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To cite this article: E G Shershneva 2022 *IOP Conf. Ser.: Earth Environ. Sci.* **988** 042073

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Architectural Development of Middle Asia: Experience of "New Ashgabat"

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Abstract. The article considers modern creative directions in the architectural landscape of the Turkmen city – Ashgabat. Analysis of features of the most original public buildings, unique symbolic monuments and the residential environment of the city is presented. There is a trend towards the development of stylistic features of monumental architecture, the search for unique images and forms with a deep socio-cultural semantic meaning. Architectural form reflects the history, culture and traditions of Turkmen people. The architectural appearance of Ashgabat is represented by the dominance of white marble as the main building material, the embodiment of national symbols in various objects, unique symbolic monuments and fountains. "New Ashgabat" emphasizes respect for national and life values: love, family, health, well-being and development. The white color of buildings as an urban color concept has a positive effect on the psycho-emotional state and health of citizens. Review of architectural innovations in Ashgabat allows to conclude that some features of sustainable architecture are visible. Noted that in this city there are trappings of a neo-city, expressed in design innovations and increasing the comfort of urban environment. It is actualized, that future development of the city is seen in the context of ecological urbanism and energy effective.

1. Introduction

One of the Middle Asian countries that has become a platform for economic, social and urban innovation is Turkmenistan. The capital Ashgabat is a flagship of architectural grandeur and uniqueness. The concept of a "new architecture" with unique design solutions and deep socio-cultural meaning is a pattern of architectural development in modern Ashgabat. Architectural objects reflect the history, culture and traditions of Turkmenistan, as well as innovative trends in the formation of the urban environment. The synergy of tradition and innovation allows the city to create an original style and increase its value for living and business development.

The relevance of the research is determined by active pace of construction of Ashgabat, the unique design of cultural and public buildings and the formation of a new architectural image. The purpose of this article is to analyze modern architectural features of Ashgabat city, which is dynamically developing as the most "white marble city" in the world. The objectives of the study are reveal creative directions in the architectural landscape of Ashgabat, analyze new unique monuments, identify the socio-cultural specifics of architectural development and explore the residential construction features.



2. Materials and methods

In recent years, Turkmenistan has become one of the most dynamically developing post-Soviet countries. Large reserves of hydrocarbons, primarily natural gas, are the main source of economic development and investment activity. Since 2010, Turkmenistan's GDP has grown by more than 10% per year, which puts the country on a par with such economic growth leaders as China, India and the Persian Gulf countries [1]. Simultaneously with economic progress, the visual transformation of Turkmen cities is also taking place. The processes of urbanization are typical for this country: growth of the urban population is steadily increasing. Ashgabat is the capital of state, a city with a population of more than 1 million people (30% of the total urban population) [2]. As a result of economic, political and social transformations, the image of the main city has become an "architectural pearl in the desert".

In the last 10 years, a large-scale architectural reform began in Ashgabat: the construction of new houses, unique buildings and monuments was carried out. The architecture is marked by the synthesis of new forms, technological progress, national traditions, heritage and symbols. There are three creative directions in the architectural landscape of Ashgabat.

1. Public buildings with unique shapes and national symbols. Amazing examples are the Wedding Palace "Bagt Koshgi" (figure 1), the cultural and entertainment center "Alem" with Ferris wheel (figure 2) and the television-broadcasting center "Turkmenistan" (figure 3).

The Wedding Palace "Bagt Koshgi" is an eleven-story building with an area of more than 38 thousand square meters. It is a three-stage structure, each side of which has the appearance of an octagonal (eight-pointed) star. The cube, which stands on large columns, forms its upper stage and absorbs a ball with a diameter of 32 meters – the symbolic planet Earth with the image of the map of Turkmenistan. The four entrances to the building symbolize the four cardinal directions [3].

The cultural and entertainment center "Alem" is a step-pyramid on which stands a Ferris wheel with a diameter of the outer circle is 57 meters. This is the largest closed-type Ferris wheel in the world, entered in the Guinness Book of records. The building has 6 levels, 7 meters each, there is a spire on top and the total height is 95 meters [4].

The television-broadcasting center is a tower of 211 meters, which made it the highest architectural structure in Turkmenistan. The Star of Oguz-Khan, which adorns this TV center is recognized as the world's largest architectural image of star and entered in the Guinness Book of records [5].



Figure 1. Wedding Palace "Bagt Koshgi", 2011.



Figure 2. Cultural and entertainment center "Alem", inside the Ferris wheel, 2012.



Figure 3. Television and broadcasting center "Turkmenistan", 2011.

