

FEATURES INTEGRATED SECURITY AIR TERMINAL MEANS OF ARCHITECTURE

Abstract: The article discusses the issue of a complex security architecture means of airports. Based on the recommendations of the regulations, modern building experiences architectural planning, design and engineering tools and recommendations have been made to protect against possible artificial, natural and social threats.

Every time after another emergency situation the security issues concerning airport building arise: they are being discussed, tried to understand the causes and conditions that had happened, looking for problems and health protection, people are starting to be interested in the experience of other countries in this region, often without going to the real action, and gradually forgetting about them up to the next incident. Moreover, even held immediately after the tragic events verifications indicate that the protection of buildings are not considered seriously: violation of fire safety rules, multiple inputs and outputs are not controlled, not working communications and warning services of employees are absent or do not work, and surveillance data are important only after the incident.

How can I avoid damage due to malfunction of equipment, human factors and make security more robust and permanent? Architecture plays primary role here: it is continuous in its impact on people, it can manage its traffic and protect against new threats. It creates the basic structure of a stable, slowly criss-crossing engineering services, communication lines and observation. The structure of this - the foundation of all kind of scene, which played out of action with a clear scenario for which the facility was provided. But if the basis of poorly coordinated and unreliable, it can not fix is nothing - that's why you need to pay attention to the comprehensive security at the design stage of the terminal.

The term "comprehensive security" given the following definition - is implemented in the design decisions agreed upon by the interaction of engineering systems (vehicles) and personnel involved in preventing unauthorized actions, the safety of people in emergency situations [2]. The definition above implies that the safety of people in the terminal may be provided by:

- rational design decisions of the object;
- rational engineering and technical means of protection facility, eliminating or reducing the effect of the expected threat;
- rational organizational measures.

In addressing these objectives, one of the main issues is how to evaluate "the expected threat," either a terrorist act, fire or explosions, the situation of the criminal nature or man-made disaster and non-support system object (which can also lead to loss of life) and other threats. Deciding complex security of the terminal all of these threats must be considered together and measures to protect the facility should also be addressed comprehensively.

In domestic and foreign regulations it is said about the importance of the issues of security at the stage of planning and design [1, 3]. For example, TR 205-09 "Technical Guidelines for the design of systems of anti-terrorist protection and integrated security buildings" introduces the concept of a physical barrier, critical points of the object and access levels, formulating basic recommendations for the design of architectural spaces safe, considering the desired state as harmonious operation of complex systems of engineering, architectural and social. Requirements for design decisions highlighted the need for control points are adjacent to the building site, as well as a hierarchical system of access and exclusion zones unauthorized passage from one zone to another. Property should be divided into zones controlled by the general and limited access to view the architectural concept of aerial parts and functional assignment of rooms and areas. In addition, the division and

coordination of human need and streams that is in the air terminal. The importance of the division and control of human movements in them can be seen particularly strong as the need for coordination of There should be few entrances and exits, strictly controlled and separated for different streams of people - staff, passengers and accompanying persons. Path is possible to divide the inner space of the building. Each route corresponds to the algorithm of human action, without the opportunity to deviate from it. Flows of people should be controlled, and of people in the terminal building monitored CCTV systems or security service. However difficult it may be, to avoid the accumulation of large numbers of people. Large spaces with an amorphous mass of people the most dangerous and vulnerable. The greater the likelihood of emergencies or other areas of the terminal, the more attention should be paid to creating a comprehensive system of protection. If we talk about developing a comprehensive protection system for existing airports, and those who are still at the design stage should consider the recommendations of ICAO «Doc 8973. Volume III. Airport Security (Issue 7)" and the requirements of the law" On comprehensive security "in stating that in the process of developing a systematic approach to the facility to ensure safety at all stages of the life cycle of the object. In general, the system approach provides:

1. The analysis object and expected threats.
2. Development of the concept of protection of expected threats.
3. The analysis developed the security and (if necessary) adjustment decisions.
4. Monitoring of protection in the operation of the object" [2].

This approach will ensure the necessary level of protection and minimization of expenses for newly designed systems. Analysis of the object of protection is performed in order to identify the "critical point" effect which can change the system of protection and safety of the state as a whole. This should be considered:

- Space-planning decisions;
- The organizational structure, number of staff personnel, modes of operation;
- The processes and their impact on security;
- Vital centers of the object (communication and means of livelihood of the object);
- Features guide that affect the security mode;
- The current organization of the object.

Can architecture means to prevent disasters and reduce the likelihood of terrorist attacks? It may be as logical to anticipate security problems at the stage of project development, identifying the most vulnerabilities and protecting them.

Architecture and planning tools in the design of airports designated for crossing a large number of people used in the following areas:

- Protection against explosion;
- Create barriers to prevent trivial threats and delay;
- Architectural software alarms, improved lighting, surveillance cameras or cable television to guard or security service could notice and time to defuse the offender;
- Creation of architectural support for hardware protection, forming the image of a safe and secure space.

Equal protection of trivial criminal assault (vandalism, illegal entry, etc.) and protection against terrorist attacks are different means of security from various threats. Protecting the infrastructure of the building is provided subject to such requirements-planning organizations:

- The focus at the beginning of the design should be given the functional zoning. Separation zones of high and low risk and remote distance. Areas of high risk should not be public. Windows, doors, walls and floors of such zones should be more reliable.
- Traffic flows for which the airport is the center of gravity as possible should not mix and overlap. They may be diluted in different levels (Figure 1).

