



Adaptive Reuse of the Waikiki War Memorial Natatorium in Honolulu, Hawaii, USA

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Abstract

This thesis proposes the adaptive reuse of the Waikīkī War Memorial Natatorium, a 1927 Beaux-Arts “living memorial” persisting as a suspended ruin, returning it to active public life through a strategy of “Liquid Memory.” Positioned at the threshold between Honolulu’s Primary Urban Center and its protected marine waters, the Natatorium is a site of “Difficult Heritage” a palimpsest layering the militarized memory of the First World War over the indigenous significance of Kawehewehe, the healing waters that preceded it.

The design rests on a single commitment: memory, across the site, is held by glass, never solid mass. A monument piazza marks each soldier’s name in standing glass boxes arranged in niho manō, a Hawaiian shark-tooth geometry of protection. Beneath the bleachers, an exhibition of glass art walls and a triangulated floor recreates a mountain ridgeline, narrating the site’s history while remaining visible through to the original 1927 concrete behind it. At the basin’s edge, a cantilevered glass walking path reopens circulation for the first time since 1979, suspending visitors above re-engineered, tidally circulating seawater.

Rejecting both faithful restoration and demolition, the design employs a “Ghost Structure” glass and Corten steel tracing the outline of lost mass without replicating it grounded in measured Honolulu tidal data rather than assumed values. Ultimately, the thesis argues for the “profanation” of the monument in Agamben’s sense: not desecration, but returning a consecrated ruin to ordinary use. The surest way to preserve this memorial is to let its water move again, and let the public move through it.

Keywords: Adaptive Reuse, Blue Mind, Difficult Heritage, Neuroarchitecture, Waikiki Natatorium, Narrative Design.

Sinossi

Questa tesi propone il riuso adattivo del Waikīkī War Memorial Natatorium, un “memoriale vivente” in stile Beaux-Arts del 1927 che persiste come rovina sospesa, restituendolo alla vita pubblica attiva attraverso una strategia di “Memoria Liquida”. Collocato sulla soglia tra il Centro Urbano Primario di Honolulu e le sue acque marine protette, il Natatorium è un luogo di “Eredità Scomoda”: un palinsesto che stratifica la memoria militarizzata della Prima Guerra Mondiale sul significato indigeno di Kawehewehe, le acque curative che lo precedettero.

Il progetto poggia su un unico impegno: la memoria, attraverso l’intero sito, è custodita dal vetro, mai dalla massa solida. Una piazza-monumento segna il nome di ogni soldato in teche di vetro verticali disposte secondo il niho manō, una geometria hawaiana a dente di squalo che simboleggia la protezione. Sotto le gradinate, un’esposizione di pareti d’arte in vetro e un pavimento triangolato ricrea il crinale di una montagna, narrando la storia del luogo pur lasciando intravedere il calcestruzzo originale del 1927 alle sue spalle. Sul bordo della vasca, un percorso pedonale in vetro a sbalzo riapre la circolazione per la prima volta dal 1979, sospendendo i visitatori sopra acqua marina ricircolata dalle maree e reingegnerizzata.

Rifiutando tanto il restauro fedele quanto la demolizione, il progetto adotta una “Struttura Fantasma” in vetro e acciaio Corten che traccia il profilo della massa perduta senza replicarla, fondandosi sui dati mareali misurati di Honolulu anziché su valori presunti. In definitiva, la tesi sostiene la “profanazione” del monumento nel senso di Agamben: non dissacrazione, ma restituzione di una rovina consacrata all’uso ordinario. Il modo più sicuro per preservare questo memoriale è lasciare che la sua acqua torni a muoversi, e lasciare che il pubblico vi si muova attraverso.

Parole chiave: Riuso Adattivo, Blue Mind, Eredità Scomoda, Neuroarchitettura, Waikiki Natatorium, Design Narrativo.

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Chapter

01

Introduction

- 1.1 The Crisis of Forgetting
- 1.2 Problem Statement: The Suspended Ruin
- 1.3 Methodology

Waikiki, globally iconic as a paradigm of modern leisure, conceals a deeply stratified architectural and ecological lineage that extends from the sacred indigenous shoreline of Kawehewehe to the imperial monumentality of the early twentieth century. While the surrounding Primary Urban Center has densified into a commercial metropolis, the Waikiki War Memorial Natatorium—a 1927 Beaux-Arts ruin suspended at the ocean's threshold persists as a neglected site of "Difficult Heritage" and environmental stagnation. This thesis proposes the site's adaptive reuse into a Center for Healing, arguing that by synthesizing "Blue Mind" neurobiology with the stratification of "ghost structures," the project transforms a static militarized artifact into a dynamic sanctuary for psychological and ecological restoration.

Chapter 01

Introduction

1.1 The Crisis of Forgetting

In the contemporary urban landscape, the organic relationship between communities and their past has undergone a fundamental rupture. Modern memory is no longer a social or spontaneous phenomenon lived within the “warmth of tradition”; instead, it has been displaced by a historicized sensibility that requires physical objects to sustain it. This shift is driven by what Pierre Nora identifies as the “acceleration of history” an increasingly rapid slippage of the present into a past that is gone for good, resulting in a general perception that “anything and everything may disappear”. Consequently, society creates lieux de mémoire (sites of memory) archives, monuments, and museums precisely because milieux de mémoire (real environments of memory) no longer exist. We act under the imperative to preserve, demarcate, and freeze specific sites because we fear that without such “commemorative vigilance,” the acceleration of history will sweep away the traces of our collective identity (Nora, 1989).

This transition from “living memory” to “history” has profound implications for the built environment. As Nora argues, true memory is “borne by living societies” and remains in permanent evolution, whereas history is merely the “reconstruction, always problematic and incomplete, of what is no longer”. When the living link to a specific past is severed as is the case with the fading generation of World War I veterans the physical structure that honors them ceases to be a milieu of lived ritual and becomes a lieu, a site where memory must be artificially maintained through the “materiality of the trace” (Nora, 1989).

The “crisis of forgetting,” however, is not merely a cultural metaphor but a tangible cognitive disconnection. Recent research in neuroarchitecture suggests that the built environment acts as an “experiential continuum,” where spatial transitions condition our memory and identity. Humans respond cognitively and emotionally to the built environment through closely interrelated systems, where architecture acts as a massive artifact that modulates neural activity (Higuera-Trujillo et al., 2021). When a site of significance is severed from public access, it disrupts the neural mechanisms of “place attachment,” effectively erasing the cognitive maps that link the community to its environment.



Fig. 01: History in Honolulu: Waikiki Natatorium War Memorial
<https://www.dvidshub.net/news/99751/history-honolulu-waikiki-natatorium-war-memorial>

The Waikiki War Memorial Natatorium stands as a potent material lieu de mémoire currently fighting against this “erasure” of the 20th century. Commissioned by the Territorial Legislature in 1921 and completed in 1927, the structure was originally conceived not as a static cenotaph, but as a functional “living memorial” dedicated to the men and women of Hawai’i who served during World War I. However, its official closure in 1979 due to structural deterioration and water quality concerns transformed the active memorial into a “suspended ruin” (Aecom, 2019). This suspension highlights the crisis of forgetting in modern cities: as the facility degraded, it transitioned from a site of active “social” memory to a contested “historical” problem.

The stalemate regarding its future caught between “demolition” and “restoration” mirrors the tension described by Sharon Macdonald regarding “difficult heritage,” where the physical remains of the past become unsettled and troublesome for the present. The Natatorium’s current condition, characterized by “spalling concrete,” “exposed corroded steel,” and “cracking”, serves as a physical manifestation of the fear Nora describes: the anxiety that the past is becoming invisible. If, as Macdonald observes, “grass growing is like forgetting” (Macdonald, 2009:9), the physical decay of the Natatorium represents a gradual amnesia of the specific colonial and military history it embodies.



Fig. 02: Undated historical photograph of the Natatorium’s mauka façade, with clock and diving tower
Honolulu Star-Bulletin File Photo. File: StarBulletin_natatorium.jpg.



Fig. 03: Natatorium under construction in 1927 off the shoreline at the time, viewed from what is now Sans Souci Beach Park
City and County of Honolulu. File: Nat_Construction_Photo_CCH_1927.jpg.

Furthermore, this crisis extends beyond historical amnesia to biological alienation. The closure of the Natatorium represents a double loss: the loss of historical consciousness and the loss of the biological connection to water. As noted in the BlueHealth framework, proximity to “blue spaces” (coasts, rivers, lakes) has historically been central to human settlement and public health, offering “salutogenic” (health-promoting) benefits that are increasingly vital in urbanized societies (Grellier et al., 2017). By fencing off the Natatorium, the city has not only neglected a World War I monument but has also severed a critical link between the urban populace and the ocean, trading a restorative “blue space” for a barrier of exclusion. Thus, to intervene in this ruin is to engage directly with the “terrible dilatoriness” of history (Nora, 1989), attempting to re-anchor a drifting cultural and biological identity through the neuro-architectural rehabilitation of a significant lieu de mémoire.

1.2 Problem Statement: The Suspended Ruin

The Waikiki War Memorial Natatorium stands today as a paradox of urban memory: it is simultaneously designated as a “National Treasure” by the National Trust for Historic Preservation and classified as an “imminent hazard” to public safety. Commissioned by the Territorial Legislature in 1921 and completed in 1927, the structure was originally conceived not as a static cenotaph, but as a functional “living memorial” dedicated to the men and women of Hawai‘i who served during World War I. Designed by architect Lewis Parsons Hobart in a Beaux-Arts style, it asserted a monumental presence characterized by a triumphal arch, a 100-meter saltwater swim basin, and stadium seating for 2,500 spectators, acting as a theater for the performance of aquatic life (Hibbard and Cummins, 1979). However, this “primary element” of the Waikiki coastline has been officially closed to the public since 1979, trapped in a state of physical and legal suspension that Aldo Rossi describes as “pathological permanence” an urban artifact that stands isolated and aberrant, disconnected from the vital currents of the city (Rossi, 1966:59).

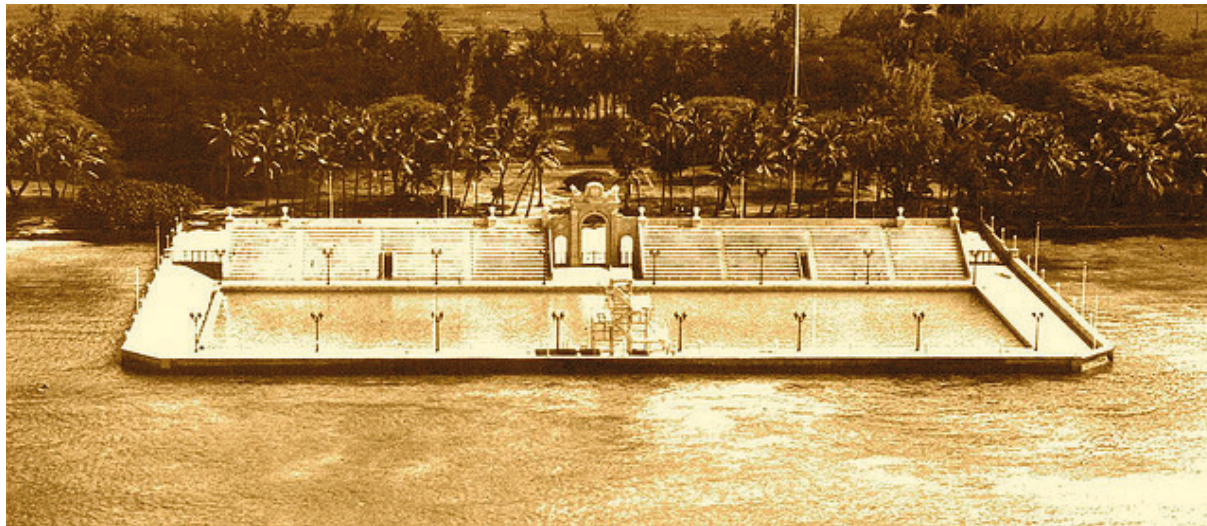


Fig. 04: This Sepia of Waikiki Natatorium War Memorial near Kaimana Beach was done in 1928, just a few years after it opened.

<https://www.civilbeat.org/2015/12/peter-apo-caretaking-our-precious-past/>



Fig. 05: Lewis E. Parsons, The architect of The Waikiki War Memorial Natatorium

https://en.wikipedia.org/wiki/Lewis_E._Parsons

The crisis of the Natatorium is not merely one of material decay, but of a complex “stalemate” between conflicting imperatives of historic preservation and public health regulation. The 2019 Final Environmental Impact Statement (FEIS) diagnoses the facility’s condition as critical, noting “extensive cracking,” “spalling concrete,” and “exposed corroded steel reinforcing” that pose significant risks of collapse. This structural failure is compounded by the obsolescence of its hydraulic function; the original “open system” relies on tidal flushing which, under modern Department of Health (DOH) regulations, is deemed insufficient to maintain water clarity and hygiene. Consequently, the site acts as a “wound” in the urban fabric fenced off and deteriorating effectively severing the continuity of the shoreline promenade and denying the public access to a space originally designated for “innocent refreshment” by King Kalākaua in 1877 (Cjs, 1985).



Fig. 06: Current Beams Situation
Site-visit Photos December, 2025

This condition mirrors what Sharon Macdonald defines as “Difficult Heritage” a past that is recognized as meaningful but remains unsettled and troublesome for the present (Macdonald, 2009). The Natatorium faces the binary conflict typical of such heritage: the choice between “demolition” (cleansing the site to create a beach) and “restoration” (reinstating a function that modern codes no longer permit). Over the last forty years, this binary has resulted in a paralysis of action. Plans for “complete restoration” in the 1990s were halted by litigation regarding health codes, while

counter-proposals for a “War Memorial Beach” which would involve demolishing the swim basin walls met fierce opposition from preservationists who argued it would destroy the site’s historical integrity.

Currently, the Natatorium exists in a state of “abject artefact” status. It is neither a ruin allowed to return to nature nor a functioning building, but a “suspended” entity shielded from view by chain-link fencing and warning signs. In this “No Action” status quo, the facility fails to perform its commemorative function “the living memorial does not bestow the respect and honor due to our World War I veterans” while simultaneously acting as an ecological liability. Furthermore, this physical exclusion disrupts the potential for “Blue Mind” therapy; by blocking access to the saltwater basin, the ruin denies the urban population the restorative neuro-psychological benefits associated with immersion in water (Nichols, 2014). The architectural challenge, therefore, is to break this stalemate not by returning the structure to its 1927 state, but by reimagining it as a Center for Healing, transforming a “pathological” ruin into a “propelling” element of the contemporary city (Rossi, 1966).



Fig. 07: Site Main Entrance Door Warning
Site-visit Photos December, 2025

1.3 Methodology

The research methodology adopted for this thesis is structured as a tripartite synthesis, moving from Archival Diagnostics (understanding the site's paralysis), to Theoretical Framing (defining the lens of intervention), and finally to Design Application (strategies for physical transformation). This approach challenges the traditional binary of “preservation vs. demolition” by introducing a neuro-architectural framework that prioritizes the psychological experience of the user alongside the material reality of the ruin.

1.3.1 Historical and Archival Diagnostics

The first phase involves a forensic examination of the Waikiki War Memorial Natatorium as a “primary element” of the city. This analysis relies on primary source documents, specifically the National Register of Historic Places Inventory and the Final Environmental Impact Statement.

These documents are analyzed not merely to establish chronology, but to diagnose the specific nature of the “stalemate” described by Macdonald regarding “Difficult Heritage” (Macdonald, 2009).

Technical Analysis: The FEIS is utilized to map the “chronology of structure-maintenance issues,” specifically the failure of the concrete cover and the “imminent hazard” status of the deck. This technical constraint is accepted as a driver for design, necessitating an approach that does not seek total reconstruction but rather stabilization.

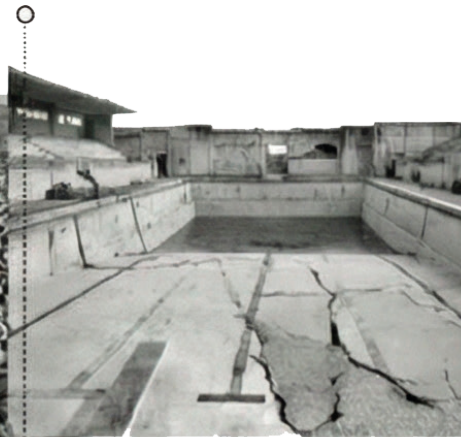
Urban Analysis: Following Aldo Rossi's theory of urban artifacts, the Natatorium is analyzed as a structure of “pathological permanence” an element that persists physically but has been isolated from the urban flow (Rossi, 1966).

1970s – Decline & Closure

Structural deterioration and poor water quality led to progressive closures. By the late 1970s the facility was permanently closed due to safety and maintenance concerns.

1927

The Waikīkī War Memorial Natatorium opened and dedicated. Designed as a salt-water ocean pool and civic monument.



1921

Commissioned by the Territorial Legislature of Hawai'i as a war memorial honoring World War I veterans.

1940s–1960s – Peak Use

Peak period of public use. Hosted swimming meets, military training during WWII, and daily recreation for Honolulu residents.

2000s–Present – Contested Future

Ongoing debate between restoration and demolition. Transition from active use to preservation advocacy, permanently closed due to safety and maintenance concerns.

Fig. 08: The Waikiki War Memorial Natatorium Historical Process

1.3.2 Theoretical Framework

Phenomenology and Neuroarchitecture To resolve the site's crisis, the thesis overlays a theoretical framework that combines Phenomenology with Neuroarchitecture. This phase shifts the focus from the "object" (the building) to the "subject" (the human nervous system).

Sensory Phenomenology: Drawing on Juhani Pallasmaa's critique of "ocularcentrism," the methodology prioritizes the haptic and acoustic experience of architecture over the visual (Pallasmaa, 2005). The design research investigates how the "acoustic intimacy" of the site shielded from the city but open to the ocean can serve as a primary therapeutic tool.

