BEYOND BUILDINGS

THE FUTURE OF MARITIME LEFTOVERS

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THE FUTURE OF MARITIME LEFTOVERS

non-building structures that have defined maritime landscapes

CONTENT

INTRODUCTION

Heritage preservation initially focused on restoring castles, historic mansions, and churches and a limited selection of pre-industrial buildings (Kuipers & De Jonge, 2017). Traditionally, priority was given to structures over 50 years old, as temporal distance was considered crucial for historical assessment. However, in recent decades, the scope has shifted, with increasing attention given to modern industrial and maritime sites as candidates for redevelopment (Nevzgodin, 2016; Meurs, 2016; Kuipers & De Jonge, 2017). Now there is more awareness of the high potential and importance of heritage. There is a widespread feeling that architectural interventions are frequently used to revitalize heritage and enhance its social relevance (Meurs, 2016).
Large-scale societal and economic changes have led to widespread vacancy, particularly in religious and industrial sites. Instead of demolition, adaptive reuse offers a sustainable alternative and makes it possible for the heritage to be the quartermaster of the renovation (Meurs, 2016; Ministerie van Onderwijs, Cultuur en Wetenschap, 2024). Since the 1990s, industrial heritage transformation has become a 'hot topic', with architects, urban planners, policymakers, and heritage specialists recognizing its importance (Nevzgodin, 2016).

As Hernández (2022) states
"As the industry declines, followed by the population shift, the original purpose of these buildings has been lost. Instead of demolishing them and rebuilding from scratch, many have been renovated to serve as the bases for revitalizing the regions."

The focus has shifted from monuments to (built) heritage. Where monuments focus on a 'stamp collection' of exceptional buildings, heritage embraces all. It covers movable heritage, built heritage, urban structures, landscape, archaeology, traditions and stories (intangible heritage) (Meurs, 2016; Hein, 2019).
Only preserving heritage is not enough to ensure the conservation of a historic city. It is an combination of both tangible heritage, associated with industrial technology and processes, engineering and architecture, and intangible heritage, embodies in people, skills, memories, traditions and social life of workers and their communities (ICOMOS, 2011; Meurs, 2016).

But how to manage former large-scale historical industrial sites? Comparing this with the preservation of buildings it brings new challenges (Nevzgodin, 2016).
The ambition is to keep the 'historic urban landscape' (HUL) recognisable, including characteristic places and structures while finding new function and undertake rehabilitation of structures on this scale looking at valuable elements that should be preserved. (Bandarin & Van Oers, 2012; Nevzgodin, 2016).

Preserving a historic cityscape involves more than just buildings[1], such as shipyards; structures[2] such as cranes, slipways, and docks are integral to maritime heritage but are often overlooked in redevelopment projects. These non-building structures[3] are integral to the maritime landscape and possess significant historical, cultural, and technological

[1] ***Building***
a structure with walls and a roof, such as a house or a factory, to give protection to people, animals or things (Cambridge Free English Dictionary And Thesaurus, 2024)

[2] ***Structure***
something built, such as a building or a bridge (Cambridge Free English Dictionary And Thesaurus, 2024)

[3] ***Non-building structure***
a structure that does not seems building like: no walls or roof

value (Crimson, 2005; ICOMOS, 2011; Meng et al., 2023; Iñiguez, 2024). They can represent crucial links in a cityscape- because they mark a transition, are iconic, show rare traces of a certain historical period or provide historic character (Meurs, 2016; Nevzgodin, 2016).

The importance of these non-building structures more often recognized and they sometimes get a monumental status to show their (historical) importance. They serve as tangible links to industrial and maritime history, contributing to a region's identity. However, they are particularly vulnerable; once their original function becomes obsolete, they risk neglect or demolition.
The preservation of non-building structures requires an approach that goes beyond standard building conservation, as these structures often lack interiors and traditional architectural features, such as walls or a roof. This makes their adaptive reuse complex, but full of potential for innovative design and urban integration. At this point there is no literature identified about how to adapt these non-building structures.

This research explores how maritime leftovers[4] can be assessed, valued, and repurposed for contemporary use. With a focus on the significance and the historical and cultural values.

The following question will be answered:

How can non-building structures that have lost their original functions be valued, investigated and transformed for contemporary use?

The sub questions focus on what type is valued, how to value such structures and investigate several case studies.
- What type of (industrial/maritime) non-building structure is valued?
- What are the key values (historical, aesthetic, functional, technical) associated with maritime (non-building) structures that extend beyond their functional use and how can they be investigated considering historical preservation and modern needs?
- What are examples of transformation projects of industrial and maritime non-building structures, and what strategies have been employed in these cases?

The goal of the research is to present strategies for design interventions and adaptive reuse that balance the preservation of maritime leftovers with contemporary needs in a way that they remain relevant in its urban landscape.
These strategies can be used on a broader scale. Across the globe, maritime structures are abandoned or repurposed, yet they remain structurally sound and characteristic of their environments. Adapting these structures can be relevant in a way of remaining the character of the urban landscape even though the area gets a complete new function.

[4] ***Maritime Leftover***
something that has lost their original function within the maritime context

WHY NON-BUILDINGS CAN BE HERITAGE

What type of (industrial/maritime) non-building structure is valued?

To determine which non-building structures hold heritage value this research primarily focuses on the Netherlands. A case study analysis has been conducted, examining both officially listed monuments and structures that have retained their historical significance despite losing their original function. The findings are presented in this chapter, with a complete overview available in Appendix A.

The value of a monument lies in both its physical attributes and the historical context in which it was created. Built heritage is most meaningful in its original location, as the connection between an object and its broader historical context enhances its significance. Their unique elements can evoke emotions among citizen and fulfil the need for historical knowledge and identity for their and their surroundings history (BOEi, 2022; URL, 2007; Van Reenen, 2024a).

The increasing recognition of non-building structures as heritage reflects a broader shift in conservation practices, from valuing only historic buildings to non-building remnants. These structures endure through time despite functional obsolescence, marking transitions in industry, technology, and urban development (Crimson, 2005; Meng et al., 2023; Van Reenen, 2024a).

Diverse non-building structures in the Netherlands have been granted heritage status due to their historical importance, architectural design and their ability to evoke collective memories. Examples include the Magere Brug in Amsterdam, the Schietmuur in Dordrecht, and Bunker 599 near the A2 highway (Dordrecht | Rijksdienst Voor het Cultureel Erfgoed, 2001; Monumenten.nl 2023, Sánchez, 2024).

Places that have meaning because of their history should also retain meaning in the future by making them as accessible and relevant as possible so that everyone feels at home. They can help to connect different time layers (BOEI, 2022).

Even structures without formal heritage status, such as old shipyard cranes and abandoned railway tracks, often remain embedded in their original context, contributing to the identity of industrial and maritime landscapes.

Areas that changed a lot recent decades and leave a lot of built heritage are industrial sites The former NDSM wharf in Amsterdam, for example, retains elements of its shipbuilding past, including warehouses, train tracks, docks, and cranes. Even structures without formal heritage status these objects are contributing to the identity of industrial and maritime landscapes (Van Reenen, 2024a).

Figure 1: Train track NDSM (Source: Klinkenberg, K. (2023, 28 februari). Erotisch Centrum op NDSM klap in gezicht cultuursector, makers en buurt. Rodi. https://www.rodi.nl/amsterdam-noord/332195/erotisch-centrum-op-ndsm-klap-in-gezicht-cultuursector-makers-e)
Figure 2: Image Slipway (Own image)

While all these aspects are preserved is often the significant structures that get a monumental status. For industrial sites it concerns often chimneys and cranes. These structures are frequently recognized as landmarks due to their height, visibility, and historical importance. Organizations such as Federatie Industrieel Erfgoed Nederland[5] , BOEi, Stichting Fabrieksschoorstenen[6] and Nederlandse stichting Erfgoed Kranen[7] (national) and The International Committee for the Conservation of the Industrial Heritage[8], European Route of Industrial Heritage[9] and International Scientific Committee on Industrial Heritage[10] (international) stand for conservation of these elements.

In 2023, FIEN declared it the "Year of the Factory Chimney," highlighting the need to protect these remnants of industrial history (FIEN, 2022).
Similarly, location-bound cranes have become a focal point for preservation efforts. The Dutch Foundation for Crane Heritage (NedSEK) published a book in 2024 detailing the history, significance, and conservation of tower cranes in the Netherlands. Several preserved cranes, for example those at the former Rijkswerf Willemsoord in Den Helder and the NDSM wharf in Amsterdam, have been successfully integrated into redevelopment projects, demonstrating the potential of adaptive reuse.

Conclusion
A wide range of non-building structures, from fountains to bridges, are valued as cultural heritage. These structures serve as physical reminders of industrial and maritime history and are often valued because of their landmark qualities, historical significance.
Chimneys and crane(tracks) stand out due to their visibility and cultural resonance. Successful preservation of these structures depends on maintaining their historical identity while integrating them into contemporary urban life. Ultimately, the goal is not merely to restore these structures but to give them renewed meaning, ensuring they continue to contribute to the identity and vitality of their surroundings.

[5] ***FIEN***
Federation Industrial heritage Netherlands

[6] ***STIF***
Foundation for factory Chimney

[7] ***NedSEK***
Dutch Foundation for Crane Heritage

[8] ***TICCIH***
The International Committee for the Conservation of the Industrial Heritage

[9] ***ERHD***
European Route of Industrial Heritage

[10] ***ICOMOS***
International Scientific Committee on Industrial Heritage

VALUE ASSESSMENT OF NON-BUILDING STRUCTURES

What are the key values (historical, aesthetic, functional, technical) associated with maritime (non-building) structures that extend beyond their functional use and how can they be investigated considering historical preservation and modern needs?

Much research has been done on the assessment and preservation of built heritage, focusing primarily on structures with defined interiors such as historic buildings, churches, and industrial complexes etc. Such as the Charter of Athenes (1931) and the Venice Charter (1964), which laid the groundwork for modern heritage conservation practices, influencing aubsequent conventions and guidelines worldwide. However, they all discribe different approaches; there is no standard solution or architectural style to repurpose a structure. According to Meurs (2008; 2016) as long as the intervention relates to the unique values of both the site and the structure and if the intervention possible adds significance to them the intervention can be considered successful. And each intervention, which could be renovation, restoration or transformation, adds a new 'layer' of time to the history of the building and therefore enriches the object.
As architect one has to start from that what is present, search for special elements on the site or in the structure that might add value to the design. Thereby intangible heritage can also be related to the social importance of the heritage (Meurs, 2016).

However, there is a literature gab exists on how to value non-building structures. These structures often play a crucial role in shaping industrial and maritime landscapes, yet their heritage potential remains largely unexplored. This chapter will use existing theories on how to value buildings to make a strategy on how to value of non-building structures and their potential for adaptive reuse.

Non-building maritime structures, such as cranes, docks, and other industrial elements, hold significant value beyond their original functional purposes. To assess these values systematically, this research applies Alois Riegl's heritage value framework along with maritime heritage-specific insights.
Alois Riegl introduced a systematic approach to understanding the values attributed to (building like) monuments in his seminal work "Der moderne Denkmalkultus" (1903). Here introduces the terms: Age Value (Alterswert), Historical Value (Historischer Wert), Deliberate Commemorative Value (Gewollte Erinnerungswert), Unintended Commemorative Value (Unbeabsichtigte Erinnerungswert), Use Value (Gebrauchswert), Newness Value (Neuheitswert), Art Value (Kunstwert).

