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# The architecture of business centers in major cities of independent Kazakhstan

La arquitectura de los centros de negocios en las ciudades principales del Kazajistán independiente

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## ABSTRACT

**Introduction:** The study aims to determine the main trends in the formation of business centers in Kazakhstan's two largest cities, Almaty and Nur-Sultan, and to develop the main city planning and architectural recommendations for improving the network of business centers and their maintenance. **Materials and Methods:** The study's systemic and complex research methodology allows it to look at business center issues from a variety of perspectives, including economic, socio-political, legislative, urban planning, and innovation. This approach allowed the architecture of business centers to be highlighted as a dynamic, interrelated process that represents the state's economic power and prestige. **Results and Discussion:** The identification of trends in the development of business centers as the main type of commercial real estate is intrinsically linked to their natural qualitative growth and structural metamorphoses, transforming future cities into business cities, business parks, business incubators, and eco-towns. **Conclusions:** The study revealed that a specific feature of the business center is the distinction in its space-planning structure of the recreational and communicative block of premises and rooms into a separate independent functional block, which, both locally and dispersed spatially, carries an ideological and logical practical load and is a functional space for a multi-purpose business building.



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## 1. INTRODUCTION

The object of the research is the trends in the formation of the architecture of business centers and commercial office real estate in Almaty and Nur-Sultan. The subject of the research is the history of the development of buildings in which business functions were performed in the past and are concentrated today – specifically, commercial office real estate in the structure of business centers and mixed-use complexes, – as well as the integration of business functions into strategic and innovative architecture. The study’s theoretical and practical value lies in the formation of requirements for the design of business centers in Kazakhstan and the improvement of the methodology for their classification. The study’s complex nature allows us to evaluate the economic, socio-political, legislative, urban planning, and innovative aspects of the business center design. Such an approach allows us to define the architecture of business centers as an interconnected multifaceted process that reflects the level of the state’s economic development as well as an object of applying the most advanced scientific technology in the construction of public buildings. The requirements for the design of office commercial real estate formulated in this scientific study can be considered and used by designers and architects when developing projects for business center buildings, as well as in the educational process of training undergraduate and graduate students in architectural specialties.

Since the end of the last century, various buildings for private commercial activities have become an integral part of architecture, which is increasingly being actively involved in the world architectural process, in an interesting way adapting the prevailing trends to regional cultural, historical, socio-economic and climatic specifics.

Today, office buildings and various business centers – often known as office objects – are one of the most in-demand types of spaces for diverse professional activities. The interaction of working and public areas (including parts of social infrastructure), auxiliary, and technical premises forms the functional structure of modern office facilities. At the same time, the proportion of public zones is constantly increasing, which is linked to the transformation of the organizational structure of companies and the redistribution of priorities for successful operations. Modern businesses are becoming more aware of social responsibility: “A company is successful if it fosters an urban culture.” The fulfilment of social obligations is associated with the development of social programs – educational, cultural, recreational, or servicing, which requires an increase in the density of the social infrastructure of office facilities. The rise in the social significance of office facilities has resulted in the emergence of elements such as:

- public catering establishments (restaurants, cafes);
- social services (shops, dry cleaners, fitness centers, children’s centers);
- business support systems (bank branches, ATMs, notary offices, photo and copy centers);
- various educational centers (specialized, developmental, advanced training);
- residential objects (hotels, apartments, residential blocks);
- cultural and entertainment facilities (cinemas, theatres; multifunctional premises for various events, festivals; exhibition spaces; game centers; walking areas).

Numerous shopping, entertainment, wellness, production, warehouse, logistics, exhibition complexes and centers for the provision of financial, legal, intermediary, educational and consulting services are located both in differentiated and integrated buildings, forming a set that now consists of repurposed or reconstructed facilities built in the previous period, and a large number of new buildings. They are used not only by large corporations, but also by small and medium-sized businesses, which are, in fact, a mass consumer, providing a significant part of the demand for both the spaces themselves for functioning and for the entire range of services accompanying their activities. The multi-speed and multidirectional dynamics of the development of entrepreneurial activity creates the need for an appropriately organized space adequate to this specificity of activity. The formation of such spaces determines the need for constant study of the development of the phenomenon from the standpoint of reflecting the current needs of users of architectural interpretation <sup>(1)</sup>.

