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# Revitalizing Istanbul's Water Heritage: The Valens Aqueduct

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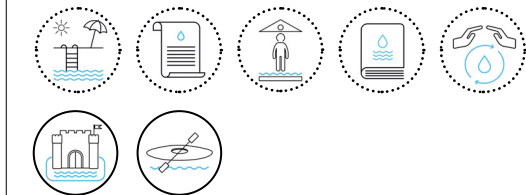
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*The ancient Valens Aqueduct in the metropolis of Istanbul, Türkiye, has the potential to raise public awareness of historical water management as well as of current and future water supply challenges. This monument stands as a highly visible remnant of what was once the longest water supply line of the Roman world. Although recognized and preserved as a heritage object testifying to its multi-layered history, it has lost its original function and its relationship to water management. We present a program that aims to develop solutions for revitalizing its tangible and intangible values as a prime example of water supply, management and culture through the ages. In this way, this heritage object can regain a connection with water, and water can become an engine for sustainable development.*



## KEY THEMES



## CLIMATE

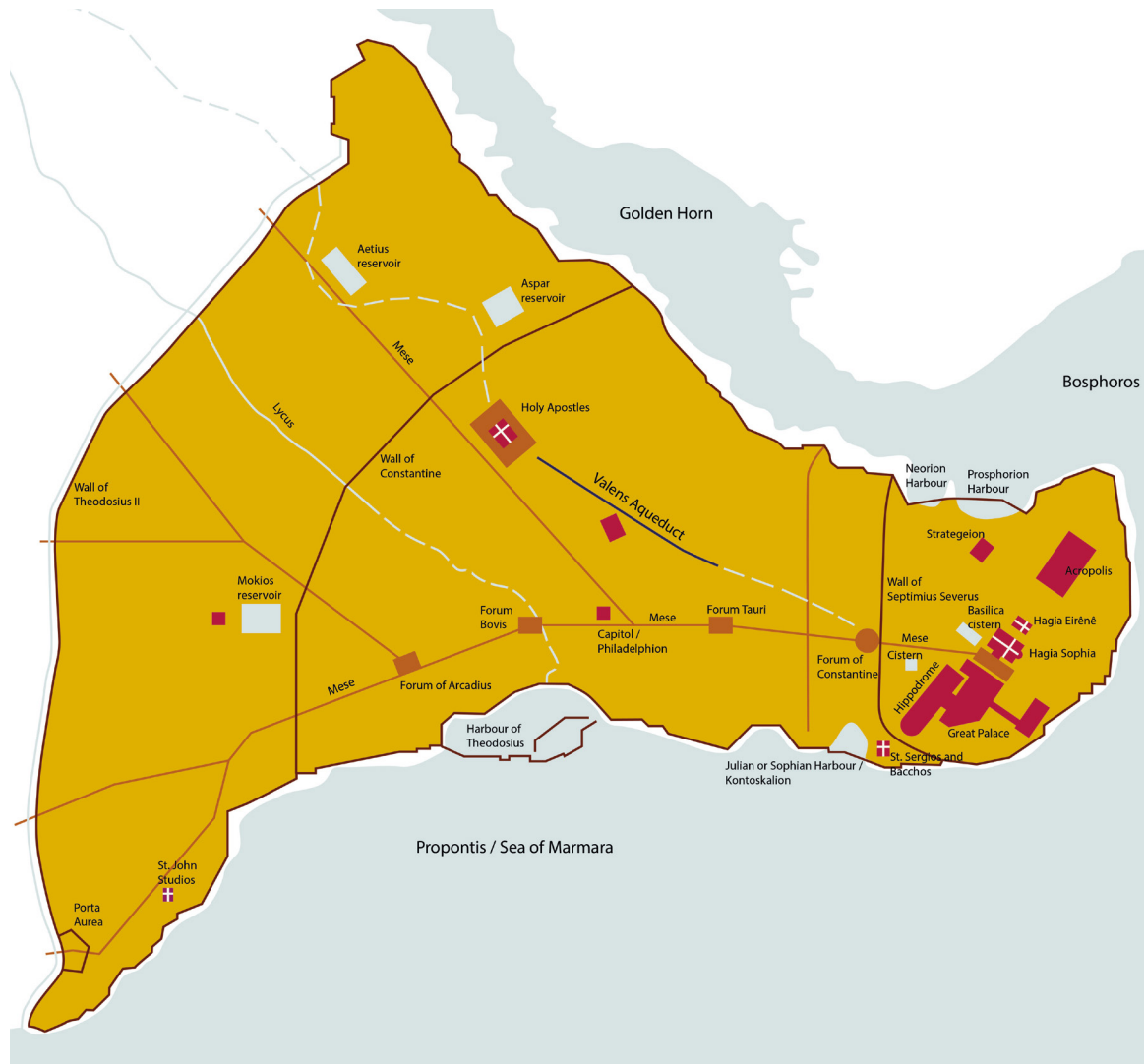


< Fig.1 The Valens Aqueduct (Bozdoğan Kemerı) in Istanbul (Source: Mariëtte Verhoeven, 2022, CC BY-NC-ND 4.0).

