

MOSCOW



Russia's capital Moscow is becoming a safer city with the introduction of a city system with over 1000 cameras, monitored and recorded on Russian made digital video recorders.

The design and installation was done by our Russian colleagues from the Intelligent Security Systems (ISS) company, who were kind enough to share their views about City CCTV systems in general and their Russian experience.

A news similar to the following would have been a sensation a few years ago: "The first Control Centre of public area CCTV system has been officially launched in Moscow. Over 1000 cameras have been installed along *Tverskaya street*." Two popular Russian TV-channels: TVC (*Petrovka 38*) on the 28th of June and RTR (*News*) on the 5th of July informed about the large-scale system of street surveillance, that monitors Moscow's centre.

For the first time in Russia 1012 cameras were integrated into a single system! The purpose of this CCTV system is to improve

crime detection and to prevent or reduce crime. Hollywood blockbuster script writers' imaginations are becoming a reality and are beginning to bring tangible results.

The latest developments from around the world clearly demonstrate that traditional legal methods of fighting against terrorism, armed robberies, assassinations, household thefts, hijackings etc., are not effective. Many traditional police methods require enormous efforts and extreme measures after extreme events, such as terrorism. This calls for new and completely different principles in fighting with such crimes.

The UK experience

Private enterprises in the US, the U.K., France, Japan spend on average from 15% to 20 % of their profits for the safety of their businesses.

The existence of potential terrorist threats (explosions, kidnapping) in any country across Europe, America or Asia forces the law enforcement agencies to use state of the art technologies for crime prevention. The CCTV systems on the streets of all large cities in Europe and the US are used by the police for keeping order and crime analysis. The largest user of surveillance and monitoring systems is probably U.K. This is one of the first countries to use "Street CCTV" systems for the safety of it's citizens, methodically implementing the newest hardware thus increasing police efficiency.

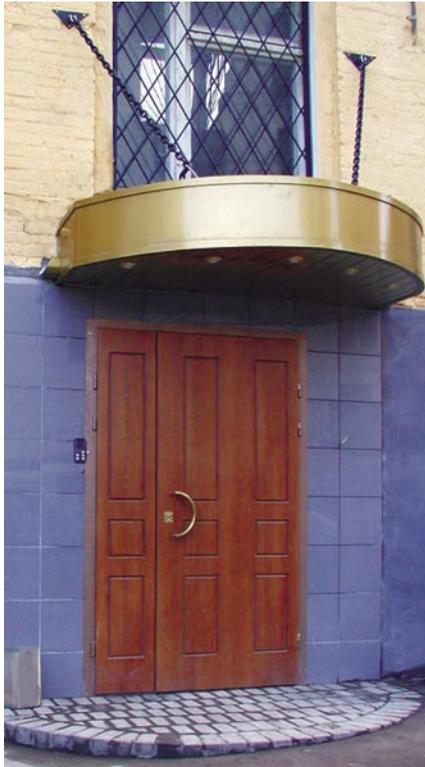
Most of the readers have probably seen on TV how a boy in UK kidnapped a two-year-old child, as seen by a CCTV camera installed in a Liverpool shopping centre. The most awful crime of 1993 - kidnapping and murder of two-year-old James Baldger by two 10-year old boys - was investigated thanks to the CCTV system in the shopping centre.

Is it worth using CCTV?

The British answer would be without any doubt "Certainly!".

The daily peaceful life in the United Kingdom is often disturbed not only by sensational murders and scandals, but also by IRA bombings, as well as football hooliganism.

This is why English builders and architects today consider security at a very early stage of their projects.



CCTV cameras are included wherever possible.

According to BBC news the British Government intends to add in excess of a thousand cameras in the public areas of various cities in order to fight crime. The cameras will be installed in residential areas with a high crime percentage, in shopping centres, hospitals, as well as in busses, trains and car parks. The UK Government has assigned a sum of £79 million for this program.

