



BISHKEK'S INDUSTRIAL ZONES, MYTHS, HOW THEY ARE CHANGING, AND FUTURE TRENDS

ZHAMILIA BAIBORIEVA

May, 2021
Bishkek, Kyrgyzstan

Social Innovation Lab Kyrgyzstan (SILK)

Soros Foundation Kyrgyzstan and the American University of Central Asia founded SILK in 2019 with the purpose of developing innovative approaches to social change and social justice in Central Asia. Hosted by the American University of Central Asia (AUCA), the Lab brings together research and development organizations to conduct research, publish reports, organize events, make recommendations for public policies, and make use of advanced technologies such as data science to create marketable solutions.

Guiding Principles

- Develop innovative approaches to understanding problems and developing solutions
- Data-driven research: evidence-based recommendations
- Collaborative projects that bring together institutions and sectors
- Results of research will be shared at public events and released to the public domain
- Collaborations with social enterprises interested in sustainable business models for delivering solutions



Contact: silk@auca.kg
https://www.auca.kg/en/research_silk

About the author

Zhamilia Baiborieva

Co-founder of Sonun Urban Design & Consulting, Landscape Architect and Urban Designer. Part-time instructor at the AUCA. Program Coordinator at the Social Innovations Lab Kyrgyzstan. MS degree in Architecture and BS in Urban Design and Landscape Architecture in Bilkent University, Turkey.

email: baiborieva_zl@auca.kg

Abstract

The industrial zones along Lev Tolstoy street form an enormous belt of abandoned, incomplete, and deteriorating factories and structures that stretch across Bishkek city from West to East. SILK will evaluate the zones to understand the current situation, identify existing problems and weaknesses, and look for opportunities to develop better uses for the sites. The research is also being conducted as a part of the Urban Design class at AUCA University, under the guidance of the researcher. After the evaluation and analysis of the current condition of the zones, the students will develop proposals for sustainability redesigning the existing structures to improve their appearance and create economic value for the City.

Keywords: industrial zones, ruins, Bishkek, industry

Background

Bishkek's urban industrial zones stretch west to east along the railroad tracks, covering over 1,272 hectares of land. The zones not only occupy a huge part of the city, they also stretch along the center of the East-West axis of the city, strongly integrating industry into the city fabric. But the zones are closed and isolated behind fences. For the regular observer who does not work at the industrial zones or visit there frequently, the area might look abandoned and demolished. But in fact, our research revealed that there is quite a lot of life going on behind those walls. The aim of this research is to introduce the industrial zones to Kyrgyz citizens, to understand how the industrial zones in Bishkek function and relate to the form of the city, and how they affect the lives of the people working there and living nearby.

First, this study covers the definitions of industrial park, and terms and policies related to it. Next, it describes different types of industrial parks and trends. Then the document will give an introduction to the industrial zones in Bishkek city, and show the results of a small survey of industry business owners, their employees and people living near the zones. The conclusion provides recommendations for how Bishkek's industrial zones might be improved and further developed, and suggests opportunities for additional research.

Also, the study of the industrial zones was a part of the Urban Design Class at the AUCA University, where the students used the results of their research to develop a future scenario for the further development and transformation of the industrial zones in Bishkek.

Definitions

There is no certain definition of what an "industrial zone" is. Terms such as "industrial park", "industrial zone" and "industrial region" might be seen as the same thing, but in fact they refer to slightly different conditions of an industrial site. "Industrial region" refers to a geographical region with extremely dense industry. A common definition of "industrial parks" is "a tract of land developed and subdivided into plots according to a comprehensive plan with the provision of roads, transportation and public utilities, sometimes also with common facilities, for use by a group of manufacturers" (UNIDO).

This definition might also be applied to an “industrial zone.”

The term “industrial park” can also refer to much broader sites, such as free-trade zones, export processing zones, special economic zones, high-tech zones, freeports, enterprise zones, etc. This is because of differences in objectives, functions, economic policies and terminologies in different countries. From park to park there are different programs and goals. Thus, the definition of industrial parks can cover a variety of forms (UNIDO).

The basic characteristics of industrial parks are,

- Geographically separated land which might have its own utilities, communications, industrial waste and wastewater treatment, access to transportation and public and private services, first aid, firefighting and more.
- A master plan that describes specifications and standards for buildings, landscaping and road sections.
- A single management entity that approves and accommodates the entry of new companies into the park, enforces compliance with its rules, and provides forward planning to promote the long-term development of the park.

Another important term is industrial policy, it is important for successful economic strategic development of the parks. Pack and Saggy define Industrial Policy as:

“The strategic effort by the state to encourage the development and growth of a sector of the economy. It refers to “any type of selective government intervention or policy that attempts to alter the structure of production in favor of sectors that are expected to offer better prospects for economic growth in a way that would not occur in the absence of such intervention in the market equilibrium” - Pack and Saggy, 2006.

Industrial policy opens a lot of potential for enhancing the economy, restructuring sectors, diversifying them, adding new industries, and adopting new global trends, technologies and production methods. The policies that promote industrial parks are directly derived from national, state and local government strategies that would

induce diversification, transformation and inclusive economies. Therefore, industrial policies have to be coordinated across disciplines, including transportation, energy, infrastructure, labor, education, and more (UNIDO).

Industrial parks can offer a variety of benefits for their companies:

1. Provide and facilitate an environment for business,
2. Create linkages for backward and forward flows of raw materials,
3. Attract foreign and local investments, because they would be assessed by quality of infrastructure, land and management,
4. Regional and national development, as it creates jobs, linkage and overall economic growth,
5. Foster innovations,
6. Incubate new businesses and reduce business entry barriers,
7. Provide a medium for testing economic reforms and new policies, which further could be replicated nationwide,
8. Encourage community development,
9. Provide and maintain common infrastructure systems that can decrease production costs and make efficient usage of water and energy (UNIDO).

History of Bishkek Industrial Zones

Stage 1 1907-1930

The history of industrial buildings in Bishkek starts after the October Revolution in 1917 and the establishment of the USSR. City development during those years was directly linked to the development of manufacturing industries. Opened in 1924, the Luga-vaya-Pishpek railroad connected Bishkek with industrial centers in Russia. When it was built, the rail line ran along the lower edge of the city. As the city grew southward, the line divided the city into two and ended up at the center of the East-West axis of the city. The first industrial buildings were built by architects from Moscow and Leningrad and other cities that had big project offices. Starting in the mid-1920s such organizations started to emerge in Kyrgyzstan as well. After the October Revolution factories were nationalized. A very big contribution to the development of the construction was the arrival of specialists from other countries, especially Czechoslovakia (Hramov Muksinov).

