

Amir Temur's Timurid-Era Garden Design

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Abstract: *The theme of Timurid gardening art was widely studied by a decade of scientists from the Soviet and post-Soviet space. However, the opinions of authoritative scientists regarding the historical location of the Bagi Dilkusho garden remained ambiguous and contradictory. The main goal of this research is to identify the historical location of the disappeared garden of Amir Temur - "Bagi Dilkusho", in order to develop a project proposal for its architectural revival.*

Keywords: Samarkand, Amir Timur, gardens, revival, sustainable tourism, GIS, interactive maps, visualization, "Tourist village", eco-tourism, cultural tourism

1. Introduction

The heritage of Amir Timur and the Timurids consists of monuments of Islamic architecture not only in the cities of Central Asia, but also in Isfahan, Agra, Delhi, Herat, Kabul, and Lahore. The capital of Amir Timur's state, the city of Samarkand, is renowned for its concentration of outstanding architectural masterpieces from the Middle East and Central Asia. "The collective work of architects and master builders created a qualitatively new direction in world architecture, providing magnificent examples of artistic creativity. Dozens of architectural monuments created during the lifetime of Amir Timur and the Timurids are remarkable embodiments of human thought, intelligence, and talent, and they continue to amaze the entire world to this day" [1].

This article is dedicated to one of the most luxurious gardens of Amir Timur—the "Bagh-i Dilkusho" garden (translated from Persian as "The Garden that Captures the Heart"), created between 1396 and 1399 in honor of one of Amir Timur's wives, Tukal Khanum. In the outskirts of Samarkand, in the Zarafshan oasis, Amir Timur ordered the planting of 14 gardens, which were connected to the city by shady boulevards known as "Khiyabans." The gardens of Amir Timur were given characteristic names based on their location, architectural design, landscape, and artistic features. Unfortunately, none of the famous Timurid gardens have survived to this day. Remarkably, each garden differed in function, size, planting schemes, as well as the diversity of architecture and decoration of garden palaces. In Table 1, the author presents a table of classification by the functional purpose of the Amir Timur and the Timurids' gardens and (Khiyaban) boulevards in Samarkand (**Table 1**).

2. Literature Survey

Information about Amir Timur's gardens has been enriched thanks to archaeological research by U. Alimov, who, in 1966–1967, discovered the remains of foundations of three park palaces: "Bagh-i Dilkusho," "Bagh-i Buldi," and "Bagh-i Davlat-Abad." U. Alimov carried out the reconstruction of the plans of these garden palaces, describing their architectural appearance, as well as the building and decorative materials used. In the "Bagh-i Dilkusho", Amir Timur received the ambassadors of the Castilian king. Clavijo provided a detailed description of the layout of the

garden and the palace, according to the diary of Ruy González de Clavijo: "Around three o'clock, they reached a large suburban garden and house where the Khan resided... The garden and palace, where the Khan received the envoys, is called "Dilkusho", there were many tents made of silk and other fabrics" [2].

Following quote from the medieval historian Sharafiddin Ali Yazdi is of scientific interest: "In the year seven hundred ninety-nine (1397), at the beginning of autumn, Amir Temur ordered: "Plan a garden on the side of Kanigil!" [3]. If we pay attention to the architectural and planning pattern of the Bagi Dilkusho garden, its layout is characterized by regularity, symmetry, and orderly planting of decorative and fruit-bearing tree species. Historians also emphasize the more picturesque and carefully thought-out placement of flowering and fruit trees of various varieties.