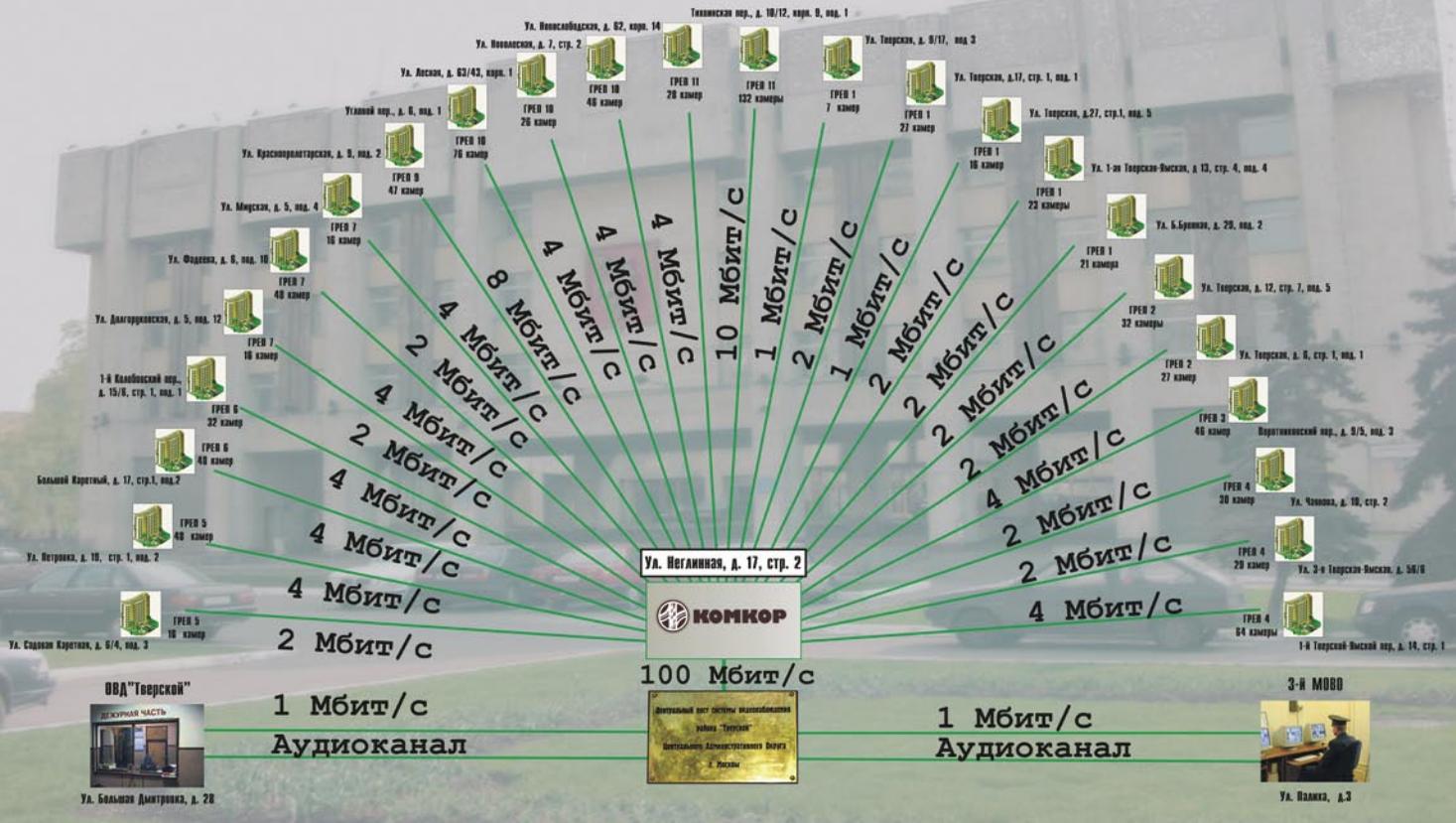
The Moscow experience

How to protect your house when traditional means have proved inefficient? Between 50 and 80 apartment burglaries occur every day in Moscow. Apartment burglaries are the most frequent crime in certain areas of Moscow.

Because of this, the prefecture of the cen-



ФУНКЦИОНАЛЬНАЯ СХЕМА ОХРАННОЙ СИСТЕМЫ ВИДЕОНАБЛЮДЕНИЯ ТВЕРСКОГО РАЙОНА



tral administrative district decided to carry out an experiment - to install cameras at the entrances of the Tverskoi district.

