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Research Article

Adding Value to Outdoor Space with Modular Bird Houses Approach

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ABSTRACT

The aim of the study is to reveal the cultural values of bird houses used on the facades of buildings as a traditional approach and current design approaches for their use today. For this purpose, modular bird house designs that can be used in outdoor spaces were developed and the visual situation in the areas where they can be used was analyzed with the visuals prepared. As a result, with the use of modular bird house designs developed within the scope of the study, it will be possible to develop ecosystems for bird species in residential areas and open-green areas.

Keywords: *Bird house, Modular bird house, Outdoor, Space*

Modüler Kuş Evleri Yaklaşımı ile Dış Mekâna Değer Katılması

Öz

Çalışmanın amacı, geleneksel bir yaklaşım olarak yapıların dış cephelerinde kullanılan kuş evlerinin kültürel değerlerinin ve günümüzde kullanımına yönelik güncel tasarım yaklaşımlarının ortaya konulmasıdır. Bu amaç doğrultusunda dış mekânlarda kullanılabilecek modüler kuş evi tasarımları geliştirilmiş ve hazırlanan görseller ile kullanılabileceği alanlardaki görsel durum analiz edilmiştir. Sonuç olarak, çalışma kapsamında geliştirilen modüler kuş evi tasarımlarının kullanılması ile dış mekânların kimlik kazanması sağlanmakla birlikte yapılaşma alanları ve açık-yeşil alanlarda kuş türleri için ekosistemlerin geliştirilmesi mümkün olabilecektir.

Anahtar Kelimeler: *Kuş evi, Modüler kuş evi, Dış mekân, Mekân*

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I. INTRODUCTION

The word tradition is defined as deep-rooted habits that can be passed from one generation to another and that turn into a pattern of behavior as a result of this hand-over-hand situation that lasts for generations. The origin of the word tradition comes from the Latin word "tradere" and its English equivalent is "tradition" and its Arabic equivalent is "an'ane" [1]. The concept of tradition, which includes a wide range of human behaviors, can only be maintained due to habits [2] and is a current issue due to the attitude of the modern age [3]. Traditions express a temporality based on iterations. One way of organizing the future is through the past, and the orientation towards the past is inherent to tradition. Traditions are a routine because of their slow pace of change. However, this gives the tradition a comfortable and reassuring quality [4]. It is almost impossible to know the founding dates or founders of traditions. Each of them emerged at some stage of the historical process, served mankind in different fields, and continues to serve today. In the current period, there are traditions in many fields, the first examples that come to mind are the tradition of art, the tradition of religion, the tradition of politics (state tradition), the tradition of literature and the tradition of science. The lifespan of these examples represents thousands of years of history [1].

Tradition is not customs and traditions as understood by almost everyone, but a historical-cultural heritage in its entirety, including customs and traditions [5]. In this context, it is possible to state that it is natural for traditions that constitute culture to be formed as a result of interactions with other areas of life and to be transferred from the past to the present by transforming and changing [6].

When we look at the historical process, animals have left their mark on people's lives, sometimes because they are aesthetically evaluated and sometimes because they enjoy their care. In this context, birds, one of the most important creatures from the past to the present, have been used in the art branches of different cultures. For example, the bird theme has taken place in many fields such as architecture, painting, sculpture, literature, fashion, music and cinema. In the historical process, birds were given importance in Turkish societies because they were believed to bring good luck. Especially because they can fly, they were perceived as having a special power and therefore they were considered sacred [7].

Birds are known as creatures that can build their nests when left to their own nature. However, not only birds but all living creatures and their habitats can be harmed in the environment we use in common. Birds, which were one of the expressions of the sense of nature for people before the industrialization period, could not find a place for themselves in modern cities after the industrialization period. Therefore, it is possible to state that people's relationship with nature was more sincere before the industrialization period. In this sense, looking at Ottoman society as an example, it is possible to find hospitals, houses and similar structures built with many living creatures in mind. In particular, although it became a duty to protect birds with a hollow or hole to shelter them, over time this became a passion in the Ottoman Empire. Thus, bird holes turned into bird houses [8].

