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PRESERVATION AND SUSTAINABILITY OF TRANSCULTURAL HERITAGE IN HISTORICAL URBAN SITES: NIĞDE CASE

ABSTRACT

Cultural heritage sites; in addition, to cover natural, cultural, historical and archaeological characteristics of the site, it also covers ecological settlements where traditional building material and appropriate construction techniques are used in space and the buildings. Niğde historical city center, which dates back to prehistoric times; is an important settlement with its open-green areas, traditional houses and life culture, as well as important transcultural heritage areas. Within the scope of the research, besides sustainability of historical city center of Niğde as an ecological settlement, it is aimed to develop proposals both in planning and design seals by considering natural/cultural landscape features and protection plan which has been preserved for centuries in the design of traditional settlement areas. Physical environment conditions and socio-cultural structure of traditional settlement texture in Niğde Historical City Center were examined and the current situation of the research area was evaluated according to the European Union Sustainability Indicators. In addition, using problem analysis method, problems and opportunities of the area were identified in order to determine the effects of traditional settlement pattern on urban identity. In this respect, the current situation was evaluated and suggestions for the sustainability of the historical city center were developed. The aim of this research is to be a guide in implementations realized by the local government, planners, designers and local people and to contribute to transcultural heritage areas which have global importance as well as Niğde City.

Keywords: Conservation, Cultural Heritage, Transcultural heritage, Niğde

1. INTRODUCTION

Cultural heritage sites; in addition, to cover natural, cultural, historical and archaeological characteristics of the site, it also covers ecological settlements where traditional building material and appropriate construction techniques are used in space and the buildings. In addition to the physical environment of these areas, their social, cultural, economic and political components also gain different values to the urban / regional identity. However, according to the statement of Yıldız and Erdoğan (2018), the transcultural heritage, which has a unique character with its natural and cultural values and identity, is shaped to the extent allowed by natural environmental conditions in the process. However, as a result of human activities, technological developments and changes, which emerged due to population growth, pressures on traditional settlement character and ecological environmental factors have increased. In this context, the largest pressure was experienced by the historical city centers, which is the traditional settlement texture.

Niğde historical city center, which dates back to prehistoric times; is an important settlement which its open-green areas, traditional urban pattern and vernacular houses and life culture, as well as important transcultural heritage areas. Within the scope of the research, besides sustainability of historical city center of Niğde as an ecological settlement, it is aimed to develop proposals both in planning and design seals by considering natural/cultural landscape features and protection plan which has been preserved for centuries in the design of traditional settlement areas. Physical environment conditions and socio-cultural structure of traditional settlement texture in Niğde Historical City Center were examined and

the current situation of the research area was evaluated according to the European Union Sustainability Indicators. In addition, using problem analysis method, problems and opportunities of the area were identified in order to determine the effects of traditional settlement pattern on urban identity. In this respect, the current situation was evaluated and suggestions for the sustainability of the historical city center were developed. The aim of this research is to be a guide in implementations realized by the local government, planners, designers and local people and to contribute to transcultural heritage areas which have global importance as well as Niğde City.

2. MATERIAL AND METHOD

The main material of the research is Niğde which is a first-degree archaeological site (Niğde Castle and Castle Park) declared by the decision of the Regional Board for the Protection of Cultural and Natural Assets, dated 15.07.1978 and numbered 1207; first and third-degree urban and archaeological sites (Kale and Alaaddin Neighborhoods) declared by the decision of the Regional Board for the Protection of Cultural and Natural Assets, dated 17.09.1983 and numbered 1535 and first-degree urban sites (Alaaddin Hill and Eski Saray Neighborhoods) declared by the decision of the Regional Board for the Protection of Cultural and Natural Assets, dated 13.07.2000 and numbered 1305 (Figure 1). In this research, the criteria, models, indicators and application examples developed by different institutions and organizations have been investigated in order to gain cities "ecological" status. In this context, it was evaluated according to the "European Union Urban Sustainability Indicators" using the "European Sustainable Cities and Towns Charter" as a framework developed by Mega and Peterson (1998) within the framework of a study conducted by the European Union. In addition, problems and possibilities of Niğde Historical City Center have been identified and suggestions were offered.

