

**CASE STUDY 1:**

**CLIENT: West Yorkshire Passenger Transport Executive (METRO) and Leeds City Council (LCC)**

**PROJECT TITLE: Upgrade of Leeds Community Safety and METRO CCTV Control, Monitoring and Recording Equipment**

**Location: West Yorkshire, England**

Leeds community safety and METRO CCTV systems were very important and mission-critical applications. Their systems design and CCTV digital solutions were designed to operate 24 hours a day and 365 days a year. The systems were equipped with state of the art technology, fit for purpose, comply with all British and international standards and were designed with future expansion in mind over the entire lifetime of the system.

The primary goal of monitoring, for METRO, is passenger's safety and the system is mainly used to monitor the passengers and detect any related criminal activities within the bus stations and their vicinities.

The principal objective of monitoring, for Leeds Community Safety, is people orientated. The rationale of the Community Safety monitoring and recording CCTV images is to identify anti-social behaviour, criminal activities and public re-assurance.

A secondary objective of monitoring is vehicle descriptions down to vehicle registration index. The new Digital Recording System must be capable of providing recorded images to evidential quality.

The purpose of the project was the establishment of a modern integrated command and control centre to be used by local operators, police force, Urban Traffic management teams and all other council services. The design involved the move into a 'fit for purpose' building with associated transmission solutions (fibre optic, IP and wireless), a series of matrices, viewing monitors, the introduction of digital recording and control equipment with authorised and controlled access through management software; and more importantly the possibility to cost effectively expand the network to deliver new services in the future.

The joint partnership operations were monitored and controlled from a new state of the art CCTV control from within the Middleton Park Complex. The new building included, but not limited to, a new CCTV Control Room, a CCTV review suite, a meeting room and a communication and equipment room.

Over 550 CCTV cameras were monitored from the control room and several police radios were used by the operators to liaise with the police for rapid response. All incidents were recorded and archived by time, date, location, nature of the incident etc. The archived footages can be played back anywhere in the world provided the user has been provided with the right access level and a relevant authorisation to access the required incidents.

ICAS Ltd security, IT and fire consultants were appointed by Leeds City Council (LCC) and METRO to provide a feasibility study for the provision of a new 'Single Site' Control Centre capable of integrating the existing control room functions and personnel into one single state of the art control room with all the modern and necessary facilities. Following submission of our feasibility report, the project was given board approval.

ICAS Ltd commenced the design development phase of the project in July 2010. We adopted a design methodology which created a distributed 'Virtual Matrix' and Digital Recording Hub in a new secure server room to replace the existing control room on each of the old locations. Each Hub integrates to a metropolitan wide area fibre network for connectivity to the new centralized control room.

ICAS Ltd managed and coordinated specialist consultancy from Architectural, Mechanical, Electrical, Ergonomic, Acoustic and Technical Design Consultancy to prepare a detailed tender package which was invited to specialist contractors under Official Journal of the European Union (OJEU) procurement guidelines.

The £1.5 million project to construct the new centre is being managed by ICAS Ltd and is due for completion by April 2012.

**Security Services Provided:**

- Feasibility
- Control Room Design
- Outline & Detailed Design
- Vendor Qualification
- Tender Package Preparation
- Project Management
- Witness Testing
- Commissioning Plans

**CASE STUDY 2:****CLIENT: Cumbria Constabulary****PROJECT TITLE: CCTV Consultancy Services – Stage 1: Scope and Business Case****Location: Penrith, Cumbria, England**

Cumbria Police has been operating CCTV systems covering Cumbrian towns such as Carlisle, Barrow, Penrith, Kendal, Workington and Whitehaven since early 1990s. In total they were monitoring approximately 200 CCTV cameras which were of different types and makes. The cameras were still using outdated analog recording technology such as VCRs and Multiplexers.

Most of the CCTV cameras are installed in town centres, residential areas, business parks and commercial sites. Most of them were coming back to the control room via a combination of different transmission means such as fibre optic links, microwave links, ADSL, coax cables and twisted pairs.

The Constabulary main concern was that their out-dated analogue recording system used multiplexers and VCRs to record the CCTV camera images. They were looking to replace it with a digital system which was capable of storing data on a web based cloud.

Cumbria Police was seeking to replace some of the existing important and strategically located cameras with new camera technology which can last and remain operational for a foreseeable future of at least 7 years.

Cumbria Constabulary was wishing to identify the best solutions to upgrade their existing analogue CCTV control and recording systems and to address the current locations of CCTV cameras while replacing them with new cameras which are capable of working day and night.

