Architectural image of modern police buildings in the context of safe urban environment

M B Permyakov, T V Krasnova
Department of construction production, Nosov Magnitogorsk State Technical University, 38, Lenin Prospekt, Magnitogorsk 455000, Russia
E-mail: permyakov.1965@mail.ru

Abstract. The authors review the existing concepts of organizing the environment which prevents criminogenic phenomena occurrence. As a result, the authors draw a conclusion that a system approach towards the organization of public spaces is quite prospective while the combination of physical and social space in the context of safe territory is one of the main tasks for making up an architectural & construction object. The article considers the examples of foreign expertise in design and construction of the penitentiary system buildings. The analysis of the available information leads the authors to the conclusion that modern police buildings are characterized by the use of up-to-date technologies and materials, creative and visually attractive solutions, laconic and distinct structures, application of a proper landscape organization of external environment. Most of the considered examples reflect the idea of openness and transparency, the inclusion in the social environment and reliability and safety at the same time. The practical part presents a variant for the building of the police office (department) made with the consideration of the results of the approaches towards the formation of the architectural image of modern police buildings in the context of safe urban environment.

1. Introduction
Achieving a high level of political and legal awareness in people and humanization of people’s values are the priorities for the development of a social and constitutional state [1]. According to the art. 7 of the Constitution of the RF, the Russian Federation is a social state, the policy of which is directed on the provision of such conditions that can ensure good living standards and free human development. People’s labour and health are subject to protection in the Russian Federation [2]. The issues of safe urban environment organization are relevant today. One of the key architectural tasks is to make a building “sound” in compliance with its intended purpose [3,4]. But is this rule truly functional in the context of modern urban science concepts? The global expertise shows that focusing the attention on the territory isolation is a disputable solution. In contrast, the examples of the prisons Bastoy and Halden in Norway, Justizzentrum Leoben Prison (Austria) where architectural and design techniques are aimed at some lightening of the penitentiary system image prove the opposite. I.e., such soft architectural and design solutions have a favorable influence on the criminal’s socialization.

2. Relevance
The issues of environment organization in a way that helps to prevent criminogenic phenomena were of interest for many foreign researchers: architect Oscar Newman (the author of the theory of “the
space convenient for defense” developed in the book “Defensible space: crime prevention through urban design” [1972]) [5], criminologist Ray Jeffery (formulating the concept of “Crime prevention through environmental design” (CPTED) 1971). The CPTED concept has been further developed by such researchers as: Paul and Patricia Brantingham (Environmental criminology, 1981), Tim Crowe (Crime prevention through environmental design, 1991), Randall I. Atlas (21st Century Security and CPTED, 2008). Since the end of the 90-s the movement, revising this theory, started to develop. In 1997 Seville and Cleveland published the article “2nd Generation CPTED: An Antidote to the Social Y2K Virus of Urban Design” stating a healthy social atmosphere of urban communities, development of the neighboring and sharing principles as the main factors of safe urban environment; i.e., they dwell upon a proper social policy in place [6].

Environment and social design methods are also considered by Russian scientists. Thus, researcher Ivanova M.S. Draws a conclusion that national designers ignore the problem of residential territory safety in her paper “Criminal Safety of Living Environment: Architectural Aspects” [7]. Meanwhile, an individual character and “territorial brand” is a prospective area for Russian cities oriented towards the development in the modern context where visual comfort, information comfort, communication comfort and safety become important [8]. Researchers Ryaposov I.A. and Kukina I.V. in the paper dedicated to a scientific problem consider the process of forming and developing an interdisciplinary scientific direction at the intersection of urban planning and criminology famous as the Theory of crime prevention arising on the basis of the idea of informal social control [9]. In terms of the architectural urban environment organization the basic key theory principles can be interpreted as follows: “transparency” (location of objects and points of activity); controlled access (setting the territory borders, accentuated entrances, landscape organizations); strengthening “territoriality” (improving the sense of being part of the territory); visual image and building maintenance; criminality location (studying the reasons of criminal activity concentration). The later papers identify five key factors contributing to the safe urban environment: district size, its density and variety of housing types; organizing the places for public meetings; organizing youth clubs; inclusion of people in the district social life; developing responsibility in citizens.