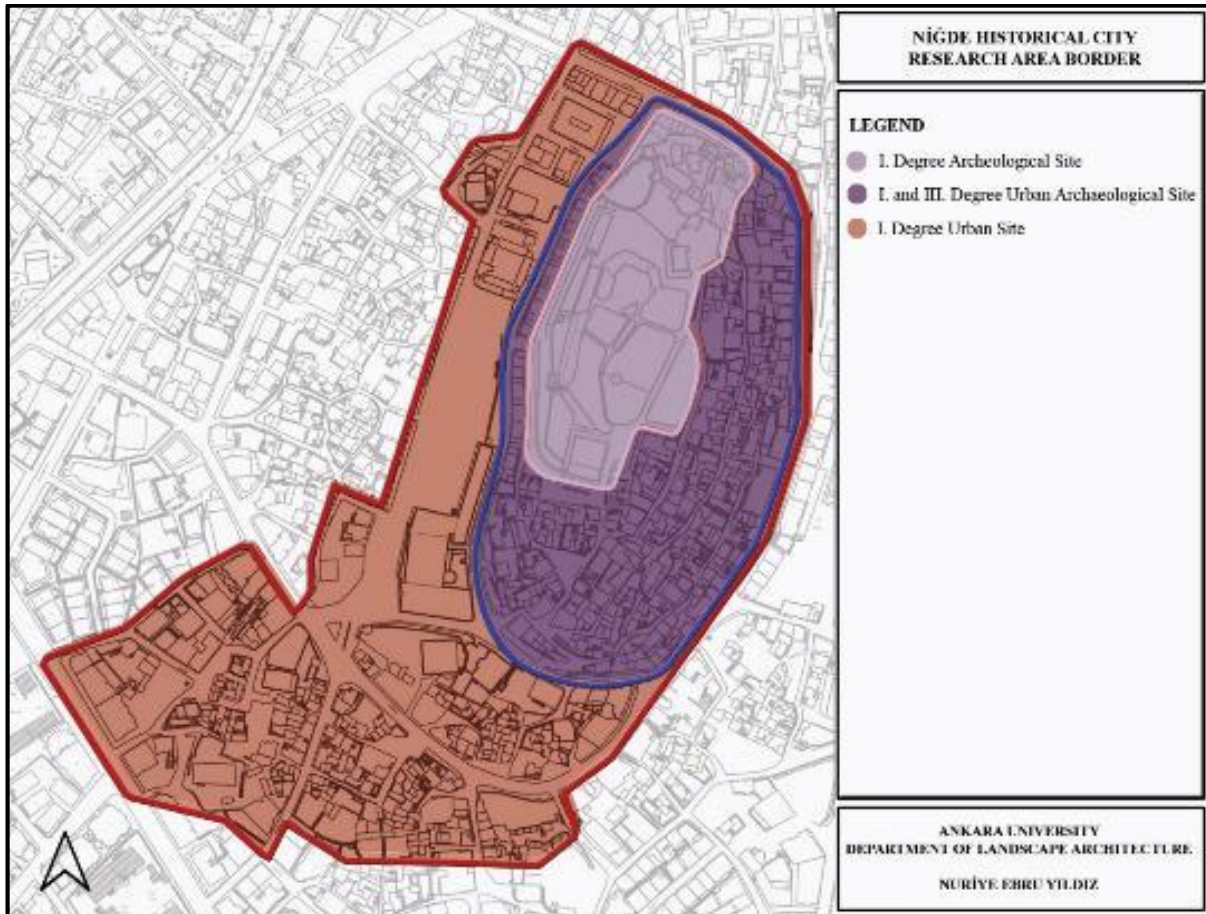


Figure 1. Location of the Research Area (Original 2017)

3. RESEARCH FINDINGS

3.1. Traditional Settlement Texture of Niğde

In line with the findings obtained as a result of the archaeological excavations carried out in 1962 in Niğde Mounds, it was determined that the region was also used as a settlement area during the prehistoric times. The settlement date of Niğde is classified in 11 periods as Neolithic, Chalcolithic, Hittite and Assyrian, Persian and Helen, Roman and Byzantine, Seljuk, Eretnans, Karamanoğulları, Ottoman, National Struggle and Republic. Alâaddin Hill, which is the settlement of different civilizations and the highest point in the historical city center of Niğde, constitutes the first settlement areas of Niğde (Figure 2) (Yıldız, 2017; Yıldız and Erdoğan, 2018). Civilizations that lived in Niğde throughout history, have built monumental buildings and traditional houses with traditional masonry system by using traditional Niğde stone and wood as building materials. However, after the 20th century, as in all Anatolian cities, the traditional urban texture in Niğde has been replaced by contemporary but unidentified buildings with a new planning process. Reinforced concrete structures, has replaced the traditional buildings as other cities as Niğde and this caused rapid deterioration of the traditional texture in the historic city center. Settlements in Niğde Historical City Center have largely disappeared and very few monumental buildings / cultural assets have survived up today. Although the residential buildings in Kayabaşı District, located at higher points of the city, are in good condition; however, they could not preserve their traditional texture features. For this reason, the area formed by the traditional Niğde houses and the Cullaz Street in the Alaaddin Hill and its surroundings in the Niğde Historical City Center was chosen as the study area (Figure 3). Traditions, beliefs, local conditions, volcanic rock formations, climatic conditions, topographical structure have influenced Niğde's natural and cultural landscaping character as well as the formation of traditional settlement texture. Beginning from the north slopes of the valley, the structures, streets and neighbourhoods in accordance with the topographical characteristics and inorganic form extends gradually towards the center of Niğde (Figure 4).