The business center now has a new quality: versatility, and it is the most relevant and wanted type of public building. A highly urbanized multifunctional hub of an urban structure (hereinafter HUMHUS) is a center of social activity that includes buildings, structures, means of transport, and open spaces where people flow to get a concentrated maximum of goods, services, and information with the least amount of time investment <sup>(2,3)</sup>.

The architectural design of public buildings and structures has a high degree of coverage of practical issues that are relevant at present. It covers social, economic, environmental, city planning, functional, constructive, compositional, and artistic aspects <sup>(2,4,5)</sup>.

## 2.MATERIALS AND METHOD

The study's systemic and complex research methodology was aimed at the investigation of the rise of office buildings and the formation of a new building type – a business center with office space. The study's complexity allows it to look at business center issues from a variety of perspectives, including economic, socio-political, legislative, urban planning, and innovation. This approach allowed the architecture of business centers to be highlighted as a dynamic, interrelated process that represents the state's economic power and prestige.

From the point of view of studying the problem of the development of business centers in the aspect of architecture, the following aspects are important. Business centers are located in different parts of settlements, have different sizes, both by area and by number of floors. The buildings themselves are both new buildings originally designed for this function, and repurposed or appropriately reconstructed objects for various purposes. They differ in the degree of specialization or versatility, as well as the ability to adapt to the needs of the tenant. The level and range of services provided to tenants varies. The ability of tenants to conduct various types of commercial activities in the field of organizing the sale of goods in a complex or a separate building typologically distinguishes a business center from structures for production purposes with their administrative and household units and buildings for state and municipal administration.

This typological feature turns out to be somewhat blurred, and buildings and complexes in which only offices and auxiliary premises are located are considered as business centers. From the standpoint of this study, such buildings are a special case of a business center. Also included in the category of business centers are the “headquarters” of firms occupying the entire building or complex, although the concept of “business center” in a certain sense implies the presence of several tenants, in fact, the formation of a single-profile or multidisciplinary “business activity center”.

## 3.RESULTS

In late 1997, the Government of the Republic of Kazakhstan decided to move the capital from Almaty to Akmola, which was later renamed Astana, and from 2019 to Nur-Sultan, Kazakhstan's new capital. The master plan of Nur-Sultan was based on the world-famous Japanese architect Kisho Kurokawa's theory of symbiotic architecture. According to K. Kurokawa, the 21st century is marked by new environmental challenges that require a radical revision of values and new approaches to urban design. The formation of the administrative and government center of Nur-Sultan on the left bank of the Ishim River is taking place in conjunction with the new downtown commercial district, which will be unlike its historical counterparts in the Business City (BC). The fundamental concept is to connect the city's historically formed areas with the city's center and new districts. Today, the capital is actively developing on the left bank of the Ishim River, where a new government, business, and diplomatic center is being formed.

Nur-Sultan pioneered the concept of initially integrated urbanism in the Business City, which is akin to that of European countries. Downtown administrative and government structures are mixed in with business, educational, shopping, cultural, and recreational complexes, as well as residential buildings. This is not a common technique in major cities. On the contrary, the construction of a modern-day downtown is occurring all over the world in the other direction, with the BC separating itself as an autonomous zone, as is the case in many historically built cities, including Almaty.

### 3.1. ADMINISTRATIVE BUILDINGS AND COMPLEXES

The center of Nur-Sultan is formed on the left bank, where the axis encompassing all the most significant objects (the Temple of Peace and Reconciliation, the Presidential Palace, the House of Ministries) stands out compositionally. The House of Ministries takes center stage in this design, similar to Bernini's colonnade in front of St. Peter's Basilica in Rome serving as a uniting element (Figure 1). The administrative and residential complex “Na Vodno-zelenom bul'vare” (On Water-Green Boulevard), the Baiterek monument in the centre, the building of the “Kazyny” Sustainable Development Fund, and the Government building make up the second square. The Senate and Mazhilis buildings are structurally subordinated to the complex's main building, the President's Palace <sup>(6)</sup>.