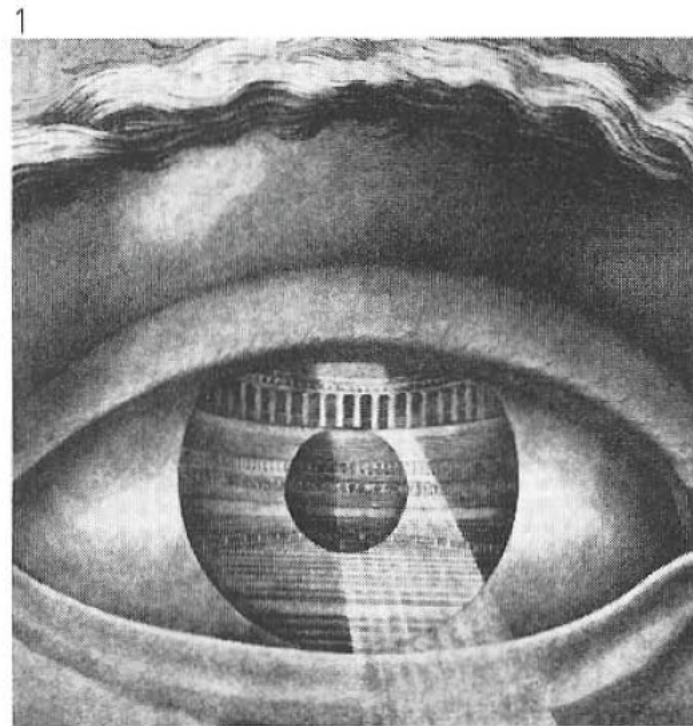


Fig. 09: Ocularcentrism Drawing from 'The Eyes Of The Skin' Book written by Pallasmaa.

Photos are from Page n. 18



OCULARCENTRISM AND THE VIOLATION OF THE EYE

1
Architecture has been regarded as an art form of the eye.

Eye Reflecting the Interior of the Theatre of Besançon, engraving after Claude-Nicholas Ledoux. The theatre was built from 1775 to 1784. Detail.

2
Vision is regarded as the most noble of senses, and the loss of eyesight as the ultimate physical loss.

Luis Buñuel and Salvador Dalí, *Un Chien Andalou (Andalusian Dog)*, 1929. A shocking scene in which the heroine's eye is sliced with a razor blade.

Aito Mäkinen/Finnish Film Archive.

Fig. 10: Ocularcentrism Drawing from 'The Eyes Of The Skin' Book written by Pallasmaa.

Photos are from Page n. 18

The “Blue Mind” Lens: The thesis integrates the “Blue Mind” theory, which posits that proximity to water induces a “mildly meditative state” characterized by lowered cortisol levels and increased cognitive restoration (Nichols, 2014). This is supported by the “BlueHealth” framework, which defines specific “urban acupuncture” interventions to maximize the “salutogenic” (health-promoting) capacity of blue spaces (Grellier et al., 2017). By viewing the Natatorium through this lens, the saltwater basin is redefined not as a sports facility, but as a neuro-architectural device for emotional regulation.

1.3.3 Design Application: Narrative and Stratification

The final phase of the methodology operationalizes the diagnostic and theoretical findings into a coherent spatial proposition. This design methodology moves beyond static preservation to implement a “performative” intervention, utilizing specific strategies derived from heritage theory and neuro-architectural analysis to manage the complex stratification of the site.

Narrative Design: The Building as Palimpsest

To articulate the historical complexity of the Waikiki War Memorial Natatorium, the project employs a Narrative Design approach. This strategy treats the architectural fabric not as a fixed object, but as a “text” or “palimpsest” to be read, where multiple layers of history from the indigenous Kawehewehe (healing waters) to the colonial military monument, to the proposed contemporary layer of public re-use are allowed to coexist (Macdonald, 2009).

This palimpsest is now organised as a legible sequence across the site rather than an abstract overlay. The visitor first encounters the monument piazza, an open plaza at the arrival threshold where the 1927 triumphal arch is read against an outdoor memorial landscape of standing basalt forms for each of the soldiers the Natatorium commemorates. This piazza is the first stratum: the indigenous and military histories meet here in the open air, before any built enclosure is entered, establishing the site’s memorial register at the scale of the city rather than the scale of the building.

Drawing on Juhani Pallasmaa’s assertion that “architecture enables us to perceive and understand the dialectics of permanence and change,” the design organizes spatial sequences to guide visitors through these historical strata. Rather than erasing the evidence of decay, which Pallasmaa argues expresses “the enriching experience of time,” the intervention uses material contrasts to highlight the passage of time. The transition from the restored Beaux-Arts archway, through the monument piazza, into the exhibition galleries beneath the bleachers, and finally onto the cantilevered glass walking path, creates a “temporal tension” that intensifies at each threshold transforming the site into a “lived space” where the visitor’s movement activates the narrative of the site (Pallasmaa, 2005).

Within the bleachers themselves, the exhibition program is deliberately conceived as an interior continuation of this same palimpsest logic. Rather than inserting a conventional gallery of framed panels behind sealed walls, the exhibition uses freestanding glass monumental walls and glass art walls as its primary display surface. The visitor reads the curated historical content the Kawehewehe healing tradition,

the 1927 opening, Duke Kahanamoku, the decades of closure while simultaneously seeing through the glass to the original 1927 concrete vault of the bleacher structure standing immediately behind it. The artefact of history and the surface displaying that history’s image are never separated; the palimpsest Macdonald describes is made literally visible in section, with the visitor’s own reflection forming one more legible layer in the stratification.



Fig. 11: The Carpi Deportee Monument Museum

Photo is from Wikipedia “Museo-monumento al deportato politico e razziale”

The “Ghost Structure” Strategy: Skeletal Permanence

To address the irreversible loss of physical fabric specifically the structural failure of the swim basin walls and the demolition of the original diving tower without resorting to a deceptive “fake” reconstruction, the design employs the “Ghost Structure” strategy. This approach aligns with Aldo Rossi’s concept of the “skeleton,” where the “relief and design of structures appears more clearly when content is neutralized” (Rossi, 1982).

This technique is operationalized through what the project terms the glass walking path, a contemporary reinterpretation of the Perimeter Deck alternative outlined in the Final Environmental Impact Statement (FEIS). By removing the “dilapidated concrete deck” and reconstructing its footprint as a cantilevered structural glass and Corten steel walkway, the design retains the “plan view” and geometry of the historic monument while removing its failing mass. The new structure functions as a lightweight, permeable framework a “skeleton” that outlines the “missing mass” of the original 1927 basin without attempting to replicate its solidity. Crucially, the glass decking does not merely outline this missing mass abstractly: it makes it

visible underfoot. The visitor looks directly through the 50 mm laminated glass floor panel into the live seawater two metres below, watching the swim basin perform the function it always should have, while standing on a structure that openly declares its own twenty-first-century origin.

This transparency allows for the “free flow of water” both literally, through the re-engineered ocean exchange openings that restore tidal circulation to the basin, and visually, through the glass deck itself reconnecting the “urban artifact” with the living ocean. This creates a “contact zone” (Pratt, 1991) where the rigidity of the city and the fluidity of the water meet, allowing the “ghost” of the past to frame the living present. The same ghost logic extends inward: the glass monumental walls of the exhibition beneath the bleachers are structurally and conceptually continuous with the glass walking path outside the same material strategy of transparency over substitution, applied at the scale of the interior gallery rather than the exterior deck.



Fig. 12: Carlo Scarpa, Castelvechio / Fondazione Querini Stampalia

Photo is from <https://architecturetoday.co.uk/last-word/>

Scarpa's bridges offer the clearest historical precedent for this strategy: structures that span across water on slender steel supports, deliberately distinct in material and construction from the stone mass they connect to, yet never competing with it for attention. At the Fondazione Querini Stampalia, Scarpa goes further still, inviting the canal water to enter the ground floor of the building directly refusing the conventional architectural instinct to keep water out, and instead allowing it to become a visible, working part of the occupied space.

The glass walking path adopts this same refusal. Rather than holding the ocean at a safe remove behind a solid deck, the path is conceived as a threshold the water is permitted to pass beneath and through its presence made continuously visible rather than concealed by mass. Where Scarpa lets the canal rise into the ground floor of the Fondazione, this project lets the visitor descend, visually, into the basin: the 40mm laminated glass floor panel suspends the body directly above the live seawater, two metres of depth made legible underfoot rather than hidden beneath a slab. The Corten steel brackets that carry this glass deck perform the same role as Scarpa's slender steel supports beneath the Cangrande plinth a skeleton sized only to hold its load, declaring its own construction openly, never imitating the load-bearing mass of the historic structure it is fixed to.

In this way, the path does not simply reference Scarpa's logic of contrast between old and new; it extends his treatment of water as an active material into the specific condition of a tidal memorial pool. The Natatorium's basin, like the Querini Stampalia's flooded ground floor, is allowed to remain what it always was a working body of water, indifferent to the architecture's desire to contain it while the new structure simply offers a precise, minimal position from which to stand above it.

Chapter

02

Contextual Framework

- 2.1 Honolulu's Layers of Memory: From Kapua to Kapi'olani
- 2.2 The Natatorium Case Study: A "Living Memorial" in Concrete
- 2.3 The Current State (The Ghost Users)

This chapter excavates the deeply stratified identity of the Waikiki coastline, tracing its ontological rupture from the hydro-centric fluidity of the indigenous Kawehewehe, a place of ritual healing and subsistence to the rigid ocular-centrism of the colonial spectacle. This investigation reveals how the imposition of Victorian leisure paradigms and the subsequent Beaux-Arts monumentality of the War Memorial Natatorium calcified a dynamic threshold into a static "abject artefact." By interrogating the friction between the site's history as a "contact zone" and its current state of "pathological permanence," this framework establishes the architectural and ecological necessity of dismantling the barriers of exclusion to reclaim the shoreline's latent therapeutic potential.

Chapter 02

Contextual Framework

2.1 Honolulu’s Layers of Memory: From Kapua to Kapi’olani

The Hydro-Centric Landscape Before the imposition of the rigid Beaux-Arts geometry that currently defines the site, the Waikiki coastline existed as a fluid threshold between land and sea, deeply embedded in indigenous cultural practices. The specific territory now occupied by the War Memorial Complex was historically known not as a fixed plot of land, but as Kapua a place defined by the movement of water rather than the static boundaries of property. As documented in the Final Environmental Impact Statement (FEIS), this area was a locus for surging a traditional surfing break accessed from the Kapua Channel used by the ali’i (ruling chiefs) and for spiritual subsistence (Mooney et al., 2018; Aecom, 2019:4-111). Unlike the Western conception of land as stable real estate, the indigenous layer of memory here is hydro-centric; the ocean was not a “view” to be consumed but a dynamic territory to be inhabited.



Fig. 13: The District of O’ahu and Project Location
Photo is taken from ‘Draft Cultural Impact Assessment for the Waikīkī War Memorial’ p.19

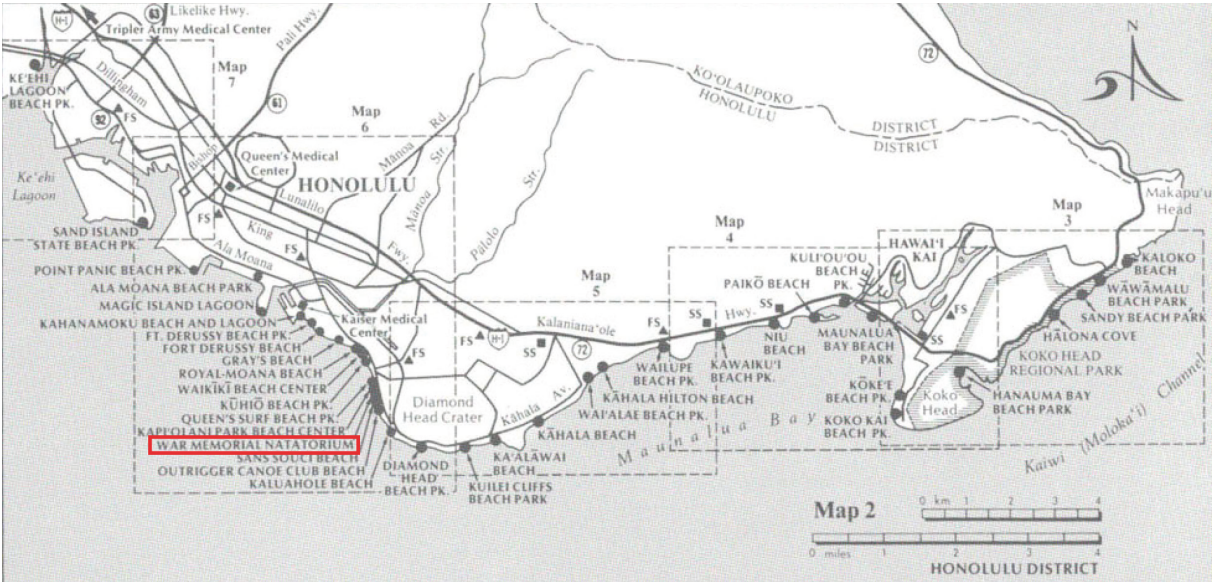


Fig. 14: The Beaches of Honolulu District and Sans Souci Beach Location
Photo is taken from ‘Draft Cultural Impact Assessment for the Waikīkī War Memorial’ p.21

The Healing Waters (Kawehewehe) as Proto-Therapy Central to this indigenous layer is the concept of Kawehewehe (the healing waters). Historically, this coastline was characterized by the mixing of freshwater streams descending from the valleys with the saltwater of the Pacific, creating a brackish condition believed to possess curative properties. This historical usage validates the core hypothesis of this thesis: that the site functioned as a “therapeutic landscape” long before the codified concepts of neuroarchitecture or “Blue Mind” existed.

As noted in the BlueHealth framework, proximity to water has historically been the central organizing principle for human health and settlement. The indigenous practices at Kapua align with Wallace J. Nichols’ assertion that immersion in water provides a “somatic tension” that connects the body to the environment, offering a sense of weightlessness and emotional release. The Kawehewehe were, in effect, a “Blue Space” intervention, utilizing the “soft fascination” of moving water to induce a meditative, restorative state. The recovery of a marine shell fishhook on the site, dated to 1460–1650 AD, serves as material evidence of this deep, subsistence-based relationship between the people and the reef, a connection defined by “lived time” rather than monumental time (Mcintosh and Cleghorn, 2018).



Fig. 15: Gray's Beach in Kawehewehe

Photo is taken from 'Draft Cultural Impact Assessment for the Waikīkī War Memorial' p.57



Fig. 16: Sans Souci Beach next to War Memorial Pool

Photo is taken from 'Draft Cultural Impact Assessment for the Waikīkī War Memorial' p.47

The First Rupture: From Ritual to “Innocent Refreshment” The transformation of this landscape began with the Mahele ‘Aina (Great Land Division) of 1848, which introduced the Western concept of private property to the islands, fracturing the holistic ahupua‘a system (Aecom, 2019:4-100). However, the definitive rupture in the site’s identity occurred in 1877, when King Kalākaua designated the Crown Lands as Kapi‘olani Park. His decree declared the area a “place of innocent refreshment for all who wish to leave the dust of the town streets” (Cjs, 1985).

While this act preserved the land from development, it fundamentally altered its ontological status. The landscape shifted from a place of ritual and subsistence (fishing, healing, chiefly surfing) to a Victorian ideal of leisure and spectacle (Weyeneth, 1991). This transition mirrors the tension described by Pierre Nora regarding the acceleration of history: as the “lived memory” of the Kapua fishery faded, the site was reorganized into a “park” a staged environment for viewing nature rather than inhabiting it (Nora, 1989). This Victorian park model prioritized the visual experience the “scenic view” of Diamond Head (Leahi) and the ocean over the haptic, immersive experience of the water itself. This was the first step in the “museumification” of the coastline, creating a psychological barrier between the city and the sea that the Natatorium’s walls would later physically concrete.

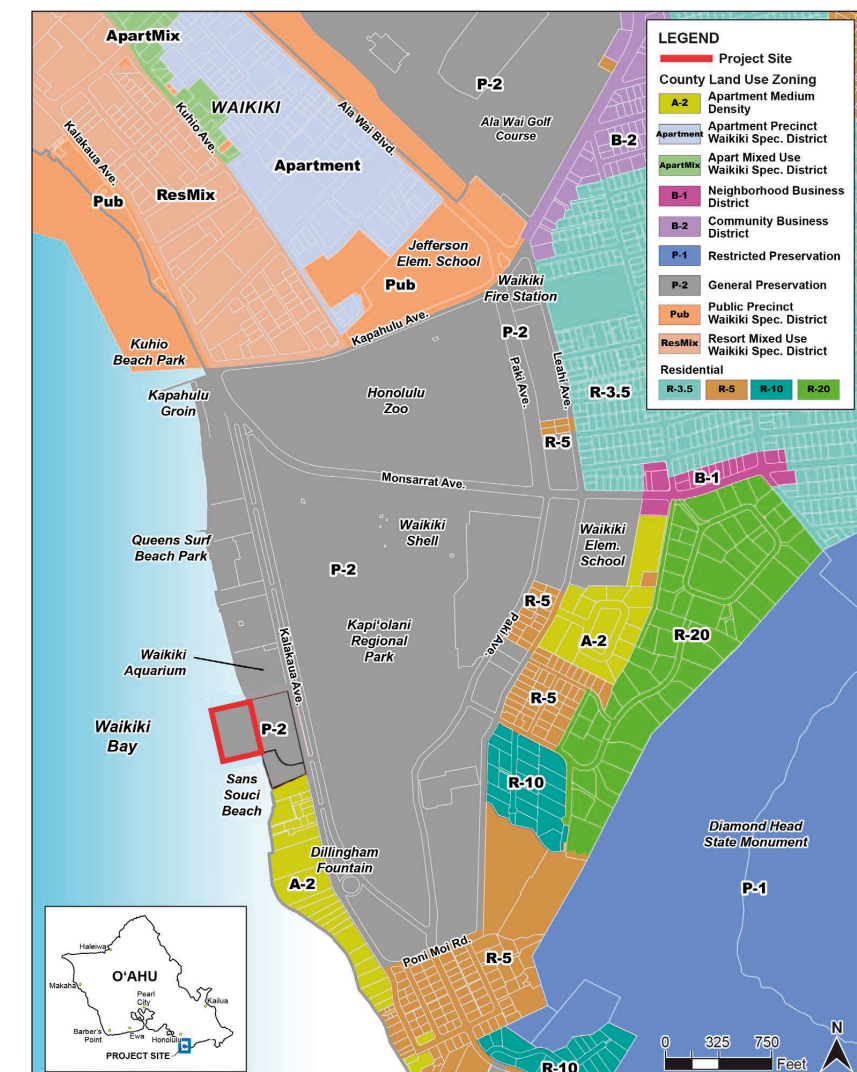


Fig. 17: County Land Use Zoning

Photo is taken from 'Final Environmental Impact Statement for the Waikiki War Memorial Complex' p.82

2.2 The Natatorium Case Study: A “Living Memorial” in Concrete

The Colonial/Military Layer The second dominant stratum of the site is the colonial and military inscription of the early 20th century, which physically solidified the American presence on the Waikiki coastline. Following the conclusion of World War I, the Territorial Legislature of Hawai'i passed Act 15 in 1921, authorizing the construction of a monument to honor the 101 citizens of Hawai'i who died in the conflict and the 10,000 who served (Hibbard and Cummins, 1979). The resulting structure, the Waikiki War Memorial Natatorium, represented a radical departure from the traditional stone cenotaphs of Europe. It was conceived as a “living memorial” a functional facility where the act of swimming would serve as a performative commemoration of vitality and freedom.