"The complex CCTV system includes 1263 entrances of municipal apartment buildings and houses of building societies in Tverskoi district of the capital. The purpose of the creation of the Monitoring Centre is the safety of the household, monitoring of the entrances and prevention of theft as well", - said Gennady Dektev, the prefect of the central administrative district during the opening of the Tverskoi District video surveillance centre.

The joint CCTV project was realised by companies "Moscowskaya telecommunicationnaya korporacia" (KOMKOR), "Planir B", "Domophon-Servic",

"Moslift" and "MOS OTIS".

The basis of the project is the CCTV digital recording technology offered by "Intelligent Security Systems" (ISS).

Technical details

More than one thousand cameras are installed on the territory of Tverskoi district. Vandal proof features of the video cameras of Russian manufacturers were modified and reinforced. The cameras monitor entrances of apartment buildings, houses, roads and lanes twenty-four hours a day.

The signal from video cameras arrives at the "transmitter - receiver" with further



transmission via "a twisted pair", and then goes to the local computer centres for video monitoring.

The processing and the compression of video signals takes place in 23 computer centres for video monitoring, and information is then transmitted to the Central Control for video surveillance via the Moscow fibre-optic network.

The surveillance control centre is equipped with a direct audio channel, with the possibility of sending video information to the internal protection department of the district. In case of an emergency a communication call can be made to a response operation group by an alarm call. Such a group is composed of a crew of 7 militia-men in a four-wheel drive for fast response.

Profession – Surveillance Control Centre Operator

There are a number of operators working in the Surveillance Control Centre, predominantly female. The operator's shift lasts 12 hours. Many of them have their first encounter with computers only here, but the CCTV system is so simple and comfortable that even a novice can manage it.

"Watchfulness is our profession", say the CCTV Centre operators proudly, and they consider themselves as contributors to law and order in the Russian capital.

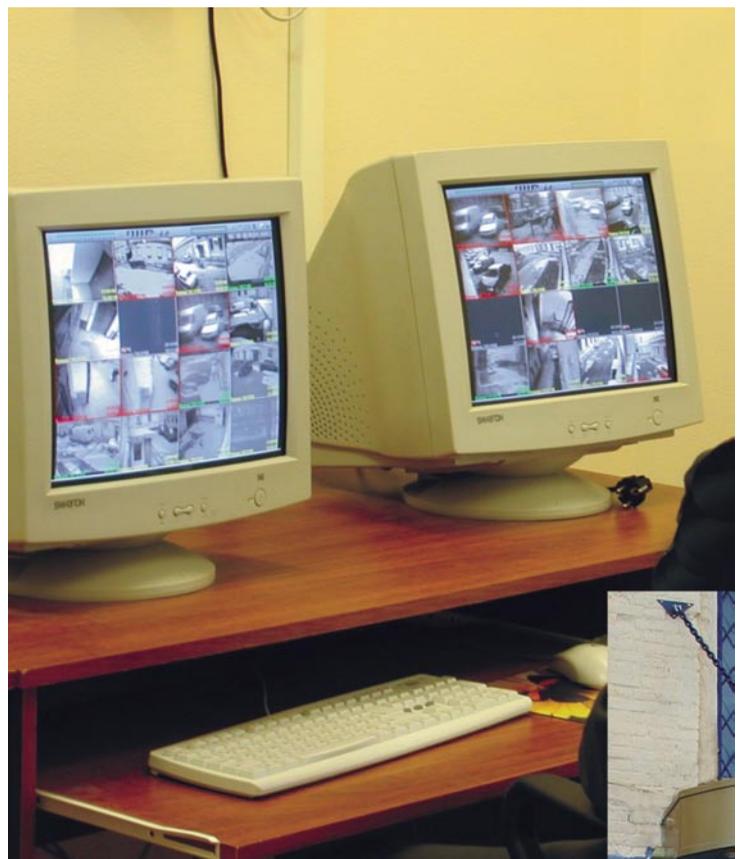
The aggressive behaviour of football fans walking along Tverskaya Street after the hooliganism in Manezhnaya Square attracted the attention of the operators. Their faces were fixed, and the system's ability to zoom in the picture and define the details assisted the police officers to identify the hooligan participants and to bring proceedings.

