

The Historic Rampart of Yazd: Finding the Palimpsest of a Forgotten Greenway

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Abstract

The conversation about greenways has always had its own complications. The most supported definition is a linear space containing elements planned, designed and managed for multiple purposes including ecological, recreational, cultural, aesthetic and other purposes compatible with the concept of sustainable land use.

In the historical city of Yazd, there were networks of ways that, in addition to performing as connecting vessels, conformed with the environmental, historical, ritual, and cultural values. Prior to the registration in the historical UNESCO World Heritage list, the conservation conditions of the historic context of the city were rapidly declining. However, since the registration in 2017, measures were taken to protect and restore the existing tangible and intangible heritage.

In the investigation of greenways in the historic urban landscape of Yazd, we face several basic questions: What is the role of the historical rampart of Yazd city (Ilkhanate-Timurid) in the urban morphology and the formation and functions of contemporary greenways, how can the rampart in its current state help to revive these greenways, and how the possible linkage of the greenways with the palimpsest help in culturally anchoring these urban elements?

Introduction

Throughout history, humanity has consistently sought to reshape nature, from the advent of agriculture to the era of industrialization. These efforts, driven by the desire to exert control over the natural world, have led to permanent alterations in our environment. (Girot, 2016) Yet, in this process of transformation, something crucial remains: the traces of nature itself; often buried beneath the layers of human intervention. Greenways and green infrastructure are efforts to return nature to urban spaces, not by erasing the past, but by weaving it into a new ecological context where the imprints of human activity are acknowledged and respected.

Yazd is a historic city located in central Iran, serving as a cultural and economic hub for centuries. Strategically positioned along ancient trade routes, it played a significant role in commerce and cultural exchange, particularly during the height of the Silk Road. With a history dating back to pre-Islamic times, Yazd has been influenced by various dynasties, each leaving its mark on the city's development. Recognized as a UNESCO World Heritage Site, Yazd remains a testament to Iran's rich urban and architectural heritage, preserving its historical significance while adapting to modernity.

In the case of Yazd, the greenway—or any potential green infrastructure—cannot be viewed in isolation. Rather, it exists in the context of the city's complex historical layers, each one representing a moment of human interaction with the land. These layers, both tangible and intangible, form what can be thought of as a "cultural geology," a concept that examines the ways in which culture and history are embedded in the very fabric of the urban environment. For green infrastructure to be effectively integrated into this space, it must respect and engage with these layers, acknowledging the city's heritage while fostering ecological sustainability.

Recognizing these underlying layers is essential for designing and implementing green infrastructure projects that are not only ecologically beneficial but also socially and culturally meaningful. Such projects increase public attachment to the environment, encouraging greater participation in preserving and enhancing fragile ecological systems. By integrating greenways with the cultural and historical landscape, these interventions enrich the urban habitat, contributing to a more cohesive and sustainable city.

This research aims to explore the ways in which green infrastructure can be integrated into the historical and cultural layers of Yazd's ancient Rampart. Through a field analysis of a relevant case study, the study tests methods of observation, analysis, and planning within a context that acknowledges the city's rich heritage. In doing so, the paper seeks to demonstrate how green infrastructure can not only serve ecological purposes but also become a key element in preserving and enhancing the cultural identity of the city.

Palimpsest and Cultural Anchors

The idea of a comprehensive green infrastructure that "stitch together fragmented cities" (Walmsley, 1995), might result in the construction of a myriad of urban elements that might encompass green networks, pleasure avenues, greenways, greenbelts, or parkways. But whatever their form and function, they capture more than just the natural setting. Even without relegating the ecological considerations in different types of green infrastructure, when the plan is to reinstate nature into the urban setting, there is a complicated and layered context to be considered. Most researcher agree with the fact that "At most given points in time, cities have to be read diachronically" since "they consist of different time layers of spatial layout and of manifestations of meaning." (Therborn, 2021, p.22)