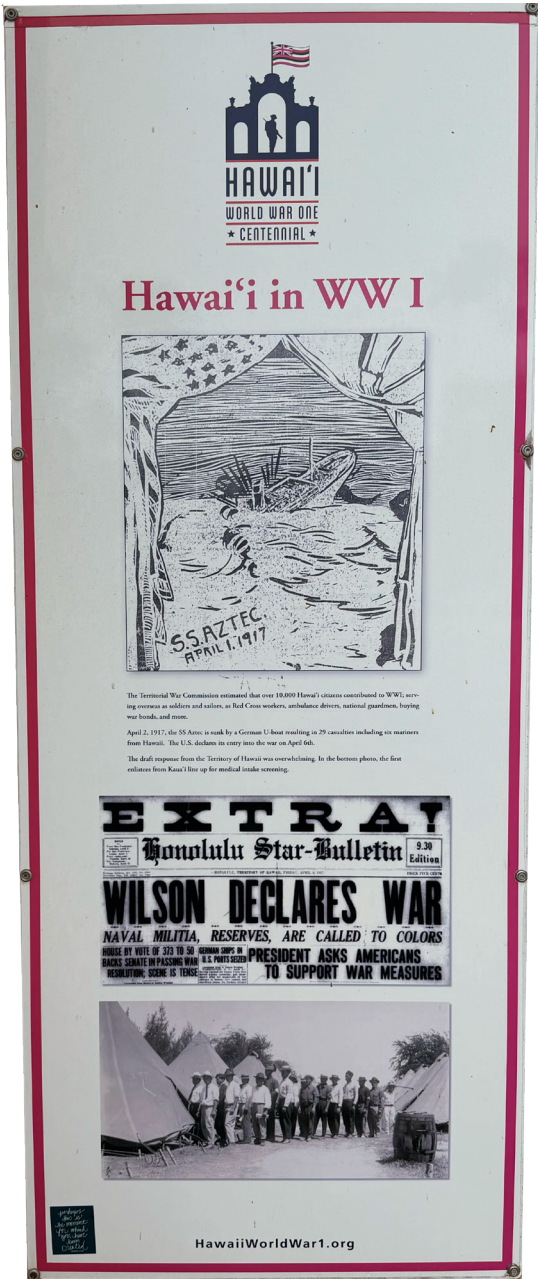


Fig. 18: Site Visit Photos About WW1

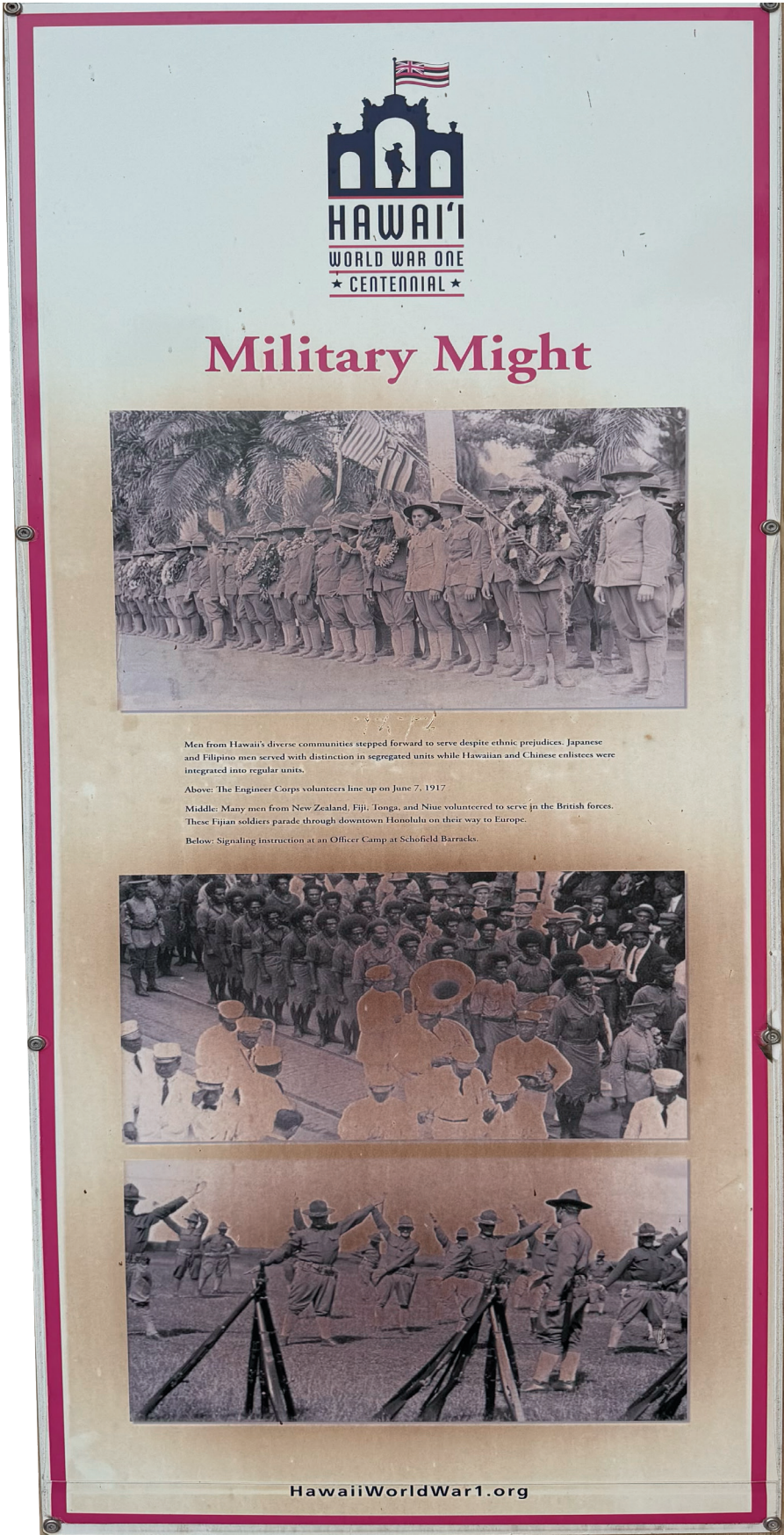


Fig. 19: Site Visit Photos About WW1

Architectural Language: The Beaux-Arts Imposition Designed by San Francisco architect Lewis Parsons Hobart, who won the territorial design competition judged by notables including Bernard Maybeck, the Natatorium was completed in 1927. Architecturally, the complex acts as a “primary element” of the city (Rossi, 1966), asserting a monumental Beaux-Arts vocabulary upon the fluid edge of the Pacific. The design is characterized by a “Grand Beaux-Arts style arch” flanked by arcaded walls and a “concrete wall with incised diamond pattern” that encloses the grounds (Hibbard and Cummins, 1979).

The main entry arch serves as a powerful threshold between the secular space of Kapi’olani Park and the “sacred” enclosure of the water. It features a pediment topped by eagle sculptures and a frieze inscribed with “The War Memorial,” explicitly framing the ocean view through the lens of American military sacrifice (Hibbard and Cummins, 1979). The complex includes a 100-meter saltwater swim basin one of the largest in the world at the time flanked by a 20-foot wide concrete deck and stadium bleachers rising thirteen levels to seat 2,500 spectators. This typology transformed the shoreline into a theater, where the ocean was captured and disciplined within a rigid geometry of reinforced concrete.

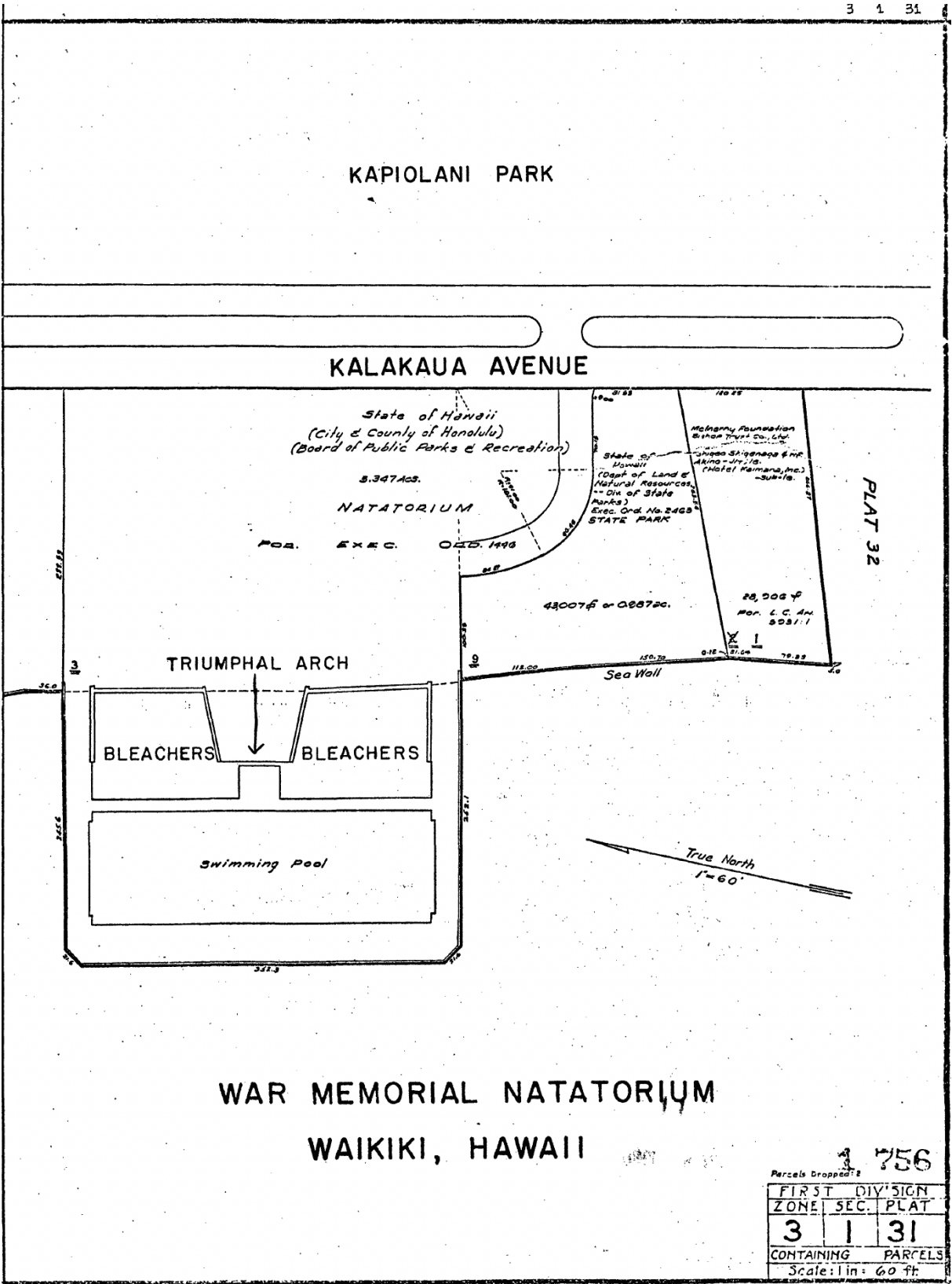


Fig. 20: National Register Of War Memorial Natatorium Drawing
Photo is taken from 'National Register O Historic Places Inventor - Nomination Form' p.6

The Contact Zone: Duke Kahanamoku and “Imperial” Memory The opening of the facility on August 24, 1927 coinciding with the birthday of Duke Kahanamoku cemented its dual identity as a temple of imperial memory and a venue for indigenous athletic persistence. Kahanamoku, the legendary indigenous swimmer, performed the inaugural dive, symbolically bridging the gap between the ancestral Kapua and the modern Natatorium. For decades, the structure operated as a “contact zone” where the rigidity of colonial administration met the fluidity of local aquatic culture.

However, the specific “imperial” memory embodied by the Natatorium is complex. While it honored local veterans, its architectural form was imported from the continental United States, imposing a “squared-off pseudo-classicism” typical of authoritarian structures of the era (Macdonald, 2009). As Pierre Nora argues, such lieux de mémoire are created because the organic environment of memory is disappearing; the Natatorium was an attempt to freeze the memory of the “Great War” in stone before it dissolved into the fluidity of island life (Nora, 1989). Today, this “living memorial” paradoxically stands as a “suspended ruin,” its “exposed corroded steel reinforcing” and “spalling concrete” serving as material evidence of the tension between the permanence sought by the monument and the corrosive power of the ocean it attempted to contain.



Fig. 21: Young swimmers diving in at the Natatorium, undated, c. 1930s
Hawai'i State Archives. File: waikiki-natatorium-memorial-2691530-h.jpg.

2.3 The Current State (The Ghost Users)

The Stasis of “No Action” Since its official closure in 1979, the Waikiki War Memorial Natatorium has existed in a state of suspended animation, defined in the Final Environmental Impact Statement (FEIS) as the “No Action” alternative. While this designation implies passivity, the reality of the site is one of active and accelerating deterioration. The FEIS identifies “significant adverse impacts” associated with this status quo, noting that the structure has transitioned from a public amenity to an “imminent hazard”. The physical fabric of the monument exhibits “extensive cracking,” “spalling concrete,” and “exposed corroded steel reinforcing,” particularly within the swim basin where the interaction of saltwater and oxygen has compromised the structural integrity of the deck and seawalls. In 2004, this decay culminated in the partial collapse of the pool deck, a physical manifestation of the failure to negotiate the site’s future.

The Architecture of Exclusion The perimeter of the Natatorium is now defined not by the Beaux-Arts grandeur of its arch, but by the architecture of exclusion: chain-link fencing, padlocked gates, and “Keep Out” signage. These barriers create a psychological and physical rupture between the city and the ocean, transforming the “living memorial” into a “dead zone” within the vibrant Waikiki coastline. As noted in the analysis of “Difficult Heritage,” such sites often become “abject artefacts,” where the inability to decide between restoration and demolition results in a landscape of neglect that signals a collective inability to process the past (Macdonald, 2009). The “visual blight” of the crumbling concrete and graffiti serves as a barrier to the “Blue Mind” experience, denying the public the neuro-psychological benefits of visual and physical access to the water (Nichols, 2014).



Fig. 22: View of WWMN from the southeast at Sans Souci Beach



Fig. 23: View of WWMN from the north, on the shoreline promenade adjacent to the Waikiki Aquarium

The “Ghost Users” Despite the physical closure, the site is inhabited by “Ghost Users” a shadow population that occupies the periphery of the ruin. The FEIS acknowledges the presence of “loitering, camping, and vagrancy” within the secured zones, indicating that the structure has become a refuge for marginalized populations who, like the building itself, are excluded from the polished narrative of Waikiki tourism.



Fig. 24: Drone View of WWMN

The Trespassers: The “No Action” status has created a liability where trespassers frequently breach the perimeter, risking injury to inhabit the decaying bleachers (Aecom, 2019:4-140).

The Displaced Veterans: The memorial function has been forced outside the walls; annual Veterans Day and Memorial Day services are conducted on the lawn or in the parking lot, creating a spatial disconnect where the ritual of remembrance is physically separated from the object of memory.

The Spectators: Tourists and locals at the adjacent Sans Souci Beach engage with the Natatorium only as a backdrop a “picturesque ruin” viewed from a distance, its function as a “contact zone” for swimming and social interaction severed.

Pathological Permanence In its current state, the Natatorium exemplifies what Aldo Rossi describes as “pathological permanence” an urban artifact that persists physically but is functionally disconnected from the city, generating friction rather than flow (Rossi, 1966). The structure “stands on thin ice,” much like the modern condition of the self described by Pallasmaa, where the “dominance of the eye and the suppression of the other senses tends to push us into detachment, isolation and loneliness”. The locked gates enforce this ocular-centric detachment, preventing the haptic and embodied experience of the water that was the monument’s original purpose. Thus, the “current state” is not merely a structural failure, but a failure of the city to integrate its memory, leaving the Natatorium as a “ghostlike apparition” that haunts the shoreline (Pallasmaa, 2005).



Fig. 25: Drone View of WWMN

Chapter

03

Theoretical Framework

- 3.1 Architecture of the City and Memory
- 3.2 The Multisensory Experience
- 3.3 Psychology of the Aquatic Interior (Blue Mind)

Grounded in the intersection of urban morphology and neuro-aesthetics, this chapter interrogates the Waikiki War Memorial Natatorium as a “pathological permanence” a severed fragment of collective memory that persists in physical form while retreating from social utility. Moving beyond the “hegemony of vision” that reduces the ruin to a static image, the theoretical framework synthesizes Aldo Rossi’s urban artifacts with Juhani Pallasmaa’s advocacy for “haptic” embodiment, arguing that true preservation requires a shift from the retinal to the visceral. By overlaying these architectural phenomenologies with the neurobiological imperatives of “Blue Mind” theory, the thesis establishes a rigorous justification for the site’s metamorphosis: transforming a frozen lieu de mémoire into a living instrument of “soft fascination” that actively recalibrates the cognitive and emotional well-being of the city.