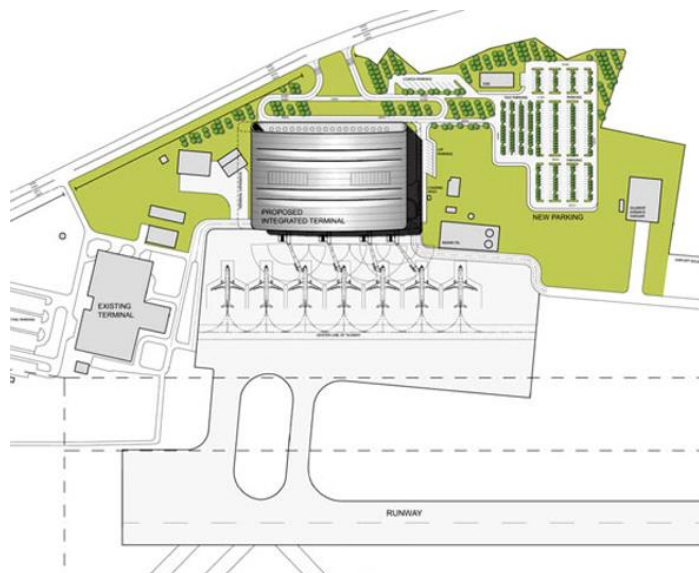


Figure 1. Vienna airport. The scheme of traffic.

- Lobby, offices, waiting rooms and temporary storage, and other hazardous area must be physically isolated from the rest of the building. These are the types of spaces that can be attacked first. Should pay careful attention to the location of entrances for staff, passengers and accompanying, and if they merged, split these flows, minimizing thereby creating queues in disadvantaged areas.

- Lobby and lobby to be adapted for placement screening devices and areas of review staff and passengers. Sign phased do better. The first is uncontrolled access in lobby area with fast protection, then - because of technical devices passes - the entrance to the controlled area, leading to the landing site, etc.

- Wide internal space, the main halls and rooms most at risk. Their design should be done explosion and Fire protection, coating – easily dismantled reflection and scattering. With the destruction they should cause fragmentation wounds.

- Control by means of observation, which should make the point of observation posts guarding. Streams of people are to be separated so as not to create a crowd that can help multilevel and a translucent barriers deviation from the desired route.

- For airports especially important to separate streams of arriving and departing, separated from the transit routes for waiting, long term and short-term parking (Figure 2). Linear organization of the major space prevents the creation of the crowd. Large and amorphous can be places of rest and waiting passengers, but the entrance they should be controlled, and interior space - always be supervised.

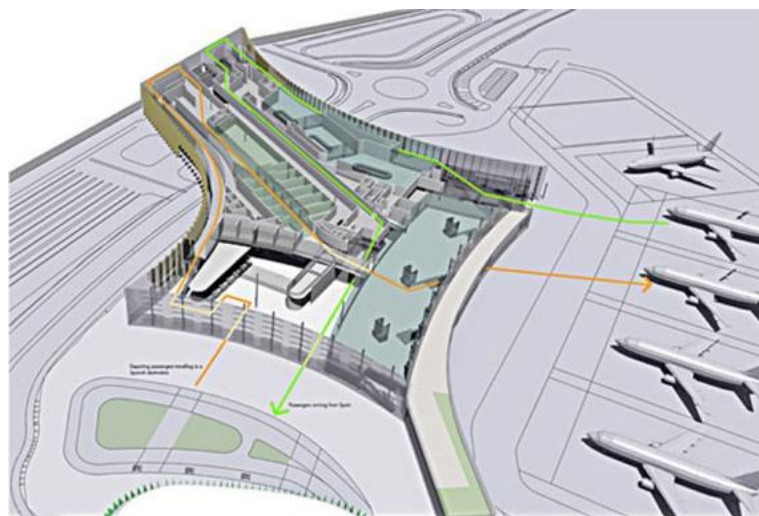


Figure 2. Gibraltar airport. Aksonometry

- Facade may be several options for security. First of all external construction should be resistant to negative impacts.

- Attention to support system building: heating, plumbing, ventilation and air conditioning. Most of these critical systems located in the input area on the roof, in commercial areas, but they must equally be protected from unauthorized access.

- All hazardous area must be clearly identified and isolated from the constant traffic of employees and visitors. All facilities and infrastructure of the building shall be equipped with their own means of protection to maintain a safe environment for employees. Access to the resources of the building should be limited and controlled observation.

Conclusions

Consideration of the problems of integrated security terminal makes it possible to link normative, organizational, technical and financial components of a comprehensive security architecture means both existing and newly created objects will only be entered into operation, will improve the activity in the prevention and suppression of shares terrorism and other threats. Architecture plays a primary role here: it is continuous in its impact on people, can control its movement and to protect against possible threats, create a stable base structure.

Analysis of the above requirements-planning of airports and the definition of "critical points" effect which can change the system of protection and safety of the state as a whole, we aim to further improve the study of theoretical and technical means of security and development of methods for complex protection of terminal facilities architecture.

References

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