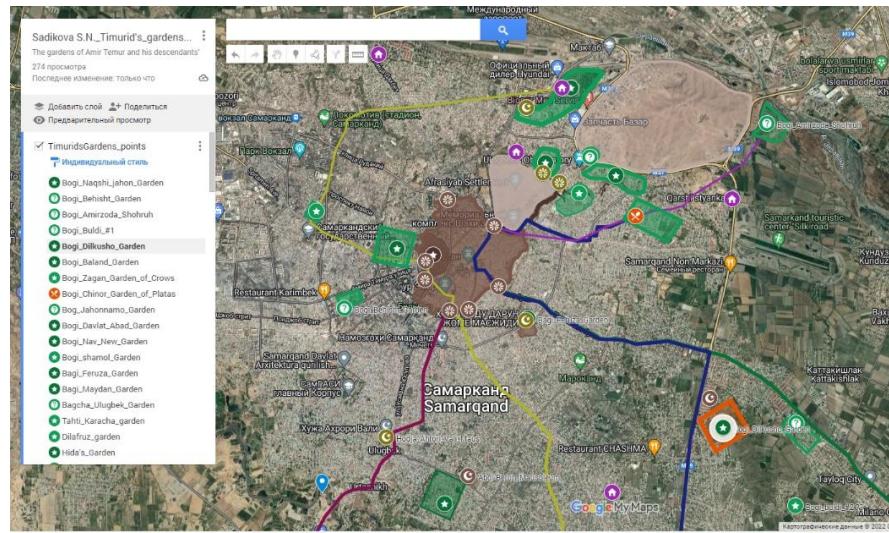
To identify the location of the "Bagh-i Dilkusho" garden today, author studied the scientific papers of 16-20th centuries. According to M.E. Masson, the garden was located to the northwest of the modern village of Sochak, with the site of its palace identified by the hill "Khancharbag," the ruins of which have been known by this name since the 17th century. [7]. Approximately halfway from the gates of Firuz to the Dilkusha garden, the boulevard Khiyaban was cut by the wide bed of the Oby-Mashat canal, over which in the 15th century there was a bridge called "Puli Magok" (Kuli Magok). Its name was transferred to the neighboring settlement and is still used today. The area to the northeast, at the confluence of the Oby-Rahmat canal, was known in the 15th century as "Khan Yurti." G.A. Pugachenova notes: "The ruins of the palace in the Dilkusha garden correspond to the hill 'Khancharbag,' south of the Pyanjiketskaya road." To identify the location of the Khan Yurti valley, we turn to the work of Mirza Babur, "Baburnama," where he mentions a distance of 1 "yigach" (or 1 farsakh = 6-8 km) from Samarkand to the Khan Yurti clearing. Later, Mirza Babur clarifies the location of another clearing: "Bidana Kuruq" lies between the "Bagi Dilkusho" garden and Samarkand [9].

Table 1: Classification by the functional purpose of the Amir Timur and the Timurids' gardens and (Khiyaban) boulevards in Samarkand

№	Functional purpose	Name of a Garden	Year of creation
1.	Palace Gardens	1. Baghi Dilkusho 2. Baghi Nakshi Jahon 3. Baghi Baland	1396-1399 1370s Mid. 15th c.
2.	Recreational country side gardens	1.Kora Toba Garden and Juhonnomoi Palace 2.Takhti Karacha Garden	1398 1398
3.	Gardens for hunting	1.Kora Toba Garden and Juhonnomoi Palace 2.Baghi Behisht 3.Takhta Karacha	1398 1378 1398-1399
4.	An intimate garden for the royal family	1.Baghi Shamal 2.Baghi Behisht 3.Baghi Amirzade Shahrulk	1397 1378 1394
5.	Gardens for negotiations and poetic debates	1.Bugi Buldi	1st half of the 15th century
6.	Multifunctional gardens	1.Bagi Maidan with the Chil-Sutun Palace and the Picture gallery - Mirzo Ulugbek's Chinni Khana 2.Bagcha - Mirzo Ulugbek's Garden ; 3.Bagi Davlet - Abad	1435-1436 20s of the 15th century 1399
7.	Gardens for public festivities	1.Bagi Zagan; 2.Baghi Chinor;	1399-1404
		3.Bughi Nau;	1404
8.	Gardens inside the citadels	1.Bustan-Saray; 2.Garden at the Kuk-Saray Palace in the Citadel of Samarkand ; 3.Garden at the Ak-Saray Palace in Shakhrisabz	1370-71s 1370 1379
9.	Memorial Gardens	1.Darus-Saodat in Shakhrisabz; 2.Walq garden at the mausoleum of Khoja Ahmed Yasavi in the city of Turkestan ; 3.Garden at the complex of mausoleums Shahi-Zinda in Samarkand ; 4.Garden of Baghi Finiza at Ishrakhana ; 5.Gur Emir Mausoleum Garden ;	1376 1402-1405 1397 XVI-XVII. 1463-1464. 1404-1405. 1st half of the 15th century