Chapter 03

Theoretical Framework

3.1 Architecture of the City and Memory

The theoretical foundation of this thesis rests on the understanding that the city is not merely a collection of functional buildings, but a repository of consciousness. As Aldo Rossi argues in *The Architecture of the City*, the city is the “collective memory of its people,” and memory is the guiding thread of the entire urban structure (Rossi, 1966). Within this framework, the Waikiki War Memorial Natatorium is analyzed not as a recreational facility, but as an “urban artifact” (*fatto urbano*) a primary element that participates in the process of a city’s development in a permanent way, capable of accelerating or retarding the urban life of the Waikiki coastline.

3.1.1 The Urban Artifact and Collective Memory

Rossi posits that the city is a “man-made object” and a work of art, defined by its history and form rather than its current function. He underlines that the value of the city and the urban artifact is estimable not by its function but by its permanent form, since form is bound to the time of the city, while function is changeable and can be lost over time. Consequently, the value of an urban artifact like the Natatorium does not reside solely in its original use as a swimming pool, but in its persistence as a physical sign of the collective past a locus, a singular place determined by space, time, and the succession of events, from the indigenous Kawehewehe healing tradition to the colonial military memorial, that have occurred there.

However, the persistence of the Natatorium is currently problematic. Rossi classifies permanence into two categories: historical or “propelling” permanence, and “pathological” permanence. The Natatorium, fenced off and deteriorating since 1979, has become a pathological element: a mummified presence that retards the life of the Waikiki coastline rather than participating in it. It stands as a cadaver of history physically present, socially disconnected, visible but untouchable.

This thesis identifies the precise mechanism of that pathology and names the design response to it. The Natatorium’s permanence became pathological at the exact moment its water stopped circulating when the original 1927 seawater exchange openings, undersized from the outset, failed to keep the basin clean enough to remain open. The building’s stagnation was therefore never only social or administrative; it was first and foremost hydraulic. It follows that the design intervention proposed here treats the re-engineering of tidal water exchange as the precondition for any other claim to “propelling permanence” without moving water, no programme, however generous, would convert the site back into a functioning urban artifact. The two large re-engineered ocean openings on the basin’s western wall, calibrated to achieve six natural exchange cycles per day, are therefore not a secondary engineering footnote to this thesis. They are its first architectural argument: the precise point at

which Rossi’s abstract category of “pathological permanence” is given a concrete, falsifiable design answer.

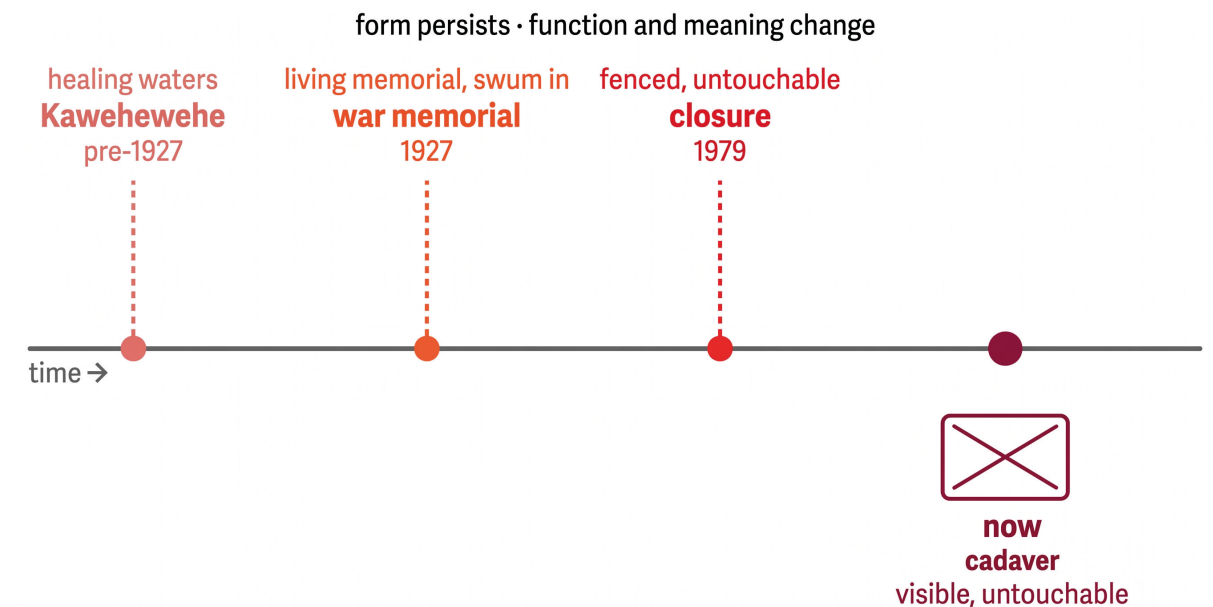


Fig. 26: Timeline of WWMN

3.1.2 Lieux de Mémoire and the Crisis of Lived Experience

This pathological state illuminates the crisis described by Pierre Nora regarding the “acceleration of history.” Nora argues that modern societies have suffered an irrevocable rupture with the past; we no longer live in *milieux de mémoire* (real environments of memory) where tradition is social and spontaneous. Instead, we are forced to create *lieux de mémoire* (sites of memory) monuments, museums, and archives precisely because “there is so little of it left” (Nora, 1989:7).

The Natatorium is a quintessential *lieu de mémoire*. Built in 1927 to freeze the memory of the First World War before it dissolved, it was conceived as a “living memorial” a deliberate hybrid of monument and milieu, intended to honour the dead through the ordinary, repeated act of swimming rather than through static commemoration alone. Yet, as Nora warns, “memory is life... in permanent evolution,” whereas history is merely a “reconstruction, always problematic and incomplete, of what is no longer” (Nora, 1989:8). By closing the facility in 1979, the city stripped the site of precisely this living quality. It ceased to be a place of ritual swimming, gathering, learning and collapsed into a purely historical object: an archive of concrete and salt-stained steel, visited but never inhabited.

The design responds to this crisis by re-establishing two distinct registers of memory side by side, rather than collapsing the site into a single commemorative gesture. At the threshold, the monument piazza an open plaza where 101 standing basalt surfboard forms commemorate each serviceman the Natatorium honours functions explicitly as a *lieu de mémoire* in Nora’s sense: a constructed, deliberate site of remembrance, static and legible, encountered before any built enclosure. Immediately beyond it, however, the glass walking path and the reactivated swimming basin function as a *milieu de mémoire*: memory carried not by monuments but by lived, repeated, bodily

practice walking the loop, swimming the basin, the tide moving in and out six times a day. The piazza commemorates; the water re-inhabits. Nora's distinction, often treated as a historical loss with no remedy, is here given a literal architectural plan: the lieu sits at the arrival sequence, the milieu sits at the centre of the site, and the visitor moves physically from one register of memory into the other.

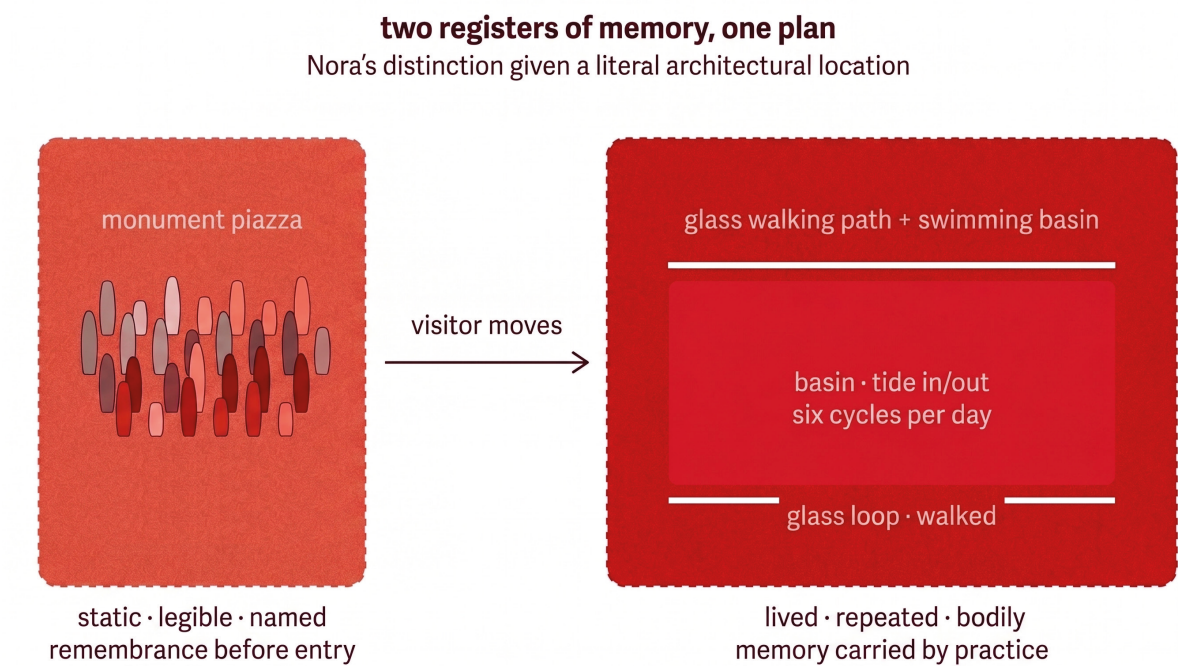


Fig. 27: Memory transition between inside and outside

3.1.3 Reconciling Artifact and Experience

The intersection of Rossi and Nora provides the directive for the design intervention. If the city is a “theater of human events” (Rossi, 1966), the Natatorium cannot remain a static backdrop. Nora observes that lieux de mémoire only survive if they possess “the capacity for metamorphosis, an endless recycling of their meaning” (Nora, 1989:19). Therefore, the restoration of the Natatorium must not be a nostalgic return to 1927 which Rossi would dismiss as naïve “urban naturalism,” the fantasy of recovering a lost original state but a transformation that re-inhabits the existing structure with new rituals proper to the present moment.

To convert the Natatorium from a “pathological permanence” back to a “propelling” one, this thesis re-establishes the connection between the locus (the site) and the citizenry through three concrete, designed mechanisms rather than a single symbolic act: the monument piazza, which restores public assembly and civic ritual at the entry; the exhibition galleries beneath the bleachers, where glass monumental walls layer historical narrative directly against the original 1927 concrete vault, allowing the citizenry to read the site’s history while remaining physically inside the urban artifact itself; and the cantilevered glass walking path, which restores everyday circulation the most ordinary, least monumental form of civic use — around the full perimeter of the basin for the first time since 1979. Where the original 1.3.3

draft of this thesis proposed a generalised sensory “Blue Mind” engagement as the mechanism of re-inhabitation, this revised framework locates that re-inhabitation specifically in the act of walking, swimming, and looking through glass embodied practices made possible by named, designed architectural elements rather than by an undifferentiated atmosphere of wellness.

3.2 The Multisensory Experience

3.2.1 The Critique of Ocularcentrism: From Retinal to Embodied Architecture

The theoretical framework of this design intervention fundamentally challenges the “hegemony of vision” that dominates contemporary architectural production. As Juhani Pallasmaa argues, Western culture has suffered a gradual “ocularcentrism,” where the eye is privileged as the organ of certainty, control, and distance, while the other senses are suppressed as archaic or private. This hierarchy results in an “architecture of the visual image” buildings designed for the instant persuasion of the retina rather than the slow inhabitation of the body (Pallasmaa, 2005).

In the context of the Natatorium, a purely visual restoration a building returned to photogenic completeness behind a fence, to be looked at rather than used would simply re-stage the pathology Rossi describes in a more attractive form. The “nihilistic eye” of modern tourism tends to flatten a ruin into a picture or a stage set, detaching the viewer from the existential reality of the site. Pallasmaa posits that “the body knows and remembers”; architectural meaning is not intellectualized but derived from archaic responses stored in the haptic memory the tensions in the muscular system, the positions of the skeleton. The intervention must therefore move beyond the visual to the haptic.

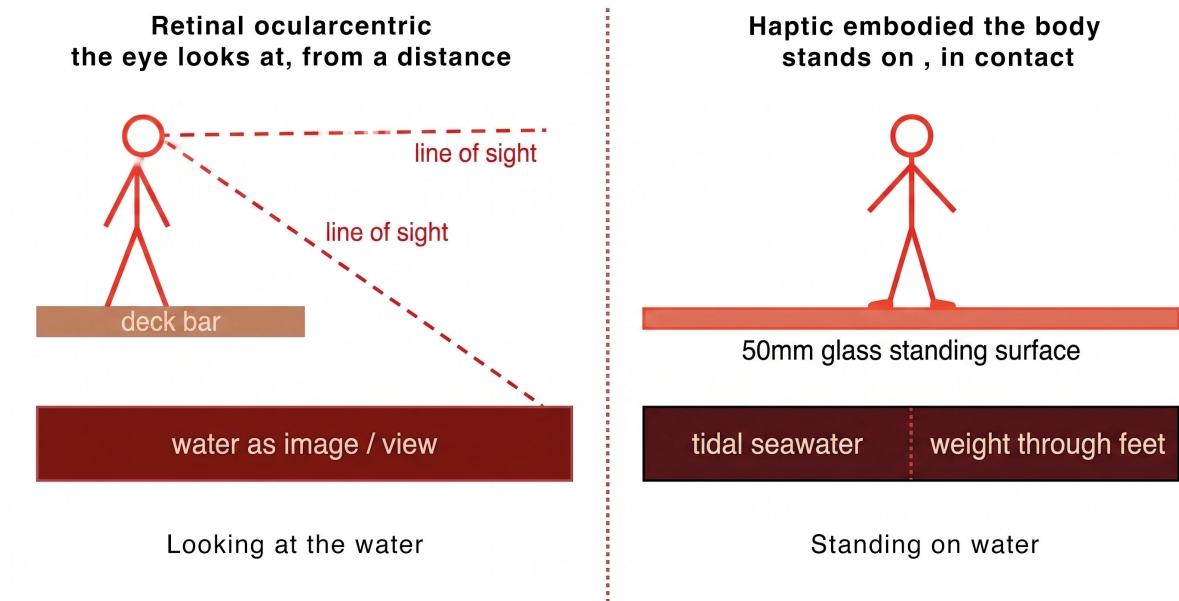


Fig. 28: From Retinal to Embodied Experience

This thesis operationalizes that shift in the single most literal way available to the project: by making the visitor's own body, rather than their eye alone, the instrument through which the basin's water is perceived. The 50 mm laminated glass floor panels of the walking path are not a viewing device in the manner of an observation deck; they are a standing surface. The visitor does not look down at the water as one looks at an exhibit; they feel their own weight transferred through their feet, through glass, onto a structure suspended two metres above tidal seawater. This is haptic rather than retinal precisely because the visitor's skeleton, balance, and proprioception are engaged before their analytic eye is the body registers the suspension over open water before the mind has finished composing the view. The same logic governs the exhibition galleries: the glass monumental walls are positioned so the visitor's own reflection appears superimposed on the historical image and on the 1927 concrete vault behind it, collapsing the conventional museological distance between viewing subject and viewed object into a single overlapping surface.

3.2.2 The "Shape of Touch" and the Patina of Time

The stabilization of the Natatorium's physical fabric is approached through the concept of "tactile value." Unlike the flatness of modern materials, which reject the dimension of time, the existing worn concrete of the Natatorium's swim basin possesses a patina of wear that enriches the experience of time. As Pallasmaa notes, natural materials allow vision to penetrate their surfaces, expressing the story of their origins and the history of human use (Pallasmaa, 2005).

This aligns with Sharon Macdonald's observation on "difficult heritage," where the materiality of the building itself acts as a witness. The erosion, the spalling concrete, and the salt-stained walls are not merely defects to be corrected but are the "shape of touch" of the ocean upon the city.

The design makes this dialogue between old and new explicit through a deliberate, legible material boundary rather than a uniform restoration finish. The repaired 1927 Beaux-Arts concrete its surface matched in aggregate and texture, its patina respected wherever structurally sound is everywhere visually and materially distinct from the new Corten steel of the bracket structure and the laminated glass of the deck and exhibition walls. This is not a stylistic preference; it is the architectural expression of Pallasmaa's "shape of touch" principle stated as a hard material rule: a visitor's hand should always be able to tell, by touch alone, which surface belongs to 1927 and which belongs to the present intervention. The rough, salt-worn concrete of the bleacher and the precise, cool surface of the Corten and glass are allowed to remain in permanent tactile contrast the "lived time" of the past and the "inhabited time" of the present, touching but never merging.

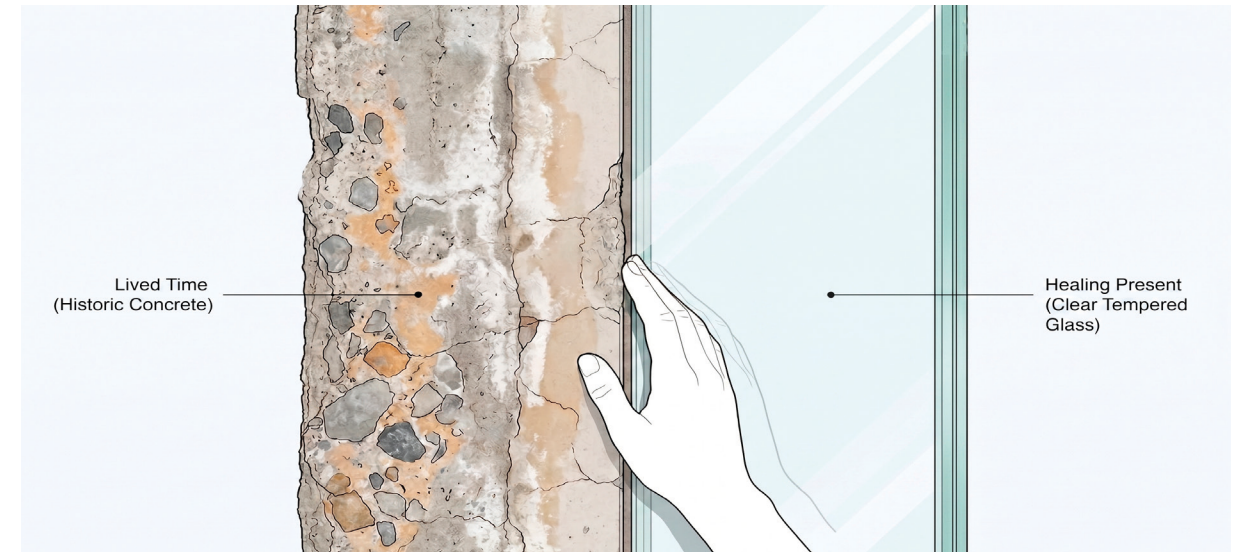


Fig. 29: Concrete and Glass Material Composition Representation

3.2.3 The Glass Threshold: Seeing Through as a Form of Touch

Pallasmaa's critique of ocularcentrism does not require architecture to abandon vision altogether; it requires vision to be reintegrated with the body rather than held apart from it as a distanced, controlling sense. Pallasmaa notes that natural materials allow vision to penetrate their surfaces, expressing the story of their origins and the history of human use; this thesis extends that same principle from material surface to architectural transparency, treating glass not as a barrier that merely permits looking, but as a threshold that the body must physically stand on or stand against in order to see through it at all.

