

Tracing Scars Through History

Reimagining Walcheren's Military Landscape as a Memoryscape for the Future



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MSc Landscape Architecture

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Reimagining Walcheren's Military Landscape as a Memoryscape for the Future

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Cover image: Flooded bunkers, Atlantic Wall. Photo by Anefo, n.d. Retrieved from Wikimedia Commons: <https://commons.wikimedia.org>



Abstract

Walcheren, a reclaimed polder region in the southwest of the Netherlands, has long served as a site of both military defense and hydraulic engineering. Its landscape bears the imprint of centuries of human intervention, where inundation creek systems, fortification remains, and polder structures intersect. Particularly in the southern area around Fort Rammekens and De Nolle Bos, the remnants of wartime defenses coexist with coastal wetlands and modern urbanization. These overlapping layers make the region an exemplary case of a military palimpsest—a landscape where past narratives remain physically and spatially embedded in the terrain.

Today, Walcheren faces multi-layered challenges: increasing vulnerability to flooding and salinization, ecological degradation of sensitive wetlands, and conflicts between heritage preservation and spatial development. Tourism and infrastructure upgrades place further pressure on historically and ecologically valuable zones, risking the erosion of landscape identity. These tensions are especially evident where fortress remains are fragmented or obscured within urban and agricultural areas. In this context, the thesis poses the question: How can the historical layers of Walcheren's military landscape be revealed through design to create a public space that preserves its historical significance and transforms into a socially vital and resilient landscape?

The research draws on theories of historical palimpsest, landscape biography, and memoryscape to guide the interpretation and transformation of the site. Methodologically, it employs palimpsest mapping, historical analysis, spatial reading of military remnants, and case studies of military landscape re-use.

These approaches inform a design framework that seeks not only to preserve layered heritage but also to spatially narrate it—allowing ecological recovery, public engagement, and resilient identity-building to emerge through landscape design.

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Fascination

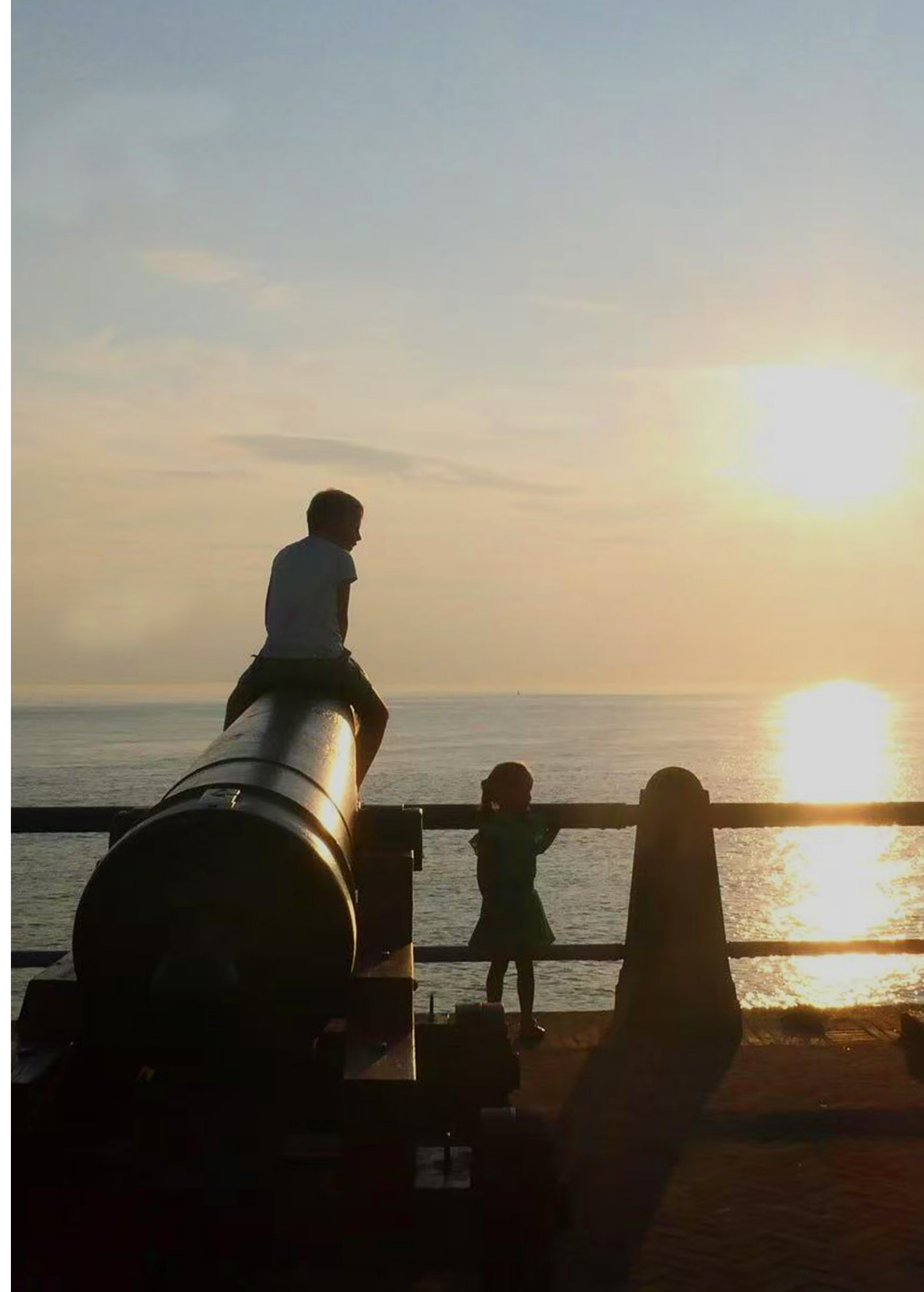
In September 2024, I visited Middelburg and Vlissingen and was struck by how deeply people have embraced the historical relics of the Second World War, from bunkers in parks to fortresses on the beach. Learning that Zeeland was a significant battlefield in the Battle of the Scheldt, with part of Walcheren—a peninsula in Zeeland—submerged during the war, deeply fascinated me. The idea of a landscape shaped by both natural forces and human conflict, bearing the scars of war and resilience, captured my imagination. This history is not only compelling but also crucial to reveal because it tells a story of survival, transformation, and identity.

In this research-through-design project, my position combines that of a landscape designer and a storyteller. I aim to uncover and interpret the hidden narratives embedded in the military, cultural, and ecological history layers of Walcheren, Zeeland. By integrating the fortress remains and the inundation creek landscape into public spaces and the broader urban context, the project seeks to bridge historical identity with contemporary relevance.

The project employs the metaphor "Tracing Scar Through History" to symbolize the process of uncovering how Walcheren's landscape identity has been erased, altered, and redefined over time. Structured across three scales—regional, local, and site-specific—the research adopts the scale-continuum principle to emphasize the interconnected dynamics that shape the landscape.

As a storyteller, my role is to reveal and interpret the landscape's untold stories, weaving together fragmented traces of the past into a cohesive narrative that resonates with the present. I delve into Walcheren's wartime history, ecological transformation, and post-war reconstruction, transforming these layers into accessible and meaningful stories for the public. Through design, I aim to make the historical traces—such as fortifications, inundation zones, and creek landscapes—speak, inviting visitors to engage with them as part of an evolving story. By emphasizing the emotional and cultural resonance of these places, I hope to inspire a deeper connection between the community and the landscape.

Through the lens of landscape architecture, this project balances the challenges of environmental resilience, historical preservation, and tourism development. The design not only protects and showcases historical relics but also proposes sustainable and innovative ways to engage the community, ensuring the landscape's continued relevance in the face of contemporary pressures.



Glossary

Palimpsest

A concept from literary and cultural studies referring to something reused or altered but still bearing visible traces of its earlier form. In your context, it relates to the layering of historical and ecological elements in landscapes.
Landscape Identity: The unique character and sense of place derived from the interaction of natural and cultural elements over time.

Layering

The accumulation of different historical, ecological, and cultural processes that shape a landscape.
Creek Landscape: Referring to the unique landscapes shaped by waterways, particularly in low-lying, inundation-prone areas.
Historical Context

Military Landscape

A landscape that has been shaped or influenced by military activity, infrastructure, or defense strategies. This can include both natural and built elements used for defense, offense, or control during wartime or as part of long-term strategic planning. In the case of Walcheren, the military landscape includes: Inundation creeks and dikes, intentionally flooded or breached to resist enemy forces (as during the Battle of the Scheldt in WWII) Fortifications, bunkers, or batteries from various periods

Glossary

Fortress Remains

Physical remnants of historical defensive structures, such as Fort Rammekens, that provide insights into past military strategies.

Landscape Biography

A method of studying the history of a landscape as a “life story,” encompassing its physical, cultural, and ecological changes.
Critical Cartography: An approach to mapping that emphasizes the power relations and narratives embedded in cartographic representations.

Cultural Heritage

The legacy of physical artifacts and intangible attributes of a group or society, passed from generation to generation.

Inundation Zones

Areas deliberately or accidentally flooded, shaping the landscape and its use.

Military Inundation

The deliberate flooding of land for defensive purposes, significant in Walcheren’s history.
Post-War Reconstruction: The rebuilding efforts following World War II, influencing both urban and rural landscapes.

Chapter 1

A History Under Water

01 Introduction

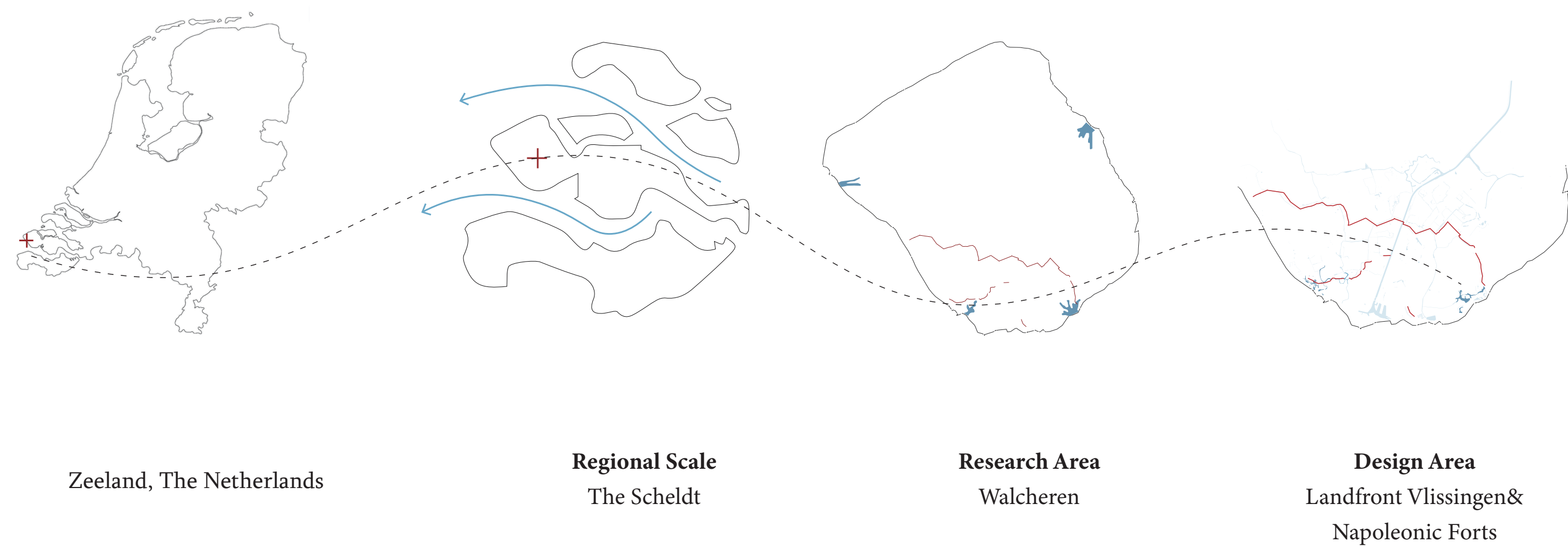
Location

Site Context

Problem Field



Location



Site Context

Landscape Layers of Walcheren

Walcheren’s landscape is shaped by a long history of negotiation between land and sea, where natural formations and human interventions coexist in a layered spatial palimpsest. Once a distinct island in the province of Zeeland, it gradually became a peninsula through centuries of land reclamation and infrastructural connection to the mainland. Sea dikes, built to defend against tidal surges and storm floods, played a crucial role in this transformation. They not only protected the polder landscape but also structured the boundaries of settlement and cultivation.

The interior of Walcheren is marked by meticulously organized polder fields, canals, and drainage systems, the result of intensive water management practices. In contrast, its coastal edges are defined by windswept dunes and sandy ridges, forming a natural barrier that complements the engineered dikes. Together, these elements reflect a deep-seated cultural landscape shaped by both ecological necessity and strategic planning.

Warfare, particularly during the Second World War, left a lasting imprint on Walcheren’s landscape. German occupation forces constructed a dense system of bunkers, fortifications, and anti-aircraft positions as part of the Atlantic Wall, exploiting the area’s elevated dunes and strategic coastal location. In 1944, the Allies deliberately breached the sea dikes during Operation Infatuate to inundate the island and drive out German forces—an act that dramatically altered the landscape. Vast agricultural areas were flooded, and the polder system was temporarily rendered dysfunctional.

Post-war reconstruction not only restored the polder landscape and repaired the sea defenses, but also introduced new spatial patterns and infrastructural upgrades. The scars of inundation, the scattered remnants of wartime fortifications, and the post-war modifications together form a distinct and historically dense landscape. In Walcheren, the land tells a story—not only of ecological resilience, but also of conflict, memory, and recovery.

"Scar" from The Second World War

Sea dikes and Flood Defences

Water System

Landscape Structure



Site Context

Inundation Creeks

Four Inudation Creeks

Due to the military inundation in 1944, most area of Walcherenwas submerged. This very flooding ultimately shaped thse four area into what it is today: a unique creek landscape where both freshwater and salt-tolerant vegetation coexist. This is now mainly due to the salty seepage water that trickles from beneath the dunes toward the Burgemeester van Woeldererenlaan.

Westkapelle — high death toll

The dike at Westkapelle was first bombed on October 3, 1944. The bombing claimed 152 lives, nearly 7 percent of the village’s total population. The breach was approximately 500 meters wide, expanding to 600 meters by June 1945. The deepest measured point was 17.60 meters below sea level (NAP). The breach at Westkapelle was closed on October 12, 1945.

Nolledijk — dike broke again

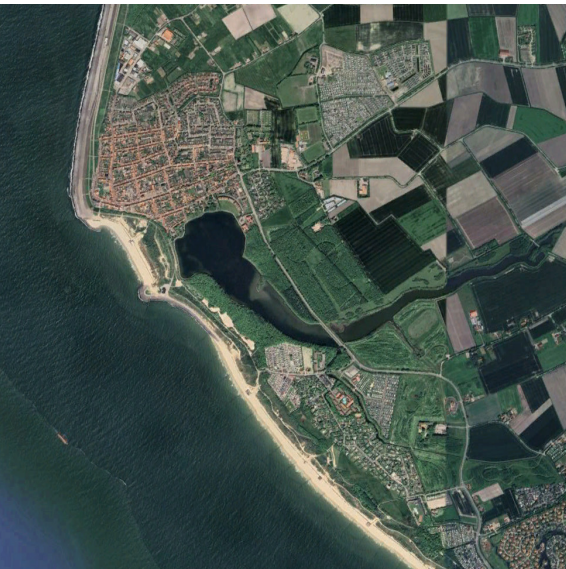
The Nolledijk in Vlissingen was first bombed on October 7, 1944. The breach was approximately 250 meters wide, and by June 1945 it had widened to 350 meters. The deepest measured point was 11.30 meters below NAP. The breach was closed on September 3, 1945. However, the dike broke again on September 25 and was closed once more on October 2, 1945.

Fort Rammekens — deepest breach

The dike near Vlissingen, east of the Canal through Walcheren, was first bombed on October 7, 1944, just like the Nolledijk. The breach at Fort Rammekens was about 700 meters wide, growing to 750 meters by June 1945. The deepest measured point was 24.50 meters below NAP. An attempt to close the breach on December 1, 1945, failed. The second attempt, on February 5, 1946, was successful.

Veere — widest breach

The dike at Veere was bombed on October 11, 1944. The breach was approximately 650 meters wide and had expanded to 975 meters by June 1945. The deepest measured point was 20 meters below NAP. The breach was closed on October 23, 1945. (Zeeuws Archief, 2024)



Westkapelse Kreek



Veersche Kreek



De Nolle Bos



Rammekenshoek Kreek

Site Context

Fortification System

Fortification System as Narrative War Landscape

The fortification systems of Walcheren function today as active storytellers, bridging the past and present through their enduring spatial presence and historical resonance. These layered military structures—such as the Napoleonic forts, World War II bunkers, inundation dikes, and anti-tank walls—are scattered across the landscape, often partially hidden within dunes, reclaimed polders, or integrated into daily surroundings. Though many have lost their original defensive purpose, they still bear the physical scars of conflict and the symbolic weight of historical memory.

Rather than standing as isolated monuments, these military remnants are embedded in everyday settings: a bunker now sits beside a cycling path, an old fort borders farmland, a concrete wall runs silently through a coastal forest. Each element silently testifies to past regimes of occupation, resistance, and survival, while shaping how people move through and perceive the landscape today. Their spatial distribution and material presence continue to reflect the dynamics of war, territorial control, and strategic planning.

They prompt reflection not only on military history, but also on how landscapes store memory, influence local identity, and reveal broader socio-political shifts over time.



Fort Rammekens, Author, 2024



Landfront Vlissingen, BoschSlabbers, 2009

Problem Field

Problem Statement

Walcheren faces complex, layered challenges in balancing environmental resilience, historical preservation, and development needs. As a landscape shaped by centuries of human intervention, Walcheren can be seen as a palimpsest—a place where past layers of use, history, and identity remain visible and relevant today.

However, as a low-lying, reclaimed polder area, Walcheren is highly vulnerable to flooding from both the North Sea and the Scheldt Estuary, while salinization and fluctuating groundwater levels threaten its agriculture and freshwater resources.