**Figure 1. The Government axis and the Baiterek, Nur-Sultan**



Two cone-shaped high-rise structures flanking the central path to the presidential mansion resolved the square's plan contradiction, which developed as a result of the presence of three different-sized buildings – the Government, the Parliament, and the Mazhilis. The House of Ministries complex, with its segmental structure, maintains the composition's integrity.

The House of Ministries, by its functional purpose, is the main office building of the entire BC. The building with an area of 300,000 sq. m and a length of about a kilometre was built to organize the space of the new square of Kazakhstan's capital. The project's authors proposed a clear and laconic form, which gave the composition a special grandeur. The composition's broken axial symmetry was restored by adding two towers to the architectural ensemble. The Baiterek complex occupies one of the main places in the space of the administrative center of Nursultan. The complex is designed in such a way as to give the administrative center of the capital of Kazakhstan a historical national character, as well as to give the city a characteristic silhouette. The round square with the Baiterek is the second most essential in the formation of the government axis. It was planned and is located at the crossroads of the present airport road and the "Water Green Pivot".

The Transport Tower is the first Kazakhstan skyscraper and the tallest administrative building in the post-Soviet space. This 36-story office building is 155 meters tall, including the spire, and has a total area of 33,342 sq. m. (Figure 2).

**Figure 2. The building of the Ministry of Communications and Transport**



The 22-storey business center includes a conference room, a dining room with a kitchen, a bank vault, utility and technical rooms, offices, VIP offices, bank president’s offices, VIP parking, underground and aboveground parking. The business center is designed in the shape of a circle, with a radius that decreases as it rises. The business centre’s architecture produces an unforgettable artistic image. The administrative complex “On Water-Green Boulevard” is located in the very center of the business life of Nur-Sultan, on the left bank of the Esil River, and houses all of the necessary infrastructure for business prosperity (Figure 3).

The complex blends organically into the overall atmosphere of the unique administrative downtown, being in harmony with the neighbouring modern architectural masterpieces – the Presidential Palace, Round Square, and the Baiterek. It looks stylish, lively, and high-tech. The composition’s grandeur is enhanced by its clean and laconic form. This is where the future and the present connect. The inside of the building is flexible to different functions and features a versatile interior area. Designers’ creativity is the only limit to the range of layouts and interior design options available. The lobbies, hallways, and public spaces are all finished to a high standard using noble natural materials (7).

**Figure 3. The Administrative Complex “On Water-Green Boulevard”**



The complex was designed according to the latest engineering technologies under the requirements for class A offices. The buildings were built following world standards and are equipped with modern silent high-speed elevators, heating and central air conditioning systems, lighting, ventilation, telecommunication, and fire extinguishing systems. There are convenient parking lots and places for guest parking near the centre. Round-the-clock security and control of all life support systems are also provided.

### 3.2. HOTELS AND ENTERTAINMENT BUILDINGS

The Talan Towers complex in Nur-Sultan (architect “Skidmore, Owings and Merrill”, 2017) is classified as a social and business complex (Figure 4). Its spatial solution consists of two tower volumes (25 floors: the Ritz-Carlton Hotel, designed by the Richmond International Bureau – 157 rooms and the Ritz-Carlton Residence – 27 residences; 30 floors: the Talan Towers Office business center, designed by Pringle Brandon Perkins + Will bureau - the total area is 31908 sq.m.), united by a three–storey podium (Emporium Gallery, designed by the Callison Agency – the total area is 8000 sq.m.) above the parking lot (550 seats for employees and guests). The complex is certified according to the LEED USGBC system to the second level: “Gold”, and is positioned as a Class A business center.

The hotel includes regular rooms and suites. Some rooms are provided with an individual concierge service. The hotel complex includes restaurants, a spa center with a gym. The conference floor consists of a ballroom, several conference rooms, three meeting rooms.

