

# Rediscovered verticality: silos as a canvas for the contemporary

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## Abstract

Industrial silos, originally storage structures, have become symbols of modernity, architecture, and urban identity. Their verticality and modularity convey both functional efficiency and monumental presence. Today, silos play a key role in industrial heritage debates, where adaptive reuse raises questions of memory, community engagement, and market pressures. This study analyzes international case studies, with a focus on Milan's Armani/Silos Museum, exploring how conservation, innovation, and cultural narratives intersect. Findings show that silos serve as multidimensional heritage platforms, balancing historical memory, social participation, and economic dynamics, offering insights for sustainable and culturally meaningful urban reuse.

## Keywords

Reinforced concrete silos, Industrial heritage, Living heritage, Adaptive reuse, Cultural memory.

## Introduction

In the history of industrial architecture, silos have emerged as iconic vertical markers, where technology, economy, and landscape converge in a distinctive formal and symbolic synthesis<sup>1</sup>. Originally designed for storage, they gradually acquired a significance that transcends their productive function, embedding themselves in the collective imagination through their «silent monumentality»<sup>2</sup>. Early modernist architects such as Gropius and Le Corbusier recognised silos an exemplary synthesis of form and function, while Mendelsohn<sup>3</sup> emphasised their sculptural potential as instruments for the visual organisation of the territory<sup>4</sup>, anticipating contemporary debates on infrastructure aesthetics as a form of monumental expression.

Today, silos occupy a central role in discussions on industrial heritage, understood not merely as material preservation but as a social and cultural process that transforms former production sites into shared heritage. Many, as icons of modernity, have been repurposed into museums, cultural centres, and tourist hubs, exemplifying how industrial icons can be integrated into contemporary urban landscapes. *Silo City* in Buffalo<sup>5</sup> stands out as a case where industrial monumentality has been reinterpreted, balancing cultural innovation and landscape integration<sup>6</sup>.

Yet, such interventions raise critical questions: to what extent do they authentically preserve the historical memory of these sites, and to what degree might they risk reducing it to a tool of urban marketing? As Smith observes<sup>7</sup>, the transition from productive infrastructure to cultural asset involves a delicate balance between conservation and innovation, community identity, and economic imperatives, underscoring the complexity inherent in contemporary heritage practices.

This study examines these dynamics through a series of international case studies selected for their architectural significance and functional diversity, focusing in particular on the *Armani/Silos Museum* in Milan, designed by Mario Cucinella Architects, which exemplifies contemporary industrial reuse. The research adopts a comparative framework, integrating documentary analysis, architectural observation, and socio-cultural investigation to understand how silos mediate memory, identity, and innovation.

### **Methodological framework**

This research adopts a comparative framework to investigate adaptive reuse of industrial silos, combining architectural and socio-cultural perspectives<sup>8</sup>.

- Documentary Analysis: Review of literature, reports, and guidelines to contextualize the heritage and architectural significance of silos.
- On-site Observation: Visual surveys and structural assessment to link architectural features with historical and functional roles.
- Secondary Sources: Academic and project documentation for socio-cultural insights and functional analysis.
- Case Selection: Sites were chosen for architectural significance, functional diversity, and socio-cultural impact. This approach ensures meaningful comparison between community-driven initiatives and top-down, market-oriented projects. International examples include Buffalo's Silo City, Minnesota's Mankato Silo Art Project, and Milan's Armani/Silos Museum.

By combining these methods, the study investigates how silos mediate the complex interactions between historical memory, cultural narratives, and urban innovation, highlighting the challenges and opportunities of contemporary heritage practice.

### **Symbolic Reappropriation and Living Heritage**

The progressive abandonment of silos has prompted reflections on their cultural potential, giving rise to reuse practices situated at the intersection of conservation, functional innovation, and the construction of social narratives<sup>9</sup>. Originally shaped by production needs, their verticality and modularity are now reinterpreted as both spatial and symbolic resources. Silos today are well-suited to host artistic, cultural, or productive functions, while also preserving historical memory and urban identity<sup>10</sup>. Such interventions go beyond mere functional adaptations, creating multiple forms of engagement with industrial heritage, where the past becomes active material for designing the present.

