

# Thinking about Future Challenges Through the Lens of the Past

A Radical Adaptive Reuse Strategy for the Preservation of Maritime-Industrial Heritage

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## Abstract

How can radical architectural interventions add value to maritime-industrial heritage, while stimulating people to think about future challenges through the lens of the past? Maritime-industrial heritage is in danger of being lost. It is crucial to transform these places with a reinterpretation towards the future. To find an answer, three strategies of Plevoets and Van Cleempoel and one strategy of Rietveld and Rietveld were researched, and a multiple case study was conducted. The case studies showed that Plevoets and Van Cleempoel's three strategies lack the stimulation of visitors to think about future challenges, while Rietveld and Rietveld's strategy does. Another contradiction is that Rietveld and Rietveld's strategy is based on breaking and removing parts and is not about adding architectural parts, in comparison to Plevoets and Van Cleempoel's strategies, which might be necessary for adaptive reuse. From this research, the answer to the research question is that both theories need to be merged. It is concluded that by using the combination of these radical architectural interventions, designs can be created that preserve the heritage, add value to the heritage and stimulate people to think about future challenges through the lens of the past.

## Key concepts/words

Maritime heritage – Radical architectural interventions – Aemulatio – Facadism – Ruination – Hardcore Heritage – Adaptive reuse

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# 1. Introduction

On the periphery of a dike, an industrial location in Alblasterdam in The Netherlands is a site where Floris Kloos (1810-1892) established a windmill factory and shipyard, operating in the 19th and 20th centuries. Standing alongside the water, this narrow 250-meter-long hall, called Kloos Kinderdijk, is defined by its spectacular length and characterised by its spacious and light atmosphere. This cathedral-like space has remained unoccupied for over five decades and is now waiting for the demolition hammer. This research explores how maritime-industrial heritage can be revitalized with the help of radical architectural interventions proposed by Plevoets and Van Cleempoel, as well as Rietveld and Rietveld. The findings of this research will consolidate and support my graduation design project: the transformation of Kloos Kinderdijk.

## 1.1. Problem

Old maritime-industrial heritage sites, such as the former shipyard Kloos Kinderdijk, once crucial to the fabric of our environment, now stand as remnants of their former utility. Currently, maritime-industrial heritage faces substantial vulnerability and is in danger of being lost (ICOMOS, 2011, p.2). Kloos Kinderdijk is no exception, even though it is the only remaining maritime-industrial heritage in the area of Alblasterdam and Kinderdijk. In a heritage transformation, designs for adaptive reuse can often not be realized as was initially conceived due to strict regulations, laws and assessments performed by different parties (Schunselaar, 2009, p. 78). Meanwhile, these immense sites of large old factories are unused, impoverished, take up a lot of space and often have low architectural value. According to Nevzgodin (2016, p. 37), by the mid-20th century, the general public held a low appreciation for industrial buildings, considering them ugly and unwelcoming. Nevertheless, maritime-industrial areas are filled with remarkable sites that hold immense historical and archaeological value (ICOMOS, 2011, p.2). Therefore, it is crucial to focus on preserving these places and protecting the tangible and intangible stories of the past. Nonetheless, this preservation should not remain fixated on the narrative of the past; rather, it should entail a reinterpretation that looks toward the future (Rietveld & Rietveld, 2017, p. 2).

## 1.2. Research Question

This research aims to challenge the conventional narrative of historic preservation, questioning whether maritime-industrial heritage should be limited to solemn representations of the past. From the identified problem and the aim of this research, the research question follows:

**Main research question:** *How can radical architectural interventions add value to maritime-industrial heritage, while stimulating people to think about future challenges through the lens of the past?*

## 2. Theoretical Framework

This chapter provides the theory required for answering the earlier posed research question. The main topic covered by the research question is whether radical architectural interventions add value to maritime-industrial heritage. First, this chapter examines how heritage is currently dealt with, then delves into four radical architectural interventions proposed by Plevoets and Van Cleempoel, as well as Rietveld and Rietveld, and finally compares them.

### 2.1 Dealing with heritage

For years, the typical approach to the built environment was either to preserve the original appearance of protected monuments as closely as possible or to demolish them. To preserve heritage sites, conservationists (governed in the Netherlands by e.g. Welstands- and Monumentencommissies) recommend formal design guidelines for conversion plans of protected buildings requiring that the 'aesthetic integrity' of the protected building is maintained as much as possible (Rogic, 2009, p. 10). Over the past decade, there has been a notable shift in this approach. New strategies appear that represent an original view of the existing building and deal with heritage in a new way by demonstrating a rather extreme approach towards the host space (Plevoets & Van Cleempoel, 2019, p. 30).

### 2.2 Radical architectural interventions

In the realm of architectural preservation, two distinct theories emerge, each proposing radical interventions that challenge unconventional approaches.

