

The Belgrade Theatre,  
Coventry, UK



MOBOTIX ... The HiRes Video Company

# MOBOTIX

## C A S E S T U D Y

### HiRes Video Improves Safety And Security At The Belgrade Theatre, Coventry, UK

The Belgrade Theatre was the first civic theatre to be built after the war and was opened in March 1958 as part of a large-scale re-development of the City of Coventry. Now an English Heritage grade II listed building, the Belgrade Theatre took its name in recognition and thanks for a gift of timber from the Yugoslav city of Belgrade that



was used in the construction of the auditorium. Holding 866 seats in its two-tier main auditorium, and just under 300 seats in its new studio sized second auditorium, the theatre remains one of the largest regional producing theatres in the country.

The Theatre is also the centre of the community with over 70,000 visitors each year attending theatre productions, school plays, training workshops and corporate events. The site covers 5 floors and is served by a large car park to the rear of the building which is part of the Belgrade Plaza building scheme. "The security of our visitors and staff is a major concern for the theatre and we have had CCTV installed since 1987"; however the old analogue system was somewhat unreliable and the quality of the black and white images meant that

actual identification of individuals was almost impossible, especially in areas with low lighting." comments Paul Duncombe, Deputy Buildings Manager.

The old system proved difficult to search through in the event of an incident, but with a major £14 million refurbishment programme between 2005 and 2007, Paul persuaded management to upgrade and improve the CCTV system. "The refurbishment included a major upgrade to the cabling infrastructure and allowed us to move to an IP based CCTV solution integrated into the building design."

Following a tendering process the theatre chose Active Communications as lead contractor for both the cabling and CCTV solution. "We wanted a CCTV system with better video quality and potential audio as well," explains Paul. "We also needed a simple to use interface that would allow us to view cameras from multiple locations."

Security Vision Systems





MOBOTIX provides discreet, high resolution coverage over critical access points throughout the 20,000 sq feet of public accessible areas at the Belgrade Theatre.

## Distributed Approach To CCTV Reduces Network Traffic And Infrastructure Costs

Active Communications is a local Coventry based systems integrator formed in 1989, by partners Peter Jacobs and Martin Gardner to provide high quality telecommunications and computer network cabling services. Over many years Active Communications have developed a strong customer base providing services to small/medium enterprises

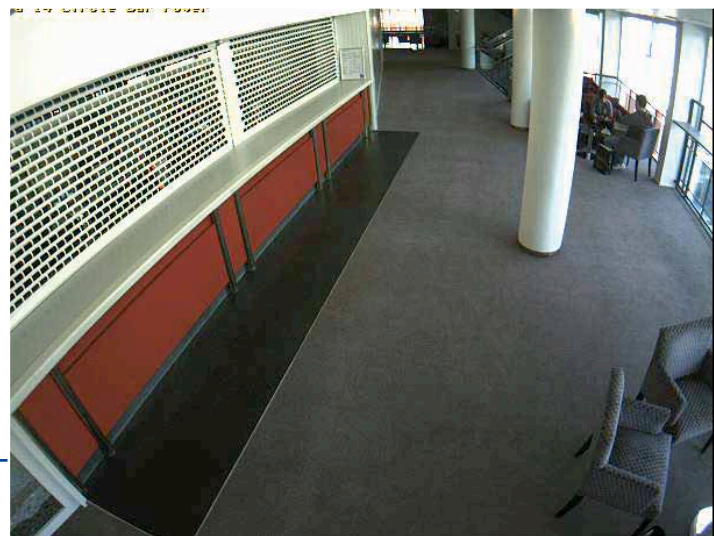
and large multinational Companies with economical, reliable and customised solutions that dramatically increases their efficiency and productivity.