This is the precise role the glass walking path and the exhibition's glass monumental walls play in the project. Neither is a window in the conventional sense, offering a view from a position of safety and distance. The 50 mm laminated glass floor panel requires the visitor's full weight to be transferred onto it before the view through it becomes available; seeing the water below is inseparable from the somatic risk and trust of standing on it. Likewise, the glass art walls beneath the bleachers are positioned close enough to the visitor's body that their own reflection, the gallery's ambient light, and the historical image displayed on the glass surface all merge into a single layered view of the original 1927 concrete vault standing behind it. In both cases, seeing through is conditioned on standing close to or standing on; vision is never permitted to operate from a comfortable remove, but only from a position the body has had to physically commit to. This is the project's specific architectural answer to Pallasmaa's demand that architecture move from the retinal to the embodied: transparency is not given freely, but earned through proximity.

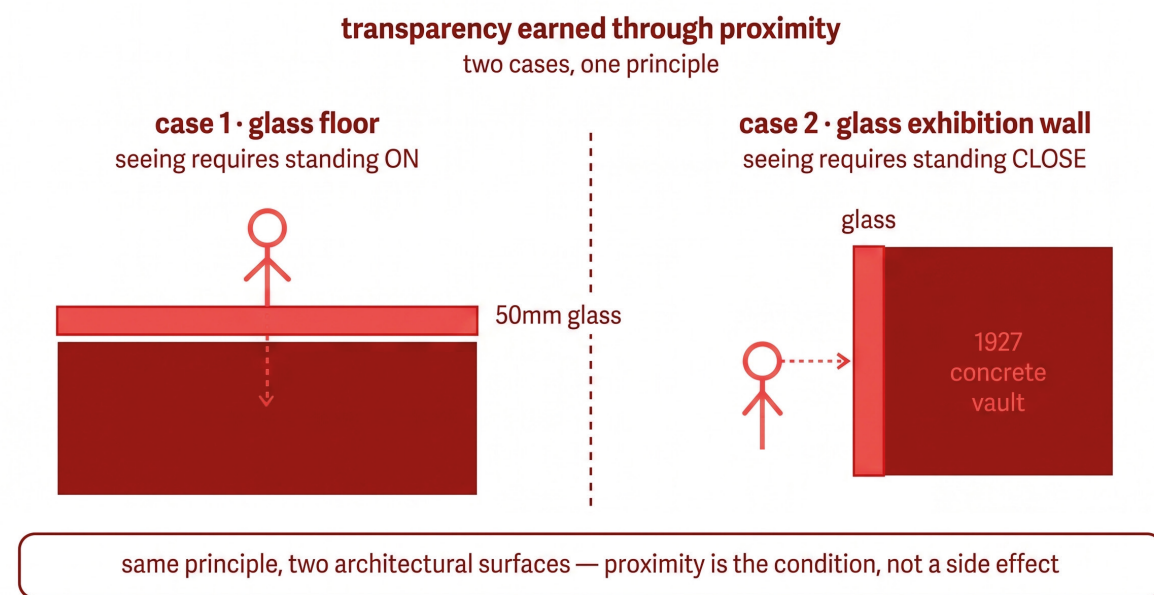


Fig. 30: Glass threshold - Proximity as the condition of transparency

3.3 Psychology of the Aquatic Interior (Blue Mind)

3.3.1 The Neurobiology of Water Contact

To justify the specific decision to prioritize active swimming and walking over passive, distanced observation, this thesis draws on the framework of “Blue Mind.” Defined by marine biologist Wallace J. Nichols, “Blue Mind” is “a mildly meditative state characterized by calm, peacefulness, unity, and a sense of general happiness and satisfaction with life in the moment” (Nichols, 2014). This state stands in contrast to “Red Mind,” the condition of chronic stress and overstimulation associated with the contemporary urban environment. Recent neuro-architectural research validates that proximity to water has measurable physiological effects: lowered heart rate and blood pressure, increased production of dopamine, serotonin, and oxytocin, and activation of the parasympathetic nervous system (Nichols, 2014:331; Higuera-Trujillo et al., 2021).

This thesis identifies two distinct architectural conditions calibrated to produce this state at different intensities, both drawn from the same continuous basin of circulating seawater. The first is the act of swimming itself the 2.5-metre basin, uniform across its full 100-metre length, restored to active athletic use for the first time since 1979, engaging the body in the rhythmic, repetitive, low-cognitive-load movement the Blue Mind literature associates with stress reduction. The second is the act of standing above that same water without entering it: the glass walking path suspends the non-swimming visitor directly over the basin, offering the calming physiological proximity to water that Nichols describes, without requiring immersion at all. Where the swimmer receives the somatic and parasympathetic benefit of direct bodily contact with water, the walker on the glass loop receives a closely related

benefit through visual and structural proximity alone both bodies are held by the same architecture, at different depths of engagement with the same basin.

3.3.2 The “Water Premium” and the Architecture of Proximity

The human brain places a disproportionately high value on the presence of water a phenomenon Nichols describes as the “Water Premium,” reflected in real estate markets but rooted in a deeper evolutionary association between water, safety, and resource abundance (Nichols, 2014).

In the current closed state of the Natatorium, this premium produces a specific and acute frustration: the site offers the visual promise of water while denying physical access, a basin visible through chain-link fencing but permanently out of reach. This is the precise psychological condition the glass walking path is designed to resolve, without requiring the visitor to enter the water at all. By suspending the visitor’s body directly above the basin, closer to the water in vertical terms than almost any conventional pool deck permits, the path converts passive visual promise into the maximum possible physical proximity short of full immersion. A visitor who does not swim still receives the architectural benefit Nichols describes: not a view of water from a safe distance, but standing contact with a surface that is structurally and experientially of the water rather than merely near it.

3.3.3 Soft Fascination and the Differentiated Pace of the Loop

The psychological justification for the project’s spatial pacing relies on the concept of “soft fascination.” Environmental psychologists Stephen and Rachel Kaplan argue that modern urban environments demand “directed attention,” producing cognitive fatigue, whereas water provides a sensory experience that holds attention effortlessly through rhythmic movement and light reflection, allowing the brain’s executive functions to rest (Nichols, 2014).

The glass walking path is designed as a continuous loop precisely because a loop, unlike a linear path with a fixed destination, removes the cognitive demand of wayfinding and permits soft fascination to dominate the visitor’s attention. There is no correct direction to walk and no endpoint that must be reached; the visitor’s pace is set by the swimmers and the tide below rather than by any architectural cue toward an exit. This same logic differentiates the loop from the monument piazza at the entry: the piazza, with its organised cluster of standing memorial forms, is designed for “directed attention” slow, deliberate, individually focused encounters with named history while the loop beyond it shifts the visitor into the diffuse, rhythmic attention Kaplan describes. The sequence from piazza to loop is therefore not only a spatial transition but a deliberate transition in cognitive mode, from directed historical attention to restorative soft fascination, mirrored directly in the plan of the project.

Chapter

04

Site Survey & Analysis

- 4.1 Technical Survey
- 4.2 Territorial Analysis (Waikiki vs. Ocean)
- 4.3 SWOT Analysis

The forensic interrogation of the Waikiki War Memorial Natatorium reveals a structure caught between its Beaux-Arts ambition and the corrosive reality of the “aggressive marine environment.” While designated a “National Treasure,” the monument’s fabric has succumbed to a chronology of material failure the spalling concrete and fractured basin walls signal a deeper, hydraulic cause: the undersized 1927 water exchange openings that never adequately circulated the tidal basin, precipitating the 1979 closure.

Mapping the site’s position between the frenetic Primary Urban Center along Kalākaua Avenue and the protected Marine Life Conservation District to the west, this diagnosis identifies the ruin not as a liability, but as a latent threshold a hinge between city and reef rather than a wall dividing them. The rehabilitation proposed here moves beyond faithful restoration toward re-engineered tidal exchange, a monument piazza restoring civic assembly at the threshold, an exhibition beneath the historic bleachers, and a cantilevered glass walking path reopening the basin’s perimeter for the first time since 1979 reconciling historic preservation with the practical demands of a living, circulating sea.

Chapter 04

Site Survey & Analysis

(The Diagnostics)

4.1 Technical Survey

The technical diagnosis of the Waikiki War Memorial Natatorium reveals a structure defined by the tension between its monumental ambition and its material failure. A forensic review of the Final Environmental Impact Statement (FEIS) establishes that the facility is not merely aging but actively disintegrating under the “aggressive marine environment”. This section maps the “chronology of structure-maintenance issues” and catalogs the “character-defining features” that constitute the site’s historic identity, providing the empirical basis for the “Ghost Structure” intervention strategy.

4.1.1 Chronology of Structural Decay

The trajectory of the Natatorium from a “living memorial” to an “imminent hazard” documents a failure of material resilience against the coastal forces of Waikiki. Commissioned by the Territorial Legislature and opened in 1927, the structure exhibited signs of distress shortly after its inauguration. As early as 1929, the pool required dredging and repairs to the deep section to ensure diving safety. By 1949, a major refurbishment was necessary to address early onset corrosion, costing the Territory \$81,886 for structural and electrical installations, including a new concrete floor around the pool.

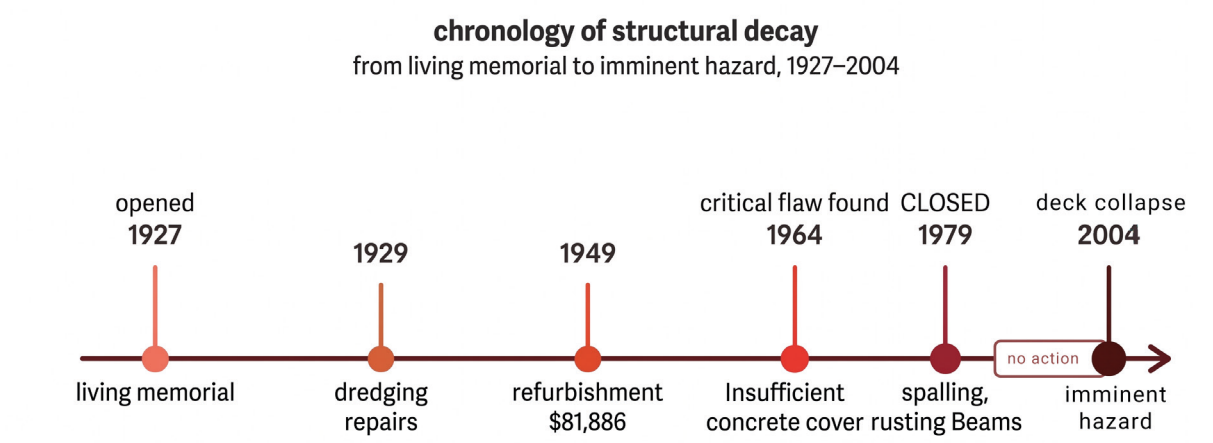


Fig. 31: Chronology of structural decay

The definitive structural crisis emerged in the post-statehood era. A 1964 assessment revealed a critical flaw in the original construction: the depth of the concrete cover over the steel reinforcing bars was insufficient to protect the metal from saltwater intrusion, a defect compounded by the poor quality of the original concrete mix. This porosity allowed the ocean to attack the structure from the inside out. In 1979, following inspections that documented extensive “spalling” (peeling) concrete and rusting support beams, the Department of Parks and Recreation officially closed the facility to the public. The “No Action” period that followed accelerated this decay, culminating in May 2004 when a section of the pool deck collapsed into the ocean, categorizing the site as an “imminent collapse hazard”.

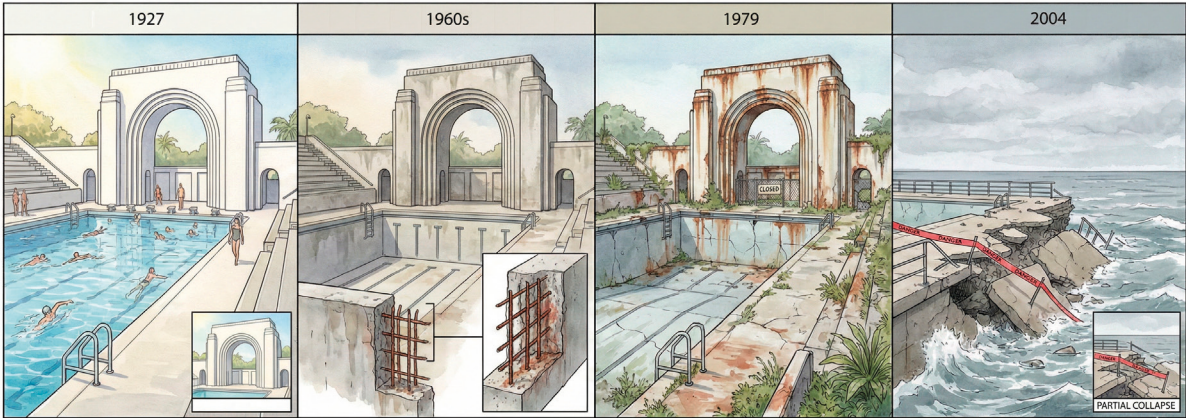


Fig. 32: Timeline of Four Stages

4.1.2 Material Diagnostics: Spalling and Corrosion

The current physical state of the Natatorium is characterized by the advanced degradation of its reinforced concrete elements. The 2019 FEIS diagnostic survey records “extensive cracking,” “excessive deflection,” and “exposed corroded steel reinforcing” throughout the complex (Aecom, 2019).

The Swim Basin: The 100-meter by 36.6-meter saltwater basin, originally designed with a “dredged remnant reef” bottom, relies on a perimeter seawall that is now “visibly out of plumb”. The Diamond Head and ‘Ewa seawalls exhibit severe concrete spalling, where the expansive force of rusting rebar has fractured the concrete surface, causing numerous segments to fall into the ocean.

The Bleacher Structure: The structural beams supporting the stadium seating show “cracks in the plaster finish,” indicating active corrosion of the internal steel and potential settlement of the supports. This degradation compromises the “Slab-On-Grade” beneath the bleachers, where public restrooms and operational spaces are located, rendering them vulnerable to moisture and collapse.

4.1.3 Character-Defining Features

Despite this advanced decay, the Natatorium retains specific architectural elements designated as “character-defining features” under its National Register of Historic Places listing. These elements constitute the “materiality of the trace” that the design must preserve or interpret, and they form the precise inventory against which any intervention must be measured: what survives, what must be replaced, and what new structure is permitted to touch.

The Swim Basin Geometry: The rectangular footprint of the 100-meter pool is a primary element of the site’s memory, representing one of the largest saltwater basins in the world at the time of its construction.

The Bleachers: The concrete stadium seating, rising thirteen levels to accommodate 2,500 spectators, defines the site as a “theater” for aquatic performance rather than a passive park.

The Beaux-Arts Portal: The “Grand Beaux-Arts style arch,” flanked by arcaded walls and eagle sculptures, serves as the ceremonial threshold between the secular city and the sacred water.

The Perimeter Deck: The 20-foot wide concrete deck enclosing the pool is a critical spatial interface between the swimmer and the ocean horizon.

The technical survey confirms that while the Beaux-Arts Portal and Bleachers can be stabilized and rehabilitated, the Swim Basin walls and Perimeter Deck in their current submerged concrete form are structurally unrecoverable without total reconstruction. This diagnosis necessitates the “Perimeter Deck” approach adopted in this thesis: removing the failed submerged concrete while retaining the “ghost” of its geometry through new, permeable pile-supported structures that allow the free flow of water.



Fig. 33: Site-visit photo for perimeter condition 17.12.2025

4.2 Territorial Analysis (Waikiki vs. Ocean)

4.2.1 The Liminal Threshold: Between the Primary Urban Center and the Conservation District

The territorial identity of the Waikiki War Memorial Natatorium is defined by its condition as a “hinge” between two conflicting urban realities. Geographically and legislatively, the site sits at the precise edge of the Primary Urban Center (PUC), the zone designated by the City and County of Honolulu General Plan as the locus of the state’s highest density, economic activity, and tourism infrastructure. To the east, the site is bordered by Kalākaua Avenue, an arterial roadway characterized by the frenetic energy of the “visitor economy,” high-rise condominiums, and vehicular congestion that defines the modern Waikiki experience.

However, to the west, the site crosses the shoreline threshold into a zone of strict environmental protection. The waters immediately adjacent to the Natatorium are not merely open ocean but are legislatively codified as the Waikiki Marine Life Conservation District (MLCD) to the north and the Waikiki-Diamond Head Shoreline Fisheries Management Area (FMA) to the south. This dichotomy creates a unique “edge condition” where the intense urbanization of the land meets the protected biological fragility of the sea. The Natatorium functions as a physical buffer between these two worlds, mediating the transition from the impervious surfaces of the city to the fluid ecosystems of the reef.



Fig. 34: Site-visit photo for monument piazza 17.12.2025

This liminal condition is the precise territorial argument the design responds to at every scale developed in this thesis. The monument piazza, positioned at the Kalākaua-facing threshold, belongs entirely to the PUC side of the hinge civic, public, urban in character. The re-engineered water exchange openings on the basin’s western wall sit exactly at the legislative boundary between the site and the MLCD, making the hinge condition Rossi describes geographically into a literal, built threshold: the precise wall where regulated city water meets protected ocean water.

4.2.2 The Visual Threshold

The territorial conflict identified in 4.2.1 is not only legislative but sensory, and specifically visual. The landside environment is defined by the density and motion of Kalākaua Avenue vehicular traffic, high-rise massing, and the continuous visual activity of the “visitor economy” that characterizes Waikiki’s urban edge. The oceanside territory, by contrast, offers an open, uninterrupted horizon line toward Diamond Head, legislatively protected from development precisely because of its scenic value.

