A Comprehensive Overview of the Urban Development of Samarkand (Zeravshan River Valley)

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Abstract

This paper is a study of the evolution of the urban pattern and architectural development of Samarkand as an oasis city. Drawing on archaeological data, historical sources, cartographic analysis, and urban morphology studies, this paper examines the city's development from pre-colonial and medieval configurations through Russian imperial rule and Soviet urban planning, up to the post-independence period. The analysis highlights how successive political regimes imposed distinct urban models onto the city, often changing earlier spatial logics while selectively preserving monumental heritage. These interventions transformed the medina, altered the traditional neighbourhood structures (mahallas), and introduced a Russian and subsequently, socialist planning system, including radial avenues, monumental axes, and microrayon-based housing estates. While these interventions modernised infrastructure and facilitated tourism, they also contributed to the fragmentation of historic urban fabric and the displacement of local populations. The paper argues that Samarkand's current urban challenges, particularly those related to heritage conservation, water management and tourism development, require integrated urban regeneration strategies that balance preservation, social vitality and sustainable development. This will ensure that the historic city remains a living urban environment rather than a static monument.

Keywords: Samarkand, oasis city, rivers, urban history, architecture.

1. Introduction

The present article aims to examine the evolution of the urban landscape of Samarkand with a particular emphasis on its distinctive urban and architectural elements. As an oasis city and a former point of rest along popular trade routes, Samarkand's urban structure has undergone a continuous process of change and adaptation.[1] The stratification and

[1] This paper is an excerpt from my master's thesis. I completed my degree in Architecture at the Department of Architecture, City and Territory at the ENSPM (Ecole nationale superièure d'architecture Paris Malaquais), in Paris. My thesis was supervised by Jerome Treuttel in 2009, following a field mission to Samarkand in 2008.

integration of diverse urban models, frequently originating from external cultures, contribute today to the cultural richness of this city and have proven beneficial for the development of local tourism. The present analysis mainly focuses on three different architectural periods in Samarkand's history: its medieval design, its development under Russian rule, and the urban model imposed by the Bolsheviks. Each leader modified the city to suit their purposes, every time shaping it anew within its specific geographic, ideological, and geopolitical context.

The main sources and literature used for this study of the evolution of Samarkand's urban development were collected from the Italian Archaeological Mission in Uzbekistan, formerly directed by Professor Maurizio Tosi.[2] The Mission's archaeologists kindly provided me with the documentation from the Aga Khan rehabilitation works, which were conducted on the historical part of the city in 1997. Using CAD, I produced graphic analyses of the modern settlement patterns. These images, as well as historical photographs, maps, and screenshots from Google Earth, can be found throughout the paper and supplement my analysis of the urban and architectural changes that have taken place in the city.

Given its central position in shaping the urban pattern from an ecological perspective, water is of particular note here. The management of water resources constitutes in fact, an integral component of the local ecological knowledge, which has been instrumental in shaping Samarkand's urban areas. When working on the graphics, I therefore placed a central focus on the role of water in shaping the city's design, both in the past and in modern times.

With a population of 591,000, the city of Samarkand ranks 2nd in terms of administrative size, just after the Uzbek capital, Tashkent, and it plays a significant role in the local tourism sector. In the context of the debate around revitalising city centres and the tourist industry, a key question arises: can urban regeneration enable the local population to remain in the city while preventing it from becoming an open-air museum, devoid of vitality and social dynamism? This article examines the issue of urban regeneration in the city centre, looking at whether past interventions have succeeded in preserving the city's architectural diversity.

[2] The Uzbek Italian Archaeological Project (UIAP) 'Samarkand and Its Territory' began in 2001 as a collaboration between the University of Bologna and the Institute of Archaeology of the Uzbek Academy of Sciences.

2. Contextualising Samarkand

The city of Samarkand is located in the modern state of Uzbekistan. It lies in the Zeravshan Valley at an elevation of 743 m asl and in a vast oasis at the edge of the Kizyl-Kum desert, where it is protected by high mountain ranges that provide the town with an abundant supply of water and thus fertile agricultural land (Figs. 1-2).

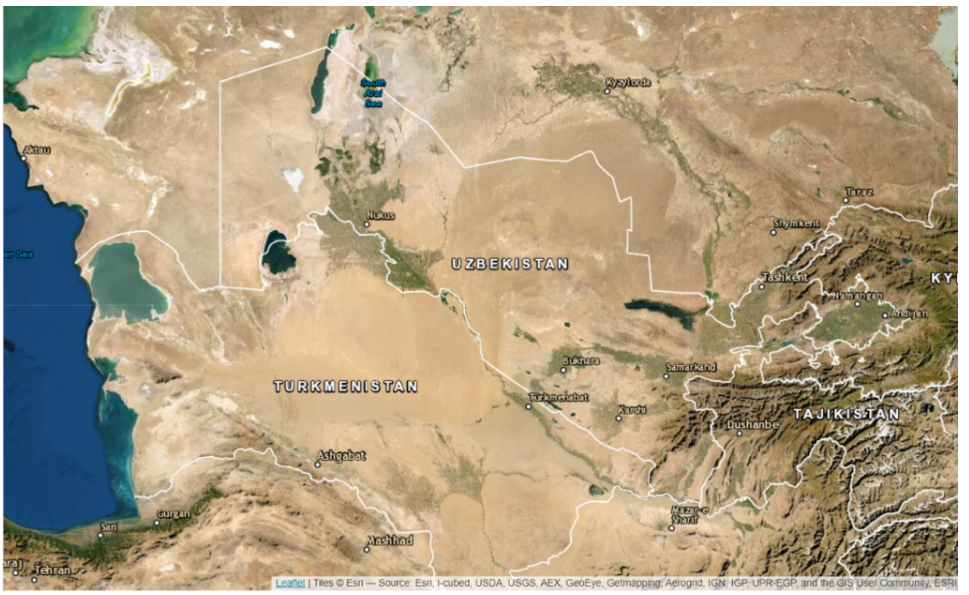

Fig. 1 - Location of Samarkand (GISmap worked by the author).

The 'doubly landlocked' territory of Uzbekistan includes three main geographical zones:
1. The Kizyl-Kum desert, including steppe and semi-arid regions, which cover 60 % of the territory, mainly in the central and western areas;
2. The fertile river valleys (including the Fergana Valley), irrigated by the Amu Darya and Syr Darya rivers and their tributaries (formerly including the Zeravshan River, though this now rarely joins the Amu Darya), which have their source in the mountainous area in the east of the country; and
3. The mountains in the east (parts of the Tian Shan and Alay ranges), with peaks reaching up to 4,600 m asl.

The longitudinal Zeravshan Valley is situated between the two major rivers of the region, the Amu Darya and the Syr Darya. It has historically

been a fortuitous ecological zone, with a documented human presence since the late Palaeolithic Era. Permanent urban settlements have existed along the Zeravshan River at different locations, as well as near the present city of Samarkand, for millennia, making this valley one of the earliest centres of civilisation in Central Asia.

2.1. Settling the Zeravshan Valley

The complex development of an oasis town such as Samarkand can only be understood within its general environmental context and through its embeddedness in these geographical surroundings. The landscape, climate, and varying altitudes have all had an impact on the liveability of this area since even before the first human settlements emerged here.