Participatory and community-driven practices position silos as living heritage dynamic assets that integrate material conservation with social processes. The experience of *Indian Head* in Canada<sup>11</sup> provides a significant example. The conversion of certain silos into museums, libraries, and community gardens actively involved residents, reinforcing the connection between historical legacy and contemporary needs<sup>12</sup>. This initiative, consistent with the principles of heritage co-production, demonstrates the effectiveness of participatory approaches, while also revealing the limits of economic sustainability and long-term governance<sup>13</sup>.



Fig. 1 Bari, Port silos, detail of van Helten's art project, 2024, (Photo B. Galli, 2025).

Fig. 2 Bremen, *John & Will Silo Hotel*, 2023, (Photo B. Galli, 2024).

Conversely, top-down approaches promoted by institutions, architects, or cultural operators aim to transform silos into iconic urban landmarks, emphasising aesthetic visibility and economic attractiveness. The *Silo Hotel* in Cape Town<sup>14</sup> exemplifies how industrial structures can catalyse cultural and tourism economies, stimulating new forms of entrepreneurship and enhancing the symbolic enhancement of the city.

A comparison of these models highlights different approaches to industrial heritage. Community-led initiatives prioritise identity and inclusivity, while institutional-commercial strategies emphasise visibility and economic gain, often linked to global cities branding<sup>15</sup>. sometimes yielding selective and exclusionary outcomes. Both perspectives transform silos from industrial ruins<sup>16</sup> into cultural platforms where past and present intertwine, and memory becomes a resource negotiated between conservation, market dynamics, and design innovation. This ambivalence also sets the stage for their role in silos as sites of public art and visual storytelling.

### Public Art and Visual Storytelling

The adaptive reuse of silos offers significant opportunities for public art, functioning as complex narrative devices where history, local identity, and contemporary imagination intersect. Vertical surfaces serve as expressive canvases and instruments of collective communication. The *Mankato Silo Art Project* in Minnesota, by Guido van Helten, transformed disused silos into monumental urban canvases, offering the community a tangible representation of cultural rootedness<sup>17</sup>. In other contexts, temporary or mobile installations such as the *Oculi* project on Governors Island<sup>18</sup>, New York, metallic silos are decontextualised and reimagined as mobile artistic pavilions. While innovative and immersive, these risk weakening ties to productive memory, reducing the structure to temporary scenographic set.

European projects offer further insight. van Helten's work in the port of Bari (Fig. 1) establishes a narrative palimpsest that integrates industrial heritage and Mediterranean imaginaries<sup>19</sup>. Here, public art does not merely aestheticise; it engages

with the city, fostering collective reappropriation and asserting the identity value of the disused industrial landscape.

By contrast, market-oriented initiatives as the *John & Will Silo Hotel* in Bremen<sup>20</sup> (Fig. 2) preserve monumental form but cater to global tourism consumption logic, yielding economic benefits while raising questions of social exclusion and cultural homogenisation.

These examples illustrate the delicate balance of silo reuse between social cohesion and market imperatives, which risk transforming industrial archaeology into a mere aesthetic product or symbol of cultural consumption. Verticality and modularity remain powerful instruments for promoting collective identity and shared memory, yet they can also foster exclusionary dynamics and spectacularisation. Such contradictions underscore the need for critical, informed approaches, where conservation intersects with social narratives and contemporary cultural practices, enacting the principles of living heritage.

### **Armani/Silos: Between Industrial Memory and Cultural Consumption**

The *Armani/Silos Museum* in Milan, inaugurated in 2015 and designed by Mario Cucinella Architects (MCA), stands as a paradigmatic example of adaptive reuse. The project converts a 1950 Nestlé former grain silo into an exhibition space dedicated to fashion<sup>21</sup>. The requalification project preserved the original verticality and modularity, transforming them into narrative devices guiding the exhibition path and highlighting the industrial artefact's monumentality. The reinforced concrete framework and floors rhythm were reinterpreted according to Modernist principles, where structural efficiency and functional clarity underpin aesthetic value.