The streets, which are bounded by courtyards and garden walls of two to three-storey houses were shaped by the cantilevers and balconies on the facade creating an organic texture that narrows and expands (Figure 5). The most important open spaces that provide active and passive recreation opportunities to the local people are the squares that were formed by the intersection of streets embellished with fountains in the urban fabric. It is also possible to see "dead-end streets" in the neighbourhoods where Niğde (Yellow trachyte tuff) stone is used as covering material (Yıldız and Erdoğan, 2018).

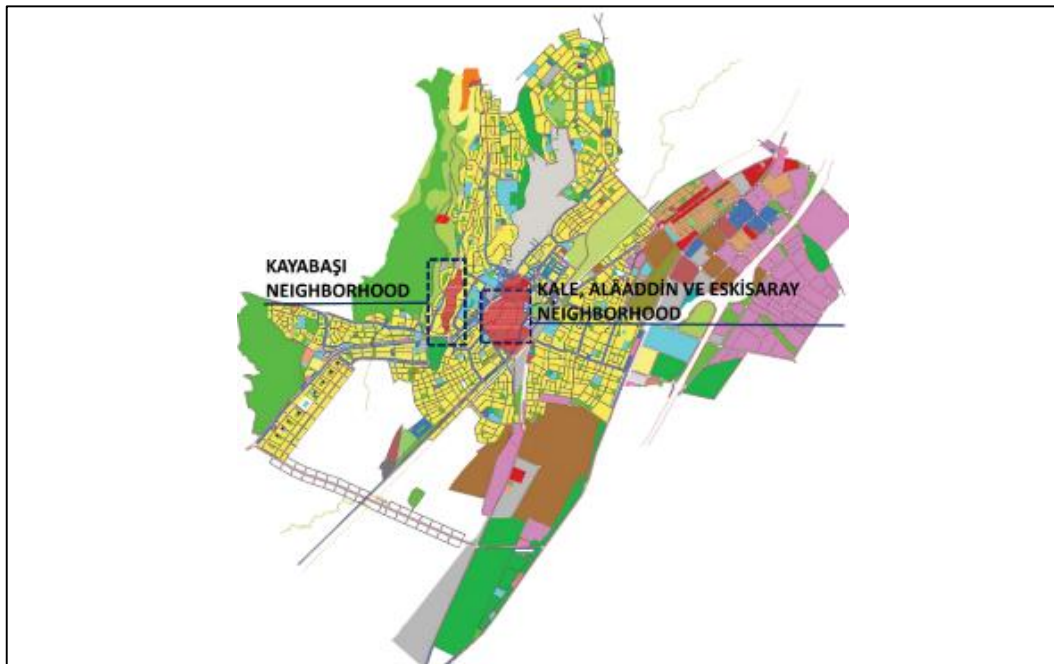


Figure 2. Niğde Province Land Uses (Niğde Municipality, 2017)

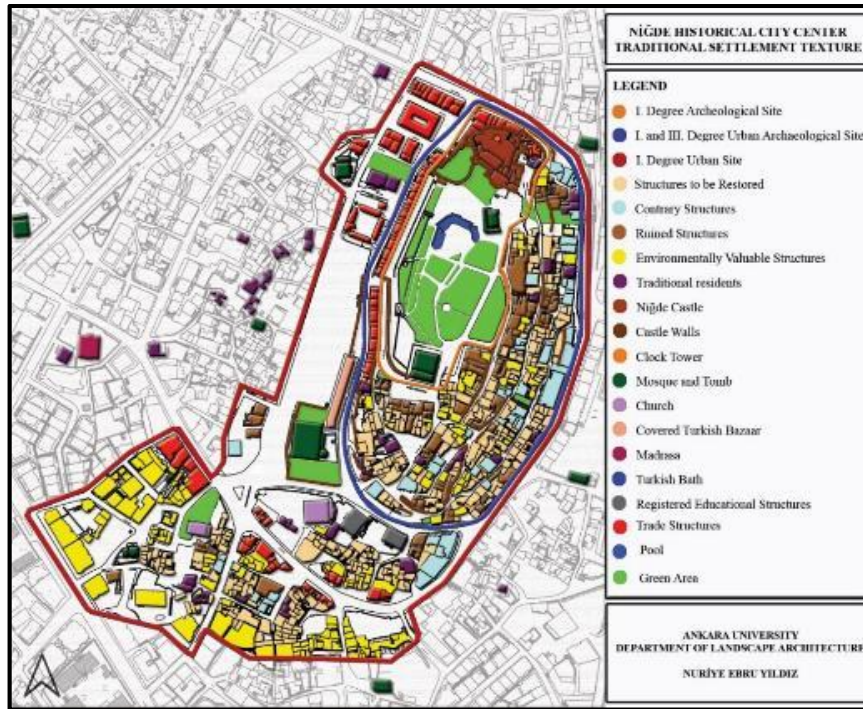


Figure 3. Niğde Province, Traditional Settlement Texture (Original, 2017)