In 1923 thanks to the cooperative “Integelpo,” a network of factories was built that became the largest in the city. Thanks to the Integelpo, by the end of the 1920's there were built a tannery, cloth and furniture factories, knitwear, shoe, tailor, sausage and other workshops. The equipment for factories was imported from Czechoslovakia and paid for by the workers. In the construction of industrial facilities, mainly local building materials were used: brick, adobe, wood, etc. Unfortunately, the industrial zones in the city developed spontaneously, without taking into account sanitary, hygienic and urban planning requirements. Architectural and planning solutions of enterprises were mainly utilitarian and had a technological character, therefore not enough attention paid to the external appearance or interiors of the buildings and structures (Hramov, Muksinov).

Stage 2 1930–1950

In 1936-1939 a large group of architects who were educated in Moscow and Leningrad came to the city of Bishkek; they made a huge contribution to the formation and development of the city's architecture. In 1938, at Gorstroyproekt, the team of authors of the workshop of Academician I.V. Zholtovsky developed a general scheme of planning and reconstruction of the capital, which was to become a fundamental document for the further development of the city. The planning scheme provided for the reconstruction and capital development of the territory located between Zhibek Zholu Avenue and the railway, with further expansion to the east, beyond the Alamedin River.

New industrial enterprises were designed from the western side of the city, near the Pishpek station, but a number of industries were also proposed to be located in the southeast, near the Alamedin River and the railway. This proposal contributed to the even distribution of residential and industrial areas, as well as the correct organization of urban transport.

In the pre-war years, the city's economic development was based on the construction of food and light industry enterprises. The architecture of industrial enterprises was, on the whole, purely utilitarian in nature. Little attention was paid to the improvement of the territory and the engineering equipment of industrial sites, household premises still did not meet the necessary requirements, the sizes of

High Tech Park (HTP)

is an example of industrial policy in Kyrgyzstan. HTP is not a physical park, it is a tax regime that is designed to encourage the growth of the tech sector.

For more information see <http://htp.kg/>.

workshops and territory were unjustifiably overstated, the standard distances between buildings and structures were violated, sanitary and hygienic, and fire safety and technical requirements were insufficiently taken into account.

During the war years, enterprises of the light manufacturing and food processing industries gave way to metalworking and machine-building industries. Construction was carried out at an accelerated pace, with maximum savings in building materials. The size of utility rooms was reduced, illumination decreased, and local building materials were widely used. Thanks to this, new construction solutions for the floors of workshops and construction techniques using wood and brick appeared. The architecture of industrial buildings of the war years was distinguished by the simplicity of space-planning solutions and the modestness of the external appearance of the buildings. In general, the development of industrial architecture during this period was quantitative.

Stage 3 1950–1970

Since the mid-50s and ending with the first half of the 70's, a large upsurge in industrial construction was observed in Frunze. The largest buildings from 1956 to 1960 were plants for the production of physical devices, the garment factory "40 years of October", and a number of other enterprises. From 1960 to 1978 were built and put into operation: Frunzenskaya CHPP, house-building factories, shoe factory "Cholpon," a worsted-cloth factory, a car assembly plant and a printing factory.

Massive and widespread construction involves the development of industrial enterprises that produce on a large scale precast concrete products, cement, ceramic and cement tiles, ceramic pipes, bricks and other building materials. In this regard, new enterprises and enterprises were being expanded, reconstructed and created to meet the needs of construction.

In 1971–1972 a characteristic feature of the development of the architecture of industrial buildings and structures was a sharp increase in quality and industrial prefabricated construction materials. Industrial enterprises were concentrated on the territories designated

by the general plan - the eastern and western parts of the city. They formed large hubs and industrial complexes with common auxiliary industries and farms, engineering structures and networks, and a single service system for workers. The coefficient of use of territories increased, typification, unification and standardization were widely used in design and construction.

The industry in the capital was supposed to develop in coordination with the nearby cities - Tokmok, Kant, Kaında and others, that form an agglomeration of the Chui Valley as a whole.

Stage 4 Post-Soviet Era

Bishkek is the largest economic center on the territory of the Republic of Kyrgyzstan. Important political and economic changes took place at the end of the 20th century, which led to the transformation of the national economy; in particular, it led to the privatization and downsizing of enterprises.

In the early 90s, there was a sharp decline in industrial production. Most of the population who worked at the enterprises found themselves out of work. In 1992, the volume of production decreased by 50 percent or more - this directly affected the chemical, petrochemical, paint and varnish industries, and the production of electrical measuring instruments. The volume of production in mechanical engineering and the food industry decreased by more than 30%. State industrial enterprises were almost completely privatized. Utility and warehouse facilities were empty and often misused.

4. The Industrial Parks Today

For regular observers, the industrial zones are vague and confusing. It might seem that they are abandoned and empty or on the other hand are engaged in heavy manufacturing. The research is aimed to understand and introduce the zones to Kyrgyz citizens. For the research SILK conducted several interviews with different people. For example, businessman and philanthropist Tolondu Toichubaev who repurposed several old factory buildings into schools. Danyar Amanaliyev is another person who owns coworking centers in the city of Bishkek and Osh.

We also developed several surveys designed for business owners in the Industrial Zones and people who live near industrial zones [Annex]. We piloted several surveys, which correspond to the literature review conducted about the Industrial Zones in Bishkek. The aim of the survey for the business owners is to understand how the facilities are available, whether there is central administration, any amenities and so forth. The survey for residents is to understand how the railroad, vehicle congestion on Lev Tolstoy street, noise and air pollution affects quality of life. In addition, the team conducted several field trips, observations and visual analysis.

In the early 2000s, small and medium-sized businesses gained strength in industrial production. Enterprises were transformed into various forms of ownership, such as open and closed joint-stock companies, joint and private enterprises, and entrepreneurs that create a competitive environment and support domestic demand. The main directions for the industrial parks today are trade, service and offices. Trade today occupies a leading place in the structure of sectors of the economy of Bishkek. It employs more than 25% of the total employed population.