From a living heritage perspective, the silo is no longer merely an industrial testimony but a vessel for cultural and social experiences, establishing continuity between the industrial past and contemporary fashion culture. The project functions as a laboratory for the dialogue between industrial heritage, urban identity and cultural production. Technically, the transformation required the integration of modern lighting, climate control, and exhibition systems, while maintaining the legibility and structural integrity of the original building. Flexible internal layouts allow for permanent and temporary exhibitions without compromising the historical coherence of the silo. Yet the museum also highlights contradictions. Memory is subordinated to global brand narrative. The original productive identity is neutralised in favour of a selective curatorial storytelling. Socially, the project follows a top-down model, with limited local participation and restricted forms of community engagement. Consequently, the reuse does not necessarily generate collective appropriation but consolidates a symbolic function aimed at a selected audience, consistent with global city branding strategies. Conservation interventions, though necessary, raise questions about authenticity and sustainability, including high energy consumption and maintenance complexity. Without transparent sustainability strategies, such projects risk transforming heritage into a form of heritage vitrification, oriented more towards spectacle than genuine, sustainable regeneration. Armani/Silos thus represents a paradigmatic case of the dilemmas of contemporary industrial reuse, oscillating between conservation and spectacularisation, memory and marketing, urban regeneration and symbolic consumption. The Milanese experience invites us to consider industrial heritage not as a static object but as a dynamic, negotiable entity at the intersection of architecture, culture, and market forces.



Fig. 3 Milan, *Armani/Silos Museum*, Main façade, (Photo B. Galli, 2025).

### Conclusion

The analysis of silos and their adaptive reuse show how these industrial structures function today as multidimensional entities, integrating historical conservation, functional transformation, cultural narration, and social participation. North American experiences (Buffalo, Mankato) demonstrate measurable socio-economic effects, particularly in tourism, while also exposing the challenges of aligning preservation with contemporary uses. Adaptive reuse and living heritage have enabled to host exhibitions, community activities, artistic projects, and productive facilities, illustrating how historical memory can coexist with innovation. Their verticality, once purely technical, now serves as a conceptual metaphor that preserves history, stimulates creativity, and fosters social integration. The comparison between community-driven and top-down approaches reveals persistent contradictions between inclusion, collective memory, and urban marketing. Sustainability emerges as decisive criterion; energy efficiency, maintenance strategies, and financial viability strongly condition the durability of these projects. While high-profile cases such as Armani/Silos underscore the risk of energy-intensive, branding-oriented strategies, community-based initiatives such as Indian Head indicate the potential of more adaptive, low-cost, participatory governance models. Looking forward, industrial heritage should be addressed as a dynamic field of negotiation between conservation, innovation, identity, and market forces. Responsible reuse calls for integrated strategies that combine cultural recognition with environmental and economic resilience. This requires systematic evaluation tools for sustainability, governance models that strengthen community involvement, and policies that prevent the reduction of heritage to spectacle or consumer product. In this way, silos and other industrial artifacts can contribute not only to cultural continuity but also to more inclusive and sustainable forms of urban development.

<sup>1</sup> Cfr. GIOVANNI STRAPPA, *Verticality and memory in industrial architecture: The case of silos*, «Journal of Cultural Heritage Management and Sustainable Development», VIII, 2018, pp. 123-138; BART PLEVOETS, KOENRAAD VAN CLEEMPOEL, *Adaptive reuse as a strategy towards conservation of cultural heritage: A literature review*, in C. Brebbia e L. Binda (a cura di), *Structural Studies, Repairs and Maintenance of Heritage Architecture XII*, Southampton, WIT Press 2011, pp. 155-164.

<sup>2</sup> Cfr. SIGFRIED GIEDION, *Space, Time and Architecture: The Growth of a New Tradition*, Cambridge, MA, Harvard University Press 1941.

