



The Venetian Arsenal: Water, Culture and Heritage

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The Venetian Arsenal, one of Europe's oldest shipyards, played a crucial role in the development of Venice. Although it now hosts events for the renowned Biennale, since the partial departure of the military, the site has offered little value to the communities in its vicinity in part because citizens have not been included in heritage management decisions. A recent draft agreement signed in 2022 to expand La Biennale's activities threatens to further exacerbate livability problems faced by local communities. However, the agreement's early stage presents an opportunity to repurpose the Arsenal in response to Venice's many problems, including mass tourism, the need for more housing, the ecosystemic loss in the Venetian Lagoon and the ongoing privatization of public spaces.

Keywords: urban regeneration, sustainable development, commodification, public asset



KEY THEMES



< Fig. 1 A view from the Gaggiandre, the aquatic canopies built between 1568 and 1573 in the Darsena Novissima and used to shelter rowing galleys that did not require masting (Source: Camila Burgos Vargas, 2023).

Introduction

The Venetian Arsenal (Arsenale di Venezia) has become renowned for its architecture and for the art displayed there. Yet, it is also a place where water management, heritage preservation and urban justice issues converge. One of Europe's oldest shipyards, the Arsenal played a crucial role in the development of the city. Between 1660 and 1797, it saw the construction of 115 warships (Nani Mocenigo 1995, 105–18). The site consists of 478,000 m² of buildings (136,380 m²), open spaces (224,620 m²), and water surface (117,000 m²), covering approximately 20 per cent of Venice's Castello district (without counting water surface). Until the end of World War II, the Arsenal was a mass-production shipyard and armory with a workforce of varying size (at the peak of its efficiency in the early sixteenth century, the Arsenal employed some 16,000 people) (Menichelli 2022). Because Venetian navy and merchant ships

were built and repaired at the site, it became a symbol of the city's economic, political and military power. Since its gradual abandonment by the military, the water system surrounding the Arsenal has been recognized as an area where both current and future challenges to Venice's survival are concentrated.

The combined effects of past industrialization, the widening of shipping channels across the lagoon and unmonitored groundwater extraction have caused the city to sink, increasing the risk of flooding, especially as sea levels rise. The Venetian Lagoon also faces threats from mass tourism and cultural globalization, which have turned Venice into a "dying city" (Settis 2014; figs. 2 and 3). In light of these complex challenges, this article argues that the Arsenal, recognized as a site of Outstanding Universal Value by UNESCO, should be managed in a way that prioritizes the well-being of local citizens and ecosystems.



^ Fig. 2 A sector of Venice covered by high water (Source: Federico Camerin, 2019).



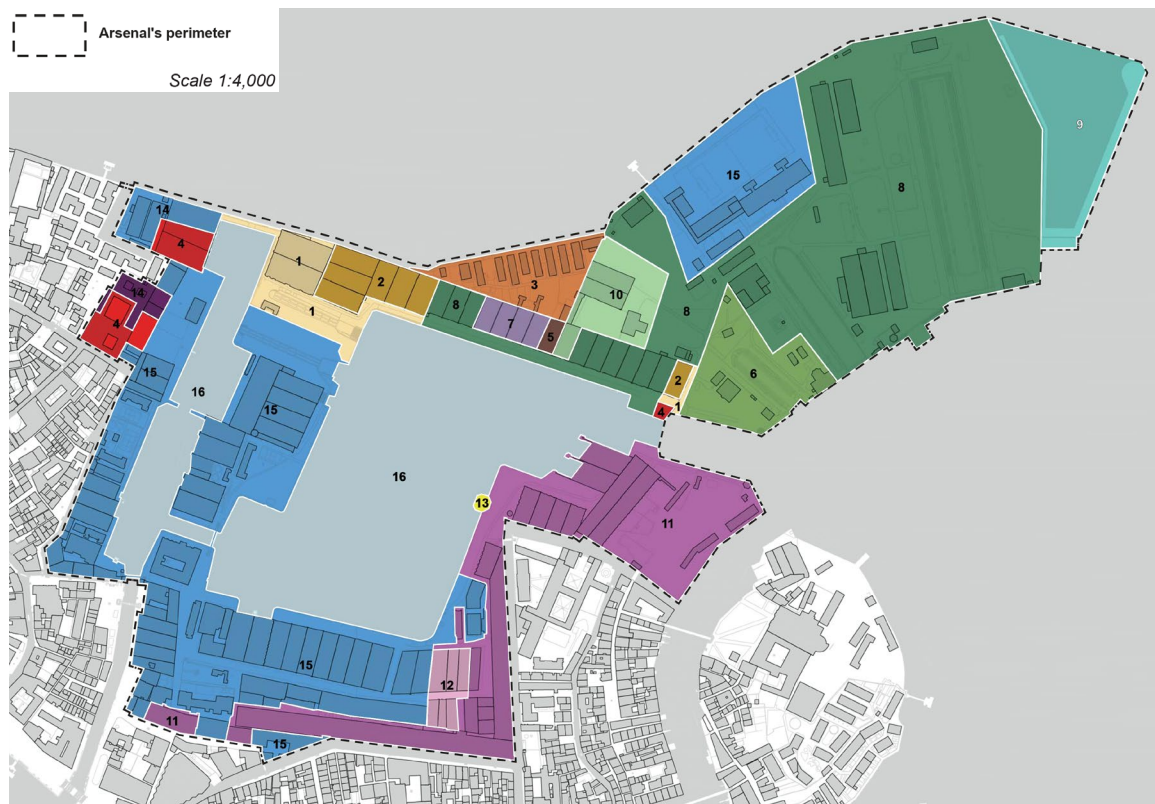
^ Fig. 3 A cruise passing through Venice's Grand Canal (Source: Federico Camerin, 2019).