The soil of the valley benefits from regular floods, which have sustained life around this pocket of fertile land since ancient times. Water management has always been a major factor for survival in the valley, as its rivers provide the population with water for consumption (Mantellini, 2017). The upper course of the Zeravshan River flows between the mountains of Turkestan, travels on through the Zeravshan Valley, and continues along the foothills until it reaches the plains and the arid desert. Life in the Zeravshan Valley is thus dependent on the nearby mountains.[3] The high-altitude areas and the low arid plains (ca 100 m asl) are connected by an intermediate mountainous area (ca 500 m asl). This includes the oasis at the middle of the valley, which has been fashioned by fluvial erosion and human influence into fertile agricultural fields. The oasis of Samarkand is thus a floodplain situated along the middle course of the river.

The Zeravshan Valley exhibits a remarkable diversity of landscapes. It is a natural geographical complex of mountain foothills, semi-arid plains, and green oases – formerly serving as routes for silk, jade, and tea caravans – that have been developed for farming and various other complementary activities by means of an extensive irrigation system of artificial canals. The surrounding mountains, used as summer pastures, also provided the people living in the plains with wood and stone to build their houses.

[3] S. Bensidoun in: *Samarkand and the Zerafshan Valley; an oasis civilisation in Uzbekistan*, 1979, presents his work as an attempt to clarify the effort made by man to adapt to the natural environment and the technical and social skill involved, He explores the hardships faced by inhabitants of desert regions and the ability to overcome challenging conditions, such as drought (Bensidou 1979).

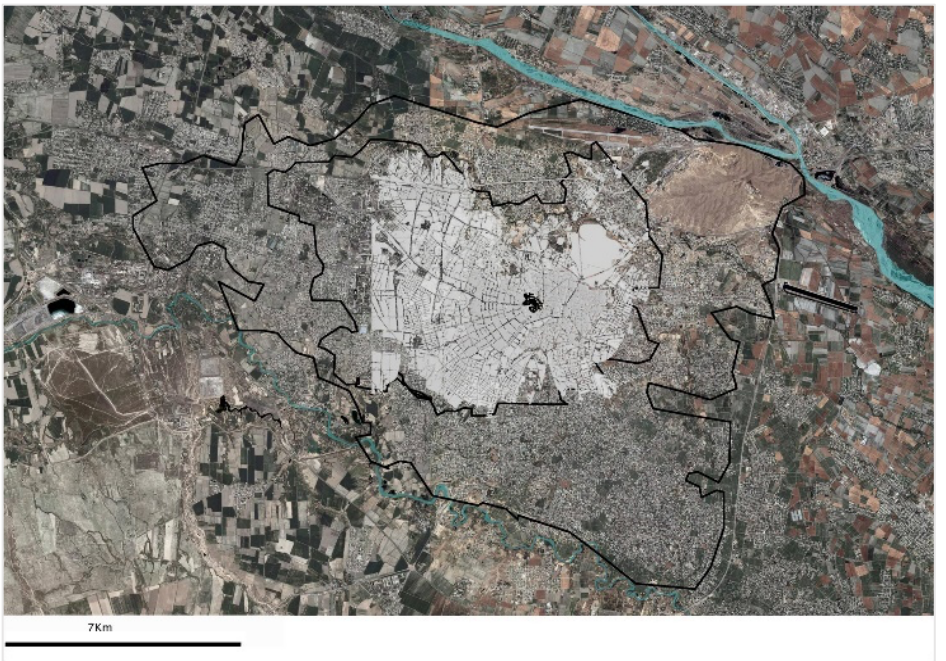

Fig. 2 - Samarkand agglomeration in 2009 (Google Earth. Elaborated by the Author from Aga Khan historical development plan).

The climate of the valley alternates between torrid summers (with high temperatures that climb above 50 °C) and very cold, snowy winters (-25 °C), but the green strip of the oasis tempers these climatic extremes.

According to research conducted on the middle Zeravshan Valley by the Italian Archaeological Mission, the earliest occupation of the ancient settlements found here can be dated to the late 4th-1st centuries BCE. Settlement of the area was made possible by the development of irrigation, which allowed agricultural practices to expand across nearly the entire floodplain. A combined economy developed, based on efficient use of the soil for irrigated agriculture, dryland farming, mountain grazing, and forest activity. This had an impact on the social dynamics between the settled farmers of the plain and the semi-mobile pastoralists of the steppe. Thanks to flooding and efficient resource exploitation, an agrarian and hydraulic society practicing polyculture was able to flourish in the valley for thousands of years. The Samarkand region thus represents the human ability to exploit the benefits of a territory, making it an example of successful agrarian and urban societies in challenging desert oasis ecological zones.

2.2 Historical background

In the northern part of the modern city of Samarkand lie the archaeological remains of Afrasiyab (Figs. 3), the site of the ancient capital of Sogdiana, an eastern satrapy of the Persian empire that was later conquered by Alexander the Great who destroyed the water channels that serviced a large part of the city. During this time, the city appears in literary sources as Maracanda. After the Macedonian conquest, the Zeravshan Valley became the crossroads of an international commerce network and an important centre of trade, connecting the oasis with important centres in Persia, India, and China. Control over these trade routes became strategically important, and major urban centres started to develop along them.

Maracanda was conquered by the Arabs at the beginning of the 8th century. Much later, the Mongol invasion in 1220 saw Genghis Khan reduce the city to ruins, causing it to be abandoned. Recent city excavations have revealed an ancient citadel with fortifications, the palace of the ruler, and residential and craft quarters (UNESCO World Heritage Convention, n.d.). Modern Samarkand developed as a newer settlement located to the south of this historical site, though only during the late medieval period after Maracanda was destroyed by the Mongols. In the 14th century, Tamerlane conquered Samarkand, turning it into the capital of his vast new empire. The city of Samarkand thus began a period of growth and splendour as the Timurid capital (The Aga Khan Trust for Culture 1997).

In 1504, an emir from the Ferghana Valley, Babur, briefly held Samarkand before being driven out from the new invaders, the Uzbeks. Babur then seized Kabul in Afghanistan and went on to establish the powerful Mughal Empire in India. He was a Sunni and a Turk who administered his empire in the Persian language. Persian was also the language of the court and of literature.

The appearance of the Russian empire in the region was a political, economic, cultural, and social breakthrough for Samarkand's inhabitants. The Russians subjugated the Khanates of Bukhara and Khiva in 1864 before moving on to take over the eastern part of present-day Uzbekistan, including Tashkent, in 1865. Samarkand surrendered to the Russians in 1868, following a brief battle. In general, the Russian advance was slow and relatively peaceful, leaving in its wake settlers who appropriated land for cultivation. The Russian imperial administration sought to apply its own model to areas previously administered according to indigenous logic.

