



REVIEW OF LANDSCAPES IN SAMARKAD CITY SURROUNDINGS

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Abstract

The natural landscape conditions of the city and its environs have a very great influence on its external and internal appearance, on the nature of buildings, the architecture of buildings, streets, squares. The following topographical features surround Samarkand. The most famous square in Samarkand is Registan Square. It has three beautiful Islamic madrasas. Tourists must visit Samarkand's UNESCO World Heritage Site square. Numerous Samarkand rulers and religious figures are buried in the Shah-i-Zinda necropolis near the city's walls. Samarkand's history can be explored at the UNESCO World Heritage Site necropolis. Central Asia's Bibi Khanum Mosque is grand and large. UNESCO designated the site, which Timur built in the 14th century. The city's historic and cultural landmarks are surrounded by arable land. Visitors to Samarkand are sure to be captivated.

Keywords: landscape; environs; sloping piedmont-plain preludial landscape; hilly-ridged Paleozoic landscape; terraced alluvial-plain landscape.

1. Introduction

The natural and landscape conditions under which a city arose are known to have had a significant impact on its external and internal appearance - the nature of buildings, their architecture, streets, and squares. Despite the very strong impact of man, nature within the city only changes and adapts in order to improve the city, while maintaining the main features of the indigenous landscape. The subsequent illustrations denote the various topographical characteristics present in the vicinity of the urban settlement of Samarkand[1]. The Registan Square, located in the city of Samarkand, is widely acknowledged as the preeminent square in the area. This location is noteworthy for its provision of housing for three exceptional Islamic madrasas, which serve as establishments for the dissemination of religious knowledge. The UNESCO World Heritage Site designation has been conferred upon the square located in Samarkand, rendering it a crucial destination for all tourists who plan to visit the region[2]. The Shah-i-Zinda necropolis is located in the vicinity of the Samarkand walls and functions as the ultimate abode for a multitude of distinguished leaders and spiritual figures

of the locality. The necropolis, which has been designated as a UNESCO World Heritage Site, offers a fascinating opportunity to explore the historical narrative of Samarkand. The Bibi Khanum Mosque holds a significant position in Central Asia due to its impressive scale and magnificence. The site, which was erected in the 14th century with the support of Timur, has been officially recognised as a UNESCO World Heritage Site[3]. The Afrasiab Museum is located in the vicinity of the erstwhile Sogdian capital, Afrasiab, which holds significant historical importance. The museum houses a thoughtfully selected collection of artefacts from the ancient city, including pottery, jewellery, and currency[4]. The Gur-e-Amir mausoleum functions as the final resting place for Timur and his relatives. The site mentioned above has been officially recognised as a UNESCO World Heritage Site and is regarded as a noteworthy architectural landmark within the urban landscape of Samarkand[5]. The topographical features surrounding the city of Samarkand are numerous, and the landscapes previously mentioned represent only a small portion of them. The metropolitan area is surrounded by cultivable land and contains several notable sites of historical and cultural importance. Samarkand is a captivating location that is likely to leave a significant impression on individuals who visit the area.

2. Literature Survey

The territory of the city and the surroundings of Samarkand in physical and geographical terms does not seem to be single and whole, but is located at the junction of three landscapes that divide the city and its environs into three sharply distinguishable parts: sloping piedmont-plain proluvial landscape; hilly-ridged Paleozoic landscape; terraced alluvial plain landscape.

A. *Registan Square*

Registan Square is a renowned landmark situated in the central region of Samarkand. It has been recognised as a UNESCO World Heritage Site and is considered one of the most emblematic sites of the city[6]. The quadrilateral area is encompassed by a trio of grand madrasas, which are Islamic centres of learning, embellished with elaborate tilework and architectural embellishments. The juxtaposition of the aesthetically pleasing architecture and the expansive plaza engenders a visually captivating tableau. Shah-i-Zinda is an archaic burial ground situated in the periphery of Samarkand. The location in question holds significant religious importance and serves as a revered destination for individuals practising the Islamic faith. The compound comprises a sequence of exquisitely adorned sepulchres and graves, featuring vivid blue tiles and intricate embellishments. Shah-i-Zinda is a visually striking location due to the presence of winding paths and surrounding trees[7]. The Gur-e-Amir Mausoleum serves as the ultimate abode for Timur (Tamerlane), a renowned conqueror, and a number of his progeny. The architectural design encompasses a majestic

dome and elaborate tiling. The ambient milieu is further enhanced by the adjacent gardens and walkways.

B. Bibi-Khanym Mosque

The Bibi-Khanym Mosque, erected during the 15th century, stands as one of the most expansive mosques in the region of Central Asia[8]. Despite being partially in ruins, the structure still serves as a testament to the magnificence of its historical era. The mosque's expansive courtyard and imposing entrance portal present a captivating spectacle set against the urban landscape. Siab Bazaar is a market situated in close proximity to the city centre, characterised by a dynamic and energetic ambiance. This location offers a superb opportunity to immerse oneself in the indigenous culture and observe the vibrant exhibitions of produce, seasonings, fabrics, and artisanal objects. The marketplace is encompassed by the visual and auditory elements of daily existence in Samarkand.

