



## Results of Existing Buildings and Construction Works in the City of Jizzak

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**Abstract:** This article discusses the recent construction of several residential structures in Jizzakh, as well as the need and requirements for residential buildings, modern single-family and multi-story buildings that are convenient for the people. A study that uses case study approach, data for this study were collected by in-depth observation and interview with city officials. It was found that the building and planning aims for housing projects are advanced in accordance with urban planning laws. A successful urban plan should balance the needs and interests of different stakeholders, while also ensuring the long-term sustainability and resilience of the city. Urban planners and developers should adopt a holistic and participatory approach that involves the local community, the industry sector, and the government in the decision-making process. By doing so, they can create a livable and prosperous city that enhances the quality of life for its residents and visitors.

**Keywords:** Jizzak, construction works, redevelopment, preservation

### 1. Introduction

Urban planning is the process of designing and managing the physical and social aspects of a city or a region. It involves balancing the needs and interests of various stakeholders, such as residents, businesses, governments, and the environment [1,2,3,4]. Urban planning is especially challenging for a newly independent country, as it faces multiple complexities and uncertainties [5]. They require a holistic, participatory, and adaptive approach that can respond to the changing needs and aspirations of the people and the place [2,3,4].

The Republic of Uzbekistan has a similar experience. In connection with its independence, the Jizzakh city government enacted new norms and rules of urban planning aimed at the development of various types of development [6,7,8,9,10,11]. The predominance of one-story individual residential buildings with private land plots up to 600 m<sup>2</sup> is preserved. Meanwhile, new residential construction is carried out in almost all residential areas. The main construction was carried out mainly in the north-eastern direction, on the lands of Koshbarmoq and Taqchilik villages. The construction of a two-story section in the Ziyokor, Gandumtosh, Kulama, Pakhtaabad, Uchtepa communities will only ensure the densification of the existing massifs. At the same time, the project includes two-story, individually lockable two-story residential buildings with apartments up to 600 m<sup>2</sup>. The experience of such construction has long been used in Uzbekistan [12,13].

One of the main challenges facing a newly independent country like Uzbekistan is how to manage the massive urban construction that often accompanies its economic and social development [14,15,16,17,18]. The rapid construction of urban centers around Jizzakh can be seen as a symbol of prosperity and development, but densification of

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urban centers presents a different picture. If not managed responsibly, densified urban centers can spiral down into favelas, an area proven to have high criminality index [19]. This will certainly cause disruption of peace and harmony within the city [14,16].

It is logical to then look at Uzbekistan as a new model of civilization. Built upon the ruins of Soviet control [17], it establishes itself as a country with vast opportunities waiting to be explored [18]. However, this creates a precarious situation which the country must prudently manage. City building, which in turn creates infrastructure projects, is one of the activities Uzbekistan is actively pursuing [5,7,8].

This research tries to explore the present activities of construction work in Jizzakh, Uzbekistan, as a model to map the overall economic and social growth of Uzbekistan. Jizzakh, with its historic significance [5,9,10,11,20,21,22,23,24,25] serves as a modern documented model of city growth.

## 2. Method

Case study approach was chosen in order to gain a comprehensive understanding of the present construction works in Jizzakh. The data presented in this study were obtained via in-depth observation and interviews with city officials. Secondary data in the form of related documents and permits & relevant literatures were also consulted.

This research is concerned with the rapid development and construction works happening in Jizzakh, Uzbekistan. The author observed new construction works around the city and took notes on details related to the construction works in question. City officials were then interviewed to give relevant explanation regarding the construction works being initiated. Relevant data were then collected and analyzed.

Data analysis results were then interpreted in the following section.

## 3. Results and Discussion

### 3.1. Current state of construction works in Jizzakh

In analyzing the existing areas, where individual construction of the villages added to the initially calculated period is being carried out, it is possible that the developers require compaction of the surrounding land and appropriate improvement [26,27,28,29].