Each operator watches four monitors at the same time – which makes 64 pictures from 16 cameras. When a moving

object appears in the frame, it automatically sounds a signal. It is also possible to zoom in any of the pictures at the slightest suspicion of criminal activity. After identifying the details the operator returns the camera into previous position or immediately presses the "alarm button". The image that has brought the operators attention, if suspicious, is immediately sent to the emergency response group. If intruders are not caught "in action" by the police the captured images are safely saved in the computer and passed onto the law enforcement officers, who take over the case.

The developer comments on Moscow's "Safe City Project"

The main tasks of any modern CCTV system are: permanent collection of video information from a large number of cameras, intelligent analysis and archiving of all collected information and the ability to receive



information at any scale, angle and time of the day. The worldwide development of high-speed data transmission channels, mostly initiated by the Internet's popularity, creates favourable conditions for constructing large-scale CCTV



systems based on new, digital methods of video information transmission.

The Intelligent Security Systems (ISS) Company is the developer of the first Russian digital CCTV system for city security support. The core of the "Safe City Project" is the integrated software/hardware system "Inspector+", which is developed by ISS.

The new development allows for the use of advanced global communications for effective engineering decisions in surveillance.

The uniqueness of the "Safe City Project" is not only in the fact that this is the first Russian project based on digital technology, but it is also a world class solution.

The digital system has a number of features:

- Ability to connect up to 64 cameras to one computer,
- Reduces the influence of human factor, which guarantees recording of absolutely all alarm events;
- Hard disk recording (auto re-cyclic recording without quality loss);
- Use of digital compression method without quality loss;
- Use of motion detector (recording is

made at the motion detection in the camera's field of view, about which the operator is notified by red outlining of the moving object);

- Convenient work with the archived footage (ability to sort out information

by camera number, time and date);

- Ability for long term video archiving and exporting of video for criminal identification for court cases;

- Effective processing of video data.

A system expansion is already planned for the very near future. Processing of additional events such as fire alarms, ambulance calls and other public security services will be included. The "Inspector+" system is built on industrial standard microprocessor modules which allow for easy expanding of the functions and features, by either software or hardware additions, or both.

In addition to controlling pan & tilt and zoom cameras, remote control of doors, light and other devices are also possible via the system.

One can consider as a separate prospective development the connection of data gathering devices - such as various types of sensors monitoring power consumption - lights, heat, water, gas etc. This would solve council problems and speed up the system payback.

The system's modularity also provides flexibility in the selection of network connection type. In addition to the Ethernet, ISDN and PSTN are also possible, which is very important for areas where installing digital communication lines is difficult.

system will completely justify itself both in respect of security, and economics.

The cost of CCTV system installation at a single entrance amount to about 26 thousand rubles (approx.US\$900), the cost of concierge place arrangement is approximately 30 thousand rubles (approx. US\$1000).

The cost of facility management amounts to a little more than one thousand rubles monthly per entrance. Actually such an amount is allocated now by the municipal administration to provide concierge operation in one entrance. But, although these amounts are high for the current Russian living standard, there are multiple benefits - the system operates twenty-four hours a day, it is reliable, it captures all people in the camera's field of view, it does not require sick-leave and it does not demand wage increases.

At the opening ceremony of the CCTV

Centre the first deputy mayor in Moscow government and the head of municipal utilities complex Peter Aksenov, called the experiment in Tverskaya district "a penetration in the security arrangement in the city as a whole".

Moscow City Hall has intentions to make the CCTV system complete in a full sense. To achieve this it is necessary to equip the doors of penthouses and basements with intrusion detectors, as well as to connect public sector objects to the CCTV system (polyclinics, hospitals, kindergartens, schools etc.). For system development it is planned to attract the investments of commercial enterprises located in the district.

For similar future systems in other districts, training seminars are planned based on the current CCTV Centre.

It is already rumoured that the Eastern and North-Eastern districts are going to participate in this. ☺



**The biggest list of CCTV websites,
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