Figure 4. Cullaz Street, Traditional Street Texture (Original, 2017)



Figure 5. Niğde Province, Traditional Residential Texture (Original, 2017)

The fortress walls on the north-south axis and the structures located inside and outside the walls of the Alaaddin Hill parallel to the topographic curves are positioned to orient east and west. In the neighbourhoods located around the Alaaddin Hill, common areas in the buildings with residential and courtyard entrances in the east were directed towards the south and southeast in accordance with the slope of the land. The high walls of the courtyards provide houses both from sunshine during the summer months and cold winds during the winter. Besides, houses were built according to the dominating wind direction to supply air circulation and the inner spaces of the houses (Yıldız and Erdoğan, 2018). The traditional urban texture of Niğde, having a geographical and geological structure similar to Kayseri and

Nevşehir, is also similar to these provinces. Soft and porous volcanic yellow trachyte tuff stone, which is the traditional building material of the region was used in the flooring of the streets, houses as a building material. The surroundings of Hasan Mountain are rich in volcanic tuff rocks, which are suitable for shelter constructions. In traditional residential texture, volcanic yellow trachyte tuff rocks have been used in the construction of caves, underground cities and traditional Niğde houses throughout history because of its easily processable nature (Figure 6 and Figure 7).



Figure 6. Volcanic Yellow Trachyte Tuff (Niğde) Stone (Original, 2017)



Figure 7. Niğde Province, Traditional Street Texture (Original, 2017)

Niğde stone is a yellow trachyte tuff rocks that have hardened after contacting with air and has a high resistance to cold weather conditions. Besides, this stone type, which is an effective material in terms of insulation, ensuring that the interior is warm in winter, and cool in summer. Thus, the use of technologies such as air conditioners and refrigerators and their harmful effects on the environment are eliminated. Therefore, it brings the effective user of energy as well as environmentally sensitive ecological design. According to the Reconstruction Plan for Niğde Eski Saray and Kale neighbourhoods, the first-degree urban site border covers a total area of 15 ha (Table 1). Within the boundaries of the protected areas and Cullaz Street; There are approximately 50 registered buildings (30 civil, 20 monumental buildings) consisting of interior and exterior castles, clock towers, mosques, masjids, churches, residences, schools, madrasas, bedestens, fountains and tombs. In addition to the registered buildings located within the boundaries of the 1st degree urban protected area, there is 1 traditional market area, 1 school, residential and commercial buildings (Table 2).

Table 1. Eski Saray and Kale Neighborhoods Land Use (Niğde Municipality, 2017)

Land Use	Old Reconstruction Plan (Ha)	Current Reconstruction Plan (Ha)	Environmental Status Project (Ha)	Conservation Plan Revision (Ha)
Residential Area	5,80	7,10	7,10	6,10
Trade Area	0,76	0,80	0,60	0,70
Market Area	0,53	0,62	0,75	0,45
Green Area	1,81	0,90	1,00	1,80
School Area	0,16	0,20	0,20	0,20
Mosque	0,56	0,45	0,45	0,27
Covered Turkish Bazaar	0,11	0,11	0,11	0,11
Castle and Clock Tower	0,22	0,22	0,22	0,22
Parking and Road	5,05	4,60	4,57	5,15
Total	15,00	15,00	15,00	15,00

Table 2. Traditional Niğde Structures (Original, 2017)

Traditional structures

Visual (Original, 2017)

Niğde Castle



Clock tower



Alaaddin Mosque / Great Mosque



Rahmaniye Mosque



Sungur Bey Mosque and Tomb













Cullaz Masjid



Greek Orthodox Church



Traditional structures	Visual (Original, 2017)	
Armenian Church		
Ak Madrasa		
Dumlupınar Primary School		
Sokullu Mehmet Pasha Bazaar		
Hatiroğlu Fountain		
Cullaz Fountain		

3.2. Traditional Niğde Residents

Niğde Historical City Center has the appearance of a typical Anatolian Turkish city with its vernacular architectural quality and street texture. The roads and structures in the traditional urban fabric are designed at the human scale (Figure 8). The widths of the streets formed in organic texture vary between 2-6 m and the streets are limited by the garden and courtyard walls of the houses (Figure 9). Traditional Niğde houses were built with a massive stone structural system with a courtyard, bay window and generally two floors. There are three types of housing: without open space, garden and with courtyard. Wooden beams placed on the walls of these houses at intervals of 1.5-2 m are complementary structural elements of the stone construction (Figure 10).



