

原 著

## The Esthetic Function of Water in Persian Garden Design

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### ペルシャ庭園様式における水の美的貢献

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#### Abstract

Water is in many ways essential to gardens. This study concerns the esthetic function of water in garden design as observed principally in traditional Persian gardens. Primary attention is given to water's capability of reflecting, and refracting, and how that quality makes possible visual interaction with the surroundings. This inquiry has exposed the means by which reflections in Persian gardens of the Zand era (1750-1794) in Shiraz break up the symmetry of the surroundings and create a visual dissymmetry.

Key Words; Dissymmetry/symmetry, water reflection, Persian garden design

#### 要 約

水は庭園においてあらゆる意味で重要である。本研究では、特に伝統的なペルシャ庭園における「水」の美的役割を考察した。主なる焦点は、「水」の反射と屈折、そして、それらがいかに周囲の情景と視覚的に関係し合っているのかにあった。この論点は、ザンド時代に造られたシラズ市にあるペルシャ庭園様式における「水」の反映が、周囲の情景の対称性を破壊し、視覚的非対称性を造り上げている事を明らかにした。

キーワード： 非対象/対象、水の反映、ペルシャの庭園様式

The earliest Persian garden to have been archeologically reconstructed in modern times is Pasargad, an Achaemenian royal garden located near Shiraz. The garden grounds embrace two palaces, two pavilions, and a number of limestone watercourses with pools at fifteen-meter intervals. Such catchments are a feature of every major Persian garden constructed since the completion of Pasargad, approximately 2500 years ago. Another distinctive feature, which persists in Persian garden design, is the integrative connection among the garden landscape, the buildings, and the different pools and conduits of water.

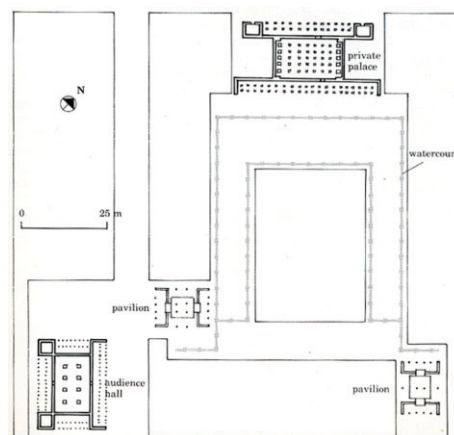


Plate 1 Plan of Pasargad (Brookes 31)

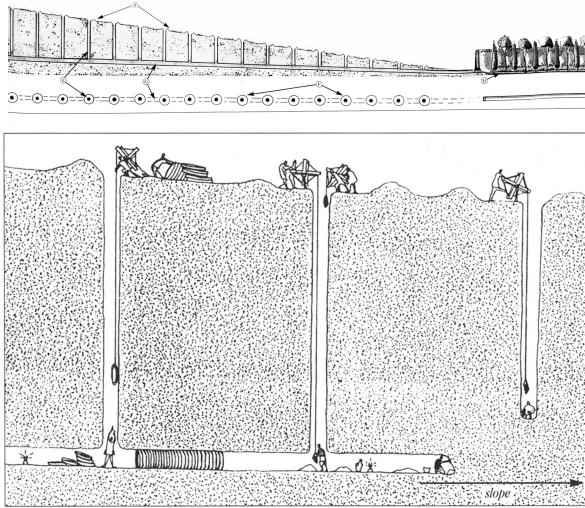


Plate 2 In the construction of qanat, deep vertical shafts were dug every 50 meters for removal of excavated material, for provision of air for the workers, and for subsequent maintenance purposes. Tunnels were then dug horizontally, connecting the vertical shafts. Advanced architectural surveying skills enabled the Persians to compute the underground slope required to let the water flow naturally from source to destination, often many kilometers apart (Khansari, Moghtader and Yavari 23-24).