**Figure 4. Complex “Talan Towers”, Nur-Sultan**



The three-storey gallery offers the services of thirty mono-brand stores, a family restaurant with a playground, cinemas, beauty salons. The parking lot is solved in two levels. It provides open and semi-open parking spaces for cars, bicycles and scooters; showers and changing rooms for staff and office staff.

**Figure 5. The Nurly Tau Multifunctional Hub**



The Nurly Tau can pretend to be the city center. Residential structures with a total area of 180,000 sq. m will be constructed around the center of the esplanade, with apartment square areas ranging from 120 to 214 sq. m, according to the Nurly Tau's general plan. The Nurly Tau's proposed entertainment component will integrate the three most vital aspects of human life: work, home, and leisure. In addition to above-ground guest parking, the complex will have a two-level underground parking structure, with one parking space for every 80 sq. m of the area (Figure 5). The class A office segment is the largest, accounting for around 100,000 sq. m, or 40% of total office space in Almaty's business hubs. The Nurly Tau will have a total office area of 130,000 sq. m. The office size might range from 90 to 1,100 sq. m. The key benefit of this project is its size, which results in a high concentration of a great number of businesses in one location. The “city inside the city” approach is being used to construct the Nurly Tau Multifunctional Hub. With a total area of around 300,000 sq. m, it will be made up of four symmetrically arranged groups of buildings with a

different number of floors. According to the project's creators, it will be the largest complex in the CIS built in the format of an international business centre.

The hub's buildings will be equipped with the latest fire and security systems, uninterruptible power supply, an automatic indoor climate control system, air conditioning and ventilation systems, as well as modern telecommunication systems and high-speed Internet, in accordance with the requirements for class A offices.

**Figure 6. The Almaty Towers**



Almaty towers complex in Almaty (arch. “PA Kazgor”, 2008) consists of two tower volumes of 25 floors, united by a three-story podium above a three-level garage. The total area is 86634.20 sq.m. Tenants are offered: spaces for organizing offices, a coworking (“Smart Point”), three cinema halls, a universal celebration hall (1200 seats), a three-level underground parking (416 seats). Office premises, mainly offered in two tower blocks, can be solved according to corridor, open and mixed schemes with a fixed communication node (two stairwells, an elevator hall of four elevators, a reception room, sanitary units, technical rooms). In an open space for one company, there are: a meal room for 10 people, two semi-open offices for 3 workplaces each, a meeting room for 12 participants, individual and group workplaces for 34 employees. With a corridor scheme with a cabinet solution, it is possible to accommodate several companies. The office for 15 employees has 4 offices and a meeting room for 16 participants. The office for 34 employees has 10 offices, a meal room for 34 seats, a pair negotiation area for four groups, and a rest room. On the glazed loggia (only on the lower floors) it is possible to place a relaxation room for general use. Figure 6 shows the Almaty Towers business center in Almaty: a typical floor plan (corridor scheme with offices); a typical office floor plan in the South Tower (open scheme with offices); a typical office floor plan in the North Tower (open scheme with offices).

### 3.3. BUSINESS CENTERS

Almaty has several well-located, high-quality office buildings; however, they are mainly commercial centers that lease space. The cost of renting such offices is quite high due to a scarcity of space in the heavily built-up downtown and rising land prices in prestigious districts. Meanwhile, the rapid development of Kazakhstan business and the strengthening of the local economy have increased demand for such real estate. Growing companies and foreign missions recognizing the importance of having a prestigious modern office to their image are striving to establish themselves in the downtown. Almaty is rightfully referred to as Kazakhstan's financial and business capital, yet the city itself lacks a well-defined business district.

The A class Nursaultet business center has seven floors with a height of 2.8 m and a total area of 18,427 sq. m. The building consists of two “smart town” type facilities and is located in the very heart of Nur-Sultan in the prestigious quarter in Imanov street (Figure 7). This architectural ensemble's blend of historic and modern features, as well as its

smart design and use of high-quality, ecologically friendly materials, provide a sense of uniqueness, comfort, and stability. Local air conditioning (“winter-summer” fan coils), supply and exhaust ventilation, automatic fire alarm system, sprinkler fire extinguishment, voice notification, smoke exhaust, and fire water supply are among the building’s technical features.