Figure 8. Niğde Traditional Street Texture (Original, 2017)



Figure 9. Niğde Traditional Urban Texture (Original, 2017)



Figure 10. Niğde Residences with Garden, Gardenless and Courtyard (Original, 2017)

In addition to the beams, the wooden structure tool has been also used indoors and windows, ceiling and floor coverings. Residential structures are usually flat-roofed. It has been used as a “delicate” flooring formed from reed and compacted soil on wooden beams. Usually, flat roofs are surrounded by parapet parapet at the level of the outer wall. In addition, profiling is used as a finishing element on the facades. In order to ensure the drainage of rainwater, stone gutters were placed at the bottom level of the parapets and borders (Figure 11). In order to provide privacy in the houses, the ground floor has been raised to reduce the relationship with the street, a small number of windows are located on the facades facing the street and the garden/courtyard walls are built high. In the houses built having 1-2 storeys, generally, the lower floor and the upper floor are constructed independently from each other (Figure 12). The connection with the upper floor was provided by a ladder from the garden (Niğde Provincial Culture and Tourism Directorate, 2015). The space arrangements of the houses vary according to the land formation and topography, the direction of the sun and the dominant wind. Ground floor plans differ from upper floor plans in houses built with and without sofas. The upper floors are reserved for living spaces, and the ground floor serves different purposes (Özbek, 2010).



Figure 11. Traditional Niğde residence, gutter (Original, 2017)



Figure 12. The courtyard of the traditional Niğde residence (Original, 2017)

3.3. Open-Green Areas in Niğde Historical City Center

The number of open-green areas designed in the historical city center is very little due to the fact that the historical city center of Niğde was built on the topographically inclined Alaaddin Hill and the local people live in the city as well as the Niğde Vineyards located in the western and northern parts of the city. It is possible to classify the open-green areas in the traditional urban texture as the courtyards and gardens of houses and monumental buildings, the city park and the square. Green areas constitute approximately 2 hectares of a first-degree urban protected area with 15 hectares. The most important open-green area of the historic city center of Niğde is Kale Park located within the borders of Niğde Castle (Figure 13 and Figure 14). Kale Park, which is an important city park for the city of Niğde, covers units such as a children's playground, fitness area, ornamental pool, pergola, sitting area, viewing terrace, walking path and service structure designed to serve the visitors. Rubber building materials were used as flooring in the children's playground and fitness area, where plastic and metal playgrounds and sports equipment are located in Niğde Park (Figure 15).



Figure 13. Niğde Kale Park, General View (Original, 2017)



Figure 14. Niğde Kale Park, Open-Green Areas (Original, 2017)



Figure 15. Children's Playground and Fitness Area (Original, 2017)

In the flooring of the pedestrian and service roads located in the park, permeable surfaces have been created in terms of infiltration of rainwater with the use of locked parquet and andesite cube stone as building materials. Wooden building material was used in the pergola in the park, and shingel building material was used in the top covering. There are wooden benches, wooden and metal trash cans, high and low illumination elements, Turkish Flag pole, and the object with the Atatürk silhouette as the urban furniture in the park. In addition, in the historical process, there is an iron cast position ball used for defense purposes in the First World War, and for warning purposes during Ramadan. This position ball is located in the position directed to the south west at the high point of Kale Park (Figure 16 and Figure 17). In addition to Kale Park, other open-green areas in the historical city center are the gardens and courtyards of traditional Niğde residential and monumental structures (Figure 18). Within the boundaries of the first degree urban protected area, elevation differences were solved with retaining walls and steps built with stone masonry.



Figure 16. Niğde Kale Park, urban furniture (Original, 2017)



Figure 17. Niğde Kale Park, Urban Furniture (Original, 2017)



Figure 18. Traditional Niğde Houses and Their Gardens (Original, 2017)

The most common plant species seen in the open-green areas in the historical city center are *Pinus nigra*, *Pinus brutia*, *Picea orientalis*, *Cedrus libani*, *Thuja orientalis*, *Thuja plicata*, *Acer negundo*, *Robinia pseudoacacia*, *Populus nigra*, *Koelreuteria paniculata*, *Fraxinus excelsior*, *Elaeagnus angustifolia*, *Juglans regia*, *Prunus armeniaca*, *Malus communis*, *Viburnum opulus*, *Ligustrum ovalifolium*, *Hibiscus syriacus*, *Vitis vinifera*, *Rosa sp.* Other open areas are small-scale squares formed at the intersection of the streets and in front of fountains and mosques, the big-square bordered by Sungurbey Mosque located on the south entrance of the castle, Dumlupınar Primary School, the Armenian and Greek Churches and the traditional Niğde market area located in the west side of the Niğde Castle (Figure 19, Figure 20).