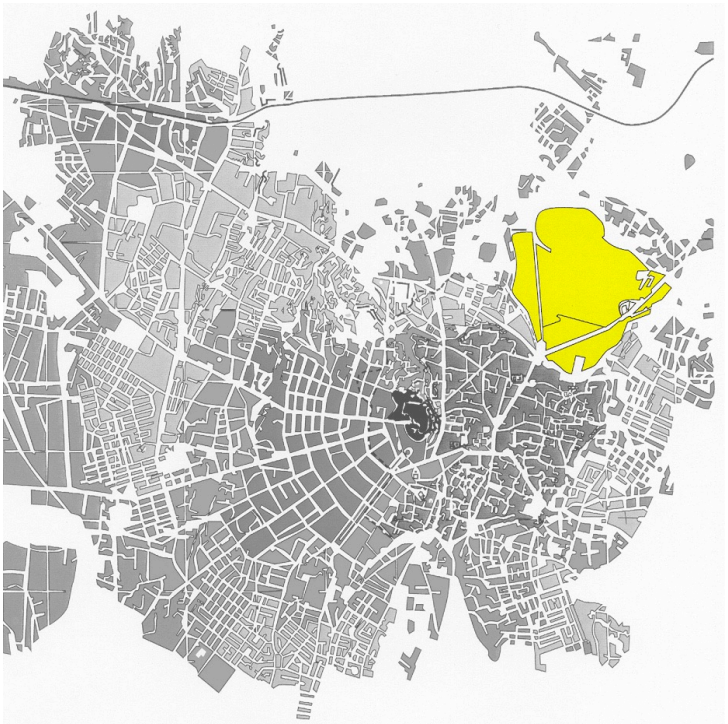

Fig. 3 - Afrasiab, Sogdiane Capital (Elaboration
by the Author from Aga Khan historical development plan).

Later, in 1918, the introduction of cotton monoculture and the attempt to implant Bolshevism in Central Asia, where no indigenous Communist enterprise had existed previously, saw the start of great economic change for the region.

In pre-modern Central Asia, ethnic groups hardly corresponded to a physical territory. Their primary identity was one of a 'solidarity group', which was reinforced by living in the same neighbourhood of a village (*mahalla*) and that could have very different sociological foundations, whether tribal, clan-based, religious, or geographic. The Soviet system of the 20th century allowed these 'solidarity groups' to be recomposed within the socio-economic framework of its agrarian communities (Russian: *kolkhozy*).

With the collapse of the Soviet Union in 1991, however, the territories in Central Asia were divided into independent republics that overrode previous transnational entities, identities, and affiliations (e.g.

Islam, Pan Turkism, or Persian cultures). The population thus passed from a multi-ethnic imperial structure without precise borders, to separate ethnic groups, to a modern nation-state structure in which a people was defined by its territory, its language, its flag, and a national anthem, all of which were lined up according to artificially determined political borders. The new capital cities were geographically distant from the centre of their respective countries and were not necessarily the historical capitals of these regions.

This heavy-handed division of territory in Central Asia was marked by the emergence of numerous enclaves and general geographical discontinuity. The creation of the borders of modern Uzbekistan and Tajikistan is a good illustration of this: when Tajikistan was created, the two large historical capitals of Samarkand and Bukhara, which were mainly populated by ethnic Tajiks, were allocated to Uzbekistan. The construction of new national languages also contributed to division between the emerging nations.

A national Uzbek identity was thus established based on a series of codes rather than as a result of indigenous culture or local history. The former President Karimov's administration relied on this and sought to maintain the idea of a strong and modern Uzbek nation-state. The government based its legitimacy entirely on ethnic nationalism, a form of rule that can be summarised as a cult of strong power (or authoritarian presidentialism).

Today, tourism has taken on an important economic role in the historic cities of Bukhara and Samarkand. In the course of its shift from a command economy to a market economy, the major international organisations, such as the IMF and the World Bank, demanded a complete privatisation of the economy, the complete dismantling of the *kolkhozy* (collective farms), and the establishment of differentiated forms of ownership and control over land and production. However, the young republic remains hesitant to liberalise and appears reluctant to permit the emergence of an entrepreneurial class or welcome massive foreign investment.

3. Pre-Colonial Settlements

A look at village morphology in the Zeravshan Valley shows the success of previous and current adaptations to the diverse natural environment. Villages display a variety of forms, from concentrated, to semi-dispersed, to dispersed, while the complex division of the population, which is

distributed between higher mountain villages, foothills, and the alluvial plain, has had an impact on settlement dynamics and forms in this location. In the irrigated territory, settlements are usually grouped together in a kind of cluster of villages and can be found in proximity to a main artery, be it a canal used as a water resource or a main road such as the Tashkent–Samarkand–Bukhara caravan routes of ancient times. In the region of Samarkand, villages are concentrated around and strongly dependent on the canals, *aryks*, that run parallel to the roads. Away from the river, as the water resources decrease and the provenance of agricultural water shifts from irrigation to mainly rainwater, rural settlements become more dispersed or semi-dispersed. Communities that live around mountain oases survive by means of arboriculture, sericulture, and viticulture (which requires habitation in groups to bring together the necessary manual labour), and in this case their economy is also symbiotically linked with the lower plains area of the Zeravshan Valley.

The population of the valley is concentrated mainly between 600 and 1,200 m asl, an ecological zone where people can best benefit from mountain activities and cooperate with the farms of the plains area. The implementation of irrigation for agriculture has also historically allowed larger concentrations of people to grow; the two largest metropolises of the regions were Samarkand and Bukhara, which were in turn surrounded by rural populations (the *raions* of the Soviet era).

Following Alexander the Great's destruction of the old city in 329 BCE, Maracanda was reconstructed several kilometres south of its original location along the Zeravshan River. Arab travellers of the late 10th century described the city of Samarkand as a commercial centre organised into specific urban districts (Fig. 4): the *ark*, or high citadel; the *shakhristan*, or walled city; and the *rabad*, or suburbs, with their bazaars, baths, caravanserais, and artisan workshops (The Aga Khan Trust for Culture, 1996).

A network of channels brought water into the city, and a system of open-air basins was established. Houses were constructed using sun-baked bricks; from the 11th century onwards, the wealthiest patrons built their homes using kiln-fired bricks. However, following its destruction by the Mongols in 1220, the city was abandoned again and once more sprouted up elsewhere along the river.

