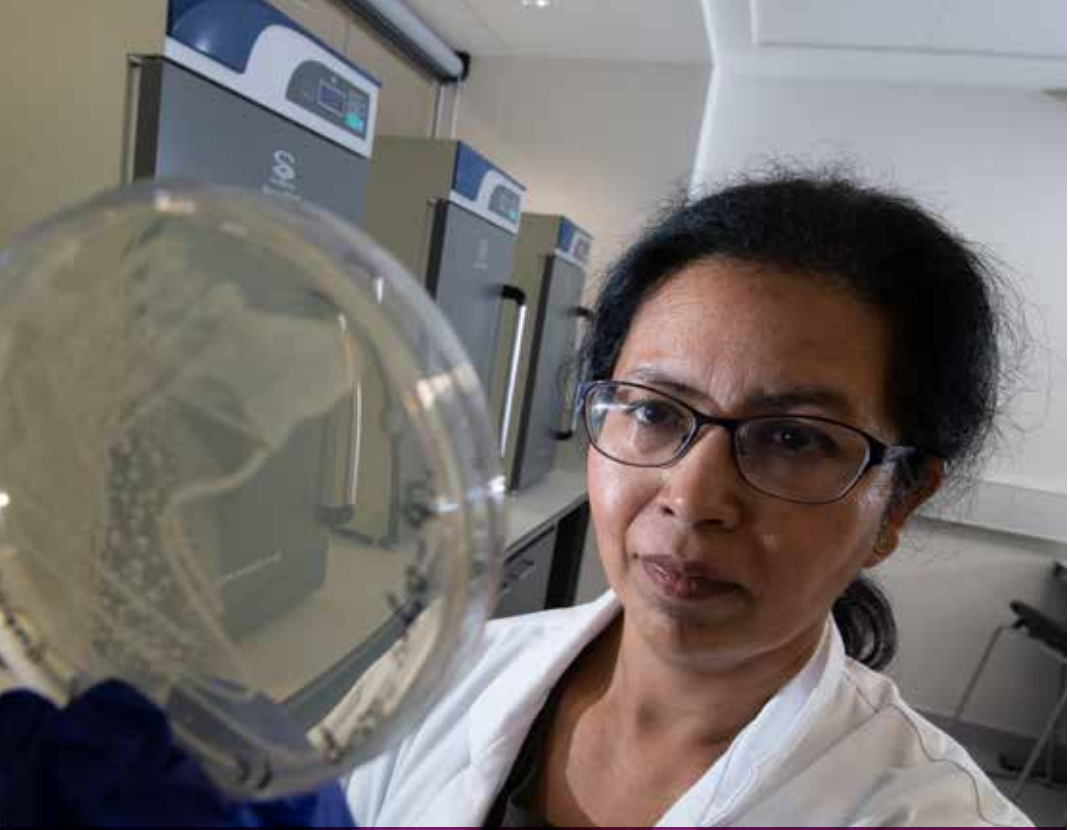


New state-of-the-art STEM building on the Luton Campus

University of Bedfordshire

STEM BUILDING

pure av
integrated audio visual solutions

Project Name:
University of Bedfordshire STEM (Science, Technology, Engineering and Maths) Building

Start Date: September 2018

Completion Date: September 2019

Approximate Value: £1.3M
AV element - £500,000

Increasing access to STEM learning

As part of a £180 million modernisation project, the University of Bedfordshire's new STEM building on the Luton Campus is set to shape futures around the globe.

The new building provides over 6000m^2 of new teaching space dedicated to engineering, computer science, health and life sciences.

The cutting-edge facilities will see the university expand its course portfolio, grow student numbers and actively promote STEM learning.

Pure AV was tasked with the challenge of delivering a flexible, future proof audiovisual solution able to create an engaging and collaborative learning experience for STEM staff and students.

Designed to the University's specification, the £500k audiovisual project was completed in September 2019 and required the installation and commissioning of multiple spaces including labs, clean rooms, classrooms, collaboration spaces and other specialist rooms.

The project makes use of technologies such as AV over IP, networked audio and roving lecterns to maximise the flexibility of the available teaching space.

Thanks to the new facilities, the University can provide an increased number of students with access to high-quality environments for STEM-based learning.

Through collaboration with Pure AV, the University's ICT department has created a solution that is simple for academics to use, offers the flexibility to scale for different group sizes, and the freedom for innovation in teaching approach. It is a model that will shape future classroom design at the institution.

Key Manufacturers

Top-Tec, Wyrestorm, Shure, Epson, DigiLED, LG, OneLan Media

An enriched student experience

The new building contains a range of STEM teaching environments, including wet & dry labs, computer labs, standard classrooms, collaboration spaces and specialised rooms.

Many of the spaces are large, open areas, often containing specialised technical equipment.

The careful positioning of laser projection and high definition displays ensures that students maintain a clear view of the teaching activity; while the audio system maintains precise audio reproduction from microphones and programme sound.

The technology in place helps to remove barriers between student and lecturer, and encourage active engagement in the learning process.