Figure 19. Traditional market area (Gabriel, 1962)



Figure 20. Traditional Market Area (Original, 2017)

3.4. The Evaluation of Niğde Historical City Center within the Scope of European Union Urban Sustainability Indicators

In order to gain “ecological” status to settlement areas, it is not enough to provide only the physical conditions and requirements; but also, local people should have sustainable qualifications in subjects

such as level of consciousness, socio-cultural and economic requirements (Akanoğlu, 2009). In this section, as well as the physical environmental conditions of the first-degree urban site located in Niğde Historical City Center, the level of consciousness and socio-cultural structure of the local people are also examined. The current situation is evaluated according to the European Union Urban Sustainability Indicators of the research area. Taking into consideration of the traditional settlement texture of the research area, the criteria of “traditional housing texture”, “green area adequacy”, “effective water use” and “construction and wreckage wastes” have been added to 13 European Sustainability Indicators. In other words, the current status of the research area was evaluated with a total of 17 criteria to determine the ecological design quality of the research area (Table 3).

Table 3. The Evaluation of Niğde Historical City Center within the Scope of European Union Urban Sustainability Indicators

Sustainability Indicators	Current Situation of Niğde Historical City Center
Sustainable Land Use	It is seen that in the settlement texture with a population of approximately 1605, building and landscape design applications are carried out in accordance with the natural landform and topography. Design applications, which are performed by taking into consideration the natural environmental features of the area such as sunbathing, wind direction, topography, are integrated with the correct use of space. The settlement center, which is located on the Alaaddin Hill, is located on the flat land where the Misli and Bor Plain meet. The traditional settlement located within the boundaries of the 1st-degree urban protected area is a sustainable settlement as it is close to the agricultural areas and Niğde vineyards supporting both tissue mass-space, effective land use, urban development and food production.
Green Area Adequacy	In Niğde I Degree urban site area, the number of green areas (20.000 m ²) were proportioned to the total population (1605 people) of Kale, Alaaddin and Eskisaray neighbourhoods and the amount of green area was determined as 12.46 m ² per person. It is seen that the amount of green area per capita is above the limit value (10 m ²) specified in the regulation due to the low population of the neighbourhoods within the boundary of the research area or the presence of a city park. However, when the total green area amount (20.000 m ²) of the research area and the total population of the city center of Niğde (137.194 people) are evaluated, it is determined that this amount is below the value in the regulation and is approximately 0.15 m ² .
Local Mobility and Transport	It is open to the use of all motor vehicles in Niğde city center, except for narrow streets. In the traditional settlement texture, narrow streets cannot be reached by cars. There are streets suitable for bicycle use in the protected area, but it is seen that bicycle use is not common in the region/city.
Traditional residential Texture	Eco-based approaches have been adopted in the traditional urban area in which the houses were built with environmentally sensitive, breathing volcanic yellow trachyte tuff stone (Niğde stone) with high resistance to climatic conditions. In this context, the courtyards, which are integral components of the houses, provide a private open space for each building. In addition, it provides a structurally low density urban area and an ecological, psychological and aesthetically distinctive and qualified urban environment. The high walls of the courtyards provide houses both from sunshine during the summer months and cold winds during the winter. A limited number of windows were opened to the south and west facades of the buildings in order to protect them from the effects of the sun rays. Besides, houses were built according to the dominating wind direction to supply air circulation and ventilation for the inner spaces of the houses.
Effective Water Use	It was determined that concrete parquet and andesite cube stone were used as a floor covering materials in pedestrian and vehicle roads in the historical city center. In this context, it is seen that permeable surfaces have been created in the traditional settlement texture regarding the infiltration of rainwater underground. By sloping the roads on the streets, the drainage gutters of the rainwater passing to the surface flow were provided. In order to ensure the flow of rainwater on the roofs of the houses, stone gutters were placed at the bottom level of the parapets and borders.
Energy-saving	In the design of the building, the sun and the wind direction were taken into consideration. Courtyards and semi-open spaces with high walls providing air circulation were designed according to the wind direction and the sun. Thus, there was no need for technologies such as air conditioners by creating warm spaces in winter and cool spaces in summer by the use of local building material which is stone; a good isolator as far as climatic factors are concerned. In addition, solar energy is used to provide hot water. Therefore, energy is used effectively in the settlement area.
Accessibility to Public Areas and Services	The residential areas in Niğde Historical City Center are within walking distance to trade, education, health, banks, markets, shopping centers, cemeteries and open-green areas. Therefore, there is no need for public transportation. However, access to agricultural land and Niğde vineyards from the Alaaddin Hill can only be provided by motor vehicles.