A. HISTORY OF BIRD HOUSES

In Turkish architectural art, bird houses are considered as a masterpiece of art. The approach of decorating the facades of buildings with bird houses started in the 16th century with the Ottoman architecture of the classical period, developed towards the end of the 19th century and became a very important detail element of national architecture [9]. When we look at the Ottoman period, it is seen that it was very rich in terms of such structures and they were built on the exterior surfaces of buildings such as mosques, barracks, madrasahs, inns, libraries, tombs, bridges, schools and residences built after 1375. These architectural elements were not only a nest for birds, but also an ornament for their location. In terms of their architectural compositions and construction styles, bird houses can be categorized into two groups: nests carved into stone or masonry or small-sized architectural designs made with different techniques and materials in the form of high relief mounted on masonry. The first group of bird houses are cells formed with bricks placed in different directions or eyes carved into the

surface of the stone wall, the entrance to which is provided by small arches. The second group of bird houses, on the other hand, were created as architectural models that were placed on a console positioned between the wall flesh or connected to iron rods coming from inside the wall [10]. Regarding the first group of bird houses, an image of the bird house in the outbuildings of the Tur-i Sina Church (Figure 1) and an image of the bird house in the Selimiye Mosque (Figure 2) were presented for the second group of bird houses.

Figure 1. *Image of the bird house in the outbuildings of the Tur-i Sina Church, İstanbul [11].*

Figure 2. *Image of the bird house in Selimiye Mosque, İstanbul [12].*

It is possible to encounter bird houses, which are given names such as sparrow palace, bird pavilion, bird house, bird exchange by researchers, in many settlements in Anatolia and Rumelia, especially in İstanbul [13]. Figure 3 presents image of the bird house on the Büyükçekmece Bridge in İstanbul.

Figure 3. *Image of the bird house at Büyükçekmece Bridge, İstanbul [14].*

There is a bird house carved out of stone on the north-facing part of the buttress supporting the eastern wall of the Second Bayezid Mosque in Amasya. The central part of the bird house has a bay window and is projected out with two consoles, and an entrance opening was created to the east and west. On the facades of the protruding part, there are two windows at the bottom and two pointed arched deaf windows at the top [15]. Figure 4 and Figure 5 presents images of the bird house in the Second Bayezid Mosque.

Figure 4. *Image of the bird house in the Second Bayezid Mosque, Amasya [15].*

Figure 5. *Another image of the bird house in the Second Bayezid Mosque, Amasya [16].*

The Ayazma Mosque is considered one of the richest collections of bird houses in İstanbul. Some of the seventeen bird houses in the Ayazma mosque, which can be called a bird house museum, are in partially good condition, while others are quite dilapidated. Especially, the bird house located on the west facade is distinguished from the others with its monumentality [10]. Figure 6 and Figure 7 presents images of the bird houses in Ayazma Mosque.

Figure 6. *Image of the bird house on the west facade of Ayazma Mosque, İstanbul [10].*