The first theory is based on the book "Adaptive Reuse of the Built Heritage: Concepts and Cases of an Emerging Discipline" by Plevoets and Van Cleempoel (2019). According to Plevoets and Van Cleempoel, new architectural approaches have emerged that do not fall within the conventional categories, but that represent a new perspective on existing buildings. Plevoets and Van Cleempoel claim to be the first to introduce three new radical architectural adaptive reuse intervention strategies: Aemulatio, Facadism and Ruination. The second theory is based on the paper "Hardcore Heritage: Imagination for Preservation" by Erik Rietveld and Ronald Rietveld (2017). This theory from Rietveld and Rietveld is a new way of thinking about monuments and cultural heritage, called Hardcore Heritage. This fourth strategy assumes that deliberate destruction, radical context changes and contradictory additions can create a new field of tension between the present, past and future. The four radical architectural intervention strategies are outlined below, each accompanied by an explanation and example, as follows:

#### 1. **Aemulatio** by Plevoets and Van Cleempoel

The first strategy, Aemulatio, is an extreme fusion of the old and the new. It seeks a relationship that strives for similarity rather than contrast by taking the building's existing, hidden or lost qualities and restoring them in a new way (Plevoets & Van Cleempoel, 2019, p. 31). An example is Park Avenue Armory by Herzog & de Meuron. In this renovation, the architects recognised the original interior and adapted it in a very subtle way to bring back the historical atmosphere.

#### 2. **Facadism** by Plevoets and Van Cleempoel

The Facadism strategy focuses on preserving the external facade of a structure while undergoing extensive interior modifications. Facadism has been used as a strategy to improve a building's functionality, aesthetics, and urban performance (Plevoets & Van Cleempoel, 2019, p. 37). A recent project that shows an extreme separation of facade and interior is Caixa Forum Madrid by Herzog & de Meuron. For this intervention, the architects removed the base of the building, leaving a covered plaza under the brick shell. The rest of the brick facade is preserved but with a contrasting interior space for a cultural programme.

3. **Ruination** by Plevoets and Van Cleempoel

Embracing the philosophy of controlled decay, the Ruination strategy challenges the conventional perception of architectural preservation. It builds on the ephemeral characteristics of a crumbling structure, creating a dynamic interplay between time, nature, and architecture, and using this as a quality in its adaptation and reuse (Plevoets & Van Cleempoel, 2019, p. 42). An example is the transformation of the ruins of the church Escuelas Pías in Lavapiés, Madrid, into a university library by Jose Ignacio Linazasoro. It is a combination of the 250-year-old ruins with a modern architectural intervention.

4. **Hardcore Heritage** by Rietveld and Rietveld

By intentionally causing destruction, making radical contextual shifts, and introducing seemingly conflicting additions, a new realm of tension emerges among the present, past and future that activates built heritage. An example of Hardcore Heritage is Bunker 599, where studio RAAAF (owned by Rietveld and Rietveld) cut through a bunker. Hardcore Heritage meets the following four criteria, explained through the analysis of Bunker 599 since the description is more generally described than that of Plevoets and Van Cleempoel.

○ **Breaks through existing conventions**

Hardcore Heritage challenges conventional norms by acts of destruction, transformation, and radical alterations in the treatment of cultural heritage. By cutting a seemingly invulnerable bunker in half, this municipal monument became a national monument. In 2021, the New Dutch Waterline, with the cut-through Bunker 599, became part of the UNESCO World Heritage List.

○ **Breaks through a seemingly indestructible structure**

The transformation of Bunker 599 and its transformation of a seemingly indestructible bunker clearly shows this criterion. Rather than leaving it untouched, Hardcore Heritage engages with the structure, altering its form and function. Hardcore Heritage interventions are about articulating the void by taking things away and creating space for reflection (Staničić & Jelić, 2022, p. 597, 600).

○ **Breaks through different disciplines**

The interventions of Hardcore Heritage result in new meaning and allow for a new appreciation of the spatial qualities and significance of an object. By merging architectural design with fine art, craftsmanship, and philosophy, these interventions enable people to discover the often-overlooked tangible and intangible qualities of their environment. For instance, the act of sawing through Bunker 599 unveiled its immateriality and placed it in a novel context. This shift in context helps people understand the interiors of other bunkers, by revealing a hidden one. Once it is seen cut through, it can never be unseen (Staničić & Jelić, 2022, p. 596 - 597).

○ **Breaks through past and present, looking for new meaning in the future**

Hardcore Heritage deals with the sense of place and the site-specific qualities by interpreting history towards the future and revealing layers that one usually does not see. The aim is to add layers of meaning, by reopening a difficult past rather than fixing it on a pedestal (Sutton, 2021, p. 2). It proposes to make history tangible by altering these decaying structures that can make their stories visible (Artemel, 2022). At Bunker 599, the story was inside the bunker and is about the meaning of war and peace, now and in the future. Cutting through this bunker opened up new ways of thinking, touching, conversing, feeling and reflecting (Rietveld & Rietveld, 2021, p. 10). Rietveld and Rietveld focus on projects that are characterized by radical interventions through which the public is invited to reflect on policies surrounding future themes such as climate change, military heritage, vacancy, and working environment.

## 2.3 Comparison of radical architectural intervention strategies

The theoretical framework for the four radical architectural interventions is listed, summarized and compared in Figure 1.





