Case Study
Portsmouth Hospital TEAMS Centre

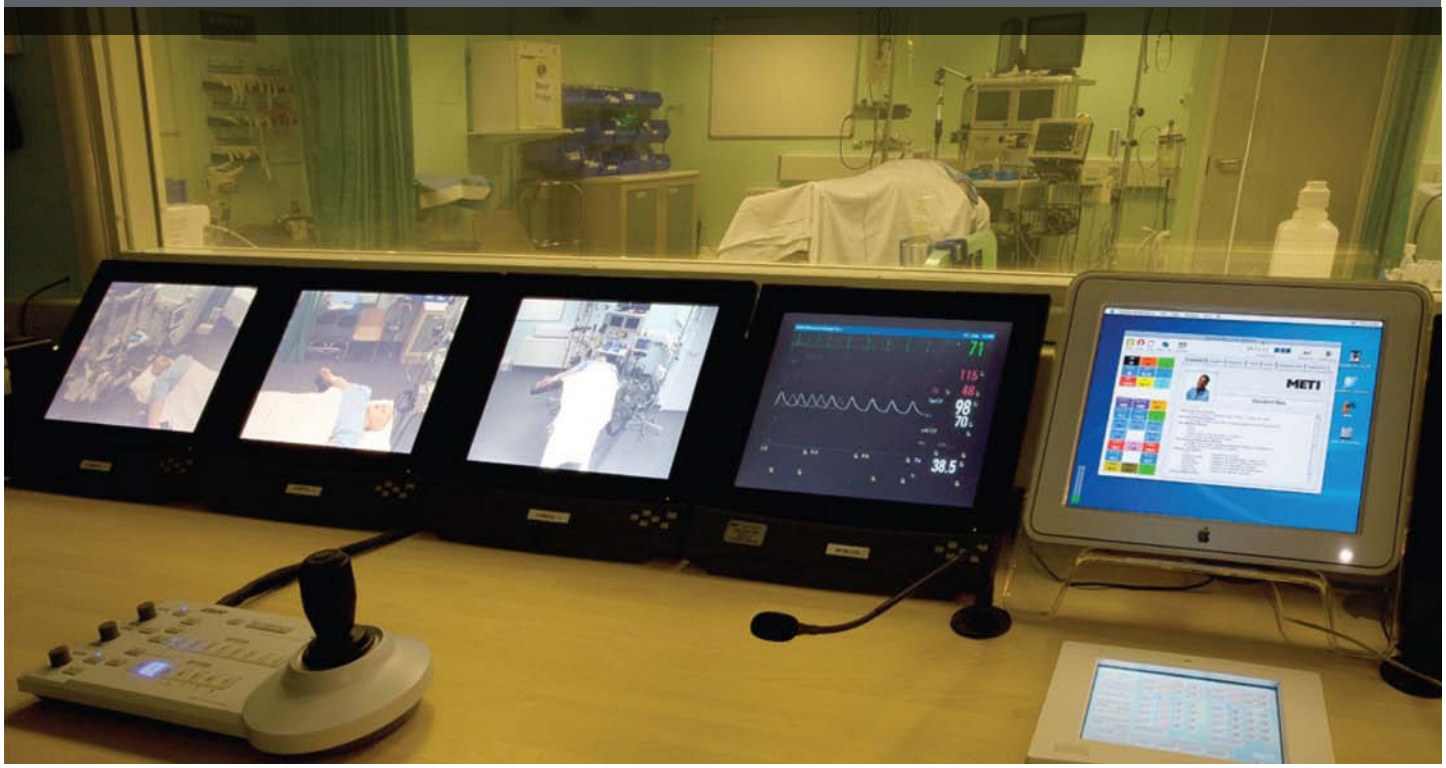
State-of-the-art medical training facility brought to life by Crestron

Since 2003 Portsmouth Hospital's academic and clinical staff have planned and developed a technically advanced training facility which provides hospital trainees with immersive, role-play scenarios to replicate the stresses and challenges of practicing medicine in an emergency situation. Following a systems upgrade incorporating the very latest in control and automation technology for Crestron, Portsmouth now has one of the best equipped clinical simulation training centres in the UK and one of the best globally.

