Formation of the Architectural Environment of Canals in the City of Fergana

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ABSTRACT

A total of 42 km of canals in the city area have been inspected by a specially established commission, and the sanitary condition of canals and water management structures, 7.5 km along Margilonsoy is currently under repair. The channel is fenced with special railings and decorated with coloured stones. This is mainly the result of the works carried out along the Margilonsoy canal. It was found that the strength of the shores of the existing 1.5 km canal along the Akhunboboev basin, and the level of beautification of the areas along the canal is in an unsatisfactory condition, which has a negative effect on the appearance of the city.

Keywords: Water management facilities, sanitation, Margilonsoy canal, landscaping

Introduction

In order to rationally use the canals and water management facilities passing through the city of Fergana, beautify the adjacent areas, and create places for cultural recreation for the population, the Cabinet of Ministers decided that the following are the main tasks of the rational use of canals and water management facilities passing through the city of Fergana:

- ensuring the appropriate sanitary condition and technical reliability of canals and water management facilities located in the city;
- comprehensive and fundamental improvement of sanitary cleaning of canals, improvement of areas adjacent to canals in accordance with sanitary, ecological requirements and regulations; reconstruction of parts of canals passing through the city by concreting, creation of recreational areas on the shores using modern landscape architecture methods;
- increase the efficiency of the use of special equipment and equipment, including water and energy-saving technologies.

The main purpose of the improvement works carried out for the welfare of the population is to maintain a healthy lifestyle, family recreation and meaningful spending of free time from the vacant or misused areas in these places [1-4]. At the same time, it is desirable that the objects planned to be built should be suitable not only for the requirements of the time but also for the way of life of the inhabitants of that area.

In the preparation of the project, special importance was attached not only to today's laws and regulations but also to the study of the opinions of the population. In this case, the opinions of the residents of this area about the canal areas were studied online. The survey consisted of a total of 7 questions, asking respondents about themselves and the canal area. Questionnaire responses were closed-ended, and participants generated aggregate statistics by choosing. About 80 residents participated in this research, and most of them live near the project area [5-9].

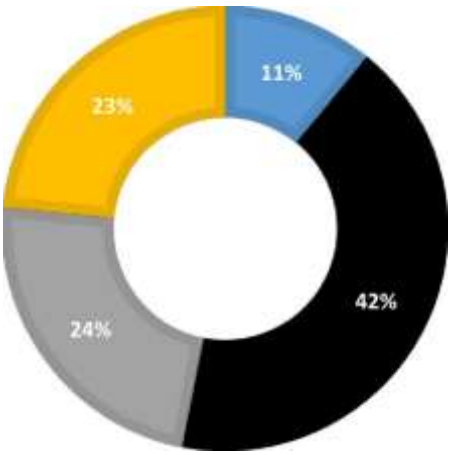
The main part

Since people of different ages have different worldviews and additional activities, it was determined to which age group they belong during the research. Most of the respondents, 95%, are between 21 and 40 years old. At the same time, only 4% of them are under 20 years old.

It is known that the way of life of people differs depending on their gender. Some activities are of interest mainly to women, while others may be important only to men. Therefore, it was decided to study the information related to their gender during the survey. According to him, 65% of the participants were women and 35% were men [10-17].

Another important information about the participants is the type of activity they are engaged in. In particular, the main focus of the research was whether the respondents were employed or unemployed, students or retired. In particular, the majority of those who took part in the survey are pupils, students (45%) and employees (36%). 17 per cent of the rest are housewives or temporarily unemployed, and 2 per cent are pensioners. These data were obtained from general surveys that asked about the respondents [16-20].

Residents living in the area along the canal use this place for various purposes. Nevertheless, we found it necessary to summarize these goals and focus on the most used of them. Canal-side areas may also be adapted to different uses depending on the area in which they are located. According to the diagram below, which shows the results of the research, it was found that the participants use the canalside areas where they live mainly for recreation. Another 3-4% of participants use it as a walkway and swimming pool. The remaining 10% of participants stated that they use it for purposes other than these.