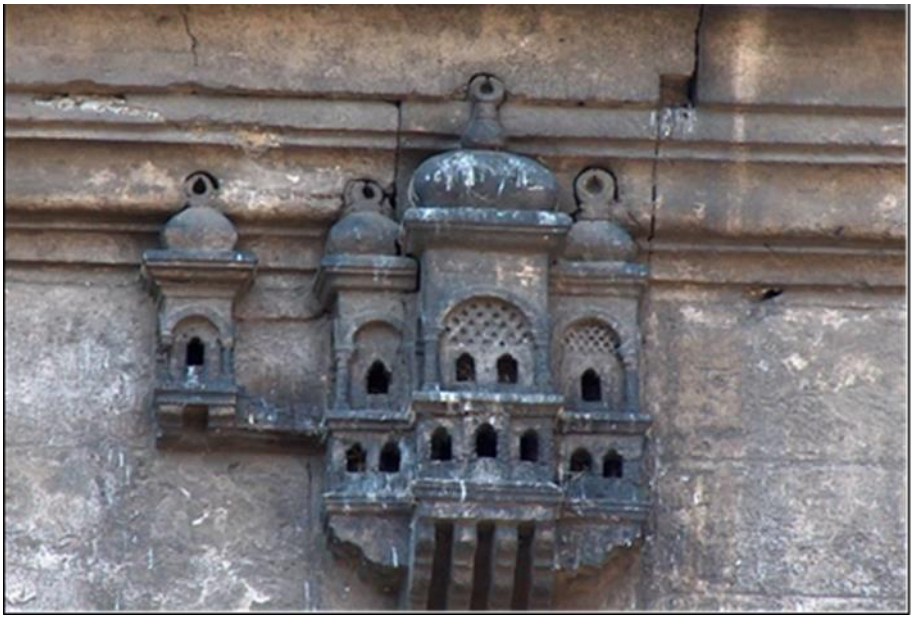

Figure 7. *Image of the bird house on the south facade of the Ayazma Mosque, İstanbul [10].*

Sulu Inn in Tokat is a building with a bird house. Built of brick, the bird house is arranged on a cantilever with two floors. However, the upper cover and part of the front part have not survived to the present day [13]. Figure 8 presents image of the bird house on the entrance facade of Sulu Inn.

Figure 8. *Image of the bird house on the entrance facade of Sulu Inn, Tokat [13].*

B. BIRD HOUSE APPROACHES TODAY

With the technology developed in recent years, bird houses can be made of concrete, wood, stone (marble, molded stone), plastic and ceramic materials. However, metal material is not a suitable material for use because it conducts heat and creates danger for birds in cold or hot weather [7]. Bird houses may face breakage and crumbling due to carelessness and lack of maintenance. For example, some wooden bird houses applied on the facades of wooden villas have not survived to the present day due to fire, weather conditions and lack of maintenance. From this point of view, it is possible to state

that the use of ceramics in bird houses is appropriate due to its ease of shaping and gaining strength by firing [17].

Examples of bird houses built today show that "S Brick" is suitable for swifts and other cavity-nesting birds without compromising the integrity or appearance of the building. The "S Brick", which takes up as much space as a single brick, is installed as part of the standard construction process. A plywood nest form is placed on its floor [18]. Figure 9 presents image of the bird houses called "S Brick".

Figure 9. *Image of the bird houses called "S Brick" [18].*

The box-shaped "Schwegler Lightweight Swift Box Type 1A" is an ideal bird house for incorporation into thermal insulation systems in external walls. The entrance of the bird house is circular and can be mounted flush with the wall surface. However, this bird house should be located on the sheltered facade of the building, at least 5 meters above the ground and under or near the roof. The dimensions of the product, made of wood and concrete, are 340mm (Width) x 135mm (Height) x 150mm (Depth) and weighs approximately 2.7 kilograms [19]. Figure 10 presents image of the bird house called "Schwegler Lightweight Swift Box Type 1A".

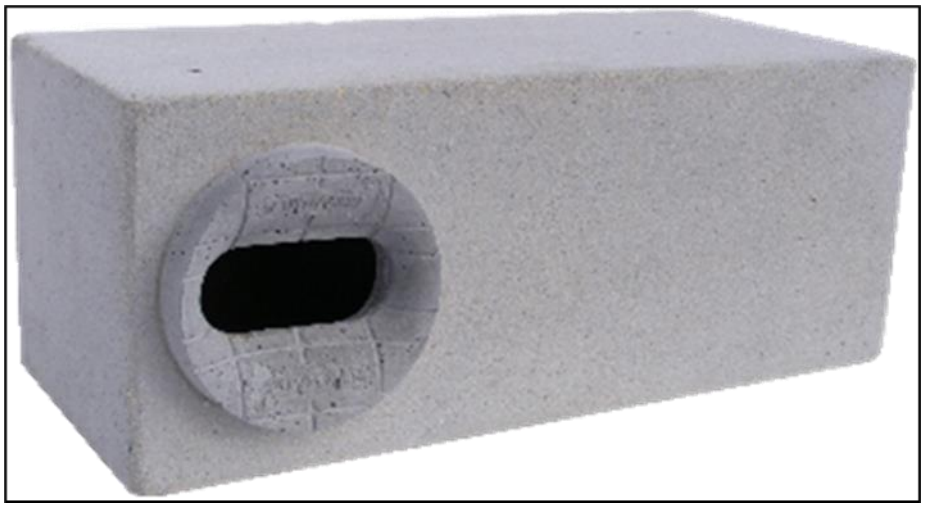

Figure 10. *Image of the bird house called "Schwegler Lightweight Swift Box Type Type 1A" [19].*