**Figure 7. The Nursault Business Centre, Nur-Sultan**



The building is fitted with four passenger elevators, an electronic access control system LG24/7, a video surveillance system, a guaranteed power supply with two feeders and ATS, and the II category power supply. The business center complex includes conference halls, meeting rooms, an ATM, payment terminals, a cafe, a pharmacy, a lawyer’s and notary’s offices, and an insurance office.

The Asia Business Center is located in the very heart of the business capital and is one of the most respectable business centers in Nur-Sultan. The city Akimat, Congress Hall, and other governmental buildings are all located near the Asia. The Akimat building and the Asia Business Center are designed in the same style, resulting in a harmonious architectural ensemble (Figure 8). Large local and international commercial companies have offices in the business centre.

**Figure 8. The Asia Business Center**



Since 2005, the growth of business activity in the republic as a whole and in Almaty, in particular, has been influenced by the implementation of a program to support small and medium-sized businesses, as well as the creation of a regional

financial center in the southern capital. Between 2000 and 2005, the number of office buildings increased by 35% yearly, but since 2005, it has increased by an order of magnitude. At the same time, the market was formed by domestic and foreign companies that developed their own businesses, rather than by developers. Until 2007, there was a severe shortage of office space on the market, which had a negative impact on supply quality. It is no secret that the quality attributes of most new or refurbished office complexes in the megalopolis' top ranks scarcely conform to the points of the commonly accepted classification <sup>(8)</sup>.

**Figure 9. The Almaty Financial Plaza**



The Almaty Financial Plaza business center is situated at the foot of the Zailiyskiy Alatau, Kazakhstan's snow-capped mountains (Figure 9). Having an office in one of its four buildings entails working in the city's most notable building, which symbolizes the connection to a strong and growing global market. Everything here complies with international standards, considering environmental, technological, and psychological factors, and as a result, leaves a positive impression on customers. A total of 79,171 sq. m of first-class office space is available in four modern buildings. The business centre's atmosphere creates ideal conditions for operating a business.

**Figure 10. The Old Square Business Centre**



The Old Square Business Center is located near one of the main transport arteries of Almaty – at the intersection of Furmanov St. and Kazybek Bi St (Figure 10). This district is home to major administrative, financial, and cultural institutions, shopping, and entertainment centers, hotels, and residential areas. The Old Square is a modern 9-storey business center located in an environmentally friendly district of the business part of Almaty. The building has simple, clear forms combined with tinted stained-glass windows and granite façade. The center is technically equipped using

the latest world achievements in the field of construction, engineering, and telecommunication technologies. The Old Square Business Center offers its leaseholders a variety of office sizes and configurations.

The ten-storey Kulan Business Center is located on Dostyk Avenue and equipped with the latest telecommunication systems and engineering devices. The total building's area is 4,500 sq. m. (Figure 11). The building has office spaces starting at 70 sq. m, as well as meeting rooms, executive offices, conference rooms, and gyms. For car owners, there are VIP garages, indoor and outdoor parking options. The Kulan Business Center has a pentapetalous shape with separate office space in each of its petals. The offices are connected by a central circle, in which there is a flight of stairs and an elevator.

**Figure 11. The Kulan Business Centre**



High-rise residential and office building construction is a particularly promising segment of the construction industry. It helps solve one of the most critical problems of large cities: land scarcity. In addition, the commissioning of high-end office space will have a significant impact on the market as a whole, leading to market stabilization, demand saturation, and a decrease in the growth of rental costs.

**Figure 12. The Ken Dala Business Center**



The Ken Dala Business Center is a modern commercial building located at the intersection of Dostyk Avenue and Karasai Batyr Street in Almaty's environmentally friendly business district, along one of the city's key transportation arteries (Figure 12). Major administrative, financial, and cultural organizations, as well as shopping and entertainment centers, hotels, and residential areas, are all located in this area. The Ken Dala Business Center has nine floors of office space, as well as technical and basement floors. The business centre's 15 500 square meters of open office space offer a variety of office sizes and amenities.