	Plevoets and Van Cleempoel			Rietveld and Rietveld
				
<b>Radical intervention strategies</b>	<p><b>1. Aemulatio</b></p> <ul style="list-style-type: none"> <li>An extreme fusion of the old and the new.</li> </ul>	<p><b>2. Facadism</b></p> <ul style="list-style-type: none"> <li>Preserving historical facades but focusing on its extreme contrast between old and new behind the facade.</li> </ul>	<p><b>3. Ruination</b></p> <ul style="list-style-type: none"> <li>Builds on the ephemeral characteristics of a crumbling structure.</li> </ul>	<p><b>4. Hardcore Heritage</b></p> <ul style="list-style-type: none"> <li>Breaks through existing conventions.</li> <li>Breaks through a seemingly indestructible structure.</li> <li>Breaks through different disciplines.</li> <li>Breaks through past and present, looking for new meaning in the future.</li> </ul>
<b>Similarities</b>	<p>Both theories challenge conventional norms in architectural preservation. They advocate for radical architectural interventions.</p> <p>Both theories emphasize a dynamic interaction between past and future. Whether through extreme amalgamation, facade preservation, controlled decay, or deliberate destruction, they aim for a continuous dialogue between historical elements and contemporary interventions, to create a design for the future.</p>			
<b>Differences</b>	<p>Three different adaptive reuse strategies, each with one criterion that a design must meet.</p> <p>The three strategies emphasize on activating the full potential of heritage.</p> <p>The three strategies are intended for adaptive reuse of architectural buildings.</p> <p>The three strategies conserve the building and add value by adding on the existing.</p>			<p>One strategy with four different criteria that a design must all meet.</p> <p>The goal of this strategy is to create a new field of tension and meaning through deliberate interventions.</p> <p>This strategy, focuses on transforming the existing structure to a sculpture.</p> <p>This strategy adds value by breaking open the existing structure, by removing certain parts.</p> <p>This strategy aims to add value to heritage to make history tangible by structures to reveal their stories and uses this to stimulate people to think about the challenges of the future through the lens of the past.</p>

Figure 1. Four radical architectural intervention strategies, similarities and differences

### 3. Methodology

The previous chapter explained four radical architectural intervention strategies for adaptive reuse, proposed by Plevoets and Van Cleempoel, as well as Rietveld and Rietveld. This chapter outlines the research methodology, including the selection of a multiple case study and three cases. In the subsequent chapter, the cases are researched using the four radical architectural intervention strategies.

#### 3.1 Research method

Qualitative research in the form of a multiple case study was chosen as the research method in the context of the theoretical framework. The purpose of the case study is to research whether radical architectural interventions add value to maritime heritage while stimulating people to think about future challenges through the lens of the past. The case study was conducted in the following steps:

1. Online research on maritime(-industrial) heritage, repurposed in the 21st century was performed.
2. A selection of four heritage sites that could have been repurposed with radical interventions was chosen.
3. Then the sites within the Netherlands & France were visited, with guided tours and on-site research, using the earlier posed theoretical framework.
4. Analysis of three heritage sites with radical interventions was made and then researched as case studies within an evaluation matrix. The analysis incorporated the strategies outlined by Plevoets and Van Cleempoel and Rietveld and Rietveld, supported by relevant literature. This process aims to address the research question, providing valuable insights for the design assignment focused on the transformation of the former shipyard Kloos Kinderdijk.

#### 3.2 Case study

This multiple case study will focus on the domain of maritime heritage, specifically chosen to establish a connection with the graduation design assignment of maritime-industrial heritage, the old shipyard. The selected maritime cases are listed in Figure 2.

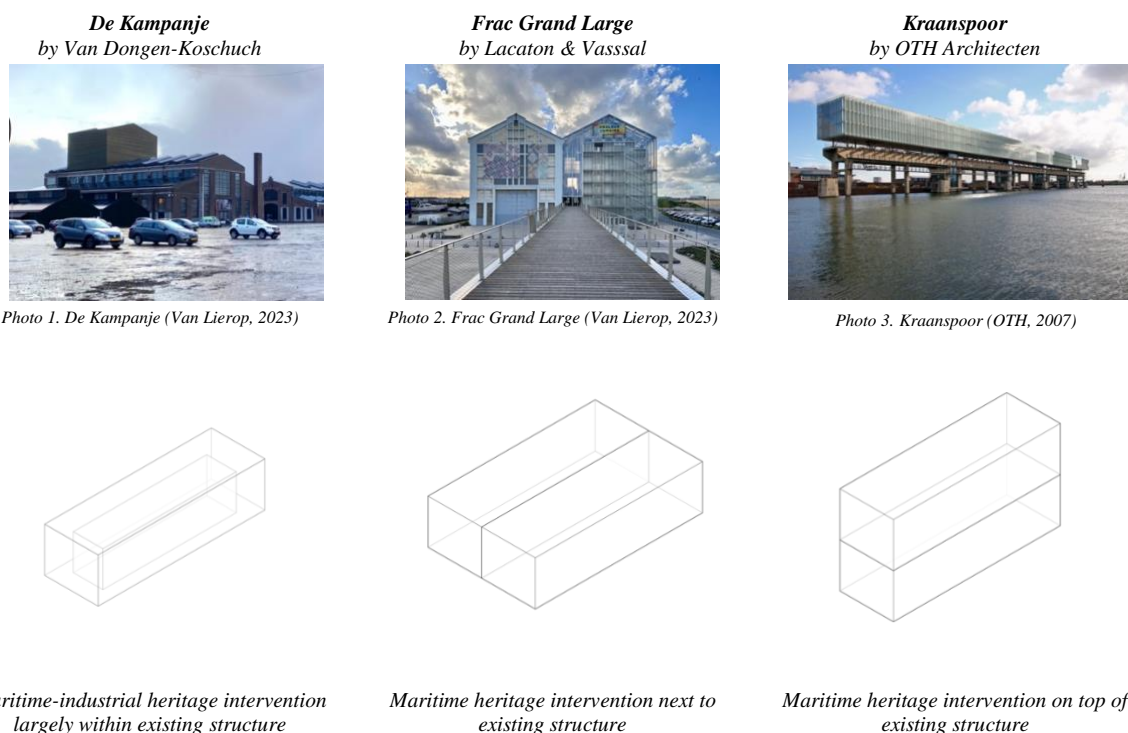


Figure 2. Sites case study

The selected case studies were chosen because they functioned as maritime(-industrial) heritage and underwent radical transformations in the 21st century (because of the new strategies as explained within the theoretical framework). They were also chosen because of the different interventions towards maritime(-industrial) heritage. In other words, they all deal with the existing differently.