Maritime non-buildings structures, such as cranes, docks and other structures, hold significant cultural and heritage values beyond their original functional purposes, mainly related to transportation of cargo or had other industry related tasks. Based on case studies the following important values specific to (maritime) non-building structures.

Historical value
The historical value is intrinsic to maritime structures as they often represent a specific period of industrial and technological advancement. They provide insight into trade, engineering, and techniques of their time while demonstrating their historical role in port cities' socio-economic development (Stichting ERM, 2024; Tideman, 2021).

Aesthetic value
Primarily functional, maritime structures often possess an industrial beauty that contributes to the visual identity of waterfrons. Their often minimalist, utilitarian design reflects in functionalism and form-follows-function ethos. Elements like towering cranes create dramatic silhouettes, while weathered metal and intricate mechanics evoke authenticity and historical connection (Stichting ERM, 2011; Van Reenen, 2024).

Functional value in adaptation
Despite losing their original, maritime structures often find new uses in contemporary settings, contributing to their enduring functional value.
Quays and cranes are repurposed into public spaces, museums, or installations, ensuring continued relevance in modern urban life while preserving the historical fabric, offering a balance between preservation and innovation (Tideman, 2021).

Technical value
These structures showcase engineering ingenuity, often pioneering construction methods and materials, serving as benchmarks for technical innovation.
Early steel cranes and concrete quay walls exemplify advancements in material science and load-bearing capabilities, informing modern engineering practices and inspire sustainable design solutions (Van Reenen, 2024b).

Symbolic and social value
These structures often become symbols of a community's maritime heritage and identity, serving as physical reminders of collective memory and tradition.
A decommissioned dock may symbolize resilience, while a restored crane represents a city's industrial past and (global) trade connections. Such values foster community pride and strengthen the sense of place and pride among local communities (Stichting ERM, 2011; Barianaki et al., 2024).

Combining Riegl's framework with specific analysis of maritime structures it becomes evident that these non-building structures hold multifaceted values. They serve as historical records, aesthetic landmarks, technical benchmarks and symbols of identity. Recognizing and preserving these values is crucial for integrating maritime heritage into contemporary urban and cultural landscapes.

Maritime heritage structures require a tailored assessment approach. Unlike traditional buildings, they often lack interiors and conventional architectural features, making their evaluation more reliant on contextual, structural, and functional considerations. To adapt Riegl's framework, this

study integrates it with Stewart Brand's (1997) concept of Shearing Layers, which differentiates elements based on longevity and adaptability. Brand looks at the four layers of Francis Duffy describes in the Measuring Building Performance (1990). *"Our basic argument is that there isn't such a thing as a building"* says Duffy "A building properly conceived is several layers of longevity of built components." He discusses four layers, which he calls, Shell, Services, Scenery and Set. Brand has taken the liberty of expanding the four S's to six S's: Site, Structure, Skin, Services, Space Plan and Stuff. Later Kuipers and De Jonge added Spirit of places, the genius loci which may be the most difficult to capture because it is mostly intangible and inexplicit. It is connected to the history of a place and is very sensitive to change (Brand, 1997; Duffy, 1990; Kuipers, 2017)

Combining the Sheering Layers, Riegl's values and the additions mentioned above the matrix below can be uses as a base for value assessment of non-building structures. This matrix combines both values and built components and which can be important and leaves them out when not applicable.

BRAND/RIEGL	AGE VALUE	HISTORICAL VALUE	DELIBERATE COMMOME-RATIVE VALUE	UNINTENDED COMME-MORATIVE VALUE	USE VALUE	NEWNESS VALUE	ART VALUE	TECHNICAL VALUE	SYMBOLIC AND SOCIAL VALUE
SITE									
SKIN									
STRUCTURE									
SPACEPLAN									
SERVICES									
SPIRIT OF PLACE									

Conclusion

Maritime non-building structures are more than functional relics; they are multifaceted heritage assets that encapsulate historical, aesthetic, functional, technical, and symbolic values. By acknowledging these dimensions, stakeholders can ensure their thoughtful preservation and reintegration into contemporary urban and cultural contexts. This approach aligns with conservation principles, promoting the sustainable use of industrial heritage in line with societal needs.

Assessing non-building structures requires a multifaceted approach that considers both traditional heritage values and specific characteristics of maritime infrastructure. By combining Riegl's values with Brand's layered framework, this study provides a structured methodology for evaluating and repurposing these structures while maintaining their historical integrity. Recognizing their technical, social, and symbolic significance ensures that these structures remain relevant within contemporary urban and cultural landscapes.

THE TRANSFORMATION OF MARITIME LEFTOVERS

What are examples of transformation projects of industrial and maritime non-building structures, and what strategies have been employed in these cases?

Non-building structures increasingly serve as focal points in urban transformation projects. While traditional architectural conservation focuses on buildings, these industrial remnants bridge tangible and intangible heritage, shaping the identity of redeveloped areas. These structures is are where the tangible and intangible heritage meet.

Adaptive reuse strategies vary but generally follow three approaches (Meurs, 2016):
- Preservation of existing elements such as buildings of fragments (conservation/restoration of substance);
- Redefining a structure or an architectural tradition (renewal within the morphological structure);
- The architectural interpretation or expression of intangible value (using mentality and intangible values as design theme).

Even though there is no literature written yet about how to adapt non-building structures, it has been done. In a case study analysis (appendix B) projects are introduced. Details like age, original function, architect, current function and the special features and elements are mentioned. Photos of the project are shown and a conclusion about the renovation/ transformation is made.
This conclusion focusses on the relationship between the original structure and the addition. It mainly looks into if there are differences or overlap, or other noticeable elements. Are there changes made at the original structure, is it brought back to the original state and how does the addition go with it.

The overall conclusion is that most of the time the non-building like structure is kept in. In some cases, for example Faralda in Amsterdam, the structure is completely renovated to the original state. In other cases, for example Kraanspoor Amsterdam and Long Museum West Bund in Shanghai crucial parts of the original structure, in both cases the crane, is removed but the concrete, not mobile part of the structure is kept due to its value.

The relation between the addition(s) and the structures differ. Some are built in top, in or next to the structure and do not even touch each other.
In the case studies modern materials like steel, concrete and glass are often used. They look very ‘new’, sometimes in contrast to the original structures. Some projects contrast also in colour, such as Faralda in Amsterdam and the Suspended Pavilion in Shenzhen where they use bright colours to separate the structure from the addition.

In other cases, such as the Krane in Copenhagen and the conceptual design for the craneloft they tried to keep the project as close to the original structure as possible, using light structures, using the interior spaces available or even using materials related to maritime heritage.

All this makes that these projects the original structure is the base/starting point for the transformation but kept and if needed, also can be brought back to its original state.

CONCLUSION

Non-building structures, such as cranes, docks, and industrial remnants, are increasingly recognized as valuable heritage assets. These structures serve as tangible records of industrial and maritime history, embodying historical, aesthetic, functional, technical, and symbolic values. While much research has been conducted on the preservation of buildings, a structured approach to assessing and transforming non-building structures remains largely unexplored. This study addresses that gap by applying heritage evaluation frameworks and analysing case studies of successful transformations.

Heritage value assessments reveal that these structures hold significance beyond their original function and non-building structures are more often recognised as monument. Their historical value lies in their connection to industrial and technological advancements, while their aesthetic and symbolic qualities contribute to place identity and collective memory. Despite their often challenging form, lacking interiors or traditional architectural element, they offer opportunities for adaptive reuse. Successful transformation projects demonstrate that these structures can be preserved, repurposed, or symbolically integrated into contemporary urban developments. Key strategies include maintaining structural integrity, contrasting new interventions with existing elements, and ensuring that adaptations respect both tangible and intangible heritage.

Ultimately, the research highlights the need for a nuanced approach to the conservation and transformation of non-building structures. Rather than restoring them to their original function, these remnants could be adapted in ways that acknowledge their historical significance while integrating them into evolving cityscapes. By doing so, they remain relevant, contributing to sustainable urban renewal and reinforcing the cultural identity of industrial and maritime landscapes.

CRITICAL REFLECTION

However the transformation of non-building structures could raise questions about the necessity of their adaptive reuse. Is it essential to assign a new function to these structures, or can their value be preserved simply through conservation? While adaptive reuse is often seen as a way to ensure their continued relevance, some argue that these structures hold intrinsic value regardless of functionality.
Maintaining these remnants in their original state preserves their historical authenticity. Many industrial and maritime structures serve as visual anchors in the urban landscape, offering cultural and historical significance without requiring active use. This approach aligns with practices seen in the preservation of ruins an monuments that remain untouched beyond basic stabilization.
On the other hand, adaptive reuse is often justified by economic, social, and environmental factors. Without a new function, there is a risk of abandonment, neglect, or eventual demolition. Repurposing these structures into functional spaces, such as public areas, cultural institutions, or commercial venues, can provide financial sustainability and public engagement, ensuring long-term preservation.

The relevance of these transformations in the long term is also uncertain. Industrial heritage and maritime remnants are currently gaining recognition, but will this interest persist? As urban landscapes continue to evolve, the societal value placed on these structures may shift.
Sustainable conservation strategies must therefore balance immediate functional needs with a long-term vision that respects historical authenticity and anticipates future urban development trends.

Ultimately, the discussion highlights a crucial tension: preserving non-building structures as historical artifacts versus repurposing them for contemporary use.
Future research and policy development could explore flexible conservation models that allow for both preservation and transformation, ensuring that these structures remain meaningful elements of the built environment for generations to come.

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APPENDIX

Appendix A
case study analysis

Appendix B
case study analysis

APPENDIX A

Case study analysis
What type of (industrial/maritime) non-building structure is valued and therefor suitable for transformation for contemporary use?