All three structures are built of white marble in the visual appearance of the octagonal Star of Oguz-Khan. This symbol takes its historical origin from the image of two superimposed squares (Rub-al-Hizb) and has been preserved not only in the decorative and applied arts of Turkmenistan and a number of other peoples, but is also actively used as religious and state symbols [6]. All these architectural landmarks were built by the Turkish construction company "Polimex" on the order of the government of Turkmenistan.

2. Grandiose and unique symbolic monuments dedicated to eternal values. Striking examples are such monuments as "My white city Ashgabat – city of love" (figure 4), dedication to Science – "Ylym Binasy" (figure 5), sculpture about health and recovery of vital forces – "Sagdynlyk" (figure 6) and monument to White Wheat as a symbol of prosperity and well-being – "Ak-Bugday" (figure 7).

The monument "Ashgabat-city of love" is a 25-meter pillar, at the top of it are olive branches, symbolizing the permanent neutrality of Turkmenistan. The pillar is wrapped around a symbolic heart as a sign of love, and the word "ASGABAT" is written in gold letters just below it. There are fountains and a park around.

The monument "Ylym Binasy" is a 36-meter pillar, is intended to become a visible symbol of the progressive development of science, its modern achievements, bringing this important sphere to a qualitatively new world level. The building is crowned with a symbolic composition depicting 9 planets of the Solar system.

The monument "Sagdynlyk" is dedicated to health improvement. Its height is 36 meters. On its top is a sculptural emblem of the V Asian indoor and martial arts games, which were held in Ashgabat in 2017.

The monument "Ak-Bugday" has a height of 36 meters and symbolizes the unity of the Turkmen people, who have carried national spiritual values through the centuries. Around the circumference of the base, inscribed in an octagon, eight pitchers pour water – a symbol of the eternity of existence and fertility of the native land. Monument resembles a giant sprout that broke through the thickness of time, embodies the connection of past, present and future [3].



Figure 4. My white city or Ashgabat – city of love, 2014.



Figure 5. "Ylym Binasy" (Science), 2015.



Figure 6. "Sagdynlyk" (Health and Recovery) with symbols of "Asiada-2017", 2015.

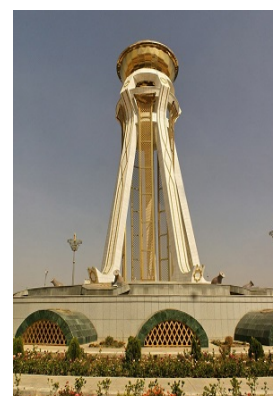


Figure 7. "Ak-Bugday" (White Wheat), 2015.

Considered monuments are made of white marble, representing greatness and good sense. These new architectural forms show symbolism and respect for the eternal values of life: love, family, health, well-being and development. Light color, nonlinearity, smooth shapes, optimal height and symbolism are the characteristics that positively characterize the visual image of new monuments in Ashgabat. A favorable urban environment with green zones has been created around each monument. These elements create a favorable impression and form the "ecological" architectural environment of the city which has a positive impact on people's health [7, 8].

The greatness of the monuments is the delight of visitors and the pride of residents. Despite the closeness of Turkmenistan, the presence of a favorable architectural environment of the main city creates conditions for the diversification of tourist potential of state. The unique architectural and cultural code of cities can form the basis for development of business, event and cultural tourism [9]. It can be argued that monuments and sculptures of Ashgabat in the cultural and symbolic aspect are instruments for constructing socio-cultural identity, as well as identifying the potential for branding of the territory [10].

Thus, monumental architecture of Ashgabat follows the modern trends of urbanism: the construction of unique sculptural forms with a deep meaning creates a positive image of the city and provides a generous cultural heritage for future generations [11].

3. Residential environment of the city. The city has many residential complexes consisting of high-rise buildings made of white marble (figure 8).

Ashgabat is listed in the Guinness Book of records as "the whitest marble city in the world": more than 500 buildings in the new part of the city are lined with white marble [3]. White color creates a sense of cleanliness, freshness and spaciousness. Study [12] shows that the gray color is negatively perceived by citizens and to improve the visual aesthetics of buildings, white color with a combination of bright accents are needed. An architectural feature is also the presence of domes and spires on the roof of residential buildings.

In the coming years, the Government plans to build ambitious "Ashgabat-City" (figure 9). It should be a modern city in the Northern part of Ashgabat (area Choganly) [13]. This mega-project will be created using technologies of the future: "smart house" and "smart city". Special attention is paid to energy saving, creating comfortable conditions for residents, environmental friendliness, walking distance to retail outlets, social facilities, cultural institutions and administrative buildings. Development plans also include educational, medical, sports and cultural facilities. It can be argued that Ashgabat-city will be one of the examples of "neo-city" on the Eurasian territory. As noted in study [14], neo-cities initially combine the urban synergy "Creative + Comfort + Smart + Green".