42% - book cafe (book store and cafe

24% - sports field

23% - playground

11% - Wi-Fi area

Figure 1. The most useful facility that can be built in canalside areas

When the area is intended for recreation, it is possible to build various objects of use. In Figure 1, the object expected to be used the most among the participants in the book cafe (book store and cafe 42%). The sports field and playground were next (24% and 23%). The Wi-Fi area took the last place with an 11% result. When conducting the survey, it was taken into account what time of the day the people spend time in the areas along the canal. Therefore, it is important to install lighting and energy-saving devices. Thus, according to the results shown by the participants, they spend their time in the canal areas during the day and in the evening.

It is known that the majority of the population living in the city lives in multi-storey buildings, and this limits the possibility of doing sports in a certain sense. Therefore, in order to provide convenience to the population, these facilities can be built in the areas along the canal. Survey respondents said they would take advantage of opportunities for cycling (47%), jogging (34%) and fitness (30%) in canal-side areas. The remaining 13% voted for table tennis, and 10% said that it would be beneficial if facilities were

created for checkers and chess.

Use of innovative technologies and materials in the creation of landscape objects in the area along the Karasuv canal

Foreign and domestic experience in creating and using parks in the city indicates the development of several new trends. They are related to the recognition of the ecological role of green spaces for recreation, as well as the emergence of new technical means of park landscapes, the rapidly changing appearance of parks and their integration with urban structures.

More and more new types of garden art objects are emerging, which reflect the growing cultural demands of the population, the interests of different social groups, and the tastes and preferences of different people. The search for unique means of expressing the objects of landscape architecture continues.

Today, there are many materials and technologies for the landscape that make the work of landscape designers easier.

Examples of such materials include gabions, geonets, geomembranes and geofences.

Gabions

Gabion structures are volumetric mesh structures of various shapes, filled with stone, made of wire wrapped in mesh, and used to protect soil from erosion (Fig. 2).

Figure 2. Forms with a mesh structure

The gabion device is one of the soil-strengthening methods. With their help, it is possible to install retaining walls in places, build lifts, and prevent changes in the shape of slopes. Gabions are nets made of plastic or metal. They are filled with stones.

These structures have become widespread due to their high design advantages. These advantages are high and high-quality consistency; safe fastening of the slope; ease of production; water permeability; not using heavy equipment; the ability to perform any complex and interesting design; quick completion of work. You can make gabions of different designs by studying the requirements for materials.

Geoset

A special mesh made of durable and long-lasting materials, resistant to rust and natural factors. Flat roll polymer material with high strength mesh structure with elastic ribs. It is produced in different ways: by connecting special weaving threads, casting, and ties. Geoset is reliable and effective in strengthening high-quality roads, sidewalks, and slopes.

It is placed between sand and gravel — through the gravel cells into the sand can not go deeper: 35 x 40, 33 x 33 and 40 x 40 mm. Their sizes depend on the fraction (type) of gravel.