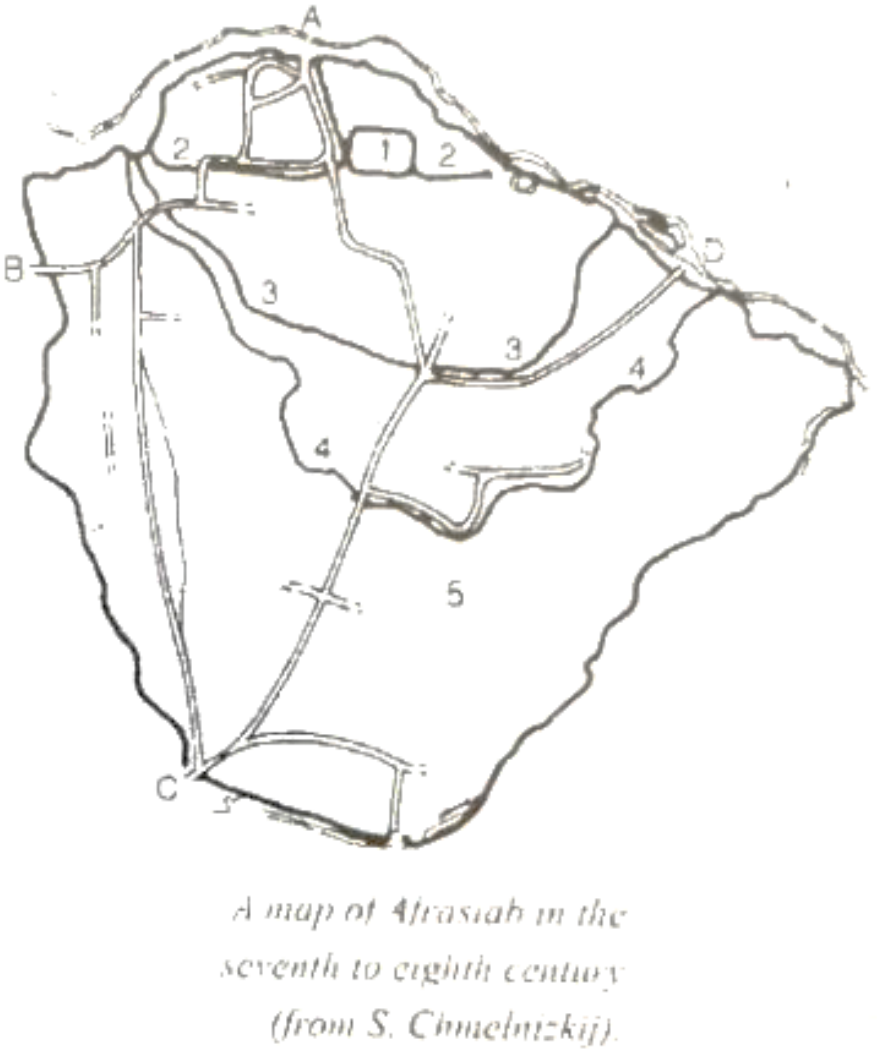

Fig. 4 - Map of Afrasyab in the 7th-8th century: 1 Citadel; 2 Walls around the Ark; 3-4 Wall around Shakhristan; 5 Rabad; A-C gates (from Aga Khan Foundation).

At the end of the 14th century, the newest iteration of Samarkand became part of the Timurid empire. As its capital, the city experienced a period of splendour. In developing Samarkand's layout, Tamerlane borrowed from Persian culture, which had left its mark on the Zeravshan Valley since the 10th century. The caravan routes, constituting the main commercial arteries,

met inside the city's main bazaar, where a covered dome market structure was conceived as an articulation point from which other commercial streets departed. The city's irrigation system was further developed, new walls were built, and new entrance gates were erected for those routes leading to other important commercial cities of the region. Caravans arrived at these gates and then converged at the centre of the city in Registan Square (lit: 'the place of sand'), a public marketplace and religious centre where significant representational buildings were erected (*madrasa*s, caravanserais, public bathhouses) during the rule of Timur. (Figs. 5-8). In 2009, the main ancient commercial road was blocked by a wall that was built to prevent traffic passing in front of the major monuments and to hide the old houses of the historic urban centre, or *medina*,[4] from tourists (Fig. 9).

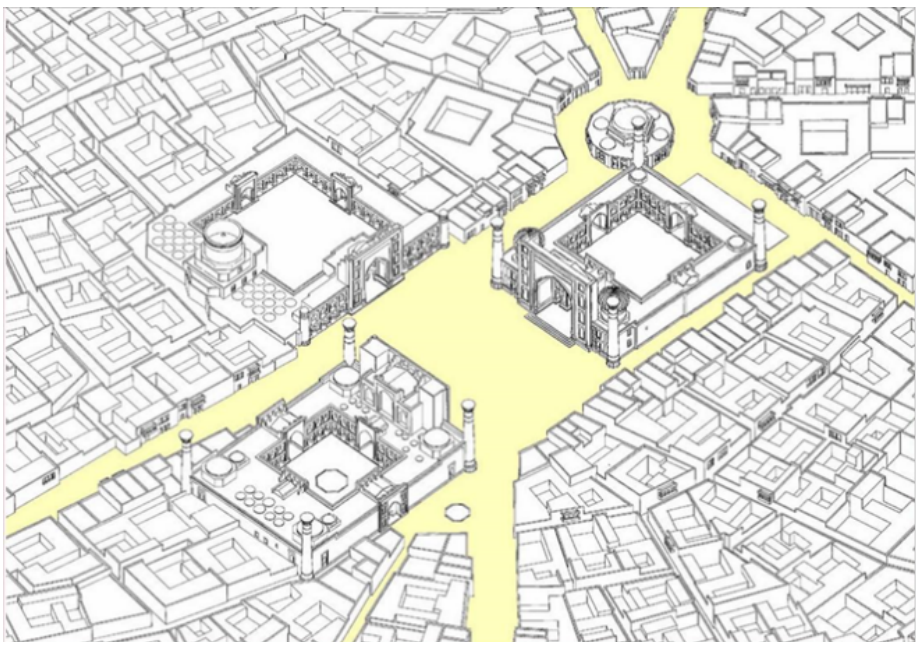

Fig. 5 - Registan square complex, hypothetical reconstruction (by Klaus Herdeg).

[4] Initially, the Arabic word *medina* simply meant 'the city'. With European colonisation and the creation of 'new towns' juxtaposed with the old *medina*s, the term shifted in meaning to designate the 'historic, traditional town'. A *medina* is characterised by its intersections with the surrounding rural areas and trading activities; in fact, a large part of a *medina* is occupied by bazaar spaces.

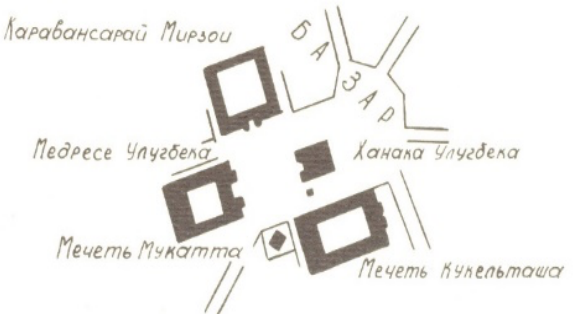

Fig. 6 - Registan square during Oulugh Beg, 15th century, and its buildings: Medersa, Mosque, Hospice, and Caravanserai (after Pougatchenkova, 'Chefs-d'œuvre d'architecture de l'Asie Centrale').

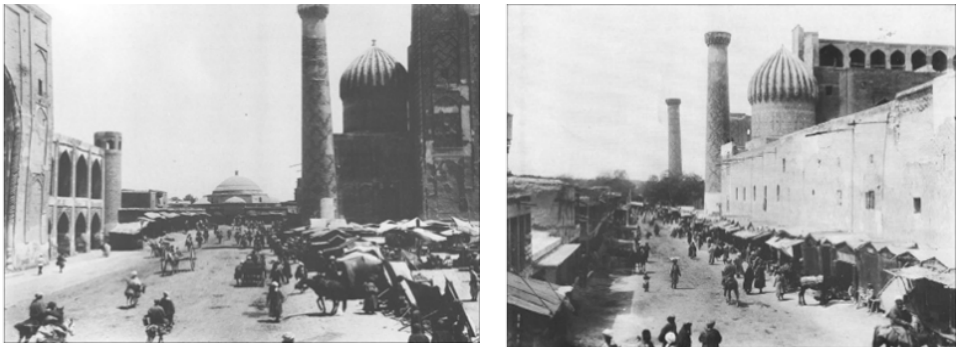

Fig. 7 - Registan main commercial road (Photos by P. Nadar 1890).