Figure 8. Modern residential buildings from white marble.



Figure 9. Mega-project "Ashgabat-City".

City authorities are very sensitive to the appearance of buildings and streets. Landscaping of streets and courtyards is a mandatory element of urban development of "white city Ashgabat". Automatic watering is provided on streets of the city. It should be noted the variety and beauty of lampposts and lanterns. Lampposts of the city are architectural masterpieces, striking in their uniqueness. Some of them are powered by solar panels. So, increase the comfort of urban environment and energy efficiency in the city is an example of achieving decoupling effect [15]. Aesthetic houses, green infrastructure and resource efficiency create an image of "Sustainable Street" that fits into the world trend of sustainable urban development [16]. Analyzing the improvement of residential areas, it can be noted the idea of individual recognizable style and originality.

There are two controversial points that the authorities believe will improve the appearance of the city, but people do not share this opinion. First, only white cars can drive on the streets of Ashgabat. Second, trolleybuses were abolished so as not to spoil the appearance of streets.

In addition to the positive aspects of urban development, there is a downside to urban growth. Large-scale building and population growth lead to the formation of a huge volume of garbage and require solving the problem of waste utilization. For this, it is necessary to use progressive waste management technologies that will improve the quality of life in the long-term perspective [17]. The urban planners of Ashgabat pay attention to the city's garbage and housing infrastructure: digital technologies, intelligent systems and alternative energy are used. The Turkmen capital city development confirms the thesis about the effectiveness of an integrated approach to urban planning and management of housing and communal services.

3. Discussion of research results

One of the most popular urban concepts is "Sustainable Architecture". It is based on the thesis that the architecture of the XXI century can create not only the most comfortable and safe space for people, but also can change the appearance of cities and improve the life conditions for future generations [18]. There is a point of view that engineering and architectural diversity can be considered as a kind of natural biodiversity [19]. Researchers also actualize that a sustainable urban environment of the city implies an attractive architectural concept that includes various elements of buildings and structures, bionic forms, favorable colors and the presence of unique sculptural forms. These elements form visual perception and create a positive psycho-emotional state of people [20].

Analysis of architectural innovations in Ashgabat allows to conclude that some features of sustainable architecture are visible. It should be noted that the policy of Turkmen President G. M. Berdimuhamedov is aimed at creating a favorable urban environment and innovative development, giving the city a unique image, which is confirmed by architectural achievements in the Guinness Book of records. Despite the closeness of the state, Turkmenistan's major cities have developing in the context of global trends with the involvement of foreign designers and investors.

Ashgabat organically combines the ancient traditions of the East and modern technologies: there are buildings and street lightings of unique design with the preservation of national symbolism [21]; amazing monuments with great philosophical meaning; residential buildings in the style of "beautiful white house"; many parks and fountains. The main features of the architecture can be identified:

- 1) Using of the national symbol in shaping and design (octagonal Star of Oguz-Khan and Crescent Moon with Five Stars);
- 2) Dominance of white marble as a building and finishing material;
- 3) Height of the monuments is 25-36 meters, dominant structure is a high pillar on a wide base;
- 4) National and socio-cultural symbolism of monumental objects;
- 5) Domes and spires on roofs of public buildings, dwelling houses and monuments;
- 6) Street lanterns of unique design with the presence of national symbols;
- 7) Greening of streets and a large number of fountains;
- 8) Engaging of foreign building firms and application of technological innovation.

It can be assumed that further efforts of the country's authorities will be aimed at the greening and energy efficiency of urban space. Improving the appearance of the city while reducing the environmental pressure will contribute the useful effect on the path of sustainable development. Refining the aesthetics and comfort of the city is an important socio-economic aspect of public administration, it is a contribution to the development of human capital, a heritage for future generations.

4. Conclusion

During Turkmenistan's economic growth, there is an architectural development of Ashgabat as a unique city in the Eurasian territory. The construction of unique buildings, monuments, cultural and historical zones is architectural feature of "new Ashgabat". The city is listed in the Guinness Book of records for a number of architectural achievements. At current moment, the architectural image of the city is represented by the dominance of white marble as the main building material, the embodiment of national symbols in various objects, grandiose symbolic monuments. In the new architecture it can be pointed the respect for national and life values: love, family, health, well-being and development. The white color of buildings as an urban color concept is positive for the psycho-emotional state and the health of citizens.

Architectural image of Ashgabat is a socio-cultural phenomenon expressed in unique and ambitious forms: modern buildings reflect the history, culture and traditions of Turkmenistan. It can be noted that in this city there are signs of a neo-city, expressed in architectural innovations and increasing the comfort of urban environment. Further development of the city is seen in the context of the adopted course with an emphasis on ecological urbanism.

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