Another design, "Bird Bricks", is a bird house approach developed in response to the fact that birds living in cities are dependent on the buildings where people live and seek places to build their nests. "Bird Bricks" can be applied to any kind of brick building starting from 2 meters in height [20]. Figure 11 presents image of the bird house called "Bird Bricks".

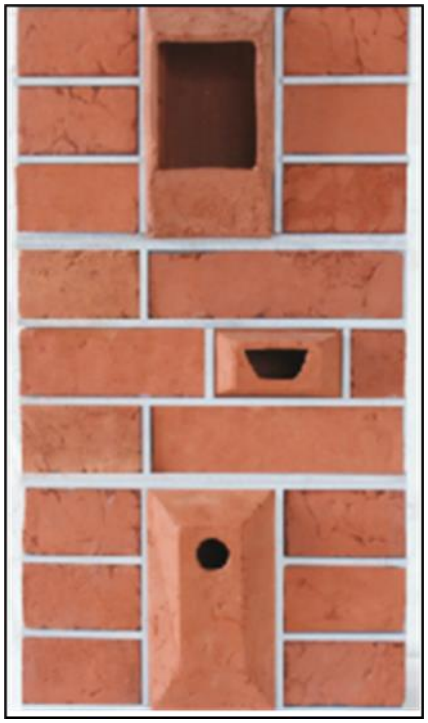

Figure 11. *Image of the bird house called "Bird Bricks" [20].*

"Brick Habitats" is a bird house design based on the placement on the walls of houses. In this design, an approach that aims to host wildlife in urban and residential areas is adopted [21]. Figure 12 presents image of the bird house called "Brick Habitats".

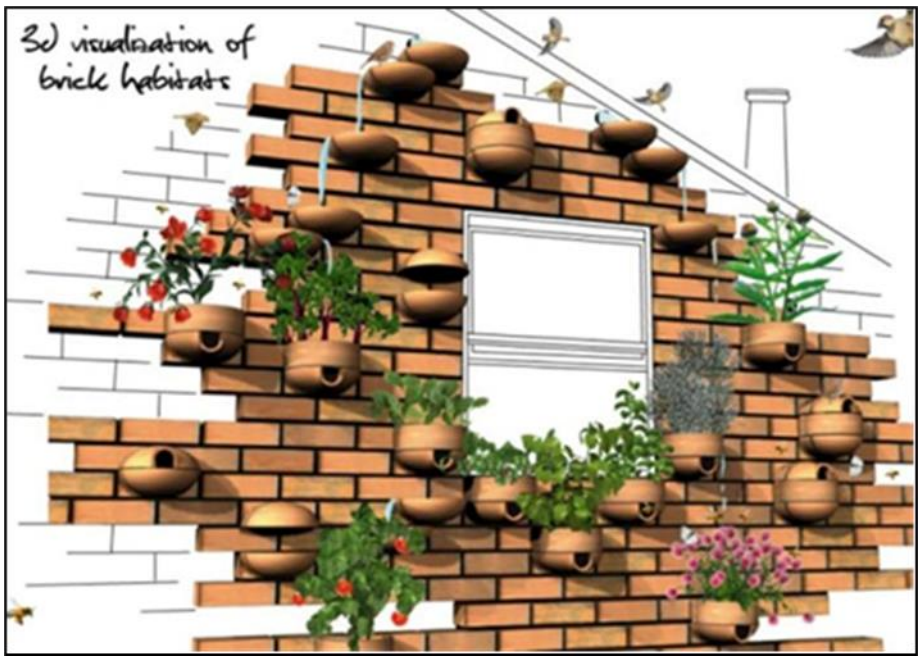

Figure 12. *Image of the bird house called "Brick Habitats" [21].*

The "Brick Habitats" design consists of three different types of special bricks. Growing areas, habitats and forage areas can be used individually or in combination for the flora and fauna to be supported. The bowl-shaped pieces can be placed upright or upside down. A brick with a ring-shaped hole on it can be used as a planter [21]. Figure 13 presents image of the bird house called "Brick Habitats".