The landscape holds deep historical significance, with remnants of wartime defenses, creek systems, and traditional polder patterns. Conservation of these historical layers often conflicts with the need for modern development. Urban expansion and infrastructure upgrades intersect with historical areas, risking the erosion of Walcheren’s unique landscape patterns if not carefully managed.

Additionally, tourism attracted by these historical relics brings more people into ecologically and historically sensitive areas, which, in turn, creates a demand for new infrastructure that can compromise the integrity of the landscape and spatial identity.

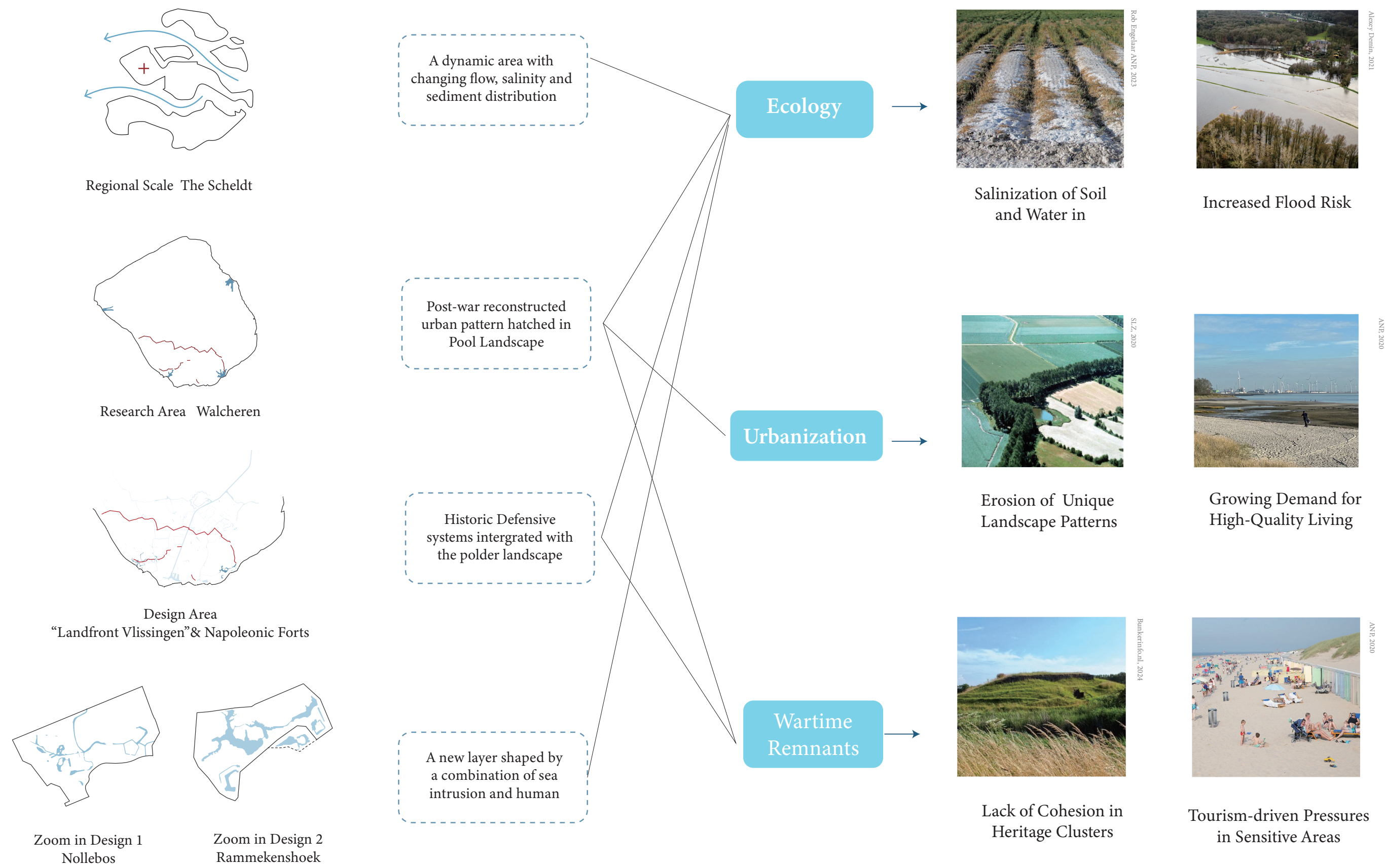
The creek landscape in South Walcheren, particularly around Fort Rammekens and De Nolle Bos, exemplifies these challenges. This area combines historical significance, with fortress relics and inundation creek systems, and ecological fragility, as the coastal wetland is threatened by salinization and habitat degradation. Tourism-driven pressure further exacerbates these vulnerabilities, particularly near the fort, where the influx of visitors risks damaging the wetland ecology.

Moreover, the urbanized area of Vlissingen presents additional challenges, as the remains of the destroyed fortress struggle to remain visible and integrated into the urban and agricultural landscape fabric. Addressing these complex and layered issues requires a thoughtful approach that balances preservation, resilience, and sustainable development.



Problem Field

Problem Through Scale



Chapter2

Research Approach

02 Research Framework

- Research Question
- Theoretical Framework
- Methodology Framwork

03 Presedence Study

- Redesign of Military Heritage



Main Research Question

How can the historical layers of **Walcheren's military landscape** be revealed through design to create a public space that preserves its **historical significance** and transforms into a **socially vital** and **resilient** landscape?



A bunker on the dune of Zoutelande , Zeewus Library, 1954

Sub-question

SRQ1

In what ways have specific **military transformations** shaped the **layered identity** of the landscape, as reflected in spatial patterns revealed through **palimpsest mapping**?

SRQ2

Which **military landscape traces** define each historical layer, and are they **sufficiently legible** to convey the historical value of Walcheren's military landscape through **societal engagement**?

SRQ3

How can **design strategies** reveal and enrich the historical and ecological layers of Walcheren's military landscape, making them **legible, accessible, and meaningful** within a contemporary public space?

Theoretical Framework

Landscape Biographies

Landscape's Life History

The notion of landscape biography refers to understanding the landscape as something that has a life history, shaped over time through continuous interaction between people, place, and natural processes. Rather than seeing a landscape as a static backdrop, this approach treats it as a dynamic, evolving entity with multiple layers of meaning and use, accumulated over time.

As explained in the book *Landscape Biographies: Geographical, Historical and Archaeological Perspectives on the Production and Transmission of Landscapes*, the concept emphasizes how "landscapes are not merely physical spaces, but are constantly being made and remade through human activity" (Kolen et al., 2015, p. 21). This means each phase in the life of a landscape—such as settlement, cultivation, defense, or abandonment—leaves behind traces, shaping its identity and spatial form.

A Double Historical Perspective

The concept of a double historical perspective is particularly productive in landscape research that deals with long-term transformations. As developed in archaeological landscape biographies (Kolen & Renes, 2015), this perspective acknowledges both the material continuities of places and monuments, and the cultural processes through which successive societies have appropriated and reinterpreted these landscapes. Scholars such as Bradley (2002) and Ingold (1993) have further emphasized that landscapes are not static backdrops, but dynamic narratives shaped by the selective memory and social needs of later generations.

In this thesis, a double historical perspective is applied to the study of the development of Walcheren’s fortification systems. This approach considers not only the long-term material history of military remnants but also how these structures have been reinterpreted through memory and practice in changing social and environmental contexts. For instance, the Napoleonic forts were repurposed in the 19th century and again during the Second World War, while the Atlantic Wall bunkers have seen diverse forms of reuse in the contemporary era.

Co-scripting of Landscape and People

The concept of co-scripting in the book *Landscape Biographies* emphasizes the intertwined relationship between people and landscapes.

Landscapes are not merely passive backdrops accumulating traces of human life; rather, they actively shape and are shaped by human experiences over various timescales. This dynamic “co-scripting” process reveals how landscapes and human life worlds continuously influence each other, a theme that resonates in literature, autobiographies, academic research, and personal memories (Renes & Kolen, 2015).

Key Issues for The Biography of Landscape

Issue 1

Who (or what) are the authors of the landscapes?

In landscape biography, the question of authorship is central and complex. This volume emphasizes that landscapes are not authored solely by individuals or human collectives. Instead, authorship can take multiple forms: it includes the historical appropriation and reinterpretation of places, but also less conventional agents such as war, technologies, literature, films, cultural narratives, institutional forces, and even non-human actors like animals and plants. These diverse agents “write” the landscape in different ways, shaping its form, use, and meaning over time. Landscape authorship is thus seen as a multi-layered, co-scripting process involving both conscious human actions and the active influence of non-human forces, highlighting a dynamic, entangled authorship network.

Issue 2

How does the temporal dimension of landscapes take ‘shape’ in rhythms, transformations, layers and memories?

Landscapes have their own temporalities and rhythms, in relation to but distinct from individual human life cycles. It seems evident, therefore, that ‘time’, and more particularly ‘lifetime’, should be considered the core business of landscape biography.

Issue 3

How can planning and design contribute to the landscape's life history?

The shifts in public appreciation on heritages demand new approaches, the aim must be to bring insights into historical processes, historical narratives and memories to the relevant actors, so that old landscapes can be transformed from vulnerable landscapes into socially vital and resilient landscapes.

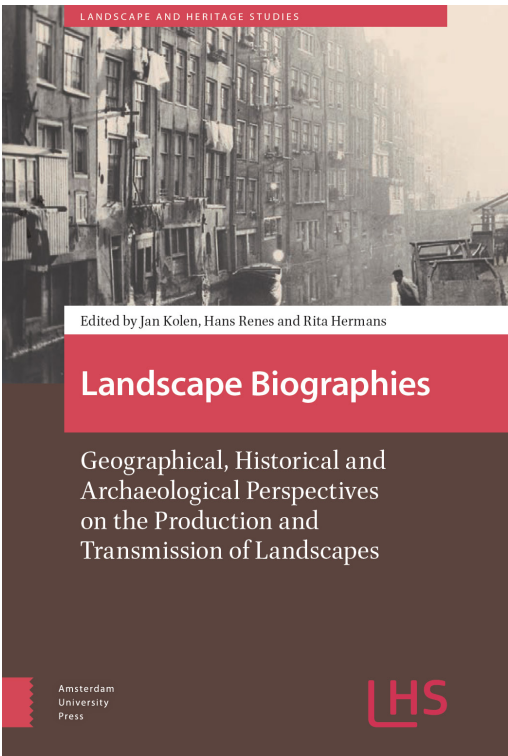


Figure1. Cover of Landscape Biographies.
Source: Kolen, P., Renes, J., & Hermans, R. (Eds.). (2015).
Landscape Biographies. Amsterdam University Press.

Theoretical Framework

Four Landscape Architecture Principles

Four Key Perspectives

The Section of Landscape Architecture at TU Delft defines four key principles that shape both the study and practice of landscape design: bodily experience, palimpsest, natural processes, and transformation. These principles reflect the multifaceted nature of the discipline, emphasizing the dynamic interaction between people, place, time, and ecology.

In the Landscape Architecture Principles graduation studio, students are encouraged to critically explore the significance and potential of these perspectives. Together, they offer a comprehensive framework for understanding and designing landscapes as evolving, layered, and experiential environments.

Bodily Experience

The perception of space lies at the core of the relationship between people and landscape. As individuals walk, pause, observe, and touch within a space, they engage with ever-changing proportions, light conditions, and material textures. This highlights the interactive relationship between place and the human body—space is not a static entity, but a dynamic process continuously shaped and redefined through bodily experience.

At the design level, acknowledging and responding to these sensory dimensions is essential for creating spatial experiences that are both meaningful and emotionally resonant. As Braae (2015) emphasizes, “Aesthetics is not a matter of ornamentation but of creating experiences and spaces for social routines and spatially anchored activities.”

This thesis explores the significance of spatial perception in both the pre-design analysis and the design process. The aim is to investigate how military landscapes are perceived and experienced by contemporary residents and visitors. Is the physical remnant the only perceivable aspect of history? Or can the site become a medium that engages visitors through a sequence of sensory encounters—activating the bodily experience to interact with the layered historical traces of the landscape as a palimpsest?

Palimpsest

When we delve beneath the surface of the earth, we encounter layers of accumulated landscape—deposits of time, cross-sections of history. But is the transformation of the landscape truly so clear-cut? Has each historical period left behind distinct and intact traces? Perhaps the landscape is better understood as a palimpsest—a surface that undergoes constant erasure and rewriting.

As de Wit and Bobbink (2020) note, “This was never a perfect process—a remnant was always left, overwritten but still visible if looked at in a particular way. Similarly, a landscape can be conceptualized as the product of successive episodes of physical change, still more or less visible as a different layer in the current landscape.” These traces of time may reinforce or contradict one another, as old and new patterns are superimposed and simultaneously present. Understanding these layers becomes one of the starting points for new transformations of the landscape.

The genius loci expresses the character of a place—not only its geographical traits but also its historical, social, and aesthetic dimensions (Nijhuis, 2013). Viewed through a palimpsestic lens, the genius loci can be interpreted not merely as an immediate sensory presence but as an accumulation of cultural, ecological, and spatial memories embedded in the landscape.

In this thesis, the principle of palimpsest provides a central framework for understanding the historical development of the military landscape. It examines how successive phases of military intervention—such as fortification, inundation, and later repurposing—have left layered imprints that shape the landscape’s current identity. However, viewing the landscape as a palimpsest does not imply an uncritical acceptance of all historical traces. Rather, a landscape-based approach involves a careful and intentional process of interpretation: deciding which layers to reveal, while acknowledging the complexity of overlapping histories, and making visible the ongoing processes of erasure, rewriting, and transformation.

Scale Continuum

The principle of natural processes highlights that landscapes are always changing and developing over time. Landscape architects need to understand and respect the complex natural and social-economic processes that shape landscapes, instead of aiming for a fixed, final design. Design should treat the landscape as an “unfinished” living system that can grow and adapt to future changes.

Landscapes are dynamic systems influenced by interactions between ecological, social, and economic factors.

Natural Process

No site exists in isolation or in a state of complete exclusion. A landscape intervention not only creates new local realities but also changes and influences systems that transcend the location. It affects and is affected by stakeholders within and outside the site boundaries, and on different scales, which means that inclusive design looks beyond the confines of a design location. The first step towards inclusivity is thinking in relations. The supportive structure for these “stakeholders” is the physical landscape, a relational structure that connects scales with spatial, ecological, functional and social qualities. Any landscape architectonic design has a spatial and physical connection to its direct surroundings and further afield, in a telescopic series of spaces stretching up to the horizon. This is the expression of the physical situation as well as the social, political and ecological context. (de Wit & Bobbink, 2020)

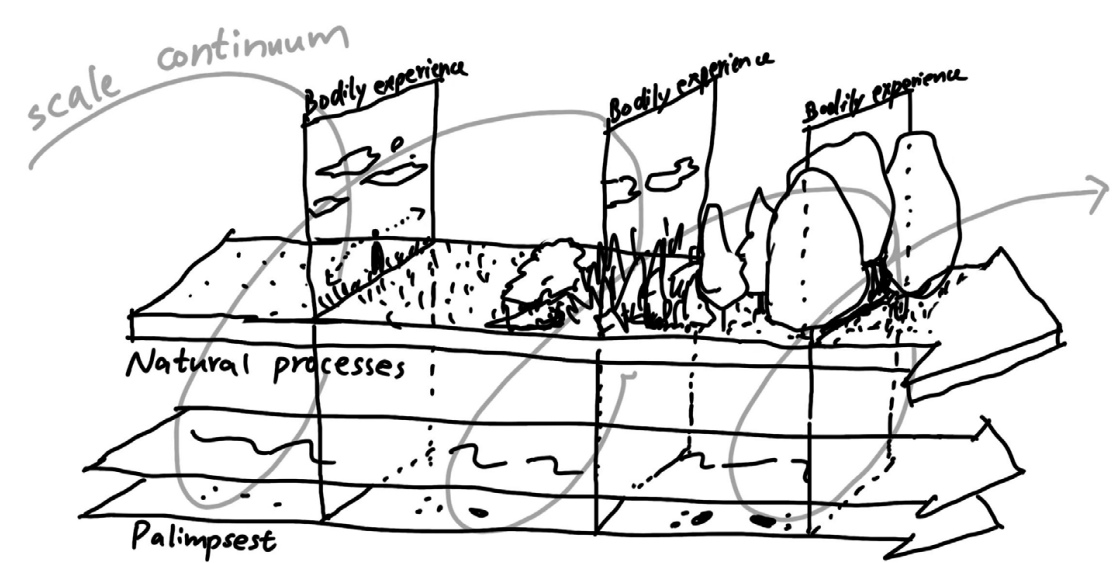


Figure. See four lenses as a whole system of Landscape Architecture Principles (Junhui Zhang, 2024)

Theoretical Framework

Memoryscapes

Origin of Memoryscapes

“Memoryscape” combines “memory” and “landscape” to describe environments where memories are embedded in spatial form. ‘Memoryscape’ is a term which was first coined by the sociologist Tim Edensor to categorize sites ““which attempt to materialize memory by assembling iconographic forms [around which] social remembering is organized”” (Edensor, 1997: 178). While not attributed to a single originator, the concept has been utilized across various disciplines to explore how landscapes serve as vessels for collective and individual memories.

Memoryscape and Narrative experience

In Toby Butler’s article “Memoryscape: How Audio Walks Can Deepen Our Sense of Place by Integrating Art, Oral History and Cultural Geography” (2007), he introduces the concept of the memoryscape as a way of engaging with place through sensory and narrative experiences. Butler explores how audio walks can transform everyday landscapes into immersive environments that evoke both personal and collective memory, offering a model for designing spaces that communicate layered histories.

"Rehabilitation and alternative uses suggest that instead of a binary opposition between memory and amnesia, a dynamic suite of memory practices relate to problematic relics of the past. Such practices involve the ambiguous use of imagery, re-labeling and transformative action, which together create spaces for individual ‘memory-work’. For example, partial erasure allows memories to be maintained whilst new meanings become attached to sites through continued re-use."