Bunker 599, Zijderveld, Netherlands

Fontijn (Fontain), Dordrecht, Netherlands

Hef (Koningshavenbrug) (Bridge), Rotterdam, Netherlands

IJseren prieel (iron pavilion), Dordwijk, Netherlands

Kraan 13 NDSM (crane), Amsterdam, Netherlands

Kraanbaan Binckhorst (cranetrack), The Hague, Netherlands

Kraanbaan Nedstaal (cranetrack), Alblasserdam, Netherlands

Magere brug, Amsterdam, Netherlands

Scheepslift (screw dock), Dordrecht, Netherlands

Schietbaanmuur (shooting wall), Dordrecht, Netherlands

Schoorsteen ENKA (chimney), Ede, Netherlands

Schoorsteen Julianaschoorsteen (chimney), Oosterhout, Netherlands

Schoorsteen Wienerberger (chimney), Tegelen, Netherlands

Tankstation Caltex, Withuis, Netherlands

Waterreservoir, Rotterdam, Netherlands

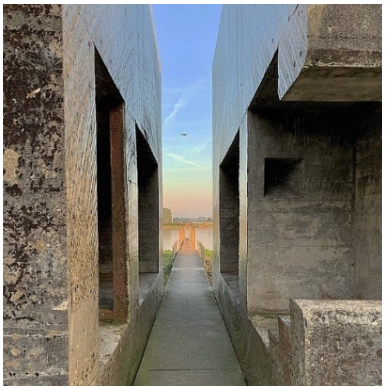
Structures Shanghai's waterfront, Shanghai, China

BUNKER 599

Location: A2, Zijderveld, Netherlands
Original function: Part of the New Dutch Waterline defensive system
Year built: 1940
Built by: Dutch Ministry Of Defence
Not used since: 1945
Monument since: 2021
Type of monument: Part of New Dutch Waterline which is UNESCO World Heritage Site

Bunker 599 is a unique monument that combines historical preservation with contemporary art and architecture. Originally part of the New Dutch Waterline, this bunker was strategically located to protect the surrounding lowlands by facilitating controlled flooding in times of war. In a radical transformation project led by Rietveld Landscape and Atelier de Lyon in 2010, the bunker was sliced open, exposing its interior to the elements. This intervention transformed the site into a thought-provoking landmark that challenges traditional approaches to historical preservation.

The bunker was transformed to provoke reflection on the intersection of heritage, memory, and modern design. Cutting through the concrete structure, creates a dramatic visual statement, symbolizing the fragility of human constructs despite their military purpose. The project also aims to make heritage accessible by integrating the monument with its natural surroundings, encouraging visitors to engage directly with history and the landscape. Its innovative approach to preserving and reinterpreting a historical site has set a precedent for how monuments can be revitalized to resonate with contemporary audiences.



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FONTIJN (FOUNTAIN), DORDRECHT

Location: Dordrecht, Netherlands
Original function: Public ornamental fountain
Year built: 1908
Built by: Architect A. van der Steur and sculptor Simon Miedema
Not used since: Still in use
Monument since: 1965
Type of monument: National Monument (Rijksmonument)

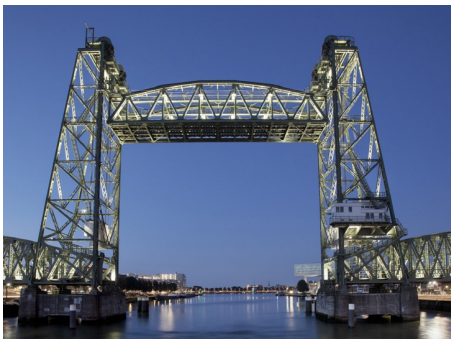
The fountain in Dordrecht, designed by architect A. van der Steur and adorned with sculptures by Simon Miedema, was constructed in 1908 to commemorate the 300th anniversary of the Union of Dordrecht. Located at the Statenplein, the fountain features an octagonal base with decorative carvings, supporting a central column that culminates in a sculptural composition. The water flows in a circular motion, emphasizing the timeless elegance of the structure.

The Fontijn in Dordrecht is a Rijksmonument due to its artistic value and historical significance. They make it a focal point in the urban fabric of Dordrecht. The fountain is constructed to celebrate a pivotal moment in Dutch history, it embodies the craftsmanship of early 20th-century public monuments. The collaboration between architect A. van der Steur and sculptor Simon Miedema resulted in a design that harmonizes artistic and functional elements.
Its placement in the Statenplein underscores its role as a centerpiece of urban identity, linking Dordrecht's present to its historical legacy. The fountain's preservation as a Rijksmonument ensures that its cultural and historical significance remains recognized and protected for future generations.

HEF (KONINGSHAVENBRUG)

Location: Rotterdam, Netherlands
Original function: Vertical-lift railway bridge
Year built: 1927
Built by: Architect Pieter Joosting and engineer C. Bijlard
Not used since: 1993
Monument since: 2000
Type of monument: National Monument (Rijksmonument)

De Hef, officially known as the Koningshavenbrug, is a historic vertical-lift railway bridge in Rotterdam. Constructed in 1927, it was part of the railway connection between Rotterdam and Dordrecht, facilitating efficient transport across the busy Koningshaven waterway. Designed by Pieter Joosting and engineered by C. Bijlard, the bridge was a pioneering feat of engineering for its time, featuring a central lifting section operated by counterweights and cables.
The bridge suffered significant damage during the Rotterdam Blitz of World War II but was rebuilt shortly after. It remained in operation until 1993 when it was decommissioned due to the opening of the Willemsspoortunnel. Despite no longer being in use, De Hef remains an iconic structure in Rotterdam's skyline and a symbol of the city's industrial heritage.
De Hef is a Rijksmonument due to its historical, technical, and cultural significance. It represents an important milestone in Dutch engineering and industrial design, being one of the first vertical-lift bridges in Western Europe. The structure reflects the rapid development of infrastructure in the early 20th century, which was essential for Rotterdam's growth as a major port city.
Its unique design, characterized by the striking steel framework and functional mechanics, has become a landmark in Rotterdam. Additionally, De Hef holds historical value as a survivor of the devastation of World War II, symbolizing the resilience and reconstruction of the city. Recognized as a Rijksmonument, it is preserved as a testament to Rotterdam's industrial and architectural heritage.



Monumenten.nl. (2025, 17 juni). De hef. https://www.monumenten.nl/monument/513922

IJSEREN PRIEEL (IRON PAVILION)

Location: Dordwijk, Netherlands
Original function: Garden pavilion
Year built: 1820
Built by: unknown
Not used since: still in use
Monument since: 1920
Type of monument: National Monument (Rijksmonument)

The Ijseren Prieel (Iron Pavilion) in Dordwijk is an ornamental garden structure built in 1820. It is a unique example of a garden pavilion made primarily from iron, a material that was relatively new for garden structures during this period. Situated in a former garden, the pavilion was designed for aesthetic enjoyment and is part of the cultural landscape of the region. It features an intricate, lattice-like iron framework with decorative details, contributing to its appeal as a piece of garden architecture. Over time, the Ijseren Prieel has become an important landmark in Dordwijk, representing the 19th-century fashion for ornamental ironwork in gardens and parks.
It is considered a monument due to its historical and architectural significance. As an early 19th-century structure, it is a rare and valuable example of ironwork used in garden architecture. The pavilion reflects the cultural and aesthetic values of its time, showcasing the trend for elaborate garden follies. Its preservation is important not only for its craftsmanship but also for its connection to the social and cultural history of Dordwijk, adding to the rich heritage of the area. Its continued existence contributes to the understanding of 19th-century landscaping and architectural practices.

Dordrecht | Rijksdienst voor het Cultureel Erfgoed. (1996, 14 februari). https://monumentenregister.cultureelerfgoed.nl/monumenten/497193

KRAAN 13 NDSM

Location: Amsterdam Netherlands
Original function: Harbour crane
Year built: 1950
Built by: Hensen factory
Not used since: 1984
Monument since: 1997
Type of monument: National Monument (Rijksmonument)

Kraan 13, also known as the Faralda Crane Hotel, is a historic harbour crane located on the NDSM-werf in Amsterdam. Constructed in 1951 by the Hensen factory, this crane was originally used for shipbuilding operations at the NDSM shipyard. Standing 50 meters tall, it is one of the few remaining cranes from the shipyard era.
In 2011, entrepreneur Edwin Kornmann Rudi acquired the crane with the vision of transforming it into a unique boutique hotel. The restoration process involved dismantling the crane, transporting it to a shipyard for thorough restoration, and reassembling it on its original site. The crane was restored to its original color palette, with non-original additions highlighted in signal red to maintain the crane's recognizability.

Kraan 13 is designated as a national monument due to its historical significance as a key component of the NDSM shipyard, which played a pivotal role in Amsterdam's maritime industry during the 20th century. The crane's design and construction reflect the industrial heritage of the era. Its preservation and adaptive reuse as a hotel exemplify innovative approaches to conserving industrial structures while integrating them into contemporary urban life.

Faralda NSDM Crane Hotel, Amsterdam – Discover project by Villeroy & Boch. (z.d.). Architonic. https://www.architonic.com/en/project/villeroy-boch-faralda-nsdm-crane-hotel-amsterdam/5103365#:~:text=The%20listed%20loading%20crane%20in,now%20accommodates%20three%20exquisite%20suites.

Luxueus 3-kamer hotel in Amsterdam-Noord. (z.d.). IAA Architecten. https://www.iaa-architecten.nl/projecten/6-faralda-crane-hotel/

KRAANBAAN BINCKHORST

Location: The Hague, Netherlands
Original function: Facilitating the loading and unloading of goods in the harbor for asphalt and concrete firm
Year built: ca. 1960
Built by: firma Heidra
Not used since: 2021
Monument since: -
Type of heritage: industrial heritage

The Kraanbaan Binckhorst is a historic crane track located in the Binckhorst industrial area of The Hague. Initially built to support the movement of goods within the harbor, the crane track was a vital component of the industrial operations in the area. It was part of the broader infrastructural development that helped to transform Binckhorst into a bustling industrial hub during the 20th century. As industrial activities in the area slowed and shifted, the crane track became less utilized. Today, it stands as a remnant of the region's industrial past, serving as a historical marker of the technological and economic changes that shaped this part of The Hague.

The track can be considered a monument due to its significance in the history of The Hague's industrial development. The crane track represents the technological innovations and economic activities that were central to the port's operations. It is an important symbol of the transformation of the Binckhorst area from a predominantly industrial landscape to its modern-day identity. Preservation of the Kraanbaan ensures that future generations can understand the crucial role industrial infrastructure played in shaping the region. The crane track also forms part of a larger historical narrative, illustrating the evolving nature of work and industry in the area.

Beurs.nl & ABM Financial News. (2020, 26 november). BAM beeindigt asfaltproductie op Binckhorst. Beurs.nl. https://www.beurs.nl/beursnieuws/binnenland/708855/BAM-beeindigt-asfaltproductie-op-Binckhorst

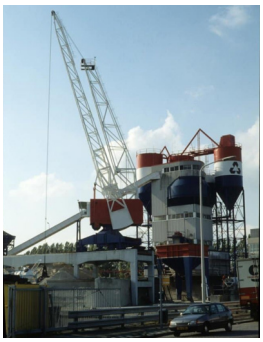
Stichting Haags Industrieel erfgoed (SHIE). (2023, 23 mei). NBM - BAM Regio West (1902 - heden) - SHIE. SHIE. https://shie.nl/bedrijven/nbm-1902-c-1990/

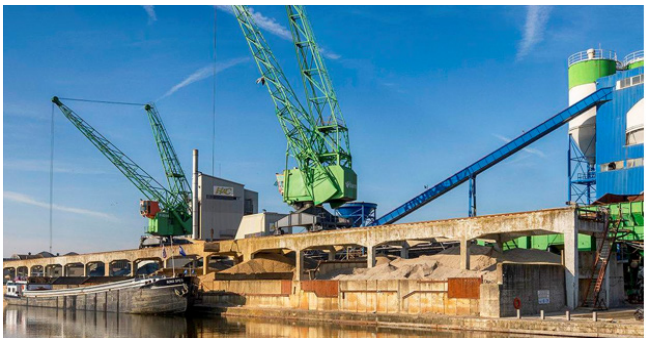
KRAANBAAN NEDSTAAL

Location: Alblasserdam, Netherlands
Original function: Facilitated the loading and unloading of materials in the harbour
Year built: 1964
Built by: Nederlandsche Kabelfabrieken
Not used since: 2000
Monument since: -
Type of heritage: industrial heritage

The Kraanbaan at Nedstaal in Alblasserdam is a historic crane track that was integral to the operations of the Nederlandsche Kabelfabrieken (Nedstaal) steelworks. Constructed in 1964, the crane track was designed to facilitate the efficient loading and unloading of materials, including steel coils and other heavy items, directly from ships docked along the harbor. This infrastructure was crucial for the steelworks' production processes, enabling the seamless transfer of raw materials and finished products. The crane track was equipped with a movable crane system, allowing for flexibility in handling various types of cargo. The design and construction of the crane track were significant engineering feats of the time, reflecting the industrial capabilities of the era.