The first case study, a former maritime warehouse De Kampanje, was chosen because it has the same industrial architectural feeling as the old shipyard, because of the used brick and steel. The intervention is mostly within the space. Secondly, Frac Grand Large was a former shipyard and is the only remnant of the maritime past in its surroundings, just like the old shipyard. This intervention doubled the volume next to the existing volume. The last case study, a former maritime crane way, called Kraanspoor, was chosen because of the building's length, just like the old shipyard. This intervention doubled the space by placing a volume on top of the existing one, preventing the demolition of the maritime heritage.



## 4. Results

This section formulates the results from the three cases. It looks at how maritime(-industrial) heritage can be preserved by adding value with radical architectural interventions. These findings are illustrated in figures and the similarities and differences will be discussed in Chapter 5. Discussion.

### 4.1 De Kampanje by Van Dongen-Koschuch

Theatre ‘De Kampanje’ serves as a maritime adaptive reuse project, introducing new public functions. Situated within the historical naval yard of Willemsoord in Den Helder and built between 1813 and 1918. The project was transformed in 2015 by Van Dongen-Koschuch. The facade was preserved, and to ensure the spatial experience of the large historic halls, a glass auditorium was designed. The essence of the intervention lies in the precision of the restoration process, combined with a contrasting addition inside.


Theatre De Kampanje, Den Helder					
					
<i>(Regionaal Archief Alkmaar, 1990) (De Kampanje, 1916) (Van Lierop, 2023) (Koschuch, 2015)</i>					
Radical intervention strategy	Criteria strategy	Project meets criteria	Remarks	Adds value	Stimulates people to think about the future through the lens of the past
<i>Aemulatio</i>	An extreme fusion of the old and the new.	+	The main idea for the transformation of Willemsoord was to restore its original beauty. The architects were careful with alterations and additions by designing an inconspicuous transition of old and new from the outside.	+	-
<i>Facadism</i>	Preserving historical facades and constructing new buildings behind it.	+	And from the inside, a contrast between the old and new. A glass and wooden theatre box have been added, allowing for a view from the theatre onto the contrasting brick and steel hall.	+	-
<i>Ruination</i>	Builds on the ephemeral characteristics of a crumbling structure.	-		-	-
<i>Hardcore Heritage</i>	Breaks through existing conventions.	+	The integration of the fly tower of the theatre, which breaks through the roof to the outside, is a notable change in the surroundings (Nevzgodin, 2016, p. 40). Despite being a national monument, the building still received permission for this radical intervention.	+	-
	Breaks through a seemingly indestructible structure.	+	“	+	-
	Breaks through different disciplines.	+	An interdisciplinary approach, integrating urban planning, architecture, and building technology. The transformation approach was to focus on the whole urban structure of industrial heritage, instead of De Kampanje as a separate building (Nevzgodin, 2016, p. 41).	+	-
	Breaks through past and present, looking for new meaning in the future.	-		-	-

Figure 3. Case study De Kampanje

## 4.2 FRAC Grand Large by Lacaton & Vassal

Architecture company Lacaton & Vassal transformed a former shipyard in Dunkirk, ‘The Cathedral’, into an art museum. Frac Grand Large was built in 1947 and transformed in 2013. The architects were impressed by the huge 75-meter-long and 30-meter-high framework along the coast, so they decided to double the same volume and build next to it. Not only did the architects preserve the cathedral-like ambience of the space, but the project also demonstrated cost-efficiency and enhanced sustainability by opting to construct adjacent to the existing structure, rather than integrating new construction within the pre-existing framework.

Museum FRAC Grand Large, Dunkirk					
		(FRAC Grand Large, 1998)	(Van Lierop, 2023)	(Van Lierop, 2023)	(Van Lierop, 2023)
Radical intervention strategy	Criteria strategy	Project meets criteria	Remarks	Adds value	Stimulates people to think about the future through the lens of the past
<i>Aemulatio</i>	An extreme fusion of the old and the new.	-		-	-
<i>Facadism</i>	Preserving historical facades and constructing new buildings behind it.	-		-	-
<i>Ruination</i>	Builds on the ephemeral characteristics of a crumbling structure.	+	Lacaton & Vassal kept the decaying shipyard to preserve the cathedral-like ambience of the space. Instead of tearing it down, they attached a new building to it.	+	-
<i>Hardcore Heritage</i>	Breaks through existing conventions.	+	The architects were told to build inside the former shipyard. Nonetheless, they decided to go against these terms of the contest and won the contest.	+	-
	Breaks through a seemingly indestructible structure.	+	The transformation does not break through a seemingly indestructible structure, but to integrate the new extension with the existing framework, Lacaton & Vassal had to break through one indestructible side wall. Furthermore, the inclusion of strategically positioned terraces and windows from the addition into the existing building provides viewpoints and connections.	+	-
	Breaks through different disciplines.	+	The inclusion of a bridge connecting the entrance of FRAC Grand Large to the surrounding landscape serves as an interdisciplinary intervention. This architectural decision not only enhances the accessibility of the museum but also forges a direct connection between the built environment and the natural landscape. Furthermore, the new building also makes a connection to the environment through facade panels that can be opened.	+	-
	Breaks through past and present, looking for new meaning in the future.	+	The fully transparent design gives all-round views that confront you with thinking about the traces of the social and environmental impact of the past maritime industry.	+	+