3. Methods/ Approach

Using Yandex Maps, ArcGIS by Esri, Google Maps, and Quantum GIS by the Open Source Geospatial Foundation (OSGeo), it became possible to apply the method of cartography and historical data visualization by creating an interactive map of the Timurid gardens of Samarkand, with brief information about each of the 14 gardens in pop-up windows (Fig. 1).



- The path of Amir Timur's return from his Indian campaign;
- Boulevard "Kuchai Khiyaban";
- Boulevard "Khiyaban of Khoja Akhrar";
- The trajectory of Amir Timur's return from the 'Seven-Year Campaign'.

Fig. 1. Location of the 'Bagh-i Dilkusho' garden (red square) and the roads along which the gardens of Amir Timur were located. Map by S.N. Sadikova.

A method of deep analysis and processing of collected data from historical chronicles, diaries, and travel books was also used. According to G. A. Pugachenkova, "It was called 'The Nearby Garden,' located 6 km east of Samarkand, in the area of Khan-Chabag near the village of Urta-Pulatchi" [4]. According to the notes on the diaries of Ghiyas ad-Din Ali [5] and Abu Tahir Khoja, the construction of the Bagh-i Dilkusho began in 1396, but even in 1399, finishing work in the garden palace was still ongoing, as there were paintings depicting Amir Timur's campaign to India [6].

According to V. L. Vyatkin's commentary on the historical work of Abu Tahir Khoja "Samariya": "The Dilkusho Garden was located east of Samarkand, about 6 versts away, in the village of Bidak (now Chumchukli), near the village of Khinduvan" [6]. According to V. E. Vyatkin, approximately halfway from the Firuz Gate to the Dilkusho Garden, the Khiyaban Boulevard crossed the wide channel of the Ob-i Mashat irrigation ditch, over which there was a bridge called "Puli Magok" (the Bridge of the Pit) in the 15th century [6]. The author found this bridge and marked it on the interactive map, significantly facilitating further searches for the "Bagh-i Dilkusho" garden.

In the work "Malfuzat-i Amir Timur," it is recounted on behalf of Amir Timur about the construction of the palace and the layout of the "Bagh-i Dilkusho" park near Samarkand: "I commanded to gather the court architects and builders from my blessed kingdom. Together they developed a plan for the lawns and alleys and began creating the garden, walls, and the very tall palace, which I ordered to be built in the middle of the garden" [8].

According to G. A. Pugachenkova: "For the Bagh-i Dilkusho garden, twelve already existing gardens were combined, their fences likely being demolished, and their plantings adapted to the new layout" [9]. "...the size of the Bagh-i Dilkusho garden was 1500 by 1500 gaz. "Considering that in the late 14th to 15th centuries the size of a gaz varied between approximately 65 to 75 cm, this area roughly corresponded to 1000 by 1000 meters" [10]. "In Bagh-i Dilkusho, all four walls were centered by portals. The corners were flanked by pigeon towers, from which a beautiful aerial perspective opened up: these towers in Bagh-i Dilkusho and Bagh-i Nav of Amir Timur were richly decorated with tiles" [11].

According to Sharaf al-Din Ali Yazdi: "Craftsmen and engineers, according to the command, selected an auspicious moment and began planning the garden. They planned it to be square, with each side measuring one thousand five hundred kari (750 m) [12]. Inside the garden, a palace with three arches was built. When the work was completed, Sahibqiran dedicated this garden to Tukal Khanum, daughter of Khizr Khoja Khan... 'On Monday, the twentieth day (April 27, 1399), in the forenoon, the ruler Sahibqiran happily arrived at the palace of Bagh-i Dilkusho and settled there. The construction of this building had just been completed. Here, he held royal conversations, all the princes, ladies, and beys came there and saw the ruler, scattered money, distributed gifts, and offered congratulations' " [13].

