually upgrade to 4K projectors without having to change the whole system.

The Results

Ivan Constable, Director at Conferex, said:

"This was a really exciting project. The complete overhaul gave us the chance to design a system from scratch that would provide everything the university needs now, as well as future-proofing it for technology advancements.

"The projectors work seamlessly with all the control equipment and the image quality is spot-on. We are also really pleased with the lecture capture system. Most systems are of a very poor quality but by installing the remote control PTZ HD cameras and the dedicated audio equipment with multiple inputs directly to the recording software – it really is first class."

Simon Ellis, IT Manager at the University, said:

"Reliability of the equipment was absolutely key. If a unit fails, we would need to erect a scaffold tower over the seats, which in itself, takes around half a day to put up. Our lecture theatres are always fully booked and we have just half a day available each week for maintenance. This is one of the reasons we chose Optoma and opted for the dual lamp EH7700 ProScene projectors."

"It was also important to us that we use the same projectors across all lecture theatres. These needed to be high resolution and bright, as well as reliable. We had a tight budget to completely refurbish all our lecture theatres, including the IT equipment. I am delighted to say that we got exactly what we wanted.

"There is nowhere else in the university where the AV equipment is done so well. Our time spent in planning this has certainly paid off!"

Installation:
Lecture Theatre A: 2x EH7700 with ST1 lenses, 2x Martin Audio Mini Line Array Speakers, Lumens cameras, 2x Sennheiser Omnidirectional Passive Antennas, control desk

Lecture Theatres B & C: 2x EH7700 with ST1 lenses, Lumens cameras, 2x Tannoy VLS Column Array Speakers, 2x Sennheiser Omnidirectional Passive Antennas, control desk


Lumens camera

Martin Audio Mini Line Array Speakers

Lectern

Department of Zoology, University of Oxford
The Department of Zoology is at the centre of Oxford's research and teaching in whole organism biology. Research is centred on the four themes of behaviour, disease, ecology and evolution. The Department is within the Mathematical, Physical and Life Sciences Division.
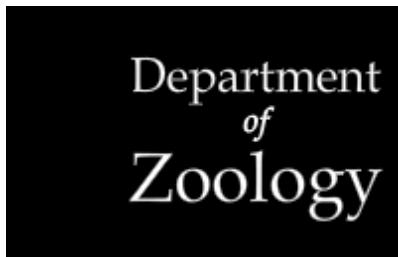
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Control Room managing all three lecture theatres:

Video rack: SY Electronics 16x16 HDMI to SDI matrix switcher, Black Magic Design 40x40 SDI router and Multiviewers, SY Electronics Apollo multiformat matrix switchers and Black Magic Design Format converters.

Audio rack: Crown DriveCore power amplifiers, Sennheiser wireless microphone receivers.

Control desk: Behringer X32 sound desk, Lumens joystick remote control for PTZ cameras, monitor screens for all lecture theatres and dedicated PC's for lecture capture.

All protected by an Eaton 9155 UPS (uninteruptable power supply) in case of power outs.

Control Room
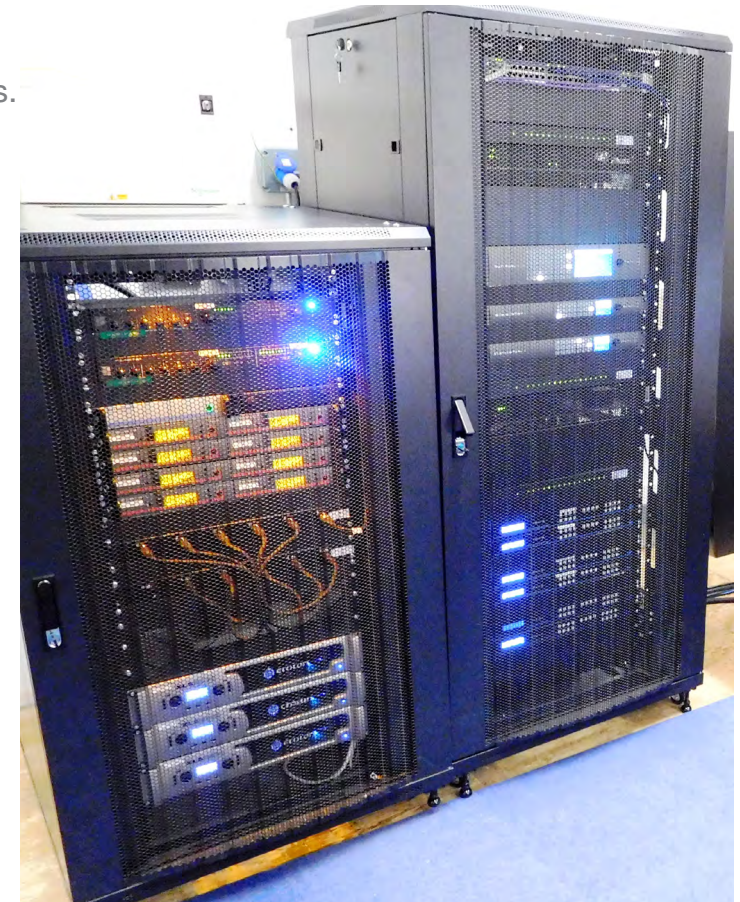
Video rack & Audio rack

Optoma

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