Figure 13. *Image of special bricks developed for bird houses called "Brick Habitats" [21].*

"Dziupla", a bird house design for songbirds that can be mounted on walls and trees in the city, can provide various spaces on the walls of buildings with the approach offered by its shape. "Dziupla", which can be made of plywood and pine boards, can be considered as an alternative approach compared to typical bird houses [22]. Figure 14 presents image of the bird house called "Dziupla".

Figure 14. *Image of the bird house called "Dziupla" [22].*

The aim of this study is to draw attention to bird houses, which have been lost in the historical process and have a traditional value, and also to reveal modular bird house designs that will add meaning to outdoor designs today.

II. MATERIALS AND METHODS

The material of the study consists of studies published in national and international literature on bird houses, internet resources, AutoCAD, 3ds Max and Adobe PhotoShop programs.

Within the scope of the study, studies published in national and international literature and internet resources were examined. In line with these examinations, technical drawings of bird house designs were made in AutoCAD program, and then their 3D models were created through 3ds Max program. Finally, the 3D modeled bird houses were placed on the architectural structures and trees using Adobe PhotoShop program and photomontage method. The method flow chart presented in Figure 15 shows the stages followed in the preparation of the study.

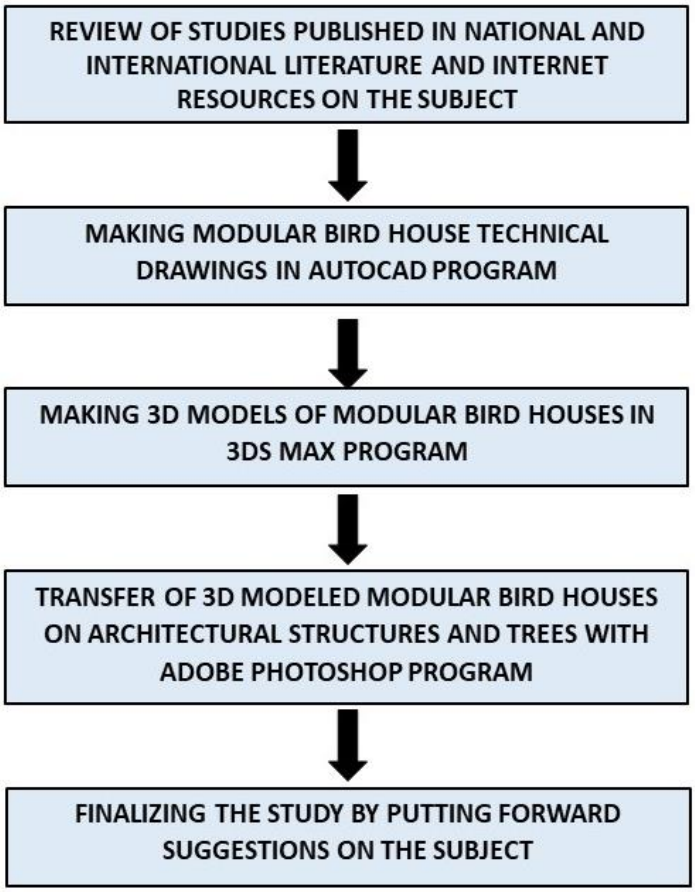

Figure 15. *Method flow chart.*

III. RESULTS AND DISCUSSION

"Schwegler Lightweight Swift Box Type 1A" bird house dimensions (340mm (Width) x 135mm (Height) x 150mm (Depth)) specified in URL-2 [19] were taken as reference in order to create a modular bird house design that can be used in many places in accordance with today. Figure 16

presents the technical drawing details of the modular bird houses created in line with the relevant source.