Figure 3. Geo-grid

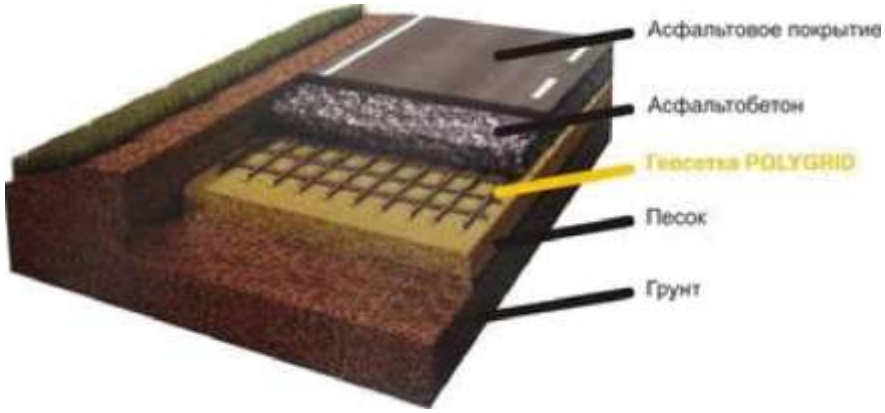


Figure 4. Geofencing

Geofencing

A geofence is also used in a similar way. It is especially important to use them in the construction of fountains. Experts know that if such a fence is not used in the project, the flow of water can immediately wash away the nearby area. Due to the fact that polyethene is not prone to decomposition, the service life of the geofence is very long, at least 50 years. The geofence is attached to the ground with plastic anchors or metal fittings.

Figure 5. Geofencing

Strengthens soil slopes to prevent erosion. later the formation of rocks and landslides, loose and non-homogeneous soil is especially sensitive to this process. Geofencing helps prevent erosion of banks and slopes near water bodies. Geofencing is used regardless of reservoir, river or decorative pond. It is laid directly on the bottom of a reservoir or pool intended for use in water facilities. Polyethene tapes are 1.5 mm thick and are glued together in a checkerboard pattern.

Geomembrane

The word "geomembrane" translates as "a thin membrane on the earth". Geomembranes are synthetic materials made of polymers. This thin film is very strong and thick. This material is made of low and high-pressure polyethene. To obtain high-quality geomembranes, not pure polyethene is used in combination with various additives. The most important of them are caustic, antioxidants, and high-temperature stabilizers. Geomembranes made of high-pressure polyethene have higher strength properties than membranes made of low-pressure polyethene. Low-pressure polyethene membranes are used where high elasticity is required. They are used as insulators in landscape design, industry and road construction.

Figure 6. Geomembrane

In recent years, not only the design of benches, lamps and kiosks familiar to us has been renewed, but also new specific types of landscaping have been developed. Now they decorate large city parks, small district squares and even the most ordinary streets.

Street stallions

It is not just garden furniture and additional entertainment for children but has become a modern element of urban design. It turns out that adults love this entertainment no less than children. They also want to feel the pleasant feeling of carefreeness on the streets. Today, these armchairs can be used to decorate not

only parks but also ordinary avenues and streets.

Pergolas

Of course, pergolas cannot be called a new word in the capital's landscape design, but until recently these structures could be seen only occasionally and usually in the form of being covered with plants. Today, pergolas of various sizes and shapes have appeared in new resorts, conceptual public spaces and ordinary district streets.

The functionality of pergolas in the capital is not very wide, but the aesthetic value is huge: these light structures allow you to arrange the space vertically, making the volume even larger. It is not surprising that today they are increasingly used in the design of regional attractions:

Wi-Fi points

In cities, you can connect to the network in the subway and underground transport, in museums, cultural centres and libraries, as well as on the streets or in your favourite park. It will be possible to meet "smart" pavilions equipped with Wi-Fi and "charging devices" in open places, for example, traffic stops, to signal to citizens. An indicator of free Internet on the streets of the capital, as well as a city map and an information stele with navigation to major attractions.