In its current ruined state, the Natatorium’s high concrete walls function as a near-total visual barrier between these two conditions. A pedestrian walking along Kalākaua Avenue cannot see the ocean through the site; a person inside the fenced basin cannot see the city. The fence reinforces rather than resolves this separation chain-link is materially transparent but experientially impermeable, since it forbids the approach close enough to look through it meaningfully, and offers no reason to do so. The wall, in other words, does not mediate between the two territories identified in 4.2.1; it simply blocks them from each other, converting a legislative hinge into a physical wall.

This visual analysis directly informs the project’s central architectural decision. The glass walking path is, before it is anything else, a resolution of this specific visual barrier. Where the existing concrete wall offers a single, fixed sightline interruption regardless of where a visitor stands, the cantilevered glass path replaces opaque mass with a continuous transparent threshold at exactly the height a pedestrian’s eye would otherwise be blocked. The monument piazza, positioned outside this wall entirely, restores an unobstructed view toward the basin and the ocean horizon from the urban side for the first time since the fence was erected a visitor on Kalākaua Avenue can, for the first time in over four decades, see straight through the site to the water.

4.2.3 Regulatory and Environmental Zoning

The site’s dual nature is further reinforced by its complex zoning overlay. While the land portion is zoned P-2 General Preservation to protect open space and scenic resources, the structure itself extends seaward of the high tide mark, placing it within the jurisdiction of state conservation laws and federal “Waters of the United States” regulations. Furthermore, the site lies within the Diamond Head Special District, a zoning overlay designed to protect prominent public views of the crater and the sea.

State Land Use District	Urban
O’ahu General Plan	Primary Urban Center
Development Plan Area	Primary Urban Center
Development Plan Public Facilities Map	Government Building
County Zoning	P-2 General Preservation
Special Flood Hazard Areas	Coastal High Hazard Area and Floodway Area
Special District	Diamond Head Special District
Special Management Area	Inside Special Management Area
Shoreline Setback Area	Within Shoreline Setback Area

Fig. 35: Land Use Legislation

Photo is taken from ‘Draft Cultural Impact Assessment for the Waikīkī War Memorial’ p.83

This regulatory layering produces a specific design constraint rather than a general atmosphere of restriction: any new structure on the seaward side of the high tide mark is reviewed against both state conservation criteria and the Diamond Head Special District’s view-corridor protections simultaneously. The cantilevered glass walking path satisfies both jurisdictions for the same reason its transparency means the new structure does not introduce a single new opaque mass into the protected view corridor toward Diamond Head, even though it physically occupies space that was previously open water. A solid concrete perimeter deck, rebuilt in its original 1927 form, would not clear this same regulatory test; a transparent structure does. The zoning overlay, read this way, is not merely a bureaucratic obstacle to the design it is one of the reasons glass and Corten steel were selected as the project’s primary materials rather than reinforced concrete.

Currently, the ruin acts as a barrier rather than a gateway. By fencing off the transition point, the site fails to resolve the tension between the Primary Urban Center and the ocean identified throughout this chapter. The design intervention re-establishes this territory not as a wall that separates the city from the sea, but as a permeable threshold the monument piazza, the glass walking path, and the re-engineered water exchange together forming a sequence that filters the intensity of Waikiki while protecting the biological sanctity of the Marine Life Conservation District beyond it.

4.3 SWOT Analysis

This section articulates a strategic diagnosis of the Waikiki War Memorial Natatorium, categorizing the internal attributes (Strengths and Weaknesses) and external conditions (Opportunities and Threats) that define the project’s scope. This analysis integrates the technical findings of the FEIS with the neuro-architectural and sociological frameworks established in previous chapters.

4.3.1 Strengths: The Intrinsic Value of the Locus

The primary strength of the Natatorium lies in its dual status as a singular waterfront asset and a monumental urban artifact a combination of conditions that cannot be replicated on any undeveloped site in Waikiki.

Historic Designation

The structure is a primary element of the city’s collective memory, validated by its listing on the National Register of Historic Places and its designation as a “National Treasure” by the National Trust for Historic Preservation (Hibbard and Cummins, 1979). The Beaux-Arts grandeur of the triumphal arch and the 100-metre swim basin constitute a unique architectural typology that physically anchors the memory of the First World War within the Waikiki landscape a level of civic and historical legitimacy a new-build structure could not claim regardless of design quality.

Direct, Unmediated Ocean Access

The site’s basin is filled by the Pacific Ocean itself rather than by any artificial water source a structural advantage no inland or treated facility can offer. This is the foundation on which the project’s entire water strategy rests: the basin does not require importing the value of “blue space,” because it already sits on top of, and is built from, the real thing. The re-engineered exchange openings are a strength precisely because they activate a resource the site already possesses rather than constructing one from scratch.

A Pre-Existing Public Threshold

Unlike a vacant lot, the site already carries 2,500 seats of stadium structure, a monumental arch, and nearly a century of accumulated civic memory. The bleachers, confirmed in 4.1.2 as stabilizable rather than condemned, give this thesis’s exhibition and circulation programme a built volume to inhabit immediately — the strength is not abstract historical value, but a literal, structurally sound container ready for new use.

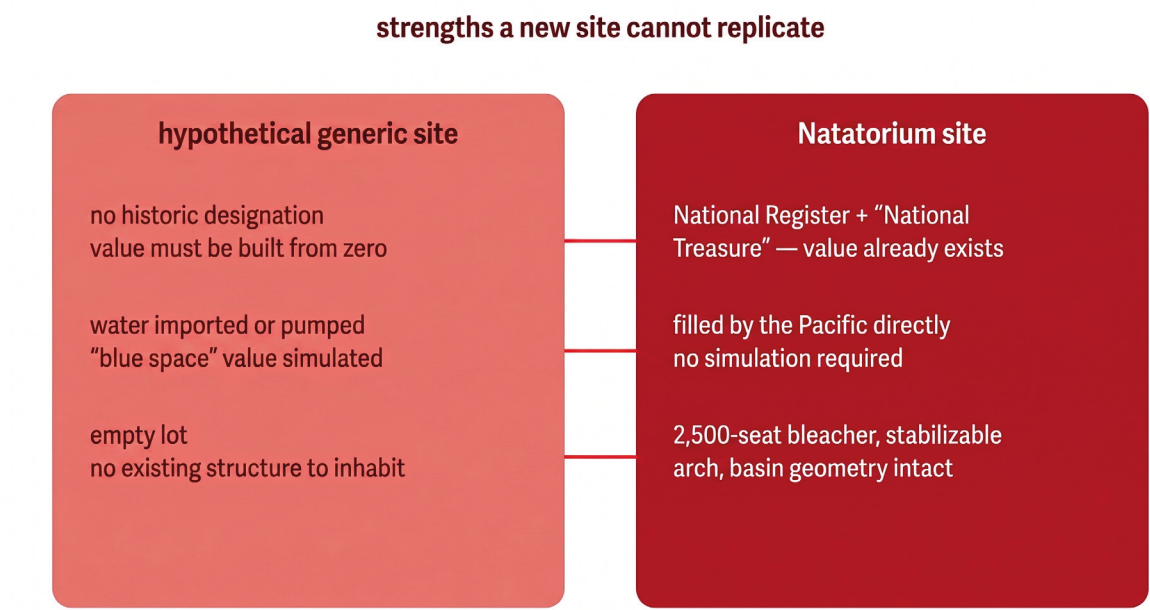


Fig. 36: Simple three-strength comparison

4.3.2 Weaknesses: Material Failure and Hydraulic Obsolescence

The weaknesses of the site are defined by two related but distinct problems: the physical degradation of the concrete documented in 4.1, and a deeper, more consequential obsolescence in the facility’s original hydraulic logic a weakness this thesis treats as the central technical problem the entire design must resolve.

Structural Deterioration

As established in 4.1.1 and 4.1.2, the FEIS documents a chronology of structure-maintenance issues stemming from insufficient concrete cover over reinforcing steel, leading to extensive spalling, cracking, and the collapse of deck sections. The swim basin walls are “visibly out of plumb” and classified as an imminent hazard, necessitating the fencing that severs the site from public use.

Water Quality and Regulatory Non-Compliance

The original 1927 design relied on a passive open system of tidal flushing through small coffered openings in the basin’s perimeter wall. Under modern Hawai’i Administrative Rules (HAR Title 11, Chapter 10), this mechanism is insufficient to maintain water clarity and hygiene to current public pool standards, leading to the accumulation of sediment and turbidity that directly precipitated the 1979 closure. This regulatory barrier renders a faithful, like-for-like restoration of the original pool function legally impossible a 1:1 rebuild of the 1927 openings would simply recreate the conditions that closed the basin in the first place.

This weakness is the precise point at which the choice of water type becomes a design problem rather than a preference. Two paths exist: replace the basin’s water source with a closed, filtered, mechanically treated system, matching the chlorinated-pool standard most public facilities use today; or redesign the scale of the original passive system so that natural tidal exchange alone can meet modern water quality thresholds. This thesis adopts the second path, and the reasoning depends on a comparison between the two water types themselves.

Clean (treated) water offers consistent year-round clarity and a well-established, low-risk regulatory pathway a standard chlorinated public pool permit is comparatively simple to obtain, and the system is unaffected by storm surge or seasonal ocean conditions. Its costs are recurring rather than structural: continuous energy consumption for pumps and filtration, ongoing chemical treatment, and daily water-quality testing and staffing. Critically, it would also sever the basin from the one resource that makes it historically and conceptually specific chlorinated water in a 1927 saltwater memorial basin would preserve the building’s form while erasing the substance of what it was built to hold.

Ocean (tidal) water offers a near-zero operating cost once the exchange system is correctly sized no pumps, no chemicals, no recurring filtration energy and it is the only water type consistent with the basin’s original identity and with the “Liquid Memory” concept developed in Chapter 5. Its risks are precisely the risks that closed the basin in 1979: insufficient exchange volume leads to stagnation, sediment build-up, and turbidity. The historical record of comparable tidal pools confirms both the promise and the risk of this approach.

category	clean water	ocean water
water clarity M: clarity+visibility	consistently clear controlled visibility year-round	variable — depends on tide and ocean conditions algae blooms possible
maintenance + infrastructure	pump, filter, chemical systems required high ongoing cost	passive tidal exchange no pump or chemicals very low running cost
running cost 	high — energy, chemicals, staff monitoring, testing required daily	low — no energy input no chemicals required self-sustaining system
health regulation + permitting	straightforward — standard public pool DOH permit well-established process	complex — caused the 1999 lawsuit. New DOH saltwater rules now exist (2005)
storm resilience 	protected — closed system unaffected by surge or ocean conditions	vulnerable — surge events can bring debris, seaweed pool closure required
swimmer experience + atmosphere	predictable, clinical feel disconnected from ocean less authentic to site	alive, raw, tidal — same water Duke Kahanamoku swam - deeply authentic
sustainability 	chlorine / chemicals enter ocean via overflow high energy consumption	zero chemical discharge zero energy input environmentally aligned
verdict for Natatorium	not recommended loses authenticity + high cost	recommended authentic + low cost + viable

■ clean / treated water ■ natural ocean water

Fig. 37: Clean water and ocean water comparison

Wylie’s Baths, Coogee demonstrates the viability of passive ocean exchange at scale: its tidal valve system achieves water replacement through a purely gravity-driven mechanism, with no mechanical pumping, and has operated on this principle since the early twentieth century. Its long-term maintenance demands` periodic storm damage to timber elements, intermittent silting confirm that ocean water is not maintenance-free, only differently maintained, with cost shifted from continuous mechanical operation to periodic structural repair.



Fig. 38: Wylie’s Baths, Australia

Bronte Baths, by contrast, demonstrates the specific failure mode this thesis must design against: a wave-over-wall exchange system that, without adequate engineered exchange volume, proved insufficient to meet contemporary water quality expectations on its own, requiring a supplementary pumphouse whose mechanical failure has since become the site’s principal maintenance liability. Bronte’s history is the cautionary precedent for the Natatorium’s own 1927 failure a passive system, undersized relative to the basin volume it serves, will eventually be forced into either closure or a bolted-on mechanical fix that compromises the purity of the original passive concept.

The Natatorium’s re-engineered exchange openings, calibrated to achieve six tidal cycles per day across the basin’s full 100-metre volume, are designed explicitly to avoid both failure modes documented in these precedents: large enough to prevent the stagnation that closed the original 1927 system, and sized for passive tidal differential alone, without the mechanical pumphouse dependency that has become Bronte’s principal liability.



Fig. 39: Bronte's Baths, Australia

Problem type	Wylie's	Bronte's	Natatorium
Storm damage ocean exposure	1974 closure community rebuilt 1995	2015-16 storms resin injection + resurfacing	Ongoing decay
Water quality exchange failure	Tidal valve zero chemicals	Wave over wall + pumphouse	Holes too small 2 new openings
Governance neglect / ambiguity	Wylie's Trust 1996 (cummunity)	Waverley Council plan of management	State vs City Friends of Nat.
Heritage tension modern vs original	Greenway Award sensitive repair	Heritage listing guided upgrades	NRHP listed 1980 blocks demolition
Community as the rescuer	1000 petitions saved the pool	Waverley residents drove all upgrades	Friends of Nat. blocked demolition

Fig. 40: Problems in Whylie's, Bronte's and Natatorium

This table reframes the precedent analysis around a question the existing 4.1–4.3 chapter structure does not yet directly ask: not just whether ocean water exchange works technically, but whether the governance structure around a tidal pool determines whether it survives. Read across the five rows, the comparison tells a consistent story every successful intervention at Wylie's and Bronte was driven by an organised, named, accountable body, while the Natatorium's forty-year stall is a story of governance failure as much as material failure.

Storm damage

All three sites face the same coastal exposure problem; the difference is response time. Wylie's closed in 1974 and was rebuilt by 1995 a 21-year gap, but a gap that ended in action. Bronte responded to 2015–16 storm damage with resin injection and resurfacing within the same maintenance cycle. The Natatorium's "ongoing decay" has no terminal date because no comparable response has ever been authorised this row visually establishes that storm damage itself is not the differentiator; the presence or absence of an empowered party to act on it is.

Water quality / exchange failure

This is the technical core of your existing 4.3.2 argument, now compressed into one line each: Wylie's tidal valve achieves zero-chemical passive exchange; Bronte's wave-over-wall system needed a supplementary pumphouse to meet modern standards; the Natatorium's original openings were simply too small, and your design response is the two new engineered openings. This row is the direct visual companion to the comparison table and precedent analysis already written into 4.3.2 it doesn't replace that prose, it summarises it.

Governance

This is the most important row in the entire diagram, and the one your existing chapter draft doesn't yet address. Wylie's has a dedicated Trust, formally established by the community in 1996. Bronte operates under a Council-administered Plan of Management a statutory document that legally obligates Waverley Council to maintain, monitor, and upgrade the site on a defined schedule, with community consultation built into the process. The Natatorium, by contrast, has no equivalent instrument: governance is split between the State and the City, with "Friends of the Natatorium" operating as an advocacy group rather than a body with any statutory management authority. The circled icon between Wylie's and Bronte's columns is well placed here it visually marks the precise gap your design and policy argument needs to fill: the Natatorium has the least formal governance structure of the three sites, despite having the most severe material crisis.

Heritage tension

Wylie's received a Greenway Award for sensitive repair; Bronte's heritage listing actively guided its upgrades rather than blocking them. The Natatorium's 1980 NRHP listing, by contrast, has functioned almost entirely as a demolition-blocking mechanism rather than a guide toward adaptive reuse heritage status has protected the ruin's existence without ever directing what should be done with it.

Community as the rescuer

All three sites were saved from the brink by organised public pressure: 1,000 petitions saved Wylie's; Waverley residents drove Bronte's upgrade programme;

Friends of the Natatorium blocked demolition at the Natatorium. This final row is the one point of genuine structural similarity across all three cases community action is the constant. The difference is what happened after the community intervened: at Wylie's and Bronte, that pressure was eventually formalised into a Trust or a Plan of Management with ongoing authority. At the Natatorium, the same pressure stopped demolition but never converted into a comparable standing management body which is precisely why the site has been "fenced off and deteriorating since 1979" rather than rebuilt by the late 1990s, the way Wylie's was.

4.3.3 Opportunities: Reactivation and Indigenous Reconnection

The crisis documented in 4.1 and 4.2 presents a specific opportunity that this thesis treats as central rather than incidental: the chance to reactivate the Natatorium's original dual identity competitive and ceremonial, athletic and memorial rather than resolving the crisis by choosing one function over the other.

Reactivation of Swimming Through Re-Engineered Exchange

The weakness identified in 4.3.2 that the original passive tidal system cannot meet modern water quality standards is, read differently, the project's clearest opportunity. Because the underlying problem is a sizing failure rather than a conceptual one, the basin does not need to be abandoned as a swimming facility or converted into a static, dry memorial. The two re-engineered exchange openings, calibrated against the failure modes documented at Wylie's and Bronte's, allow the 100-metre basin to return to active competitive and recreational use for the first time since 1979 restoring the building's original, founding function rather than substituting a different one in its place.

A Public Threshold Restored: The Monument Piazza

The site's current condition as a fenced barrier, established in 4.2.2, is an opportunity precisely because the fix is structurally simple: removing the fence and building a deliberate point of arrival in its place. The monument piazza, positioned at the Kalākaua-facing threshold, converts the site's worst current weakness its total inaccessibility into its strongest new asset: a civic gathering space, anchored by 101 standing basalt forms commemorating the servicemen the Natatorium honours, that did not exist in any form in the original 1927 design.

A Stabilized Structure Ready for New Narrative

As established in 4.1.2 and 4.1.3, the bleacher structure is sound enough to rehabilitate in place. This is an opportunity this thesis takes directly: the exhibition galleries inserted beneath the bleachers do not require new construction to house the site's historical narrative they occupy genuinely original 1927 fabric, using glass monumental walls that let the visitor read the building's history while looking directly through to the concrete structure that lived that history.