Figure 4. Case study FRAC Grand Large

### 4.3 Kraanspoor by OTH Architecten

Kraanspoor is a three-story, lightweight and transparent office built on top of a concrete crane way within the former NDSM (Nederlandsche Dok en Scheepsbouw Maatschappij) shipyard. This maritime building was established in 1952 and transformed in 2006 by OTH Architecten, into an office building. The newly added construction, extending the same 270 metres long and 12.6 metres wide, is elevated three meters above the crane way by slender steel columns and the former platform defines a morphological rhythm for the design of the new building. The gap between existing concrete and new prefabricated glass panels underlines the difference between old and new, giving the perception of a new volume floating over the crane.


Office building Kraanspoor, Amsterdam					
					
<p>(Stadsarchief Amsterdam, 1952)                      (OTH, 2007)                      (OTH, 2007)</p>					
Radical intervention strategy	Criteria strategy	Project meets criteria	Remarks	Adds value	Stimulates people to think about the future through the lens of the past
<i>Aemulatio</i>	An extreme fusion of the old and the new.	-		-	-
<i>Facadism</i>	Preserving historical facades and constructing new buildings behind it.	-		-	-
<i>Ruination</i>	Builds on the ephemeral characteristics of a crumbling structure.	+	OTH Architecten aimed to conserve the existing structure as a foundation system for the new building (Guidetti & Robiglio, 2021, p. 6). The new building, above the existing crane track, rests on columns, leaving the crane track almost entirely free of buildings (Van den Berg, 2012, p. 14).	+	-
<i>Hardcore Heritage</i>	Breaks through existing conventions.	+	Kraanspoor was listed for demolition until OTH Architecten recognized the structure as a base for an office building. For this re-use, the urban plan was changed, the demolition permits cancelled, and the concrete track restored (Delisse, 2011).	+	-
	Breaks through a seemingly indestructible structure.	-		-	-
	Breaks through different disciplines.	-		-	-
	Breaks through past and present, looking for new meaning in the future.	+	The fully transparent design gives all-round views that confront you with thinking about the traces of the social and environmental impact of the past maritime industry.	+	+

Figure 5. Case study Kraanspoor

## 5. Discussion

This chapter interprets the results and limitations and states recommendations for further research.

### 5.1 Interpretation of results

Throughout the paper, four radical intervention strategies Hardcore Heritage, Aemulatio, Facadism and Ruination have been explained.

Hardcore Heritage consists of four criteria. The first criterion states that the heritage has to break through existing conventions. The three cases meet this requirement, in the same way Bunker 599 does. With incisive cut-through of old structures, as done with the cases and Bunker 599, radical interventions can enhance the value of heritage structures and even become part of the UNESCO World Heritage List.

The second criterion states that the intervention should break through a seemingly indestructible structure. According to Rietveld and Rietveld, this is about articulating the void and creating space for reflection by taking things away. However, to establish this dialogue between the structure and user and add value, the case studies show that this approach can also be done by breaking the existing structure without it having to be 'indestructible'. This means a modified criterion could be applied: Breaks through existing structure.

The third criterion 'Breaks through different disciplines' is debatable because it is very broad. The approach is inherently interdisciplinary, bridging the gap between theory and practice. It states that spatial interventions result in new meaning and allow for a new appreciation of the spatial qualities and significance of the object. It affords people the possibility to discover material and immaterial qualities of their environment that would otherwise remain unnoticed. It is about changing the context, whether adding value to an existing world or uncovering and revealing a new one. It is also about radically new perspectives on what is possible and meaningful in human life by merging e.g. architectural design skills, fine art, craftsmanship and philosophy of embodied cognition. Given this broad approach, the tangible has been chosen for researching the case studies in this third criterion. The intangible value is included in the fourth criterion 'Breaks through past and present, looking for new meaning in the future' and in the column in the tables that deals with the question if the radical intervention stimulates people to think about the future through the lens of the past.

The fourth criterion is 'Breaks through past and present, looking for new meaning in the future'. FRAC en Kraanspoor are both ruins. They are decaying structures that have remained intact. By revealing these deep traces of the past, they give more meaning to the future. De Kampanje is fully restored and therefore gives less meaning.

Another remark is whether the new function of the heritage (e.g. office, theatre, museum, event location) partly determines the users' perception of its meaning for the future. This aspect has not been researched throughout this paper.