Recent Approaches to Preserving and Managing Water Heritage

In the 1980s, a long process began that would turn the Arsenal into an art hub. There were many complexities and challenges. Repurposing former port sites often presents difficulties, as observed in similar cases around the world (e.g., Orchowska-Smolińska 2019; Van Valkenburgh Associates 2024). The challenges are

apt to be even more pronounced in a city as historic as Venice, where attracting tourists and commodifying public assets competes with the need to maintain or enhance livability.

The initial phases of the Arsenal's transformation followed the dominant concepts of waterfront regeneration, prioritizing public-private partnerships and private ventures, with limited citizen involvement in heritage management (Zan 2022).



ARSENAL'S USES/FUNCTIONS

1 State Property - Historical and Artistic Branch	5 Arsenale di Venezia SpA	9 Magistrato alle Acque di Venezia	13 Soprintendenza BAP Venezia e Laguna
2 State Property - Historical and Artistic Branch - Temporary Concessions	6 ACTV SpA	10 Thetis SpA	14 Università Ca' Foscari
3 State Property - Transport and Navigation Branch - Harbour Master's Office	7 ISMAR-CNR	11 La Biennale di Venezia	15 Ministry of Defense - Italian Navy
4 Municipality of Venice	8 Consorzio Venezia Nuova	12 La Biennale di Venezia (to refurbish)	16 Ministry of Defense - Italian Navy (water space)

^ Fig. 4 Planimetry of the Arsenal, color coded with current uses and functions (Source: Federico Camerin, 2024).



^ Fig. 5 The interior spaces of a restored building that today hosts activities of La Biennale (Source: Gerardo Sempregon, 2023).



^ Fig. 6 Exterior open spaces of the Arsenal devoted to La Biennale at the edge of the area still owned by the military (Source: Gerardo Sempregon, 2023).

To date, five main civil functions have been established at the Arsenal, with the aim of combining restoration and innovation (fig. 4). The first function is connected to the Arsenal's military history; the Italian military still owns 77,000 m² of the site, which houses, among other things, the Italian Navy Staff College and a library.

The second function dates to 1980 – before the Venetian Lagoon's 1987 designation by UNESCO as a World Heritage Site – when the Arsenal became an exhibition site for La Biennale, one of Italy's most influential cultural foundations and known especially for its semiannual international exhibitions. Since then, La Biennale has played a significant role in the restoration of the Arsenal, redeveloping several areas to host foundation activities (Somma 2021, 146; figs. 5 and 6).

In the early 2000s, a third function was introduced when the Institute of Marine Sciences

(ISMR), part of the National Research Council (CNR), relocated its headquarters to the Arsenal. This state-led institution conducts research in Mediterranean, oceanic and polar regions, focusing on climate change and its socioeconomic impacts on coastal systems (Menichelli 2022).

The fourth function began in 2006 when the Consorzio Venezia Nuova, a concessionaire of the Italian Ministry of Infrastructure and Transport, was granted a significant portion of the northern part of the Arsenal for the storage of industrial materials and debris. The consortium is responsible for the planning, maintenance, management and control of the ecosystem associated with the functioning of MoSE (Experimental Electromechanical Module), a large-scale engineering project designed to prevent flooding, which became operational in 2020 (Menichelli 2022).