Memory Practices and Contested Heritage

In contrast, Anthony Gristwood’s article “Memoryscapes: Heritage, the Cityscape and the Idea of Nation” (2014) connects the term to contemporary cultural identities. He defines memoryscapes not as neutral reflections of the past, but as strategically constructed representations of heritage designed to serve national, cultural, or ideological purposes. Gristwood argues that heritage differs fundamentally from history: while history is a critical and evolving dialogue with the past, heritage tends to present a selective, often sanitized version intended to reinforce national identity and suppress uncomfortable truths.

Memoryscapes Art

NVN MemoryScape is Bespoke photo-collages created by artist Nancy VanNoppen, the goal of each NVN MemoryScape is to capture and preserve the unique essence of a beloved place. Combining photographs from past and present, she composes an imagined scene that accurately depicts the visual characteristics of a place while simultaneously fracturing it with moments from different points in time to reflect the infinite, co-existing memories of the people who experienced it.

What I can learn from this memoryscape art,inspiration for my design concept?

This artwork inspires the design exploration in this thesis, demonstrating how a well-designed historical site can serve as a medium that engages visitors physically and emotionally. It can guide them through a sequence of sensory encounters, allowing their personal memories and perceptions to interact with the collective memory of a specific historical period.



Figure. Wyoming Summer (Nancy VanNoppen, 2013)

Methodology

Conclusion

Palimpsest Mapping

Palimpsest mapping is a technique that uncovers and visualizes the layered identity and spatial patterns of a landscape or urban environment. Like a palimpsest manuscript—where traces of earlier writings remain beneath newer ones—this method reveals how different historical, cultural, and ecological layers have shaped a place over time.

In this thesis, palimpsest mapping is used as an analytical and design tool to decode the complex historical layers within the military landscape. By identifying and interpreting the spatial patterns of past interventions, the method helps uncover how four key historical periods have shaped the area’s identity.

Rather than merely identifying spatial shifts, the map-based analysis interprets how changing defense strategies—such as inundation lines or coastal artillery zones—responded to both geographic constraints and evolving conceptions of threat and control.

This approach guides the selective highlighting of meaningful layers that contribute to a coherent narrative, while also recognizing the processes of change and adaptation over time.

Ultimately, it enables a nuanced understanding that informs design decisions aimed at balancing preservation, transformation, and contemporary use.

Landscape Biography

Using a Landscape Biography approach allows researchers and designers to focus on transformation processes rather than just final forms. This method is useful when trying to design with sensitivity to historical context, cultural meaning, and long-term landscape dynamics. It is especially relevant for areas with rich historical layering, where past uses and meanings still influence how the space is perceived and used today.

This thesis adopts landscape biographical approach to explore how specific military transformations have shaped the layered identity of Walcheren’s landscape. Using palimpsest mapping, it traces spatial changes in fortification systems and their surroundings, revealing how four key historical periods have inscribed themselves onto the landscape.

These spatial analyses are complemented by short narrative episodes that reflect how military actions—such as inundation or reconstruction—emerged from human decisions and, in turn, reshaped daily life. Through these stories, the research highlights the reciprocal relationship between people and landscape.

Framed by the concept of co-scripting, the landscape is seen not as a passive record, but as a dynamic actor in an ongoing dialogue—shaped by successive generations and reinterpreted through new uses and memories.



Figure. Walcheren Under Water, Zeeuws Archive, 1944

Methodology

Conclusion

Analysis of Existing Military Remnants

This is a pre-design analysis of existing military remnants in the southern part of Walcheren — including both visible and hidden traces. The goal is to explore how these landscapes are perceived and experienced by residents and visitors today.

The analysis is structured around two key dimensions: spatial legibility and emotional engagement. Spatial legibility focuses on the tangible, physical aspects of the site — the visible foundation of both personal and collective memory. It is assessed through criteria such as visual distinctiveness, physical accessibility, the presence of recognizable military structures, and visible traces of historical periods.

In contrast, emotional engagement addresses the more intangible side: how a place evokes feelings, memory, or curiosity. This includes connections to historical events, the potential for memorial space, public interpretation, and the atmosphere of the site — all of which shape landscape identity and people’s sense of connection to it.

Precedents Study

This thesis employs precedent study as a key methodological approach, focusing primarily on transformation projects of historic military landscapes, such as the Nieuwe Hollandse Waterlinie. These projects serve as critical case studies that demonstrate how layered military heritage can be interpreted, preserved, and adapted for contemporary use.

By analyzing their spatial strategies, design interventions, and narrative techniques, the research gains insight into effective ways to reconcile historical traces with present-day environmental and social contexts.

This method goes beyond inspiration; it functions as a critical lens through which the Walcheren landscape’s complex history can be translated into design proposals. It facilitates a dialogue between past and present, allowing for informed decisions about which historical layers to emphasize, reinterpret, or transform in the site-specific design response.

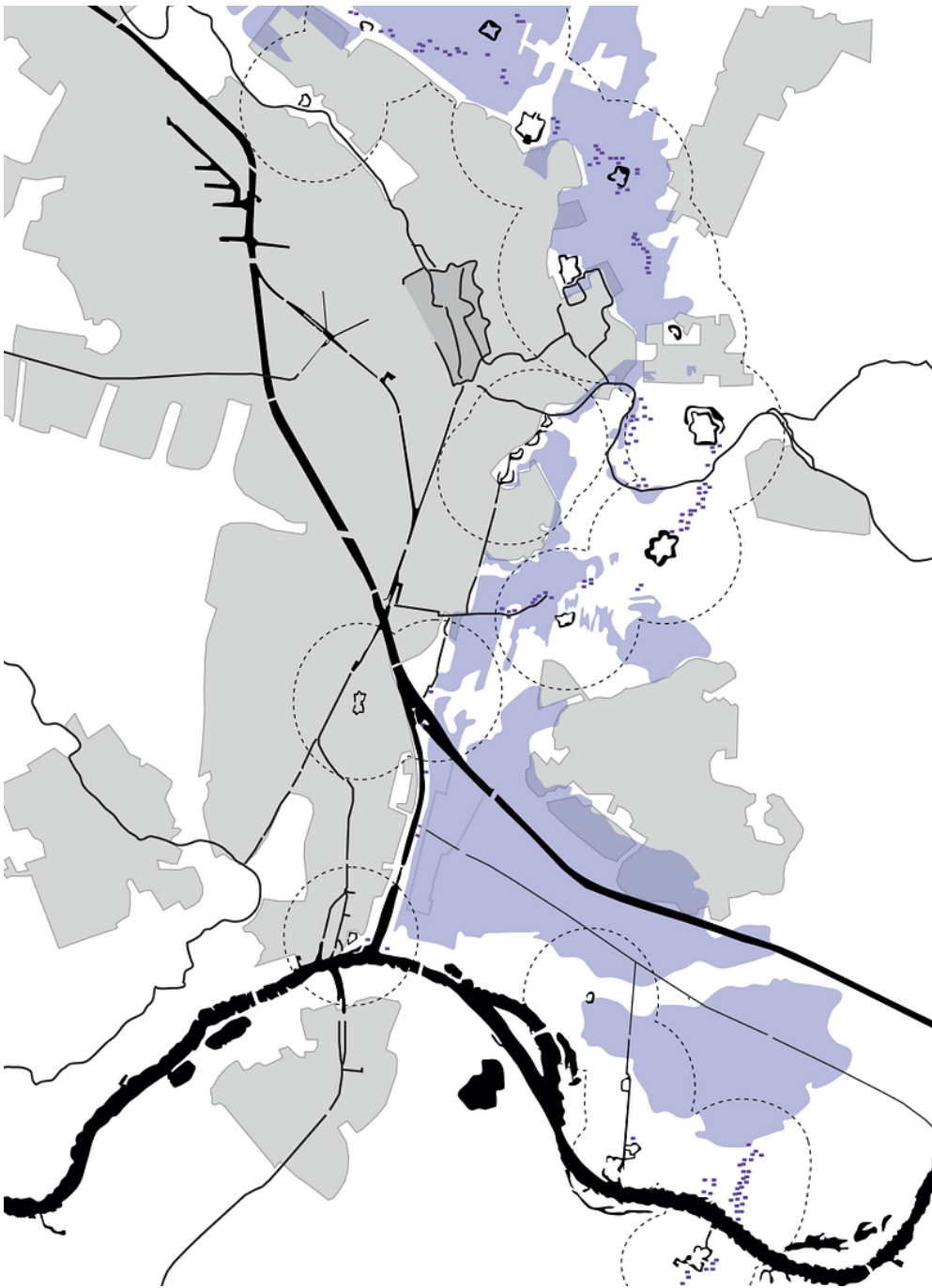
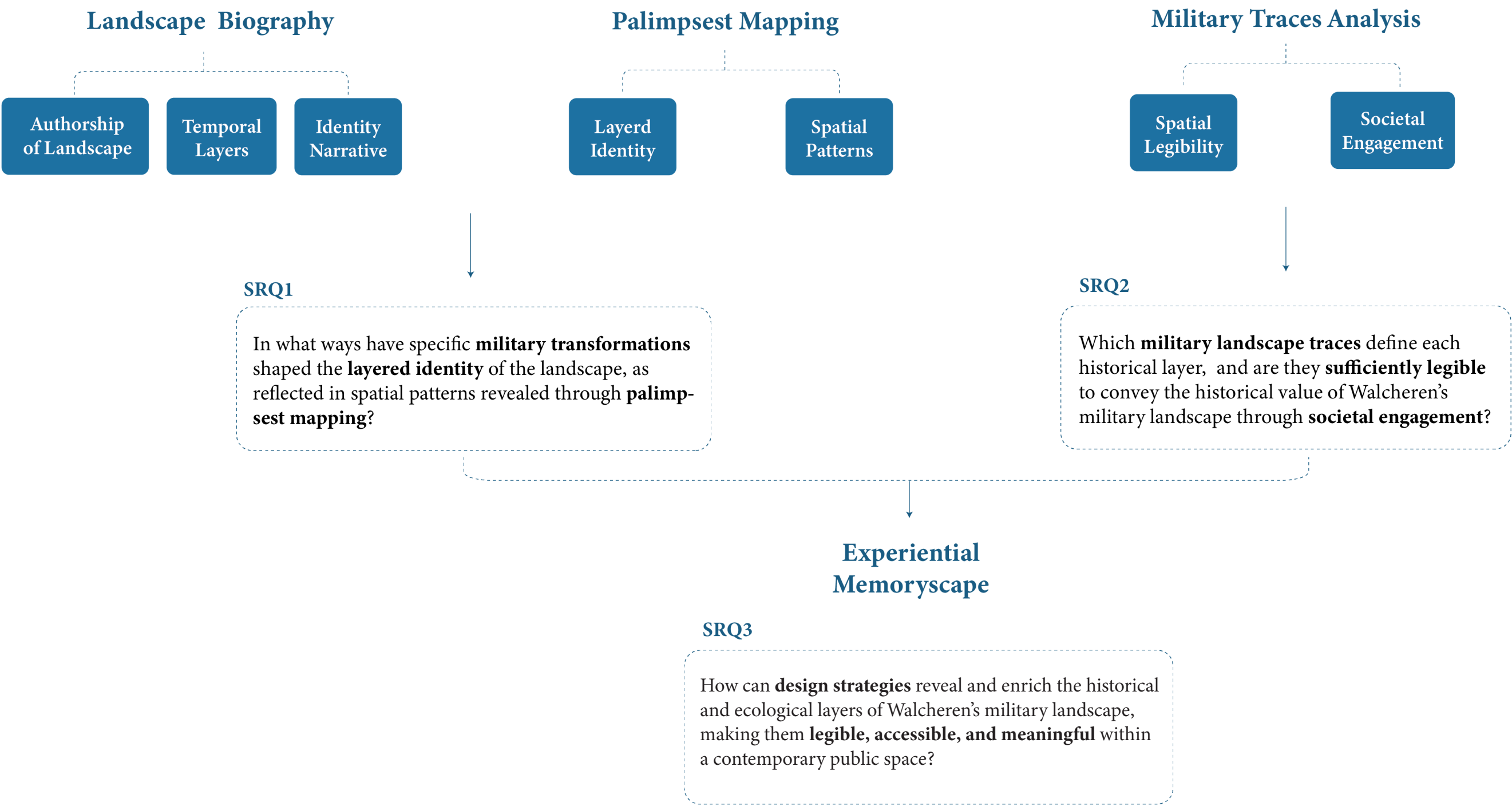


Figure. The Nieuwe Hollandse Waterlinie, Bureau B+B, 2011

Methodology Framework



Design Assignment

The design focuses on unveiling the historical layers of Walcheren's inundation creek landscape and its wartime remnants, intertwining these narratives into the redesign of the war landscape in South Walcheren. The project operates at two scales: **a broader vision** for the Landfront Vlissingen and the Napoleonic Fortress relics, and **two detailed zoom-in sites**: De Nolle Bos and Rammekenshoek.

This transformation aims to establish the site as **both a historical landmark and a vibrant recreational space**, fostering greater public engagement. The approach will emphasize the spatial modification of topography and vegetation to enhance visitors' immersive experience of history.

Additionally, the design will integrate the creek into the regional ecological network of dunes, polders, waterways, and cultural sites, creating a cohesive connection between natural and cultural landscapes. This integrated approach highlights the interplay between ecological and historical elements while enhancing the site's accessibility and identity.



Rammekenshoek natural reserve, author, 2024

Chapter3

A "Co-scripting" of landscapes and people

04 A Landscape Biography of Walcheren

05 A Palimpsest of Military Traces on Landscape

06 Analysis on Existing Military Remants



MID 16TH CENTURY

CONSTRUCTION OF FORT RAMMEKENS ON THE MEDIEVAL SEA DIKE

"In 1547, as Regent of the Netherlands, I ordered the construction of Fort Rammekens to defend the mouth of the Westerschelde and the port of Middelburg. This waterway was vital to the Netherlands' maritime trade, and the growing threat from hostile forces required decisive action.

To counter the dangers posed by gunpowder and advanced artillery, I entrusted the renowned Italian architect Donato de Boni with the task of designing the fort. His innovative bastion system featured low, solid walls reinforced with thick layers of earth, capable of absorbing the impact of cannon fire. The fort was integrated with the existing medieval sea dike, serving not only as a defensive stronghold but also as a hydraulic barrier to protect against flooding."



History Backgorund

Military and hydraulic system coexisted

The findings at Fort Rammekens illustrate how medieval water management strategies were intertwined with military fortifications, shaping the landscape over centuries. The old dike beneath the fort serves as a testament to this adaptive process.

Medieval Water Management

The dike, initially built before 1400, was a crucial flood defense structure protecting inland areas from storm surges and tidal influences. Over time, it was reinforced with layers of clay and silt, reflecting the region’s continuous struggle against water intrusion.

Military Adaptation

When Fort Rammekens was constructed in 1547, the dike was integrated into the fort’s foundations rather than being removed. This suggests a dual-purpose strategy—preserving existing hydraulic infrastructure while enhancing military defense.



Fig. Overview of the Western covering of the Old Sea Dike. Silkens, 2019

Structural Evolution

Borehole studies indicate that the dike underwent several phases of reinforcement, with possible relocations between 1400 and 1547. The weight of the fort also influenced the dike’s subsidence over time, further altering the landscape.

Dynamic Interaction

The site exemplifies the shifting balance between natural processes, hydraulic engineering, and military strategy. While the fort was positioned for coastal defense, it also had to accommodate and adapt to pre-existing flood management infrastructure.

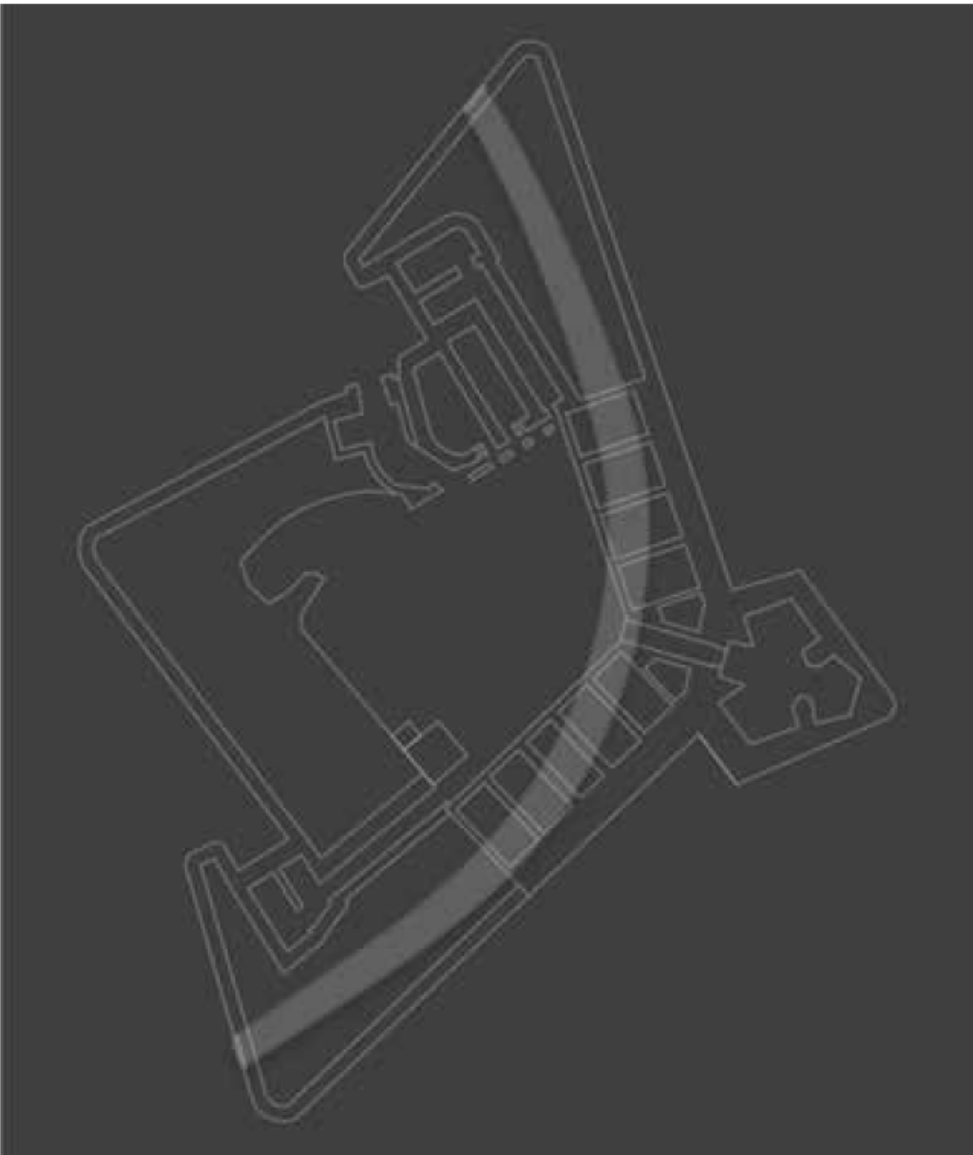


Fig. Probable course of the Medieval Sea Dike under the fort, the dike probably runs largely under the Napoleonic casemates. Silkens, 2019

FRENCH TIME 1795-1814

NAPOLEON'S FORTS IN VLISSINGEN

"Time's Majesty is greatly pleased with the immense efforts undertaken by the engineers and the navy. Fort Montebello is armed with eighty guns and reinforced with a casemated redoubt. The Vlissingen seafront boasts one hundred 36-pound cannons, sixty plate mortars, twelve-inch mortars, and Gomer mortars.

