



## An Elegant Detail of Water Culture in Traditional Architecture: Çöpür Stone

### Geleneksel Mimaride Su Kültürünün Zarif Bir Ayrıntısı: Çöpür Taşı

Yasemin TÜMER<sup>1</sup>, Esra USLU<sup>2</sup>

<sup>1</sup>Karabük University, Faculty of Engineering and Natural Sciences, Karabük

<sup>2</sup>Karabük University, Safranbolu Şefik Yılmaz Dizdar Vocational School, Karabük

**ORCID:**

Y.T.: 0000-0002-2460-9414

E.U.: 0000-0003-2039-2278

**Corresponding Author:**

Esra USLU

**Email:**

esrauslu@karabuk.edu.tr

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#### Abstract

Water, an indispensable element for a healthy and sustainable life, has been managed through various techniques and structures depending on geographical, climatic, and social conditions. These structures ensure the controlled transportation, storage, and use of water while also reflecting the architectural and cultural values of the period. The spiral form is a universal symbol that appears in various cultures through symbols such as yin-yang, takarangi (an interlocking spiral), the endless knot, and the double spiral. The çöpür stone, which is the subject of this study, is a unique element of traditional water architecture that uses its spiral form to direct and change the direction of water. It is also used for aesthetic purposes. Also known as "Yılankavi Suyolu", these stones transcend their functional role as waterways, carrying a symbolic meaning that represents cosmic order and the cyclical nature of life. We encounter the çöpür stone in cities such as Sivas, Konya, Şanlıurfa, Mardin, Diyarbakır, Kayseri, and Istanbul in Turkey. It also appears in different parts of the world, including India, France, Spain, and Mexico, drawing attention with its universal dimension.

**Keywords:** Traditional Structures, Water Structures, Çöpür Stone, Spiral Water Channel

#### Özet

Sağlıklı ve sürdürülebilir bir yaşam için vazgeçilmez bir unsur olan su, coğrafi, iklimsel ve toplumsal koşullara bağlı olarak farklı teknikler ve yapılar aracılığıyla yönetilmiştir. Bu yapılar, suyun kontrollü şekilde taşınmasını, depolanmasını ve kullanılmasını sağlarken aynı zamanda dönemin mimari ve kültürel değerlerini de yansıtmaktadır. Spiral form, farklı kültürlerde ying-yang, takarangi, sonsuz düğüm ve çift spiral gibi simgeler aracılığıyla da karşımıza çıkan evrensel bir semboldür. Bu çalışmada ele alınan çöpür taşı, spiral formuyla suya yön veren, suyun yönünü değiştiren ve estetik bir öğe olarak kullanılan özgün geleneksel su mimarisi unsurudur. Yılankavi Suyolu olarak da anılan bu taşlar, yalnızca fonksiyonel bir su yolu olmanın ötesinde, kozmik düzeni ve yaşamın döngüsellikini temsil eden sembolik bir nitelik taşımaktadır. Türkiye’de Sivas, Konya, Şanlıurfa, Mardin, Diyarbakır, Kayseri ve İstanbul gibi şehirlerde örneklerine rastladığımız çöpür taşı, Hindistan, Fransa, İspanya ve Meksika gibi dünyanın farklı coğrafyalarında da karşımıza çıkarak evrensel boyutu ile dikkat çekmektedir.

**Anahtar Sözcükler:** Geleneksel Yapılar, Su Yapıları, Çöpür Taşı, Spiral Su Yolları

## 1. INTRODUCTION

Throughout history, water has not only been a vital resource for sustaining life but has also shaped social organization, cultural expression, and spatial formation. Access to and management of water has influenced the formation of settlements, architectural solutions, and daily life practices. At the same time, water has been symbolized through beliefs, rituals, and art, becoming an integral part of the cultural landscape. In this sense, water represents a shared heritage existing at both material and spiritual levels. However, today, increasing population pressure, climate change, and rapid urbanization threaten the sustainability of natural resources, especially water resources (Turkmen and Donmez, 2015; Husam et al., 2021; Yilmaz and Ozturk, 2024). Addressing this situation is critical in the context of sustainable environmental management (Ozturk et al., 2023; Ersahin and Turkmen, 2024). Water resources are not only functional systems but also carry layers of local architectural aesthetics, environmentally sensitive design, and symbolic meaning. In this context, the protection and revitalization of our natural resources offers an opportunity not only to ensure cultural continuity but also to support ecotourism, heritage preservation, and sustainable development (Turkmen and Donmez, 2019; Ozturk et al., 2020; Kose and Donmez, 2021).

Water management is essential for a healthy, high-quality life. Different techniques and structures are required to manage natural water resources sustainably, depending on the water source, geographical conditions (Boz et al., 2020), climatic characteristics, and the community's daily living habits and needs. Water wells that provide access to underground water, water cisterns and pools built to store surface water resulting from atmospheric events such as rain and snowfall, fountains built for the controlled transport, direction and use of water, aqueduct bridges, water channels, maksems and even water mills built to benefit from the kinetic energy of water can be given as examples of traditional water structures (Angelakis et al., 2012; Yenigün et al., 2013; Bölükbaşı Ertürk, 2021; Verma, 2022; Kahyaoğlu, 2023; Genç, 2024; Belder, 2025).

Ornamental pools, fountains, and water channels in traditional structures reflect the aesthetic values of the period in which they were built in. In addition to their aesthetic value, water structures convey the refreshing and calming effects of water, as well as the symbols of purity and abundance engraved in our memories, to the living environment.

Çöpür stones, also known as *dönerce* stones (Özcan and Katuk, 2021) are spiral water channels. In Sedad Hakkı Eldem's book *Turkish Gardens*, *çöpür* stone is referred to as "Yılankavi Suyolu" (Eldem, 1973). This name is thought to be due to the curved nature of the *Çöpür* stone, as well as the fact that in some examples of *Çöpür* stone, the central ends of the spirally carved stone are terminated in a shape resembling a snake's head. In traditional spaces, the flow of water through spiral channels cools the environment and creates a calm and peaceful atmosphere through the melodic sound of flowing water.

