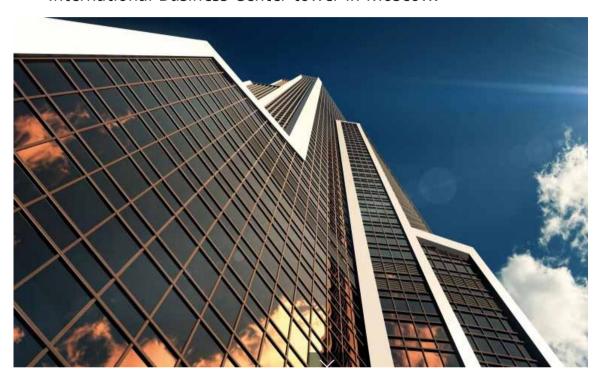# Axis cameras improve safety and security for Mercury City Tower.

ARMO-GROUP successfully employs complex security system for International Business Center tower in Moscow.

**Organization:**
Mercury City Tower

**Location:**
Moscow, Russia

**Industry segment:**
Commercial

**Application:**
Safety and security

**Axis partners:**
ARMO-GROUP, Lenel

## Mission

All facilities included in the Moscow City International Business Center needed to meet the highest requirements of engineering, construction and operation as well as demonstrate compliance with strict requirements for complex safety and security, anti-terrorism legislations, fire safety and civil defense. In this case, the business center needed to employ a video surveillance solution as part of a complex security system for Mercury City Tower.

## Solution

After extensive market research, integrator ARMO-GROUP decided to install an IP video surveillance system based on Axis video solutions. As Axis network cameras offer outstanding performance, functionality, easy integration with third party systems, flexible and easy setup, ARMO-GROUP got a real chance to create a complex security system with video surveillance supporting 900 IP channels.

With Axis megapixel IP cameras offering progressive scan, a high quality HDTV image can be obtained, and this fact is very important in terms of positive identification and video analysis. All installed cameras are fitted with varifocal lenses, so the video system can be easily adapted and operated.

## Result

Safety and security of visitors and owners of Mercury City is ensured by qualified services and a highly reliable complex security system based on a single integrated platform incorporating intelligent video surveillance.

**AXIS**
COMMUNICATIONS

Moscow City International Business Center covers an area of approx. 60 ha in Moscow. At the present, it represents the largest construction project with valuable investments not only in Moscow, but also in Russia.

Moscow City International Business Center is the greatest unique complex of buildings that meet all existent and future requirements for business, social and cultural city requirements, including underground communications, transport and energy. Therefore, the business center is able to create an incredibly comfortable environment for business operations, social accommodations, hotels and recreation spaces. As planned, the Center will include a total of 26 skyscrapers.

One of the most significant projects of the business center is Mercury City Tower. As high as 338.82 meters with a total area of 173,960 square meters, Mercury City Tower is the highest building in Europe according to the skyscraper rating developed by Emporis company.

## Generation of video surveillance system

In addition to standard tasks (live monitoring, recording and storing video, minimum surveillance dead zones), the video surveillance solution for Mercury City Tower also had to meet customer-specific requirements, including:

> integration of video surveillance system with other building engineering systems;
> central point of access and control for;
> automatic response of system to emergency events;
> data exchange and live video sharing with a Common Complex Security Center being the heart and basic element of the complex security system in Moscow City International Business Center;
> identification of persons entering secured areas with highly detailed images to guarantee positive identification of intruders;
> support for intelligent motion detectors;
> reduction of everyday work of operators and fault elimination due to human factor;
> optimize security personnel and save workforces;

In addition to viewing video in automatic and manual mode on monitors in the central security station, video surveillance system had to offer continuous monitoring of its performance as well as recording and logging of all system events and failures.

## Selecting contractor

For development and installation of complex security system incorporating video surveillance solution, ARMO-GROUP was selected as it specializes in installation of professional engineering systems to large buildings. ARMO-GROUP has extensive experience of such installations and has successfully realized many large projects, including the West skyscraper of Federation multifunctional complex, i-Land business park in Nagatino, Skolkovo Moscow Management School, Sberbank of Russia Corporative University, Olympic village in Sochi, Polypropylene Plant in Tobolsk and others.