## Introduction

The presence and accessibility of freshwater was the most critical condition for settlement in the peninsula that Roman Emperor Constantine chose as the site for his new capital, Constantinople, in 324 (fig. 2). Although politically and commercially strategic, the location was a poor choice from the point of view of water sup-

ply since it lacked freshwater. In 373, the city was provided with a long-distance water supply line (Crow et al. 2008), named after the emperor to whom the construction is attributed: Valens. The Valens line consisted of a system of channels, bridges and tunnels that carried water through the landscape from Thrace, 185 km away. The line was extended in the fifth century to 250 km in a straight line, but the complete



^ Fig. 2 Plan of Constantinople in Late Antiquity (Source: Studio Hartebeest, 2021, adapted).

system was calculated to be at least 426 km in total (Ward et al. 2017).

Throughout its history, management of the Valens line had to be adapted to changing conditions, including droughts, hostile attacks and fluctuating population numbers. In the year 626, a large Avar army besieged Constantinople and the Valens line was cut, not to be restored until the year 766. From the twelfth century onwards, the long-distance water supply line largely fell out of use. However, the section now known as the Valens Aqueduct (Bozdoğan Kemerli), the 971-meter-long arched aqueduct bridge between the third and fourth hills of the historical city, was in use (primarily for urban gardening) until the fall of Byzantine Constantinople in 1453. After 1453, part of the old Byzantine system, including the Valens Aqueduct, was revitalized and restored by the Ottoman Sultan Mehmet II (Çeçen 1996, 33–4). An inscription on the monument mentions a further restoration around 1700. The aqueduct was depicted numerous times on Ottoman period city panoramas and was the subject of early photographers. Since the 1940s, the long-defunct aqueduct has had traffic speeding under its arches along the Atatürk Boulevard. Restoration work on the Valens Aqueduct started in 2018 on behalf of the Istanbul Water and Sewerage Administration (ISKI).

### **Current Situation**

The Valens Aqueduct stretches over an area with a dense and varied urban fabric consisting of historical monuments, workplaces, restaurants, residences, parks, parking areas and one of the main thoroughfares of the historic peninsula (fig. 1). The aqueduct is listed as a national monument, and its surrounding area is registered as an “Urban Conservation Site.” In

addition to its national significance, the Valens Aqueduct is within the boundaries of the “Historic Areas of Istanbul” UNESCO World Heritage Site.

The Valens Aqueduct is under a complex heritage management and governance scheme. Due to the area’s national and international protection status, there are conservation master plans regulating the monument’s preservation under the responsibility of the Ministry of Culture and Tourism. As a historic water structure, the Valens Aqueduct is legally owned by ISKI.

Despite its universal significance, the aqueduct is facing several threats, including air pollution, ongoing urbanization and uncontrolled use of the aqueduct by citizens. Houses, cafes and shops have been built partly in and against the monument, putting the integrity of the monument at risk (fig. 3).

Since 2018, ISKI has been carrying out restoration work, focusing primarily on structural and material problems. The masonry is being thoroughly cleaned and the joints are being renewed and strengthened (fig. 4). The restoration plan also proposes installing a platform to allow walking over or alongside the aqueduct at different heights. It is not clear to what extent this plan articulates the original function of the aqueduct and its connection to water management.

### **Challenges and Initiatives**

Every day in Istanbul, an estimated 16 million people need to be supplied with freshwater. The metropolis brings 50 percent of its water from other provinces because its own reservoirs are drying up (İlhan 2021). Consumers are hardly aware of the efforts made in water manage-



^ Fig. 3 Interior of the Valens Café (Source: Mariëtte Verhoeven, 2022, CC BY-NC-ND 4.0).

ment because the modern water supply system is largely invisible while the visible remains of the historical system are no longer in use for hydrological purposes.

The Valens Aqueduct, an imposing structure in the heart of Istanbul, representing centuries of multi-layered history of urban water supply, is seen as an ideal showcase to tackle the challenges of developing a greater awareness of the precious value of water, and to restore the relationship between water and heritage. In 2021, under the umbrella of the Urban Heritage Lab of the Netherlands Institute in Turkey (NIT), where we collaborate with academic, public and private partners from Türkiye and the Netherlands, we started seeking public opinion by conducting an online public survey about the Valens Aqueduct. Although limited in scope and reach, it clearly indicated that many residents of Istanbul know the Valens Aqueduct and are aware of its original function. They see the monument as part of their history and strongly feel that it should be preserved, even though it no longer serves a hydrological function. Yet actual public engagement – notions of ownership by the community and a more in-depth or personal understanding of the heritage values of the aqueduct and of the historical water system that it was part of – is limited.