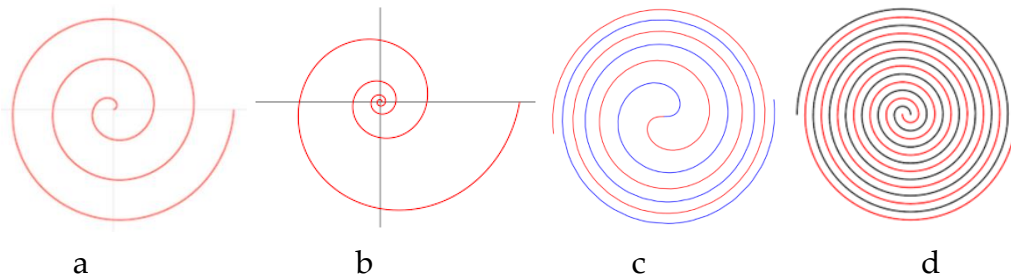
This study was conducted using qualitative research methods with the aim of examining the *çöpür* stone, an element of water culture in traditional architecture, in terms of its aesthetic and functional aspects. First, a conceptual analysis was performed based on the geometric shape of the *çöpür* stone and the cultures in which it is used; the aesthetic, functional, and symbolic aspects of this form were examined. Subsequently, traditional structures in Turkey and around the world that incorporate this stone were identified, and a comparative evaluation was conducted. During this process, both literature reviews and archival visual materials were consulted.

## 2. SPIRALS AND HELICES IN GEOMETRY

These terms describe the geometry of natural products and phenomena, such as fingerprints, DNA helices, tendril, water whirlpools, snail shells, magnetic fields, and pinecones. Two-dimensional spirals and three-dimensional helical structures are related to each other and are both geometric motifs. Spirals associated with the Fibonacci sequence and the golden ratio are among the most beautiful examples of mathematics reflected in aesthetics.

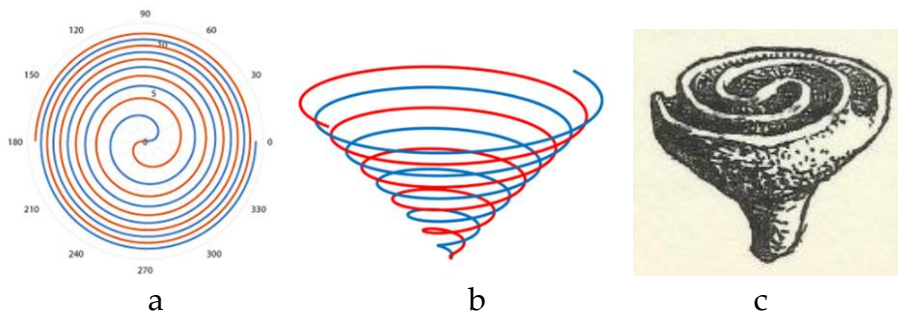
In mathematics, a spiral is defined as "a curve that starts from a focal point and moves outward in a circular motion around that point on the xy plane". There are several types of spirals, including Archimedean spiral, logarithmic spiral, clothoid curve, and Fermat's spiral, as well as combinations of semicircular curves (Yıldız et al., 2001; Banakh et al., 2010). Each type has a unique appearance because it is produced according to different geometric rules (Zhushchikhovskaya and Danilova, 2008; Pal and Saraswat, 2019).

An Archimedean spiral is a straight line rotating rapidly around a focus with a constant speed and angle, and the turns of the spiral are equidistant from each other. The radius of the spiral increases according to the sequence  $a + 2a + 3a + 4a + \dots + na$ . The distance between the turns of the logarithmic spiral defined by Descartes increases as  $a + 2a + 4a + 8a + 16a + \dots (x^2)$  (Deligeorges and Recherche, 1998). The Fermat spiral, on the other hand, develops as two symmetrical spiral arms originating from the same focus. This spiral is used to create continuous curved paths, which are particularly preferred in architectural and engineering designs requiring smooth curvature transitions (Lekkas et al., 2013). The double spiral, also known as the twin swirl, is similar to the Fermat spiral (Figure 1).



**Figure 1.** a. Archimedean spiral; b. Logarithmic spiral; c. Fermat's spiral; d. Double spiral

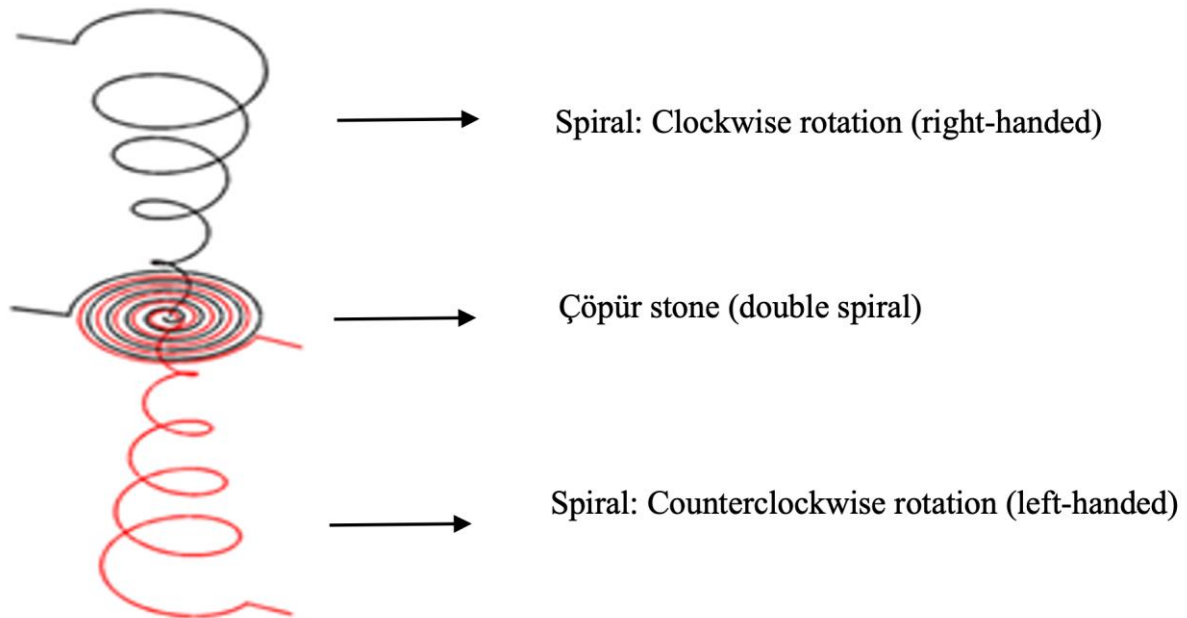
A spiral structure is a type of three-dimensional curve. It is also called a helix (Figure 2). Examples include screws, tower and minaret staircases, and DNA. Spirals are classified as right- or left-handed depending on their direction of rotation. The three-dimensional, helical structure made of baked clay stamp seals found in Çatalhöyük is evidence that this geometric figure was used during the Neolithic period (Mellaart, 1967).