In this context, any research supporting the planning phase of green infrastructures must undertake the meticulous task of mapping disciplines and topics relevant to analyzing these layers. This requires engaging with diverse perspectives, such as the concept of "Sequent Occupance" (Whittlesey, 1929), the idea of "Cultural Geology" (Therborn, 2021), or the "Historic Urban Landscape (HUL)" approach (Bandarin & Van Oers, 2012). Despite their apparent differences, these frameworks share a common thread: the "Palimpsest Analogy"; the concept that resonates across theories due to its ability to illustrate the superimposition of historical, political, and social layers in space and place (Diener & Hagen, 2019, p.14). What Sauer, Whittlesey, and mainly Meinig contributed to the study of space/place bound culture was the careful consideration of the temporal processes of landscape, and the fact the analogy of palimpsest reminds us of how "the landscape itself reflects some of its past propertie." (Mitin, 2010).

In a more implementation oriented approach, the Historic Urban Landscape (HUL) is also supported with rich literature that highlight the significance of the Palimpsest in acknowledging layers of cultured space, and the vertical connection that the analogy creates through cultural anchoring (Razavi, 2020). Hence all efforts are concentrated on delving into this “capacity of construction, negotiation, and contestation of national identity through urban space and place” (Diener & Hagen, 2019, p. 9).

The efforts to capture and reveal the mentioned past properties in urban or periurban infrastructures, had precedents before the conception of the Palimpsest analogy. In essence, every amelioration of routes towards ritual destinations in history has created a greenway with a palimpsest framed as a destination. As an example with a non-ritual destination, the famous Chahar-Bagh pleasure avenue comes to mind. Within western examples, the siting of the Eastern Parkway over Jamaica Pass, and the entire conception of the Blueridge Parkway to glorify the history of the settlers, bring to mind the same idea of capturing the hidden layers of historic landscape. In all these examples, other political or economic goals may be at play, yet it is undeniable that the finished infrastructure has “the capacity to produce cooperative and conflictual social relations through their spatial layout... whether through mundane everyday interactions or carefully staged pageantry. They do so by selectively framing layers of history, politics, and social relations in space and place” (Diener & Hagen, 2019, p.14). In that respect, greenways can be a welcome intervention in the conservation management of the historic cities and landscapes.

History and Description of the Rampart

The elements that shape the physical structure of cities transform over time. One such crucial element is the defensive embankment, which has evolved based on the circumstances of each historical period. Beyond its strategic role, this element has left an undeniable imprint on the city's expansion. (Bahra, Naderi, 2020, p.1) Yazd, one of the most valuable historical cities in Iran, holds a rampart of particular significance.

There is insufficient information regarding the exact size, extent, and location of the city during the early Islamic period (11th century AD) and before. However, some researchers have used archaeological and morphological studies to estimate the city's initial range and its rampart. according to the available aerial images, the morphology of the context in this area differs from the surrounding context. Despite the fine-grained and compact nature of the entire historical context of the city, this area appears finer and more compact. This compactness could be attributed to an obstacle limiting the use of land for building construction throughout history. The area's peripheral accesses exhibit a combination of circular and radial forms, suggesting that the passages led to an important center. Local historical sources, which describe the city mainly from the fifth century AH (11th century AD) onward, do not mention specific buildings or uses for this area. It is plausible that a factor existed prior to this period that directed routes to this area. The identification of pottery belonging to the first centuries of the Islamic era in sites within some neighborhoods surrounding this central area validates the existence of Yazd in the early Islamic era within this area (Mortezaei, Mirdeqad Ashkazari, 2014, pp.169-171; Bahra, Naderi, 2020, pp.3-5).

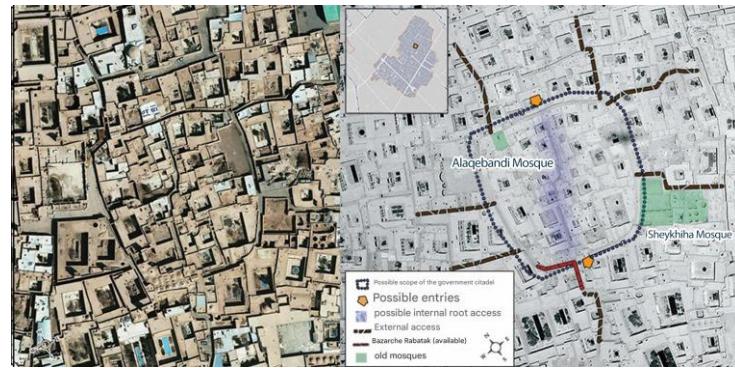


Figure1. Possible area of the city during the early Islamic period (Naderi, Bahra, 2020 p.2)