Finally, since 2019 public authorities have sought to revive the boating and shipbuilding



^ Fig. 7 Interior spaces of the Arsenal hosting the annual international Venice Boat Show (Source: VELA S.p.A., 2024).

industry through the annual Venice Boat Show. This event has focused on both traditional and innovative shipbuilding, linking heritage craftsmanship with modern concerns such as sustainability and innovative technologies including electric, hybrid and hydrogen propulsion systems. Additionally, the event has promoted educational and sporting activities in and around the sea and the lagoon, emphasizing Venice's enduring connection to these waters (Città di Venezia 2024; fig. 7).

The restoration and rehabilitation of the Arsenal has created space for scientific research, heritage preservation, cultural activities and military functions. However, this transition has failed to provide facilities or spaces freely accessible to citizens or addressed their most pressing concerns: excessive tourism and the shortage of housing (Zan 2022; figs. 8 and 9). From the outset, the regeneration of the Arsenal has been disconnected from the needs of local commu-

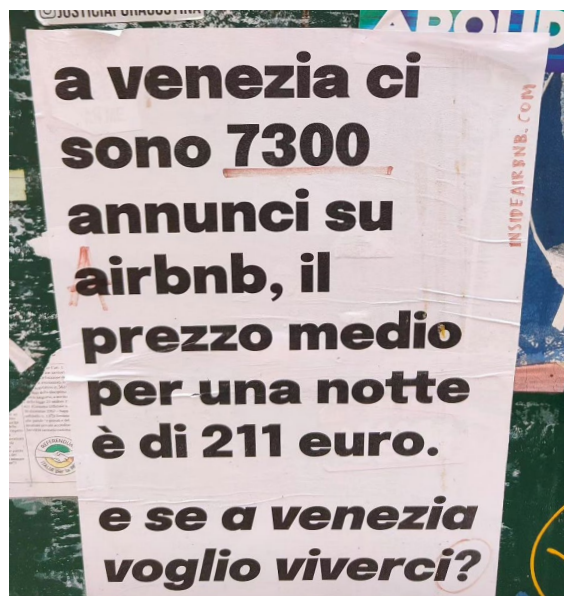
nities, prioritizing the commodification of the cultural activities promoted by La Biennale.

Current and Future Challenges in the Management of the Arsenal

The Arsenal faces two distinct sets of challenges, both stemming from the top-down approaches to water management, urban planning and heritage protection taken by the national and local governments. On the one hand there are ecological challenges associated with the MoSE system of movable barriers designed to block high waters and prevent flooding in the city (fig. 10). However, the frequent use of MoSE, which is likely due to climate change, is reported to damage the ecosystem of Venice and its lagoon (Viviano 2022). Specifically, the system threatens the halophytic vegetation of salt-tolerant plants that serve as a biodiversity hotspot. The MoSE prevents the vegetation from



^ Fig. 8 Written on a shop shutter: "Too many tourists" (Source: Federico Camerin, 2024).



^ Fig. 9 A poster on the street in July 2023 states “Venice has 7,300 listings on Airbnb, with an average price of 211 euros per night. What if I want to live in Venice?” (Source: Federico Camerin, 2023).

being regularly submerged by tidal sediment, disrupting the intake of essential nutrients for local flora and fauna (Alberti et al. 2023).

On the other hand, since the early 2000s intellectuals, academics and citizens have advocated for portions of the Arsenal to be dedicated to boatbuilding, rowing groups and the display of traditional watercraft, which could generate jobs while preserving traditional Venetian ways of life. However, much of the Arsenal remains largely inaccessible to the public.

In 2002 the conference *Arsenale e/è Museo* (Arsenal and/is Museum) proposed converting the Arsenal into a “civilizing center of water” – a public complex that would include a national museum of archaeology, history and ethnography, along with a research center focused on the Venetian Lagoon as a resource (Castelli 2002). Although this idea was supported by the

local district council and the navy, it was not endorsed by the City Council, and no further action was taken.