<sup>3</sup> Cfr. ERICH MENDELSON, *Amerika. Bilderbuch eines Architekten*, Berlin, Rudolf Mosse Buchverlag 1926; LE CORBUSIER, *Vers une architecture*, Paris, Éditions Crès 1923, pp. 104-105; WALTER GROPIUS, *Jahrbuch des Deutschen Werkbundes*, Jena, Diederichs 1913.

<sup>4</sup> Cfr. REYNER BANHAM, *Concrete Atlantis: U.S. Industrial Building and European Modern Architecture 1900-1925*, Cambridge, MA, MIT Press 1986; RODNEY HARRISON, *Heritage: Critical Approaches*, London, Routledge 2013.

<sup>5</sup> Silo City, Buffalo (USA): 20th-century industrial silos, originally grain storage facilities; preserved and revitalized by Glen Allen and local communities since the 2000s as a cultural and tourist attraction. Cfr. GLEN ALLEN, *Silo City: Preservation and Transformation of Buffalo's Grain Elevators*, «Journal of Industrial Archaeology», XLV, 2018, pp. 115-134; WILLIAM D. TARBET, *Grain Dust Dreams*, New York, Excelsior Editions 2015; JAMES W. BROWN, *American Colossus: The Grain Elevator, 1843 to 1942*, New York, Colossal Books 2009; LYNDA H. SCHNEEKLOTH, *Reconsidering Concrete Atlantis: Buffalo Grain Elevators*, Buffalo, The Landmark Society of the Niagara Frontier 2006; GEORGE O. CARNEY, *Grain Elevators in the United States and Canada: Functional or Symbolic?*, «Material Culture», XXVII, 1995, pp. 1-24.

<sup>6</sup> Cfr. BENJAMIN FRAGNER, *Adaptive re-use*, in J. Douet (a cura di), *Industrial heritage re-tooled: The TICCIH guide to industrial heritage conservation*, Lancaster, Lancaster, Carnegie 2012, pp. 110-117; PETER A. BULLEN, PETER LOVE, *A new future for the past: A model for adaptive reuse decision-making*, «Built Environment Project and Asset Management», I, 2011, pp. 32-44.

<sup>7</sup> Cfr. LAURAJANE SMITH, *Uses of Heritage*, London, Routledge 2006.

<sup>8</sup> *Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes*. International Council on Monuments and Sites, 2011 <<https://ticcih.org/about/about-ticcih/dublin-principles/?utm=> [09/08/2025]; *The Valletta Principles for the Safeguarding and Management of Historic Cities, Towns and Urban Areas*, Paris, International Council on Monuments and Sites <[https://civviih.icomos.org/wp-content/uploads/2022/03/Valletta-Principles-GA-EN\\_FR\\_28\\_11\\_2011.pdf](https://civviih.icomos.org/wp-content/uploads/2022/03/Valletta-Principles-GA-EN_FR_28_11_2011.pdf)> [09/08/2025]; *The Nizhny Tagil Charter for the Industrial Heritage*. Adopted on 17 July 2003 at the Triennial General Assembly of TICCIH in Moscow, 2003 <<https://ticcih.org/wp-content/uploads/2013/04/NTagilCharter.pdf>> [09/08/2025].

<sup>9</sup> Cfr. JOHN PENDLEBURY, *Conservation in the Age of Consensus*, London, Routledge 2009.

<sup>10</sup> Cfr. OWEN HATHERLEY, *Silo Dreams: Metamorphoses of the Grain Elevator*, «The Journal of Architecture», XX, 2015, pp. 474-488.

<sup>11</sup> Indian Head Silos, Saskatchewan (Canada): 20th-century agricultural silos, originally used for grain storage; repurposed as community spaces, including museums, libraries, and gardens, with active local participation, following heritage co-production principles. Cfr. *Library and Archives Canada. Government of Canada* <<https://www.collectionscanada.gc.ca/>> [11/08/2025]; *Popsilos Adds Two New Murals on Farm Silos to Its Touristic Circuit* <<https://www.popsilos.ca/en/news/134-popsilos-adds-two-new-murals-on-farm-silos-to-its-touristic-circuit>> [07/09/2025].