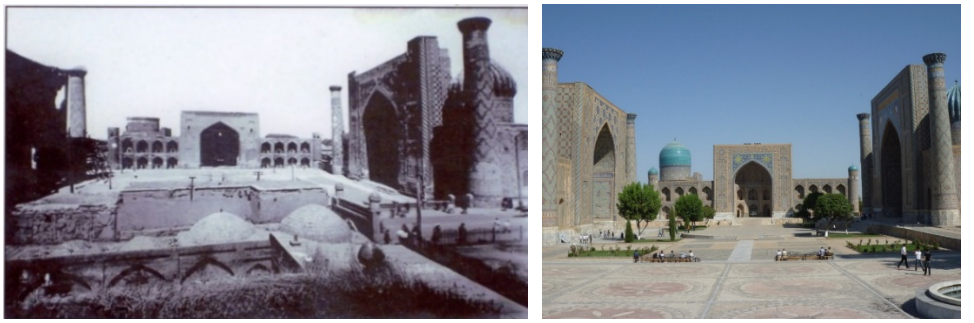

Fig. 8 - Left: Registan main commercial road before bazar's structures were cleared (Photo by H. Burhardt (1857-1909); right: Registan Square (2010, Courtesy of UNESCO).

Between 1403 and 1406, the Spanish ambassador Ruy Gonzalez de Clavijo (2006) journeyed to various principalities along the Silk Road, leaving behind a description of the lands and cities he visited. These writings are one of the most valuable sources on life in the city of Samarkand during this high point in its history. Clavijo paints a picture of a prosperous and densely populated city surrounded by orchards, vineyards, and noble and beautiful houses with rich pleasure gardens. He writes about the numerous bustling marketplaces with shops open day and night. Every day, caravans and camels passed through the city laden with fruit (melons in particular), silk from China, spices, fine stones from India, silver products from Iran, Byzantine cloth, and ceramics.

Samarkand was a multicultural city home to various ethnic groups. The so-called Silk Road was not only used by trade caravans but was also traversed by people of various religious beliefs; those persecuted by neighbouring states followed it to seek refuge in Samarkand, for example. In the late 14th century, Timur Beg brought craftsmen, engineers, and other skilled workers from several countries to the city. Architects from Iran made their mark upon the city, constructing the renowned Timurid palaces and ornamental gardens, which later inspired those of the Safavids and the Mughals and remained a prominent model for subsequent generations. Networks of canals and ponds lined with paving stones ran through the gardens, and fruit trees and roses gave the city the image of being a true paradise.

After Timur's death in 1405, the capital was moved to Herat, where Timur's son Shah Rukh ruled until 1447. From 1417, Shah Rukh's son, Ulugh Beg, developed Samarkand's central Registan Square and further embellished the city by erecting new religious buildings and caravanserais. A few hundred years later, the 17th century saw a new Uzbek dynasty reconfigure Registan Square with the construction of the Shir Dar *madrasa* on the eastern side of the square (1619-1636) and the construction of the Tila Kari *madrasa* on its northern side ten years later.

In the 18th century, Samarkand experienced a gradual decline, and nomadic raiders ravaged the region. It was only under the Bukhara emirs (1785-1920), who absorbed Samarkand into their domain, that the city returned to its former status as a regional market town as in its golden years of Timurid rule.

Fig. 9 - Registan Square transformations in 2008. A wall separates the medina space from the Registan complex (by the Milan Polytechnic).

4. The *Medina*

In the past, the fabric of the *medina* was extremely dense; the streets were narrow with a consistent characteristic sinuosity, resembling a labyrinth in which one can easily get lost. However, it was possible to find one's way through these small streets, which were defined by certain reference points and public gathering spaces, very often located directly in front of house doors. Any part of Samarkand within the *medina* was connected to a *mahallah* (a community-based neighbourhood) and a mosque, which was considered to be a meeting point for the entire community. Belonging to a *mahalla* had in fact traditionally played a palpable role in creating a sense of social cohesion within its community (Fig. 10).

A traditional house in Samarkand, such as those standing in the *medina*, was closed off from the neighbourhood, with its living space organised around a rectangular or square inner courtyard that was not visible from the outside. Though a house might have had a very modest exterior, its interior may have been characterised by exceptional opulence.

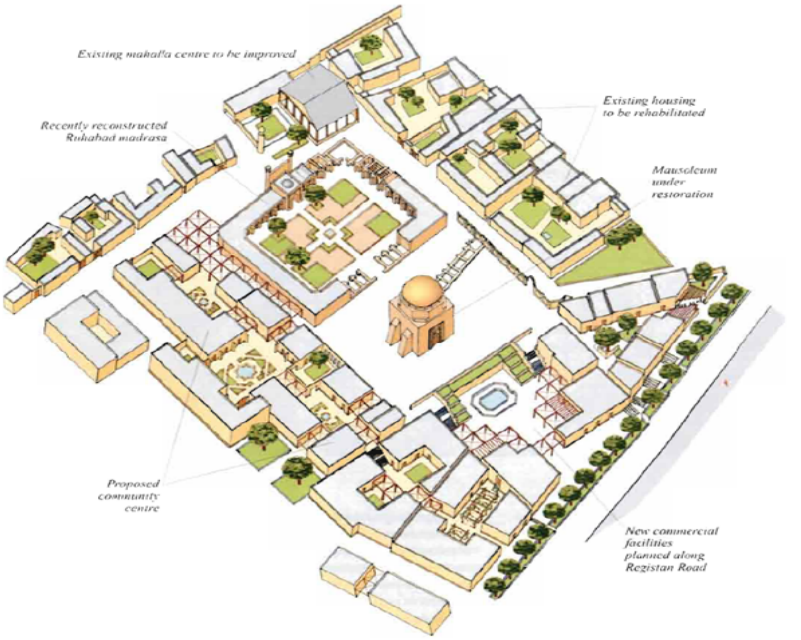

Fig. 10 - Typical pre-colonial district space organisation with *Mahalla* and dense habitat (from Aga Khan Foundation).

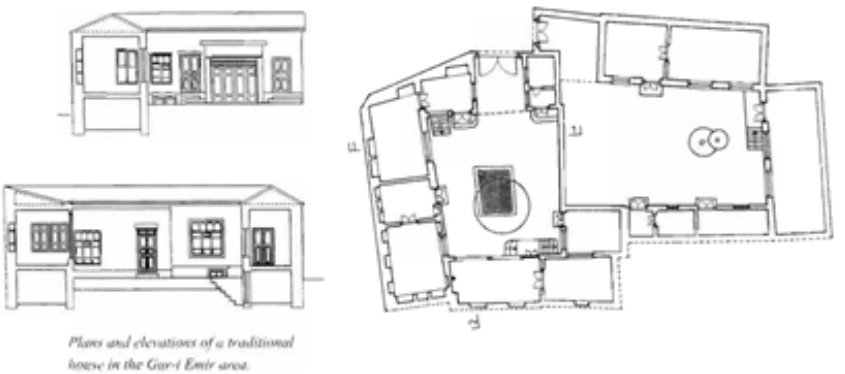

Fig. 11 - Late 19th century traditional houses with single and double courtyards (from Aga Khan Foundation).