The leading industries in Bishkek are food, energy, electricity, mechanical engineering and metalworking, chemical and biomedical (Hramova, Muksinov). At one time, production facilities were provided with an engineering infrastructure at the proper level, and had access to railway and motor roads. The responses to the piloting survey indicated that today there are bad roads, time to time problems with water or electricity, no united administration or any amenities nearby. It should be noted that the basis of the architectural and planning organization of industrial and warehouse territories did not undergo any radical changes since the Soviet period. Thanks to this, today we have an interconnected structure of industrial areas-nodes with a street-road network, located mainly along the railway. The main part of industrial buildings and structures built during the Soviet period is the modern development of the industrial zones of the city.

Today, most of the manufacturing enterprises are located in the central part of the city, along the main railway track. Such a linear arrangement of production areas is typical for the entire Chui Valley region. According to the urban planning analysis, in the northwestern

part of the city, surrounded by residential buildings, there are also industrial and warehouse territories.

Most of the industrial facilities that used to be located on the outskirts of the capital are now in the "fabric" of the city. The carried out urban planning analysis shows that due to the fact that industrial areas are located in the center of residential buildings, there are joint industrial and residential zones. The nature of the development is not the same: here you can find various buildings for housing, civil and industrial purposes - houses of culture, clubs, shopping centers, canteens, cafes, institutes, residential buildings, garages, warehouses, various workshops. Buildings and structures of various stores and configurations form the development of industrial and communal storage areas, rarely forming complete architectural ensembles.

Industrial facilities, which, together with public and residential buildings, form a single whole, participate in the formation of streets and squares, influencing the expressiveness of the city silhouette. However, the visibility of the industrial buildings from the main points and highways of the city is often difficult due to their isolation or enclosure by other buildings. Many are in a dilapidated, abandoned state and are crumbling.

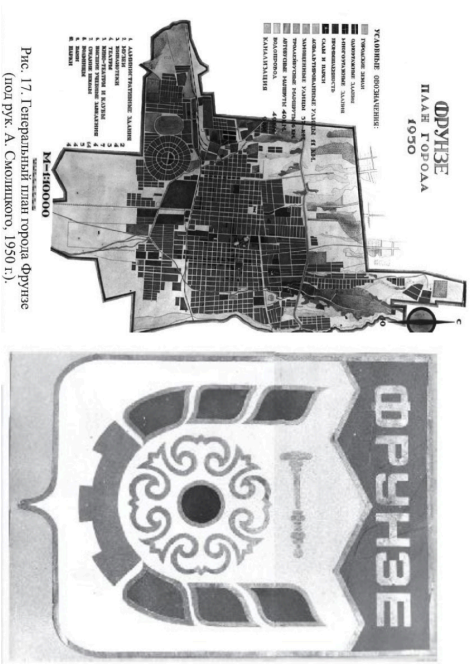
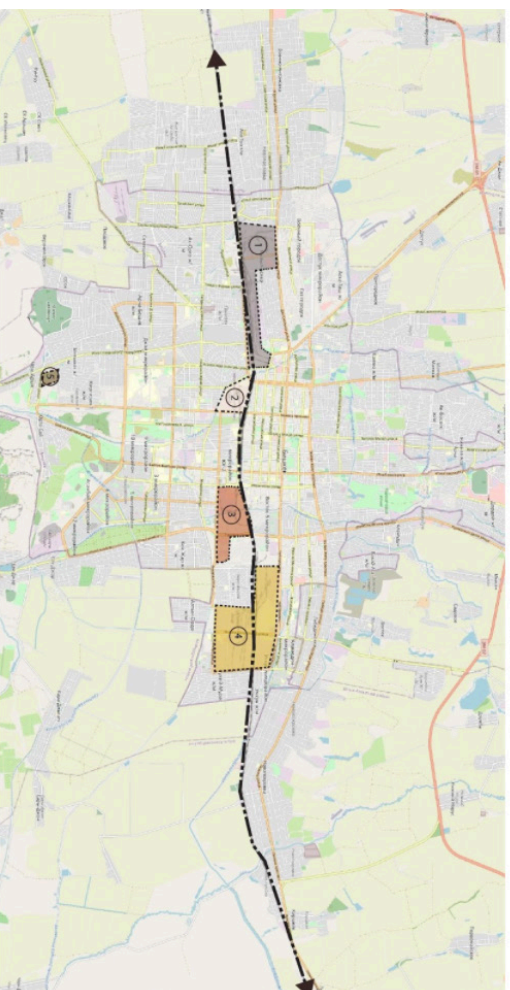


Рис. 17.1. Интегрированный план города Душанбе (по рис. А. Соколинского, 1950 г.).



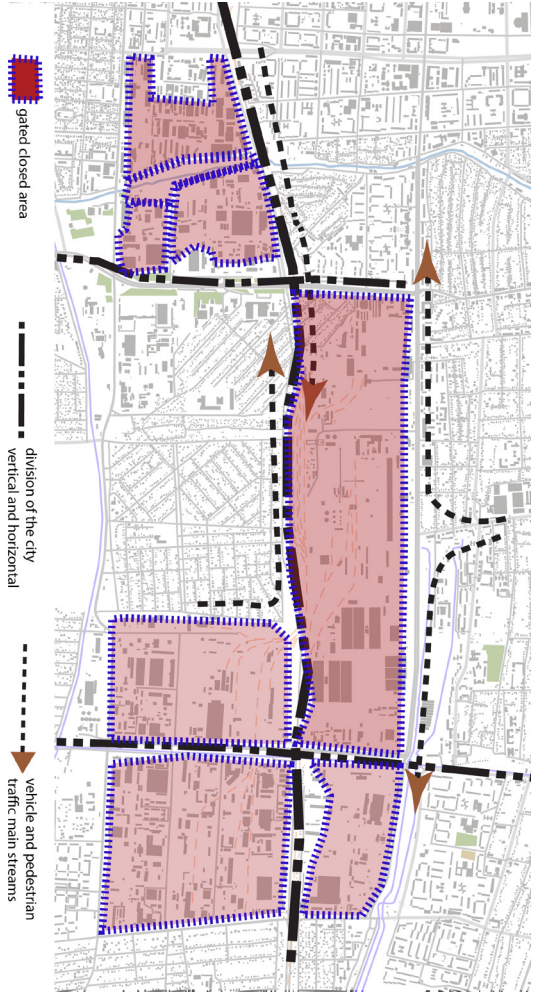
Рис. 16. Генеральная схема планировки г. Фрунзе, 1939 г.