Water is a crucial element for the construction and maintenance of Persian gardens. Moreover, the source of water is critical. Because water evaporated quickly on the high and dry Iranian Plateau, it was necessary to develop underground methods for transporting water to supplement the uneven yield of local water resources. The Persian transport system, known as qanat, is believed to date back to around 1000 B.C. (cf. Plate 2 and Shayesteh 119)

The garden of Bagh-e-Shahzade, in Kerman in central Iran, provides an excellent example of the extreme contrast between the exterior (cf. Plate 3) and the interior of the garden (cf. Plate 4). Outside the garden, the land is stony, dry, and barren, while within its surrounding high walls, the garden is shady and cool with tall trees, flowering plants, pools and flowing water.

After water has been brought from distant sources by means of *qanat*, which were laboriously constructed at great expense, it is possible for the water to serve esthetic functions in Persian gardens. Although water serves practical functions such as enabling plants to grow, and symbolic functions (as a purifier and giver of life), the esthetic functions are striking: water affects the temperature and humidity,



Plate 3 An aerial view of Bagh-e-Shahzade shows the garden flourishing in the middle of a barren desert because of water transported to the garden underground from distant mountains (Khansari, Moghtader and Yavari 16)

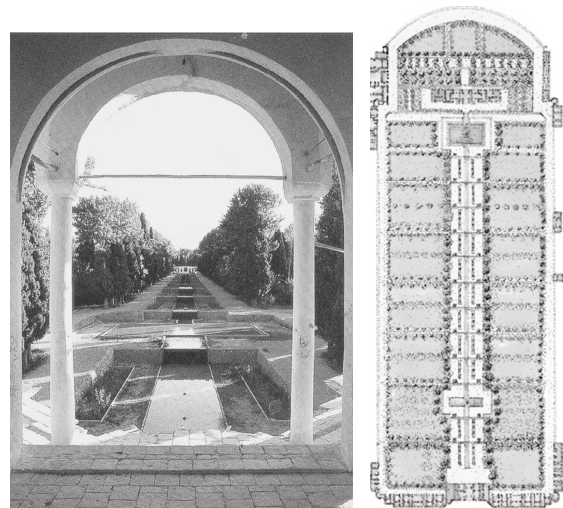


Plate 4 Interior and plan of Bagh-e-Shahzade (Khansari, Moghtader, and Yavari 16-17)

and its presence alters both sound and light. With the water circulating in channels and pools, the space of



Plate 5 Bagh-e-Afifabad, Shiraz, seen at the time the pool was being filled.

the garden is visually extended and altered by the reflections of light (Ardalan and Bakhtiar 59).

The sheen surface of water lying tranquilly in pools is valued for its dark yet reflective quality, for the pools are not intended to be clear. By contrast, the open channels linking the pools are lined with blue tiles and are crystal clear, as can be seen in the famous channels of Bagh-e-Fin (in Kashan, also in central Iran; Plate 6). As a British scholar observes, the traditional blue-tiled interior of European swimming pools has as a precedent the blue-tiled garden pools of Persia (Brookes 198).

Bagh-e-Fin, also on the edge of a desert and watered by ghanat, was built in 1590 as a villa for Shah Abbas to take rest while traveling to the north from Isfahan. Within the garden long watercourses accentuated with small fountains pass between tall stands of 400-year old cypress. The garden is cool and shady in summer with the bubbling of fountains adding to the tranquility.

Persian pools are generally raised somewhat above the level of the surrounding ground and are positioned such that they are visible from most parts of the garden (cf. Plate 8). Because of the importance of the dark, reflective quality of the water surface, the pools are seldom cleaned. The water, reflecting the heavens, thus joins "the exalted with the mundane."

Reflections in Persian gardens can be divided into three categories, according to the location and size of the pools.



Plate 6 Bagh-e-Fin. The gentle gurgle of water, moving through gravitational flow, cannot be caught on still film.

