

Allam Medical Building

Advanced AV Integration for Castle Hill Endoscopy Centre

AudioVisual
Nuway

Project Overview

Client: Castle Hill Hospital – Allam Building

Sector: Healthcare / Medical Education

Location: East Yorkshire, UK

Specialist Contractor: Nuway

Project Value: £200,000

Scope: Design and installation of a building-wide high-performance 4K video distribution system across operating theatres, seminar rooms and lecture theatre



**Site wide high performance 4K
video with zero delay**



The Challenge

As part of an £8 million investment in a new state-of-the-art Endoscopy Centre, Nuway was contracted to deliver a building-wide 4K video distribution platform capable of supporting clinical procedures, training, and live demonstrations.

The system needed to:

- Provide real-time, high-resolution 4K visuals
- Enable two-way audio communication between operating theatres and teaching spaces
- Maintain ultra-low latency for precision procedures
- Support recording, streaming and lecture capture
- Integrate seamlessly with existing surgical imaging systems

Following the success of previous work, the scope was expanded to include a specialised seminar training room and a 100+-capacity lecture theatre – both of which were required to stream live procedures in 4K with robust control and communications infrastructure.

**Real time low latency 4k
broadcasting to theatres and
classrooms**

Our Solution

Nuway engineered a fibre-backed, IP-based 4K AV ecosystem designed specifically for clinical accuracy, educational clarity and long-term scalability.

4K Lecture Theatre Environment - The 100+ seat lecture theatre features a Panasonic PT-RQ7L 4K 7,500-lumen projector paired with a Screen International tab-tensioned screen, delivering bright, colour-accurate large-format visuals suitable for detailed medical content.

An Extron 4K60 recorder/streamer captures up to five simultaneous inputs – including high-quality audio – enabling comprehensive lecture capture and content archiving.

Advanced Seminar Room Integration - At the heart of the seminar room installation are twin Samsung 65-inch 4K commercial-grade displays, providing flexible viewing for live procedures and collaborative sessions.

Video distribution operates over a Bluestream 4K 4:4:4 AV-over-IP platform, supported by a fibre optic backbone and 10GB Netgear switches to ensure stable, uncompressed transmission.

4K endoscopy cameras by Olympus stream directly onto the isolated video network, alongside in-room Angekis 4K Sabre cameras. A four-way multi-view Bluestream switching system enables multiple operating theatres to be displayed simultaneously on a single screen – allowing instant comparison and enhanced learning.

A key highlight is the integration of the Angekis Sabre 4K PTZ camera with 12x optical zoom, capturing high-detail procedural footage for live streaming and archival use.

Two-Way Audio & Intelligent Control - Two-way communication between operating theatres and seminar rooms is delivered using Symetrix Radius DSPs in conjunction with Polycom and Sennheiser wireless/Bluetooth headsets and microphones.

Both the seminar room and lecture theatre feature Crestron 10-inch tabletop touch panels and dedicated control processors, providing intuitive access to; Source selection, Video routing, Conferencing controls and Environmental settings

The system also supports additional inputs including DICOM imagery and PACS integration, ensuring compatibility with clinical imaging workflows.

The Result

The completed installation provides Castle Hill Hospital with a cutting-edge digital training and collaboration platform.

Surgeons can share live procedures in 4K with students and colleagues in real time, supported by ultra-low latency transmission and two-way communication. Educational teams benefit from high-performance presentation tools, multi-source viewing and integrated lecture capture.

The Allam Building now operates as a digitally connected clinical learning environment — enabling advanced medical education, real-time collaboration and scalable future expansion.

“The system supports teaching, collaboration and presentations with exceptional clarity. It has become an essential part of the building’s daily operation.”

- Castle Hill Hospital – Allam Building

Planning a similar project?

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