3. Identification of objectives
To conduct the research:
- Review the existing concepts of organizing the environment which prevents criminogenic phenomena occurrence;
- Review the examples of design and construction of modern public buildings, complexes and erections;
- Review the examples implementing modern approaches towards the shaping of the architectural image of police stations in the context of safe urban environment.

4. Theory
Modern conceptual approaches towards the forming of urban environment by architectural and design means should create image concepts that shape an image of a comfortable-to-stay architectural and construction space in the consumer’s mind [10]. Modern urban science is at the stage of search for new methods and forms of organizing a life-sustaining activity of urban people. The important factor is the expressive component of an artistic image of real estate development, its uniqueness and rememberability of architectural building solutions, erections and their complexes [11]. Conceptual design of modern cities stipulates for a complex approach towards the development of a creative idea [12]. The systematic approach in the organization of public spaces is one of the most prospective ones. The combination of physical and social space in the context of safe territory is one of the key tasks for making an architectural and construction object. The area of people interaction in the environment under urbanization conditions is becoming more versatile and polyphonic [13,14]. Modern public spaces have a lot of functions. The example of modern construction of public buildings can be a multi-functional complex Emporia, located in Malmoe, Sweden) (Figure 1a). This a kind of a mini-city with
its own infrastructure. The building roof locates a true park - the object of modern landscape design. The characteristic features of Emporia are: large scale, original design, attention to the details and materials, expressive image. A bright illustration of a modern approach towards the construction of public buildings is the project “One work area” (USA) (Figure 1b). All the project is located in the territory of 3.25 square kilometers, and at least 1 square kilometer is covered with warehouses, the remaining territory is occupied by offices and stores. A special focus the architects placed on the surrounding nature. Significant landscape works done allow enjoying a wonderful view while the employees drink coffee on soft sofas during their breaks. The characteristic features of the project are: unique urban design (perforated building faces), use of innovative solutions, well-designed landscape organization.

![Figure 1. Public building examples: a) Multi-functional complex Emporia; b) project “One work area”.

Another illustrative example can be provided by the project of the branch of “Universidad del Pacifico” (Lima, Peru) located in the area of 2,000 square meters (Figure 2). This is a campus built on five levels around a circular space. It includes parking zones, exhibition zones, cafes, classrooms and lecture spaces, libraries and workshops, administrative areas. The building is connected on all levels through vertical cores.

![Figure 2. Example of the public building Universidad del Pacifico.](image-url)
The considered examples of modern approaches towards designing of public architectural construction objects show the key tendencies in the work of architects and designers: multiple building functions; application of modern technologies and materials; creation of memorable visual solutions; laconic and distinct structures, use of proper landscape techniques. Well, what are the factors providing for the safety of such territories in terms of the architectural environment organization?

Consider the examples of construction of modern police buildings. The police office in Hollenbeck, California (USA) is characterized by an asymmetric irregular building face with metal window blind. A laconic and strict image was developed by the American architectural agency AC Martin (Figure 3a). In Madrid the police department has a form of cube with semi-transparent walls and patio (Figure 3b). The project was developed by Spanish architectural agency Voluar Arquitectura. A conceptual idea consisted in the effort to make the relationships of state services and city residents more transparent. The face plane is enriched by prominent overhanging transparent structures of rooms and mesh screens made of anode aluminum.

Tokio built the police office within the project "Koban Police Box" developed by the architectural agency Klein Dytham Architecture (Figure 4a). The authors resolved the tasks of creating a friendly and individual image in the surrounding urban development area. The architectural solution is rather simple and laconic. The decoration of the second-floor face uses the technique of steel perforation. Through the perforation one can see bright building walls. An example of modern architectural approach can be policed head-quarters being a 75 m high tower in Charleroi, Belgium, built by the project "Hotel de Police Charleroi" (architectural agency MDW Architecture (Figure 4b). The skyscraping tower is constructed in the territory of a reconstructed complex of the cavalry barracks of the XIXth century (at present here is the location of a ballet center and an art museum).