- 1) West Industrial zone,
- 2) Bishkek Machine Factory,
- 3) Maslo - Syr Baza,
- 4) East Industrial zone,
- 5) Free Economic Zone





West Industrial zone and
Machine Building factory



East Industrial zone
and Maslo-Syr-Baza

1. Fences around the industrial zones and railroad visually and physically divide the city into Northern and Southern parts.



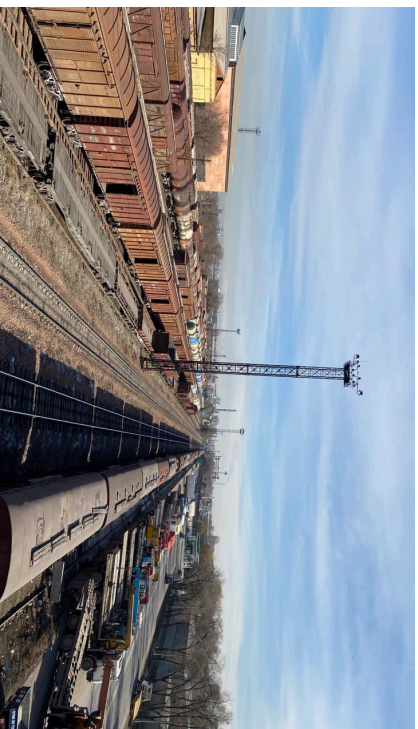
2. Although many buildings might look demolished and abandoned, there are very dense activities going on.



3. The main activities at the Industrial zones are storing, assembling, and logistics.



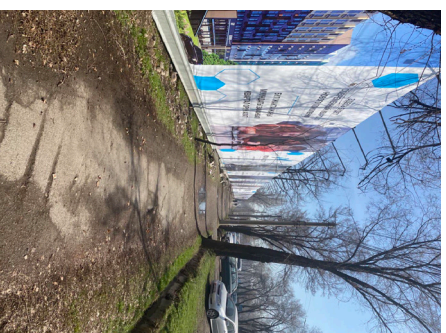
4. Because of the many heavy trucks on the road, Lev Tolstoy is a heavily traffic-loaded street. A Pilot survey also supported this observation.



5. Lev Tolstoy street and the railroad tracks serve as a barrier that divides the city into northern and southern parts. A Pilot survey also supported this observation.



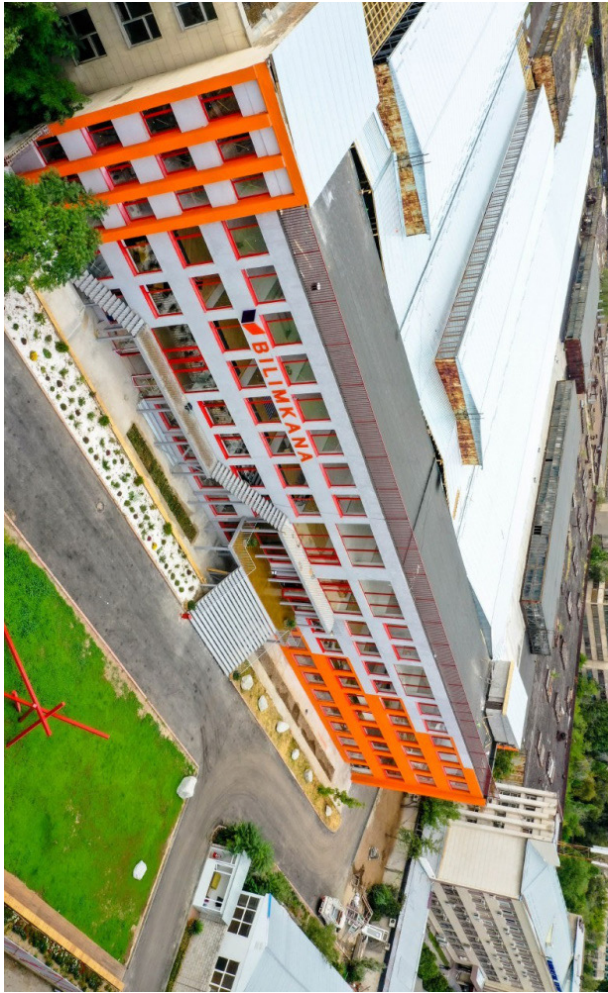
6. There is more and more construction of residential buildings in the industrial zones.



New residential complex
at the Maslo-Syr -Baza

Bilimkana school, an old
factory repurposed into
a school

retrieved from
[https://data.kakus.media/
image/big/2020-09-03_16-15-
35_889376.jpg](https://data.kakus.media/image/big/2020-09-03_16-15-35_889376.jpg)



Industrial building repurposed
into school Sapat-Jal

retrieved from
[https://sapat-edu.kg/wp-
content/uploads/2020/09/
dji_0508-scaled.jpg](https://sapat-edu.kg/wp-content/uploads/2020/09/dji_0508-scaled.jpg)



An industrial building in the eastern industrial zone repurposed into the Loft business center and production studio

retrieved from <https://storage.yvision.kz/images/user/jobboldgish/>



FACTORY
coworking space



An industrial building repurposed into a bar
retrieved from <https://19.photo.2gis.com/images/>

5. Global Trends

Trends today go towards building eco-friendly industrial parks. Modern industrial parks have to have a strong sustainability foundation based on principles such as sustainable site development, sustainable transportation, water conservation, energy efficiency, the use of sustainable building materials, management of natural resources, health and well-being facilities, green education, public consultations and waste management. Industrial parks should have a master plan and be evaluated in terms of environmental and social impacts on ecosystems and lay a base for an on-going assessment of socio-economic impacts. A master plan should define relationships with land use, topography, infrastructure, buildings, social settings and their environments (World Bank, Regenerating Urban Land: A Practitioner's Guide to Leveraging Private Investment, 2016). A master plan should be based on existing plans, site surveys and feasibility studies. A proposed master plan for an industrial park should address mixed-use land use, flexibility in designing the built environment, physical connectivity, use of renewable energy resources, energy conservation, integration with the region, compliance with norms and regulations, conservation of nature, optimal usage of the land, and so forth. (LandT-RAMBØLL Consulting Engineers, A Presentation on Site Master Planning – Examples from India, International Conference on Eco Industrial Parks, Hyderabad, 2009).

Another feature that good industrial parks should have is a variety of different zones organized according to expected uses, industrial and non-industrial. Typical zones in an industrial park context would be: the industrial zones themselves, such as factories and industrial units; amenities zones, such as clinics, administrative buildings, shopping centers and so on; special infrastructure zones, such as labs and market intelligence units; utility zones, which would have waste collection centers; residential zones and green zones which would form green belts and buffer zones around the park (UNIDO).