The entire area behind Vlissingen has been flooded, creating an inundation 300 meters wide, supported by a system of lunettes. Well-covered roads, strong ramparts, and three crown works—positioned 2,400 meters from the fortress—stand in alignment with Forts Montebello and St. Hilaire, shielding the fortress from bombardment.

Fort St. Hilaire, armed with fifty guns, is linked to Fort Rammekens through a network of intermediate forts. Rammekens itself, protected by a crown work, is further shielded by inundations. The dikes have been breached and reconnected with masonry barriers, while 120-meter tunnels within the dike can be detonated if necessary."

This is the outline of the extensive fortifications completed in Vlissingen over the past two years. The army's engineers alone have undertaken an extraordinary task, nearly matching the magnitude of all previous military engineering efforts. The project has included the construction of casemates, storage warehouses, and other facilities at a cost of nine million francs."



History Backgorund

Napoleon's forts on the Scheldt

Walcheren's Stratigic Location

Walcheren occupies a highly strategic location at the mouth of the Western Scheldt, the only navigable route to Antwerp—Napoleon’s intended military port and naval stronghold in northern Europe. Its position made it a vital choke point for controlling maritime access to the Scheldt estuary and inland Belgium, as well as a frontline of defense against British naval forces across the North Sea.

Following the failed British Walcheren Campaign in 1809, Napoleon recognized the vulnerability of the area and ordered a system of fortifications along the Western Scheldt, including Fort Rammekens, to secure access to Antwerp and prevent future invasions. These forts served to monitor and defend key waterways, enabling the French to block hostile

Forts System on Western Scheldt

The map was drawn in 1813 by the deputy director of the French engineers in Vlissingen, major Armand François Lamy (1781-1839) and shows the fortress town itself with surrounding inundation. In a semicircle around the fortress are five detached defense works, the coastal forts Montebello and St. Hilaire, as well as three large crown works. Further to the east are two further works: the fort Ruffin under construction and the coastal fort Lacoste. From Lacoste a fortification camp was constructed, which extends to the old fort Rammekens, which had been provided with an additional crown work a few years earlier (Vincennes, SHD, GR 1 V M 116, 9).

According to Rudi Rolf in *Napoleon’s Forten aan de Schelde*, these enhancements formed part of a coordinated system of French fortifications along both banks of the estuary, aimed at safeguarding Antwerp from sea attacks . This network empowered the French to monitor and control maritime traffic, reinforcing Napoleon’s naval ambitions and deterring future British interventions.

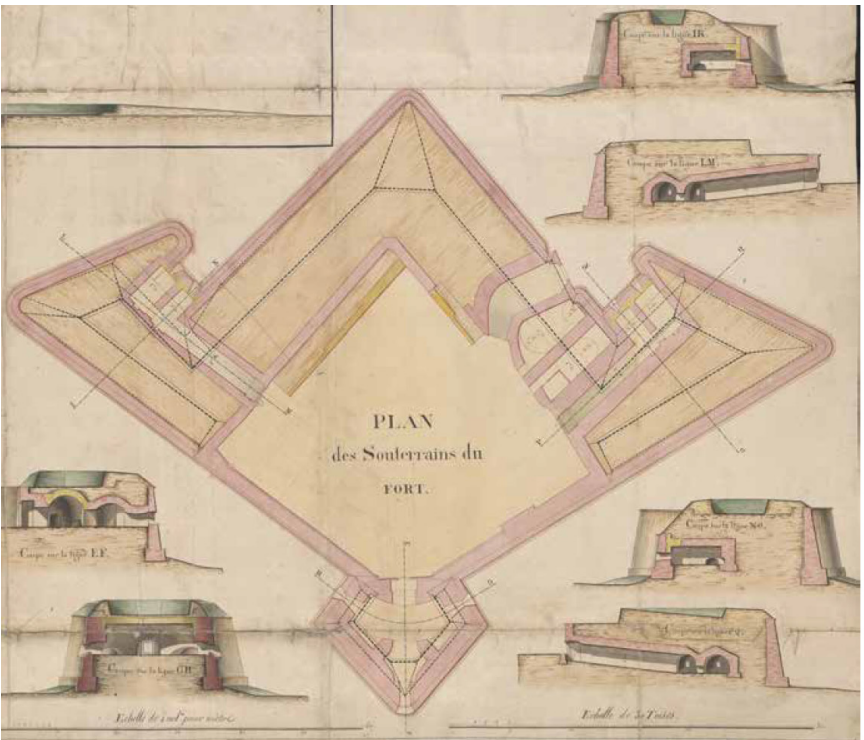


Fig. Overview drawing from 1810 in preparation for the French works on the fort. The various casemates of the Fort are drawn on the plans. The various cross-sections and the raising packages are interesting. Source: Zeeuws Archief



Fig. Map of the French fortress of Vlissingen (Armand François Lamy, 1813)

THE SECOND WORLD WAR

ATLANTIC WALL IN WALCHEREN

Hans stood atop Fort Rammekens, the wind heavy with salt and unease. Around him, farmland that once fed villages was being reshaped into a fortress. Concrete bunkers rose from the soft polder soil, alien and unwelcome. The locals watched in silence—some bitter, others resigned—as the land their families had reclaimed from the sea was taken again, this time by war.

At dawn, the first explosion split the horizon. The dikes—once symbols of resilience—were breached. Water poured in, indifferent to strategy or sides, flooding fields, homes, and the new bunkers alike. Soldiers stumbled through the rising tide, their weapons no match for nature.

By nightfall, the bunkers stood marooned like relics of a broken plan. Hans gazed out across the flooded plains, the war still echoing in the distance. The land was no longer theirs, not to farm, not to defend. It belonged to the water once more.



History Backgorund

The Atlatic Wall in Walcheren "Landfront Vlissingen"

Landfortn Vlissingen

During the Second World War, the German occupiers began building the Atlantic Wall in 1942. The Atlantic Wall is a defensive line of no less than 5,000 kilometres from the North Cape in Norway to Biarritz in France. Walcheren and Breskens were heavily defended to block access to the world port of Antwerp. In addition to a defence in the dunes, there was a second defence belt inland of Walcheren: the Land Front. This line ran from the Westerschelde dike at Fort Rammekens via Nieuw-Abeelee, Groot-Abeelee and Koudekerke to the dunes at Groot-Valkenisse.

The “Landfront”, which formed the northern defense line of the “”Verteidigungsbereich Vlissingen“”, ran from Fort Rammekens, across Oud and Nieuw Abeelee, along the north side of Koudekerke to the dunes of Valkenisse. This defense, constructed from 1942, was formed by an obstacle in the form of a tank ditch, a concrete tank wall and dragon's teeth (“”Höckerhindernisse“”) to stop armored vehicles. Behind it were bunkers with anti-tank guns and machine guns.

The Seefront Vlissingen has been largely demolished, but the Landfront Vlissingen is still very recognizable and largely physically intact. This is a unique fact within Europe, where almost all remnants of Landfronts of the Atlantic Wall have been demolished and/or disappeared in large-scale new housing estates. (Rijksdienst voor het Cultureel Erfgoed, n.d.).



Figure. Atlantic Wall, Bundesarchiv Bild ,1944



Figure. Bunker in Vlissingen ,Oorlogzeeland

History Backgorund

The Atlatic Wall in Walcheren "Landfront Vlissingen"



Figure. Mapping of Defense system in Second World War
Source: T. de Kruijf, J. Baalbergen, PJJ van Dijk et al.,
Atlas of the Historical fortifications in the Dutch. Zeeland, Utrecht, 2004, p 274

MILITARY INUNDATION & POST-WWII RECOVERY 1945-1953

INUNDATION DURING THE BATTLE OF THE SCHELDT AND POST-WAR DIKE CLOSURE

The war had ended, but Walcheren bore the scars of its violence. The dikes lay shattered, and the land, once fertile and green, had turned into a salt-stained wasteland. Yet the people returned, driven by an unshakable determination to rebuild.

Willem stood at the edge of the broken dike, a sack of sand slung over his shoulder. Around him, men and women labored tirelessly, their hands raw and their backs bent under the weight of rocks and sandbags. The air smelled of wet earth and seawater, a constant reminder of the struggle they faced. Anna worked beside him, tying sandbags with aching fingers. She had never imagined this kind of labor, but it felt like a battle for survival—a battle for their home. Every shovel of dirt, every stone placed, was an act of defiance against the sea that had tried to take everything from them.



History Backgorund

Inudation During The Battle of Scheldt

In the autumn of 1944, the island of Walcheren became a focal point in the Battle of the Scheldt, a crucial Allied campaign to open the port of Antwerp for supply lines into northwestern Europe. The island was heavily fortified by German forces, who had transformed it into a coastal stronghold with extensive artillery batteries capable of blocking Allied access through the Western Scheldt. To break the German resistance without a prolonged frontal assault, the Allies launched Operation

Infatuate, which included a radical strategy: the intentional inundation of Walcheren. On October 3, 1944, the Royal Air Force bombed the dikes at Westkapelle, Vlissingen, and Fort Rammekens, flooding large parts of the island with seawater. This caused immense disruption to German defenses, weakened infrastructure, and allowed amphibious landings to proceed more effectively. However, the inundation also led to severe long-term damage to the landscape, local agriculture, and civilian life, consequences that lasted long after the island was liberated in November 1944 (Liberation Route Europe).

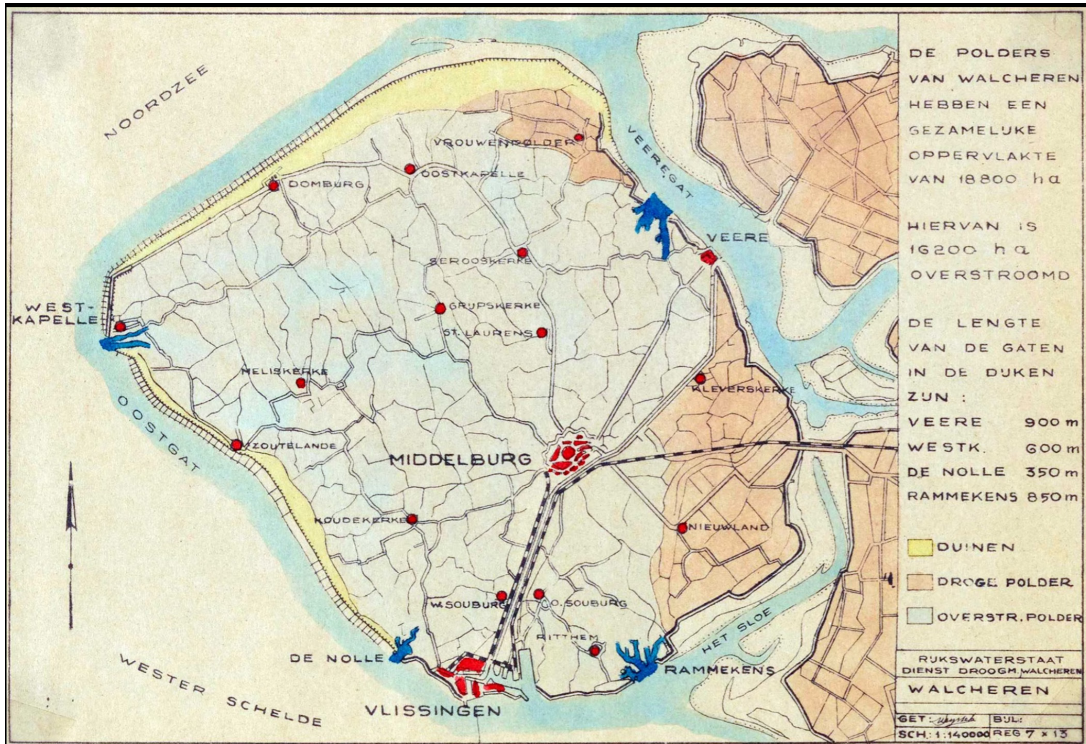


Fig. Allied bombs blew holes in the dikes of Walcheren in four places, Zeeland Archives



Aerial photo after bombardment of the dike near Fort Rammekens, University of Keele



Flooding of the territory east of westkapelle, Zeeland Archives

History Backgorund

Post-War Dike Closure

After the intentional inundation of Walcheren in October 1944 by Allied forces—who bombed key dikes at Westkapelle, Vlissingen, and Fort Rammekens to flood the island and weaken German defenses—the region remained submerged long after liberation. The saltwater destroyed agricultural fields, homes, and infrastructure, leaving the population displaced and the land uninhabitable. Although local residents and military engineers initiated emergency repairs soon after liberation, full restoration only began in earnest in early 1945 due to logistical and wartime challenges

The re-diking process unfolded step by step. Engineers employed a mix of techniques, including the use of caissons, sunken ships, and temporary dams to seal the breaches. These closures were complex and dangerous, as the terrain was still unstable and weather conditions harsh. Over the following year, sections of the dike were gradually restored. The final closure of the dike ring was achieved in October 1946, after which the island could be drained, and the long process of rebuilding agricultural productivity and communities could begin.
(Tweede Wereldoorlog Zeeland, n.d.).



Boat with household goods to Middelburg. Bank Zeeland ,1944



Closing bombed dike, Bank Zeeland ,1945

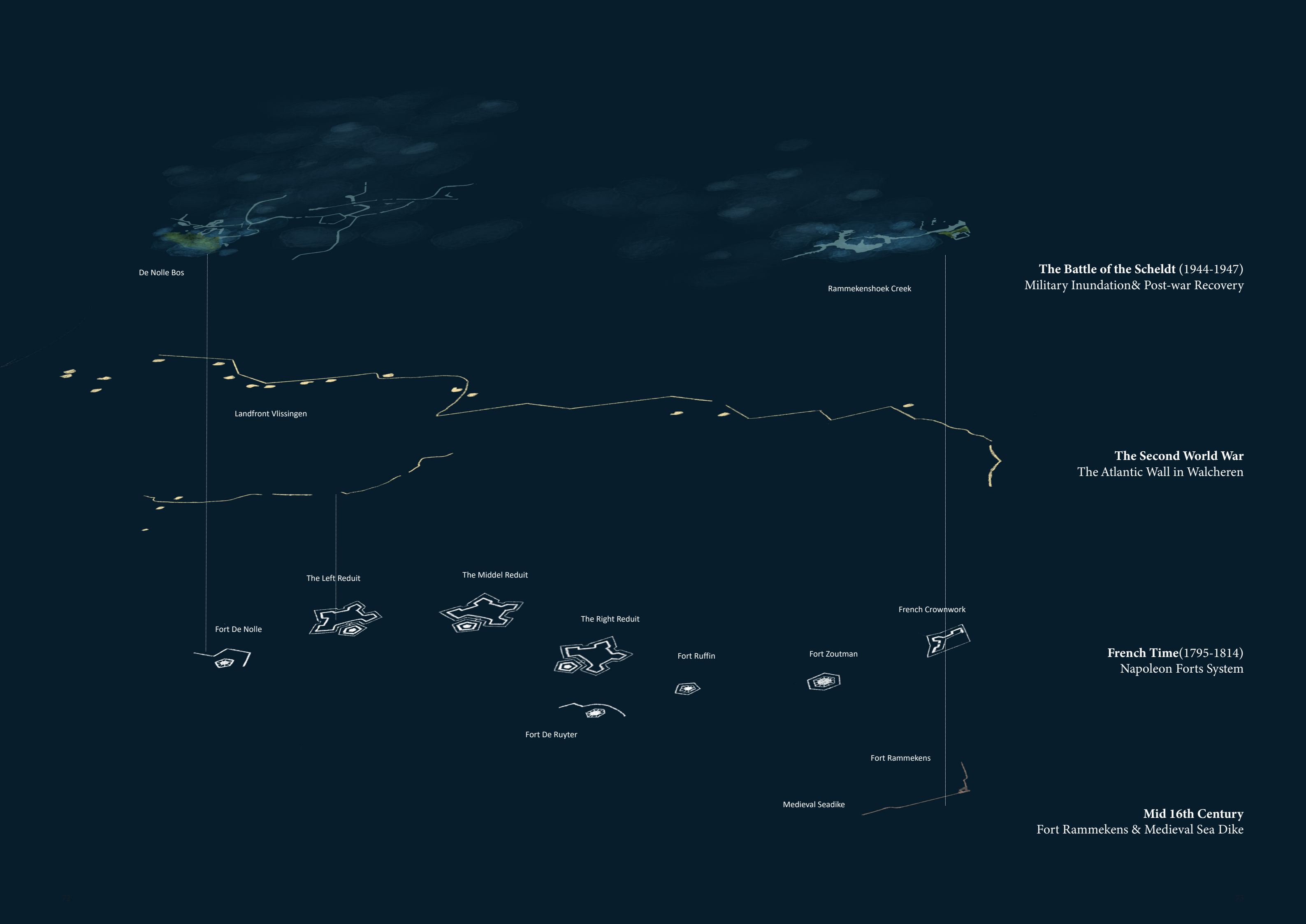
A Palimpsest of Military Traces on Landscape

The long-term submersion reshaped the landscape,
permanently altering its intricate dike systems and small polder plots.