Naderi and Bahra quote Khademzadeh and Mandegari, stating: “The arrival of Ala al-Dawla Abu Mansur of the Kakuyeh (1007-1141 A.D) dynasty to Yazd marked the beginning of a new chapter in its history, transforming it from a small town into a coherent city. By establishing a small local dynasty and constructing an embankment, Yazd gained relative political independence and a new identity. One of the most important factors influencing this development was the construction of the embankment with four gates surrounding the city.” (Naderi, Bahra, 2020, p.4).

The rampart underwent changes in different periods due to various reasons, including government transitions, population growth, city expansion, wars, and natural disasters. Naderi and Bahra quote Kateb Yazdi and Modarres, who state: “In 673 AH (1247 AD) during the Atabakan era (1155-1424 A.D), a devastating flood struck the city, accompanied by five days of continuous rain. The flood, descending from the mountain to the city, caused extensive damage to outer neighborhoods. It filled the city ditch, destroyed parts of the rampart, and damaged gates and other structures. Subsequently, the rampart was repaired and modified. (Naderi, Bahra, 2020, p.5).

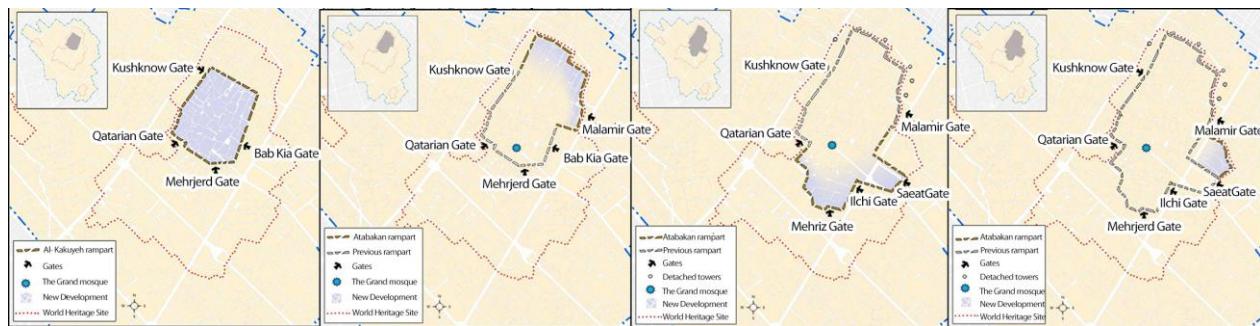


Figure2. The perimeter of the rampart, from left to right, in the Al-Kakuyeh, Atabakan, Al-Muzaffar and Timurid era (Naderi, Bahra, 2020 pp. 3-9)

During the rule of Al-Muzaffar, neighborhoods previously located outside the old rampart were incorporated into the city following the construction of a new rampart. Additional gates and significant towers were also built, doubling the size of Yazd during this period (Kateb Yazdi, 1966, pp.83-84).