The main room, or *iwan*, featured a high ceiling and was richly decorated, while other rooms had more flexible functions. The house was also divided into a winter area, with thicker walls and lower ceilings, and a summer area. The freshness of the central garden during scorchingly hot summers was doubled by the presence of *panjarab,* a practical solution for catching daylight without letting heat inside the rooms. To promote ventilation and thus provide some coolness to its inhabitants, these buildings were generally oriented to catch the wind from the north (Fig. 11).

Today, the style of residential architecture being built in the *medina* is undefinable because of its heterogeneity. The traditional building materials of sun-baked brick and wood have been replaced by kiln-fired bricks or cement. In some cases, the spatial organisation of the interior, however, remains similar to that of the historical houses, leaving these structures caught between a traditional spirit and a sometimes poorly executed attempt at contemporary architecture.

5. Russian imperial period (1868-1917)

With the arrival of the Russians in 1868, the medieval city pattern was suddenly confronted with a different urban model. The site of the ancient Timurid Citadel, the old place of power, was first to be modified. Its walls were demolished, and the old gates were completely transformed. The fortifications and the king's palace were also taken down to make way for new military buildings, a school, a church, and a military hospital. Starting from this symbolic centre of ancient power, Russian engineers laid out new roads and avenues towards the 'new city', which was designed according to the models of St. Petersburg and Moscow. The houses and the historical monuments of the *medina* were abandoned, though all of the water canals running through the city were kept in place (Fig. 12).

The new Russian section of the city (built in 1871) was developed to the west, according to a European model. Built under the Tzars, this phase introduced wide radial avenues and administrative buildings (such as the town hall and national bank) around which colonial and neoclassical houses surrounded by large gardens with pavilions were concentrated (Figs. 13-14).

Large radial avenues were connected to semi-circular and concentric axes at regular intervals of 200 m, starting from the Citadel, but any connection with the pre-colonial city was avoided or removed (Fig. 15). In a radical break with the urban design of the past, none of the new roads

joined any of the pre-existing ones, and the pre-colonial part of the city ultimately lost its importance as the urban centre of Samarkand and fell into ruin. Further destruction was caused by the opening of new routes through the old settlements. Though Registan Square had previously been a popular site for people to go to pray and to engage in trade, it had now lost its main function. The area was transformed into a veritable wasteland.

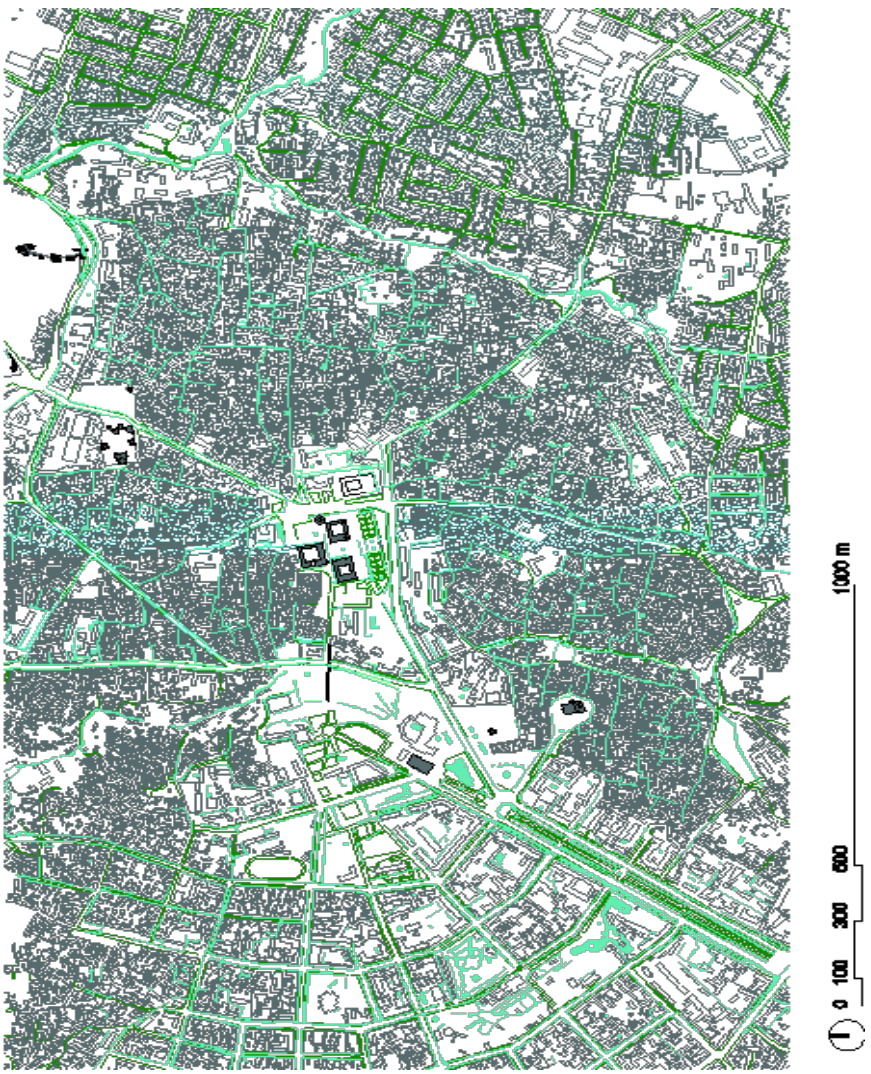

Fig. 12 - Graphic map of pre-colonial habitat and water channels distribution (from the Aga Khan Foundation. Elaborated by the Author).

Fig. 13 - 1872-1917, Tzarist urban pattern in purple (from Aga Khan historical development plan. Elaborated by the Author).

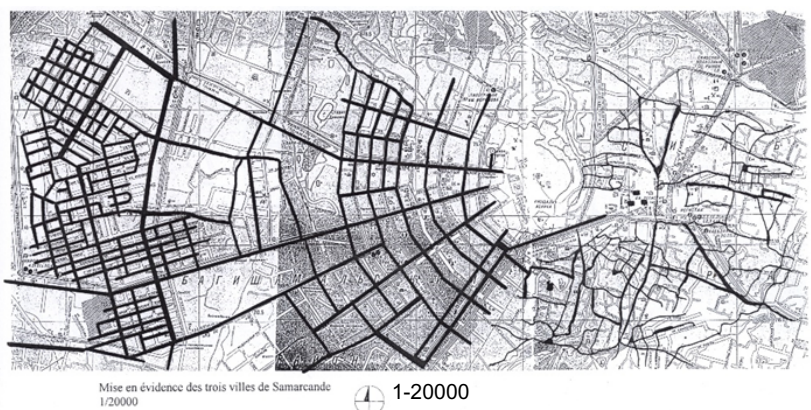

Fig. 14 - Urban street pattern development From left to right: pre colonial urban layout; tsarist urban layout; soviétic urban layout (from Aga Khan Foundation).