Though Walcheren was restored,
the former "Garden of Zeeland" was irreversibly transformed,
its layered history still imprint in the resilient traces left behind.

Visible or invisible,
each layer tells a story about how war shapes, scars, and, sometimes,
regenerates the landscapes it touches.

The intertwined issues requires an approach that
views Walcheren's landscape as a palimpsest,
where each layer of history, ecology, and development
contributes to a sustainable and cohesive whole.



De Nolle Bos

Rammekenshoek Creek

The Battle of the Scheldt (1944-1947)
Military Inundation & Post-war Recovery

Landfront Vlissingen

The Second World War
The Atlantic Wall in Walcheren

The Left Reduit

The Middel Reduit

The Right Reduit

Fort De Nolle

French Crownwork

French Time (1795-1814)
Napoleon Forts System

Fort Ruffin

Fort Zoutman

Fort De Ruyter

Fort Rammekens

Medieval Seadike

Mid 16th Century
Fort Rammekens & Medieval Sea Dike



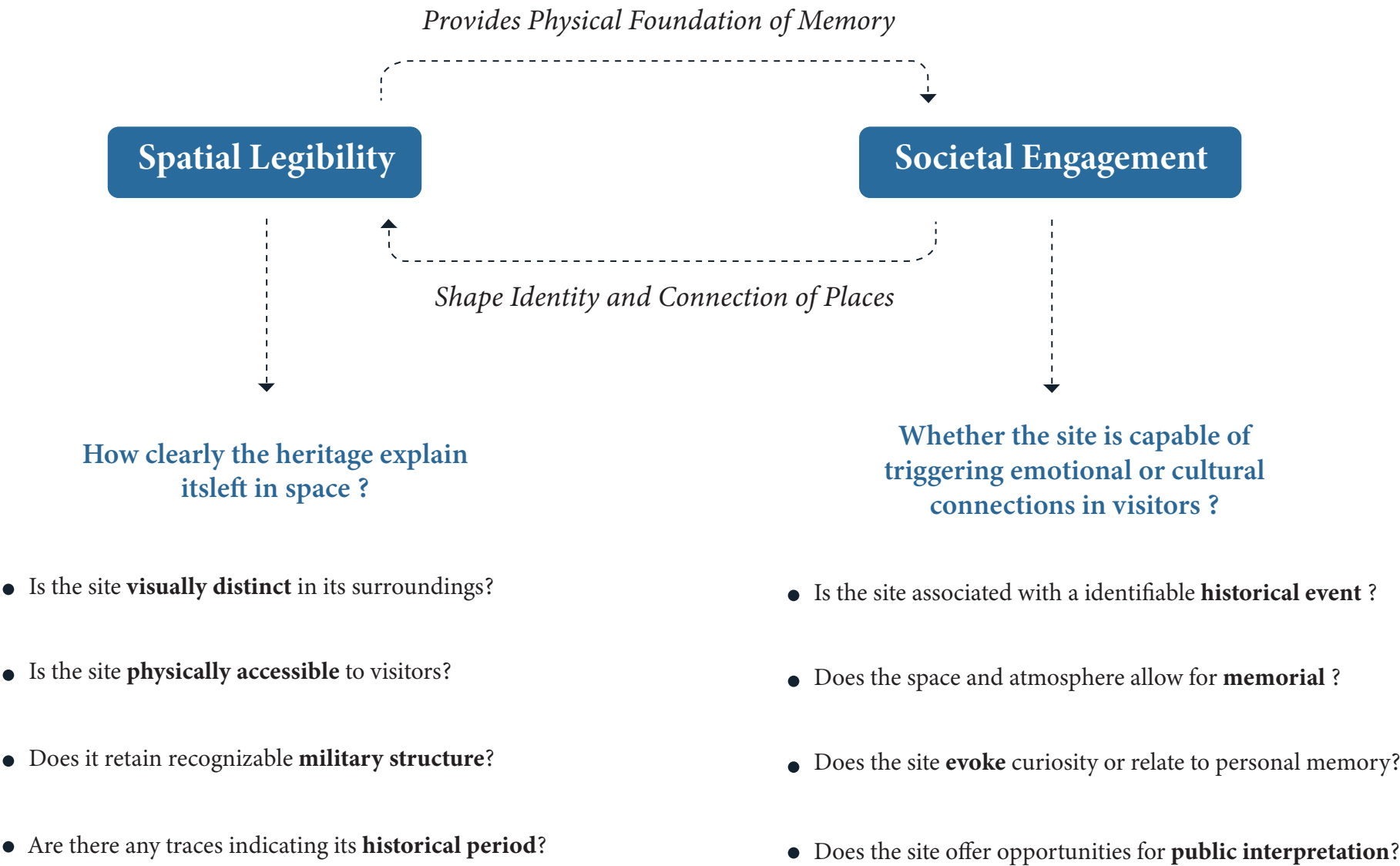
Sensory Traces: Mapping the Experience of Military Landscape Remnants

A Pre-Design Analysis of Existing Site and Traces

“Sensory Traces Mapping” is a pre-design analysis of existing military remnants in the southern part of Walcheren — including both visible and hidden traces. The goal is to explore how these landscapes are perceived and experienced by residents and visitors today.

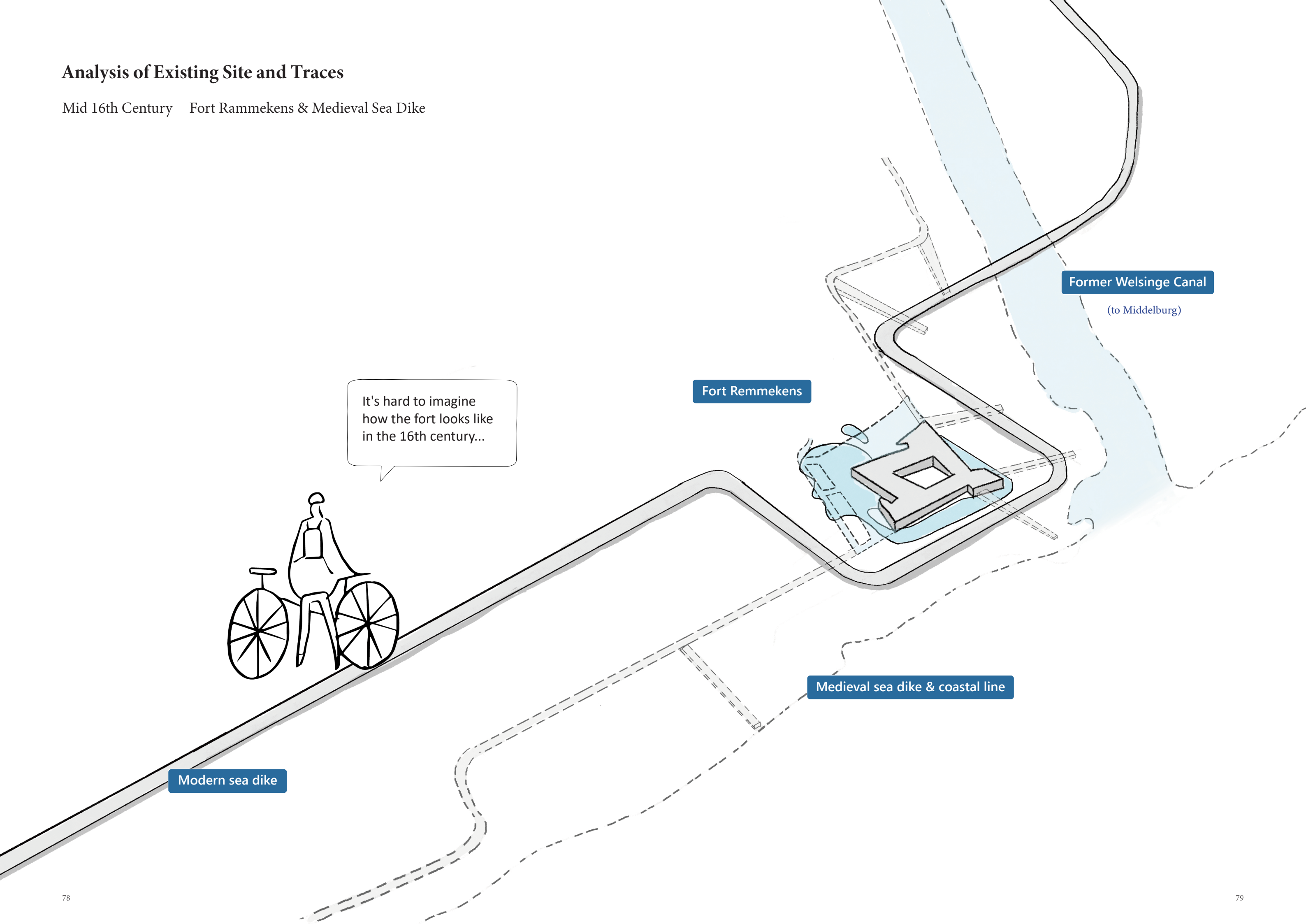
The analysis is structured around two key dimensions: spatial legibility and emotional engagement. Spatial legibility focuses on the tangible, physical aspects of the site — the visible foundation of both personal and collective memory. It is assessed through criteria such as visual distinctiveness, physical accessibility, the presence of recognizable military structures, and visible traces of historical periods.

In contrast, emotional engagement addresses the more intangible side: how a place evokes feelings, memory, or curiosity. This includes connections to historical events, the potential for memorial space, public interpretation, and the atmosphere of the site — all of which shape landscape identity and people’s sense of connection to it.



Analysis of Existing Site and Traces

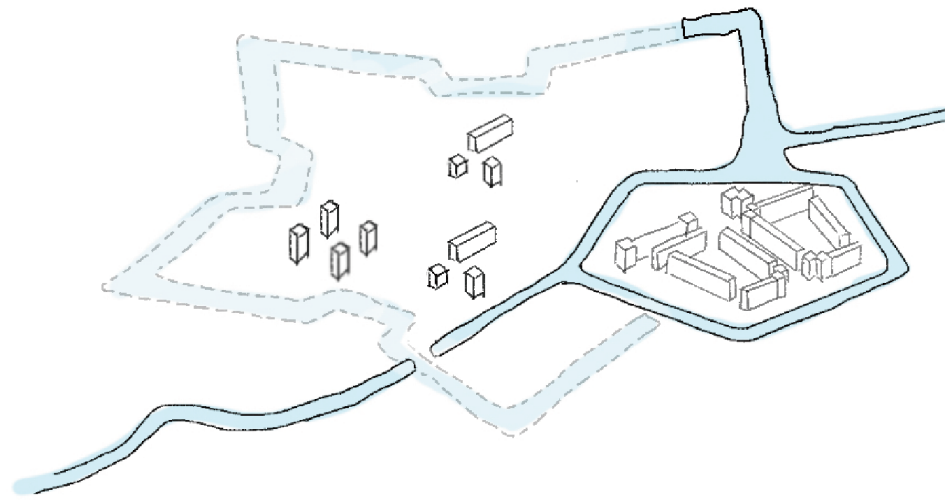
Mid 16th Century Fort Rammekens & Medieval Sea Dike



Analysis of Existing Site and Traces

French Time (1795-1814) Napoleon Forts System

The shape of the canal is very interesting.



Moat remnants of The Left Reduit

Nollestrand is such a nice place to enjoy the sunshine!



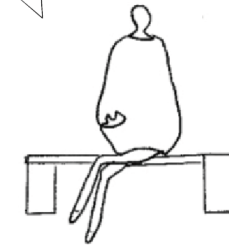
Historical site of Fort De Nolle

The sign says this is the oldest sea fort in Western Europe!



Fort Remmekens

A pond surrounded by trees, easy to miss when passing by...



Moat remnants of Fort Zoutman

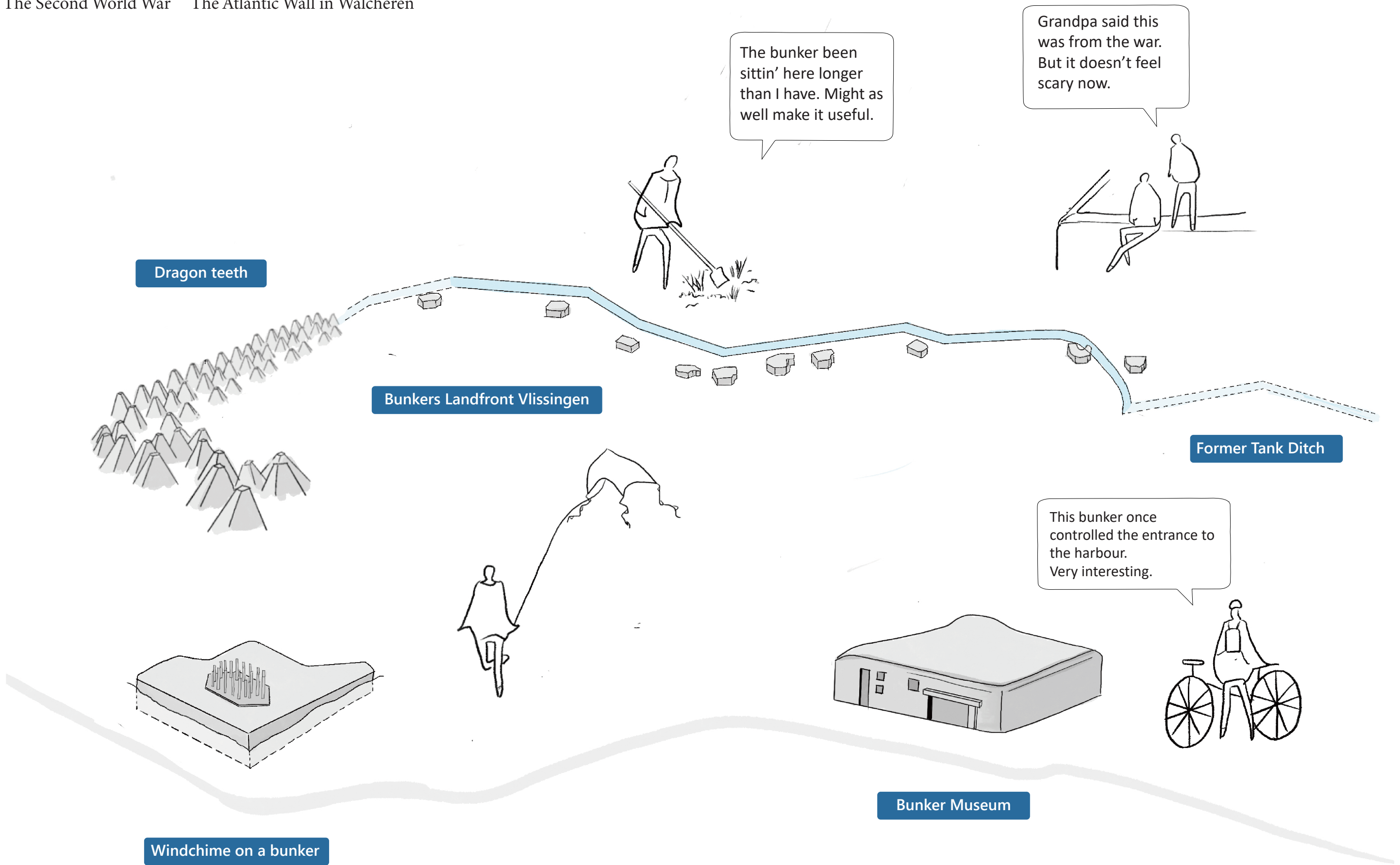
I've never noticed so much construction debris here before.