C. Foothill-plain landscape.

The main part of the city and the southern environs of Samarkand are located on a vast proluvial plain, adjacent to the south and northern sloping foothill plains of the Karatepe mountains[9]. The absolute heights of the plains and vary from 760-790 m in the southeast to 670 m in the northwest. Genetically, the landscape is a piedmont trough filled with a thick stratum of predominantly clayey-sandy sediments of the Neogene age. The geological structure of the landscape is characterized by the development of a thick layer (from 20 to 120 m) of Quaternary deposits, represented mainly by light gray proluvial loess-like loams, interbedded in their lower part with sandy-loamy-sandy and gravel deposits, represented by an uneven eroded surface of reddish-brown Tertiary deposits. In granulometric terms, loess-like loams in the vicinity of the city of Samarkand contain on average from 10.4 to 24.15% sandy, from 77.91 to 63.34% silty and from 8.8 to 12.26% clay fractions. The landscape has a common uillon directed to the north and northwest, and is a slightly undulating plain, cut through by many canals and ditches. Ancient canals and ditches (Dargom, Shaudar, Siob, etc.) cut deeply into loess-like loams, formed their own valleys with terraces and acquired the appearance of natural rivers. Ditches extending from them in deep ravines cut the city in the meridional direction and make it extremely uneven. It should be noted that on the territory of Samarkand and its environs, ravines are quite developed, which accommodate compact buildings, the construction of urban transport, water supply, sewerage and create territorial gaps between separate parts of the city. The ravines of the greatest depth and density of dissection are characteristic of the left bank of the Dargom canal. Meridionally oriented ravines up to 30 m deep are strongly developed here. coefficient, high razmonaemost, weak coupling. They are easily washed away by surfaces and groundwater; secondly, in spring, melted snow waters and heavy rains in the mountains

gather in the sairs and come out into the landscape in large streams; in the graded, the general slope of the Dargomye from south to north enhances the eroding activity of the water flows passing here, where the Dargom channel is the basis of erosion. Finally, in some cases, the Dargom channel intersects a ravine formation in the area. In hydrogeological terms, the landscape is characterized mainly by the transit of groundwater, its feeding in the low-mountain and upper parts of alluvial fans and partial wedging out in the peripheral sections of the foothill plains and terraces of the Zarafshan river valley. In the loose Quaternary deposits of the landscape, groundwater occurs everywhere, forming a complex mirror, where dense clays of the Tertiary age are a water-resistant layer. The depth of the groundwater table generally decreases with distance from the mountains towards the valley of the Zarafshan River. In depressions, sairs and hollows, the groundwater level is not deep (3-4 m) from the surface. In the zone of action of the Dargom canal, groundwater approaches the surface of the earth to a depth of 2 m, and in some places wedged out along the bottom of the ravine, and on the southern outskirts cities, due to a more significant incision in the ravine network, gradually sink to 18-20 m. In the Samarkand area, groundwater has a depth of 5 to 12 m, in some places wedging out along the lengths of the deepest ditches, which have the character of ravines. Groundwater is everywhere fresh, bicarbonate-ring, slightly increasing the degree of mineralization. in the direction of flow, with a solid residue content of 0.3 to 1 g/l. The soil cover of the landscape within the city and its environs is represented by typical gray soils and irrigated typical gray soils. The vegetation cover of the city and its environs is dominated by cultural groups: forest parks, fruit and berry plantations, as well as melon and vegetable gardens. In the structure of the landscape of the foothill plains, typical tracts are: a) densely built-up slightly undulating plains, occupying almost the entire territory of the former "old city", which for many years was the habitat and very active human economic activity, the so-called cultural layer with a thickness (for example, along Tashkentskaya street) up to 15-20 m; b) flat plains, which occupy the main part of the former "new city", are composed of thick loess-like loams, deep groundwater (6-12 m); c) slightly sloping equal with a general slope to the north-west, occupying the western part of the city, with thick covers of loess and loess-like loams; d) deep ravine-shaped plains of ancient ditches, often with waterlogged bottoms; e) deep ravines; f) flat surfaces between ravines with sedge-bluegrass vegetation on typical gray soils.

In general, the foothill-flat landscape is the most promising area for industrial and housing construction[10]. In this investigation an attempt has been made to study the effect of various composition of boron carbide powder reinforced with zircon sand in aluminium matrix composite. From this investigation the following important conclusions are derived: Detailed literature survey has been carried out on hybrid metal matrix composite materials for identifying the problem and the objectives are finalized. Basics of adhesive wear properties and mechanical properties have been

studied. Selection of equipments and testing procedure are finalised in order to fabricate the sample. Fabrication of sample using stir casting method is to be prepared. The effect of wear on sample surface will be tested. The mechanical properties such as tensile, compressive and hardness properties will be tested. Evaluations of micro structure of the tested samples are to be imaged using SEM analysis.