The Hardcore Heritage strategy is based on breaking through and removing parts. In comparison to Hardcore Heritage, the strategies of Aemulatio, Facadism and Ruination, offer more insight into radical architectural transformations where something is actually added to the structure. In the example of FRAC, it is shown how to preserve the former shipyard; however, to transform the building into a museum, an addition had to be made. This case study and the other case studies show that not only the removal but also the addition of elements can contribute to increasing value. This is also evident in the transformations of De Kampanje and Kraanspoor. The addition, to the former maritime warehouse, De Kampanje altered the silhouette of the building, which resulted in an increased prominence within the surroundings due to the striking intervention being visible from a distance. Furthermore, without the addition of a volume above Kraanspoor, the former maritime crane way would have been demolished.

During the research of the case studies it was observed that Hardcore Heritage primarily focuses on transforming the existing structure into a sculpture. Hardcore Heritage adds value by breaking open the existing structure, removing certain parts and showcasing the old in a completely new way so that it stimulates visitors to think about the challenges of the future through the lens of the past. In contrast, the strategies of Aemulatio, Facadism, and Ruination approach heritage as an architectural building for adaptive reuse. Aemulatio, Facadism, and Ruination conserve the building and add value by adding architectural parts and creating a new balance between old and new, but not specifically intended to encourage people to think about future challenges through the lens of the past.

The case studies demonstrate that these strategies can coexist and even need each other.

## **5.2 Relationship to existing literature**

The findings from the case studies support the theory described in Chapter 2. Theoretical Framework. The case studies illustrate the value added by each radical intervention strategy and show that multiple strategies can be used in a transformation project, as described. However, to stimulate people to think about future challenges, the Hardcore Heritage strategy is necessary. To address the research question, an alternative solution is proposed in Chapter 6. Conclusion.

## **5.3 Generalisability and external validity**

This study specifically focuses on maritime heritage. However, this research could apply to other forms of heritage.

In conducting this research, various literature was studied. One of the most used sources was about Hardcore Heritage, as described by Rietveld and Rietveld, the owners of studio RAAAF. Given that Rietveld and Rietveld are the source and creator of this term, concerns may arise regarding the potential bias or subjectivity in their descriptions and literature. However, Rietveld and Rietveld consistently declare the absence of any commercial or financial relationships that could pose a conflict of interest in their research.

## **5.4 Recommendations for further research**

This study, based on the theories of Plevoets and Van Cleempoel and Rietveld and Rietveld, assumed that there are four new radical strategies for dealing with heritage. This assumption was made because it is described in the chosen literature. However, this has not been further researched for its accuracy. In future research, it would be interesting to test different heritage interventions to explore how and whether designers currently approach heritage differently. Cases of maritime-industrial heritage can be chosen in that research. This research can contribute to that research. Additionally, it could be interesting to then explore whether there is a universal radical intervention method for heritage transformations.

## 6. Conclusion

In this research paper, the research question was: How can radical architectural interventions add value to maritime-industrial heritage, while stimulating people to think about future challenges through the lens of the past? In this paper, four radical intervention strategies are elaborated in the theoretical framework and further researched in three maritime cases. The strategies have different criteria, as shown in Figure 6.

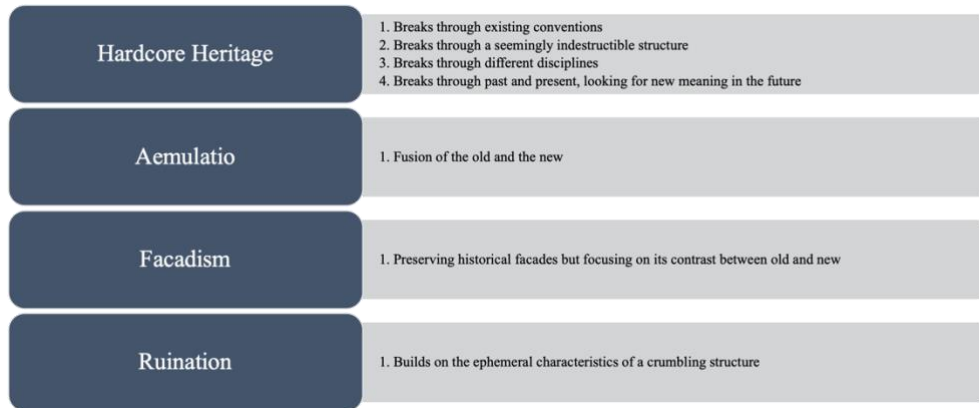


Figure 6. Four radical architectural intervention strategies with criteria

As discussed in Chapter 5, the second criterion of Hardcore Heritage has been adjusted. A second conclusion is that all four radical strategies, individually, appear to be insufficiently represented within the three cases to be able to answer the research question. The three strategies of Plevoets and Van Cleempoel are missing the stimulation of the visitors to think about the challenges of the future. The strategy of Rietveld and Rietveld is missing the possibility of adding architectural parts to the heritage that is necessary for the adaptive reuse of heritage.

In conclusion, by merging the strategy of Rietveld and Rietveld with one of the three strategies of Plevoets and Van Cleempoel for adaptive reuse of (maritime-industrial) heritage with radical architectural interventions, designs can be created that preserve the heritage, add value to the heritage and stimulate people to think about future challenges through the lens of the past.