Sustainability Indicators	Current Situation of Niğde Historical City Center
Solid waste	According to the data of Niğde Provincial Directorate of Environment and Urbanization, Niğde Municipality collects about 117 tons of solid waste per day, within the borders of the adjacent area. The collected solid wastes are transported to Hıdırlık Mevkii Solid Waste Regular Storage Area, which is 7 km away from the city center, by the use of regular storage methods.
Construction and Wreck Waste	Within the scope of Niğde Municipality Excavation Soil and Construction / Wreck Waste Regulation; the stone building material, which is obtained from the ruined traditional buildings and ruins located in Niğde Historical City Center where available, and used again in restoration and repair works. Wastes in the filling of the sand pits in Hıdırlık Locality determined by Niğde Municipality according to the data of the Provincial Directorate of Environment and Urbanization.
Waste water	2,336 tons of treatment sludge was created at the Wastewater Treatment Plant by the Niğde Municipality. Treated water is used in open-green areas and in the irrigation of fields for agricultural purposes, and mud cake is sent to landfill areas as a solid infrastructure (Anonymous 2016).
Noise pollution	Motor vehicle usage is low in the traditional settlement texture. Therefore, there is no noise caused by vehicle traffic. However, the noise originating from the historical Niğde Public Market located on the 1st degree urban site and established on Thursdays is creating a noise problem in the traditional housing area.
Sustainable management in public institutions	Niğde Governorate Provincial Directorate of Culture and Tourism, Nevşehir Regional Directorate of Conservation of Cultural Heritage, Niğde Municipality, Niğde University and Ministry of Environment and Urbanization organize workshops and seminars with the aim of raising awareness and education for the purpose of increasing the quality of life and ensuring its sustainability in the traditional settlement area.
Products to Support Sustainability	In Niğde Historical City Center; Handicraft applications such as weaving, leatherwork, felt making, blacksmithing, copper making, masonry and plastering are carried out and contribute to the local economy of Niğde.
Use of Technology	Telephone and mobile phone use are common in residences. Internet access is mostly provided through internet cafes.
Public Satisfaction	A total of 110 complaints were received in Niğde Municipality regarding air, water, waste and noise. The complaints were resolved 100% by the municipality. In this context, it is possible to say that the satisfaction of the public is provided by local administrations (Anonymous 2016).
Local Ecological Support	Environment-themed painting, poetry and design competitions such as “protection of the environment” and “the environment of my dreams” are organized in the educational institutions by the Provincial Directorate of Environment and Urbanization of Niğde Municipality. “Bicycle”, which is a nature-friendly means of transportation, is given to the students who are ranked in the competition. With the cooperation of Niğde Provincial Directorate of National Education, seminars titled “Environment Sensitivity Begins with Education”, “Waste Management and Environment”, “Environmental Awareness”, “EIA and Environmental Permits” and “Medical Waste” are given to students and their parents. In addition to the seminars, a “waste battery collection” campaign was launched in order to raise awareness of students on waste materials. In the traditional settlement texture, local people are partially respectful and sensitive to the ecological structure and environmental resources.
Local Air Quality	By Niğde Air Quality Measurement Station, air for 5 basic pollutants such as SO ₂ (sulfur dioxide), NO ₂ (nitrogen dioxide), CO (carbon monoxide), O ₃ (ozone), PM ₁₀ (the most important pollutant particles affecting human health in the air) quality index was calculated and the air quality index of Niğde City Center was determined as “sensitive” (Ministry of Environment and Urbanization, 2017). It has been determined that the air quality of Niğde city center has decreased due to manufacturing and industrial enterprises, mining enterprises, exhaust emission gases of motor vehicles and domestic heating. In this context, in line with the measurements made throughout the city; inspections were increased and local people were made aware of the use of quality liquid / solid fuel and natural gas. At the same time, efforts to increase the amount of green space in the city center have been initiated and regular inspections of motor vehicles' exhaust measurements and industrial institutions have been granted emission permits.

3.5. Problems and Opportunities for Niğde Historical City Center

The problems identified within the scope of land and survey studies carried out in the research area:

- There is an inconsistent structure that will impair the integrity and homogeneity of the historical urban fabric in the first-degree urban site area (Figure 21),
- The new constructions in the residential area in Niğde City Center has disrupted the silhouette of the Alaaddin Hill,
- The traditional settlement pattern lost its original function by means of idle structures,

- The zoning approach in the preservation plan does not contain the necessary details, there are gaps in the application,
- Solar collectors, satellite receivers, urban reinforcement elements that disrupt street texture, which was established to use solar energy are creating visual defects,
- There is visual pollution in the area caused by the constructional additions to traditional houses and structures in ruins (Figure 22 and Figure 23),



Figure 21. Buildings Creating Visual Disturbance in the Traditional Texture (Original, 2017)



Figure 22. Ruined Buildings (Original, 2017)



Figure 23. Neglected Street Texture, and Additions Giving Harm to the Aesthetical Quality of the Building Facade (Original, 2017)

- The walls and frescoes of the monumental buildings were damaged due to the environmental conditions,
- Negligence and destruction is seen in the facades and courtyard walls of the houses in the residential area (Figure 24 and Figure 25),

- Signs that are not suitable for spatial identity is seen on the facades of traditional buildings with different functions,
- The trade areas on the western slope of the Alaaddin Hill have spoiled the original identity of the traditional settlement texture (Figure 26),
- Non-holistic landscape design approaches are seen in the traditional settlement texture,
- Natural plant species of Niğde Province are not used in urban open-green areas.