References

1. Abdukhalimjohnovna, M. U. (2021). Technology Of Elimination Damage And Deformation In Construction Structures. *The American Journal of Applied sciences*, *3*(05), 224-228.
2. Qosimov, S. R., & Ne'matov, F. J. (2021). The Prospects for the use of Energy-Saving Materials in Residential Architecture. *Central asian journal of arts and design*, *2*(12), 56-60.
3. Жўраев, Ў. Ш., & Турсунов, Қ. Қ. (2020). Фарғона вилояти тарихий шаҳарларидаги турар-жой биноларида ганч ва ёғоч ўймакорлигининг шакилланиши ва ривожланиши. *Science and Education*, *1*(3), 264-267.
4. Djhalolovich, A. J., & Shavkatovich, J. U. (2022). Qadimgi va o'rta asrlarda samarqand shahri hududida landshaft arxitekturasining shakillanishi. *Nazariy va amaliy tadqiqotlar xalqaro jurnali*, *2*(2), 82-89.
5. Jurayev, U. S., & Akhmedov, J. D. (2022). Взаимодействие гармонических волн с цилиндрическими сооружениями. *Nazariy va amaliy tadqiqotlar xalqaro jurnali*, *2*(3), 57-65.
6. Mirzaakhmedova, U. A. (2021). Inspection of concrete in reinforced concrete elements. *Asian Journal of Multidimensional Research*, *10*(9), 621-628.
7. Esanov, N. K., Almuratov, S. N., & Jurayev, U. S. (2022). Sayoz o 'rnatilgan uch qatlamli sferik qobiqlarning erkin tebranishi. *Nazariy va amaliy tadqiqotlar xalqaro jurnali*, *2*(2), 51-56.
8. Жураев, У. Ш. (2010). Численное решение плоской задачи Лемба. *Пробл. мех,(4)*, 5-8.
9. Soliyevich, Z. M., & Olimjon ogli, K. Z. (2021). The Formation Processes of Smart Cities. *Central Asian Journal Of Arts And Design*, *2*(12), 38-43.
10. Sagdiyev, K., Boltayev, Z., Ruziyev, T., Jurayev, U., & Jalolov, F. (2021). Dynamic Stress-Deformed States of a Circular Tunnel of Small Position Under Harmonic Disturbances. In *E3S Web of Conferences* (Vol. 264, p. 01028). EDP Sciences.
11. Mirzaaxmedova, O. I. A. (2022, May). Binolarning konstruktiv elementlarida uchraydigan shikastlanish va deformatsiyalarni bartaraf etish. In *International conferences on learning and teaching* (Vol. 1, No. 8, pp. 209-215).
12. Мирзаахмедов, А. Т. (2022, May). Прогнозирование надежности и долговечности энергоэкономных строительных конструкций. In *International conferences on learning and teaching* (Vol. 1, No. 8, pp. 181-184).
13. Abduxalimjonovna, M. O. (2022). Assessment of the Service Life of Reinforced Concrete and Steel Elements. *Texas Journal of Engineering and Technology*, *9*, 65-69.
14. Эсанов, Н.К. (2020). Свободные колебания трубопроводов как тонкие

цилиндрические оболочки от внутреннего давления. Научные доклады Бухарского государственного университета , 3 (1), 46-52.

15. Esanov, N. K. (2020). Free oscillations of pipelines like thin cylindrical shells with regards to internal pressure. *Scientific reports of Bukhara State University*, *3*(1), 46-52.
16. Juraboyev, A. T. U. J., Toshpulatova, B. R., & Nurmatov, D. O. U. N. (2022). The role and importance of compositional methods in landscape architecture. *Nazariy va amaliy tadqiqotlar xalqaro jurnali*, *2*(3), 74-80.
17. Xusniddin, M. N., Abdumalik, R. G., & Maxamat, R. D. (2022). Methods of modernization, renovation and reconstruction of housing and buildings. *International Journal of Advance Scientific Research*, *2*(06), 73-83.
18. Ozodovich, X. A., & Azim o'g'li, N. A. (2021). Formation of the "Obod Mahalla" System in the Villages of Uzbekistan and Serving the Population. *Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali*, *1*(5), 325-329.
19. Мирзаахмедов, А. Т., & Мирзаахмедова, У. А. (2019). Алгоритм расчета железобетонных балок прямоугольного сечения с односторонней сжатой полкой. *Проблемы современной науки и образования*, (12-2 (145)), 50-56.
20. Umarov, A. O., Jurayev, U. S., Zhuraev, T. O., Khamidov, F. F., & Kalandarov, N. (2022, June). Seismic vibrations of spherical bodies in a viscoelastic deformable medium. Part 2. In *AIP Conference Proceedings* (Vol. 2432, No. 1, p. 030125). AIP Publishing LLC.