The Khiyaban boulevard led from the Firuz Gate to the "Bagh-i Dilkusho" garden for about six kilometers.

According to G. A. Pugachenkova, "Bagh-i Dilkusho was surrounded by an adobe wall (duval) 900 meters long" [9]. In the "Baburnama," Mirza Babur writes: "In the Dilkusho garden, a large palace was also built, on the walls of which a picture was painted depicting one of Amir Timur Beg's battles in India. In addition, he planted the 'Bagh-i Chinar' garden south of Samarkand, near the city, and gardens 'Bagh-i Shamal' and 'Bagh-i Behesht' down from the capital" [14]. The garden could be entered through one of four gates, and in the center of the garden stood a palace. The palace had three floors, and each floor had a fountain. On the walls of the palace were miniatures depicting the campaigns and wars of Tamerlane. Today, the village of "Dilkusho" is located on the site of this garden [15].

It is well known that the great scholars G. A. Pugachenkova and P. Sh. Zakhidov engaged in a scientific debate for over 20 years regarding the location of Dilkusho. According to P. Sh. Zakhidov (in the book "Ishratkhana - The Great Pavilion of the Bagh-i Dilkusho"), the garden was located around Ishratkhana, and that the latter was its garden palace [16].

4. Results / Discussion

"As a result of gathering and processing extensive historical data, as well as cartographic research to determine the exact historical location of the 'Bagh-i Dilkusho' garden using GIS, the author created a map in a geographic information system, utilizing Google Maps, Yandex, and Arc GIS. During fieldwork, using all the previously mentioned references by historians and archaeologists, the author found the sought-after mound on the northern side of the garden, where the grave of Khoja Safo (15th century) miraculously survived today, at the center of the old cemetery of the village of Sochak (Fig. 3), and to the south – the Bedana-Kuruk reserve.

Noteworthy are the descriptions by Rui Gonzalez de Clavijo about Amir Timur's campaigns and the ceremonial receptions and celebrations of these victories in gardens along the way to the center of Samarkand. Following the logical sequence, it was concluded that the Dilkusho garden was located directly along the route of Amir Timur's victorious return from his campaign in India, north of the Bedana-Kuruk reserve and south of the Khoja Safo grave. Thus, the exact location of the Bagh-i Dilkusho garden was identified by the author in the fall of 2021. In Figure 2, an interactive map of Timurid gardens in Samarkand is presented, with historical sites, roads along which Amir Timur's gardens were located, Khiyaban boulevards, and our sought-after Dilkusho garden highlighted in a red square.

Thus, the location of the Dilkusho garden was established. Measurements were then carried out at this historical site using the Leica TS-02 Plus theodolite. Topographic surveys and measurements were made, which laid the foundation for further phased work on the architectural and project proposal for the revival of the Bagh-i Dilkusho garden at its historical site." [18] (Fig.2).

Research and survey drawings of foundation traces by archaeologist U. Alimov were used.