Ruins of Fort De Ruyter

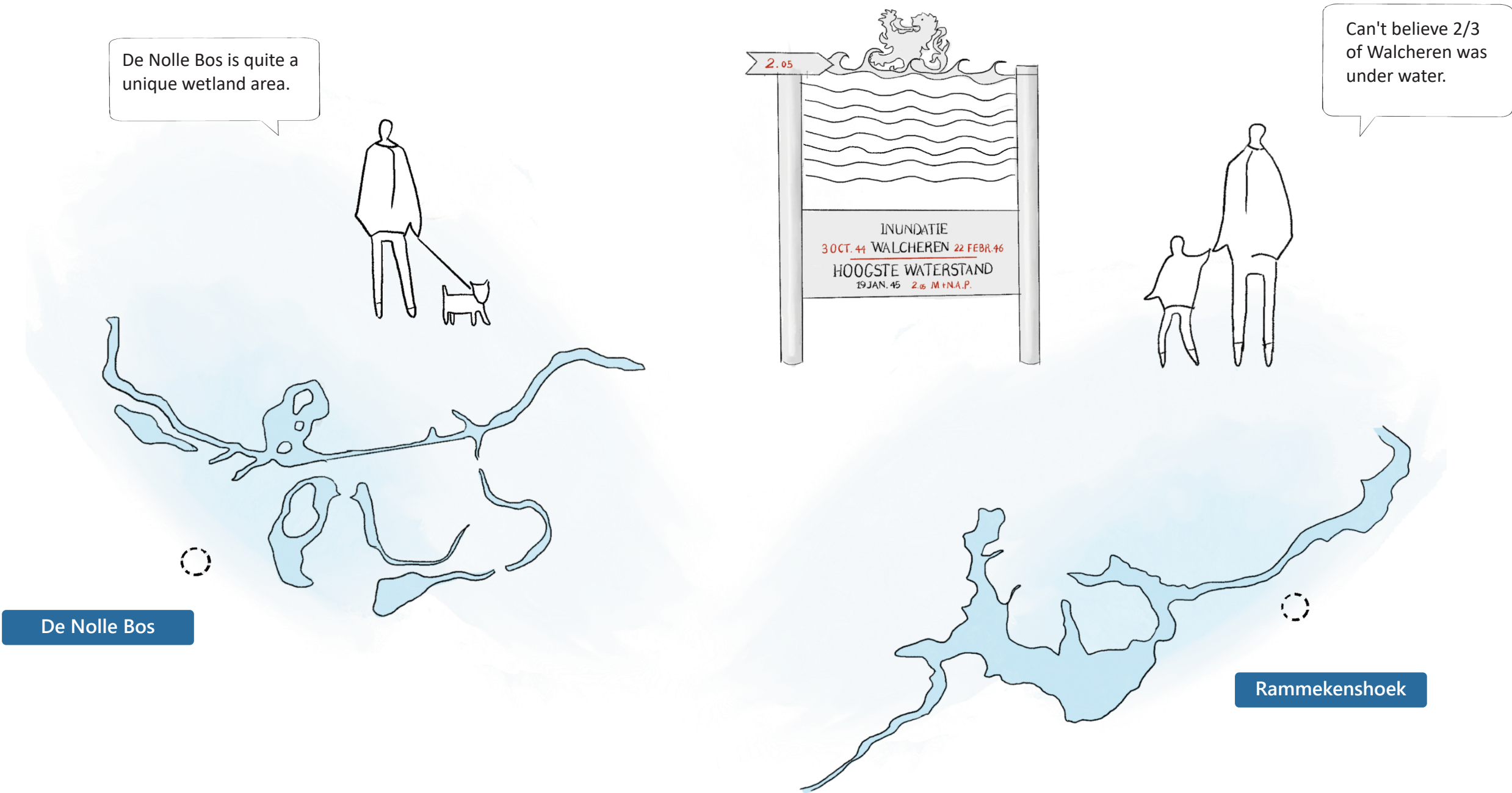
Analysis of Existing Site and Traces

The Second World War The Atlantic Wall in Walcheren



Analysis of Existing Site and Traces

The Battle of the Scheldt(1944) Military Inundation& Post-war Recovery (Untill 1946)



Mapping of Legible Military Heritage



Legend

- Preserved National Monuments
- Clusters of "Landfront Vlissingen"
- Tank Ditches WW II
- Ruins for Conservation
- Protected Historical Landscape

Mapping of Societal Engagement Space



Mapping of Invisible Historical Layers

- Legend**
- Invisible/ Destroyed Construction
 - Moats no longer exists
 - Existing Fortress
 - Remnants of Moats
 - Existing Water System

The Left Reduit

The Middle Reduit

The Right Reduit

Fort De Nolle

Fort Rammekenshoek

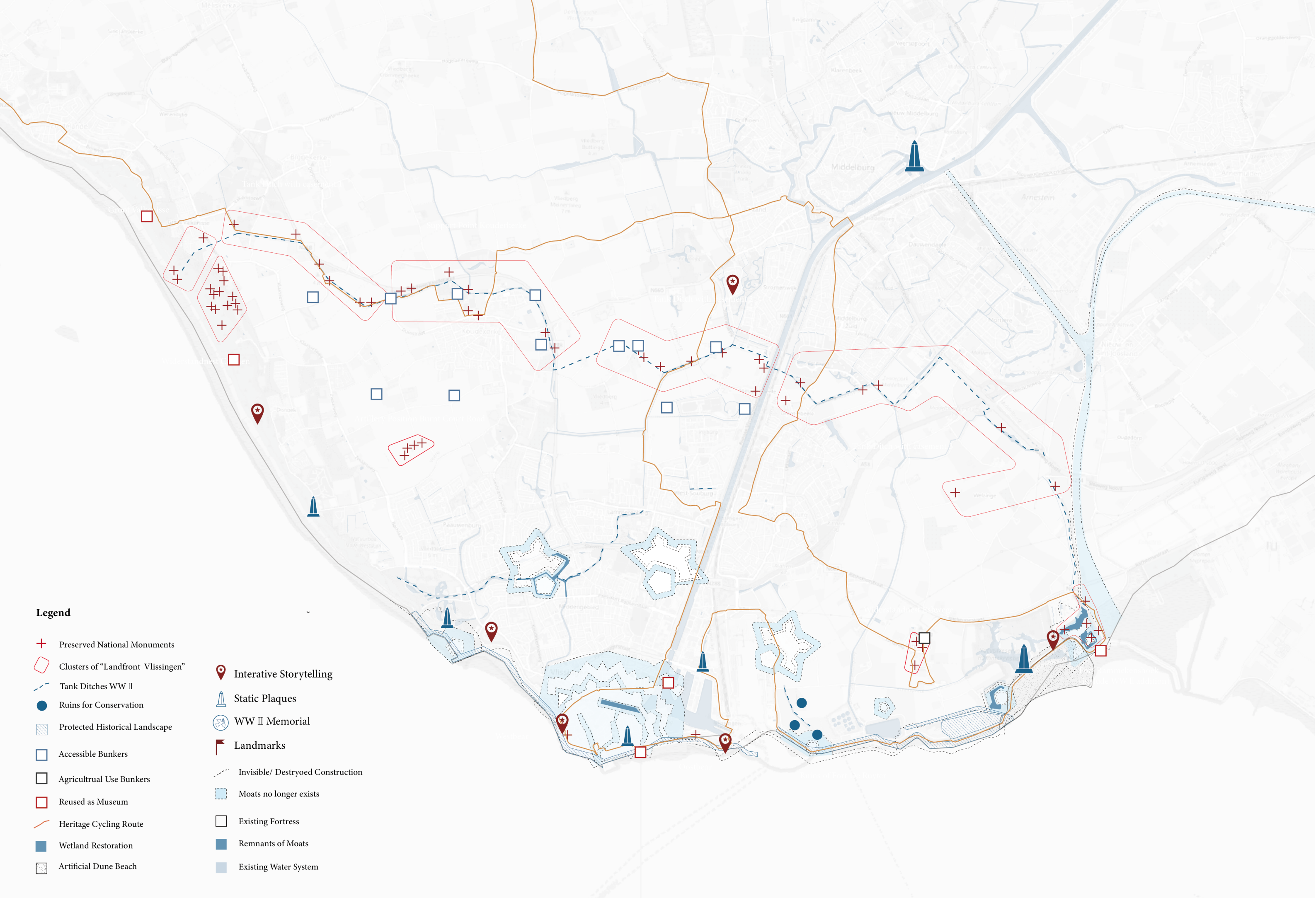
Fort Ruffin

Fort Zoutman

Vesting Vlissingen

Fort De Ruyter

Cannal Connecting Middelburg



Legend

- + Preserved National Monuments
- Clusters of "Landfront Vlissingen"
- Tank Ditches WW II
- Ruins for Conservation
- Protected Historical Landscape
- Accessible Bunkers
- Agricultural Use Bunkers
- Reused as Museum
- Heritage Cycling Route
- Wetland Restoration
- Artificial Dune Beach
- Interactive Storytelling
- Static Plaques
- WW II Memorial
- Landmarks
- Invisible/ Destroyed Construction
- Moats no longer exists
- Existing Fortress
- Remnants of Moats
- Existing Water System

Conclusion

Spatial Legibility

Absence of Physical Remains

Limited Physical Accessibility

Lack of Visual Connectivity

Societal Engagement

- Engagement limited to information panels
- Emotional Responses are mostly triggered by mounments
- Lack of Multi-Sesory Perception

Precedents Study

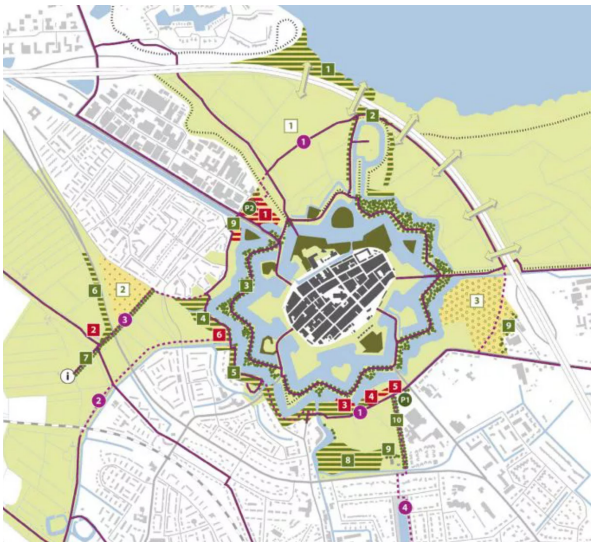
Waterlines in the Netherlands

Integration of amenity routes with existing infrastructure



Design Guidline for The Grebbe Line
Gelderland, NL
REDscape

Recreating the connection between
fortrees remains and urban cotext



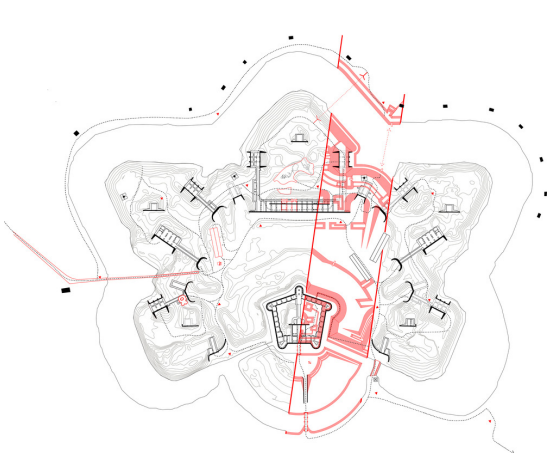
Future Vision for Naarden fortress
Naarden, NL
BoschSlabbers

A museum landscape represent the
history of cannal widening and waterline



Objets Trouvés
Nieuwegein, NL
B+B, H+N+S

Restoration of a band on
rewilded earthen bastion



Fort bij Vechten, National Waterline Museum,
Bunnik, NL
WEST 8

Precedents Study

Redesign of Fort bij Vechten

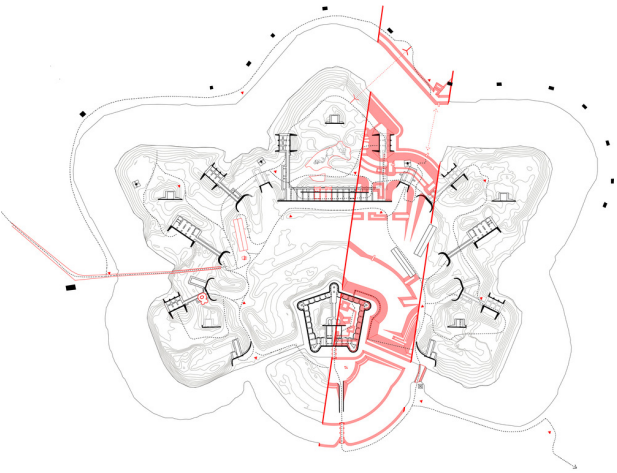
Reconstruction in a Rewilded Landscape

Project name:
Fort bij Vechten, National Waterline Museum
Location: Bunnik, NL
Designer: West 8

Fort bij Vechten was constructed between 1867 and 1870, is one of the 46 fortresses that make up the Nieuwe Hollandsche Waterlinie (The New Holland Waterline), a 85km long and 3-5km wide, military defence line which was made up of an ingenious system of inundation zones, bastions and walled cities. Today, the site is a popular and interactive museum that tells the story of this inventive water system.

After years of neglect, the grassy structure of the fort was completely overgrown. West 8 transformed the site with an 80-meter wide band, in which the fort was returned to its original state. Several existing underground structures have been consolidated, restored and transformed and elements such as bridges and earthworks have been reconstructed. Because the site is surrounded by a wide moat, it is home to numerous rare and endangered plant and animal species. The original vegetation has been made visible again or replanted, creating a rich contrast between nature and culture. (west 8)

What I find particularly insightful about this project is how it thoughtfully addresses the challenges of reconstruction within a rewilded landscape. This is especially relevant to my design reflections on Fort Rammekens, which also lies within an ecologically sensitive area. I deeply appreciate West 8's approach of intentionally framing a contrast between nature and culture, rather than erasing one in favor of the other. It shows how design can both respect ecological processes and reveal historical narratives—an important balance for transforming post-military landscapes into meaningful public spaces today.



Redesign of Fort bij Vechten, West 8



Entrance of Fort bij Vechten, Author



Redesign of Fort bij Vechten, West 8

Precedents Study

Fort Werk aan 't Spoel

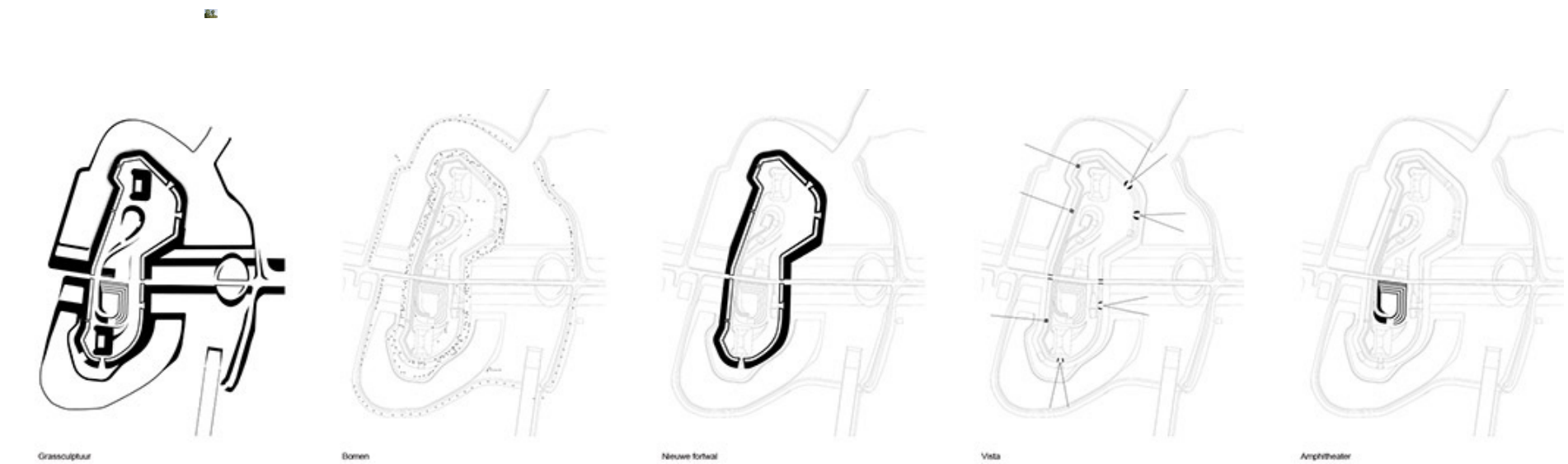
Balance Original Function With Contemporary Uses

Project name:
Fort Werk aan 't Spoel
Location: Culemborg, NL
Designer: Atelier de Lyon + RAAAF

The new fort can be understood as an enormous grass sculpture integrating both new and historical elements such as the bunkers, the bombproof buildings, old inundation locks, the new Fort house and the amphitheatre.

The design takes its inspiration from the fort's rich past without historicizing it. The fort forms the playground for a wide variety of local and regional activities. As such, it forms an example of a new type of public domain and has become one of the major attractions in the New Dutch Waterline (NDW).

The redesign balance the original defensive function with contemporary uses, Key elements designed by Rietveld Landscape and Atelier de Lyon include the pathways, visitor center, and landscape integration, all intended to maintain the fort's visual integrity and connection to the New Dutch Waterline's water-based defense concept. Their design approach was sensitive to the site's natural and historical aspects, using minimalist interventions that respect the fort's original structure while introducing sustainable landscape elements, like wetland areas and native vegetation, to enhance biodiversity.



(RAAAF / Atelier de Lyon,2014)



(RAAAF / Atelier de Lyon,2014)



(Rob 't Hart,2014)