Twenty years later, in 2022, the Ministry of Defense, Ministry of Culture, and the City Council signed a draft agreement (Ministero della Difesa-Mibact-Comune di Venezia 2022) that appears to reinforce La Biennale’s focus on private-oriented cultural and leisure activities, backed by €170 million of public national funding (with 107 million coming from Italy’s recovery and resilience plan). This agreement, which was not publicly discussed, outlines three main actions: the creation of an International Center for Research on the Contemporary Arts, managed by La Biennale in a navy area; the restoration of the Arsenal’s old docks and Galeazzo canal as a dock and safe harbor for emergency public boats; and the requirement to host two events per year, each lasting at least 15 days.

These initiatives seem to overlook the relationship between citizens, the Arsenal and the sea, focusing instead on La Biennale’s artistic and cultural activities and the associated economic gains. The 2022 draft agreement, which grants more public space to La Biennale, highlights the absence of an integrated heritage management strategy. The Arsenal now risks being transformed from a unique symbol of Venice’s maritime history to merely a venue for La Biennale events. Residents and organizations have opposed the agreement due to the lack of public consultation and the continued commodification of public assets for private interests.

Future Possibilities for the Arsenal

Amid increasing water-related and environmental challenges, changing socioeconomic dynamics and the pressures of privatization,



^ Fig. 10 Aerial view of the MoSE project in Venice, Porto di Lido (channel north of Lido) in mid-2009 (Source: Chris 73, 2009. Wikimedia Commons, CC BY 3.0).

Venetian citizens have mobilized to demand more people-centered approaches for the Arsenal. Reflecting this activism, the grassroots association Forum Futuro Arsenal (2018) has proposed an inclusive heritage management plan and the creation of a maritime museum. However, these proposals have not yet seriously been considered by public authorities, who prioritize more profitable private-oriented reuse of the site. One potential solution to reconcile the interests of public authorities and citizens is the establishment of an autonomous public entity that could integrate the diverse needs of public authorities, private stakeholders and the community. The concept of Public-Private-People Participation (“P4”) has emerged to address the shortcomings of traditional public-private

partnerships by including the general public alongside public and private actors (Boniotti 2023). Ideally, the City Council would coordinate this initiative, but citizens continue to argue that the local administration has failed to fully assume this responsibility.

The local political and socioeconomic landscape must foster a more sustainable relationship between water and heritage. What the Arsenal lacks is a democratic dialogue involving all stakeholders and the development of short-, medium- and long-term strategies to address diverse needs. Several solutions could unlock the Arsenal’s potential to tackle the challenges faced by Venice and its residents:

1. The Bacino Grande of the Arsenal could be repurposed for permanent shipbuilding activities focused on sustainable and traditional practices, such as building oar-powered boats that generate less wave action than motorized vessels, thus reducing the erosion of stilt foundations and preserving both the craftsmanship and the Venetian urban fabric.
 2. Underused areas of the Arsenal could be allocated to fulfill citizens' requests for a maritime museum, more accessible public space and housing.
 3. Some of the space currently dedicated to the management of the MoSE project, ISMR-CNR and the Italian military could be used for research on safeguarding the Venetian Lagoon, including the restoration of salt marshes that have protected and nourished Venice for 18 centuries.
 4. The public-private collaboration with the Biennale could adopt a more community-centered approach, for example, by earmarking a portion of the international event revenues for the renovation of the Arsenal sections dedicated to the public, providing annual access to Venetian residents and creating programming within the Biennale that celebrates and preserves Venetian heritage.
- tions, research and educational purposes. However, institutional efforts must become more transparent and aligned with the public interest. While La Biennale and its activities significantly boost the local economy, the solutions proposed by public entities have not sufficiently addressed the hardships experienced by residents and the lagoon ecosystem. Embracing the P4 model – including the components of participation and open planning – offers an opportunity to enhance stakeholders' involvement in heritage management and to foster new public-private partnerships and initiatives capable of addressing multiple challenges.

Conclusion

The renovation of the Arsenal has the potential to pursue SDG 11, "Sustainable Cities and Communities," by transforming what was once the cornerstone of Venice's maritime power into a catalyst for the "right to the city" and addressing the social, economic and environmental challenges Venice faces today. Governance partnerships have successfully restored and repurposed sections of the Arsenal for exhibi-

Policy Recommendations

- Dialogue with citizens should be initiated to overcome the shortcomings of the multi-decade process of repurposing the Arsenal. The sustainable development of the city should be pursued along with protection of the city's water, culture, natural surroundings and heritage. Following negotiations, P4 approaches should be formalized with binding contracts involving civil society organizations, academia, professional organizations and media.

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