The Office of the Police and Crime Commissioner and Cumbria Constabulary were seeking to:

- Identify appropriate independent and balanced options for the modernisation of public space CCTV in Cumbria, making best use of available technology.
- Appoint a suitably knowledgeable and experienced organisation to carry out a scoping exercise that produces a costed business plan for all viable options.
- To engage the services of a security consultant to support a CCTV project to produce a business case that can be considered by the major stakeholders of the Cumbria CCTV wide.

ICAS Ltd was awarded the contract and was requested to investigate all areas relating to this matter and provide budgetary pricing, in order that a business case can be presented to stakeholders.

The Scope of Services for a security consultancy delivered by ICAS Ltd were:

- Carried out site wide surveys and a full audited of all the public space CCTV camera sites and control rooms.

- Worked with all stakeholders and identified the operational requirements of each CCTV camera and their importance in combating crime in Cumbria.
- Reviewed the operational requirements of the current public space CCTV system and established if it is fit for purpose.
- Identified the main objective of each camera and draw a list of cameras which were required to be retained and those which were not required and recommended that these be decommissioned and removed.
- Identified the different available options to modernise and upgrade the existing CCTV system operated by Cumbria Constabulary.
- Explored the different available options to connect the retained cameras back to the Cumbria police HQ control room. The design options were based on future proofing, the need of the police operational requirements and the possibility to extend coverage of the existing system where viable.
- Developed a report making realistic recommendations to standardise CCTV across all sites in the future using best possible technology available and bench marked it against identified best practice.
- Ensured that systems meet operational and legal requirements sufficient to provide best evidence and no degradation of service to Cumbria Constabulary.
- Ensured that all technological solutions proposed are fit for purpose, easily upgraded and ensure that the new technologies will integrate with existing fibre optic infrastructure.
- Ensured that all work takes cognisance of current Government guidelines, recommendations and reports on the subject of improving the efficiency and effectiveness of public space CCTV.
- Provided a costed business plan for all options, reflecting the need to achieve best value and reduce revenue costs.
- Developed a phased framework for implementation of best options.

***Security Services Provided:***

- Feasibility Study
- Recommendations
- Business case and Business plan
- Provided different development options
- Provided framework and development stages schedules

**CASE STUDY 3:****CLIENT: ABERDEEN CITY COUNCIL - Housing & Environment****PROJECT TITLE: Public Space CCTV Modernisation – Consultancy Phase****Location: Aberdeen, Scotland**

Aberdeen City Council was responsible for providing a wide range of services to its population of circa 220,000 with approximately 105,000 domestic and 8,000 non-domestic properties.

Aberdeen City Council had a number of regularly maintained CCTV cameras located around the city centre and some housing estates. The cameras were monitored from a control room located at Grampian police station HQ.

The public space CCTV system managed by Grampian Police operates primarily in the City Centre, with connections to Rosemount and Torry.

The CCTV system was totalling around 93 cameras installed at different at different times over the years. Most of these cameras were linked to the main control room via a fibre optic network. Many of the existing cameras and the associated recording equipment were nearing the end of their life.

As part of this exercise the Council was seeking to identify options to improve the monitoring capacity for these systems, whilst reducing overall revenue costs.

There was also a desire to consider options to extend CCTV coverage in the city, subject to evidence of likely effectiveness and available funding.

There are also a number of portable and wireless CCTV systems operating on a wireless mesh network in the city for which improved monitoring capacity and operational effectiveness is required.

The Council in partnership with Grampian Police was seeking to identify appropriate independent and balanced options for the modernisation of public space CCTV in the city of Aberdeen, making best use of available technology. The council and the police were also seeking a suitably knowledgeable and experienced organisation to carry out a scoping exercise that produces a costed business plan for all viable options.

ICAS Ltd was awarded the contract and selected among other competitors to carry out the task.

**Scope of work**

The following areas were deemed to be within the scope of the project delivery

- Full investigation of existing public space CCTV systems
- Development of a systems brief using best possible technology and bench marking against identified best practice.
- Provide framework to ensure future proofing
- Consider all management and funding options

- Consider options for location and nature of monitoring facility
- Ensure no degradation of service to the police of the public
- Integrate new technologies with existing fibre optic infrastructure
- Explore options for consolidation of services
- Develop a phased framework for implementation of best options.

**The Desired Outcomes delivered by ICAS Ltd were:**

The Council and Grampian Police were provided with a number of costed options that allowed both parties to modernise public space CCTV in the city of Aberdeen.