Chapter 4

A Experiential Military History

07 Design Framework

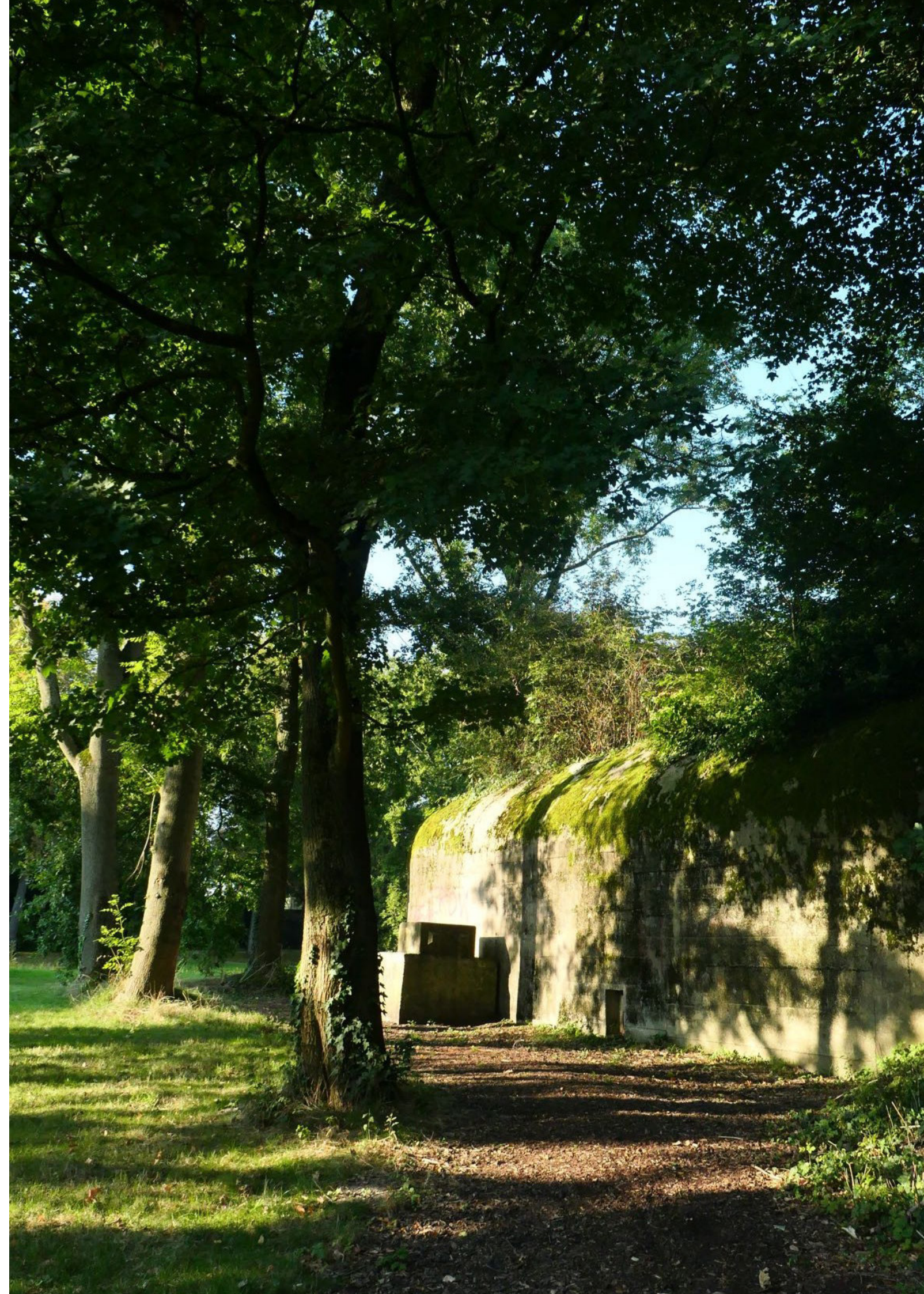
Design Concept

Design Strategy

Historical Narrative Layers

Vision: Coastal and Landfront Belt

08 An Experiential Route of Military Landscape



Design Concept

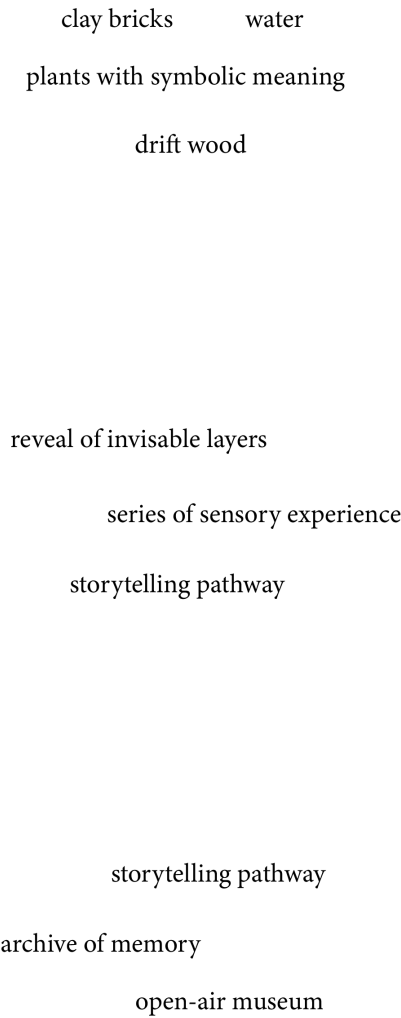
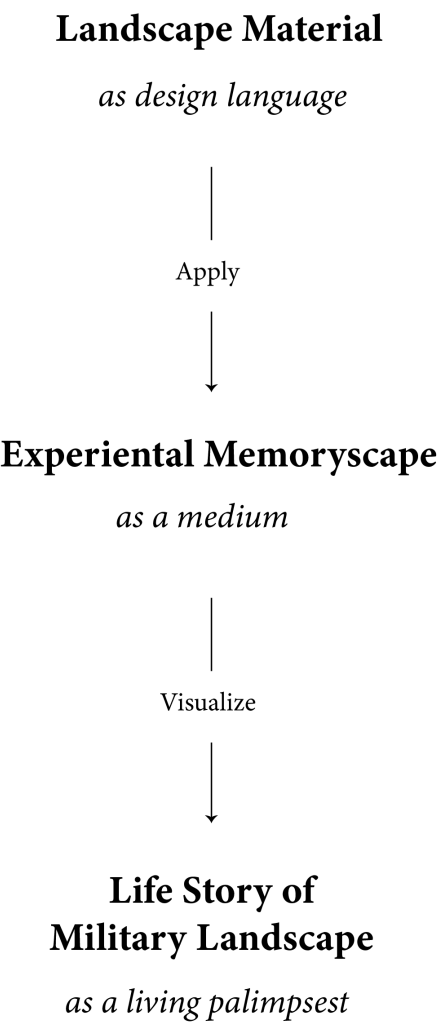
An Experiential Memoryscape

This design proposes an **experiential memoryscape** that unveils the layered history of a military landscape through the spatial language of natural materials.

Elements such as driftwood, stone, water, and plants with symbolic meaning are carefully selected and placed to serve as carriers of memory—each material translating invisible historical layers into tactile and visual experience.

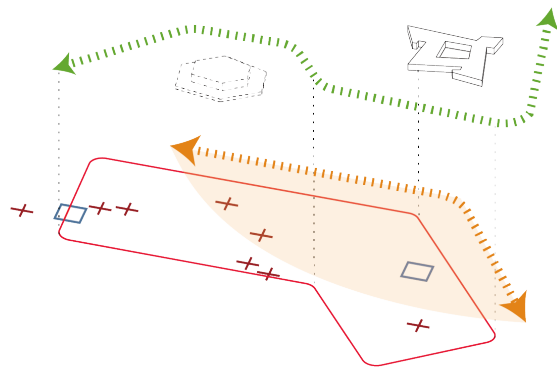
Through **material symbolism** and **spatial storytelling**, the site becomes a medium that engages visitors physically, emotionally, and historically. The pathway leads users through a **sequence of sensory encounters**, allowing them to interact with traces of the past in a landscape that is both reflective and alive.

Ultimately, the design narrates the life story of the military terrain as **a living palimpsest**—an open-air archive of memory that retains its everyday charm while honoring its complex past.



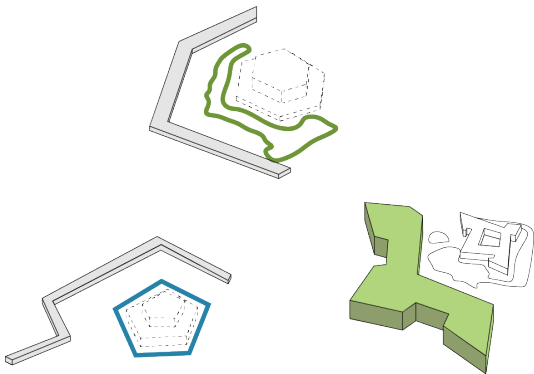
Design Strategy

Stratify



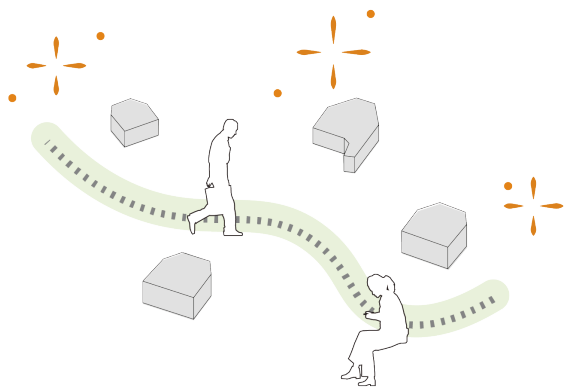
Stratify heritage clusters by historical layers through enhanced visual and spatial continuity, reinforcing their presence within the landscape

Reveal



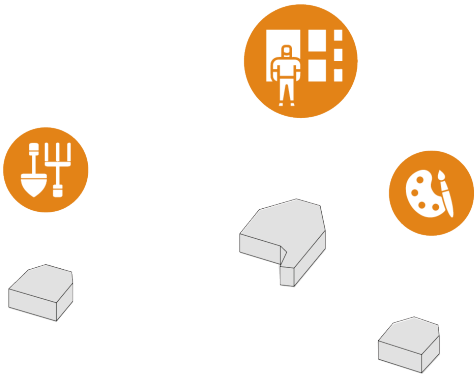
Reveal erased traces and forgotten narratives by uncovering 4 historical layers and intergrating them into the site's experience.

Evoke



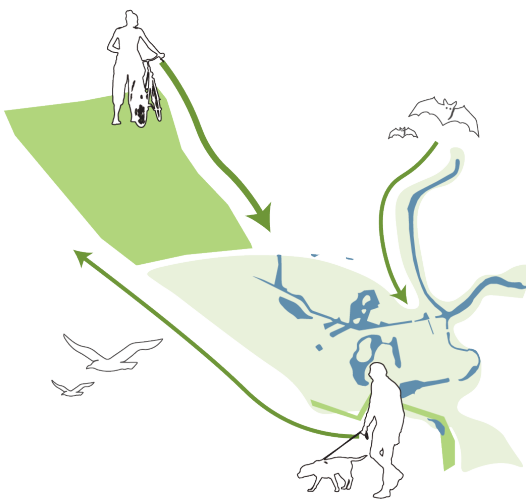
Visitors seek out and re-assemble scenes, to be stitched together through their own experiences and associations.

Repurpose



Repurpose spaces for community engagment and ecological integration, infusing them with the charm of everyday use to foster a dynamic and meaningful connection with the past.

Connect



Connect fractured historical layers and green spaces through two landscape belts, enhancing accessibility and ecological continuity

Layerness of Military Landscape - Four Key Military Landscape Layers

The Battle of the Scheldt (1944-1947)
Military Inundation & Post-war Recovery

The Second World War
The Atlantic Wall in Walcheren

French Time (1795-1814)
Napoleon's Forts System

Mid 16th Century
Fort Rammekens & Medieval Sea Dike

Design Principle Narrative Layer

Mid 16th Century - Military and hydraulic system coexisted

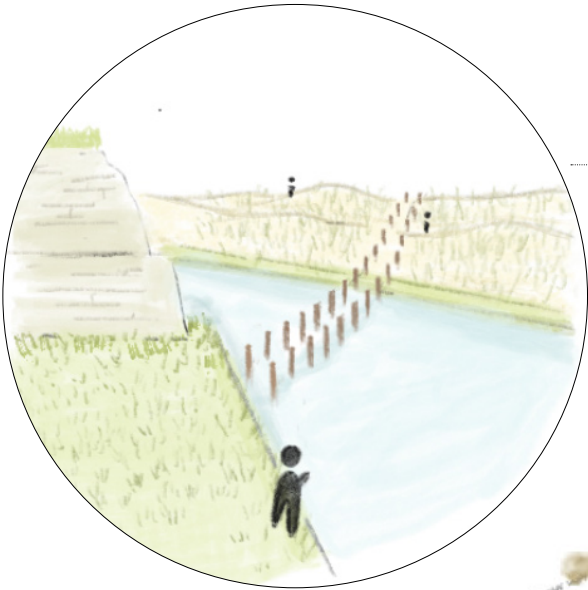
Contextual Landscape Reconstruction

Recreat medieval sea dike remains using natural materials, ensure both authenticity and seamless intergration into existing landscape.



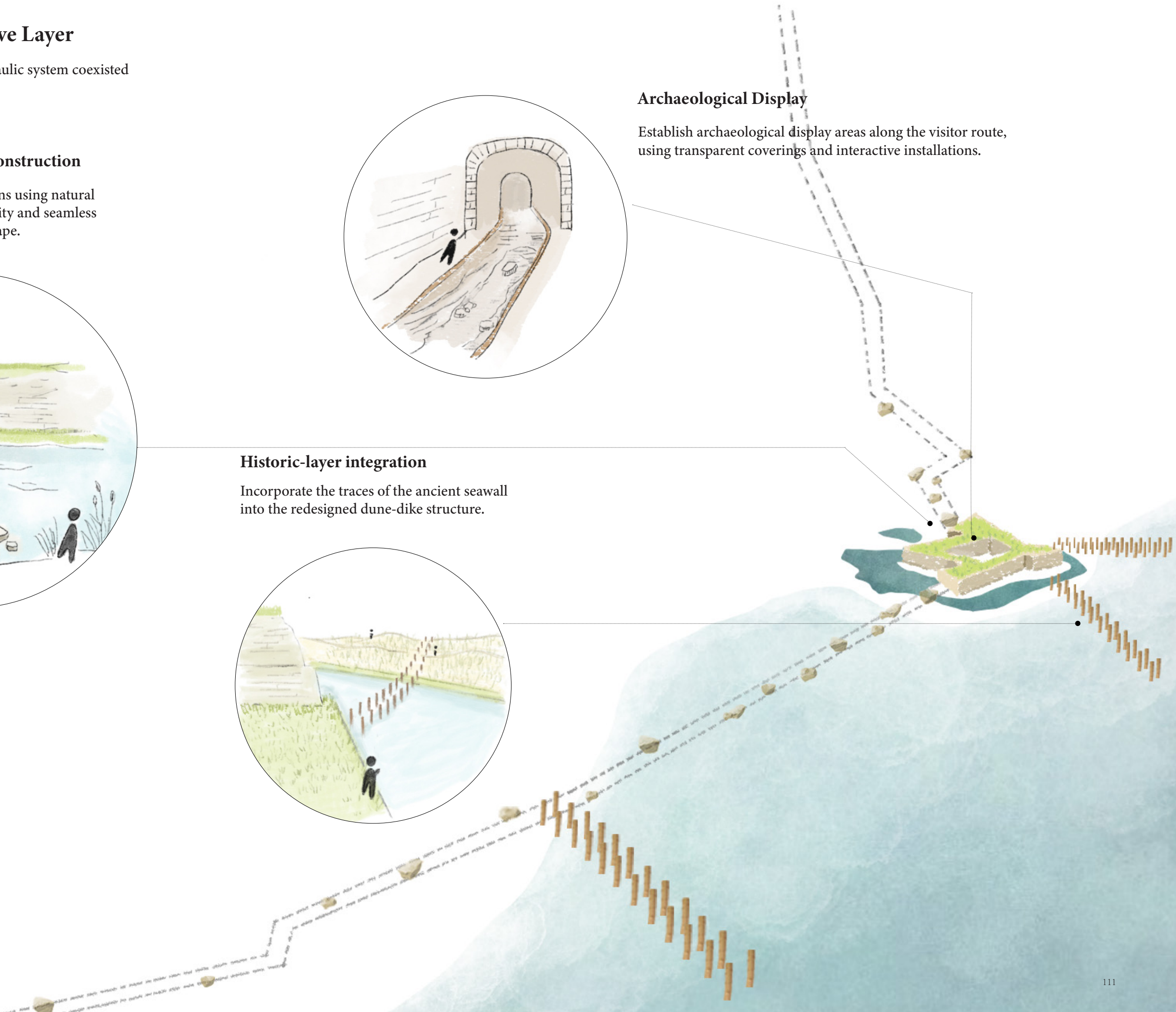
Historic-layer integration

Incorporate the traces of the ancient seawall into the redesigned dune-dike structure.



Archaeological Display

Establish archaeological display areas along the visitor route, using transparent coverings and interactive installations.

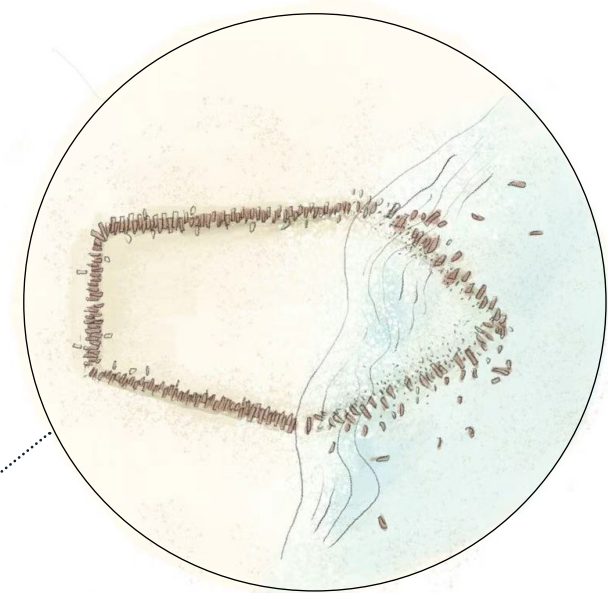


Design Principle Narrative Layer

French Time(1795-1814)- Napoleon Fortification System's Imprint on Landscape

Thrift Wood Fort Outline

Working with natural forces, such as tidal movement, recreate the erasing porcess.



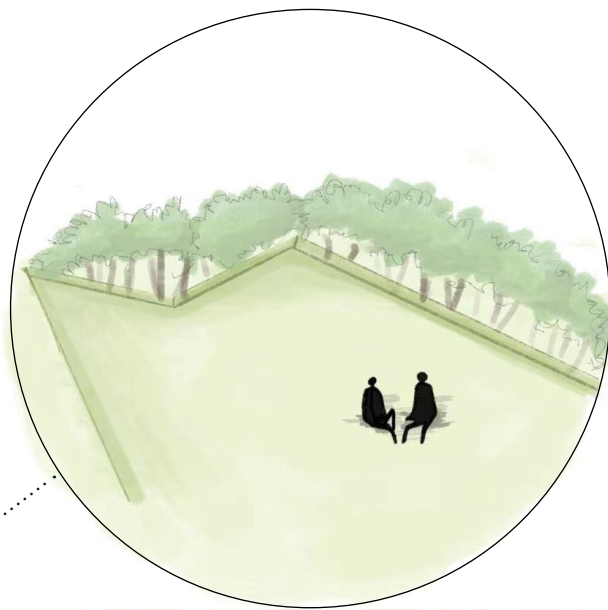
Reconstruct the Earthwork

Reconstruct the original earthworks as rising berms, allowing people to walk along them and follow the traces of the former moat



Outline the Lost

Where remnants have been lost to erosion or time, use layered vegetation to outline their original footprint and gradually integrate them into the landscape.



Design Principle Narrative Layer

The Second World War (1942-1944)- The Atlantic Wall in Walcheren

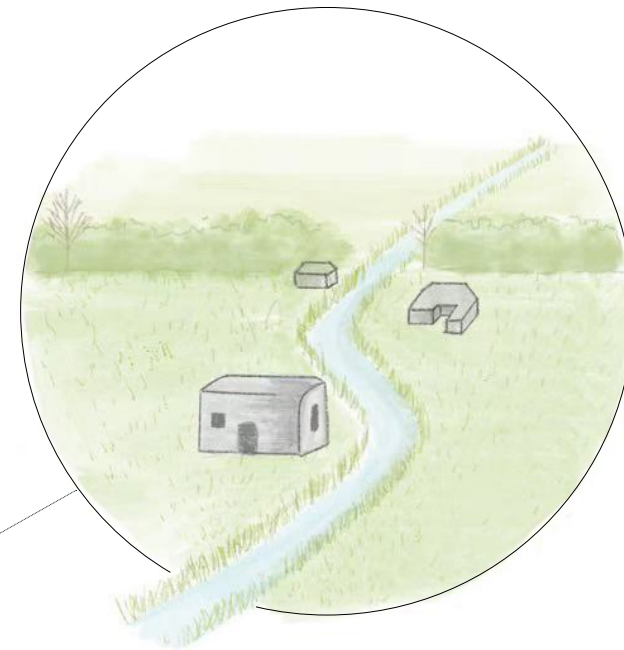
Viewing Platform

Viewing platforms are positioned on elevated dunes to offer a panoramic view of the bunker cluster.