According to the heritage committee (erfgoedcommissie) Kraanbaan at Nedstaal is considered a monument due to its historical significance in the development of the steel industry in the Netherlands. As a key component of the Nedstaal steelworks, the crane track played a vital role in the production and export of steel products, contributing to the economic growth of the region. Its design and construction exemplify the industrial architecture of the mid-20th century, showcasing the technological advancements of the period. Preserving the Kraanbaan allows for the recognition and appreciation of the industrial heritage of Alblasserdam and the Netherlands as a whole.





Erfgoedcommissie adviseert behoud van kraanbaan op Nedstaalterrein. (z.d.). Alblassserdamnieuws. https://www.alblasserdamsnieuws.nl/wordpress/2022/06/10/erfgoedcommissie-adviseert-behoud-van-kraanbaan-op-nedstaalterrein/#google_vignette

MAGERE BRUG

Location: Amsterdam, Netherlands
Original function: Pedestrian drawbridge across the Amstel River
Year built: 1934 current version, earlier versions date back to 1670
Built by: unknown
Not used since: still in use
Monument since: 2002
Type of monument: National Monument (Rijksmonument)

The Magere Brug, or "Skinny Bridge," is an iconic drawbridge in Amsterdam crossing the Amstel River. Its slender appearance in its earlier iterations gave rise to its name. The current version, made of wood and designed in a traditional Dutch style, features eleven arches and is a symbol of Amsterdam's rich history of canals and waterways. The bridge opens frequently to allow boat traffic, maintaining its historic function.

The Magere Brug holds historical and cultural significance as a symbol of Amsterdam's engineering and water management heritage. Its design exemplifies traditional Dutch craftsmanship, and its continued functionality as a drawbridge connects the past with the present. Declared a national monument, it is preserved as an integral part of the city's historical landscape and identity.

Monumenten.nl. (2025b, juni 17). Magere brug. https://www.monumenten.nl/monument/518383

SCHEEPSLIFT (SCREW DOCK)

Location: Dordrecht, Netherlands
Original function: Ship elevator used for lifting and launching ships out of the water
Year built: 1928
Built by: unknown
Not used since: mid-20th century
Monument since: 2002
Type of monument: National Monument (Rijksmonument)

The Scheepslift in Dordrecht is a rare example of an early ship elevator, a mechanical structure designed to facilitate the lifting and launching of ships. Located in one of the Netherlands' key maritime cities, it highlights the region's historical role in shipbuilding and trade. The Scheepslift was constructed in 1928 to serve the adjacent Machinefabriek L. Straatman Ketelmakerij in Dordrecht. The dock was a mechanical system designed to partially lift ships out of the water for repairs, primarily facilitating maintenance work on steam boilers and machinery. Its unique design using a screw mechanism for movement distinguishes it from other ship lifts in the region. Though no longer operational, the structure remains a powerful symbol of industrial innovation.

The Scheepslift is significant for its technical ingenuity and role in the development of Dutch maritime industry. It represents an era of rapid industrial growth and the adaptation of innovative technologies. As one of the few remaining examples of its kind, the structure is preserved to illustrate the evolution of shipbuilding and harbour facilities in the Netherlands.

Tegenover Kuipershaven 191, 3311 AM te Dordrecht | Rijksdienst voor het Cultureel Erfgoed. (2002, 24 juni). https://monumentenregister.cultureelerfgoed.nl/monumenten/522323

SCHIETBAANMUUR (SHOOTING WALL)

Location: Dordrecht, Netherlands
Original function: shooting wall used by Corps der Pontonniers, Dutch military
Year built: 1910
Built by: Dutch Ministry Of Defence
Not used since: unknown
Monument since: 2001
Type of monument: National Monument (Rijksmonument

The Schietbaan Muur is a wall that was part of a shooting range constructed around 1910. Located at the edge of Wantijpark, it was used by the Corps der Pontonniers, a Dutch military unit specializing in bridge construction. The wall is constructed from red brick and was part of a larger training ground for military personnel. After the military ceased operations, the land was incorporated into Wantijpark in the 1930s.

It is a significant historical structure, representing early 20th-century military training in the Netherlands. Its association with the Corps der Pontonniers, a key military engineering unit, makes it an important symbol of Dutch military history. The wall's preservation highlights the historical role of military infrastructure in shaping the urban landscape of Dordrecht. It is also notable for its traditional craftsmanship, as it was built using red brick in a crossbond pattern, a common construction technique of the time.

Dordrecht | Rijksdienst voor het Cultureel Erfgoed. (2001, 24 december). https://monumentenregister.cultureelerfgoed.nl/monumenten/522311

SCHOORSTEEN ENKA

Location: Ede, Netherlands
Original function: Chimneys for the ENKA factory, producing synthetic yarns
Year built: 1929
Built by: ENKA (Royal Dutch East India Company)
Not used since: 20th century
Monument since: 2000
Type of monument: National Monument (Rijksmonument)

The ENKA Chimney in Ede is a striking example of early 20th-century industrial architecture, built in 1929 as part of the ENKA factory, which was pivotal in the production of synthetic yarns. This chimney stands as a testament to the advancements of industrial processes at the time, specifically in the production of artificial fibers. The factory was one of the most important contributors to the Dutch textile industry during the early 20th century, and the chimney was integral to the factory's operational processes. The chimney remains an iconic structure due to its size and design, which combines function with distinct architectural style. Standing tall as one of the few remaining industrial relics from the area, it reflects the technological innovations of its era. While the factory ceased operations decades ago, the chimney has been preserved as a symbol of both the industrial revolution and the growth of the synthetic yarn industry in the Netherlands. Its continued presence in the landscape of Ede offers a visual connection to the city's rich industrial past.

The ENKA Chimney is designated as a Rijksmonument due to its significant role in the history of Dutch industry, its architectural merit, and its representation of the industrial age in the Netherlands. As a monumental structure, the chimney stands as a rare survivor of the ENKA factory complex, which was once a major center for synthetic yarn production. The design of the chimney and its massive size highlight the technological achievements of the period, making it an important example of industrial architecture from the early 20th century. Its preservation allows for reflection on the transformative era in which it was built, when manufacturing industries like textile production played a central role in shaping the economy and development of the region. The chimney's status as a Rijksmonument underscores its cultural importance and its place in Dutch heritage, ensuring that the legacy of the industrial revolution continues to be recognized in the present day. This monument not only marks the history of ENKA but also the broader narrative of industrial development and the evolution of manufacturing technologies in the Netherlands, offering future generations the chance to appreciate and learn from this unique part of history.

ENKA schoorsteken: het symbool van vooruitgang. (z.d.). BOEi. https://www.boei.nl/projecten/schoorstenen-enka-ede/

ENKA: Schoorsteen bij ketenhuis in ede (gelderland) | Monument - Rijksmonumenten.nl. (2024, 16 november). https://rijksmonumenten.nl/monument/527063/enka-schoorsteen-bij-ketenhuis/ede/

JULIANASCHOORSTEEN

Location: Oosterhout, Netherlands
Original function: Chimney for the Juliana Laundry
Year built: 1955
Built by: Wasserij Juliana (Juliana Laundry)
Not used since: 2004
Monument since: 2016
Type of monument: Local monument

The Juliana Chimney in Oosterhout, constructed in 1955, was originally part of the Juliana Laundry complex. The 25-meter tall chimney was an iconic feature of the factory, which operated along the Zuid-Willemsvaart Canal. The chimney's impressive height and its prominent location made it a defining element of the industrial landscape in Oosterhout. When the laundry moved in 2004, the factory buildings were demolished, but the chimney was preserved due to its cultural significance. In 2016, it was restored as part of a new residential area development, where it now serves as the centerpiece of the neighborhood.
The chimney holds significant historical value, representing Oosterhout's industrial heritage. Built in 1955, it symbolizes the growth of local industry, particularly in the textile sector. The chimney is a rare survivor of Oosterhout's once-dominant industrial landscape, as most other factory chimneys in the area were demolished. Efforts by organizations like BOEi and the municipality led to its preservation, ensuring the chimney remains a physical connection to the city's industrial past. Its restoration and the new role as a central feature of a residential area highlight its ongoing cultural and architectural importance as a symbol of Oosterhout's industrial transformation.

BOEi. (2024, 18 december). Julianaschoorsteen Oosterhout tóch gerestaureerd | BOEi. https://www.boei.nl/projecten/julianaschoorsteen-in-oosterhout-wordt-middelpunt-nieuwe-buurt/

SCHOORSTEEN WIENERBERGER

Location: Tegelen, Netherlands
Original function: Factory chimney for Wienerberger brickworks
Year built: 1927
Built by: Canoy-Herfkens
Not used since: 1980
Monument since: -
Type of heritage: industrial heritage

The Wienerberger Chimney in Tegelen was constructed in 1927 as part of the Wienerberger brickworks, a significant facility in the region's long tradition of clay product manufacturing. Standing 70 meters tall, the chimney is a striking feature, with its simple yet elegant brick design. It was used in the production of bricks and tiles, an industry that played a key role in the local economy for many decades. Though no longer in use, it remains a visual landmark and a reminder of the area's industrial past.
The chimney is an important piece of industrial heritage, reflecting the technological advancements and craftsmanship of early 20th-century brickworks. As one of the last surviving chimneys from the region's industrial era, it symbolizes the legacy of clay product manufacturing in Tegelen. The chimney's preservation highlights the transition of industrial structures into cultural landmarks, breathing new life into the building by integrating it into contemporary reuse projects. Through restoration and adaptation, the structure continues to hold value, not only as an architectural icon but also as a cultural reference point that bridges the past with the present.

BOEi. (2025, 17 april). Schoorsteen Wienerberger: een lichtbaken van Venlo | BOEi. https://www.boei.nl/projecten/schoorsteen-wienerberger/

TANKSTATION CALTEX

Location: Withuis, Netherlands
Original function: Gas station
Year built: 1953
Built by: A. van der Cruijs
Not used since: 1983
Monument since: 2022
Type of monument: BOEi project

The Caltex Tankstation in Withuis, built in 1953, is a noteworthy example of post-war Dutch architecture, designed by architect Ben Schinkel. The tank station was once one of the busiest along the border, serving motorists on the road between the Netherlands and Belgium. Its distinctive design, especially the overhanging canopy, marks it as an iconic structure from the 1950s, in the Dutch Wederopbouw (reconstruction) style. Despite the change in traffic patterns with the construction of the A2 motorway, this structure remained a key landmark for the local community. Over the years, the station fell into disuse and was repurposed for storing agricultural vehicles. However, in 2022, BOEi took ownership and began restoring it with plans to reintroduce it as a central feature for tourism, likely linked to car and bike tourism in the region.