**ICAS Ltd carried out the following tasks:**

- Audited of existing CCTV provision in Grampian Police and Aberdeen City Council
- Clearly identified options to modernise the existing CCTV system operated by Grampian Police
- Identified the capacity to extend coverage of the existing system where viable.
- Identified options to create and manage a new monitoring facility, including options for a joint facility operated by the police and the council.
- Provided a costed business plan for all options, reflecting the need to:-  
Achieved best value and reduce revenue costs
- Ensured that systems meet operational and legal requirements sufficient to provide best evidence.
- Ensured that all technological solutions proposed are fit for purpose and easily upgraded.
- Ensured that all work took cognisance of current Scottish Government guidelines, recommendations and reports on the subject of improving the efficiency and effectiveness of public space CCTV in Scotland.

***Security Services Provided:***

- Feasibility Study
- Recommendations
- Business case and Business plan
- Provided different development options
- Provided framework and development stages schedules

**CASE STUDY 4:****CLIENT: Newcastle University****Project Title: Security Systems Review****Location: Newcastle upon Tyne**

Newcastle University is a City Centre complex which sprawls over a wide area and all but a small central core are open access from many directions and used by the general public for short-cuts.

The University were concerned at the efficiency and most of all cost-efficiency of their overall security provision and commissioned ICAS Ltd to carry out a detailed audit and produce costed recommendations. All faculties and departments were requested to cooperate fully.

An initial program of auditing, fact-finding and interviews established that a fundamental problem was in the method of funding security measures together with the organisation of manpower.

Security being taken as just another facet of faculty/departmental life then each of those entities had an autonomous budget into which Security was included.

Consequently throughout the entire university there were several separate individual CCTV, Access control and Intruder Alarm systems, with different rental/maintenance contracts from different companies, dramatically different states of serviceability and substantial differences in value for money in terms of protection delivered.

This widespread disparity extended to monitoring and general management of the various systems from reasonable to neglectful.

The University Police and manned security was heavily represented by older staff and the shift patterns, which were inefficient and wasteful, were jealously defended against any suggestion of change. The balance between Police and Security officers and the respective duties allocated to them was not either effective or justified in cost terms.

Finally, there was little or no Security Culture, quite rightly all focus was on academic achievement with most other considerations being regarded as an irritant but statistical reported crime and disorder was an increasing problem and a subsequent questionnaire issued to both the student and academic staff showed that that which went unreported was substantially greater. Most worryingly the fear of crime, especially by females, was considered an inhibiting factor to much activity.

These findings were reported and inter-faculty/departmental discussion was suggested to promulgate the principle that a collective financial and administrative re-organisation would offer a solution to the majority of problems and considerable financial, self financing, advantage

Approval was subsequently given to prepare proposals on that basis and a detailed survey and audit was undertaken, by ICAS Ltd, of all installed equipment as well as liaison with installers and maintenance companies

At the same time all users of security equipment and services were questioned to establish their actual security requirements rather than their presumed needs or those which “Have always been that way”.

A report was subsequently submitted and the following recommendations were proposed:-

- A revision of all CCTV which cut out all the dead-wood, brought everything up to the same standard of performance and serviceability, and which came under one large “economy-of-scale maintenance contract. Centralised monitoring from a central control room was proposed
- An identical revision was proposed for all intruder alarm systems with the added bonus that the centralised monitoring of alarms would be closely integrated with the CCTV and with Police/Security Guard communication
- A further, similar program for the various access control installations with a phased program of progressive compatibility between systems to facilitate more effective control of card issue and macro emergency response
- A complete reorganisation of manpower and shifts developed by Sir Stanley based on his decades of experience. This involved a re-allocation of duties and dealing with shift patterns head-on but in such a way that resulting benefits were available to all concerned
- A PR program was proposed aimed at all students, employees and academic staff that heightened security awareness and made clear how reporting and the correct use of security measures was to the benefit of all

Budgetary costings were included and it was estimated that even with the cost of re-engineering the fist full year savings would be in the order of £50,000 to £100,000 thereafter.

There would also be changes in administration and management as well as budgeting but for obvious reasons details of these, together with the actual measures taken, cannot be included herein.

**CASE STUDY 5:****CLIENT: Newcastle City Council****PROJECT TITLE: Control room design****Location: North East of England**

Newcastle City Council is a local authority serving the citizens, communities and businesses of Newcastle upon Tyne, the biggest city in the North East of England.

With 78 councillors and around 15,000 employed staff, the council is responsible for delivering services to a diverse range of customers across Newcastle upon Tyne which has a population of over 173,000.