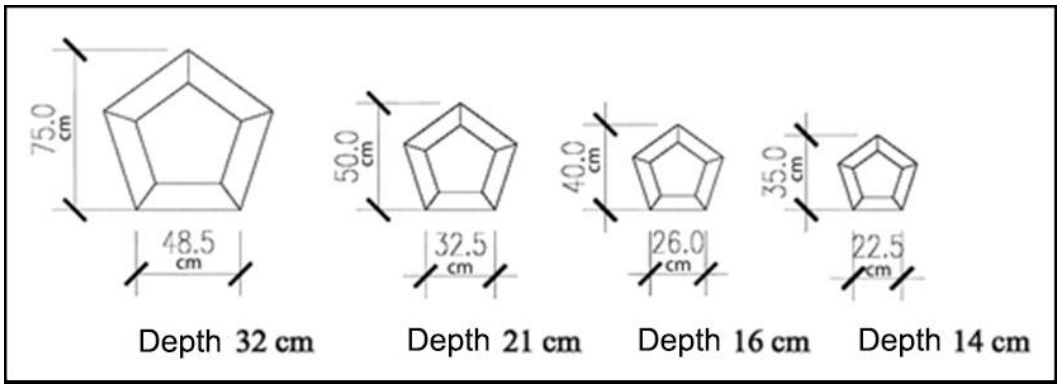

Figure 16. *Technical drawing details of the modular bird house design.*

It is possible to use pentagonal modular bird houses of four different sizes as flower pots by creating pentagonal modules between them (Figure 17).

Figure 17. *3D visualization of pentagonal modular bird houses.*

It is possible to create various combinations by assembling the pentagonal modular bird houses in a straight line (Figure 18) or in a staggered shape (Figure 19).

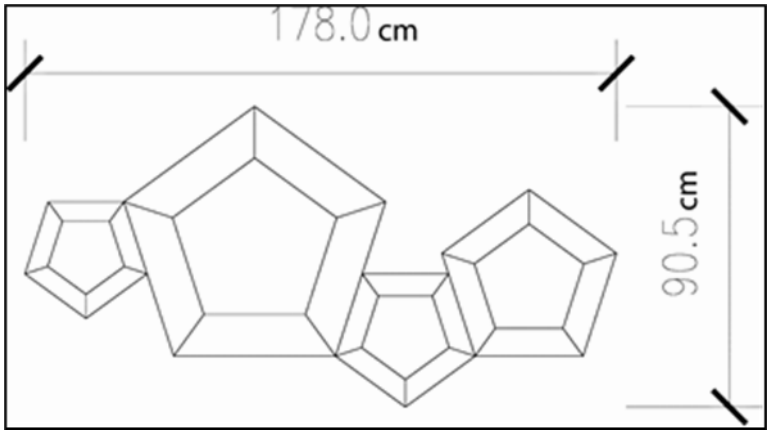

Figure 18. *Image of the use of pentagonal modular bird houses in flat form.*

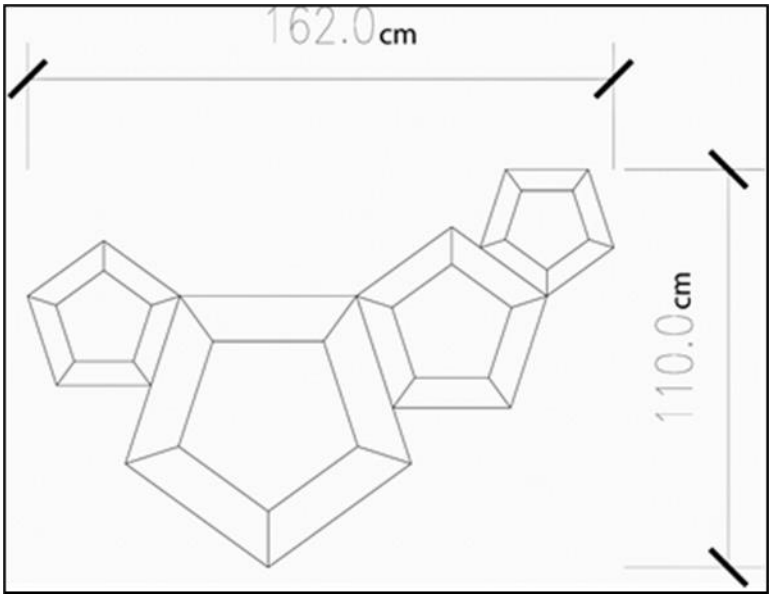

Figure 19. *Image of the use of pentagonal modular bird houses in a staggered form.*

Depending on the creativity and imagination of the users, modular bird houses can be designed in different combinations by using the desired number of modules and positioning these modules independently from each other. Figure 20 presents image of modular bird houses that can be used on the facade of a historical building.