Landscape Framing

Tree linnes and waterways are used to spatially enclose the bunker cluster and direct visitors' movement and visual focus.



Design Principle Narrative Layer

The Battle of the Scheldt (1944-1947) - Military Inundation& Post-war Recovery

Expose Layers in the Dike

At the original boomed spot of the sea dike, cut a "cross-section" of the dike to reveal layers: bomb damage, emergency repairs, and final reconstruction.



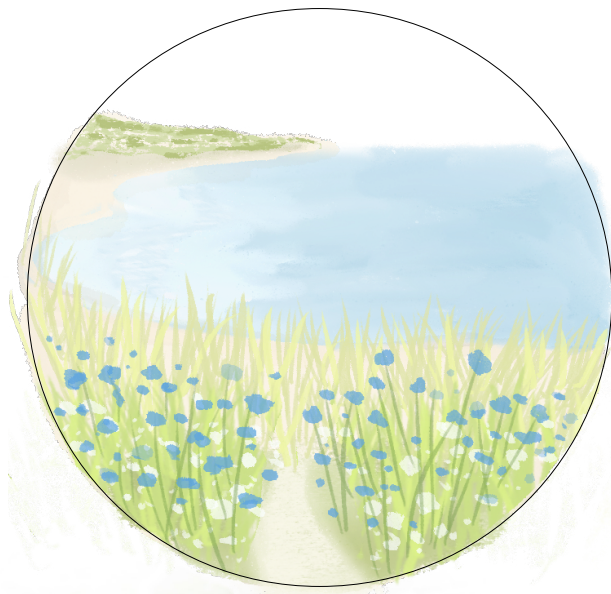
Memory Shelter and Escape Boat

A small wooden hut marks the lost village. Next to it, a boat filled with everyday objects recalls how residents fled the flood. The scene tells a story of sudden loss, survival, and memory.



Saline Bloom as Flood Marker

Plant salt-tolerant, blue-flowering species along the historic inundation line to mark where seawater once stood. These living markers not only trace the flood's extent but also reveal the saline landscape it left behind.



Regional Vision

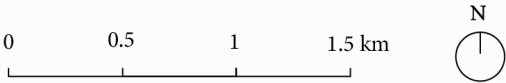
- Legend
- 1 Fort Rammekens
 - 2 Reconstructed Napoleonic earthwork
 - 3 Moat Remnant
 - 4 Rammekens Dune Beach
 - 5 Saline Bloom- Flood marker
 - 6 Rammekenshoek Nature Reserve
 - 7 Medieval Sea Dike Marker
 - 8 Landfront Vlissingen
 - 9 Tank ditch marker



An Experiential Route

Legend

- Cycling Lane
- Kayaking Route
- Walking Path
- Sightseeing Spot
- Existing Nature Reserve
- New Green Spaces



An Experiential Route



Chapter 5

Where historical layers meet

09 Design Exploraion

The Visible: Fort Rammekens and creek

The Invisible: De Nolle and the Left Rduit



Where Historical Layers Meet



De Nolle and The erased Left Reduit



Fort Rammekens and the Creek

Zoom-in Design Site 1 De Nolle Bos & Erased Left Reduit

Along the windswept edge of the Scheldt estuary, where salty air meets grassy dunes, the land bears silent witness to centuries of conflict, transformation, and forgetting. Once, this terrain bristled with military intent — a fortified threshold shielding Vlissingen from sea and land alike.

In the early 19th century, under Napoleon's command, a chain of defenses emerged along the Scheldt. Among them stood Fort de Nolle, guarding the coast with its cannons turned seaward, and the Left Reduit, anchoring the landfront as part of the fortified crown wall that circled Vlissingen.

But as empires shifted and threats faded, so too did the purpose of these massive walls. By the mid-19th century, the French crown wall was dismantled, and the military zones between fort and fort were drained and transformed into productive polders. Fields took root where soldiers once drilled, and the memory of war grew faint.

Yet the landscape would not remain peaceful for long. In 1944, during the Battle of the Scheldt, war returned with a vengeance. Allied forces bombarded Vlissingen to break German resistance and reclaim control over the vital shipping route to Antwerp. The Left Reduit, already aged and repurposed, was heavily bombed, leaving behind rubble and ghosts. To the west, Fort de Nolle, reactivated for World War II, succumbed to military inundation — a deliberate drowning of land that turned defenses into sacrifice zones. The sea was unleashed as a weapon, washing over the earth where walls had once stood.

When peace came, it brought with it an eagerness to rebuild — and to forget. In the postwar decades of urban expansion, the ruined core of the Left Reduit was quietly overwritten. From the 1960s to the 1990s, residential neighborhoods and sports parks took root. Children played football where soldiers once stood guard. Only the gentle curve of an old moat, now quiet and green, hinted at what once was — a watery remnant still flowing, now connected to the edge of the De Nolle Bos.

Further along the coast, Fort de Nolle's place in the landscape was reshaped once more. The sea dike, shattered in war, was rebuilt, and later recast as a dune — a naturalistic defense, soft where the old fort was hard. Over time, the De Nolle forest expanded across the site, stitching trees and paths over the scars of conflict.

The area is now a recreational area, a place of dog walkers and cyclists, with no obvious sign that it was once a military stronghold lost to sea and fire. These are landscapes of palimpsest, where new layers obscure old meanings, and silence speaks of buried pasts. Forts became fields, then homes. Moats became beach. The strategic became ordinary. Yet beneath the surface — in the curves of the moat, the whisper of names like "de Nolle" — the old stories remain, waiting to be read again.

*The forts are gone, but subtles- a waterline, a curve, a name-
still hint at what once stood here.*



Windchime, Nollestand. Edith Kuitert, 2024



THE LEFT REDUIT

FORT DE NOLLE



0 50 100 200m





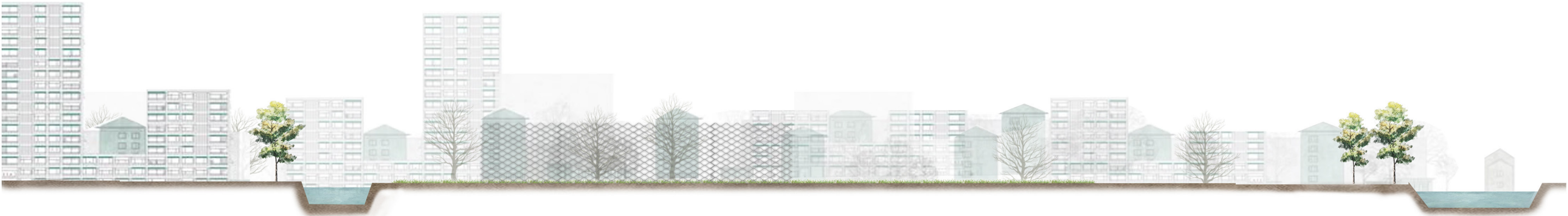
Legend

- 1 Reconstructed Napoleonic earthwork
- 2 Trenches Transition Zone
- 3 WW II Memorial Space
- 4 Bunker
- 5 Saline Bloom- Flood marker
- 6 De Nolle Bos Nature Reserve
- 7 Napoleonic Fort Trace Marker

0 50 100 200m



Detail Design Area Moat Remnant in Residential Area



Detail Design Area Moat Remnant in Residential Area





Zoom-in Design Site 2 Fort Rammekens and the Creek

At the mouth of the Western Scheldt, where the river meets the sea, stands Fort Rammekens — quiet now, but once full of purpose. Built in 1547 by order of Emperor Charles V. Its thick, angled walls were designed to protect important trade routes and guard the port of Middelburg from enemies coming by sea.

Over the centuries, many powers passed through here — Spanish, Dutch, French, German. Each left its mark, changing the fort's role and structure. In the early 19th century, when Napoleon ruled much of Europe, the French reinforced Fort Rammekens as part of a larger military strategy to control the Scheldt estuary. They added new bunkers, walls, and gun positions, preparing it once again for war.

At times it was a stronghold, other times a prison, or a depot for storing weapons and supplies. Its long, low outline watched ships come and go, through years of conflict and calm.

In World War II, the fort found itself in battle once more. The German army used it as a base, and when Allied forces came to take back the Scheldt in 1944, heavy fighting shook the area. Bombs left craters, sea water intruded and parts of the old walls were damaged. But the fort endured, as it always had.

After the war, Fort Rammekens slowly faded from memory. Nature returned. Grass grew over the bunkers. Birds nested in the ruins. The surrounding land — once shaped for defense — was later reshaped for nature, with new tidal creeks and marshes flowing in. Today, the fort sits within a quiet landscape of water and walking trails.

People come here to walk, to rest, or to look out over the sea. Few know the full story. But in the brickwork, in the shape of the earth, and in the stillness of the rooms, traces of the past remain.

This is a place where history is not gone, only resting — waiting for someone to notice, to ask, to listen.

*The battles have faded, the fort stands quiet, yet the slope of a wall,
the stillness of a moat, and the old name remain
— quiet clues to what once was*



Fort Rammekens. Michel's walking page, 2019



RAMMEKENSHOEK CREEK

FRENCH CROWNWORK

FORT RAMMEKENS

MEDIEVAL SEADIKE

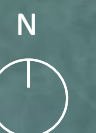




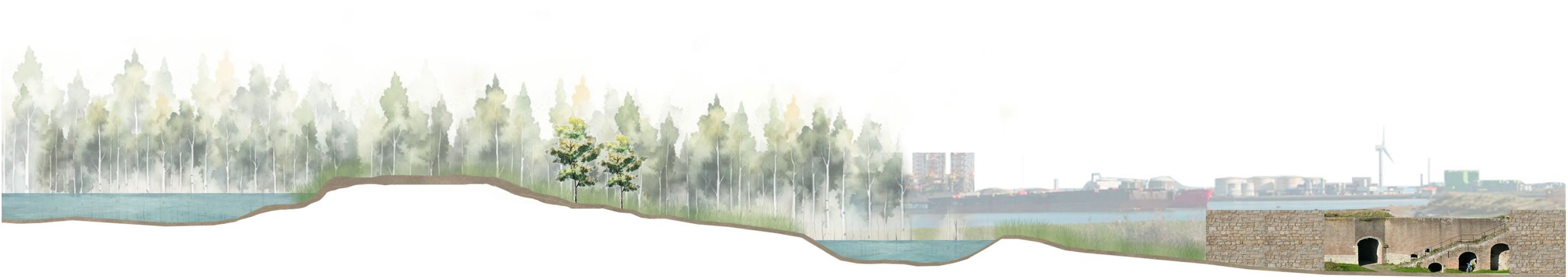
Legend

- 1 Fort Rammekens
- 2 Reconstructed Napoleonic earthwork
- 3 Moat Remnant
- 4 Rammekens Dune Beach
- 5 Saline Bloom - Flood marker
- 6 Rammekenshoek Nature Reserve
- 7 Medieval Sea Dike Marker

0 25 50 100m



Detail Design Area Moat Remnant and Fort Rammekens



Detail Design Area Moat Remnant and Fort Rammekens





Chapter 6

Design Reflection

Conclusion
Reflection
Bibliography



Fig. Havenstraat in Middelburg. Zeeland Library, 1944

Conclusion

SRQ1

In what ways have specific **military transformations** shaped the **layered identity** of the landscape, as reflected in spatial patterns revealed through **palimpsest mapping**?

Based on the four key historical periods in my research, the first two—the construction of Fort Rammekens and the Napoleonic Forts System—focus on the interaction between the city’s function and the landscape’s water system. During this time, Vlissingen’s urban structure was shaped by its moat system and military inundation strategies, which defined the city’s spatial organization and defense.

As the city shifted from military defense to trade, this distinctive moat-fort pattern disappeared: moats became ports, fortifications transformed into villages and polders, canals were reclaimed, and forts lost their original guiding role. This reflects a broader functional transformation that reshaped both the city and its landscape.

In the Second World War, the remains of military structures were influenced by the earlier forts, some of which were reused as part of the Atlantic Wall.

What makes this military landscape unique is how military inundation shaped its scars—not only through human activity but also through natural forces, created a unique creek landscape where both freshwater and salt-tolerant vegetation coexist. Today, it primarily functions as a natural preserve where cultural values and the history behind it are not invisible.

SRQ2

Which **military landscape traces** define each historical layer, and are they **sufficiently legible** to convey the historical value of Walcheren’s military landscape through **societal engagement**?

To assess whether Walcheren’s military landscape can effectively convey its historical value through societal engagement, we must first clarify what those values are. From a dual historical perspective, these include strategic importance, cultural impact, and historical continuity and transformation.

In the first historical layer, dating from the mid-16th century, Fort Rammekens stands as the most prominent and well-preserved trace, making this period highly legible as heritage. In contrast, elements like the medieval sea dike have vanished, leaving little visible evidence of early water-based defense.

The Napoleonic layer is more fragmented: while only partial remnants of the fort system remain, they influenced land use and reshaped the spatial pattern of the surrounding landscape, indicating a transformation that is subtle but traceable.

From World War II, elements of the Atlantic Wall are better preserved. Many bunkers remain intact, while the tank ditch, once a key connective feature, has lost visibility and now functions as a canal—an example of adaptive reuse. This transformation reflects both continuity and reinterpretation of military infrastructure.

The inundation creek, shaped by wartime flooding, its identity and the story behind its formation remain largely illegible today, with few interpretive tools or physical clues to communicate its meaning.

In sum, while some layers are physically and interpretively legible—especially those with preserved structures—others require more effort in storytelling, interpretation, or design to make their historical value accessible and meaningful for public engagement.

SRQ3

How can **design strategies** reveal and enrich the historical and ecological layers of Walcheren’s military landscape, making them **legible, accessible, and meaningful** within a contemporary public space?

To enhance both physical legibility and societal engagement, the design reinterprets and reactivates Walcheren's military landscape through five interwoven strategies: Stratify, Reveal, Evoke, Repurpose, and Connect.

Stratify serves as the core strategy, aligning with the concept of palimpsest. By organizing and differentiating fragmented heritage traces into coherent spatial layers, it reveals the chronological depth of the site. Reveal reinforces this legibility by selectively exposing erased or hidden layers—such as the outlines of military structures or traces of former water systems—bringing the invisible back into the realm of the perceivable. These two strategies work in tandem, allowing visitors to physically navigate and read the layered narratives embedded in the ground.

While the first two strategies focus on cognitive and spatial clarity, Evoke introduces a more subjective dimension. It activates the imagination and emotional memory of individuals through fragments of collective memories and suggestive spatial scenes, encouraging personal interpretation and deeper engagement.

Beyond enhancing the perception and understanding of heritage, the design also seeks to embed history in contemporary life, giving it social and ecological relevance. Repurpose stimulates everyday use by transforming historical remnants into functional spaces for public interaction and environmental education. Connect weaves these moments together through continuous green infrastructure, strengthening spatial and functional relationships across the site.

In conclusion, these five strategies form two interrelated dimensions, one focuses on enhancing the legibility and emotional resonance of historical traces (Stratify, Reveal, Evoke), while the other activates these traces through contemporary functions and spatial continuity (Repurpose, Connect). Together, they form a system that not only makes history visible, but livable .

Reflection

Information collection and selection

One of the major tasks at the beginning of my research was to gather as much information as possible about the history of Walcheren, especially the events of the Second World War. I was particularly fascinated by the bunkers in Middelburg and the inundation creeks. Historical maps proved to be valuable resources, providing me with geographical insights, while archival photographs offered a human perspective and helped me connect emotionally with the past.

During the research, I found that using an existing framework was very helpful. For me, the national monument registry served this purpose well—it documents all existing war remnants with historical value and provides detailed descriptions of each heritage cluster.

Being selective also became important when analyzing heritage. Initially, I attempted to divide the elements into four categories, but the result was unclear. Eventually, I aligned my analysis with the four key historical periods used in landscape biography, interpreting the heritage through these layered perspectives.

Reflection on Research Method

Landscape Biography is my main research method, it helps me to uncover the historical and ecological layers of Walcheren. From the scope of Landscape biography, the landscape is viewed as a living document that has been written and rewritten over time. This aligns well with my focus on the inundation creek, wartime traces, and post-war reconstruction—each representing a different “chapter” in the landscape’s evolution.

Most important, Landscape biography treats the landscape not as a passive backdrop, but as something actively shaped by and shaping human lives. By incorporating archival photos, personal accounts, and local memory, landscape biography lets me connect the intimate human scale, how people lived during the inundation, for example, with broader processes like war, reconstruction, and ecological change. This adds richness and empathy to the spatial narrative.

Design Reflection: Balancing Open Interpretation and Historical Truth

The design intervention in this project remain quite subtle and metaphorical. For example, "Evoke" is a strategy used to trigger the viewer's emotional associations and imagination, emphasising the perceptual nature of the historical experience rather than purely conveying information. This approach has a strong impact, stimulating individual memory and collective perception through incomplete symbols, material remnants, or scenic allusions, giving the site an "unfinished" openness. This strategy helps to avoid the limitations of over-explanation and closed interpretation in traditional commemoration, and makes the space a bridge for the viewer's self-constructed meaning.

However, this de-textualisation and de-explicit approach also brings about a certain "threshold of interpretation". For viewers who lack relevant historical knowledge or cultural background, abstract symbols or "suggestive scenes" may not effectively convey the designer's intention, but may lead to misinterpretation. Especially in spaces involving war, suffering or complex history, the evocation of emotion, if detached from the specific context, may become generalised and romanticised, and even weaken the critical power of history.

Therefore, the challenge of Evoke's strategy lies in how to strike a balance between "open interpretation" and "authentic communication". While avoiding the fixation of history as a single narrative, we need to be wary of over-abstracted expressions that blur history and make it weightless.

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