The decrease in the housing stock is planned only during the reconstruction of existing highways, the construction of new ones, and the design of the main highways of the city. Disruption is primarily due to outdated housing construction, regardless of high-rise buildings. The necessary volume of housing construction is determined by the following bases:

- 1) preservation of all capital and planned residential construction;
- 2) demolition of an old one-story building for reconstruction;
- 3) an increase in the volume of two-story single-family residential construction;
- 4) taking into account the acceptable conditions of relocation;
- 5) the calculation period of the housing fund of the rural settlements attached to the first stage and the norm of the total living space is initially 17 m<sup>2</sup> people and 18 m<sup>2</sup> people for the calculation period;
- 6) to determine the settlement period and dynamics of the number, density, area, population and breakdown of housing stock warehouses. Transfer of housing stock to residential areas, indicating the housing stock by population.

### 3.2. Housing construction

As of January 1<sup>st</sup>, 2019, the total area of the city's housing fund was 1,472.55 thousand m<sup>2</sup>. Average supply is 10.1 m<sup>2</sup> people. The average size of a family is 4.63 people. Currently, 23.9 thousand m<sup>2</sup> are being built per year.

The necessary volume of housing construction for the accounting period is determined based on the following:

- 1) preservation of all capital and planned residential construction
- 2) demolition of old one-story buildings for redevelopment;
- 3) an increase in the volume of two-story single-family residential construction;
- 4) taking into account the acceptable conditions of relocation;
- 5) norms of total living space for 20 m<sup>2</sup> / person in the first place and during the calculated period.
- 6) consideration of the housing fund included in the city limits of rural settlements (According to the first option, if by 2017 = 39.6 thousand m<sup>2</sup>, then by 2030 = 327.67 thousand m<sup>2</sup>. According to the second option, if by 2017 = 202.0 thousand m<sup>2</sup>, then by 2030 = 1044.0 thousand m<sup>2</sup>).

The volume of housing construction is mainly based on the following:

- 1) Comparison between the average security standard of the total area and today's condition;
- 2) Demolition of existing low-value buildings for redevelopment and gentrification;
- 3) Observation of the housing stock of villages connected to the city.
- 4) Observation of the population census.

The main housing construction in the city consists of one-story single-family residential buildings and plots of land from 400 m<sup>2</sup> to 600 m<sup>2</sup> per family. They will be located in planning areas 1 and 2, because first of all it is necessary to unite the divided areas of the city. It should be noted that the project in the city is not planned for mass construction [30,31,32,33,34,35,36,37,38,39,40].

Such houses should be located along the main highways of the city, as well as near the centers of residential and planning areas.

### 3.3. Housing devices

The volume of housing construction is determined based on the following:

- 1) Maintenance of all capital high-rise buildings;
- 2) Replacement of 80% old one-story buildings with new comfortable buildings;
- 3) Demolition of housing stock for the purpose of reconstruction;
- 4) Calculation of the housing fund of rural settlements added to the city limits;
- 5) Observation of the optimal location conditions [41];
- 6) Increase of the living space per person to 14.5 m<sup>2</sup> instead of 12.8 m<sup>2</sup>/person, and eventually to 18.0 m<sup>2</sup>.

Jizzak is developed according to an urban area plan which divides the city into residential zones, located in the central part of the city, and industrial zones, located in the western (referred to as "A") and northeastern (referred to as "B") parts of the city. As a result, two planning areas appeared, which were distributed across the city in the following order:

- 1) The first planning area covers the central area of Jizzakh and is a conglomerate of residential, industrial, administrative, sports and other functional areas, including employment, recreation, medical, and educational institutions [42,43,44,45,46,47,48,49].
- 2) Villages located in the northeast of the second planning area. The industrial zones of the city are located on the basis of the existing industrial zones in the

first and second planning areas. They are divided into the "Central Industrial Zone" (consisting of the "A" and "B" industrial zones) and the "Western" located on the site of the former lime factory in the western part of the city. Placing industrial zones as close as possible to urban residential buildings reduces the time for residents to travel to work. At the same time, some small industrial enterprises, warehouses, foundations, construction organizations are removed from residential areas of the city to industrial enterprises, and in their place cultural and social organizations and structures of the city scale are placed.