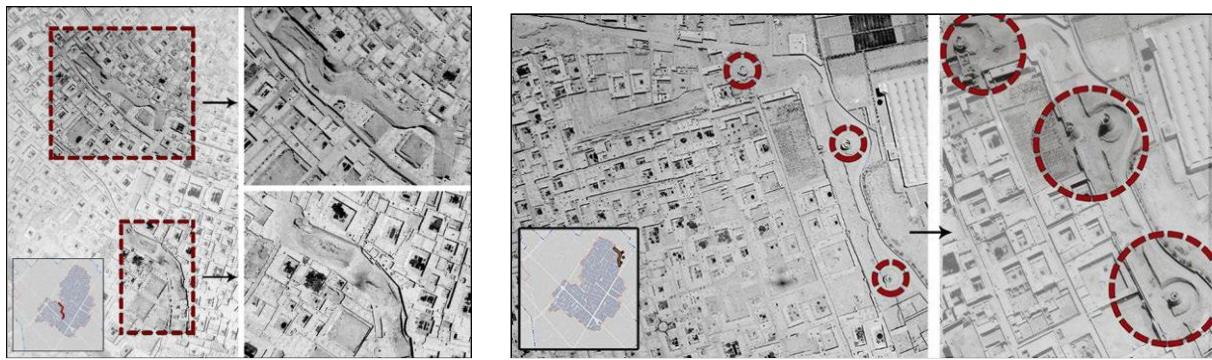


Figure3. Digging ditches (Left) and Detached towers (Right) built during the Al-Muzaffar Era (Naderi, Bahra, 2020 pp. 11-12)

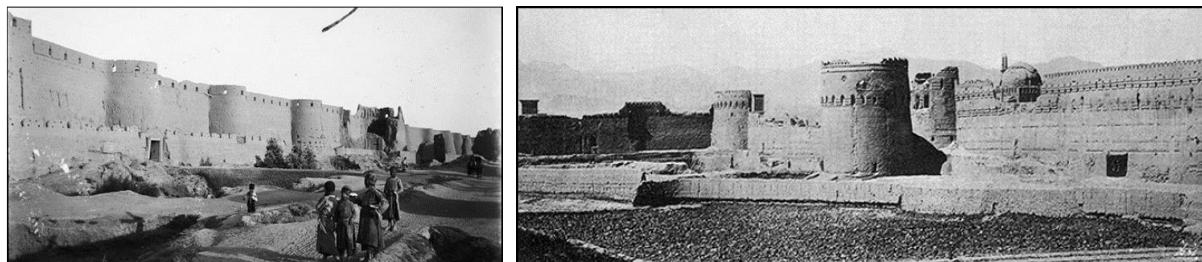


Figure4. Remaining part of the Al-Muzaffar rampart of Yazd / Source: Courtesy of Yazd historic city World Heritage base documentation center

In the Timurid period (1370–1506 AD), a broad embankment was constructed around the city. Towers and battlements served as strongholds, complemented by a defensive ditch inside the rampart and iron gates (Ja’fari, 1959, p.39; Mostofi Bafghi, 1963, pp.164-165).

In the Safavid era (1501–1736 AD), the city expanded again, and new neighborhoods emerged west and south of the rampart (Khademzadeh, Noruzian, Amiri, 2023).

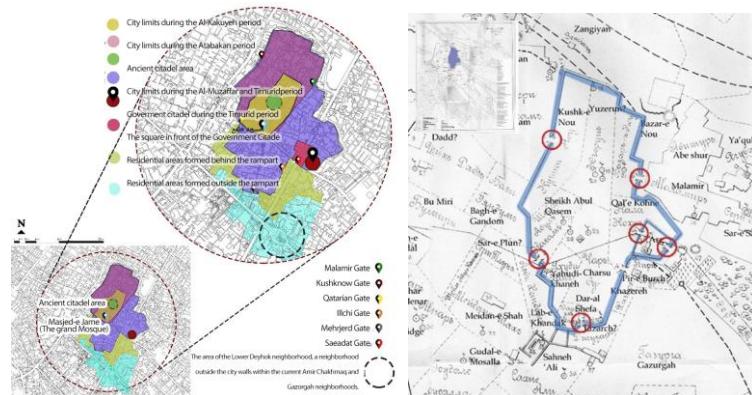


Figure 5. (Left) The development of the rampart and the city until the Safavid period (Khademzadeh, Noruzian, Amiri, 2023)/ Figure6. (Right) The authors' analysis over the Shetalov map the1899A.D Courtesy of Yazd historic city World Heritage base documentation center

During the Qajar period (1796–1925 AD), the city gradually ceased to be surrounded by the rampart, losing its military significance. The city was divided into an old core and new quarters (Qalamsiah, 1994, p.130).