**Figure 2.** a-b. Fermat's Spiral and 3D Function of the Fermat's Spiral (Pal and Saraswat, 2019); c. Çatalhöyük: Stamp Seal from the Neolithic Period (Mellaart, 1967).

When the two-dimensional structure of the spiral (x and y axes) is transformed into a three-dimensional helix (along the z axis), the resulting image can be interpreted as a transition point

where the results of past experiences (the material) give rise to creative thought (the spiritual, the soul), or where creative thought emerges in the physical world. The two-dimensional spiral structure of the stones is thought to represent the cycle between material and spiritual life; birth, life, and death; the transition, change, transformation, balance, and continuity between earth and sky (Figure 3).



**Figure 3.** Three-Dimensional Spiral Expansion of the Two-Dimensional Spiral Çöpür Stone

### 3. CULTURES THAT USE THE SPIRAL SYMBOL

Spiral and helix-shaped drawings or structures, referred to as symbols of dynamic balance, change, and cyclicity, appear in different historical periods, cultures, and geographical regions. The most well-known examples are yin yang in Chinese culture, takarangi in Māori culture, the endless knot in Buddhist culture, and the double spiral in Celtic culture.

The Māori, the indigenous people of New Zealand, have a rich cultural heritage. They are known for their traditional arts, mythology, and symbols. Takarangi, which means spiral motifs, is composed of the words taka, meaning revolution or rotation, and rangi, meaning the heavenly realm. It holds an important place in Māori art and belief systems. Takarangi consists of intertwined double spirals used in traditional Māori wood carvings (Figure 4a) (Williams, 2009; Kawharu et al., 2017).

The intertwined double spiral of Takarangi represents the balance of opposing yet complementary forces such as light and darkness, male and female, and the material and spiritual worlds, as well as birth, death, and rebirth. Additionally, in Māori mythology, the creation of the universe begins with Rangi-nui (Sky Father) and Papa-tū-ā-nuku (Earth Mother). It is believed that Takarangi also symbolizes the separation of the two mythological beings and the expansion of the universe (Williams, 2009; Kawharu et al., 2017).



**Figure 4.** a. Takarangi (Tapsel and Woods, 2010); b. Yin-Yang Symbol

In Chinese culture, yin represents passive and negative energy, while yang represents active and positive energy. The Yin-Yang symbol consists of intertwined spiral-like curves, which are half circles separating the Yin and Yang areas (Figure 4b). The Yin-Yang spiral is circular in shape and represents the harmony and balance of opposites. The small dots within the spiral represent the idea that each opposing element contains a part of the other. The life energy known as qi (chi) in Chinese culture moves in harmony with the Yin-Yang balance. The Yin-Yang spiral is a symbol of constant movement and transformation. These shapes express that the energy in the universe is not static, but rather in a state of constant flow and change (Feuchtwang, 2016; Banakh et al., 2010).

The spiral is an ancient and mysterious Celtic symbol (Yoon et al., 2021). Long before the Celts, this shape was among the sacred symbols of Neolithic peoples, and it was believed to provide people with the opportunity to connect with supernatural powers. Therefore, it was believed to indicate the location of sacred areas where spiritual powers resided. Especially because it was often depicted in tombs, it can be said to be a spiritual symbol. Various similarities in the symbolic languages of the Celts, who are thought to be related to the Proto-Turkic peoples, have been the subject of research (Gasımova, 2020; Yiğit, 2024).

In Celtic culture, double, triple, and multiple spiral motifs are noteworthy (Figure 5). For the Celts, the clockwise spiral represents water, power, beginning, opening, and movement. The clockwise rotation begins at the center and extends outward. The counterclockwise spiral symbolizes the end. In this case, the spiral turns inward, and this direction of movement symbolizes a return to our origins. In the double spiral structure of the Celts, two opposing spirals emerging from a single line show that there is always a balance between them, even though the two states are completely opposite cycles. Cycles such as birth and death occur together and are therefore represented by a double helix. The triple helix (Triskelion) is thought to symbolize triads such as body, mind, and spirit; mother, father, and child; or past, present, and future (Yoon et al., 2021).



**Figure 5.** Double and Triple Spirals in Celtic Culture (Yoon et al., 2021).

The spiral waterways of South America are functional engineering structures that optimize the natural water cycle, but they also carry a cosmological and religious meaning that emphasizes

the sanctity of water. Found in the Nazca, Inca, and Chavín cultures, these waterways represent concepts such as cyclicality, energy flow, and harmony with nature, similar to other spiral symbols. A series of spiral canals known as puquios, located in Peru's Nasca region, are believed to have been constructed to store moisture from the air underground or to access underground water sources (BBC, 2016).

The Nazca Lines, carved into the surface of the Nazca Desert in southern Peru, consist of 300 figures that can only be clearly seen from the air. Many theories exist about the purpose of these figures, including that they were used to map underground water sources, that they were related to calendars or astronomy, that they served as landing strips for spaceships, or that they were part of religious ceremonies (Eitel et al., 2005; Mardon, 2021). Among these figures (geoglyphs), which were created by moving or arranging stones, one of the most intriguing is the spiral-tailed monkey figure. Additionally, the double spiral figure carved into stone in the Aztec collection at the Mexican National Museum is also quite intriguing.