Fig. 15 - Left: Russian urban pattern with large avenues (from Google Earth); Right: Avenue in Russian Tzarist city in 2008 (photo by the Author).

6. Soviet period (1917-1991): Demolition, construction, and preservation

In 1924, Samarkand briefly became the capital of the Uzbek Soviet Socialist Republic until this was relocated to Tashkent in 1930. During the Soviet period, the colonial policy towards the ancient city was marked by ambiguity, oscillating between attempts to restore its built heritage and episodes of functional destruction. While the main monuments were preserved and restored, other modernisation efforts considerably changed the urban landscape. Large commercial roads were carved through the city, such as Registan Street and Tashkent Street, commercial streets that run from Registan Square to the Bibi Khanum Mosque and the site of the new Siab Bazaar (Figs. 16-18).

The Soviet leaders wanted to represent their presence in the old city centre, and as a result the pre-colonial zone underwent many functional transformations.

Fig. 16 - Map showing Soviet city building extensions. In red 1917-1958 ville sovietique (1917-1991) (from Aga Khan historical development plan. Elaborated by the Author).

Understanding the need for preservation on some level, they sought to rehabilitate the old centre, using commercial streets to literally reconnect it to the newer Russian districts in the west. In the 1920s, the many houses of the *medina* formerly surrounding the Registan area were cleared to make way for large parks (and, in more recent years, hotels) beside the isolated surviving monuments. The Bolsheviks carried out extensive restoration work on Registan Square itself (Fig. 19), stabilising the minarets, rebuilding the domes, and removing the sand that had accumulated on the square; subsequently, they used it as a stage for organising political demonstrations. Major roads were opened in the *medina* (Registan Street and Tashkent Street, mentioned above).

6.1 The functional rehabilitation of historical buildings

As early as 1918, Lenin signed a decree calling for monuments to be listed and all those that might have a religious connotation to be demolished; this Communist campaign against religion continued until 1940. The government began attacking the institution of the *mahallah*, and religious properties were expropriated as part the systematic dismantling of Islamic institutions, while mosques and *madrasa*s were brought under the direct control of the government.

Meanwhile, new 4/5-storey blocks were built along Registan Street opposite Registan Square, in the middle of the historic centre, partially demolishing the houses of the *medina* in the process. Inhabitants were evicted and relocated to large Soviet-style housing estates, a process that happened systematically throughout the USSR and was replicated in Samarkand without taking into consideration the climatic or cultural differences of the region. The Registan complex itself was transformed to accommodate tourists.

Another hallmark of the Bolshevik's pragmatic approach was that many public buildings, particularly those related to religion, were not destroyed but rather given a new function that erased their history of pre-Soviet activities. The Ulugh Beg *madrasa* on Registan Square, originally part of the Registan complex, was used as a grain warehouse, for example. The House of the Soviet and the headquarters of the Communist Party were erected in the old Citadel, an historically symbolic place of power. Subsequently, in the 1950s and 1960s, various public administrative and cultural buildings, such as the Opera Theatre, were also built in that area.

The only possible culture was that of the proletariat, and historic buildings, now belonging to the people, were transformed into places of propaganda, celebration, and commemoration. It was not until 1961 that more protective heritage laws were drawn up to safeguard the preservation of the historic centre of Samarkand. An inventory of historic buildings was also created at this time, though ultimately it was the lure of attracting tourism that stood behind this new attention to the old town.

Fig. 17 - Tashkent Street, 1890 (Photos by P. Nadar).

Fig. 18 - Before (above) and after (below): Tashkent Street, from Registan and reaching Bibi Khanum and the new bazaar, Siab (M. Colla, 1997-98).

Fig. 19 - Left: Restoration work during Soviet periods of Registan *madrasa*s (Photo by P. Nadar); right: the Registan madrasa today.

6.2 Master plans and old city development

A first master plan for Samarkand was developed in 1938 and foresaw the completion of the radial plan begun during the Russian imperial period in 1870. Main monuments became focal points for the new roads that cut into and through the *medina* area. New master plans for the development of the city were drawn up in 1960 and in 1980 (Fig. 20). Both of these abandoned the previous radial plan, as its execution would have been too expensive and would have required further demolitions (Fig. 21).

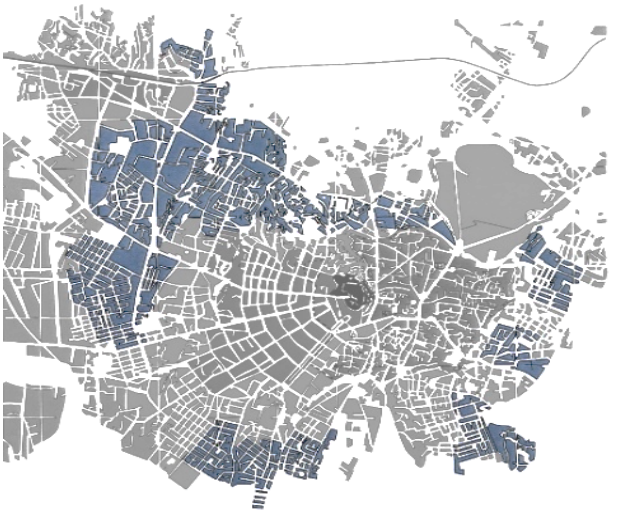

Fig. 20 - Soviet master plans development in blu color, 1958-1972 (Aga Khan Foundation).

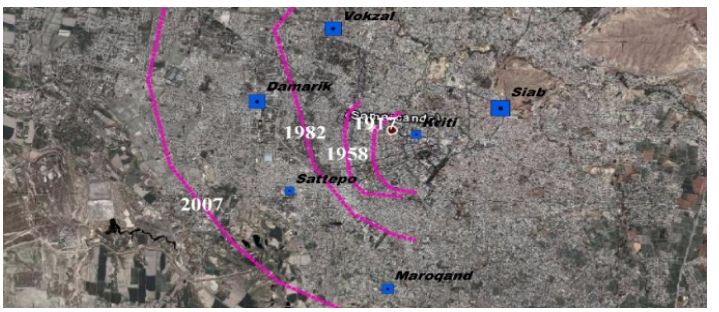

Fig. 21 - Urban development over time indicated by purple lines, 1917-2007 (Courtesy, Italian-Uzbek Archaeological Mission).

As the population increased throughout the mid-20th century, the city continued to expand between the Zeravshan River and the Dargom canal, and an industrial district was also created in that area (Fig. 21). From 1969 to 1970, the historic centre was emptied of its residents and devoted entirely to activities related to tourism. The lack of sanitary conditions and water in the old houses of the *medina* led their inhabitants to move to the new Soviet buildings, which were richer in modern comforts. The 1960s and 1970s also saw the historical monuments begin to receive international attention (with the 1964 International Charter on the Conservation and Restoration of Monuments and Sites and the 1972 UNESCO World Heritage Convention), and local urban policies evolved to ensure more systematic protection of the pre-colonial districts.