During the Pahlavi period, significant changes occurred due to modern urban developments and the city's expansion. The rampart, having lost its defensive function, faced neglect and destruction. New street layouts and the introduction of wide, straight roads led to the demolition of large sections of the rampart. Imam Street, which aligned with the south and southeast side of the ramparts, and Qiyam Street are examples of how modern developments disrupted the historical texture. Vahdatzad, in his article "Reflections on the Urban Planning of the First Pahlavi Period: A Case Study of the City of Yazd," criticizes these changes: "There is no doubt that Reza Shah's urban planning method in Yazd, by tearing apart the historical context and destroying the most important traditional urban spaces, destroyed the civilizational organization and foundation of the ancient city" (Vahdatzad, 2007, p.9). This shift in urban planning reflected a broader change in attitudes towards historical architecture, where individual heritage buildings gained significance, but the cohesive historical fabric lost its importance.

The Role of the Rampart in Urban Planning

The rampart played a vital role in shaping the urban structure and planning of Yazd. Throughout history, the city evolved around this defensive element, with the rampart influencing neighborhood layouts, access points, and the city's expansion.

During the Safavid era, the rampart's strategic importance was coupled with the development of key city features such as bazaars, mosques, and caravanserais, creating a cohesive urban fabric. However, as urban needs changed, the rampart's role transformed. For instance, in the Qajar period, it was no longer a primary defensive structure but retained its historical significance.

Despite its diminished defensive role, the rampart continued to influence the social and cultural dynamics of Yazd. Neighborhoods formed around its gates, and its towers became landmarks, contributing to a sense of identity for the city's inhabitants.

Discussion: Backbone or Benchmark?

In the present tense, the rampart in some spots is still a place for social activities. Some spots are spaces adjacent to the remaining parts of the rampart, while others are formed on its palimpsest. Segment 1 on the map (Figure8) is an urban plaza adjacent to the remaining parts of the rampart. This space hosts socio-cultural gatherings, including the 2017 mud brick sculpture symposium, where participants built sculptures that now enhance the plaza's character. Segment 2 is a neighborhood park with a sports field, playground, and seating areas, enriched by the visual and ecological presence of trees. Both areas in the northern part of the rampart are vital for its continued relevance. They host dynamic public activities: families visit the playground, tourists explore restored rampart sections, and young people and the elderly use the park for leisure and socialization. Structurally, the rampart here is visible but not imposing, striking a balance between the inner World Heritage site and its outer surroundings.

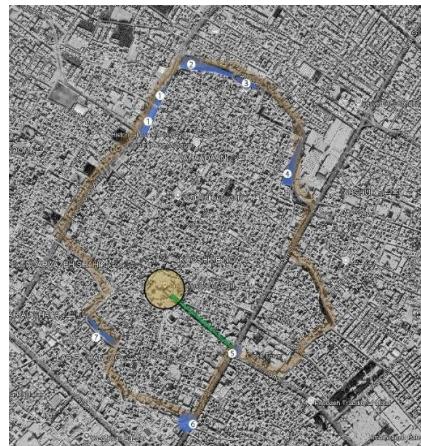


Figure7. Cultural/social/entertainment/ritual activities in the vicinity of the rampart. The authors' analysis over the Google map 2024

Ecologically, tree planting in Yazd's hot, arid climate is challenging, with the city's per capita green space at 13 square meters—far below the 25-meter standard (Heydari, 2017). Trees in this area create a pleasant microclimate, with dense planting in the east and sparse greenery in the west, enhancing both aesthetics and ecological value. Segment 3 serves as a neighborhood entrance with tree-lined streets but no visible rampart traces, reflecting its development on the rampart's palimpsest.

Segment 4 is a religious-cultural park featuring a mosque and a Zur Khaneh (traditional gymnasium). Small remnants of the rampart are visible here. Segment 5 (Figure9) marks the intersection of Masjed-e Jame Street and the rampart, where a clock tower defines an axis leading to Masjed-e Jame, creating a vibrant urban space despite the rampart's absence. Segment 6 hosts the Shazdeh Fazel shrine, a religious-cultural hub for worship and rituals, located at the southeasternmost point of the Ilkhanate-Timurid rampart, where no traces of the embankment remain.