**Figure 6.** Nazca Line Monkey (Reiche, 2019)

#### **4. SPIRAL WATER CHANNELS: ÇÖPÜR STONES**

Çöpür stones are spiral water channels carved from stone that appear in traditional buildings as part of water channels, imparting a cyclical motion to the water and changing its flow direction. It is interesting to encounter this elegant architectural element, which is on the verge of being forgotten and inspires admiration, not only in Anatolia but also in different geographical regions such as India, France, Spain, and Mexico.

##### **4.1. Examples of Spiral Waterways Found in Different Parts of the World**

Thizy is an ancient medieval town located in the Serein Valley in France. The Fontenille laundry house in the town bears traces of the only spiral symbol used by Celtic culture. Additionally, the facade of the building features a statue of the Gallic goddess associated with the cult of healing waters. The water flowing from the fountain in front of the building reaches the

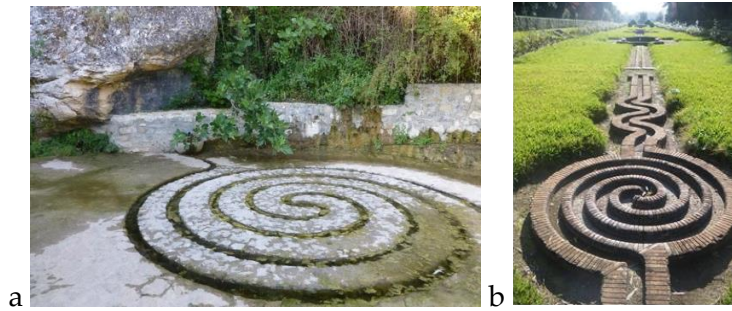


spiral stone carved in a double helix shape via a canal (Figure 7). It is said that the current center of the spiral corresponds to the point where two high-energy faults and an underground waterway intersect (Bournisien, 2015).



**Figure 7.** Tizzy Town Çöpür Stone (Bournisien, 2015)

The çöpür stone located in the rural area of Granada, Spain, is again located on the overflow channel of a fountain. When the water changes direction, it is discharged through a groove at the end of the channel after passing through the spillway stone (Figure 8a) (Civitatis, 2025). The çöpür stone located in Moratalla Gardens near the city of Córdoba in Spain was constructed as part of a long waterway (Figure 8b) (Avantgardes, 2017).



**Figure 8.** a. Çöpür Stone: Granada, Spain (Civitatis, 2025); b. Çöpür Stone: Cordoba, Spain (Avantgardes, 2017)

The Jahaz Mahal, located in India, is a fort with artificial lakes on both sides. The artificial lakes were built to enhance the beauty of the fort and make it look as if it were floating on the sea during the rainy season. There are water channels at each corner of the complex that direct the water to a central reservoir. This system is also very useful for storing rainwater. Water flows from the higher pools to the lower ones through channels with a spiral pattern (Figure 9a) (Mitra, 2009).

A spiral water channel can also be found at the Nilkant Temple in Mandu, India, which is dedicated to Lord Shiva. This structure is considered one of the holiest shrines in the region. The water flowing through this channel and feeding the tank is believed to be sacred, and people collect the water droplets here in their hands (Zamani, 2015). Another example in India is Jahaz Mahal, a fort surrounded by bodies of water. The complex has water channels that collect large amounts of rainwater and direct it to a central reservoir. Circular-patterned channels are used to filter the water and convey it to the pool at different levels (Verma, 2022).



**Figure 9.** a. India, (Nilkanth Mahal) Madhya Pradesh, Mandu (Verma, 2022); b. India-Jahaz Mahal spiral waterways (Lokgariwar and Purohit, 2015)

#### 4.2. Examples of Traditional Çöpür Stones Found in Turkey

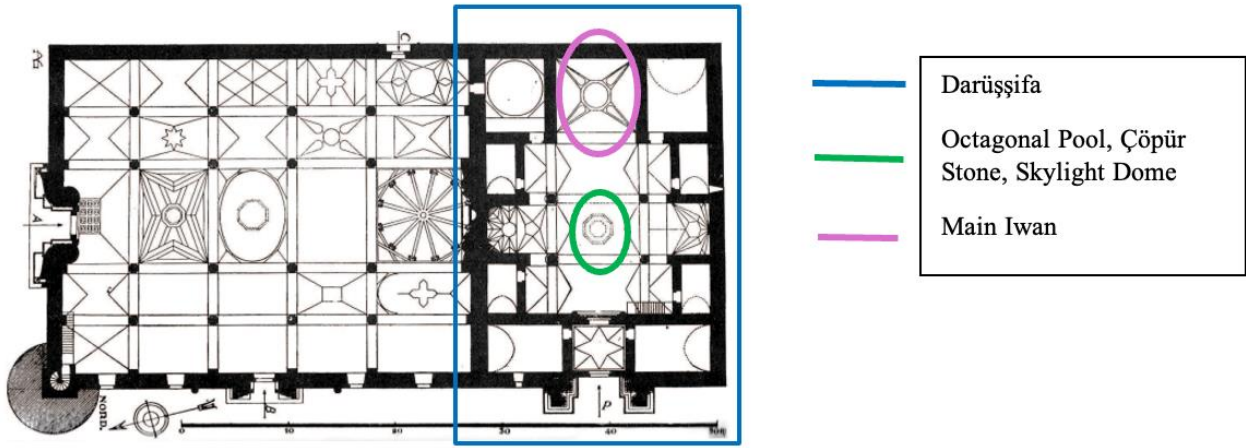
In Turkey, especially in traditional buildings in the vicinity of Sivas, Konya, Şanlıurfa, Mardin, Diyarbakır, Kayseri, and Istanbul, the “çöpür stone,” an aesthetic touch in traditional water architecture, can be observed.