According to BOEi the Caltex Tankstation holds monumental significance due to its historical role in Dutch transportation and its architectural value. Built in the mid-20th century, it represents a key period in the reconstruction of the Netherlands after World War II, embodying the growth of the automotive economy and international trade. The building's distinctive design, particularly its characteristic canopy, reflects the optimism of the era and the advancements in construction technology. As the last remaining gas station of its kind in the area, it is an important symbol of post-war infrastructure, making its preservation an act of safeguarding the region's cultural heritage. Its conversion into a modern landmark will continue to celebrate this legacy while providing a fitting purpose in today's tourism landscape.

BOEi. (2025a, april 17). Caltex tankstation in Withuis | BOEi. https://www.boei.nl/projecten/caltex-withuis/

WATERRESERVOIR

Location: Rotterdam, Netherlands
Original function: Water storage facility for the city's water supply system
Year built: early 20th century
Built by: The municipality of Rotterdam
Not used since: late 20th century
Monument since: -
Type of heritage: industrial heritage

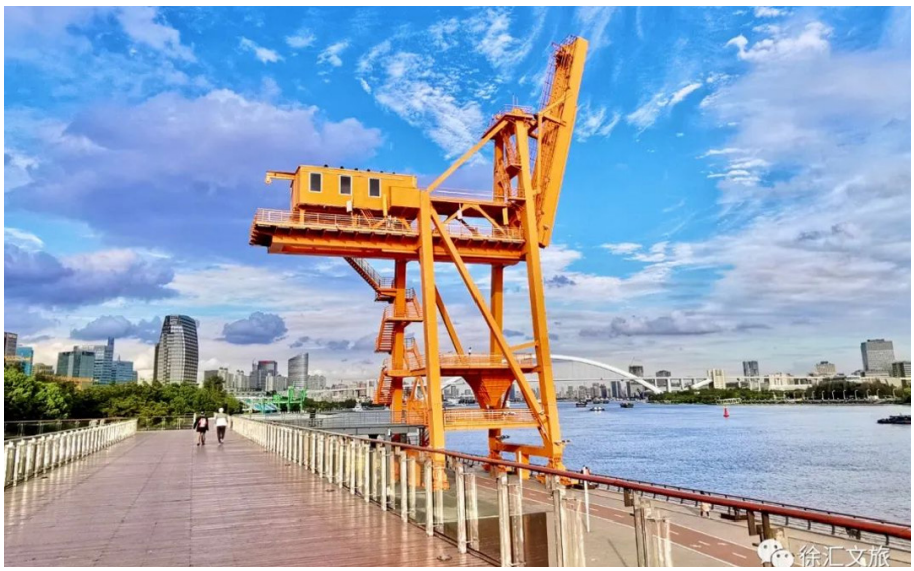
The waterreservoir at Speedwellstraat is a significant industrial heritage site in Rotterdam. Built in the early 20th century, it was designed to meet the growing water demands of the city. The structure is characterized by its robust brick architecture and distinctive cylindrical shape, which was both functional and aesthetically pleasing. Over the years, the reservoir has become an iconic landmark in the Delfshaven district, reflecting the city's industrial history and architectural evolution.
The structure exemplifies early 20th-century industrial design, showcasing the engineering advancements of the period. Its preservation allows for the appreciation of Rotterdam's industrial heritage and the evolution of its water supply infrastructure. The reservoir's distinctive appearance and historical context make it a valuable asset to the city's cultural landscape. It is not designated as a monument but is still preserved.

Merwede-Vierhavens. (2023). In Stadsontwikkeling Bouw- en Woontoezicht. https://www.commissiemer.nl/projectdocumenten/011823_3426_1a._Ontwerpbestemmingsplan_M4H_def_versie-12-4.pdf

STRUCTURES SHANGHAI'S WATERFRONT

Location: Shanghai
Original function: Crane
Year built: unknown
Built by: unknown
Not used since: unknown
Monument since: -
Type of heritage: industrial heritage

The structures are prominent red cranes along the waterfront in Shanghai, part of the city's industrial heritage. This crane likely dates back to the area's maritime past when such cranes were used for loading and unloading goods from ships, especially in port areas like the Bund.
These cranes are part of the industrial remnants of Shanghai's waterfront, reflecting the city's historical role as a major port and center of trade. Many of these cranes are now preserved for their historical value, serving as landmarks or even public art pieces.
While not typically designated as monuments in the formal sense (such as UNESCO World Heritage sites), they are often considered industrial heritage landmarks, representing Shanghai's transition from a port-centric economy to a modern city.
The exact age, builders, and specific history of the cranes would depend on the individual crane in question, but many cranes like these were active from the early to mid-20th century. Over time, as port facilities evolved and technology advanced, these cranes were gradually decommissioned. Today, many such structures have been preserved as part of revitalization projects, serving as a reminder of Shanghai's industrial past.



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Tegenover Kuipershaven 191, 3311 AM te Dordrecht | Rijksdienst voor het Cultureel Erfgoed. (2002, 24 juni). https://monumentenregister.cultureelerfgoed.nl/monumenten/522323

APPENDIX B

Case study analysis
What are examples of transformation projects of industrial and maritime non-building structures, and what strategies have been employed in these cases?

Kraanspoor, Amsterdam, Netherlands

Faralda Crane Hotel, NDSM, Amsterdam

Long Museum West Bund, Shanghai, China

TanArt Community, Xi'An, China

Beijing 751 Library, Beijing, China

The Krane, Copenhagen, Denmark

Victorian Gasholders, Londen, United Kingdom

Gasometer, Munster, Germany

Danish National Maritime Museum, Helsingør, Denmark

Transformation Manresa Island, Norwalk, Connecticut, USA

Suspended Pavilion, Shenzhen, China

Craneloft, Conceptual Design

Cranes of Palermo (proposal), Palermo, Italy

KRAANSPOOR

Kraanspoor, translating to "craneway," is a distinctive office building in Amsterdam, Netherlands, designed by OTH Architecten. Completed in 2007, this innovative structure repurposes a 270-meter-long concrete craneway from 1952, a relic of the former NDSM shipyard, by adding a lightweight, transparent three-story office space atop the existing framework. Elevated 3 meters above the original structure on slender steel columns, the new construction appears to float, preserving the industrial heritage while introducing modern functionality. The building features a double-skin glass façade with motorized louvers, providing natural ventilation and acting as a thermal buffer, enhancing energy efficiency. Utilizing water from the IJ River for heating and cooling via a heat pump system further underscores its sustainable design. Kraanspoor has become an iconic symbol of adaptive reuse, blending historical industrial elements with contemporary architectural practices, and serves as a catalyst for the creative redevelopment of Amsterdam's NDSM wharf area.

Original function: craneway for transport, two cranes
Location: Amsterdam, Netherlands
Built: 1952
Original architect: J.D. Postma
Size: 270m x 13,5m 8,7m

Current function: offices
Built: 2007
Architect: OTH Architecten (Trudy Hooykaas)
Size: 270m x 13,5m 8,7m and 3 floors new built, total 12.500m2

Special features or elements:
Double-Skin Glass Façade: Features motorized glass louvers that provide natural ventilation and act as a thermal buffer.
Infra+ Floor System: Hollow floors accommodate piping and wiring, allowing for maximum clear height.
Lightweight structure, 500 à 600 kilo per square meter.
Sustainable Energy Use: Utilizes water from the IJ River for heating and cooling via a heat pump system.
Preservation of Industrial Heritage: Maintains the original craneway structure, integrating it into the new design to honour the site's industrial past.

Conclusion:
New structure built on top of the original structure. While the two structures are still separated by a three meter gab they still work together. The stairs and lifts are hidden in the crane track and there is storage in the highest part of the track.
The newly built structure is made of glass and is a closed square. However, because of the material it is seetrough. The original structure is made of concrete and consists of beams and piles, which create an open structure.
The addition is in contrast with the original structure, and due to the gab the original structure is still in tact except for the two cranes that used to be on top.

Saieh, N. (2021, 2 maart). Kraanspoor / OTH architecten. ArchDaily. https://www.archdaily.com/2967/kraanspoor-oth-ontwerpgroep-trude-hooykaas-bv

OTH Architecten. (2021, 1 oktober). Kraanspoor - OTH. OTH. https://oth.nl/projecten/kraanspoor






FARALDA CRANE HOTEL

The Faralda Crane Hotel is a unique luxury hotel situated in a repurposed industrial crane at Amsterdam's NDSM Wharf. Originally constructed in 1951 as Crane 13 (kraan 13) for the NDSM shipyard, the crane was decommissioned after the shipyard's closure in 1984. In 2011, developer Edwin Kornmann Rudi acquired the dilapidated crane and, following extensive restoration and conversion efforts, transformed it into a boutique hotel featuring three exclusive suites, each approximately 35 m² in size. The restoration process involved dismantling the crane and transporting it to a specialized shipyard for refurbishment, where the steel structure was meticulously restored to its original colour palette, with new architectural elements highlighted in signal red to distinguish them from the original structure. The crane's design allows it to rotate with the wind, a feature facilitated by offshore engineering solutions to accommodate the movement of utilities such as water and electricity. In addition to the luxurious suites, the hotel offers a television studio/event space at 10 meters elevation and an outdoor jacuzzi at 50 meters, providing panoramic views of Amsterdam's skyline. The Faralda Crane Hotel has garnered international acclaim, receiving nominations for the European Hospitality Award 2015 in three categories and winning the Pieter van Vollenhoven Prize for adaptive reuse in 2016.

Original function: Crane harbour (Crane 13 of the NDSM warf)
Location: Amsterdam, Netherlands
Built: 1951
Original architect: firma Hensen
Size: Hight approximately 50m

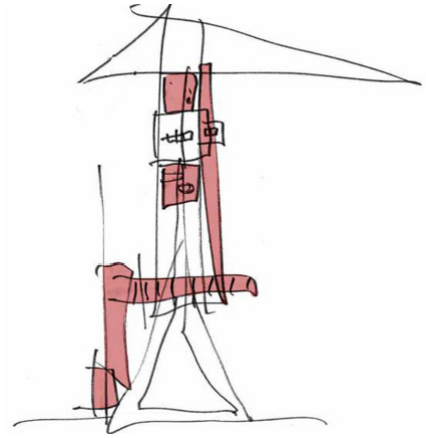
Current function: hotel
Built: 2014
Architect: IAA Architecten
Size: 3 suites (ca 35m2), event space at 10m, (outdoor) jacuzzi at 50m

Special features or elements:
Rotating Structure: The crane retains its ability to rotate with the wind, necessitating specialized engineering to manage utility connections.
Distinctive Color Scheme: Restoration included returning the crane to its original colors, with new additions marked in signal red to differentiate from the historic structure.

