

Allahverdi Khan Bridge (Si-O-Seh Pol) of Esfahan

An Example of Art and Mathematics

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*Beside a river seat thee on the sward;
It floweth past-so flows thy life away,
So sweetly, swiftly, fleets our little day –
Swift but enough for me!* (Hafez 14th. Century tr. Gretrude Bell)

Abstract

The bridge of Allahverdi Khan begins at the end of the Char Bagh, the main boulevard built in the 17th century as part of an urban project during the reign of King Abbass Saffavid in his capital city of Esfahan. It spans 300 meters, linking the city of Esfahan to new Jolfa, the new Armenian quarter across the Zayandeh Rud River. The great technical ability employed in this bridge is combined with a delightful sense of beauty and grandeur.

Built from sand, brick and sarouj (local concrete), this massive and picturesque bridge is set up against the river side.

The management and supervision of its construction was overseen in 1602 by the famous general, Allah Verdi Khan, after whom the bridge was named. The central aisle provided passage for animals and carts, paths on the sides are for pedestrians, from which there is access to arcaded galleries overlooking the river. Typical of the bridges of Esfahan, the Allah Verdi Khan was designed as a social and contemplative space, not just a transportation structure [1].

The bridge structure contains various detailed engineering characteristics. It exhibits the perfection of its architectural design. At the same time, the cultural aspects are considered properly.

“The traditional dual-purpose bridge-dam was retained in the more important monumental structures, but some of them were provided with places for leisure and recreation with elegance designed two or three story arcaded complexes serving as places for recreation and amusement. The arch of spans of Safavid bridges are always pointed and lined with bricks in a herringbone pattern. Tile is used in the mainly symmetrical decoration of the façade and arches.” [2]

The structure of the bridge provides enough rooms for traditional coffee shops that present storytelling shows. This bridge, which is 295 meters long and 13.75 meters wide, has very large arches, about 5.57 meters, with towers more than 3 meters thick. In the bridge design we observe some asymmetric elements resulting from protective structures for supporting the bridge against water damage. These asymmetry elements support the structure by additional arches and tunnels on the south side.

“Instead of an obvious and monotonous one to one or two to one correspondence, one arch of the upper story answer a pier below, while the next two above are paired against a single large arch,

thus creating an engaging syncopated rhythm. The measure of three regular beats in the upper register is accompanied by a double beat (the board foundation arch) and a blank rest (the solid pier) in the base below, and such compensating irregularity is one of the essences of syncopation.” [3]

During the conference, the authors presented ideas on how the bridge’s designer used a few asymmetry elements to provide special details where they were needed. The authors also presented how the technical elements were combined with a delightful sense of beauty and grandeur.



Figure 1: *Pedestrian arcade, Robert Byron, 1933-34*



Figure 2: *Down stream View, Khosrow Bozorgi, 1999*

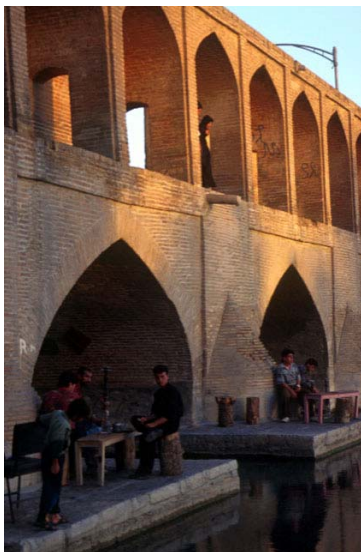


Figure 4: *The openings in the bridge act as social spaces, Tim Bradley, 1996*



Figure 3: *View through the arches, Talinn Grigor, 2000*

References

- [1] Blair, Sheila S. and Jonathan Bloom, *The art and architecture of Islam*. New Heaven: Yale University Press, 1994
- [2] M. Mousavi, *Bridges and Dames, Splendor of Iran* volume two page: 51, Booth- Clibborn Edition 2001
- [3] Arthur Upham Pope “ *A Survey of Persian Art*” Vol. 3, *Architecture*, Pages 1235-1237, Oxford University Press, London and New York , 1938