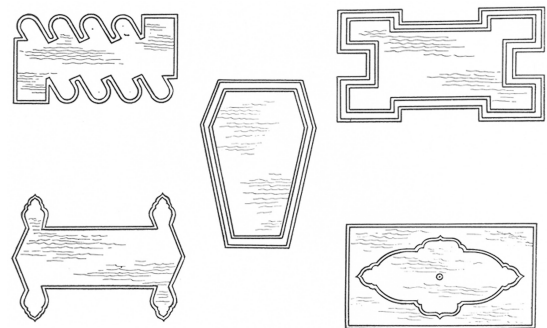


Plate 7 The different ways in which water is shaped and molded (Wilber 104)

### Reflections on the Large Pool

These pools essentially create the same effects that are familiar in western gardens, namely mirroring the surroundings but not effecting much alteration in the equilibrium of space.

Chehel Sotoon (cf. plates 9 and 10) was built in Isfahan in the late seventeenth century as a ceremonial palace for entertaining foreign ambassadors. A large rectangular pool reflects the entire pavilion. The



Plate 8 One of the small pools of Divan Khane, Shiraz

curious statues on either side of the pool originally functioned as fountains and are reminiscent of earlier Achaemenian or Sassanian motifs. The name "Chehel Sotoon" means "hall of forty pillars" and refers to twenty pillars set in three rows of six, with two additional ones on either side of the main entrance. When these pillars are reflected in the large rectangular pool, their number is doubled to forty, which in Persian is chehel.

#### Reflections on the Small Pool (Indoors)

The 18<sup>th</sup> century garden of Hasht Behesht was built in Isfahan. Openings occur on four of the walls of the octagonal pavilion, three of which provide a view of the large outdoor pool. Visually, the pavilion and garden merge. Within the pavilion, however, there is another, indoor pool which is also octagonal and can

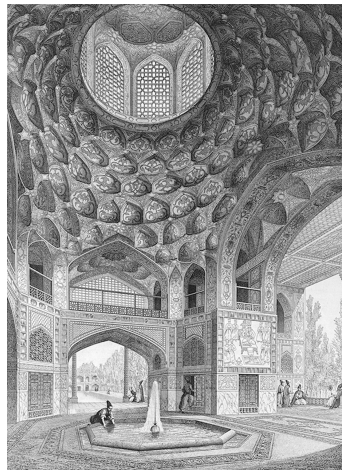


Plate 11a Hasht Behesht, 19<sup>th</sup> century engraving (Coste xxxviii)

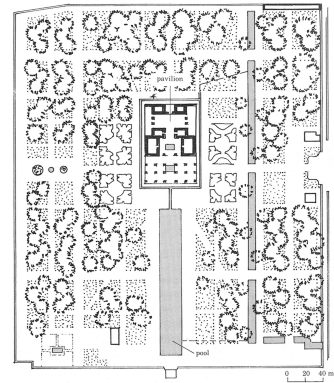


Plate 9 Chehel Sotoon, plan (Brookes 82)



Plate 10 Chehel Sotoon built in Isfahan, 1647

also be seen from each opening (cf. Plate 11 a&b). The fact that the indoor pool is the same shape as the building, outside of which stands a large reflective pool, emphasizes both containment and transition, bringing the exterior to the inside and suggesting the outside from the inside.



Plate 11b Hasht Behesht, Isfahan



Plate 12 Bagh-e-Nazar, interior



Plate 13 Haft Tan, Shiraz, built in the late eighteenth century

Bagh-e-Nazar was also built in the 18<sup>th</sup> century, but in Shiraz where it served as an ideal location for celebrations and special events in the hosting of foreign dignitaries and ambassadors. In the center of the garden there is an octagonal building in the center of which is a small octagonal pool that reflects the rich patterns of light that come in through glass-covered windows and entrances. Again, it should be noted that the shape of the pool imitates the shape of the building, outside of which there is a large, rectangular pool (cf. Plate 12).

#### Reflection on the Small Pool (Outdoors)

In Shiraz during the Zand period (1750-1794) several exterior pools were constructed in notably small scale. The uniqueness of their construction, which causes the surface water reflection to be similarly small, is a characteristic essential to the purpose of this study.