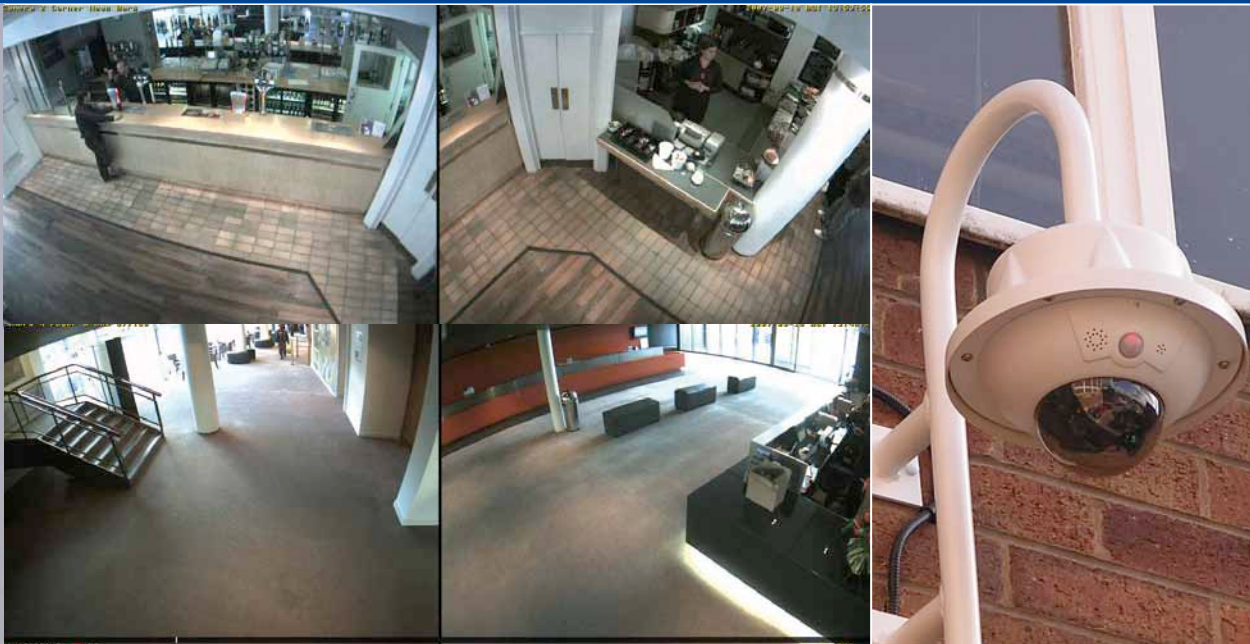
After a detailed site survey, the technical team from Active Communications and Paul established essential locations for 27 cameras, delivering 39 views for a complete 100% coverage of all public areas within the theatre. Using a mixture of single and dual lens MOBOTIX cameras, the new CCTV system provides megapixel level quality and audio reception fed back to one major location and can be used on other computers by remote access if needed.

Each camera is activated by built in motion sensors and footage is stored on a centralised rack of NAS units. "We decided to use 8 separate 500Gb NAS boxes and have two spares in case of any failures," explains Paul. "In the event of a NAS box failing, the system will notify us via email and we can quickly replace the drive with only a few minutes delay."

The Theatre was also impressed by MOBOTIX's distributed approach to CCTV which reduces network traffic. In this distributed architecture, all image processing, recording logic and decisions are made in the camera itself. This is in complete contrast to most other CCTV systems it had evaluated, where the camera typically has no real intelligence and relies on decision making and image processing taking place at 'the core' of the network via centralised software or DVR.

For example, in video motion recording, recordings will be made only when movement occurs in certain areas. An intelligent distributed CCTV solution will send images only when it needs to record them to its storage device. In contrast a traditional 'dumb' centralised system will be constantly sending images to the central location so that the software can make the decision to store it or disregard it. This means that there is always a network overhead, even when there is no movement.





Active Communications successfully installed both the new structured cabling and CCTV network on time and within budget and the new system has worked well. "The quality of the images is very good." "We are able to pick out clear and recognisable faces of anybody within the 20,000 sq feet of the public areas."

"Every time a camera is activated, the footage is recorded with a time stamp which makes looking back to find an incident relatively easy," Paul explains.

The success of the CCTV installation has prompted the theatre to plan an additional remote camera at its workshops, "This will be connected to us via DSL and allow us to monitor and record any incident within our workshop" explains Paul, "The use of the existing DSL link will make this very cost effective as we can reuse the cost of our storage at the theatre."

Overall, the CCTV installation has been a success, "We now have a system that provides better coverage, better quality images and audio, improved reliability and is much easier to use" explains Paul, "To date, we have had only one failure of a camera sensor and Active Communications alerted us before we even realised it had happened and were on site next day to replace it."

The Belgrade Theatre is now working with Active Communications on a trial to use a higher resolution MOBOTIX camera to film performances for archiving, training and potentially streaming to the internet.

The MOBOTIX solution has been in place now at the Belgrade for almost two years and has performed flawlessly. The low energy maintenance free design has also helped it maintain its commitment to achieve a comfortable and pleasant environment whilst managing its CO2 and making optimum use of energy.

**Why Mayflex?**

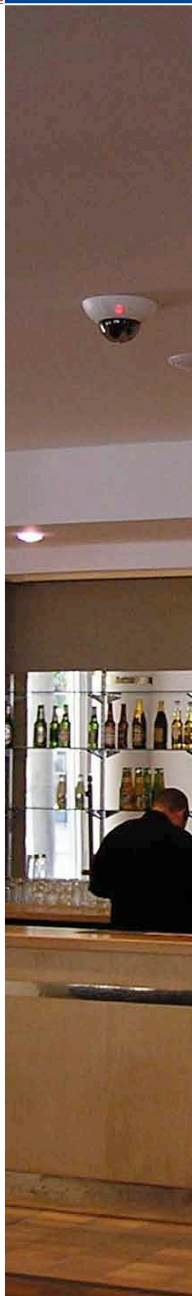
"Mayflex have been a long term partner who have consistently delivered the products and services we needed – when we needed them. Our relationship with Mayflex has helped to establish Active Communications as one of the leading MOBOTIX partners in the UK" says Peter Jacobs, Partner, Active Communications.