These changes paved the way for the master plan of 1980, which also reflected the increasing cultural and touristic importance of Samarkand. The urban scheme of 1980 proposed a central axis connecting the historic centre and the newly developed areas in the southern part of the city. New large roads were to be constructed within the old Timurid city in order to fulfil the main objective of this plan: a monumental area that harmoniously integrated the old city with the new constructions and infrastructure. However, the 1980 plan was ultimately only partly realised (Fig. 22).

When the Soviet Union collapsed in 1991, the *medina* area suddenly became the most coveted real estate in Samarkand – a distinct change from the century before. Empty lots were purchased as investments for tourism development, while the few remaining inhabitants began selling their houses to Westerners. Functional rehabilitation was no longer the prerogative of the government, and private actors began to appear on the stage. The medieval part of the city was again undergoing important changes, shaped now by the more lucrative tourist industry. Some inhabitants tried to take advantage of tourism and use part of their houses as bed and breakfasts or private hotels, yet the government maintained total control over tourism as large new hotels sprang up in the city. As of 2008, local people participating in the tourism sector still could not take full advantage of its economic benefits.

Fig. 22 - Urban development Master Plan (from Aga Khan Foundation).

6.3 The Soviet social housing programme: Microrayons, or grouped habitat organisation

After the end of the Second World War, the population of Samarkand increased with the arrival of people from across the USSR. New residences (apartment blocks) containing several flats were built to house them, and working-class people were resettled in close proximity to their industrial place of work. Utilitarian spaces (such as the toilet, kitchen, and bathroom) were shared by several families. Large green spaces in front of the buildings or in the courtyards served as children's playgrounds.

Following the uniform organisational scheme applied across all cities within the USSR, the modern Soviet residential city was composed of apartment blocks that also contained all necessary services, such as shops, an internal committee to solve local problems, and public gardens. Public institutions were at their centre. The Soviet urban model consisted of residential and industrial areas that contained a population of 40,000 inhabitants. These '*radii*' were divided into neighbourhoods of 10,000 inhabitants, called '*micro-rayons*' (Fig. 23). Like the apartment blocks, each district included all necessary social facilities. Between 1959 and 1965 (during the Khrushchev era), these complexes were built on the outskirts of the modern city. From the middle of the 1970s to the end of the 1980s, construction continued along the same typology in peripheral districts for industrial workers (with Sattepo and Sogdiana in the south and Vozkal in the north), (Fig. 24).

Fig. 23 - *Microrayons* built from 1958-1980 (Google Maps).

The *microrayons*' buildings were constructed using standardised, prefabricated materials, reflecting the prevailing ideal of equality, technology, and progress. Initially, the houses were 4/5 storeys high; later they reached up to 10 floors. The buildings were well-equipped with water and heating, but they were not designed with the local climate in mind, and the concrete flats became extremely hot during summer. Another drawback was their relatively small size: each flat allowed for 8 m^2 per person, though a traditional Uzbek house possessed 30 m^2, including the garden. Some of these housing blocks contained up to 500 flats for more than 2,000 people, constituting self-sufficient villages – a city within a city. Samarkand's new districts thus increasingly resembled the suburbs of Moscow and other cities throughout the USSR and its sphere of influence (Figs. 25-26).

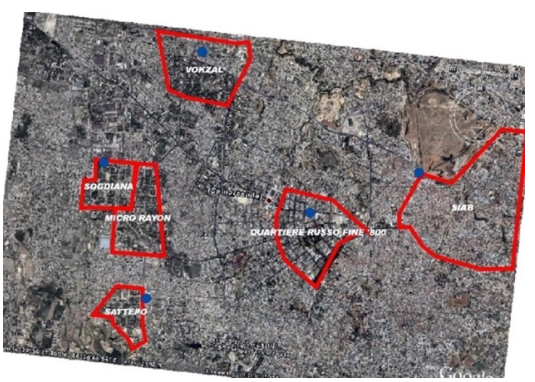

Fig. 24 - New residential areas developed to the west of the city near the industrial zone (Courtesy of the Italian-Uzbek Archaeological Mission).

Fig. 25 - Right: New soviet buildings. Left: Soviet city planning around residential and industrial areas called *rayons.*

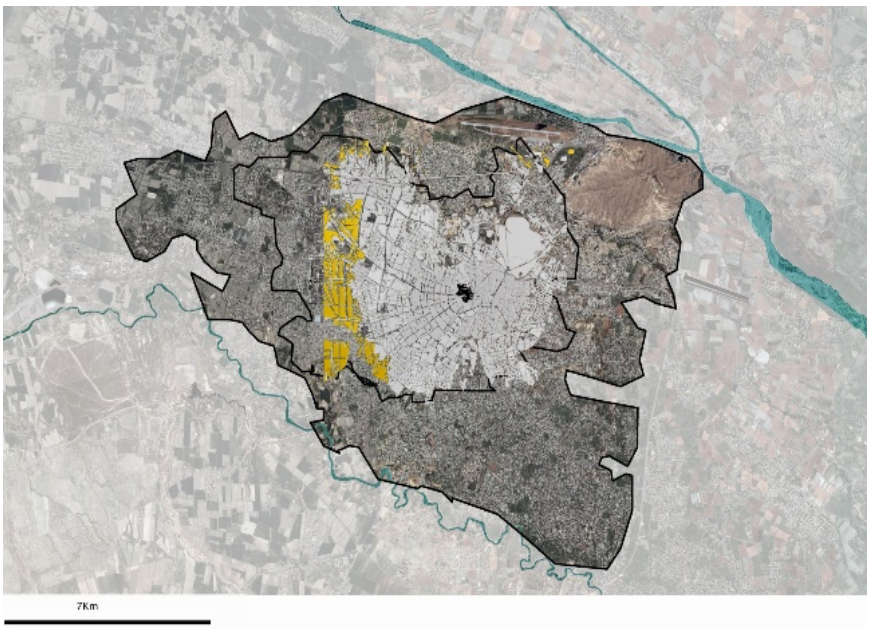

Fig. 26 - New urban agglomerations after independence in 1991 (Source(s). Elaborated by the Author).

7. Closing remarks

Overall, the city of Samarkand has undergone radical urban transformations. During the Russian occupation, irremediable destruction was caused to the *medina* area, though the city's main symbolic historical monuments were nevertheless preserved and in some cases reconstructed or

restored. The area around Registan Square was one of the most affected by demolitions during the Soviet period. The large *madrasa*s in the main square are currently well-protected, but the empty space created around them still reflects the consequences of previous urban policies. Having lost their original function as religious schools, the *madrasa*s are now occupied by craft merchants or make up a vast shopping area with nightly folk music concerts targeted at tourists.

As of today, the trend in the city's urban development continues along the lines of the Soviet policy. Water management continues to pose difficulties, and traditional settlements in the *medina* are still being demolished to make way for new larger roads that are better suited to automobile traffic and tourism. Without policies in place to prevent this kind of development, the Samarkand of the future will thus surely lack a significant number of its historical pre-Soviet features.

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