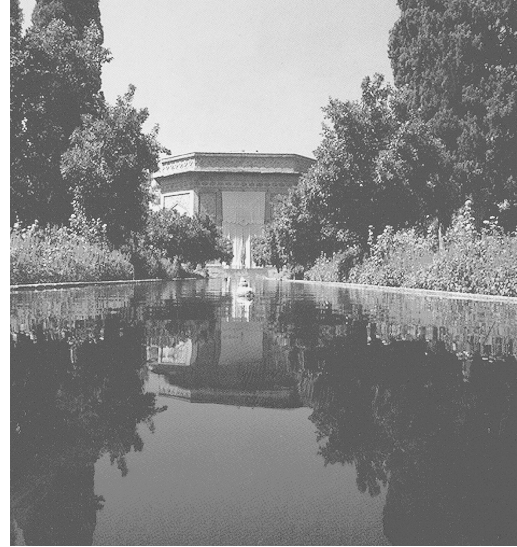


Plate 14 Bagh-e-Nazar, Shiraz

Karim Khan Zand (reigned 1747-1779) made Shiraz his capital. He reorganized the fiscal system of the kingdom, and removed some of the heavy tax burden on the agricultural class. An active patron of the arts, he attracted many scholars and poets to his capital. He was an exceptionally compassionate ruler who refused to assume the title of *shahanshah* (king of kings) but used instead the lesser title *vakil* (regent). During his reign he constructed many fine gardens in Shiraz, among which are Haft Tan (cf. Plate 13), Bagh-e-Nazar (cf. Plate 14), and Arg (the court house, cf. Plate 17). All of these gardens contain small outdoor pools. It is notable, perhaps, that this ruler who reduced taxation and assumed a modest title similarly reduced the scale of exterior pools, though the Arg also contains the traditionally large, rectangular pool.

Haft Tan is situated on the slopes of mount Chehel Tanan overlooking the city of Shiraz. The main building has a portal with a high entrance, in front of which is located a small rectangular pool (cf. Plate 13).

Bagh-e-Nazar, a former royal garden, was constructed between 1760 and 1770. The small octagonal pavilion, already mentioned above and known as *koleh-farangi*, is located at one end of a small but long rectangular pool occupying the center of the garden. The exterior walls of the building are decorated with glazed tiles that form floral designs in mosaic. Thus



Plate 15 Villa of the Papyri (a classical Roman garden), reconstructed in California in 1974 (Vercelloni)



Plate 16a Kinkaku-ji or The Golden Pavilion, Kyoto (originally built in 1398, but destroyed by fire in 1950 and rebuilt in 1964)

when reflected in the water of the small exterior pool, the mosaic floral designs create a visual garden within a garden. In other words, the living garden that is dominated by the man-made artificial garden contains a symbolic image of itself.

## The Creation of dissymmetry

Western gardens, with the exception of some naturalistic English gardens, are often symmetric throughout, down to minute detail. Generally, when they contain pools, the pools are large but not reflective (cf. Plate 15). Therefore, the symmetric aspect of the space surrounding the pool remains unaltered.

In contrast to Western gardens, Japanese gardens are typically asymmetric from the beginning (cf. Plate 16 a&b).

Logically, there are two alternatives to symmetry. One is asymmetry, which is the absence of symmetry. The other is dissymmetry, which is the breaking up of the symmetric state. Dissymmetry is a condition whereby an expected state is altered. Dissymmetry can occur in music as well as in visual domains. Visual dissymmetry is the striking result of the construction, placement, and usage of pools found in the gardens of the Zand era in Shiraz (cf. Plate 18).

True symmetry is rarely observed in the natural state, though we tend to construct a mental illusion of symmetry, imposing an expectation of balance and repetition. This man-made imposition becomes more pronounced in man-made structures, which, if truly symmetrical, are generally uninteresting. The designer, or designers, of traditional Persian gardens creates symmetry in the layout of the buildings, walls, and gardens and then intrudes into this symmetry by constructing reflecting pools that alter the perception of symmetry. This shifting illusion of three-dimension forms as reflected by two-dimensional water surface creates a visual conflict of symmetry and