Another international trend is to restore and repurpose entire industrial complexes. The following are some noteworthy examples.

1. Khlebozavod, Moscow

In the 1920s, during the heyday of the New Economic Policy (NEP), Moscow was growing by leaps and bounds. The government is launching a program to build bakeries to provide bread for the arriving population. George Marsakov, a mechanical engineer built a cannon factory in Volgograd, and then restored the water supply system there, destroyed during the Civil War. Since 1924 and for the rest of his life he has been developing technological lines for baking bread. "Khlebozavod No. 9" with a capacity of 190 tons of bread per day was put into operation in 1934. It was considered an automatic bakery: flour was sent to the upper floor, and ready-made loaves and rolls were received below. In the fall of 2019, Shuka Lab opened the doors of the main building - the most remarkable architectural structure on the territory of the Khlebozavod. The ring conveyor, the main production center of the plant, was located here.

On the ground floor, a space "Marsakov" appeared with stores of concept brands and a lobby where there is free Wi-Fi and you can work. On the other floors there are offices, loft apartments and Living Room No. 9 - a two-story event platform with panoramic windows and access to the roof [Xne6o3a6o4 №9, 2021].



Retrieved from

<https://storage.strelka.com//aa0d6d20-3004-4bb8-a8de-65cdee282153/w/840>

2. Landschaft Park Duisburg-Nord, Germany

In 1991, an unusual landscape park Duisburg-Nord was opened on the territory of the former metallurgical plant in Duisburg. Now it is one of the most popular holiday destinations for city residents and tourists. The plant was stopped back in 1985, after which the city inherited an industrial zone with an area of almost 200 hectares. Oddly, environmental activists spoke out against the demolition of the abandoned enterprise. They came up with an initiative to open a park on the territory of the plant, but not an ordinary one - with green lawns, flower beds and fountains, but using the existing industrial landscape as a basis.

The central idea of the landscape park project was not to get rid of the structures disfiguring the landscape, but to interpret them in a new way, giving new life and reorienting them to modern realities. The former gas meter now houses a diving center, where scuba divers sink to the bottom - and swim among artificial coral reefs, occasionally bumping into wreckage of ships, cars and aircraft. On the site of the old power plant, performances by contemporary artists and music concerts are held, attracting thousands of participants. The steel shop has been converted into an entertainment center, and an open-air cinema is now operating where metal was previously cut. Climbing and parkour enthusiasts have chosen the concrete walls, and the former blast furnace # 5 has become an observation deck offering breathtaking views of Duisburg and the surrounding area. About 500 thousand guests visit the park annually [Westfalia, 2021].



Retrieved from

https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcdewIDagFbPb6_CANXuMOHkC7GnHt9g2T6b-g&usqp=CAU

3. Genk C-Mine, Belgium

Located on the site of a former coal mine, Genk C-Mine is a new cultural center in Belgium. It became an urban square with a cultural, creative, design and entertainment function. Most of the buildings around the square are former mining buildings, renovated and converted into buildings with a cultural program; a large theater, cinema, restaurants and the (newly built) design academy in Genk. The design of the square interacts with the surrounding buildings and facilitates and creates space for all kinds of spectacles. The plaza creates an impressive open space: The events and activities planned in the square make it the cultural center of Genk (Landezine, 2021).



Retrieved from

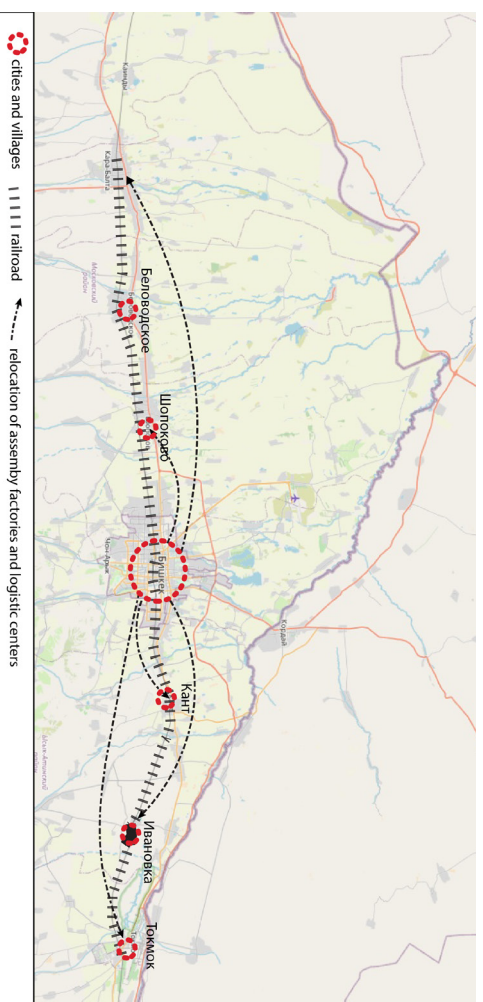
<http://landezine.com/wp-content/uploads/2012/07/03-C-Mine-Genk-by-HOSPÉR-Pieter-Kers-300x300.jpg>

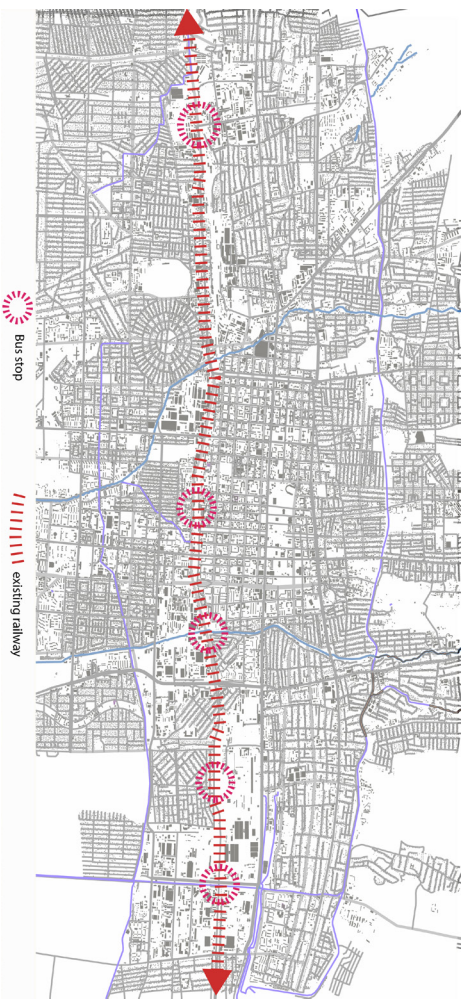
3 Vision

Based on the literature review and interviews with different people, SILK came up with several strategies for how the industrial zones in Bishkek should be developed. As was stated in chapter one, the important element of a strategic development is to approach it at the bigger scale. Ideally it should be an institutional collaboration between economists, politicians, business leaders, construction companies, residential associations, and urban planners.