The Council operates out of several locations with their main offices located in and around Newcastle and mainly the main building located within the city centre. This is a Grade 2 listed building and accommodates the Mayor, council officers and chambers, coroner's court, births & death registration together with council officials and associated administration.

Due to security breaches within the building and the fear for the staff well being, the client wanted a fully integrated security system comprising of CCTV, Access Control with interlocking system, Door Entry, Intercom system, staff personal attack and Car parking management comprising of controlled traffic barriers and bollards. The CCTV cameras were to be installed on a grade 2 listed building; therefore, making the system design more complex.

In particular an insurance lead project to develop a high-security Bullion Transfer facility where Armoured vehicles could deposit into the Treasurers Department money collected from car parks, Metro railway ticket machines and other money collecting systems.

ICAS Ltd associate was appointed by Newcastle City Council to undertake to review the security and design the system which will accommodate all the above requirements. ICAS Ltd was challenged to come up with a new system that will reassure the council employees that they are working in a safe and secure environment and their well being is well looked after. A new innovative design was developed and engineered by an ICAS senior security consultant, successfully completed and tested.

**Security Services Provided:**

- Feasibility
- Control Room Design
- Outline & Detailed Design
- Project Management
- Witness Testing
- Commissioning Plans

**CASE STUDY 6:****CLIENT: North West Development Agency****Project Title: THE SPEKE-GARSTON PROJECT****Location: Liverpool - North West of England**

The Speke Garston Development Company (SGDC), which is part of English Partnership, took over the old Liverpool Airport site, after the new airport was put into service, with a mandate to develop it into a prestigious Enterprise park later named “The Estuary Enterprise Park”.

WSP Consulting were appointed to design all the services and as part of a formal service agreement employed an ICAS Ltd associate as sub consultants for all matters related to Security.

The first responsibility was to produce a Security Strategy and working in co-operation with the local Police a strategy for the initial and ultimately developed site area was developed which covered both Inner road and perimeter CCTV, a multi-service fibre network, perimeter fencing, site access control and night-time traffic restrictions, monitoring of tenant sub-systems, connection to adjacent commercial estates, several revenue generating methods, recommendations for manpower and the design and construction of the security gatehouse.

ICAS Ltd were appointed by the Client to carry out a feasibility study and come up with an audit report including recommendations. A consultancy report on the crime in the area of that city and the development of a strategy for countermeasures including CCTV, Site Access Control, Perimeter Surveillance and Landscaping, Road Layout and Traffic Management, integration with the systems of tenant businesses and the design of a controlling Gatehouse and its staffing was produced.

These having been presented and accepted in full for implementation the next phase was to design and write the specification for the comprehensive and extendable CCTV system, assist in the issue and evaluation of the tenders, supervise the contract and undertake the hand-over

**Security Services Provided:**

- Feasibility
- Recommendations
- System Design

**CASE STUDY 7:****CLIENT: Ancoats Project****Project Title: Feasibility Study****Location: Ancoats – Manchester - UK.**

This is a district close to the centre of Manchester which is claimed to be the birthplace of the Industrial Revolution and is essentially a half mile square of many remaining cotton mills. It is surrounded by poor working class districts with higher than average crime rates.

Totally neglected for many decades it fell into substantial dilapidation until it was designated for de-development into mixed residential and developers were invited to purchase buildings and convert them, largely into restage private apartments.

In addition the district contained a very large charitable housing complex, some local authority dwellings, a couple of empty church and a lot of derelict commercial properties.

Such projects that had already been completed were generally well done and prestigious but with an eclectic mix of different security totally uncoordinated with each other.

There was however no policy for area security and crime reduction and as a consequence there was an escalating crime situation which was detrimental to further commercial development.

As the Security Consultant of choice for the North West Development Agency ICAS Ltd consultant was invited, in partnership with Greater Manchester Council to undertake a complete security review including audit of existing security infrastructure, analysis of crime statistics, public and commercial consultation by questionnaire and to produce a report with recommendations on both a social and technical level.

To do this our consultant technically and photographically audited more than 100 large and small properties and documented all security measures by make and model where possible.

By questionnaire we consulted all residents and owners of property and liaised with the local authorities, the Greater Manchester Police and the architects already appointed for the development of public spaces.

ICAS Ltd consultant chaired a number of all-party meetings.

ICAS Ltd final report, made of few volumes identified and provided evidence of those elements contributing to the escalating crime situation and recommended :-

1. The engineering approach to revitalising and integrating all existing individual equipment and measures into one coherent scheme with a central control room and added public area coverage. This included both capital and revenue considerations
2. Measures for the utilisation of existing security staff into a cooperative network centred on a core staff and management under council control
3. Extensive measures under CPTED principles to throw off the depressingly defeatist atmosphere of the area

**Security Services Provided:**

- Feasibility
- Recommendations
- System Design

Our report was accepted in full and has been integrated into the long and short term policy for development of the area.