The residential area itself consists of four different types:

- 1) The city settlement development - the first type - the Old City district, established on the territory of the old "Horde" fortress. It is located in the northern part of the city, and it has a local character of the streets, which includes planned residential buildings, as well as later built city-scale facilities, a single-family housing stock typical of medieval cities.
- 2) The second type of development - it is located in the southern part of the city, near the station area. Its appearance was the development of the "Jizzakh-1" railway station. The essence of this residential construction is mainly of the European type, there are planned residences, mainly one-story houses, unplanned single-family houses.
- 3) The third type - buildings with 2-4-5 floors located in the south-west and east directions from Friendship of Peoples avenue. It consists of microdistricts built in recent years.
- 4) The fourth type is a one-story, two-sided, capital, individually planned building that is formed and folded, located mainly on the outskirts of the city. Currently, this type of development dominates the formation of residential areas of the city. On the one hand, this has a positive effect on the hot climate of Jizzakh region, because the courtyards are landscaped, on the other hand, it is negative, because its construction requires more space and increases the length of engineering infrastructure and various communications [41,50,51,52,53,54,55,56].

The residential development of the city is the decoration of the city environment with residential buildings of different floors, starting from 9 floors located in the city center and higher. Residential development of the city is built in accordance with the developed master plans of the city, specific planning plans, planning the construction of primary utility facilities, schools, kindergartens.

In addition, there will be parks, entertainment centers, recreation areas, streets, roads near the newly built houses.

### 3.4. Industrial zones

The industrial zones in Jizzak are mainly located in the northeastern, southeastern, and southern parts of the city. Some industrial enterprises are also located in residential areas. However, they lack large sanitary protection zones as in the industrial zones [57,58,59,60].

Food, light, building materials, mechanical repair, chemical, furniture and surrounding agricultural products processing industries in Jizzakh industry, as well as agricultural machinery, vehicles, and construction materials repair enterprises are present to serve Jizzak industry to enable them to grow.

The largest industrial zone is located in the northeastern industrial zone, the main specializations are construction, chemical, automotive, mechanical repair and other industries.

The largest enterprises located in the 1st part of the city: "Jizzakh battery plant" OJSC, oil reserve, "Reinforced concrete products" LLC, "Barkamoltrans" (HATP-4), customs goods base, "Vostok LTD" company, marble workshop and others there are a number of enterprises.

Uzbek-Lichtenstein joint venture "Rohat-Jay" LLC for the production of cheese and dairy products: Uzbek-Russian joint venture "Oybek Sank" producing canned fruit and vegetables. At the first stage, they will start. According to the information developed by the Ministry of Economy of the Republic and the Economy Department of the State Government, light industrial enterprises are at the stage of formation.

In addition, the city has separate facilities for light and construction industry, which are located in small districts and neighborhoods of the city.

### 3.5. Current state of construction works in Jizzakh

It should be noted that the rapid growth of service facilities in urban conditions and their excessive concentration in the central part of the city. In particular, the growth of trade, food and car service facilities was noted. The city's central streets and avenues are being built rapidly. At the same time, fewer service facilities are being built in the northeastern regions of the city. This is due to the lack of a network of major highways, which is important in width, and the quality of the existing highways in the city.

## 4. Conclusion

Jizzak is a city with lots of development potential. The Jizzak city government has shown its care towards their people by initiating government and private infrastructure projects. The city successfully evolves from a simple town towards a bustling future, with its heavy industries and beautiful residential buildings. Jizzak urban planning and development is a complex and challenging task that requires careful consideration of various factors, such as environmental impact, economic viability, social equity, and cultural identity. A successful urban plan should balance the needs and interests of different stakeholders, while also ensuring the long-term sustainability and resilience of the city. Urban planners and developers should adopt a holistic and participatory approach that involves the local community, the industry sector, and the government in the decision-making process. By doing so, they can create a livable and prosperous city that enhances the quality of life for its residents and visitors.

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