A Failed Barrier Converted to a Threshold: The Glass Walking Path

The same structural failure that condemned the original perimeter deck (4.1.3) is the opportunity for its replacement to do more than restore what was lost. The cantilevered glass walking path reopens circulation around the full basin perimeter for the first time since 1979, while simultaneously resolving the visual barrier identified in 4.2.2 a

single new element addressing a structural failure, a circulation failure, and a visual failure together.

Indigenous Reconnection

The site overlies the historical location of Kawehewehe healing waters, where freshwater streams once met the sea before the 1927 basin was constructed over them. The rehabilitation offers a genuine opportunity to acknowledge this pre-colonial layer rather than treat 1927 as the site's only point of origin. This is not proposed as a separate programmatic addition, but as a layer made legible within the project's existing narrative structure: the exhibition beneath the bleachers, already organised to read the site's full history as a palimpsest (per Chapter 5, Narrative Design), is the appropriate place to give the Kawehewehe tradition equal weight alongside the 1927 military memorial, rather than treating indigenous history as a footnote to the colonial monument.

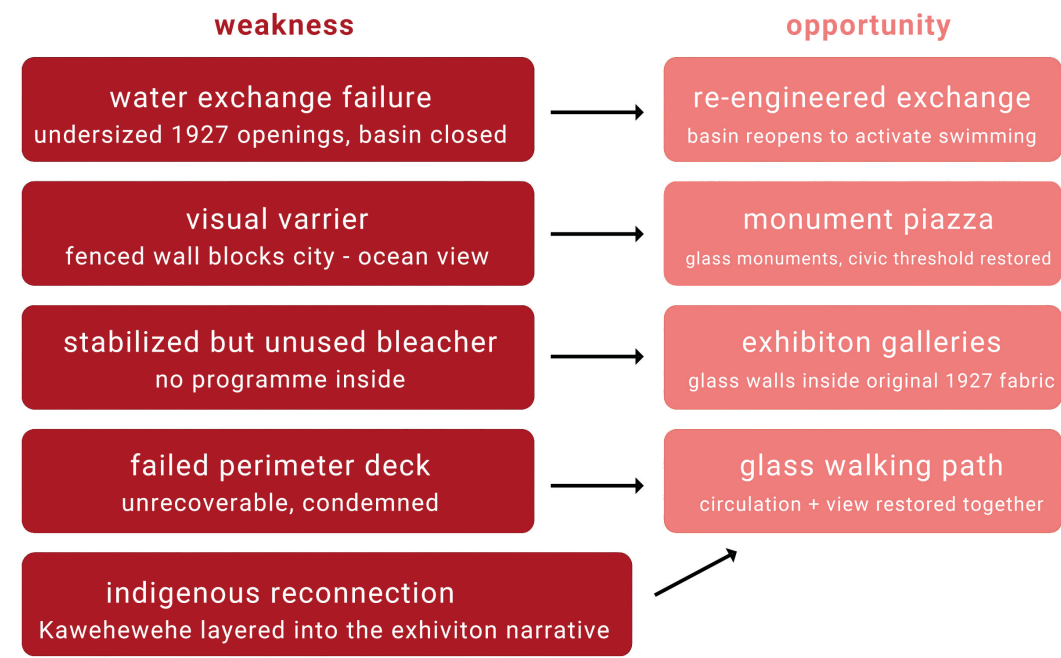


Fig. 41: Opportunities mirrored against weaknesses

4.3.4 Threats: Environmental and Governance Erasure

The external threats to the project are existential, driven by climate change and the unresolved governance failure that has defined the site for four decades.

Sea Level Rise

The FEIS projects a sea level rise of 3.2 feet by the end of the century, which would result in more frequent overtopping of the perimeter walls and inundation of the deck. Any intervention must be designed with adaptive resilience, capable of withstanding increased wave energy and submersion a constraint this thesis addresses directly through the cantilevered glass walking path, whose structural logic (piles and brackets rather than a continuous ground-bearing slab) is inherently more tolerant of episodic inundation than the rigid, ground-bearing perimeter deck it replaces.

Demolition by Neglect

As Sharon Macdonald observes, “difficult heritage” often faces a choice between demolition, cleansing, or preservation, with demolition frequently justified by the high costs of maintenance (Macdonald, 2009). The “No Action” alternative currently in effect is a slow-motion demolition, where the structure is allowed to erode until safety concerns mandate its total removal.

Governance Erasure

The competing jurisdictions of the City, the State Department of Health, and preservation advocacy groups create a continued threat of inaction. As noted in the FEIS, the inability to reach consensus has left the site in a suspended state for over forty years, risking the total loss of the resource before any design solution can be implemented. This threat is sharpened by direct comparison to the two precedent pools examined in 4.3.2: Wylie’s Baths is governed by a dedicated Trust established by its rescuing community in 1996, and Bronte Baths operates under a Council-administered Plan of Management a statutory instrument legally obligating ongoing maintenance, monitoring, and scheduled upgrades. The Natatorium possesses no equivalent body. “Friends of the Natatorium” has successfully blocked demolition on repeated occasions, but advocacy that prevents loss is not the same instrument as a Trust or Plan of Management that compels renewal. Without a comparable governance structure put in place alongside any architectural proposal, this thesis’s design risks repeating the site’s own history: surviving demolition, again, while never being rebuilt.

source	consequence	mitigation
sea level rise +3.2 ft by century end FEIS projection	overtopping of walls deck inundation increased wave energy	pile + bracket structure tolerates episodic inundation
demolition by neglect "No Action" alternative erosion	structure erodes until safety forces total removal	no architectural mitigation alone
governance erasure city / State / advocacy groups	design survives on paper never built	requires a trust Plan of Management

Fig. 42: Threats table: environmental and governance erasure

Chapter

05

Concept Framework & Strategy

- 5.1 Concept: “Liquid Memory”
- 5.2 Strategy: The “Ghost Structure” Approach
- 5.3 Conservation Approach

Predicated on the ontological tension between the rigidity of the urban artifact and the fluidity of lived experience, this chapter establishes the conceptual framework of “Liquid Memory” to reconcile the site’s fractured identity. Rejecting the “Disneyfication” of a redemptive reconstruction, the strategy employs the “Ghost Structure” as a prosthetic intervention, a permeable wireframe armature that stabilizes the physical ruin while dissolving its opaque boundaries to invite the neuro-biological benefits of the “Blue Mind” state. Ultimately, this framework advocates for the “profanation” of the military monument, deactivating its imperial aura to transition the site from the stasis of “Monumental Time” to the therapeutic dynamism of “Lived Time,” thereby restoring the ancient hydro-centric lineage of the Kawehewehe.

Chapter 05

Concept Framework & Strategy

5.1 Concept: “Liquid Memory”

The Waikiki War Memorial Natatorium presents architecture with a paradox no amount of restoration funding has resolved: the building’s identity was never in its concrete, but in the water it was built to hold. For forty-five years, the site has existed as a ruin permitted only to be looked at fenced, photographed, mourned, never entered. This thesis rejects that condition through a single material commitment, applied without exception across every scale of the project: memory, in this design, is never held by solid, opaque material. It is held by glass, at every register from the individual to the immense and the geometry in which that glass is arranged is never arbitrary, but drawn from Hawaiian visual tradition.

This commitment is legible the moment a visitor arrives. At the monument piazza, in front of the restored arch, each serviceman the Natatorium commemorates is marked not by a carved name on a solid stone, but by an individual glass box, inscribed with his name and set into the open plaza. There is no statue to stand in front of, no inscribed wall to read at a respectful distance the box and the name are the entire monument, with nothing behind the glass to protect, because the glass itself is the memorial gesture, not a vitrine sheltering one.

The boxes are not arranged on a neutral grid. Their positions follow niho manō, the shark-tooth triangle motif found throughout traditional Hawaiian kapa and tattoo design. In Hawaiian belief, sharks (manō) are revered as aumakua ancestral guardians who protect and guide the living and the niho manō pattern carries this meaning of protection wherever it is used. Arranging the names of the fallen within this specific geometry is therefore not a decorative gesture borrowed for visual texture: it situates each individual name inside a pattern whose own cultural meaning is guardianship over the living who walk past it, linking the memorial’s military register to a Hawaiian visual language that predates the building by centuries. This is memory at its most individual scale: one name, one box, one death, held within a pattern that has always meant protection.



Fig. 43: Niho manō, the shark-tooth triangle motif

Moving inward, beneath the historic bleachers, the same material logic operates at the scale of collective narrative and the same principle of borrowed geometry returns in a second form. The exhibition’s glass floor is paved with triangular glass units arranged to recreate a mountain ridgeline, a motif drawn from traditional kapa design, where repeating triangular forms have long been used to depict the silhouette of the island’s peaks. The freestanding glass art walls continue this same ridgeline upward, so that, read in plan from above, the boundary between floor and wall dissolves into a single continuous mountain profile legible only when the space is understood as a whole, not wall by wall. Where the piazza’s niho manō speaks to protection, the exhibition’s mountain motif speaks to mauka, the high ground, the permanence of the island itself beneath a building whose own permanence has been anything but guaranteed. The glass walls hold the curated history of the site the Kawehewehe healing tradition, the 1927 opening, the closure, the decades of advocacy while allowing the visitor to see directly through the display surface to the original 1927 concrete vault standing behind it. Glass here does not protect an artefact from a viewer; it merges the artefact, the image, and the viewer’s own reflection into a single layered surface, set within a floor and wall pattern that is itself a mountain the visitor walks across rather than merely views.



Fig. 44: Mountain ridgeline pattern

Finally, at the perimeter of the basin, the glass walking path extends this same logic to the scale of the living, present ocean. The 50 mm laminated glass floor panel, cantilevered on Corten steel brackets, suspends the visitor’s body directly above two metres of circulating tidal seawater. Memory here is no longer a name or a narrative it is the literal, ongoing life of the basin the building was built to hold, made visible underfoot rather than concealed beneath a solid deck.

Read together, these three elements describe a single, continuous material and geometric argument rather than three separate design gestures. Glass is the only material this project permits to hold memory, because glass is the only material capable of making memory legible without freezing it behind a barrier. And the patterns in which that glass is arranged niho manō at the piazza, the mountain ridgeline beneath the bleachers are never applied as ornament after the fact: they are drawn from a Hawaiian visual language whose own meanings of protection and permanence speak directly to what a war memorial is for, long before the building itself existed in 1927. A name in stone is fixed and final. A name in glass, held within a pattern of guardianship, lit by the same light that falls on the ocean beyond it, remains part of a living site rather than a sealed archive exactly the distinction this thesis, throughout Chapter 3, draws between a lieu de mémoire and a milieu de mémoire (Nora, 1989). The piazza, the exhibition, and the walking path are not three

different strategies. They are the same strategy, applied at three different scales: the name, the narrative, and the ocean (the technical justification for ocean water specifically, rather than treated water, is detailed in 4.3.2).

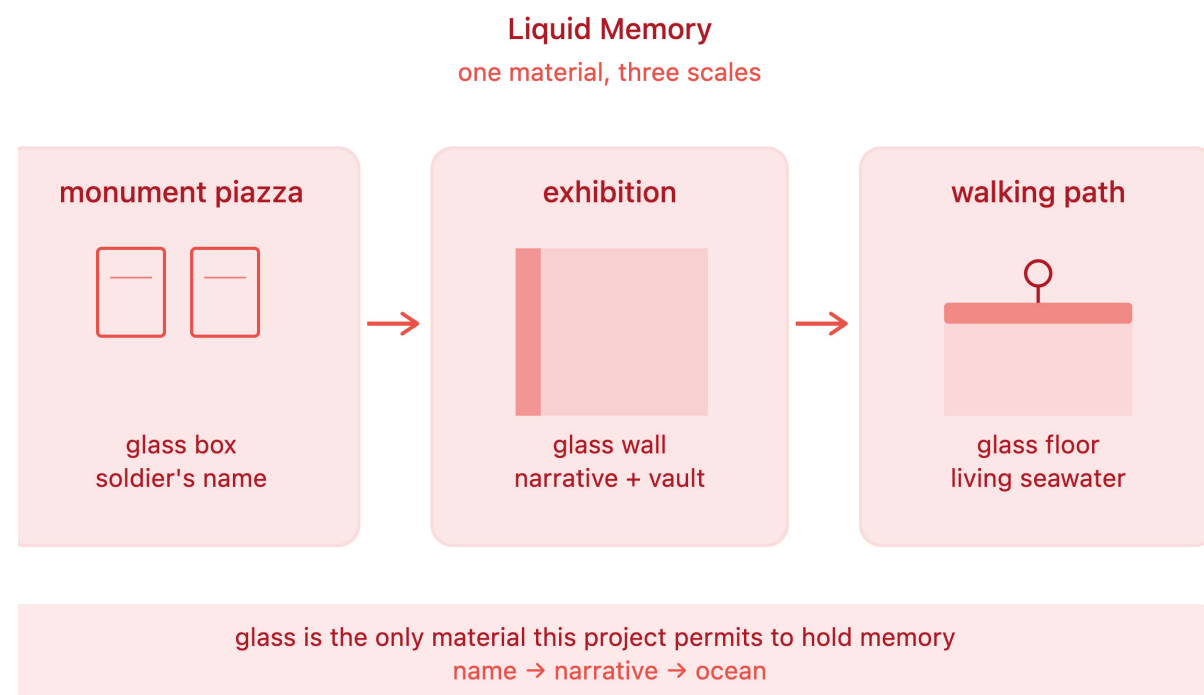


Fig. 45: Liquid memory flow

5.2 Strategy: The “Ghost Structure” Approach

If Liquid Memory is the project’s conceptual claim that glass alone is permitted to hold memory, and that the geometry of that glass is drawn from Hawaiian visual tradition rather than invented arbitrarily the Ghost Structure is the structural method that makes this claim physically possible, without disguising its own contemporary construction or competing with the 1927 fabric it inhabits.

A ghost structure, in the sense intended here, is an architectural insertion that is simultaneously present and absent: present in its material precision, absent in its refusal to imitate the mass of the historic structure it touches. This logic governs every new element of the project, at every scale, from the smallest glass box to the full perimeter loop and it governs not only what material is used, but how that material is geometrically organised.

At the scale of the individual marker, the monument piazza’s glass boxes are the most minimal possible expression of the Ghost Structure idea. Each box holds nothing but names. No statue, no figure, no solid plinth to anchor it symbolically. There is no mass to neutralise here because there was never any mass to begin with: the box is pure outline, the ghost of a monument with no body behind the name. This Hawaiian geometric logic is not merely applied as surface ornament; it determines the actual structural layout of the glass. The niho manō triangulation establishes the module and spacing for the glass boxes themselves, the pattern is not printed onto

a floor beneath fixed-position boxes, but generates the positions the boxes occupy, so that the protective geometry described in 5.1 is, simultaneously, the project’s foundation-setting-out drawing.

At the scale of the interior gallery, the exhibition’s glass monumental walls operate as a freestanding skeleton rather than a built-in display case. Positioned in front of, but never against, the original 1927 concrete vault, the glass walls let the historic bleacher structure remain the visible architectural subject, with curated content layered transparently across it rather than concealing it behind a conventional partition wall. The same principle of borrowed geometry governs construction here too: the triangular glass floor units and the freestanding glass art walls are set out on the mountain ridgeline geometry described in 5.1, meaning the motif is not an applied finish but the actual modular logic by which the glass panels are cut, braced, and assembled. The Ghost Structure’s claim to honesty that nothing here pretends to be older or different than it is that extends to this point precisely: the Hawaiian pattern is structural geometry, not decoration applied after construction, and a visitor reading the mountain profile in plan is reading the building’s actual setting-out grid, not a printed surface laid over a hidden, unrelated structure beneath it.

At the scale of the perimeter, the cantilevered glass walking path is the project’s most literal application of Aldo Rossi’s concept of the architectural “skeleton,” where the “relief and design of structures appears more clearly when content... is neutralized” (Rossi, 1982). The path is a contemporary reinterpretation of the Perimeter Deck alternative outlined in the Final Environmental Impact Statement (FEIS): by removing the dilapidated concrete deck and reconstructing its footprint as a cantilevered structure of 50mm laminated glass on Corten steel brackets, the design retains the plan and geometry of the historic monument while removing its failing mass entirely. The new structure is a lightweight, permeable framework that outlines the “missing mass” of the original 1927 basin perimeter without attempting to replicate its solidity. The visitor looks directly through the glass floor panel into the live seawater two metres below, watching the basin perform the function it always should have, while standing on a structure that openly declares its own twenty-first-century origin.

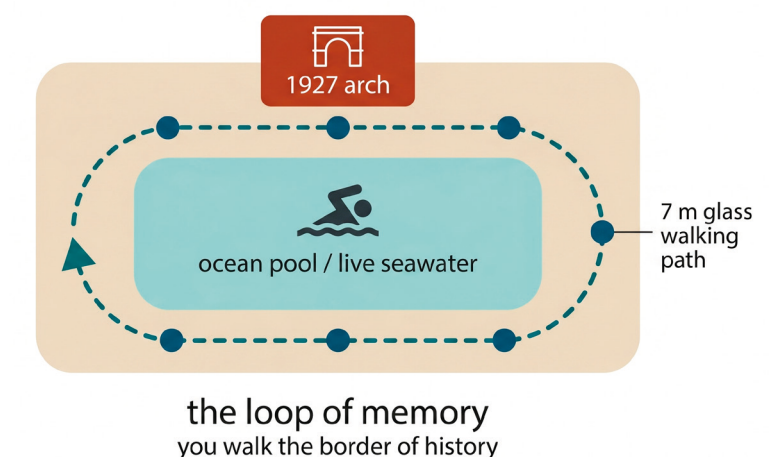


Fig. 46: The loop of memory diagram

Precedent for this approach is found most precisely in Carlo Scarpa’s work at the Castelvechio and the Fondazione Querini Stampalia, where slender steel supports carry historic or monumental elements across water without imitating the mass of the structures they serve most directly in Scarpa’s decision to let canal water rise directly into the ground floor of the Querini Stampalia, rather than holding it at a safe remove. This project’s glass walking path performs the same refusal: water is never something the new structure protects visitors from, but something the structure is built specifically to bring the visitor toward.

Read together, the glass box, the glass wall, and the glass path are not three different strategies bolted onto a heritage shell. They are the same Ghost Structure logic present, precise, and structurally honest, never disguised as historical, and never arranged arbitrarily applied consistently at three different scales: the name set within a pattern of protection, the narrative set within a pattern of permanence, and the ocean held beneath a single sheet of glass.