The Great Mosque and Hospital (Darüşşifa) of Divriği (Sivas), which was added to the UNESCO World Heritage List in 1985, was the first architectural structure from Turkey to be included in this list. The mosque was built by Mengücek Bey Ahmed Shah, and the hospital was built by Ahmed Shah's wife Turan Melek in 1228–29. The structure, built by Ahlatlı Hürremşah, is a synthesis of the architectural traditions and construction technologies of Central Asia, Iran, the Caucasus, and northeastern Anatolia (Peker, 2007; Bozkurt, 2020; Yıldırım ve Yüksek, 2024).

The Darüşşifa is adjacent to the southern wall of the mosque (Figure 10) (Arslan, 2012). The central section of the Darüşşifa, with its pool and skylight dome (a vault with a hole in the center), resembles a closed courtyard structure. Three iwans and an entrance support the image of an iwan courtyard in Persian architecture. Additionally, the presence of corridors in front of the iwans makes it similar to a three-aisled basilica structure. The four-column arrangement is reminiscent of a transept-domed basilica (Figure 11a).

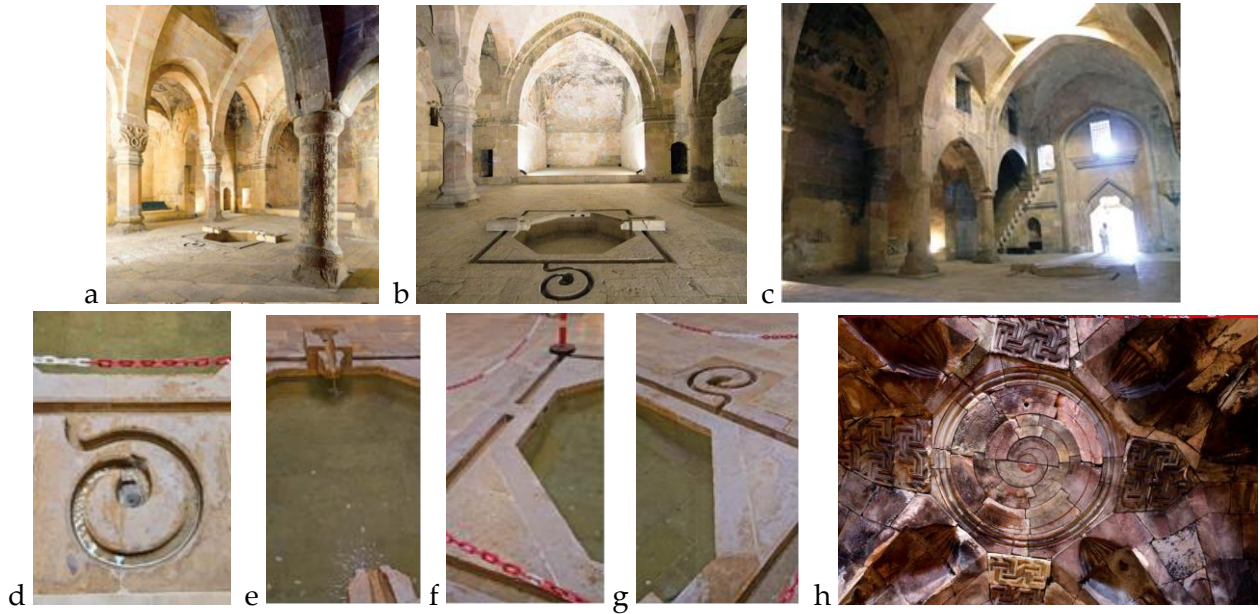
The octagonal pool at the center of the Darüşşifa is surrounded by a square-shaped water channel. On the south side of the water channel, facing the entrance to the Darüşşifa, there is a spiral waterway (çöpür taşı) carved into the stone. The pool is fed by gutters on the east and west sides. The overflow water from the pool is transferred to the water channel surrounding the pool through drainage openings on the north side, and the water in the channel is discharged after making a spiral cycle in the spiral waterway (Figure 11b-g).





**Figure 10.** Pool in Darüşşifa, Open Vault, Columns in Front of South Iwan, and Mezzanine Floor; Plan Drawing (Gabriel, 1931)

The dome of the main iwan has a rare structure, with a multi-part helical keystone forming the central point (Figure 10h). Its harmony with the spiral structure of the Çöpür stone is also noteworthy.



**Figure 11.** a-c. Darüşşifa Pool, Open Vault, Iwans, Columns, and Entrance Gate (İhsan, 2019; Peker, 2007) d. Çöpür Stone; e. Gutter Supplying Water to the Pool; f. Transition of Overflow Water from the Pool to the Water Channels; g. Water from the Water Channel Reaching the Spout Stone and Flowing Down to the Lower Level from the Center of the Spiral (Fotoğraf d-g: Yasemin TÜMER); h. Helical Keystone in the main Iwan (İhsan, 2019)

In the Uluanak neighborhood of Sivas, the tomb of Sarihatipzade Numan Efendi and his family members stands abandoned in an area surrounded by walls on three sides, resisting the passage of time. In the family cemetery (Karakuş, 2024), known to have been built by Şadi Bin Yusuf between 1750 and 1768, the Çöpür stone, which was cut off due to its connection to a possible water channel or street fountain and to the high-level road, attracts attention with all its beauty (Figure 12).

The presence of the çöpür stone in the cemetery supports the idea that it represents the cycle of life, the transition between material and spiritual life, and the endless movement. The çöpür stone is located approximately 50 cm above the cemetery code, and it is thought that when the

water connections were active, the peaceful sound of water flowing from above accompanied the spiritual atmosphere of the cemetery.



**Figure 12.** Uluanak Neighborhood in Sivas - Çöpür Stone in the Cemetery (Karakuş, 2024)

According to Necibe Çakıroğlu, the Güpgüpoğlu Mansion, located in the Melikgazi District of Kayseri, was built over a long period between 1419 and 1497 and took on its current form with additions made in the 18th century. It was restored between 1986 and 1996 by the General Directorate of Monuments and Museums of the Ministry of Culture. The mansion, which consists of harem and selamlık sections, has a courtyard on its northern facade. The courtyard has an ornamental pool and a fountain (Arslan, 2012). The overflow water from the fountain is first passed through a spiral-shaped stone and then poured onto the ground with a difference in elevation (Figure 13).