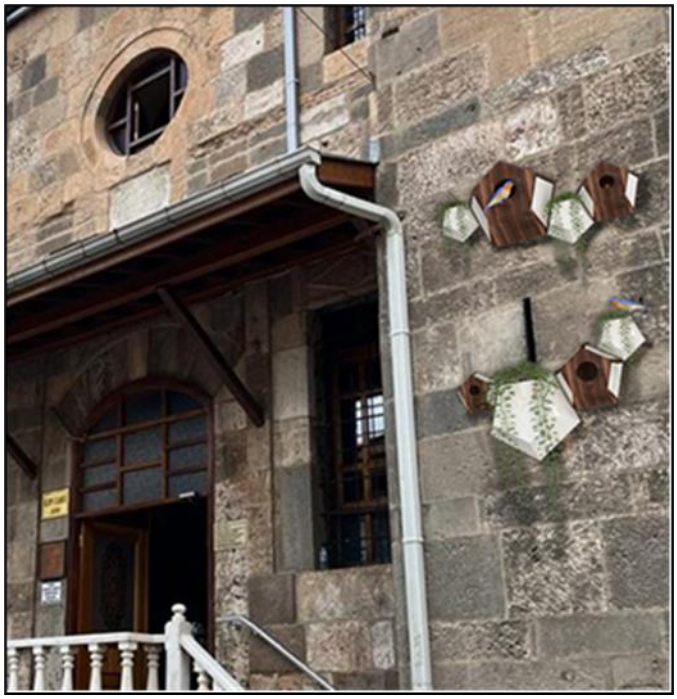

Figure 20. *Image of modular bird houses that can be used on the facade of a historic building.*

Since modular bird houses can be placed in different sizes and individually, they can also be used on cylindrical surfaces such as tree trunks (Figure 21).

Figure 21. *Image of modular bird houses used in tree trunks.*

The sample bird house modules presented in Figure 20 and Figure 21 can be used on exterior facades of modern and historical buildings, vertical gardens, tree trunks, retaining and garden walls, etc. in the form and size desired by the users.

IV. CONCLUSION

This study focuses on revealing the traditional bird house culture and developing modular bird house designs that can be used outdoors today. Suggestions regarding the benefits that the modular bird house designs put forward within the scope of the study will provide with their use in outdoor spaces are given below:

- In urban areas, it is possible to create spaces where different and more bird species can live by supporting natural life. This can be considered as a factor that will bring natural quality to the forefront with the enrichment of fauna in cities.
- A more aesthetic visual effect will be achieved on the facades of historical and modern buildings, and the buildings will be integrated with nature.
- It will be possible to increase the natural effect by enriching the fauna not only in built-up areas but also in parks and gardens. Therefore, this will be a motivational factor for many users by providing a natural effect in parks and gardens, which are an important value for urban and non-urban recreational activities.
- Structurally, a traditional approach will be maintained and promoted. This is an approach that supports the preservation and development of the historical fabric in the areas where the buildings are located, and may be an approach that will positively affect tourism.
- As an artistic approach, it will be possible to contribute to the outdoor space. Thus, an imaginary effect can be created in spaces such as residential areas, parks and gardens.

As a result, it can be stated that modular bird houses designed to be used in outdoor spaces within the scope of the study will be an effective element in gaining identity for outdoor spaces as well as maintaining a traditional approach. In addition, with the use of these bird houses, it will not only be possible to create spaces for bird species to live, but also to develop ecosystems for bird species in both built-up areas and open-green areas. Therefore, it is important to encourage the use of bird houses by adopting new design approaches.

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