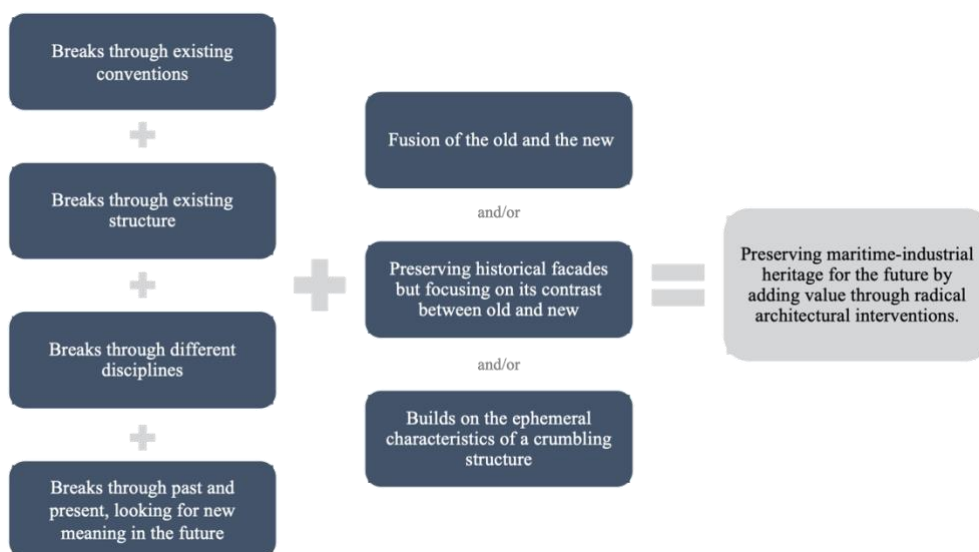


Figure 7. Criteria for preserving maritime heritage for the future by adding value through radical architectural interventions

# Reflection

## Research

This research, produced for the graduation studio Heritage & Architecture, dealt with the issue of heritage and radical design interventions. A topic that has been of great interest to me during past adaptive re-use projects. On the one hand, well preserved Heritage has always appealed to me, but whenever a redesign had to be made, intuitively I felt that radical design interventions could sometimes give new meaning to a building in a way that restoration could never accomplish. Inspired by the works of RAAAF and some projects of Herzog and de Meuron, I started this graduation year with my research on this topic. The goal was to back up my intuitive thinking with academic arguments, to move away from a conservative approach to Heritage and to gain ideas for the later design phase.

Diving more deeply into the field of radical re-use, I soon found case studies and literature about the topic. The first few weeks were mostly focused on delineating the research topic and research approach. The following weeks were about writing the research.

The initial intention of this research was to focus on maritime-industrial heritage, given that my graduation design assignment revolves around the former windmill factory and shipyard Kloos Kinderdijk, constructed during the Dutch Industrialisation. However, the cases under consideration do not originate from the industrial era; instead, they pertain to maritime heritage (except for De Kampanje). Despite this deviation, the maritime cases proved valuable for the research due to the architects' radical adaptive reuse approach. In hindsight, it would still have been intriguing to apply this research to maritime-industrial heritage.

## Kloos Kinderdijk

My graduation design assignment is the transformation of Kloos Kinderdijk. This former shipyard is situated between Alblasterdam and Kinderdijk. These villages are historically situated in an important area for the maritime-industrial industry. Nevertheless, anything that might remind you of their shipbuilding activities has been destroyed. Kloos Kinderdijk is one of the few maritime-industrial remnants in the area. Unfortunately, this is not for long since Kloos Kinderdijk is going to be demolished this year. Apparently, the aesthetics and history of Kloos are undervalued.

The duality of the site visit was to know that demolition was going to start only a few months later. Designing for re-use to prevent demolition, whilst the plans for demolition were already made. A question was rising regarding the general valuing of heritage buildings; Could other undervalued historic buildings be saved, through a more radical architectural approach on re-use? I soon found out that my redesign for Kloos Kinderdijk could be an example to show the potential in soon-to-be-demolished buildings. Not only to save the heritage and tell stories through its historical and cultural values, but also to minimise the addition of new materials from the perspective of sustainability.

The adaptive reuse of Kloos Kinderdijk involves transforming the site to serve as the new entrance for Kinderdijk with an indoor museum, theatre, restaurant and hotel. This transformation aims to enhance the value of Kloos for locals and tourists by adding various radical architectural interventions while stimulating them to think about future challenges through the lens of the past (such as sea level rise due to climate change).



## How can I apply the results of this research to my design?

In this paragraph, I explain my design choices and how, based on this research, the basis of the (adjusted) criteria has affected them.



Photo 1. De Kampanje (Van Lierp, 2023)



Photo 2. Frow Grand Looze (Van Lierp, 2023)



Photo 3. Kraanspoor (OZG, 2005)



Heritage intervention largely within existing structure



Heritage intervention next to existing structure

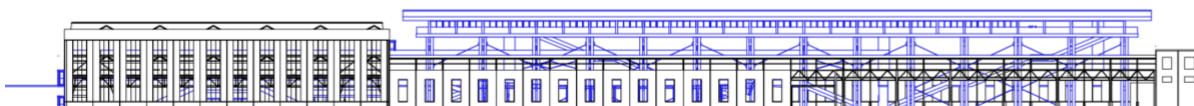


Heritage intervention on top of existing structure

Strategies	Criteria	De Kampanje	FRAC	Kraanspoor	Kloos Kinderdijk
<b>Aemulatio</b>	<i>Fusion of the old and the new</i>	+	-	-	-
<b>Facadism</b>	<i>Preserving historical facades but focusing on its contrast between old and new in the interior</i>	+	-	-	+
<b>Ruination</b>	<i>Builds on the ephemeral characteristics of a crumbling structure</i>	-	+	+	+
<b>Hardcore Heritage</b>	<i>Breaks through existing conventions</i>	+	+	+	+
	<i>Breaks through a seemingly indestructible structure</i>	+	+	-	+
	<i>Breaks through different disciplines</i>	+	+	-	+
	<i>Breaks through past and present, looking for new meaning in the future</i>	-	+	+	+