**Figure 13.** a. ve b. The Fountain Pool and the Water Channel with Çöpür Stones in the Courtyard of the Güpgüpoğlu Mansion. c. Havuz ve Çöpür Taşının Arkasındaki Dinlenme Alanı (Photos: Onur ERTAŞ, OTS Proje Müşavirlik İnşaat Ltd. Şti.)

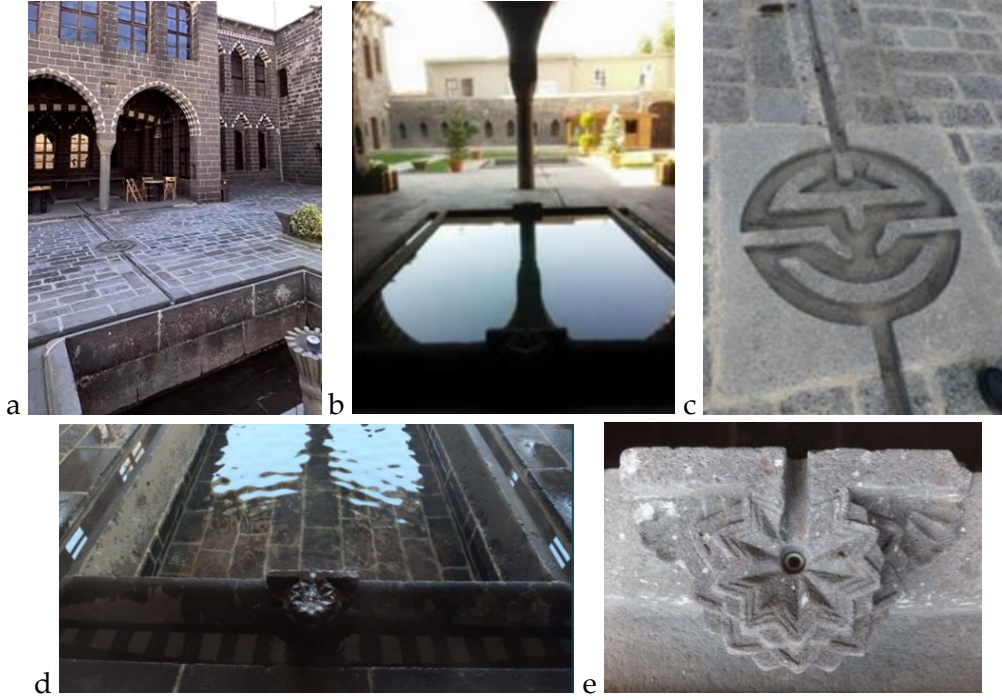
Located in the Germir neighborhood of Melikgazi District in Kayseri, Bakkaloğlu Mansion is an example of 19th-century civil architecture. Today, it has been restored and repurposed as the “Bağ Museum.” In the garden on the southeast facade of the mansion, there is a stone slab on the overflow channel of the fountain pool. The water flowing in a spiral pattern on the Çöpür stone continues its course by flowing into the water channel below (Figure 14).



**Figure 14.** a. Pool with Fountain and Çöpür Stone b. Çöpür Stone (Photos: Hamiyet DUMAN)

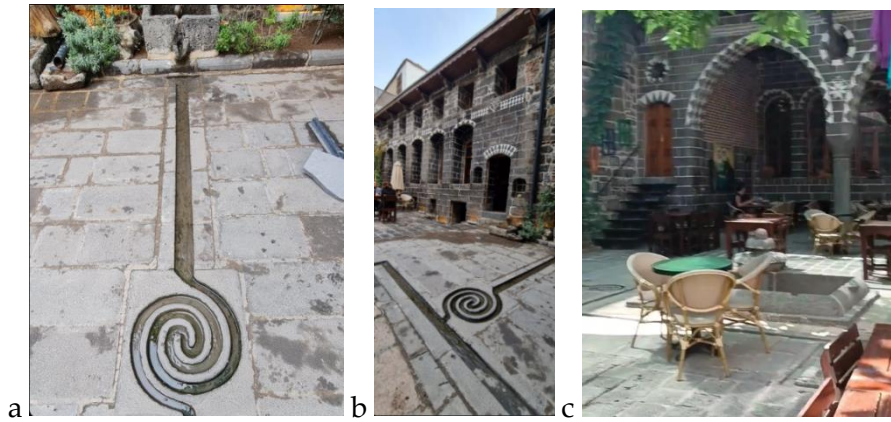


The Cemil Paşa Mansion, which is now used as the Diyarbakır City Museum, was built by Ahmet Cemil Paşa in 1887. Located in the southwestern part of Suriçi, the mansion is surrounded by streets on all sides. Consisting of three separate buildings, the harem, the reception hall, and the servants' quarters, the mansion has some striking features (Halifeoğlu and Nursen, 2021). The overflow water from the pool located between the two arched iwans in the selamlık section of the mansion flows through a water channel to the courtyard pool (Figure 15) (Haspolat, 2015; Işık, 2022).



**Figure 15.** a. View of the iwan from the selamlık courtyard b. View of the courtyard from the iwan c. Çöpür stone d. The pool in iwan e. The water source of the iwan pool (Haspolat, 2015; Işık, 2022).

In Sur, Diyarbakır, the Zerzevan Mansion, said to be 150 years old, is now used as a restaurant (ANW, 2022). The water flowing from the fountain in the mansion's courtyard reaches the Çöpür stone via a canal. The water flowing from the Çöpür stone into the canal continues to flow along the canals surrounding the courtyard pool. The Çöpür stone, obtained by carving porous basalt stone, not only adds aesthetic value to the environment but also provides a sense of coolness thanks to the flowing water (Figure 16).