There are three major zones for the implementation of office projects in Almaty, which is justifiably considered the state's business and financial centre:

- the first zone is a historically established economic center known as the “golden square of the city.” It is outlined by Seifulin, Makatayev, Dostyk, and Satpayev streets. It is home to a variety of office buildings, including historic Soviet-era buildings, the first high-quality office complexes built by local developers, and contemporary high-quality class A centers;
- the second zone is the city's southern districts, which have been quickly growing since 2000, owing to a scarcity of free sites in the city centre. The Dostyk St. has the biggest concentration of office buildings in this location;
- the third zone is the south-west, where a new business downtown is currently being formed in the Al Farabi Corridor area. New high-quality office projects are being implemented in this location.

Office projects have also been constructed and projected on the west side of Seifulin Street in recent years, but this region does not belong to the commercial district and is unlikely to be actively developed in the coming years.

Business centers can be considered as a progressive independent type of trade enterprise and as an important connecting element of large shopping malls or retail and consumer service networks for city residents. Our country currently has very little expertise in designing and constructing such facilities. Nonetheless, some of the completed projects, such as those in which city business centers serve as the connecting link for the entire commercial district, stand out for their creativity and innovative ideas.

#### 4.DISCUSSION

We can draw the following conclusions after analysing business centers in the downtown of Nur-Sultan and Almaty. In the center of Nur-Sultan, there are class A (44%), class B (27%), and class C (29%) business centers of six floors and more. 15 objects were built on the left bank, 42 on the right bank. All business centers were constructed after the year 2000 and have a multifunctional design. The majority of Class A business centers are located downtown. The study of foreign practice, which has accumulated a depth of experience in the design and construction of business centers, is of great importance for the expansion of their use and development in our country. The employment and rethinking of the most interesting techniques and principles of this practice is an integral part of the development of the domestic typology of urban business centers.

History clearly shows how architectural design responds to socio-economic changes. Time dictates the need for a particular type of public building, as well as specific features of the formation of each type of building in a given economic situation in a particular country.

1. In the historical context, the first trend in the growth of business centers manifests itself in their integrated location in Kazakhstan's key cities, Nur-Sultan and Almaty. The influence of climatic and urban planning elements also played a vital role in setting up these cities. Due to the formation of an extended new center designed for a rapidly growing city, an integrated system for the location of business centers in the city structure was initially established for Kazakhstan's new capital, Nur-Sultan. When the city's population surpassed one million, a group of multifunctional class A business hubs and a Business City with autonomous provision emerged objectively.

Almaty was extending to the west and north, with its historically established habitual structure deprived of the ability to develop to the south and east due to the mountain range of the Zailiyskiy Alatau foothills. After assessing commercial office real estate (CORE), the city's central part was named the office square outlined by Dostyk, Satpayev, Seifullin, and Raimbek streets. The north and west directions were formed as bedroom districts of the city, therefore the east-west and north-south transport directions are the most congested. In the wake of rising, the city's historic square changed its shape along the periphery of the city boundaries causing the formation of latitudinal and meridional office corridors <sup>(9)</sup>. The latitudinal corridors of commercial real estate, also called office corridors, include Al-Farabi, Satpayev, Abay, Kabanbai Batyr, Tolebi, Gogol, and Raimbek avenues. The meridional corridors of commercial real estate are Dostyk, Furmanov, Abylaikhan, and Seifullin avenues in the city's historical part. Avenues have also been formed in the western residential areas of the city, Rozybakiev and Sain, where residential, shopping, cultural, and entertainment complexes with office and commercial space are currently under construction <sup>(10,11)</sup>.

As a result, the formation of office squares and office corridors is a distinguishing feature or specificity of the CORE formation in Almaty. The CORE's latitudinal and meridional corridors are ultimately integrated with residential complexes, which is objectively very similar to the buildup of European cities. However, it is this factor that will eventually become an obstacle to increasing the class of business centers. Cramped by the foothills, office squares and corridors will only expand in two directions: west and north, creating stretched lines from the centre, and the value of the center will be decreasing. Transportation without a metro will eventually become problematic and inefficient for business purposes. The importance of the city's administrative center will quickly become obsolete, and there will be a real need for the formation of an autonomous, free from transport problems, multifunctional Business City on the outskirts of the city or beyond <sup>(9,11,12)</sup>.