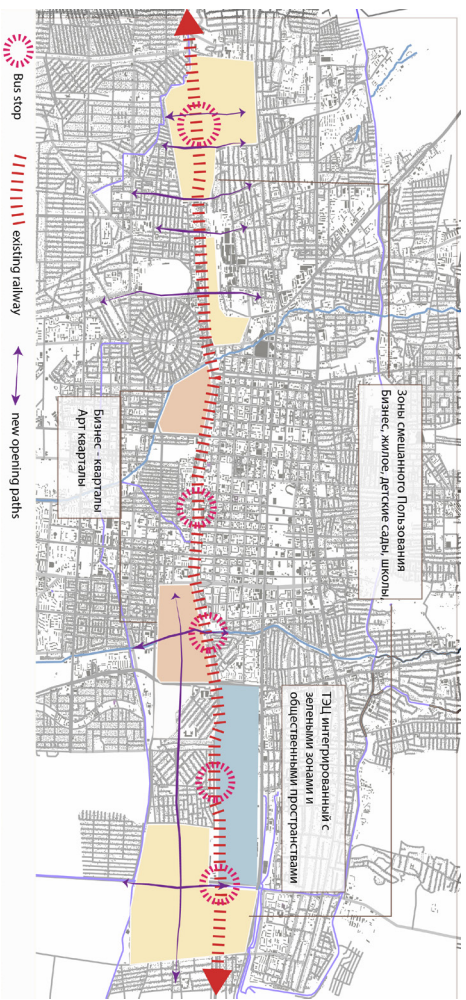
First, we suggest building an electrical train on the existing tracks that would reliably run every 30 mins to the cities and towns to the east and west.

Second, the logistics and assembly factories should relocate to the smaller cities, such as Kant, Ivanovka, Tokmok, Belovodskoe, Kara-Balta and Shopokovo. This relocation of industry would create new job opportunities and development of industry sectors in the smaller cities. For Bishkek it would help open gated industrial zones, release Lev Tolstoy from dense traffic and create opportunities for industries that would not harm the environment or create dense vehicle traffic.





Third, establish several stops within the city, instead of only one existing train station.



Fourth, repurposing existing zones would facilitate opening the zones for new vehicle and pedestrian routes.

Fifth, instead of assembly factories and logistic centers, we suggest establishing business districts and high tech parks closer to center parts and mixed-use buildings, which would be partially residential, and partially various businesses and amenities. Therefore instead of manufacturing industries at the center of the city, we should have more industries, which would produce more intellectual and creative products. Also, this way we would be able to reintegrate those closed areas into the city.

This proposal would indicate a further set of actions and strategies.

1. Define types of new economies and businesses based on future proposals and predictions.

There should be legitimate research and calculations on types of new economies that we need to introduce and maintain. This research would have formed a framework for the urban planners to develop a new strategic development plan. Therefore it would not be arbitrary and subjective to the person developing the plan.

2. Define buildings that should be repurposed or replaced with new building types.

Visual, structural and spatial analysis which would further help to evaluate buildings and repurpose them to a function that would enhance local economies.

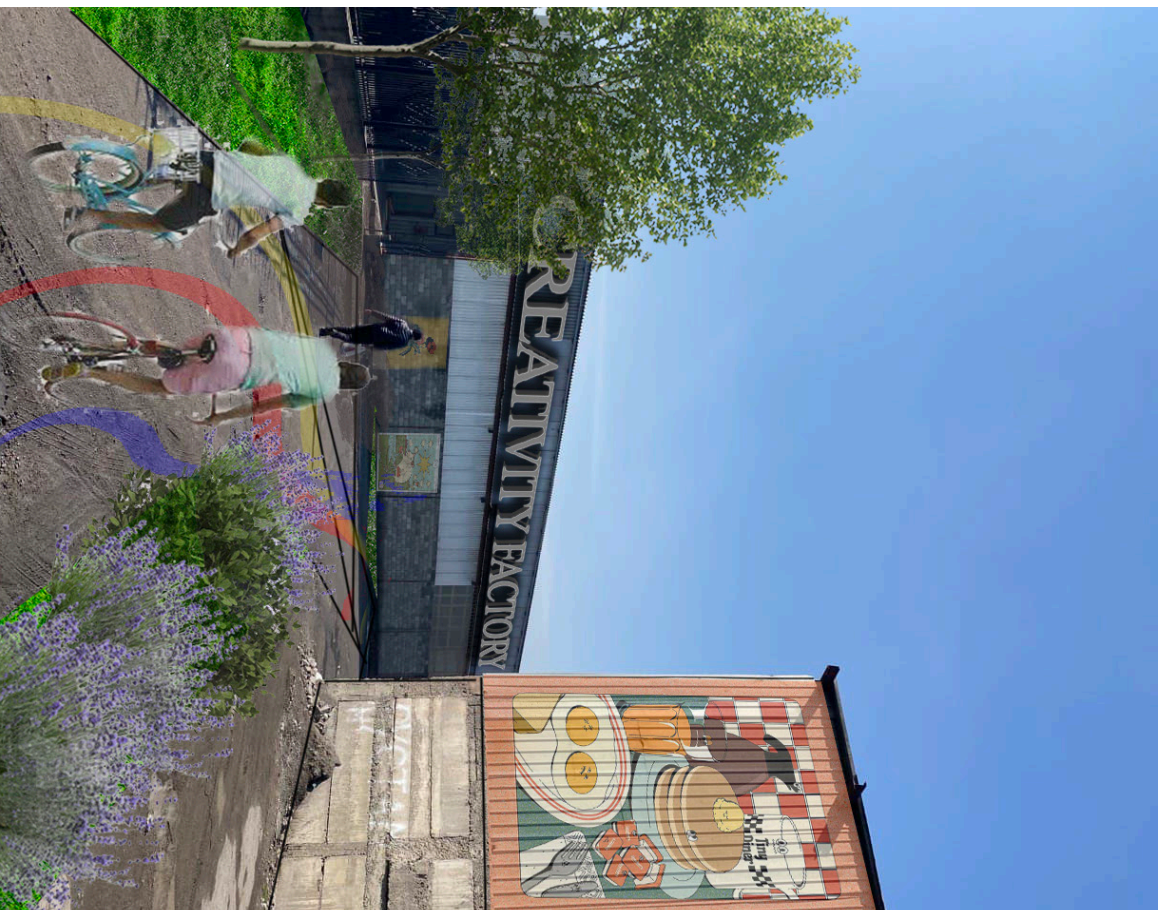
3. Organize further meetings with various groups and government units and conduct surveys on a bigger scale.