**Figure 16.** Diyarbakır-Sur, Zerzevan Mansion Çöpür Stone (Özen, 2022a ve Özen, 2022b)

Located north of Balıklıgöl in Şanlıurfa-Eyyübiye, Akçarlar House, whose exact construction date is unknown, consists of two sections: the harem and the selamlık. The building was constructed on an area of 493 m<sup>2</sup> with five floors, based on the evaluation of the code difference.

Since 2010, it has been serving as the Harran University Urfa House Application Hotel (Güzel et al., 2019; Tel, 2021).

Each floor of the building has water well. One of the wells is located inside the eyvan. One of the most striking features of the iwan is that the door on the wall where the well is located opens into a cave. The open facade of the iwan faces the Urfa Castle and the Halil-ür Rahman Lake (Balıklı Göl) and the Mosque located at the foot of the castle.

The water coming from the well flows through the iwan and continues along the canal after leaving the iwan. The channel first descends due to the elevation difference caused by the iwan being higher than the ground, then continues along the wall and descends again over three steps. The channel continues for approximately 5 meters at the elevation it reaches and ends with a hole that facilitates water drainage (Figure 17).



**Figure 17.** a. View of Şanlıurfa Castle and the Çöpür stone from the iwan; b. Çöpür stone; c. View of the cave door, well, and Çöpür stone from the iwan; d. Well; e. Iwan; f. View of the iwan of the Akçarlar house from a distance (Fotoğraflar: Yasemin TÜMER).

In Istanbul-Eyüp, at the Şeyh Murad Efendi Tekke, a çöpür stone without a water connection was found. Since its original location within the tekke and garden could not be determined, it is kept in the open. It is thought that the water coming from the hole observed in the center of the single spiral-shaped çöpür stone leaves the stone without changing direction, moving in a spiral motion (Figure 18).

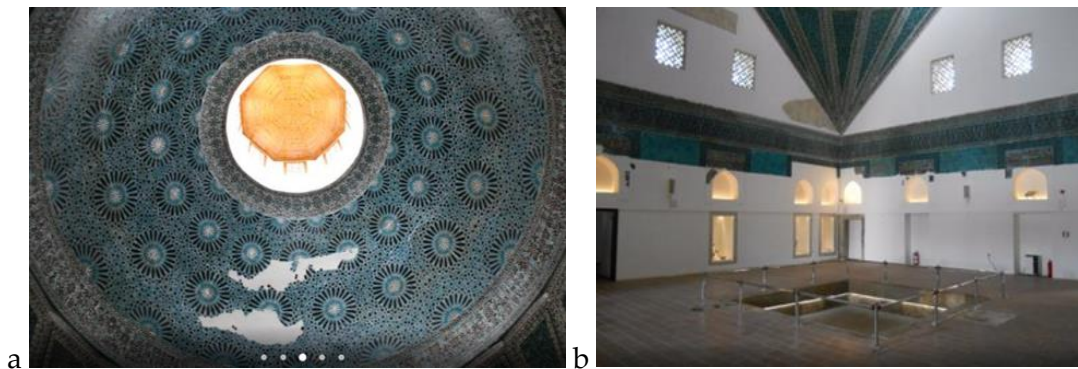




**Figure 18.** Istanbul-Eyüp Sheikh Murad Efendi Lodge Çöpür stone (Özen, 2021a)

The Karatay Madrasa in Konya was built in 1251 by Seljuk vizier Celaleddin Karatay. An important center of education and culture during the Seljuk period, the madrasa is a significant work of art that reflects the stonework and architectural features of the period. Today, it serves as a museum displaying Turkish-Islamic works of art in Konya (Odabaşı, 2016).

In the central section of the main hall, there is a square-shaped pool. The dome above the pool was constructed with an open center during the Seljuk period. This opening allowed light and air to enter, and rainwater collected in the pool below. Today, however, the dome is covered with a glass roof (Figure 19) (Odabaşı, 2016; Bilici, 2024).

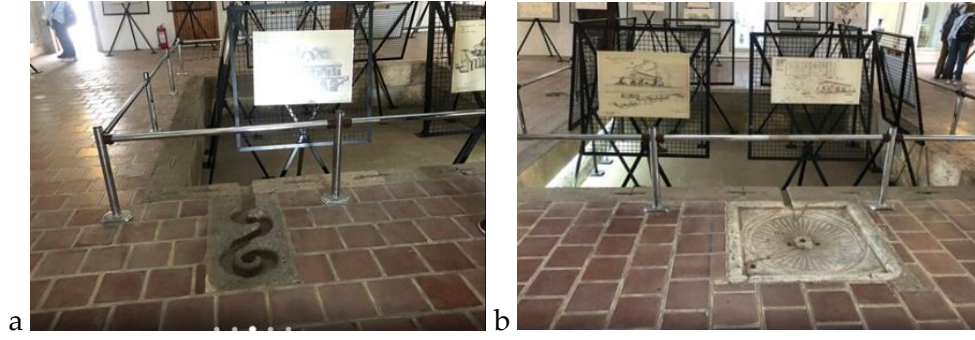


**Figure 19.** a. Dome over the Pool; b. Square Shaped Pool (Tripvisor, 2016)

The pool and the dome with an opening in the center are architectural designs that have symbolic meanings in Seljuk architecture. The pool represents the underworld, the section from the ground to the dome represents the earth and the sky, and the dome with an opening in the center represents the gate to the sky (Odabaşı, 2016; Bilici, 2024). This representation is called microcosm and suggests that the Karatay Madrasa may contain a sacred space that communicates with the macrocosmic, or spiritual, dimension.

The stone extending from the water channel, which resembles the Celtic double spiral symbol and features a wheel motif with flowers, was used to drain the overflowing water from the pool. It is quite striking that the Çöpür stones, which we discussed earlier as symbolizing the transition between material and spiritual life, the cycle of birth, life, and death, and change, are located in the Karatay Madrasa, which is thought to be a cosmic space (Figure 20).