Figure 24. Incompatible Urban Furniture with Traditional Texture (Original, 2017)



Figure 25. Neglected Residential Facades and Courtyard Walls (Original, 2017)



Figure 26. Trade Areas (Original, 2017)

The potentials determined within the scope of land and survey studies carried out in the research area are:

- Traditional settlement area is situated on a slopy land,
- Since the sloping areas are open to the wind, natural air circulation is provided in the buildings as well as the courtyard and garden spaces,

- Sloping areas provide natural drainage for rainwater enabling water collection, storage and flow control in the urban area,
- The Kale Park, which has the quality of a city park within the boundaries of the research area, offers an alternative with its natural qualities of recreational area,
- The local administrations have a positive and comprehensive approach towards the protection and development of Niğde Historical City Center,
- Local people have willings to develop environmental awareness and improve the quality of urban life,
- Traditional settlement texture in Kayaraddı and Tepebağları is very close to the natural protected area and Niğde vineyards (2,5 km); it will be easy to establish the connection between these areas to develop an integrated preservation approach.

4. CONCLUSION AND SUGGESTIONS

Within the scope of the research, land-survey studies have been carried out in order to protect, develop and sustain the first-degree urban site located in the historical city center of Niğde Province in terms of ecology, spatial and socio-cultural values. The current status of Niğde Historical City Center has been evaluated due to 4 main themes namely sustainable land use, the quality of the traditional settlement texture, effective water use and energy saving and the local mobility and transportation. Then, suggestions have been developed according to the evaluation criteria.

Sustainable land use: It is seen that the historical city center of Niğde has been designed integrated with the natural environment and topography both in physically and functionally. However, it was determined that the open-green areas in the traditional urban texture were insufficient and the existing green areas were neglected.

Traditional settlement texture: Monumental and residential buildings are at a human scale and provide climate comfort for individuals. It was determined that long-lasting, durable, easily accessible, recycling and sustainable traditional building materials, stone and wood were used in the construction of buildings. However, the silhouette of the Alaaddin Hill, which is in contrast with the traditional character of the area, neglected buildings, the subsequent additions to the buildings deteriorate the integrity of urban silhouette. The use of urban furniture such as signage, lighting and electric pole, trash bin, which are not suitable for the building identity spoils the original character of the traditional settlement texture.

Efficient water use and energy saving: It is seen that sun, wind and rainwater are effectively utilized in the design of the traditional settlement area where natural and cultural landscape features are taken into account. In this context, it is possible to say that traditional buildings in Niğde have high insulation value and provide energy savings.

Local mobility and transportation: It is seen that all urban roads, except for narrow streets in the traditional residential areas, are open to motor vehicle use. However, it has been determined that there is no need for the use of motor vehicles in the historical city center since it is within walking distance to all services such as to trade, education, health, banks, markets, shopping centers and open-green areas. In this sense, there is no transportation problem in the field of research on vehicle and pedestrian access.

As a result of the site analysis studies and the evaluations, suggestions have been developed for Niğde Historical City Center:

- First of all, traditional Niğde residences and monumental buildings in the historical city center of Niğde should be examined by experts and repaired with appropriate restoration techniques.
- The additions and alterations into the houses should be removed in relation to the traditional urban fabric and the buildings that have lost their function should be used and functioned.
- The streets combining the registered residential buildings to the Kible Street, Nusreddin Street, Kelikçi Street and Üçok Street, should be rehabilitated and a cultural route has to be arranged showing the characteristics of a vernacular district of Niğde.

- The square bordered by the south gate of Niğde Castle, Sungurbey Mosque, Dumlupınar Primary School, the Greek Orthodox and Armenian Churches should be designed as a “cultural square” reflecting the traditional settlement pattern of the region emphasizing the culture of Niğde.
- Other small-scaled squares and traditional market in the traditional settlement texture should be reorganized. Sub-tree seating units should be arranged enriched with vegetable material in these areas.
- The castle / fortification walls, towers and gates on the Alaaddin Hill should be maintained and repaired and an entrance point welcoming the visitors should be created at the north entrance to Niğde Castle.
- The period annexes in the commercial buildings located in the north and north-west of the castle should be removed and the decorative facade and roof garden arrangements should be done in harmony with the traditional texture,
- In the traditional settlement texture, the houses, courtyards, garden walls and doors that give organic form to the streets should be preserved with their original formation and bay windows should be repaired,
- The widths and existing slopes of the stairways must be preserved in their original position and steps and walls must be rehabilitated.

This research is aiming to be a guide in the practices to be carried out by the city administration of Niğde and the local administration, planner, designer and local people, and to contribute to the transcultural heritage sites that are of global importance as well as Niğde City. This research will enable to predict the possible consequences of potential interventions and to eliminate the negative effects with the urban design studies to be carried out in the fields of transcultural heritage. On the other hand, it is important that urban design works involving traditional settlement textures, which are expressed as transcultural heritage areas, are the priority action area of the multi-layered spatial planning process, instead of investigating these negativities after urban planning, design and implementation phases.

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