## Selecting network cameras

IP technology and Axis IP cameras were selected as they support multiple individually configurable streams in H.264 and Motion JPEG video formats. With an H.264 video codec that offers a high compression rate with no compromise to quality of live video and recordings, the system integrator was able to ensure that any possible IP network overloads would be avoided and distributed data storage including 30 archive servers with total storage space of 500 TB provided. Archive video servers are included for the dedicated IP network, and in addition to main communication lines, redundant channels are provided. These components form a core of the complex security system.

## Video surveillance and complex security

The main advantage of the complex security system is integration of individual subsystems. In turn, this enables not only safety improvements, but also cost-savings for the customer. Cameras and telemetry products offered by Axis were integrated into the complex security system that includes solutions from Lenel Company combining monitoring and access control, alarm signaling and CCTV. Axis and Lenel share total solution partner status that ensures that these systems can be easily integrated.

As a result, all advantages offered by integration were successfully realized. Mercury Tower received a common interface where users can monitor or make settings for the whole system from a "single window". When any event occurs in one interfacing subsystem, this leads to a respective response in other system. Also, the customer can select any specific responses to different events. Such complex security systems are essential for large buildings because they are intelligent and allow potential hazards to be revealed and operators warned, thereby improving protective effectiveness as well as decreasing human factor.

"Implementation of complex security systems onto skyscraper towers that require a highest level of anti-terrorism protection. And video surveillance solutions represent an integral part of such security systems. Similar system based on Axis products and solutions was successfully created for Mercury City Tower, and it offers continuous monitoring, automatic security and highest safety."

Tselina Oleg Grigorievich, Project Manager of the Mercury City Tower, Bilfinger HSG Facility Management Ltd.

## Video surveillance and fire safety

When designing a complex security system for Mercury City Tower, ARMO-GROUP provided the possibility to integrate the complex security system with a Simplex-branded fire alarm system offering wide integration capabilities with third party systems.

This approach ensures a highly informational system and enables introduction of video verification for fire alarms. In fact, Axis IP cameras react to output signals of Simplex fire detectors. When smoke or high temperature rates are detected, Axis cameras located close to the fire detector begin to send video to the Central Security Station.

## Visualization system in Central Security Station

The Central Security Station of Mercury City represents not only a base point that in real time accumulates data about all events occurred in building. In case of emergency it also plays a role of a real emergency station requiring continuous monitoring, control and on-line analysis of large quickly changing visual informational data flows.

Here, the basic element is an automatic visualization system that includes a video wall incorporating 16 46" LCD VTRON and high performance controllers programmed for security applications. Using a special algorithm, the video wall supports different display modes for viewing data from different video sources: Axis cameras, mass media broadcasting channels, automated workstations of security system. 27 automated workstations are installed in the building, and each has an individual hardware and applications.

Images from any automated workstation can be sent to the Central Security Station in a proper format. Wide format video can be output in the same resolution as video wall resolution. In addition, data to be displayed on the video wall may be received from other sources over analog or digital outputs. External sources are shown in separate windows that can be freely scaled and re-located within screen of the video wall. Such universal visualization system is considered an essential tool in cases where there is a need to receive and process actual data in real-time, and these data will be used for quick responses. This is extremely critical for complex security system performance.

## Project value

The above-mentioned features of the complex security system for Mercury City Tower, that were designed to enhance the quality and reliability, enabled the significant improvement of one of the main aspects needed to ensure highly secure and safe environment in the building. And this aspect is response time. With regard to corresponding adjustment of complex security system and Axis products, this aspect was improved and as a result, the greatest level of safety and security was ensured for the business center along with reduced costs and personnel.


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## About Axis Communications

As the market leader in network video, Axis is leading the way to a smarter, safer, more secure world — driving the shift from analog to digital video surveillance. Offering network video solutions for professional installations, Axis' products and solutions are based on an innovative, open technology platform.

Axis has more than 1,400 dedicated employees in 40 locations around the world and cooperates with partners covering 179 countries. Founded in 1984, Axis is a Sweden-based IT company listed on NASDAQ OMX Stockholm under the ticker AXIS. For more information about Axis, please visit our website www.axis.com

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