The Training, Education and Assessment by Medical Simulation (TEAMS) Centre provides simulators for training theatre-based staff in a resuscitation environment. The facility consists of a twin theatre and ward type room, control room and a debrief room. Inside the simulation rooms lifelike mannequins are connected to medical equipment which can be altered by training staff to present varying, real-time symptoms and outputs which require diagnosis and treating by the trainees.

> "Although not yet commonplace, this type of facility represents the future of effective practical medical training and our brief demanded optimum levels of performance and reliability.

Matt Williams,
TEAMS Clinical Director at Portsmouth Hospitals NHS Trust



"Although not yet commonplace, this type of facility represents the future of effective practical medical training and our brief demanded optimum levels of performance and reliability," says TEAMS Clinical Director at Portsmouth Hospitals NHS Trust, Matt Williams. "When you consider what our staff are training towards and what is at stake, the TEAMS Centre needed to stand up to the demands of its function and purpose."

Surrey-based custom installers, Pixel Projects, were tasked with realising the complex vision and designed and completed system which supports the current and future requirements of the unit. The decision to specify Crestron hardware allowed for the best quality video images and audio throughout and also presented the options for additional features and functionality to streamline the effectiveness of the unit.

The AV equipment inside the unit consists of a series of cameras which relay live video feeds to the control rooms for the trainers to analyse. Other equipment in the theatre rooms includes digital microphones, radio microphones and audio processors and the provisions for future recording equipment to be added. All this technology is unified via 2 Crestron CP2E processors and is operated via TPMC Crestron touch screens.

"This complex system required a flexible and, above all, reliable backbone to keep every aspect of it functioning as it should," says Pixel Projects Project Manager, Roger Langworthy. "The Crestron processors were selected for this very reason, they work well across the board and the handshaking times are almost instantaneous, even between the non-Crestron elements of the project. Due to the instantaneous and reactionary nature of this facility, this level of performance and reliability was essential."

When in use, various items of the medical equipment have their own outputs displayed on monitors housed within the control room. Operators are able to talk freely with trainers inside the facility using the radio microphones and in-ear receivers. Each of the cameras in the unit use pre-sets from the Crestron system and the camera joysticks and digital video recorders are all controlled via the TPMC Crestron touch screens.

> "This complex system required a flexible and, above all, reliable backbone to keep every aspect of it functioning as it should. The Crestron processors were selected for this very reason, they work well across the board and the handshaking times are almost instantaneous, even between the non-Crestron elements of the project.
>
> **Roger Langworthy,**
> Pixel Projects Project Manager

During the simulated sessions the system operators have access to the control of each aspect and component of the AV setup using the touch screens and within the debrief room a separate dedicated control server allows for live feeds to be streamed for real-time evaluation.

“Since going live in the TEAMS Centre, the AV system has been a hugely effective and beneficial in maximising the learning from simulation training; the combination of automated mannequins and live role-plays give our trainers the platform to recreate a variety of scenarios,” says Matt. “What has been especially helpful is how such a complex system has been made so accessible and simple to navigate allowing us to give our entire focus and attention to monitoring the trainees and enabling the optimum debriefing.”

Since completion, the TEAMS Centre has been able to improve its functionality as a simulation centre for training. The precise Crestron control system has allowed the staff to confidently manage and control each aspects of the AV technology to manipulate the mannequins and analyse trainee responses. Through the intuitive touch screens the control of the facility is simple, fast and effective. Combined with the peace-of-mind that comes from the reliable Crestron processors at the backbone of the installation, the training staff can focus 100 percent on training.

Testament to the success of the project and the staffs’ satisfaction with it, the TEAMS Centre has since increased the number of mannequins to include a mother and baby which shows vital signs in a simulated birthing procedure.

Crestron solutions and the application of Crestron technologies are realising huge benefits in many different businesses, schools and medical facilities around the world. This latest example at Portsmouth Hospitals NHS Trust displays quite how versatile Crestron control solutions can be.

> “What has been especially helpful is how such a complex system has been made so accessible and simple to navigate allowing us to give our entire focus and attention to monitoring the trainees and enabling the optimum debriefing.

Matt Williams,
TEAMS Clinical Director at Portsmouth Hospitals NHS Trust

About Crestron

For 40 years Crestron has been the world’s leading manufacturer of advanced control and automation systems, innovating technology to simplify and enhance modern lifestyles and businesses. Offering integrated solutions to control audio, video, computer, and environmental systems, Crestron streamlines technology, improving the quality of life in commercial buildings, universities, hotels, hospitals and homes.