<sup>12</sup> Cfr. RAYMOND SHIPLEY, STEPHEN UTZ, MICHAEL PARSONS, *Does adaptive reuse pay? A study of the business of building renovation in Ontario, Canada*, «International Journal of Heritage Studies», XII, 2006, pp. 505-520.

<sup>13</sup> Cfr. SOPHIA LABADI, UNESCO, *Cultural Heritage, and Outstanding Universal Value: Value-Based Analyses of the World Heritage and Intangible Cultural Heritage Conventions*, Lanham, AltaMira Press 2013.

<sup>14</sup> Silo Hotel, Cape Town (South Africa): 20th-century industrial grain silos; converted into a luxury hotel by Nico Murray, completed in 2017. Cfr. *Hansgrohe collabora con John & Will Silo-Hotel, 2024* <<https://www.webwire.com/ViewPressRel.asp?ald=331011>> [03/09/2025]; NADIA YEKSAREVA, VLADIMIR YEKSAREV, ANDREY YEKSAREV, *Potential for architectural adaptation port silos*, «VITRUVIO - International Journal of Architectural Technology and Sustainability», VII, 2022, pp. 92-103.

<sup>15</sup> Cfr. GRAEME EVANS, *Hard-branding the cultural city – from Prado to Prada*, «International Journal of Urban and Regional Research», XXVII, 2003, pp. 417-440.

<sup>16</sup> Cfr. TIM EDENSOR, *Industrial Ruins: Space, Aesthetics and Materiality*, Oxford, Berg 2005.

<sup>17</sup> Mankato Silo Art Project, Minnesota (USA): 20th-century agricultural silos, originally for grain storage; transformed into monumental murals by Guido van Helten, project started in 2015 and developed until 2019. Cfr. JANE FUNDINGSLAND, *Mankato Silo Art Project*, Mankato, Free Press 2022; GUIDO VAN HELTEN, *Mankato Silo Art Project Portfolio*, Minneapolis, Studio Catalogue 2019.

<sup>18</sup> Oculi Installation, Governors Island (USA): metallic silos decontextualized and reimaged as mobile artistic pavilions; curated by the Oculi Collective in 2018-2019. Cfr. AUSTIN+MERGOLD, *Oculi*, 2018 <<https://austin-mergold.com/projects/oculi/>> [01/08/2025]. MACKENZIE GOLDBERG, *Pavilion made from grain silos wins competition to be installed at Governors Island this summer*, 2024 <<https://bustler.net/news/6279/pavilion-made-from-grain-silos-wins-competition-to-be-installed-at-governors-island-thissummer>> [03/09/2025].

<sup>19</sup> Port of Bari (Italy): 20th-century port silos, originally for cargo storage; transformed into public street art by Guido van Helten in 2024. Cfr. *La più grande opera a cielo aperto di Bari: la street art sul porto*, 2024 <<https://www.borderline24.com/2024/09/11/la-piu-grande-opera-a-cielo-aperto-di-bari-la-street-art-sul-porto/>> [07/09/2025].

<sup>20</sup> John & Will Silo Hotel, Bremen (Germany): early 20th-century industrial silos, originally grain warehouses; redeveloped into a hotel by DMAA, completed in 2025. Cfr. «DMAA trasforma i silos Kellogg's in un hotel a Brema», 2025 <<https://www.designboom.com/architecture/dmaa-kelloggs-silos-waterfront-hotel-bremen-germany-renovation-06-20-2025/>> [07/09/2025].

<sup>21</sup> Cfr. *Inaugurato a Milano, Armani/Silos trasforma un deposito industriale degli Anni '50 in uno spazio espositivo razionale, conservandone la forma ad "alveare"* <[https://www.domusweb.it/it/notizie/2015/06/05/armani\\_silos.html](https://www.domusweb.it/it/notizie/2015/06/05/armani_silos.html)> [03/09/2025]; *Armani/Silos Exhibition Catalogue*, Milano, Fondazione Giorgio Armani 2015.