**CASE STUDY 8:****CLIENT: Malta Maritime Authority****PROJECT TITLE: Design and implementation of a CCTV System at the harbour****Location: Valletta, Malta**

From an initial contact via the ASC ICAS an Associate was commissioned by the Malta Maritime Authority [the third biggest shipping flag in the world] to undertake the design and supervising implementation of cutting edge CCTV on major Ports and Harbours throughout the island

Malta was, and is, responsible for the security of a disproportionate area of the Mediterranean due to its registration size and is a primary target for the relentless illegal immigration coming in from sub-Saharan Africa

Financed by the EU the project required cameras at high vantage points in each designated port or harbour that would “ IDENTIFY THE NUMBER/GENDER/AGE OF THE OCCUPANTS OF A 4-METRE BOAT OR LARGER OVER A DISTANCE OF ONE KILOMETRE WITHOUT THE AID OF ANY ILLUMINATION SAVE THAT PROVIDED AS PART OF THE CAMERA ASSEMBLY”

The ICAS Associate undertook multiple visits to the island to officiate at meetings with several Government department and civilian administrators of candidate buildings for equipment positioning. This was complicated by the island of Malta being one big heritage site with all the limitations that involves

Using direct and several dog-leg lines of radio transmission a network was designed to broadcast comprehensive function control and return real-time full bandwidth CCTV pictures to and from a purpose designed Control Room located in the MMA headquarters building in Valletta.

This included evidential quality archiving and UK procedurally correct data management and protection.

Each camera location required the design of massively stable mounting platforms to support the very large Zoom lenses and big infra-red projection lamps required as well as H&S Compliant device access arrangements.

Subject to some budget adjustments the ICAS Ltd associate design proposals were accepted and after conversion into a tender specification he participated in the tender and award process, supervision of the contractor, system implementation and commissioning and the provision of service and operating manuals and the training of staff.

There being nothing previously in place this required the translation to contemporary UK rules and regulations pertaining into Maltise legislation.

**Security Services Provided:**

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- Feasibility
- Control Room Design
- CCTV design
- Outline & Detailed Design
- Vendor Qualification (PQQ)
- Tender Package Preparation
- Project Management
- Systems implementation
- Witness Testing
- Commissioning Plans

**CASE STUDY 9:****CLIENT: Tees and Hartlepool Port Authority****PROJECT TITLE: Overall Security Review and Upgrade****Location: Tees Port and Hartlepool Docks, England**

The Tees and Hartlepool ports incorporate the large Teesport, Hartlepool Docks, the authorities Container terminal, off-site logistics distribution depots and warehouses and vehicles storage.

The ports mainly served the main industrial sites of Teesside made predominantly of Petro-chemical industry which main core of business included, but not limited to, import/export of gas, Liquid and bulk material. This has led to substantial container traffic and the navigational management of the River Tees under the Harbour Master.

Due to its large amount of traffic and transactional activities, the port authority had its own warrant-carrying Police Force as well as civilian security etc.

In a summary, Tees and Hartlepool Port systems were very busy, important and mission-critical ports. The control of access into the port and its proactive and reactive monitoring of each area were very critical.

The primary goal of its integrated security systems were the safety of its employees, visitors, contractors etc., traffic control inland and within the river tees, safe loading and unloading of containers and detect any related criminal activities within the port areas and their vicinities.

Following on from the successful implementation of a cutting edge CCTV system on the South Gare peninsular [observing ships at sea up to two kilometres in starlight conditions] the port authority commissioned ICAS Associate consultant to carry out an authority-wide survey followed by a critical report and recommendations in the form of a costed strategy plan.

The consultant undertook this in cooperation with his colleague a senior member of Northumbria police force, the late Sir Stanley Bailey, Retired Chief Constable of Northumbria and long-standing Patron of the Association of Security Consultants.

**Security Services Provided:**

The strategy Plan, comprehensively adopted by the Authority, included:-

- Feasibility Study
- Review of the Site Access Control
- Review and Re-organisation of Traffic Management
- Review and Recommendation of a Comprehensive Authority-wide CCTV upgrade
- Re-organisation and centralisation of the control room
- Review of the Access Control monitoring and surveillance of the Container Loading

- Re-organisation of materials handling paperwork and computer programming to improve traceability
- Re-organisation of the Port Police and Security Force [by Sir Stanley] Training Procedures