We decided to focus on actions and initiatives connected especially with SDG 4 (Quality Education) in order to: (1) increase knowledge and public awareness of the tangible and intangible values of Istanbul's water heritage, and (2) educate (future) heritage experts, planners and designers on how to integrate heritage in contemporary urban design.

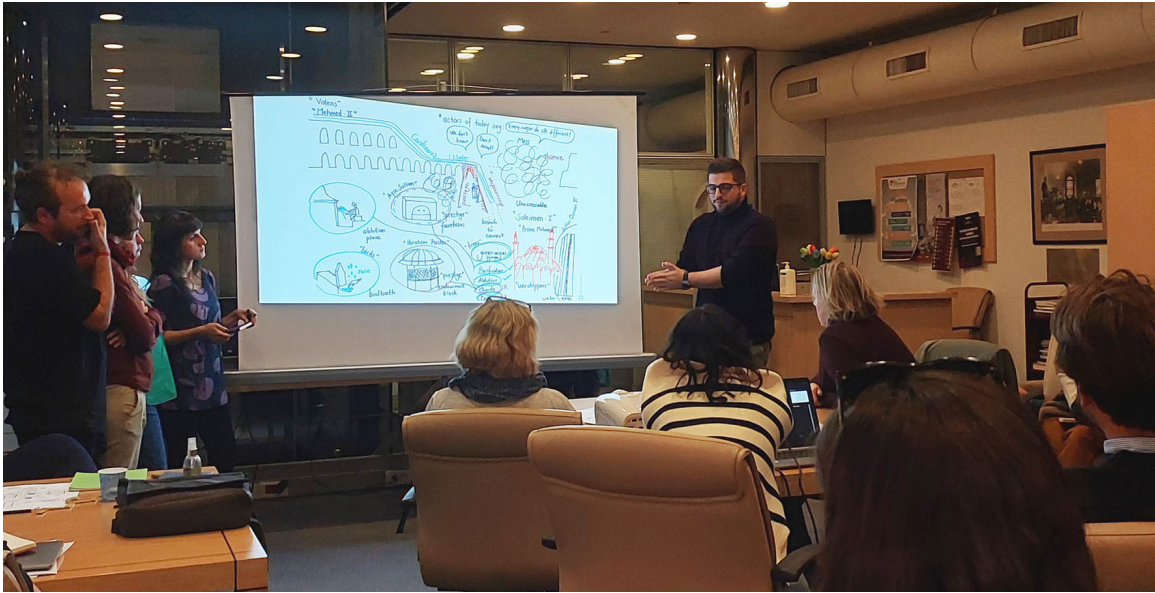
To explore sustainable solutions for increasing knowledge and public engagement, representatives of Dutch and Turkish heritage organiza-

tions, NGOs and the creative industry met in September 2022 in Istanbul for a workshop. Two approaches emerged from the brainstorming session: a technological one and a more physical one. With the use of digital technologies, we want to develop a walking route app, which uses texts, images and videos to guide the user along the Valens Aqueduct and related heritage, providing not only insight into its multi-layered history but also contemporary testimonies. A more physical engagement could be established by using the Valens Aqueduct as a stage and backdrop for a Water Festival on World Water Day, with culture and art activities around the theme of water in past, present and future. These activities should be developed in collaboration with the local community so that they can come up with their own solutions for sustainable urban water supply and consumption issues, thereby connecting SDG 17 (Partnership for the Goals) with SDG 11 (Sustainable Cities and Communities).

An interdisciplinary academic course for graduate students and junior professionals from the Netherlands and Turkey ran from September to December 2022. This course, Water Heritage for Sustainable Cities, familiarized participants from a range of disciplinary backgrounds – architecture, urban planning, heritage studies, history, arts – with perspectives on water and heritage, especially those related to contemporary water challenges in a context of climate change and urban development. In a research-by-design exercise, participants learned to work in an interdisciplinary team to design proposals for the revitalization of the Valens Aqueduct (fig. 5). These proposals included reversible interventions in the urban fabric, art installations, educational programs, heritage walks, water harvesting systems and local community activities. The results will be published in 2023 and shared with stakeholders and the public.



^ Fig. 4 Restoration work on the Valens Aqueduct (Source: Mariëtte Verhoeven, 2022, CC BY-NC-ND 4.0).



^ Fig. 5 A discussion in the Water Heritage for Sustainable Cities course, October 2022 (Source: Netherlands Institute in Turkey, 2022, CC BY-NC-ND 4.0).



## **Conclusion**

The biggest challenge for any plan to revitalize the Valens Aqueduct is to convince the relevant stakeholders in heritage and water management to preserve and protect the aqueduct not only as a historic relic but to employ it to restore the relationship between heritage and water. ISKI could, for example, through one of the proposed initiatives for the Valens Aqueduct, educate the public about its current efforts devoted to water management and supply in a sustainable future.

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