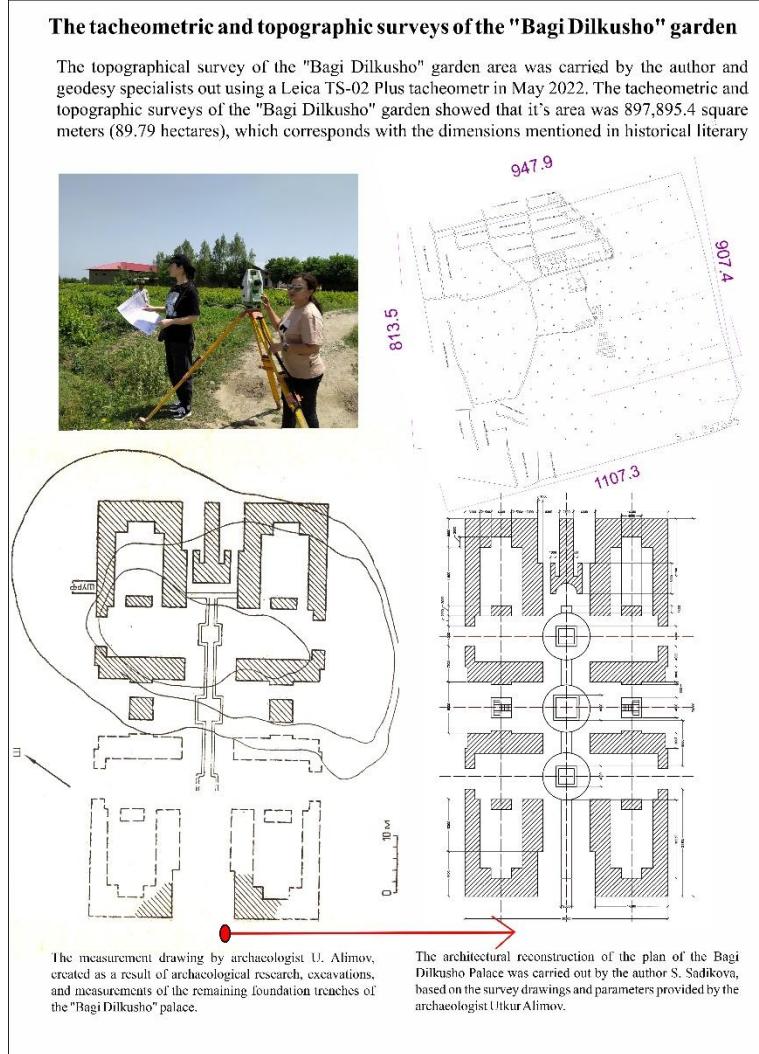


Figure 2: The tacheometric and topographic surveys of the 'Bagh-i Dilkusho' garden

An architectural project was developed: plans for the 1st, 2nd, and 3rd floors; main and side facades, as well as the general plan of the garden with the Bagh-i Dilkusho palace—a project proposal for the revival of the 'Bagh-i

Dilkusho' garden at its historical site, as part of the 'Eco-Tourism Mahalla Dilkusho' in the Sochak village, Taylak district of the Samarkand region (Fig.3)



Figure 3: The project proposal by author for the revival of the 'Bagh-i Dilkusho' garden at its historical site.

5. Conclusion

To summarize, it can be stated that during the scientific research, a thorough study of the data of historical notes and archeological reports made by Soviet and modern historians, collection of extensive information, such as: ancient maps of Samarkand, records of court chroniclers from the 14th century, Vakf documents, and historical records from the 17th century were conducted and studied. The data was processed and analyzed to create an interactive map, a "storytelling map," with the help of Yandex Maps and ArcGIS software. On this map, medieval architectural landmarks were plotted for the visualization of historical data: a major fortification—Amir Timur's citadel, city gates, the "Hiaban" boulevards, mausoleums of spiritual leaders, etc. All these landmarks served as guides for the author in searching for the lost gardens of Amir Timur [19]. Thus, as a result of theoretical research, analysis, and processing of the collected data, and practical fieldwork, the historical location of the "Baghi Dilkusho" garden was found.

Thus, the identification of the historical location of the lost garden of Amir Timur "Baghi Dilkusho" was carried out for the development of a project proposal for its architectural revival in Samarkand province. This project has a global goal—creating new tourist attractions as a result of the revival of several Timurid gardens and, therefore, contributing to the sustainable tourism development of the region. The meticulous study of the works of medieval chroniclers and Soviet historians-archaeologists, the processing of the collected data, and the creation by the author of the interactive map "Timurid Gardens in Samarkand" provided the foundation for further phased work on the architectural and project proposal for the revival of the gardens of Amir Timur and the Timurids at their historical locations.

The Timurid gardens being restored at their historical locations in Samarkand province fully align with the goals of "sustainable," "agro," and "eco" tourism, which is actively developing in Uzbekistan. The Timurid gardens can serve as new tourists attractions and parks for recreation. As a result of their restoration in landscape-recreational areas, tourist centers will be created, significantly reducing the burden on the infrastructure and engineering networks of the historical zone of Samarkand in touristic season. The Timurid gardens, as part of the "Tourist Quarters," will become new attractions to meet the recreational needs of tourists and locals, and will fully contribute to the rapid development of sustainable domestic and international tourism in Samarkand province.

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