Segment 7 (Figure10), in the Lab-e Khandaq neighborhood ("beside the ditch"), is a park enriched by trees and remnants of twin towers from the rampart, which act as monuments. The street built on the ditch clearly reveals the rampart's palimpsest, blending historical layers with modern urban space.



Figure 8. The first mud brick sculpture symposium of Yazd (Yazd Municipality website)

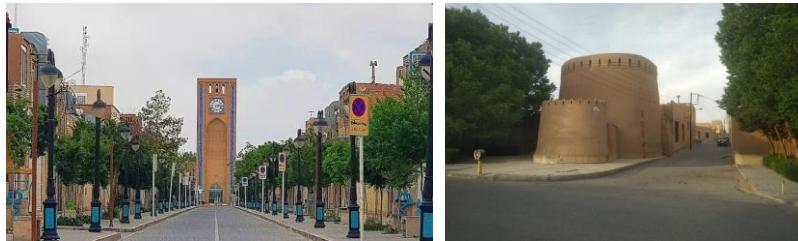


Figure 9. (Left) The clock tower(UTRAVS.IR) /Figure10. (Right) Twin towers of Lab-e Khandaq (Google maps)

Conclusion

The contemporary era is deeply invested in harmonizing the public realm with nature. However, as the concept of the palimpsest suggests, any urban development—green infrastructure included—unfolds within a complex, layered framework shaped by both tangible and intangible historical and cultural traces. Within this context, preserved historical elements serve as vital cultural anchors, bridging past and present across these layers.

In certain areas, existing spaces have naturally integrated into the backbone of green infrastructure, while in others, this potential remains dormant, subtly embedded in the city's morphology. Given the evident synergy between cultural behaviours, historical context, and green corridors revealed through map analysis, any thoughtful approach to green infrastructure development must prioritize the seamless coexistence of these layers. To guide this process, we have categorized and assessed landscape design proposals based on specific criteria: 1. The visibility and prominence of the rampart (Orange in figure 11); 2. Availability of free, open space (Blue in figure 11); 3. Density of vegetation and trees (Green in figure 11); 4. Proximity to significant historical monuments or landmarks (Red in figure 11); 5. Connection to historical, socio-cultural, or economic behavioral patterns and the strength of these relationships (Pink in figure 11); and 6. Level of public approval and community support. (Yellow in figure 11).

This framework ensures that future green infrastructure honour historical layers of Yazd while fostering meaningful connections between its cultural heritage and natural environment. Finally, by examining the above-mentioned cases, seven areas that were common to the cases are considered as spaces with high potential for landscape design or landscape improvement. Designing or redesigning these seven areas, along with completing the green belt around the rampart, can help bridge the missing link between tangible and intangible heritage, nature, and the community: cultural anchoring through active reading to the rampart palimpsest.

In conclusion, the historic rampart of Yazd stands as a layered testament to the city's evolving relationship with its environment and heritage. Once a defensive structure, it gradually transformed into a forgotten greenway, reflecting the dynamic interplay between architecture, nature, and urban life. Uncovering this palimpsest not only reveals the hidden narratives embedded in Yazd's landscape but also offers valuable insights into how past urban strategies can inspire sustainable development today. Revitalizing this historic pathway could bridge the gap between preservation and innovation, breathing new life into the cultural fabric of the city.

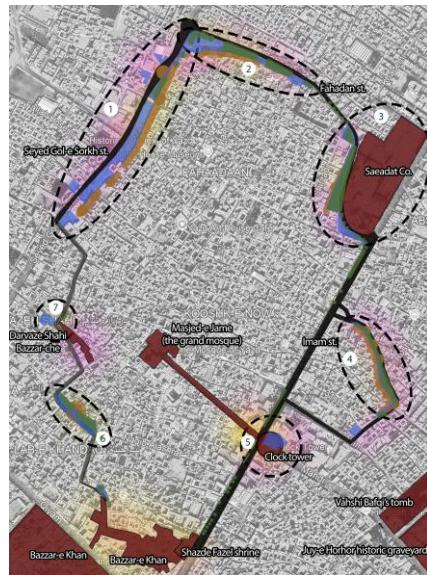


Figure 11. Analysis map of the potential of different spaces for landscape design. The authors' analysis over the Google map 2024

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