The theme of a police office tower can be traced in some more examples. In Georgia the Palace of Justice and the police office were designed by the Berlin architectural agency Jurgen Mayer H. Architects (Figure 5a). A concrete face is associated with a medieval tower and remind of the chain links thus making up the image of reliability, durability and monolithic stability. Vertical glass apertures make it easier for the eye to perceive a building and make the building looking more open for people. In Norway the police office is built by the project of the agency Filter (Figure 5b). Brutal materials: face and dark brick and the use of raw wood in the interior make up the image of reliability, simplicity and soundness. The building is located in the vicinity of a residential area and is divided into two functional zones: for common people - area with a front access, for troublemakers - area with a back door.
The analysis of the foreign examples leads the authors to the conclusion that modern police buildings are characterized by the use of up-to-date technologies and materials, creative and visually attractive solutions, laconic and distinct structures, application of a proper landscape organization of external environment. Most of the examples reflect the idea of openness and transparency, the inclusion in the social environment and reliability and safety at the same time. Architectural & design technics make up individual images harmonically integrating into the urban environment.

5. Practice
Penitentiary system institutions belong to a special social and cultural environment. Getting into a penitentiary space, a person who have broken the law loses its common social status and is assigned a special and weird in relation to the external environment status. The penitentiary system is a set of social, public, state institutes, means, methods providing for repentance, in particular - conscience of guilt on the crime, wrong deed, mistake committed and the expression of the regret of the actions committed [15-17]. In this context the tasks of socialization of law breakers and criminals become the top priorities. In modern Russia the notion of a “penitentiary system” includes the institutions and bodies executing criminal sanctions and criminal&legal measures, administrative sanctions and preventive measures for lawbreakers, etc.
The process of design is initially directed on the generation of a basic mage which further provides a basis for a whole creative process of architectural design [18,19]. The application of the method “I-concept” in the course of design allows for putting an image-bearing foundation to the design. This foundation will reflect aesthetic and image-creating tasks [20]. We suggest a variant of low-rise construction object, developed by student-architect Dvoretsky V.A. under the supervision of Krasnova T.V., which in our opinion captures the trends in the area of organizing a safe urban environment and takes into account a specific nature of Russian standards and laws in the area of penitentiary system object organization (Figure 6).

![Figure 6. Variant of the building for locating a police office (department) on the basis of the concept “Mirotvorets” (“Peace-maker”).](image)

A graphical concept “Mirotvorets” (“Peace-maker”) made a foundation for the project. The perception associativity of a social realm, suggested to the consumer by the author’s concept, should form a scenario of living in an architectural space [21].

The author developed the project “Police office”. The project stipulates for a building that comprises several functional areas: dispatch center, area for keeping the persons taken into custody, recreation area for patrol sentry duty workers, administrative area, area for arms keeping. In addition, the initially put in the graphic concept image gets the air of a public building translating the concept and status of the state structure [22] but still quite a friendly and individual one. The author took into account the requirements of regulatory documents in construction. In compliance with the trends,
identified in the research, the project is oriented towards the use of modern technologies and materials, application of the techniques for the landscape organization of external environment [23,24]. Moreover, the project follows the key principles of the theory of crime prevention through the environment organization: “Transparency”, access control, reinforcement of “territoriality”, visual image and building service. During the construction of this object additive technologies can be used to create more complex forms [25,26].

6. Conclusion
Modern urban science is characterized by the search for new methods and forms of organizing a life-sustaining activity of people. The combination of physical and social space in the context of safe territory is one of the key tasks for making an architectural and construction object.

Considering the issues of forming an architectural image of modern police buildings in the context of creating a safe urban environment, the authors made the following conclusions:

- Modern approaches towards the design of public objects are implemented in the following features: multi-functional purpose of buildings, use of modern technologies and materials, making up impressive visual solutions, laconic and distinct structures, the application of a proper landscape organization.

- In terms of the territory organization - a police office should incarnate the guarantee of compliance with legal order and control over criminogenic phenomena as the “key mission of the police is to protect the life, health, rights and liberties of citizens, counter-act the crime, protect public order, property and ensure public safety”. An individual character and “territorial brand” is a prospective area for Russian cities oriented towards the development in the modern context where visual comfort, information comfort, communication comfort and safety become important;

- Modern police buildings are characterized by the use of up-to-date technologies and materials, creative and visually attractive solutions, laconic and distinct structures, application of a proper landscape organization of external environment. Most of the examples reflect the idea of openness and transparency, inclusion in the social environment and reliability and safety at the same time. Architectural&design techniques make up individual images harmonically adding the urban environment.

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