Conclusion:
The crane is completely restored to the original shape, all the components are restored and the original colour palette is brought back. The additions are realized in bright red to show separate them from the original.
The additions rest on the original structure. Due to the load the crane used to handle this is possible.
The additions are in contrast to the original structure even though they are mostly woven in to the structure.

Faralda NSDM Crane Hotel, Amsterdam – Discover project by Villeroy & Boch. (z.d.). Architonic. https://www.architonic.com/en/project/villeroy-boch-faralda-nsdm-crane-hotel-amsterdam/5103365#:~:text=The%20listed%20loading%20crane%20in,now%20accommodates%20three%20exquisite%20suites.

Luxueus 3-kamer hotel in Amsterdam-Noord. (z.d.). IAA Architecten. https://www.iaa-architecten.nl/projecten/6-faralda-crane-hotel/



LONG MUSEUM WEST BUND

The Long Museum West Bund, located along the Huangpu River in Shanghai's Xuhui District, is a prominent cultural institution that seamlessly integrates contemporary architectural design with the site's industrial heritage. Designed by Atelier Deshaus and completed in 2014, the museum occupies a former coal wharf, preserving elements such as a 1950s Coal-Hopper-Unloading Bridge. The structure features a distinctive umbrella-vaulted concrete shell, creating expansive, column-free exhibition spaces that accommodate a diverse range of artworks. Spanning approximately 33,000 square meters, with 16,000 square meters dedicated to exhibitions, the museum comprises four levels, including underground facilities. Its design emphasizes spatial continuity and flexibility, with interconnected spaces that facilitate a dynamic visitor experience. The preservation of industrial artifacts, combined with minimalist modern design, reflects a dialogue between the past and present, contributing to the cultural revitalizatio.

Original function: Coal-Hopper-Unloading Bridge for coal transportation at the Nashine Power Plant
Location: Shanghai
Built: 1950s
Original architect: unknown
Size: 110m x10m x 8m

Current function: exhibition
Built: 2014
Architect: Atelier Deshaus
Size: total floor area: 33.000m2, exhibition space: 16.000m2, 4 levels including underground facilities

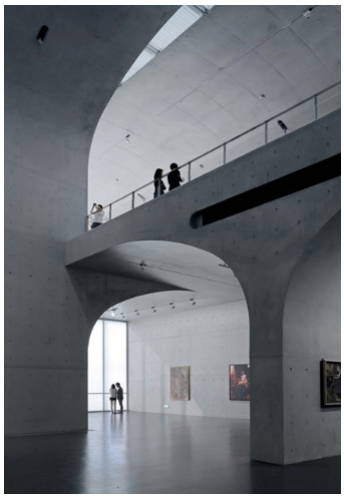
Special features or elements:
Umbrella-Vaulted Concrete Structure: The museum's distinctive umbrella-vaulted concrete shells create large, column-free spaces, enhancing spatial flexibility for exhibitions.
Spatial Continuity: Interconnected exhibition spaces promote a seamless visitor experience, allowing curatorial approaches.
Minimalist Aesthetic: The use of exposed concrete and simple geometric forms reflects a minimalist design approach, emphasizing the artworks on display.

Conclusion:
The addition to the original crane track is built around the 100m meter structure. The track is restored and the volumes of the new building are built next to the track.
Because the additions are not touching the track and the distances they have to the original structure the cranetrack is still in tact. Only the crane itself is not kept.
The building is following the grid of the built basement, which is not built in the same time as the structure itself. The umbrella shaped structure is with its roundings in contrast to the original structure.
Even though both structures use concrete as base the texture and colours are completely different. There is a clear difference in age.
The new buildings is emphasising the crane track with its shape. Because the physical distance between the structure and the building the two are clearly separated but because of the shape of the addition they strongly work together.

Aguilar, C. (2024, 9 juli). Long Museum West Bund / Atelier Deshaus. ArchDaily. https://www.archdaily.com/554661/long-museum-west-bund-atelier-deshaus
http://www.yongsy.com. (z.d.). Long Museum West Bund /-Works-. http://www.deshaus.com/En/Script/detail/catid/8/id/6.html





TANART COMMUNITY

The TanArt Community is a mixed-use art center located in Xi'an, China, repurposed from a decommissioned coal-burning boiler station originally built in 1997. Designed by Nomos Architects and completed in 2022, the project revitalizes the industrial heritage site by transforming the large boiler room into an art exhibition gallery and converting smaller rooms into commercial spaces that support art events. The renovation preserves the building's original industrial frame, including its tall chimneys and large coal scuttles, while introducing modern interventions such as a polycarbonate panel façade that enhances thermal performance and integrates the structure into the urban context. A newly added runway connects the outdoor square to the main exhibition hall on the third floor, serving both functional and symbolic purposes by highlighting the blend of old and new elements. This adaptive reuse project not only conserves an industrial relic but also contributes to the cultural and economic vitality of the community by providing a venue for artistic expression and commercial activity.

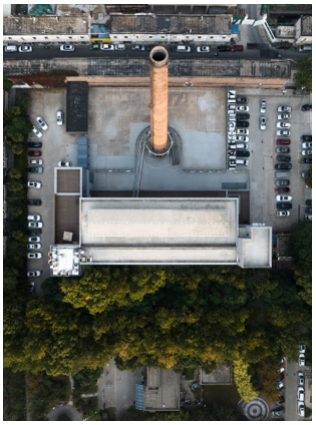
Original function: Coal burning boiler station for Xi'An Shiyou Unicersity residential campus
Location: Xi'An, China
Built: 1997
Original architect: unknown
Size: +- 4.000m2

Current function: art exhibition gallery, commercial spaces
Built: 2022
Architect:
Landscape architect: (if relevant)
Size: +- 4.000m2

Special features or elements:
Polycarbonate Façade: The addition of polycarbonate panels improves thermal performance and visually integrates the building into its urban surroundings.
Connecting Runway: A newly constructed runway links the outdoor square to the main exhibition hall on the third floor, facilitating access and symbolizing the fusion of historical and contemporary design.
Flexible Interior Spaces: The large, tall boiler operation room is repurposed for art exhibitions, while smaller rooms are utilized as commercial spaces to financially support art events.

Conclusion:
The complete project is about more than non-building like buildings. The main part this project is the renovation of the building like part. The most important, or at least visible part is the chimney. As mentioned in sub question 1 this, a landmark such as a chimney, is more often the reason to keep a complex.
In the new design the chimney is used as entrance, which originally was not the case. The building itself has changed in form and material but the chimney is kept.
The building like part of the building is changed in the renovation but the chimney is kept the same, except for the role it has in the new design because of its iconic shape.

Chen, C. (2025, 21 mei). TanArt Community / Nomos Architects. ArchDaily. https://www.archdaily.com/995048/tanart-community-nomos-architects?ad_medium=gallery



BEIJING 751 LIBRARY

The Beijing 751 Library, completed in 2024, is a cultural and educational facility situated at the end of 798 Road in Beijing's 751-798 Art District. This district, established in the 1950s as an electronics component factory, has evolved into China's largest art district, hosting events like Beijing Fashion Week and Design Week. The library occupies the site of a former ash washing pool, with a crane once used for transporting coal ash still present above the site. Designed by Do Union Architecture, the library integrates the industrial remnants into its structure, preserving the site's historical essence. The building comprises three above-ground floors and one basement level, encompassing approximately 2,700 square meters. It houses a variety of functions, including reading areas, cultural forums, conference rooms, and cafes, serving as a multifunctional cultural complex. The design emphasizes the harmonious coexistence of modern architecture with industrial heritage, creating a dynamic space that fosters community engagement and cultural exchange.

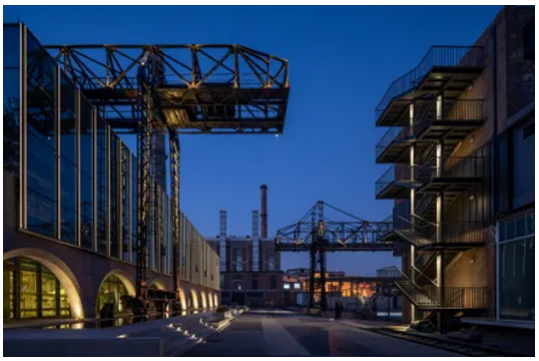
Original function: Electronics component factory
Location: Beijing, China
Built: 1950s
Original architect: unknown
Size: approximately 15 to 20 meters high and 30 to 50 meters long

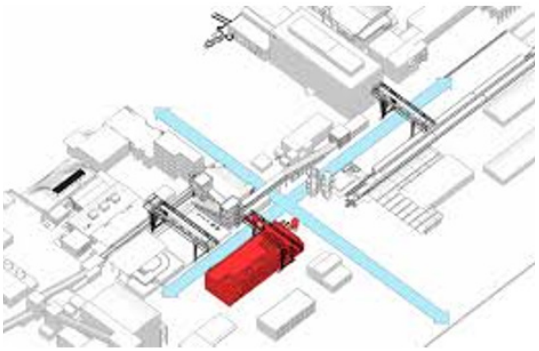
Current function: library, cultural forms, conference rooms, cafes
Built: 2024
Architect: Do Union Architecture
Size: +- 2700 square meters with three stories above ground and a basement.

Special features or elements:
Adaptive Reuse: Integrates industrial remnants, such as the crane, into the library's design, preserving historical elements.
Multifunctional Spaces: Includes reading areas, cultural forums, conference rooms, and cafes, serving diverse community needs.

Conclusion:
The structure previously used as ash washing poolho and the new building are two complete separate structures. The addition is located underneath the structure and made from the modern materials glass and concrete while the structure is made from dark painted steel.
Other steel structures cross other places like a basketball court and other buildings.
The two do not have any connection but are strongly related because they are close together. The volume of the addition fits perfectly underneath the steel structure while the structure still is an icon.

Luco, A. (2024, 18 september). Beijing 751 Library / Do Union Architecture. ArchDaily. https://www.archdaily.com/1020683/beijing-751-library-do-union-architecture?ad_source=search&ad_medium=projects_tab





THE KRANE, COPENHAGEN

The Krane is a unique hospitality and meeting space located in Copenhagen, Denmark, designed by Arcgency and completed in 2017. This innovative project involves the adaptive reuse of a former coal crane, transforming it into a multi-functional facility that includes a private retreat, meeting room, spa, and terrace. The design emphasizes a monochromatic black color scheme, inspired by the crane's industrial past and the coal it once transported. This black theme is consistently applied throughout the interior and exterior, creating a cohesive and minimalist aesthetic. The Krane offers panoramic views of Copenhagen's harbor, with large windows and a rooftop terrace providing expansive vistas. The interior features high-quality materials and furnishings, including Dinesen wood floors and Kvadrat textiles, enhancing the luxurious atmosphere. The project also incorporates sustainable design elements, such as energy-efficient systems and the use of durable materials, reflecting a commitment to environmental responsibility. The Krane serves as an example of innovative adaptive reuse, blending industrial heritage with contemporary design to create a distinctive urban retreat.