The hilly ridged Paleozemic remnant landscape occupies the northeastern outskirts of the city called the Chupanata Upland, has not yet been fully developed and has retained a more or less natural appearance. The genetic landscape is a protrusion of the Paleozoic folded basement, the Zarafshan intermountain depression, where the Paleozoic rocks come to the surface and are expressed in the relief as low hilly ridges with a maximum absolute height of 826 m and rising above the surrounding area by about 140 m. Ancient Paleozoic rocks on the surface of the Chupanata Upland represented by crystalline schists and red sandstones. In the relief, the landscape is expressed by hilly beds, strongly dissected by sai, going in different directions. The northeastern slopes of Chupanata abruptly break off to the Zarafshan River, where rocks in the form of small rocks are exposed. The southern and southeastern slopes are gently sloping, characterized by relatively weak dissection, covered from above by loess-like loams of considerable thickness at the foot of the slopes. In the structure of the hilly ridged Paleozoic remnant landscape, the most pronounced tracts are: a) steep, steep, northern and northeastern slopes with outcrops of Paleozoic rocks; with flattened slopes, with mixed ephemeral vegetation on fine-earth typical serozems. In the future, this landscape is suitable for one-story buildings with the allocation of sites for the construction of individual public buildings.

The terraced alluvial-plain landscape covers the north and north-eastern parts of the city and its environs[11]. Genetically, the territory of the landscape corresponds to the Samarkand trough, which was formed in the Tertiary time in place of a sinking pit. The trough is filled with a thickness of Neogene and Quaternary deposits up to 2500 m thick. (3). The day surface of the geological structure of the landscape is characterized by the development of a thick layer of alluvial deposits. IN The base of the alluvium consists of pebbles, which are everywhere covered with a cover of fine earth formations of varying thickness. The absolute heights of the landscape range from 650 m in the west to 720 m in the east. The landscape consists of a floodplain and three terraces above the floodplain with a general slope from east to west. This landscape is characterized by peculiar favorable features of microclimatic conditions due to the influence of irrigation, the construction of canals, etc., which significantly reduce the temperature and increase the absolute and relative humidity of the lower layer of the atmosphere. The landscape is characterized by an abundance of groundwater. The landscape structure is composed of the following complexes: 1. The floodplain complex occupies a small area on the northernmost and northeastern outskirts of the city and is composed of pebbles with a greater or lesser amount of sandy-silty material. The high content of silt

particles in the composition of sediments, the proximity of groundwater, and abundant moisture during floods create favorable conditions on the floodplain for the development of herbaceous and shrubby vegetation on alluvial and marsh soils underlain by pebbles. 2. The lower-racial complex with close occurrences of pebbles and groundwater on a loamy-sandy loam cover covers the first and second terraces of the Zarafshan River. The first terrace is composed of a layer of pebbles; covered from the surface with fine-earth deposits-clay with sandy loam with a thickness of 0.5-2 m. The second terrace is the most developed, it is proclaimed by a ledge 2-3 m above the surface of the first terrace and is an alluvial plain composed of clayey layered deposits with a thickness of 2-3.5 m. Groundwater within the lower terracial complexes is confined to alluvial pebble deposits and lies at a depth of 0.5 to 3 m, along the lowered areas of gentle terraces and ditches, they wedge out, forming powerful springs that feed spring systems of the "Karasu" type[12]. In this complex there are unorganized rural developments that can be landscaped and turned into workers' settlements.

The complex of faithful terraces with deep occurrence of pebbles and groundwater occupies the third terrace of the Zarafshan River. The third terrace is separated from the second by a ledge of 2-3 m and higher. In some places the ledge is smoothed out. The surface of the third terrace is a slightly undulating and flattened plain, in the southern part it merges with the proluvial foothill plain. The complex is composed of ancient alluvial-proluvial pebbles covered with a cover of thick (5-7 m and more) gray-yellow slightly porous and loess-like loams alternating with interlayers of gray silty fine-grained sands and sandy loams. Groundwater occurs at a depth of 8-10 m. The predominant part of the territory of this complex has been used for irrigation since ancient times. There is a rare linear building here, which can be streamlined and compacted. The architectural complex is represented by gardens and summer cottages. The complex is rich in natural prerequisites for numerous urban planning solutions. Conclusions: Thus, the city of Samarkand and its environs consist of non-rocky genetically sharply different landscape conditions and many small natural complexes that compose them, which require separate urban planning solutions.

3. Conclusion

Uzbekistan is home to the ancient city of Samarkand, which holds great historical significance. The location in question is renowned for its opulent past, impressive structural design, and picturesque terrain. The urban centre and its environs present a diverse array of picturesque vistas that merit investigation. The environs of Samarkand boast several noteworthy landscapes. The city of Samarkand is encompassed by the Zarafshan Range, thereby serving as an aesthetically pleasing natural setting for the urban centre. The topographical features of the region, including the mountainous terrain, valleys, and waterways, provide ample prospects for engaging in recreational

pursuits in the natural environment, such as trekking, enjoying meals in scenic outdoor settings, and investigating the indigenous plant and animal species. The act of investigating these terrains will not solely exhibit the innate and structural elegance of Samarkand, but also furnish a more profound comprehension of the municipality's chronicles and cultural eminence.

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