2. The second trend is the formation of multifunctional complexes in the urban structure, which is taking place in Nur-Sultan with the construction of large-scale breakthrough projects like the Pyramid of Peace and Accord and Khan Shatyr. In Almaty, this trend can be seen in the construction of such buildings as the International Regional Financial Centre, MRFC (Almaty Financial Plaza), and the Esentai Tower multifunctional complex on Al-Farabi Avenue, which are all precedents in Kazakhstan architecture. In the future, the MRFC should consist of 80 separate blocks of buildings to create a developed infrastructure of the environmentally friendly Al Farabi office corridor. Since this corridor is incapable of developing in the southern direction, the northern one is formed by new residential complexes of the bedroom district. Further formation of the Al Farabi office corridor will also follow the path of integrated urbanism, however, setting up an autonomous corridor outside the Business City is inevitable, as stated in Kazakhstan's Development Strategy.

3. The third trend is the "shoot-out" of business centers and mixed-use complexes outside the city due to their insufficient activities in the historical structure of cities caused by constraining forces: environmental and transport problems, inconsistency with international standards of the Building Owners and Managers Association, and the principles of The Leadership in Energy & Environmental Design (BOMA-LEED).

## 5. CONCLUSIONS

In the state Strategy program, this trend is described for the conditions of Almaty in the form of the creation of four satellite cities. A promising innovative direction is the development of business centers improving the quality and comfort of urban infrastructure, the energy efficiency of urban economy and architecture, as well as the introduction of new standards in architecture and urban planning. The construction of the Pyramid and Khan Shatr complexes in Nur-Sultan, the design of a business center on Al-Farabi Avenue in Almaty (Almaty Financial Plaza), and the Esentai Tower multifunctional complex improve the quality of the urban environment and open a new era of innovative technologies in the architecture of Kazakhstan.

The analysis of the present-day practice of organizing business centers made it possible to identify four options for placing elements of social infrastructure in them: integrated, built-in, attached, and located separately or specialized. With integrated placement, office and social elements are combined, actively interacting. Options for such integration can be such solutions as office+housing, office+cafe, office+transport. Commercial real estate is built by connecting either multifunctional purpose blocks or individual cells modules that combine the main functional processes with respect to insolation and operation requirements. These modules come in a variety of sizes and can be found on floors 1□2□3. The connection of residential and working areas improves the work process's continuity and intensity and provides additional communication opportunities.

An office building with blocks of various functional purposes can be considered as a whole city, including a sales office, exhibition spaces, pre-sale preparation areas, a conference centre, technical and administrative offices, hotel rooms, various recreation areas, a playground, cafes, and restaurants, etc. Built-in placement is distinguished by the separation of elements of social infrastructure from work areas and a well-defined spatial demarcation of public spaces of free (for all social groups) and closed (only for office employees) access. Free access zones are frequently located on the lower building floors to meet safety regulations, making them a part of the urban environment. Closed-access social infrastructure elements can be found in any part of the building, depending on the compositional scheme and the communication system solution, and take up the whole floor (canteens, training centers) or a part of it (cafes, recreation areas, vending machines). Vertical zoning and the placement of all communications within easy reach of each of the functional zones characterize high-rise business center buildings. Typically, such building structures are divided vertically into four main sections. On the lower floors, there are retail premises open to the public and companies providing cultural and consumer services; the second group of floors is reserved for banks, the third for

offices, and the fourth for hotels. The topmost floor can also be open to the public if the building is very tall. There may be an observation deck or residences for top executives or penthouses for the elite on the upper floors. The universal model of a business center as the principal architectural object shows itself in two versions regarding the category of external and internal space: a “business center building” as an architectural composition, and a “business center interior” as a group of high-demand premises and rooms within other buildings. The study revealed that a specific feature of the business center is the distinction in its space-planning structure of the recreational and communicative block of premises and rooms into a separate independent functional block, which, both locally and dispersed spatially, carries an ideological and logical practical load and is a functional space for a multi-purpose business building.

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