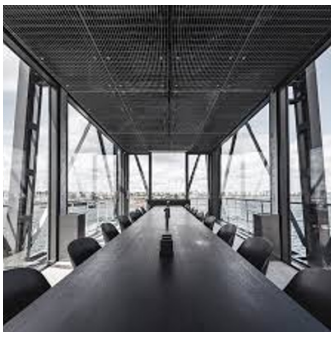
Original function: coal loading crane
Location: Copenhagen, Denmark
Built: mid 20th century (exact year not specified)
Original architect: unknown
Size: +- 15 meters

Current function: private retreat, meeting room, spa, terrace
Built: 2017
Architect: Arcgency
Size: 285m2

Special features or elements:
Monochromatic Design: Employs a black colour scheme throughout, inspired by the crane's coal-related history, creating a cohesive and minimalist aesthetic.
Panoramic Views: Offers expansive views of Copenhagen's harbour through large windows and a rooftop terrace.

Conclusion:
The additions on this Krane (crane) are in the style of the original structure. The former controlling room and other interior spaces are used and the additions made are in the same colour palate or transparent (glass).
There are no big interventions, which keeps the character of the krane in tact.
The interior is all black, which refers to the history of the crane transporting coal.
The design is minimalistic and functional, which could be considered in line with a functional structure as a crane itself.

Rojas, C. (2024, 30 oktober). The Krane / Arcgency. ArchDaily. https://www.archdaily.com/876702/the-krane-arcgency?ad_source=search&ad_medium=projects_tab




UNIONKUL


UNION

VICTORIAN GASHOLDERS

The Victorian Gasholders in London, dating back to the 19th century, have been transformed into a mixed-use residential hub, blending historical architecture with modern living. This regeneration project, led by RSHP, repurposes the iconic gasholder frames into luxury apartments, preserving their industrial heritage while introducing contemporary amenities. The development includes the construction of new residential buildings within the gasholder structures, creating a unique living environment that honors the site's history. The project also features public spaces, retail areas, and landscaped gardens, enhancing the urban fabric and providing amenities for residents and the wider community. The design approach emphasizes sustainability and community integration, aiming to revitalize the area and contribute to the local economy. This transformation exemplifies the adaptive reuse of industrial structures, offering a model for future urban regeneration projects.

Original function: gas storage and distribution
Location: Londen, United Kingdom
Built: 19th century (exact year not specified)
Original architect: unknown
Size: hights range from 25 to 40 meters

Current function: Mixed-use residential, public spaces retail
Built: 2024
Architect: RSHP

Special features or elements:
Mixed-Use Development: Incorporates residential units, retail spaces, and public areas.
Sustainability: Emphasizes sustainable design and community integration.
Urban Regeneration: Revitalizes a historic industrial site, contributing to local economic growth.

Conclusion:
The original interior space of the gasholders is already gone for a significant time, however, the structure around is still kept and in tact.
These structures are now the base for a new design for this district.
The shape of the gasholders is kept by building round buildings inside of these structures, just like were the original gasholders used to be.
The volumes itself however are not similar, the hights differ and the materials are different as well. Also the site is much greener due to the function change. This makes that the area looks completely different.
However the structures that used to be around the gasholders are still in tact and not touched. The additions are based on the original situation but with a modern twist.

Fakharany, N. (2024, 23 juli). RSHP Transforms 150-Year-Old Victorian Gasholders into a Mixed-Use Residential Hub in London, UK. ArchDaily. https://www.archdaily.com/1018768/rshp-transforms-150-year-old-victorian-gasholders-into-a-mixed-use-residential-hub-in-london-uk?ad_source=search&ad_medium=projects_tab&ad_source=search&ad_medium=search_result_all%27

GASOMETER

The Gasometer in Münster, Germany, is undergoing a significant transformation from a decommissioned gas storage facility into a sustainable residential tower. Designed by Mei architects and planners, this project aims to revitalize the industrial landmark while promoting environmental sustainability and community engagement. The adaptive reuse of the Gasometer preserves its historical significance, integrating modern residential units within the existing structure. The design prioritizes inclusivity, offering housing options tailored to various income levels to foster a diverse and vibrant community. Green spaces and noise-reducing features are incorporated to provide residents with a sanctuary amidst urban life. Public facilities, including a theater, co-working spaces, commercial areas, and a health center, are planned across several floors, enhancing the building's role as a community hub. Sustainable design elements include photovoltaic panels on the exterior façade, rainwater harvesting systems, and the use of recycled materials, aiming for a "Paris Proof" building with minimal CO_2 emissions. The project also features a public roof garden and communal vegetable garden, promoting biodiversity and community interaction. The first phase of the Gasometer transformation is expected to open by 2024, offering a model for future urban regeneration projects that blend historical preservation with modern living.

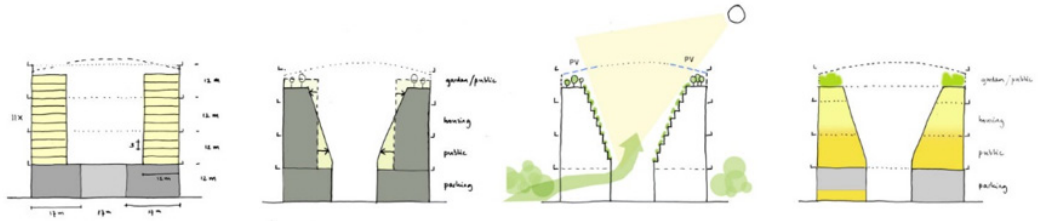
Original function: gas storage facility
Location: Munster, Germany
Built: 1950s
Original architect: unknown
Size: ca. 50m high structure, ca 12 meter high volume.

Current function: residential tower, public facilities, green spaces
Built: first phase projected to open by 2024
Architect: Mei architecten and planners
Size: 23.000m2 bvo, ca. 50 meter high building

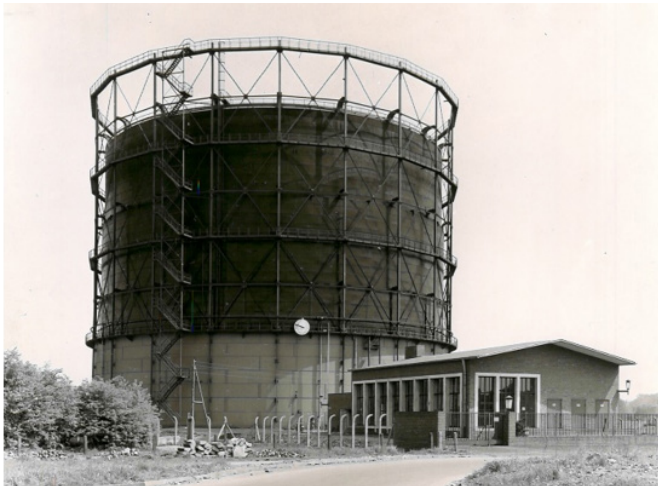
Special features or elements:
Sustainability: Incorporates photovoltaic panels, rainwater harvesting, and recycled materials to minimize CO_2 emissions.
Community Integration: Includes public facilities such as a theater, co-working spaces, and health center, fostering community engagement.
Environmental Commitment: Aims for a "Paris Proof" building with minimal CO_2 emissions.

Conclusion:
The original structure of the gasholder is still in tact and functions as a base for the transformation. The addition takes the form of the structure and functions within. From the outside this looks similar to a original gasholder, except for the clear difference in function.
The original 12,5 m high volume is kept in tact and the addition is built on top.
On the inside the architect played with volume to maximise the amount of daylight in combination with volume. This makes that the design on the inside does not show the original function of the site, whilst from the outside this is really clear.

Mei architects and planners. (2024, 7 november). Gasometer - Mei architects and planners. Mei Architects And Planners. https://mei-arch.eu/projecten/gasometer/



Bestand und Potential | Optimierung für mehr Tageslicht | Sonne und Natur im Inneren | Nutzungszonen



DANISH NATIONAL MARITIME MUSEUM

The Danish National Maritime Museum, designed by BIG (Bjarke Ingels Group), is located in Helsingør, Denmark, and repurposes an old dry dock into a state-of-the-art museum space. The design blends modernity with history, as the museum is built within the boundaries of an existing historical industrial site. The building is integrated into the landscape with a distinctive sunken structure, which allows visitors to experience the history of Denmark's maritime heritage while providing a new perspective of the city. The museum is laid out with a circular path that leads visitors through exhibits while providing views of the surrounding harbor, creating a relationship between the industrial past and the present. The building's structure comprises both submerged and above-ground sections, with the old dry dock becoming the heart of the museum. The innovative use of the dry dock space results in an open, inviting atmosphere for visitors to interact with the exhibits. This adaptive reuse of industrial architecture preserves the historical significance of the site while incorporating modern architectural principles.

Original function: dry dock
Location: Helsingør, Denmark
Built: 1950
Original architect: unknown
Size: 150 m long, 25 m wide, 9 m deepd

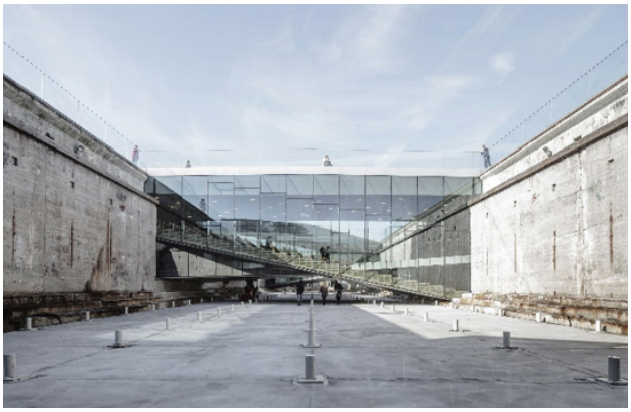
Current function: maritime museum
Built: 2013
Architect: BIG (Bjarke Ingels Group)
Landscape architect: (if relevant)
Size: +-5.000 square meters

Special features or elements:
Innovative architecture: The structure is sunken into the ground, offering a unique design approach that integrates with the surrounding harbour landscape.
Circular layout: The exhibition areas are designed in a circular path, guiding visitors through different maritime themes while offering panoramic views of the harbor.

Conclusion:
The original shape is more or less in tact. The museum is built in the "walls" of the drydock and the only physical addition are the stairways/connections through the dock.
The connections have a clearly different look because of the use of materials such as glass. The connections do not tough the bottom of the dock and therefor are clearly separating old and new.
The original structure is still visible and clear, however the once completely open space is now 'disturbed' by connections. When standing on the ground in the dock this open space is still there because of the height of the connections.
The design really appreciates the original structure while using there were possible.
The fact that de maritime museum is located in a ship shaped drydock is very suiting.