**Figure 20.** a. A stone resembling the Celtic double spiral symbol; b. A flower-patterned wheel-shaped water drainage channel (Tripvisor, 2016)

Another element that supports this interesting cosmic connection is the magnificent Taçkapı (Crown Gate) of the Karatay Madrasa. The Taçkapı, which has been the subject of numerous studies from different perspectives, also attracts attention with its three symmetrically positioned kabara (Figure 21) (Bilici, 2024). A kabara is the use of convex sections of a sphere or cone in architectural decoration. According to some researchers, kabaras represent the sky, stars, and planets. They are described as cosmic spheres.



**Figure 21.** a. Karatay Madrasa Crown Gate; b. 3 symmetrically positioned kabaras on the portal (Bilici, 2024).

In Edirne, in the garden of the house considered sacred by the Bahá'ís, by the pool (Figures 22a and b) (Bahaitr, 2025) on the ground in the garden of the Batman Museum (Figure 22b), in the decorative waterway of the fountain built in Topkapı Palace as “a fountain of life for the Divan,” and again in Topkapı Palace, in the portico of the Fatih Pavilion, images of çöpür stone have been encountered.



**Figure 22.** a. Çöpür Stone in the Baha'i House in Edirne b. Batman Museum Garden (Bahaitr, 2025 ve Gültepe Anadolu Lisesi, 2025)

The characteristics of the Çöpür stones have been classified based on their geographical location, spiral shape, structure, water source, and drainage location (Table 1).

**Table 1.** Çöpür Stones Associated with Traditional Water Structures in Turkey

City of Origin	Spiral Shape	The Building	Water Source	Where the Water Discharges
Sivas-Divriği	Single Spiral Archimedean Spiral	The Great Mosque and Hospital	Gutter that supplies water to the pool	Discharge from the center of the Çöpür stone
Sivas	Double Spiral	Sarıhatipzade Numan Efendi Cemetery	Unknown	The cemetery floor has a code difference from the Çöpür stone
Kayseri-Melikgazi	Double Spiral	Güpgüpoğlu Mansion	Fountain that provides water to the pool	From the Water Channel to the soil ground
Kayseri-Melikgazi (Germir)	Double Spiral	Bakkaloğlu Mansion-Bağ Museum	Fountain that provides water to the pool	The water channel on the ground with a code difference from the Çöpür stone
Diyarbakır	Decorative Water Channel	Cemil Pasha Mansion-City History Museum	Water Gutter in the Pool in the Iwan	Pool with fountain in the courtyard
Diyarbakır-Sur	Double Spiral	Zerzevan Mansion	Fountain in the Courtyard	Water Channels in the Courtyard
Şanlıurfa-Eyyübiye	Double Spiral	Akçarlar House - Harran University Urfa House Practice Hotel	The Well in the Iwan	Drain Hole at the End of the Water Channel
İstanbul-Eyüp	Single Spiral Archimedean Spiral Celtic	Sheikh Murad Efendi Lodge	Unknown	Unknown
Konya	Double Spiral	Karatay Madrasa	Pool	Discharge from the center of the çöpür rock

### 4.3. Examples of Modern Çöpür Stone in Turkey

The modern çöpür stone at the Akdeniz University Olbia Cultural Center is a unique design element that draws attention as architect Cengiz Bektaş's original approach to integrating the themes of water and memory into architecture. With this unique approach, the building was awarded the Aga Khan Architecture Award in 2001. It is a beautiful example of how traditional elements can be harmoniously integrated into modern architecture. The modern waterfall, consisting of seven levels, creates a natural melodic sound and aesthetic visual effect through the flow of water from a high elevation (Figure 23a) (Yılmaz et al., 2013; Şanlı and Örmecioğlu, 2018; Özcan and Katuk, 2021).

Architect Cengiz Bektaş's modern stone applications can also be seen at the Bodrum Ora Holiday Village and the entrance hall of the İş Bankası Bakırköy Branch (Figure 23b and c).



**Figure 23.** a. Modern Çöpür Stone, Olbia Social Center, Antalya (Bektaş, C., Salt Araştırma Arşiv); b. Bodrum Ora Holiday Village (Hotels-in-bodrum, 2025); c. İş Bankası Bakırköy Branch entrance hall (Bektaş, C., Salt Araştırma Arşiv)

In 2005, a pool was built at the visitor center of Deyrulzafaran Monastery (Mardin), inspired by the Çöpür stone (Ergünmimarlık, 2005). The square-shaped pool design uses simple lines and local stone materials to blend in with the monastery's historical texture. This aesthetic pool at the monastery entrance creates a cool and peaceful environment (Figure 24).



**Figure 24.** The visitor reception center of the Deyrulzafaran Monastery, a pool inspired by the Çöpür stone (Photos: Yasemin TÜMER).

In Istanbul Ataşehir, the modern whirlpool application in Nezahat Gökyiğit Botanical Park attracts attention. From the first whirlpool with a single spiral and a central water source, the water flows in a circular path and reaches the second whirlpool through a channel. In the second water feature, which consists of a double spiral, the water changes direction and flows into the pool located at the lower level (Figure 25).



**Figure 25.** Two modern examples of single and double spiral rubble in Nezahat Gökyiğit Botanical Park (Özen, 2021b)

## CONCLUSION

This study evaluated the stone used in traditional water structures in terms of its functions, formal characteristics, and symbolic meanings. The research reveals that the stone's function is not limited to directing water; it also plays an important role in architecture as an aesthetic and cultural element.

Spiral- and helical-shaped çöpür stones appear in various regions of Anatolia in different forms, such as on pool edges, on tombs, and in cemeteries. These forms not only have a visual impact but also carry deep symbolic meanings such as the cyclical nature of life, the continuity of balance, and the unity of opposites. Similar examples found in different geographical regions such as India, France, and Spain demonstrate that spiral waterways are a universal architectural element.

The reinterpretation of the Çöpür stone in modern architecture enables traditional forms to be combined with contemporary designs. In this regard, the spiral stone serves as an important example of cultural continuity and the preservation of local heritage in architecture.

In conclusion, the Çöpür stone is an important architectural element in traditional water structures, both functionally and aesthetically and symbolically. Documenting and interpreting such structures contribute to the preservation and transmission of cultural heritage to future generations.

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