Elevation Kinderdijk view: existing



Elevation Kinderdijk view: new design

### 1. Breaks through existing conventions (*Hardcore Heritage*)

Kloos is not recognized as a monument and, therefore, does not have specific monument regulations. Nevertheless, there is a view of Kloos from UNESCO Kinderdijk, so the Kinderdijk guidelines apply to Kloos. The guideline for Kloos is that from UNESCO Kinderdijk, there should be an unobstructed view of the surrounding area which means that Kloos has a maximum building height of 18 metres.

Additionally, I believe that the maritime-industrial shipping history is significant. By transforming Kloos Kinderdijk into the new entrance for Kinderdijk, it will gain more prominence in both aspects. Currently, from the waterside the large robust character is visible, while the small-scale polder landscape remains hidden and from the polder landscape, the windmills stand out, overshadowing the maritime heritage. With the transformation of Kloos Kinderdijk, as an entrance with an extension, against UNESCO rules, will enhance the



prominence of Kinderdijk from the waterside, giving more recognition to the maritime-industrial heritage from Kinderdijk. By breaking the rule of maximum building height, both heritages will stand out more and gain more value. They reinforce each other.

Bunker 599 is a good example of this. The bunker was a municipal monument, and, despite or because of breaking the rules, it became a national monument and eventually even part of UNESCO World Heritage. Another example is the national monument, De Kampanje theatre. The fly tower breaks through the roof, altering the building's silhouette and making it more noticeable from the surroundings. Despite the strict regulations of the national monument, this architectural intervention could take place and even contribute to value enhancement.

A large discussion in the design was the height of the new addition and the effect it would have on the world heritage site of Kinderdijk. Soon it was agreed upon to lower the new architectural addition to keep a clear view from Kinderdijk to its surroundings. And to lower the impact of the architecture on the residents living along the dike next to Kloos. With floating elevation and with a shed roof, I minimised the impact from Kinderdijk and maximised the impact on the riverside.

## **2. Breaks through existing structure (*Hardcore Heritage*)**

To enable the construction of the extension on Kloos Kinderdijk, the extension will need to be structurally supported by the ground. This is because the existing structure is not strong enough to support additional construction on top. As a result, the structure will have to break through the existing building to then place the extension on top of its new structure.

## **3. Breaks through different disciplines (*Hardcore Heritage*)**

With the transformation from Kloos to Kloos Kinderdijk, the aim is to enhance the value of Kloos within its surroundings.

To achieve this, the boundary between Kloos and the water, as well as between Kloos and the natural area, will be diminished. This will be accomplished by altering the quay, making the water a more integral part of the design. Additionally, this adjustment creates space for a pleasure harbour, a river cruise stop, and a water bus stop. Also, the users will experience the surroundings much more because of the added volume on top. From the extension, there is a great view of the water, the nature reserve, and the windmills of Kinderdijk. Moreover, the bridge over the water will connect Kloos to Alblasserdam, Kinderdijk, Ridderkerk and the new transferium, uniting the natural areas on both sides of the water.

## **4. Breaks through past and present, looking for new meaning in the future (*Hardcore Heritage*)**

Through adaptive reuse, Kloos Kinderdijk will establish a connection between the past and the future. The new entrance for Kinderdijk links to the windmill history of Kloos, and the new pleasure harbour and waterways, serving as logistical connections, align with the maritime history. The former name Kloos Kinderdijk completes the circle.

Additionally, the extension will give Kloos a new significance for the future for three distinct reasons. Firstly, Kloos and its maritime past will gain more recognition from the surroundings, making the building more prominent, just like the transformation of De Kampanje. Secondly, by preserving the immensely long hall, users can fully appreciate and experience the vast open space, reminiscent of the past while it gives meaning to the future: the tangible and intangible, carrying the new entrance of Kinderdijk. An example where the hall has also remained open is evident in FRAC. The example of Bunker 599 demonstrates that maintaining an empty space is about articulating the void by removing things and creating space for reflection. Finally, Kloos programme becomes future proof through the extension, making it resilient to flooding. This could stimulate visitors to think about future challenges of sea level rise due to climate change.

**5. Preserving historical facades but focusing on the extreme contrast between the old and new behind the facade (*Facadism*)**

The existing facade of Kloos will be retained. The construction of the extension will contrast with the existing structure of Kloos. The existing structure is steel, and the new structure will be constructed of timber from a sustainability point of view. Although the materialisation of timber contrasts with the design, the materialisation also establishes a connection with the former Kloos Kinderdijk factory. In the factory's early years, timber sawmills and wooden ships were built.

**6. Builds on the ephemeral characteristics of a crumbling structure (*Ruination*)**

Preserving Kloos as it is, with a new function and an extension on top of the crumbling structure, the value of Kloos Kinderdijk will increase. The enhanced value of the object and its surroundings can prevent the demolition of Kloos. This has also occurred with Kraanspoor. The demolition of this crane track was averted by adding a new volume on top of the structure.

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