Plate 16b An aerial view of the Arg, Shiraz, built in 1755

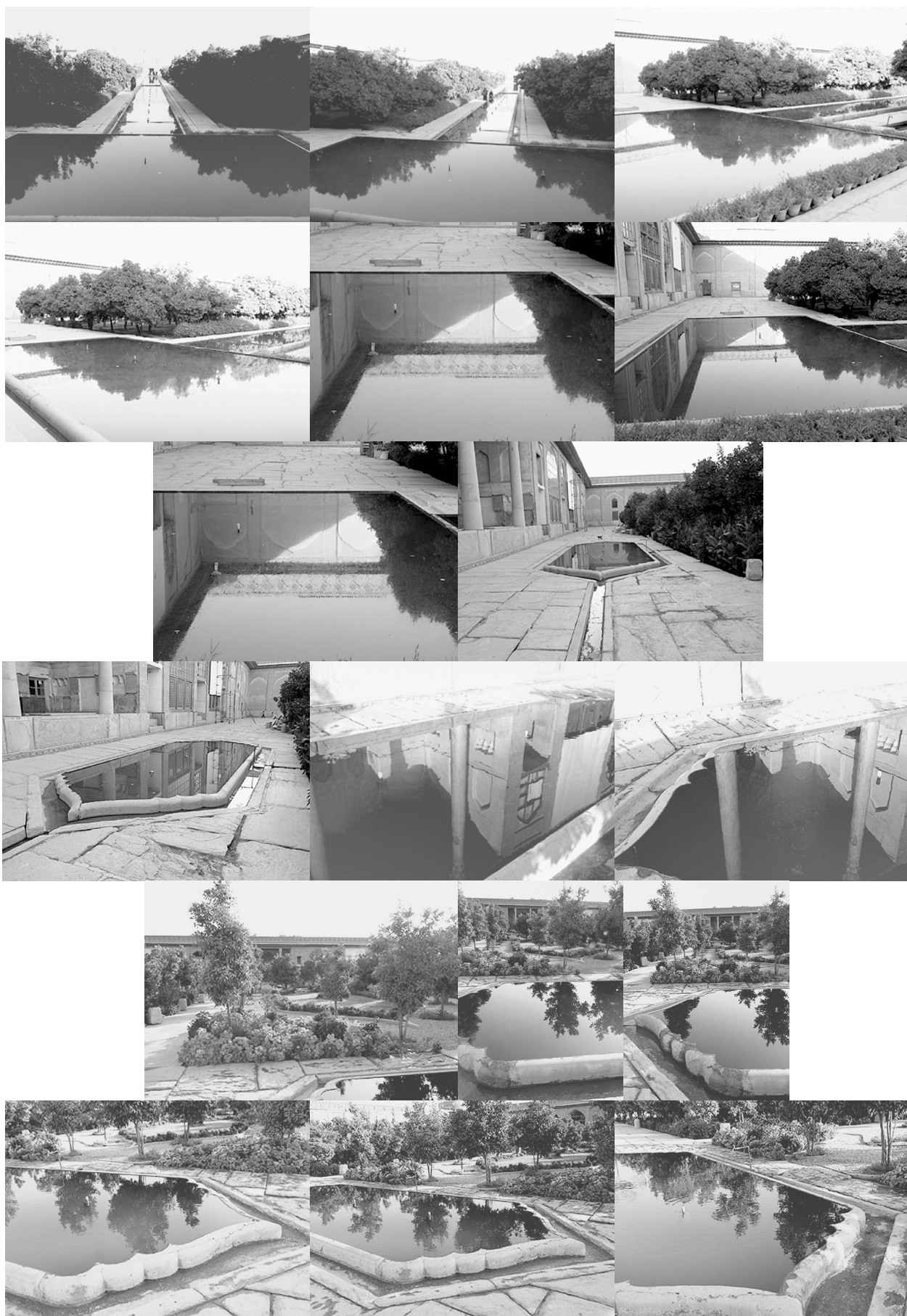




Plate 18 The Arg, interior

distortion such that the effect is dissymmetry found within a symmetric state. The garden itself is a man-made symmetrical state surrounded by the asymmetry of nature, growth, and decay found outside the walls of the garden. This interior/exterior reflection and contrast where symmetry and dissymmetry are united but distinct is the essence of the Persian garden.

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