Surveys were already designed (see Annex) and pilot tested. Now the surveys should be conducted on a bigger scale to prove the statements above. Also there should be meetings with business owners about the possibility of moving businesses to other locations and with government units to understand what their plans are for the future.

4. Develop a detailed urban design master plan

The master plan should have several challenges to solve, such as reducing congested traffic, detailed solutions for the open train stops and passing bridges, and standards for the greenfields and street intersections.





REFERENCES

Asian Development Plan, 2018. A DIAGNOSTIC STUDY OF KYRGYZ REPUBLIC'S FREE ECONOMIC ZONES AND INDUSTRIAL PARKS. [online] Asian Development Bank, pp.18-46. Available at: <https://www.carecprogram.org/uploads/2018-df-agnostic-study-ecozones-kgz.pdf> [Accessed 4 April 2021].

Landezine. 2021. GENK C-mine. [online] Available at: <http://landezine.com/index.php/2012/07/genk-c-mine-by-hosper-landscape-architecture-and-urban-design/?___cf_chl_jschl_tk___=971c30f77a9c972d5a21637a361a62d4f7f373-1622789874-0-AceTdJhWIGDn9FjeQJ2em9UX_ffS-j0nKSyLLtIBZMKvID2Xi-qZHJbazuyAvPs-Fb-xi-BE-XvWL4yme_EaZ5iveZay_w60JDYWiK-2z1BlKSImQd-2pWGXb-JD8dy454lhUnbnizeX-zyVWL0WieIA2iN9Qps0j0JkdJEmBmImjKk-1TaD_RnWx_qMiqTV-5tsXmvmNyxECj5ye4MoK-ixNemqBhqiZUKG660UXiQjYqV5yJXqHFAcuevi-Fx7ZF6JadX9m9W0okG66jhsJ4VxT02SDba62XUV0eF8JhzfCk3AHSTSTFD6vzakVGtc1PKu-c8mN-wFRrDbWkYzyvV8qbxT0m10Yoc_uq10MK5de-Da1Yscs3QKIHQay-52liKNNSt45edv53rUlh78C-QwY2RXKEawTcWk2yTKJgk9Fn56IQWpN_Kvb3_QH94gVgrHtv-b7a2qsk6ecPF1zuZvkrQdNi5IE-wliQyPOJt84U6ByUm3AsgwJUQrGwCMeQzn-Fr_2BQ> [Accessed 4 May 2021].

Muksinov, R. M. & Нрамов, Н. С. [2010]. Архитектура города Бишкека. Традиции и современность [The architecture of the Bishkek city. Traditions and modernity]. Retrieved from: <http://lib.krsu.edu.kg/uploads/files/public/2936.pdf>

UNIDO, 2019. INTERNATIONAL GUIDELINES FOR INDUSTRIAL PARKS. CROSS-DISCIPLINARY TEAM ON INDUSTRIAL PARKS. [online] UNIDO, pp.15-61. Available at: <https://www.unido.org/sites/default/files/files/2020-05/International_Guidelines_for_Industrial_Parks_EN.pdf> [Accessed 3 March 2021].

Рейн-Вестфалия, С., развещения, П. and парк, Л., 2021. Ландшафтный парк: на завод - как на праздник. [online] RestExpert. Available at: <<https://tourism.restexpert.ru/germany/place/landscape-park/>> [Accessed 4 June 2021].

Национальный статистический комитет Кыргызской Республики, 2016. ПРОМЫШЛЕННОСТЬ КЫРГЫЗСКОЙ РЕСПУБЛИКИ. [online] Бишкек, pp.1-105. Available at: <<http://stat.kg/media/publicationarchive/87639bc7-b675-4781-887a-75764abb8f7b9.pdf>> [Accessed 4 March 2021].

2021. Хлебозавод №9. [online] Available at: <<https://hlebozavod9.ru/o-проекте>> [Accessed 4 February 2021].

ANNEX 1

As the study of Industrial zones was also a part of student projects in the Urban Design Course at the AUCA University, here are some of the students' design suggestions.

Ayim Alchieva

Ayim attempted to create a complex master plan for Bishkek Machine building Factory, she proposed to open the industrial zone, add more amenities, locate a dog park and a waterfall create a promenade along the river, enlarge the existing park and add more infrastructure.



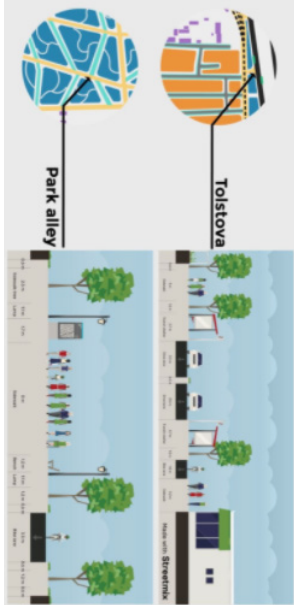
Aydar Zhumabaev

Ayar proposed a park instead of functioning warehouses, with a variety of activities inside of it. He also proposed many recreational activities with tourist possibilities. He also proposed to open a boulevard through the Tokoldosh neighborhood and open small food businesses that could raise the local economy. He also proposed establishing a train museum on the existing railroad and a park for skateboarders.



Ilias Asanaliyev

Ilias developed a detailed proposal for new land uses, where he keeps the existing industrial zone, but proposes to open it, create more amenities, enlarge existing green zones and build new types of road sections.



ANNEX 2

ИССЛЕДОВАНИЕ ПРОМЫШЛЕННЫХ ЗОН БИШКЕКА

Для многих жителей Бишкека промышленные зоны остаются загадкой. Мы ходим или ездим по улице Льва Толстого, не понимая, что происходит за стенами и насколько важны эти зоны для нашей экономики.