Each lab and teaching space contains multiple display devices ranging from a couple of projectors up to, in some of the larger teaching spaces, eight or nine LED displays or a combination of LED screens and projectors.

Using Wyrestorm AV over IP, each display is connected to the university network.

Flexible room collaboration

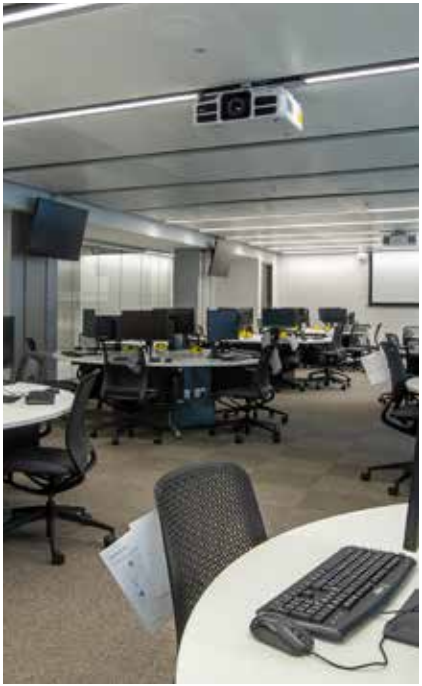
There is no fixed teaching point in the labs. Instead, there is a mobile lectern which can be wheeled about and located in one of up to 4 or 6 connection points, depending on the size of the lab.

The location of the teaching point is selected by the lecturer according to the class size and desired configuration of the space.

The use of AV over IP means that the lectern, once in position, can be quickly joined to the network via a single cable connection into a network socket. The academic can then commence teaching either by linking a laptop to the connection plate on the podium or through use of the in-built PC.

Connection of the lectern is straight-forward. Bespoke network connection plates are labelled, and cables are colour coded so that lecturers can see at a glance the correct cable to insert.

Simple Extron push-button controllers are used to manage source switching.



Powerful audio for large teaching labs

In the large teaching lab, Shure array microphones ensure that both student and teachers can be heard without difficulty.

These labs can operate as two separate rooms or combine to become one space with the option for master control from either place.

Each contains a total of 3 Epson laser projectors and 3 Shure MXA910 ceiling-mounted conference microphone systems and mobile lecterns.

The system feeds into a central DSP and is programmed so that the ceiling speakers near to the person speaking do not output the audio.

When labs are to be linked together, the university technicians can use the Wyrestorm App to drag and drop and adjust the system layout effortlessly.

The building was designed with most of the mechanical electrics and data, located above a series of floating panels. It was therefore imperative that the locations for projector mounts, power and data, ceiling speakers and microphones were exact.

The University enlisted the engineering skills of Pure AV system designer Dan Saville CTS-D, CTS-I, who helped to calculate precise positions for ceiling-mounted devices and in some instances, was able to value engineer a more practical solution.

Room Types

a. Outreach Space

b. Mechatronics and Physics Engineering Classrooms

c. 3 - Computer Teaching Labs (2 Interlinked Computer Lab classrooms)

d. 1- Computer Simulation Lab

e. 1- Pharmaceutical Simulation Suite

f. 3 - Collaboration Study Hubs

g. 2 - Chemistry Labs

h. 1 - Microbiology Lab

"Investing in technology on the cutting edge of their fields is vital to the student experience at Bedfordshire.

The technology we use allows students to experience industry-level practices and gain the skills necessary to attain these new knowledge bases for their future careers.

The STEM building serves as an icon for the town, symbolising our commitment to skills, scientific discovery and an unimaginable future.

Our goal is not simply to help our students achieve a degree, but toprepare them for their future and help them achieve their aims and ambitions.

The STEM facilities give students the opportunity to develop their skills and knowledge to be able to enter the world of work prepared and practiced in their fields."

Bill Rammel
Vice Chancellor
University of Bedfordshire

"We now have new Engineering labs/Automotive labs to support our new courses in STEM subject areas with the ability to hold larger numbers of students in our teaching spaces and technical areas.

The technology supports our teaching with the ability to move and plug in the teaching lectern in various locations within the D100's teaching rooms.

Our CST students are particularly impressed with our engineering labs and equipment, especially with our new 3d printing equipment."

Robert Keane
Technical Services Manager
University of Bedfordshire

"The new learning spaces are dynamic and reconfigurable, allowing us to use them for different class sizes and teaching styles.

I really like the mobility of the audio and that, if needed, lecterns can be moved around in larger spaces.

The roaming radio microphone is also great as it allows a lecturer to move around the room without affecting the level of audio.

The layout of the projector screens is also very useful and allows students a clear view from different angles.

Overall, students have been very positive and feel that the new spaces are innovative and of high quality,"

Dr Paul Sant
Head of School of Computer Science and Technology,
University of Bedfordshire

"AV\IP gave the usual benefit, but for me, it provides me flexibility to transmit a given lecture/event to other teaching rooms across multiple sites."

Mujib Rahman
Desktop & Media Services Manager
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