**Result**

The Belgrade Theatre has implemented a 27 camera MOBOTIX solution which covers 5 floors and over 100,000 sq m. The solution provides HiRes video and synchronised audio to three separate monitoring locations and has helped improve the safety and security of 70,000 visitors over the last year.

**Benefits**

Higher quality CCTV coverage, Substantial improvement in CCTV reliability, Indexed and searchable for events captured by CCTV, Ability to scale CCTV coverage inline with requirements over the next few years.





## MOBOTIX Technology: Cost Savings In Every Aspect

### High Resolution For Sharp Images

All MOBOTIX cameras are high-resolution cameras with integrated image storage and up to 1536 images lines and 2048 horizontal pixel resolution. The stored image thus contains 30 times more detail for creating zoomed sections of the image than regular cameras with 288 lines (CIF, 2CIF). This is why one single MOBOTIX camera with a 90° super wide angle lens is sufficient to monitor an entire room and yet provides more detailed images than traditional technology. The MOBOTIX Day/Night cameras feature zero maintenance with one color and one B/W image sensor.

### Intelligent Storage Technology Uses Fewer DVRs

The new, decentralized storage technology pioneered by MOBOTIX reduces the number of recorders that store the smooth high-resolution video by up to 90%. Up to 40 cameras store smooth video streams, including audio on a single PC, with every camera managing its own ring buffer and image database. Intelligent search features provide swift access to the stored events. The professional MxControlCenter software with research functions is available free of charge, no licences required. Event-controlled recording and automatic increase of frame rates upon detecting movements drastically reduce the storage requirements.

### Low Power Consumption Means Enormous Savings

Since MOBOTIX cameras are anti-fogging, do not require heating and only use 3 Watts each, power can be injected into the network cabling using standard PoE products, year round. This drastically reduces the amount of cables and the power requirements for backup power.

### Integrated Telephone Features

All MOBOTIX IT and Secure models feature bidirectional audio support. The built-in microphone and loudspeaker are used for live audio transmissions and storage purposes. Voice messages with PIN confirmation and call forwarding via IP or ISDN telephony have been integrated as well. Using the switch outputs, you can switch lights or open doors from the phone or from the computer.

### Robust And Well-Protected

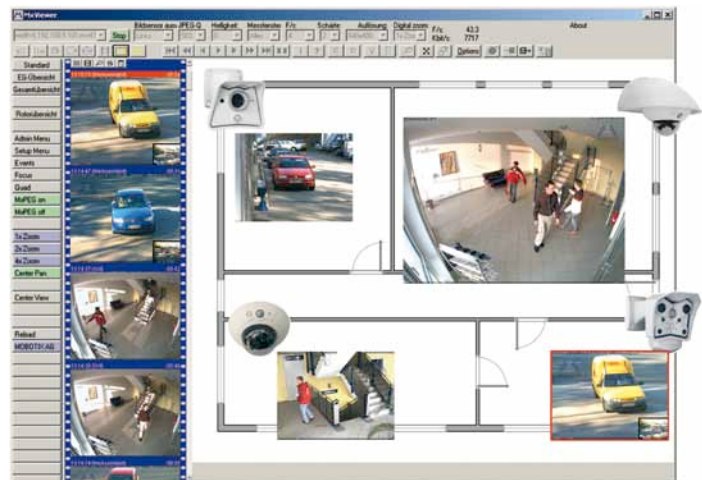
The fiberglass-reinforced housing is shockproof and, together with the concealed cable duct, protects both the camera and the network cabling against damage. Weatherproof (IP65) from -30° to +60°C (-22° to +140°F).

### High Return On Investment

Since the number of cameras and storage capacity are freely scalable and any kind of data connection can be used (ISDN, DSL, Ethernet, Wireless, GSM, copper, optical), MOBOTIX means high ROI, even years after installing.

### State-Of-The-Art Technology

Developed and manufactured in Langmeil, Germany, MOBOTIX produces imagestoring weatherproof high-resolution cameras, including lens and wall/ceiling mount for as little as 598 EUR (\$798) excl. VAT. To date, more than 100,000 cameras have been sold worldwide.



MxControlCenter alarm management software: free of charge with each camera - no restriction on camera type, layout editor or research functions

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