Небольшая команда академических архитекторов и градостроителей проводит исследования зон. Нас интересуют текущие условия, потребности работодателей и возможности улучшения инфраструктуры. Мы планируем опубликовать небольшой доклад о зонах, чтобы помочь лидерам сообществ, экономистам, застройщикам и правительственным чиновникам лучше понять важность зоны и роль, которую она играет в будущем Бишкека.

Заполнение этого опроса займет около 15 минут. Ваши ответы будут анонимными. В отчете будут подготовлены только агрегированные данные.

Мы очень ценим вашу поддержку нашего исследования. Если у вас есть какие-либо вопросы или вы хотите поговорить с нами по телефону или лично, пожалуйста, ознакомьтесь с нашей контактной информацией в конце опроса.

Лаборатория Социальных Инноваций Кыргызстан
Студия-Музей
Департамент Урбанистики, АУЦА
Сонун Городской дизайн и Консалтинг

1. Адрес бизнеса? Пожалуйста, укажите название зоны, если таковая имеется.

2. Как долго ваша компания работает в этом месте? (годы)

3. Вы владеете своим зданием или сдаете его в аренду?
собственность аренда

4. Кем вы являетесь на предприятии

- владелец предприятия
- сотрудник

5. Что это за бизнес?

- Легкая промышленность
- тяжелая промышленность
- работа в офисе
- складирование
- сервисный центр - ремонт, изготовление на заказ, прототипирование
- оптовый магазин
- сохранить магазин
- образование
- Другое _____

6. Занимается ли ваш бизнес международной торговлей?

- a. в основном импорт
- b. в основном экспорт
- c. оба
- d. мы не занимаемся импортом и экспортом

6. Примерно сколько рабочих бывает на вашем сайте в обычный день? (не клиенты или посетители)

7. Нам интересно ваше мнение о качестве услуг, которые вы получаете в этой промышленной зоне.

По шкале от 1 до 5, насколько вы удовлетворены следующими услугами? 1 = очень недоволен обслуживанием, 3 = средне, 5 = очень доволен. Если вы не пользуетесь услугой, введите 0.

электричество _____

вода _____

обработка отходов _____

дороги _____

сантехника _____

железнодорожное сообщение _____

топливо для автотранспорта _____

строительство _____

озеленение _____

таможенные услуги (импорт / экспорт)
общественное питание для рабочих _____
место для встреч _____
доступ к поставщикам _____
качество рабочей силы _____
уровень шума _____
качество воздуха _____
детский сад _____
открытое пространство для отдыха, упражнение _____
Другой _____

Пожалуйста, прокомментируйте любые услуги, которым вы поставили оценку 1 или 5. Пожалуйста укажите, был ли фактор сезон например лето или зима.

Что могли сделать менеджеры вашей индустриальной зоны, чтобы ваш бизнес стал успешнее? Отметьте три (3) изменения, которые будут иметь наибольшее значение.

- лучше дороги внутри зоны
- более частое железнодорожное сообщение
- более надежная мощность
- больше воды
- лучший доступ к поставщикам
- лучше ландшафтный дизайн
- более удобный доступ к механическим цехам
- ресурсы для прототипирования продуктов
- Более качественная рабочая сила для какой работы?
- Больше, более качественное питание
- Больше ресурсов для встреч, тренингов, мероприятий
- Другой
-

8. В какое другое предприятие вы бы перекавалифицировали бы ваше здание или всю зону?

Скажите, пожалуйста, несколько слов о том, как эти изменения могут улучшить ваш бизнес.

Большое спасибо за ваше время и за то, что поделились своим опытом в промышленной зоне.

Можем ли мы связаться с вами, если у нас возникнут вопросы по поводу ваших ответов или мы хотим обсудить тему, касающуюся промышленной зоны? Если да, укажите, пожалуйста,

Имя: _____

E-mail: _____ Телефон: _____

Наш контакт: jamiya.vairob@gmail.com

ANNEX 3

6 Survey for citizens living near industrial zones

Для многих жителей Бишкека промышленные зоны остаются загадкой. Мы ходим или ездим по улице Льва Толстого, не понимая, что происходит за стенами и насколько важны эти зоны для нашей экономики.

Небольшая команда академических архитекторов и градостроителей проводит исследования зон. Нам интересуют текущие условия, потребности работников и возможности улучшения инфраструктуры. Мы планируем опубликовать небольшой доклад о зонах, чтобы помочь лидерам сообществ, экономистам, застройщикам и правительственным чиновникам лучше понять важность зон и роль, которую она играет в будущем Бишкека.

Заполнение этого опроса займет около 15 минут. Ваши ответы будут анонимными. В отчете будут подготовлены только агрегированные данные.

Мы очень ценим вашу поддержку нашего исследования. Если у вас есть какие-либо вопросы или вы хотите поговорить с нами по телефону или лично, пожалуйста, ознакомьтесь с нашей контактной информацией в конце опроса.

Лаборатория Социальных Инноваций Кыргызстан
Студия-Музей
Департамент Урбанистики, АУЦА
Сонун Городской дизайн и Консалтинг

1. Как часто вы видите грузовые машины на дороге?
редко иногда часто почти всегда

2. Что бы вы хотели видеть в промзонах?

парки
общественные места
общественное искусство
садики и школы
места общепита
другое _____

как бы вы оценили шум от ул. Льва Толстого и предприятий по шкале от 1 до 5

3. Как бы оценили загруженность ул. Льва Толстого по шкале от 1-5.

1 2 3 4 5

4.. Какой вид транспорта вы видите по улице Льва Толстого?
легковая машина большая грузовая машина
маленькая грузовая машина маршрутка автобус
7. Будучи пешком попадали ли вы в аварии?

8. Если вы живете поблизости ул. Льва Толстого и промзон, как бы оценили шум по шкале от 1 до 5?

9. Как бы вы оценили качество воздуха по шкале от 1 до 5?

10. Как бы вы оценили зеленую инфраструктуру?

11. Как бы вы оценили пешеходную инфраструктуру?

Большое спасибо за ваше время и за то, что поделились своими опытом в промышлленной зоне.

Можем ли мы связаться с вами, если у нас возникнут вопросы по поводу ваших ответов или мы хотим обсудить тему, касающуюся промышлленной зоны? Если да, укажите, пожалуйста,

Имя: _____

E-mail: _____ Телефон: _____

Наш контакт: jamilva.vaybor@gmail.com