Sánchez, D. (2024, 1 augustus). Danish National Maritime Museum / BIG. ArchDaily. https://www.archdaily.com/440541/danish-national-maritime-museum-big?ad_source=search&ad_medium=projects_tab

Danish Maritime Museum | BIG | Bjarke Ingels Group. (z.d.). BIG | Bjarke Ingels Group. https://big.dk/projects/danish-maritime-museum-1699



TRANSFORMATION MANRESA ISLAND

Manresa Island, located in Norwalk, Connecticut, is undergoing a significant transformation from a decommissioned power plant site into a vibrant 125-acre public park. This ambitious project, spearheaded by local philanthropists Austin and Allison McChord, aims to revitalize the waterfront and provide the community with enhanced access to Long Island Sound. The design, developed by SCAPE and BIG, focuses on ecological restoration, sustainable design, and community engagement. The park will feature a network of outdoor areas, including walking trails, beach access, and recreational spaces, all integrated with the site's industrial heritage. The adaptive reuse of the existing power plant infrastructure will house facilities such as swimming pools and event spaces, preserving the site's historical significance while introducing modern amenities. The first phase of the park is projected to open by 2030, with plans to offer year-round programming, including water access, play areas, ecological experiences, education, and event spaces. This transformation aims to create a resilient and welcoming space that serves as a community hub, promoting environmental stewardship and public engagement.

Original function: coal-fired and oil powered power plant
Location: Norwalk, Connecticut, USA
Built: Mid 20th century (exact year not specified)
Original architect: unknown
Size: 125 acres

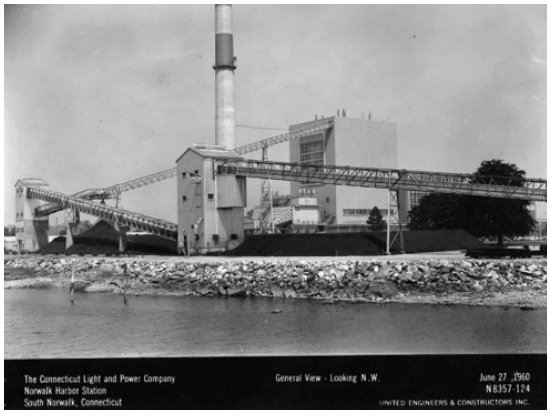
Current function: public park, recreational spaces, ecological restoration areas, event venues
Built: concept, not built (yet)
Architect: BIG
Landscape architect: SCAPE
Size: 125 acres

Special features or elements:
Ecological Restoration: Focuses on revitalizing coastal ecosystems through extensive brownfield remediation, enhancing the natural landscape.
Community Engagement: Plans to offer year-round programming, including water access, play areas, ecological experiences, education, and event spaces, fostering public interaction and environmental stewardship.

Conclusion:
Not only a transformation of the built environment but the whole site around. The focus for this case study analysis is on the building BIG architects designed.
They mainly use the building with the interior spaces. The physical appearance of the building changed from closed off walls to a open glass façade. However the volumes more or less stayed the same.
The chimney is again kept and a landmark in the new design. From far away and inside the building this chimney is visible and part of the design.
The water basins however are removed. Therefor the only part that is kept in the original shape is the chimney.

Florian, M. (2024, 2 oktober). BIG and SCAPE Reimagine Decommissioned Power Plant into a Public Destination in Connecticut, US. ArchDaily. https://www.archdaily.com/1021894/big-and-scape-reimagine-decommissioned-power-plant-into-a-public-destination-in-connecticut-us?ad_source=search&ad_medium=projects_tab&ad_source=search&ad_medium=search_result_all

Manresa Island Park - SCAPE. (2024, 7 oktober). SCAPE. https://www.scapestudio.com/projects/manresa-island-park/


The Connecticut Light and Power Company
Norwalk Harbor Station
South Norwalk, Connecticut
General View - Looking N.W.
June 27 ,1960
N-8357-124
UNITED ENGINEERS & CONSTRUCTORS INC.

SUSPENDED PAVILION, SHENZHEN

The Suspended Pavilion, designed by TJAD Original Design Studio and completed in 2020, is situated along the Maozhou River in Bao'an District, Shenzhen, China. The site is bisected by a transverse embankment road, creating two distinct landscape zones: one near the water bank and a low-lying green space. The design integrates these zones into a cohesive landscape system, emphasizing architectural and environmental harmony. The north side, originally a low-lying green area, has been transformed into an ecological rainwater wetland through sponge city principles, allowing rainwater to infiltrate the land, replenish groundwater, and support diverse plant life. A newly constructed steel trestle system, suspended over the wetland, connects both sides of the embankment road, forming a continuous pathway. The trestle's design, featuring overhanging sections supported by central columns and steel grilles, offers visitors an immersive experience, walking above the wetland and engaging directly with the natural environment. This project exemplifies the integration of urban infrastructure with ecological restoration, creating a public space that fosters environmental awareness and community engagement.

Function structure: water irrigation system pavilion
Function building: ecological wetland park with suspended steel trestle pathways
Location: Shenzhen, China
Built: 2020
Architect: TJAD Original Design Studio
Size: total area 270m2

Special features or elements:
Ecological Wetland: The transformation of the low-lying green space into a rainwater wetland enhances biodiversity and contributes to groundwater replenishment.
Suspended Steel Trestle: The elevated pathway allows visitors to traverse the wetland without disrupting the ecosystem, providing an immersive natural experience.
Sponge City Principles: The design incorporates sustainable urban drainage systems to manage rainwater, reflecting modern ecological urban planning strategies.

Conclusion:
This is actually not a redesign since the water irrigation structures are the same age as the building itself. However because of their contrast the decision has been made to include this in the case study analysis.
The water system is higher and had a different physical appearance than the building itself. The building is realised in glass in a minimalistic design. The pavilion is one story high and lifted from the ground.
The water system is panted in a bright red/orange colour and is standing above the pavilion. The structure is the clear landmark in this design.
There is a clear difference between the non-building like structure and the building/pavilion by material, colour and shape.

Chen, C. (2024, 2 juli). Suspended Pavilion / TJAD Original Design Studio. ArchDaily. https://www.archdaily.com/959276/suspended-pavilion-tjad-original-design-studio?ad_source=search&ad_medium=projects_tab

CRANELOFT, CONCEPTUAL DESIGN

The Craneloft is a conceptual architectural proposal developed by Yorgos Rimenidis and Michalis Softas, students from the University of Thessaly in Volos, Greece. The project envisions the adaptive reuse of decommissioned port cranes, transforming them into residential lofts. Given the ubiquity of such cranes in commercial ports worldwide, this concept offers a globally applicable solution for repurposing industrial structures. The design involves suspending two interconnected shipping containers from the crane's framework, providing both storage and living spaces. This approach not only revitalizes obsolete machinery but also integrates these structures into the urban fabric, contributing to a dynamic and condensed cityscape. Sustainability is a key aspect of the design, incorporating features such as photovoltaic panels for energy generation, wind catchers for natural ventilation and heating, and systems for rainwater and greywater collection. Although the Craneloft remains a theoretical project, it stimulates discussion on innovative urban living solutions and the potential for repurposing industrial heritage in contemporary architecture.

Original function: cargo handling in port facilities
Location: undefined, could be applied to every crane
Size: different

Current function: living space/residential lofts
Architect: Yorgos Rimenidis and Michalis Softas
Size: Two interconnected shipping containers per unit

Special features or elements:
Sustainable Design: Incorporates photovoltaic panels for energy, wind catchers for ventilation, and rainwater collection systems.
Modular Living Spaces: Utilizes standard shipping containers to create flexible and efficient residential units.

Conclusion:
This is not an actual built design but it shows the interest in these kind of projects. These students have shown how any crane can be transformed into lofts using containers. The idea to use containers is because of the relation between cranes and containers in the shipping industry.
The students state that this from of habitation would be constantly changing and form a “condensed European city”.
Due to the use of containers and cranes the idea is a sort of combination of structures that (may) have lost their original function. The fact that the containers are used suggest a quite conservative strategy comparing to the other non-building like case studies.

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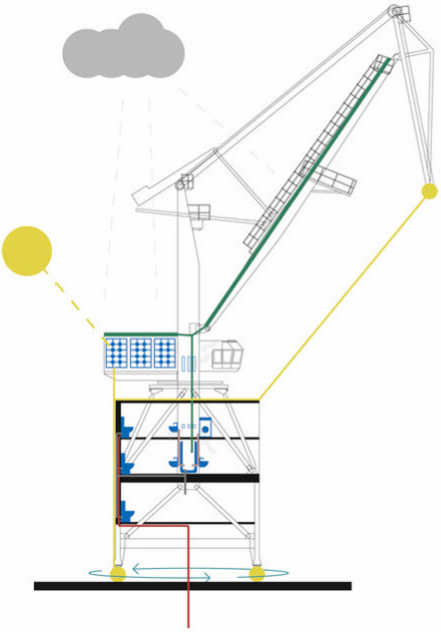

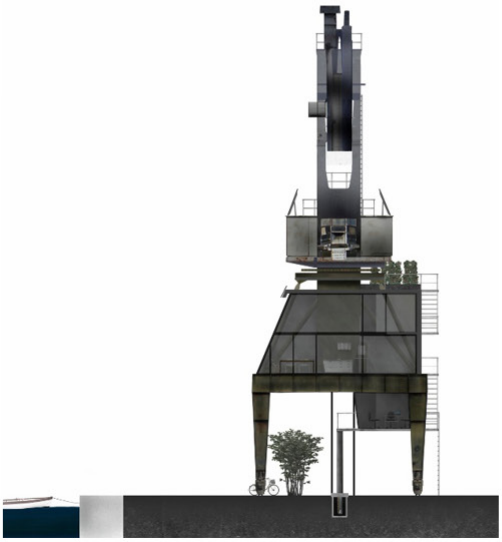

CRANES OF PALERMO (PROPOSAL)

The Cranes of Palermo Proposal is an architectural concept developed by De Fournier & Associados, aiming to repurpose the iconic port cranes of Palermo, Sicily, into a cultural and leisure center. Drawing inspiration from the rich Baroque history of the region, the design seeks to transform these industrial structures, which have been prominent in the city's landscape for over 30 years, into vibrant public spaces. The proposal includes the integration of cultural facilities such as exhibition centers, libraries, multi-use spaces, cafes, shops, and restaurants within the crane structures. Additionally, the design envisions the development of a public square at the base, enhancing the urban fabric and providing a flexible area for various events and exhibitions. The project emphasizes formal exuberance and contrasts, reflecting the scenographic and ornamented elements characteristic of Sicilian Baroque architecture. By revitalizing these cranes, the proposal aims to create a new landmark for Palermo, fostering cultural engagement and contributing to the city's ongoing urban renewal efforts.

Original function: cargo handling in the port of Palermo
Location: Palermo, Italy
Built: 1980s
Original engineer: Ceretti & Tanfani
Size: ca. 70 meters

Current function: conceptual proposal for cultural and leisure centre, including exhibition spaces, library, multi-use areas, cafes, shops and restaurants.
Date of proposal: 2012
Architect: De Fournier & Associados

Special features or elements:
Baroque Inspiration: Incorporates elements of Sicilian Baroque architecture, emphasizing formal exuberance and scenographic qualities.
Public Square Integration: Develops a ground-level plaza to host various events and exhibitions, enhancing community engagement.

Conclusion:
This project is a proposal and not a realised building. The fact that the proposal for these iconic structures in Palermo is made show the potential for industrial/maritime non building like heritage.
The additions are designed in contrast to the original structure. The volumes are realised in bright colours and modern materials such as glass. The shapes are designed perpendicular to the direction of the cranes and the red structure connects the two cranes.
There is a clear physical difference between the original structure and the additions.

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