5.3 Conservation Approach

The conservation strategy for this thesis is grounded in a specific and deliberately provocative theoretical position: Giorgio Agamben’s concept of profanation. Agamben argues that profanation involves reclaiming sacred objects for common use, countering the secularising and commodifying tendencies that otherwise reduce a place to spectacle. For Agamben, the most direct method of moving an object from the sacred register into the profane is to use it to put it back into service in a way that may appear, at first glance, entirely inappropriate relative to its consecrated status.

This is precisely the conservation problem the Natatorium poses. Since 1980, the building has been treated as sacred in the most literal architectural sense: heritage-listed, fenced, photographed, occasionally restored at the edges, but never used for the purpose it was built to serve. It has been permitted only consumption for touristic uses admired from behind a chain-link fence, its meaning reduced to its appearance rather than its function. This thesis applies profanation through five specific conservation moves, each tied to a named element of the design rather than left as abstract theory.

A monument that holds no object to protect. The conventional war memorial sacralises an absence by filling it with a substitute presence a statue, a figure, an inscribed wall to be approached and read at a respectful distance. The monument piazza refuses this substitution entirely. Each glass box holds nothing but a name; there is no artefact inside the glass for the visitor to be kept at a distance from, and therefore nothing for the memorial register to consecrate in the conventional sense. This is, in Agamben’s own terms, the most radical possible profanation available to this project: a memorial with no sacred object at its centre cannot be treated as a relic, because it was never built to contain one. The visitor does not stand before the box they stand among the boxes, walking the niho manō triangulation as one walks through a guardian pattern, not around a fenced shrine.

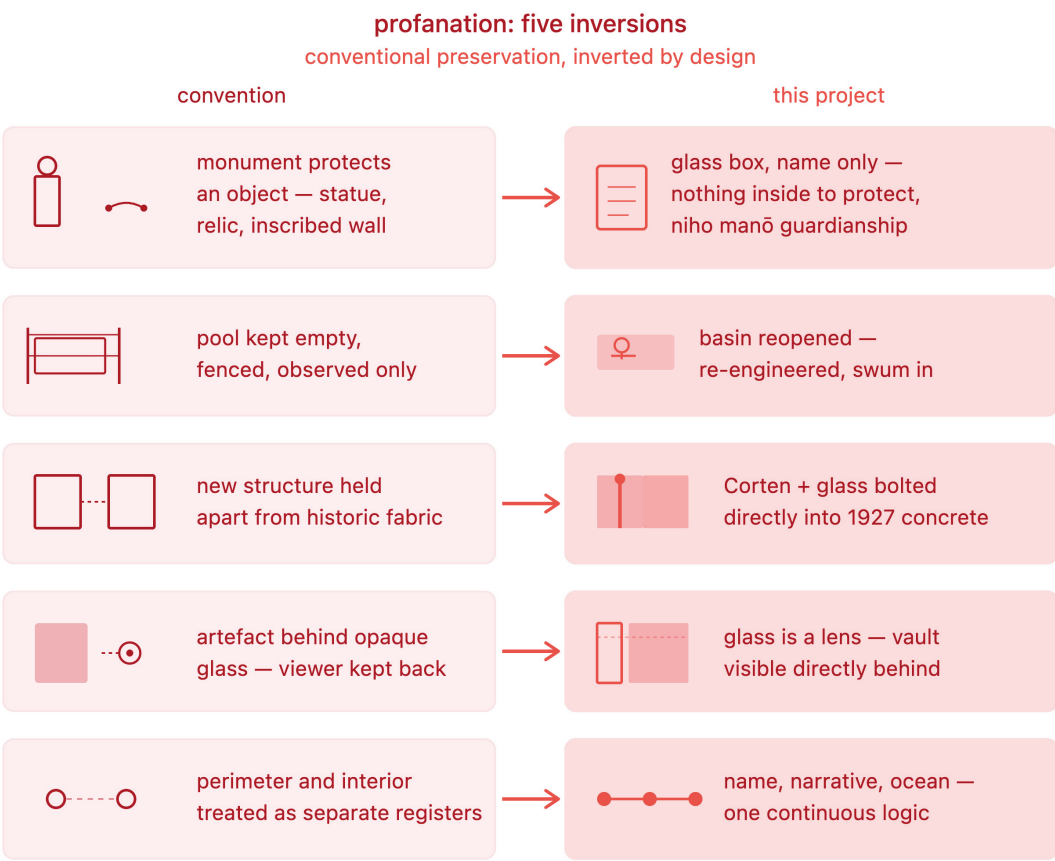


Fig. 47: Adaptive reuse diagram

Reactivating the original swimming function rather than memorialising its absence. The pool is rebuilt to swim in, not to look at. A monument that cannot be entered is not preserved it is embalmed. The renovation’s primary conservation act is therefore mechanical and hydraulic before it is aesthetic: re-engineering the ocean exchange openings, detailed in 4.3.2, so the pool can be legally certified for swimming again, exactly as it was in 1927.

Permitting contemporary structure to physically touch historic fabric. The Corten brackets bolt directly into the 1927 concrete on the exterior; inside, the glass exhibition walls are anchored directly to the original bleacher vault rather than being held apart from it by a buffer wall, as a conventional museum fit-out would insist upon. Agamben’s account of ruins specifically identifies the moment when blurring boundaries between the sacred and the profane challenges traditional access rules as a moment of genuine cultural vitality, not loss.

Allowing memorial content to be seen through, rather than only observed from behind glass in the conventional museological sense. Here the project takes a deliberately inverted position relative to standard exhibition design: rather than placing artefacts behind glass to protect them from the visitor, the project places the visitor in front of glass that is itself transparent, so that the act of viewing history becomes inseparable from seeing the actual historic structure of the bleacher standing immediately behind the display surface. The glass is not a vitrine. It is a lens.

Allowing the perimeter and the interior to share one continuous material and geometric logic. The monument piazza's niho manō pattern of protection, the exhibition's mountain ridgeline of permanence, and the glass walking path's suspension above living water are not three separate strategies arranged around a heritage shell they are the same strategy of transparency over substitution, applied at the scale of the name, the narrative, and the ocean. Memory, across the entire site, is treated as something to walk through, stand upon, and see through never something to view from behind a rope barrier.

The conservation logic of this thesis can therefore be summarised in a single inversion: where the previous forty-five years treated the Natatorium's untouchability as the condition of its preservation, this project treats its use, its transparency, and its refusal to substitute objects for absence as the only form of preservation capable of saving it. The building is not protected by being kept empty, kept opaque, or filled with relics standing in for the dead. It is protected by being filled with water, filled with light, filled with swimmers and walkers and visitors reading names that ask nothing to be protected except remembrance itself.

Chapter

06

The Project Ideas (Intervention)

- 6.1 The Monument Piazza
- 6.2 The Exhibition
- 6.3 The Glass Walking Path

This chapter operationalizes the theoretical framework of “Liquid Memory” through three named architectural interventions, each holding memory in glass at a different scale. At the monument piazza, standing glass boxes inscribed with soldiers’ names are set within a niho manō triangulation grid that a Hawaiian geometry of protection borrowed directly from the shark-tooth motif, generating both the boxes’ positions and the compression of the arrival sequence toward the 1927 arch. Beneath the north bleacher, the exhibition’s freestanding glass art walls and triangulated glass floor recreate a mountain ridgeline pattern legible in plan, narrating the site’s layered history from the Kawehewehe healing tradition through the 1927 opening to the forty-five-year closure while the visitor’s own reflection merges with the original concrete vault standing directly behind the glass. Finally, the glass walking path dissolves the failing 1927 concrete perimeter into a cantilevered loop of 50 mm structural glass on Corten steel brackets, replacing the basin’s static containment with a continuous threshold suspended above circulating, tidal seawater re-engineered through calculations grounded in real NOAA datums for Honolulu Station 1612340 to achieve six exchange cycles per day. Together, these three interventions reconcile the monumental geometry of the 1927 artifact with the genuinely living, tidal rhythm of the basin it was always built to hold.

Chapter 06

The Project Ideas (The Intervention)

6.1 The Monument Piazza

The monument piazza occupies the full width of the site at its Kalākaua-facing edge, positioned outside the 1927 arch rather than within the bleacher enclosure, so that the memorial functions as public urban space before it functions as a controlled or ticketed site. The piazza's ground plane carries two distinct geometric registers working together rather than one: the standing glass boxes rising vertically from the surface, and a niho manō triangulation pattern set directly into the floor beneath and around them.

The glass boxes are detailed as tall, narrow vertical elements rather than waist-height markers: each box stands 2.5 metres tall and 200mm thick, scaled closer to a standing figure than to a plinth or low marker. At this height, the boxes read as a true vertical field when seen from the piazza's edge that a visitor approaching from Kalākaua Avenue sees a populated grove of standing glass forms rather than a flat memorial garden. Beneath and around these standing boxes, the niho manō triangulation is paved directly into the ground plane as glass floor triangles, the shark-tooth motif rendered underfoot rather than only implied by the spacing of the boxes above it. Where the exhibition's mountain ridgeline pattern in 6.2 is read primarily in plan, the piazza's niho manō pattern is encountered at both registers simultaneously: the visitor sees the triangulated floor directly beneath their own feet while walking among the standing boxes that rise from it, so the protective geometry described in 5.1 is legible at ground level in real time, not only in a drawing viewed from above.

The niho manō floor triangles establish the exact positions of the standing glass boxes, consistent with the Ghost Structure logic developed in 5.2: the pattern is not a decorative surface applied beneath fixed-position boxes, but the actual setting-out geometry from which the box positions are derived. Each box rises from a vertex or edge of the floor triangulation, so a visitor who looks down while standing beside any box sees the geometric origin of that box's position traced directly into the ground at their feet that the protective shark-tooth pattern and the standing memorial element are read as one continuous gesture, floor and vertical object generated from the same triangulated grid.

The arrival sequence is organised in three stages across the piazza's depth. At the street edge, the visitor crosses from the public sidewalk onto the piazza surface with no gate, no fence, and no controlled threshold that a deliberate decision following directly from the conservation argument in 5.3, since any enclosure device here would reintroduce the same fenced-off condition this thesis diagnoses as the building's core pathology. The niho manō floor pattern begins immediately at this street edge, so the visitor's first footstep onto the piazza is already a footstep onto the protective geometry, before a single standing box has been encountered.

Moving inward, the visitor enters the field of standing glass boxes, walking across the triangulated floor between them, arranged in the niho manō pattern described in 5.1, tall enough to be encountered at full body scale rather than glanced down at. The final stage of the piazza sequence is the compression toward the arch itself. Both registers of the pattern that the standing boxes above and the triangulated floor below that narrow progressively as they approach the 1927 portal, so the spacing between boxes and the density of floor triangles both increase as the arch threshold nears. This is the threshold compression named in this section's original brief: not a single gate, but a geometry that tightens gradually at the level of the feet and at the level of the body simultaneously, so the visitor registers the approach to the arch through the ground itself before their conscious attention does.

The glass boxes are detailed as sealed vertical units, each holding an inscribed name on an internal face rather than an applied surface graphic, so the inscription is protected from weathering while remaining legible from multiple angles as the visitor circulates among them. Because each box stands at full height rather than below eye level, the piazza's sightline toward the arch and the bleachers beyond is read through a field of standing names rather than over a field of low markers that while the floor beneath that same sightline carries the shark-tooth geometry that generated every name's position in the first place, so the piazza's plan and its elevation describe the same protective pattern from two different vantage points at once.



Fig. 48: Memorial glass box in monument piazza

6.2 The Exhibiton

The exhibition occupies the full footprint beneath the north bleacher only, organised as a single continuous narrative space running the bleacher's full length, distinct from the administration function that sits below it on the lower level, and entirely separate from the shower and restroom functions housed under the south bleacher on the opposite side of the basin.

The defining spatial device is the mountain ridgeline geometry described in 5.1 and 5.2, here detailed at construction scale. The glass floor is paved in small triangular units, each with a 1.7-metre edge length, clustered in irregular groupings across the exhibition floor rather than arranged in a continuous regular grid. Each cluster of triangles is capped by a single zigzag line tracing across the peaks of its highest points this line is the literal mountain ridgeline silhouette, read directly off the tops of the triangle clusters exactly as a real mountain ridge is read off the peaks of a mountain range. Because the triangles within each cluster vary in height and orientation, the ridgeline produced is irregular and asymmetric in the same way an actual coastal mountain range is irregular, rather than reading as a repeating decorative motif.

This pattern only resolves into a legible mountain profile when read from directly above in plan, exactly as a topographic drawing of O'ahu's own ridgelines would be read. At eye level, walking through the exhibition, a visitor experiences the triangles as a varied floor texture underfoot rather than as a recognisable silhouette; the mountain only becomes visible as a mountain in the architectural drawing itself, which is precisely the point: the plan drawing of the exhibition floor is, simultaneously, a drawing of a Hawaiian mountain ridgeline. This is the most literal possible expression of mauka described in 5.1 that the floor a visitor walks across in the exhibition is not merely patterned like a mountain, it is a mountain in plan, with the visitor's footsteps tracing the same ground a topographic survey of the island's peaks would trace.

The freestanding glass art walls, standing 2 metres high and 5 metres thick, are positioned to continue this same ridgeline logic vertically. Where the floor triangles establish the ridgeline in plan, the art walls substantially thicker than a conventional partition, closer to a glass mass than a glass screen give the ridgeline a third dimension, so that walking between the walls and across the triangulated floor simultaneously produces the experience of moving through a landscape of peaks and valleys rendered entirely in glass. The 5-metre thickness allows each wall to function as a true display volume rather than a thin pane: historical imagery, lighting, and structural bracing can all be integrated within the wall's depth, while the wall's two outer faces remain available for the layered reflection-and-vault effect described in 5.1 and 5.2.

The walls stand clear of the original 1927 concrete vault behind them close enough that the visitor's reflection, the displayed historical image, and the concrete structure beyond all occupy the same depth of field when viewed from a normal standing distance, but never making physical contact with the vault's surface itself, preserving the original fabric's surface condition undisturbed. Lighting is introduced from above, between the top of each 2-metre wall and the underside of the bleacher

seating structure, so the historical content is illuminated without any fixture touching either the glass or the historic concrete directly.

Circulation through the exhibition moves between and around the triangle clusters rather than along a single fixed spine, since the clusters are irregularly placed rather than aligned to one continuous axis. This irregularity is deliberate: a visitor's path through the exhibition is never identical twice, mirroring the way no two paths through an actual mountain range follow the same line, even though both eventually traverse the same ridge.

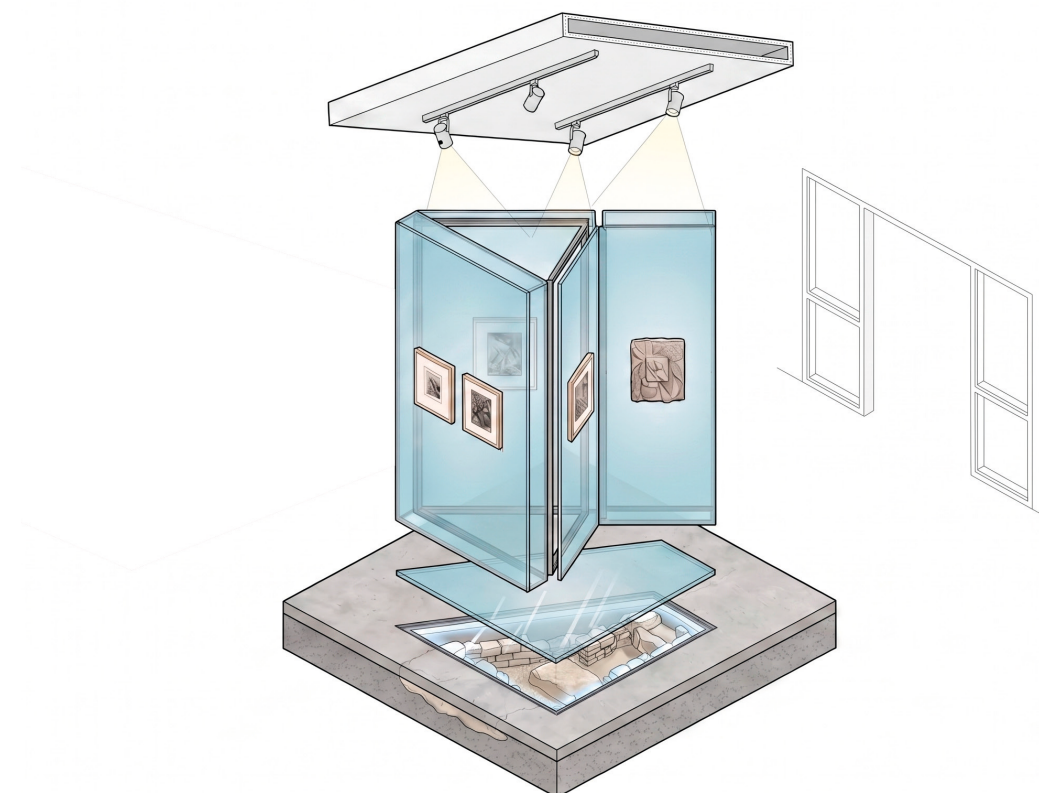


Fig. 49: Exhibiton area - glass art walls with glass pavement

6.3 The Glass Walking Path

The glass walking path is detailed here as a continuous architectural loop, 7 metres wide at every point along its length, wrapping all four sides of the 100-metre by 40-metre basin without interruption, gate, or directional signage. The deck is built from 50mm laminated structural glass, consistent throughout the loop.

Deck elevation, derived from NOAA Station 1612340

The path's deck height above the water is fixed against real tidal data for this site rather than an assumed freeboard. Using NOAA's published datums for Honolulu (Station 1612340, 1983–2001 epoch, referenced to MLLW = 0.00 ft), the governing high-water condition is the 2017 King Tide, an anomalously high recorded event reaching approximately +2.56 ft (+53cm MSL), against a Highest Astronomical Tide

for the station of +2.99 ft (+66cm MSL). The walking path’s deck is set at MSL +55cm (MLLW +2.62ft) — 22 centimetres above ordinary MHHW and 2 centimetres above the recorded 2017 King Tide, so that under the most extreme tidal event on record for this station, the underside of the glass deck remains dry.

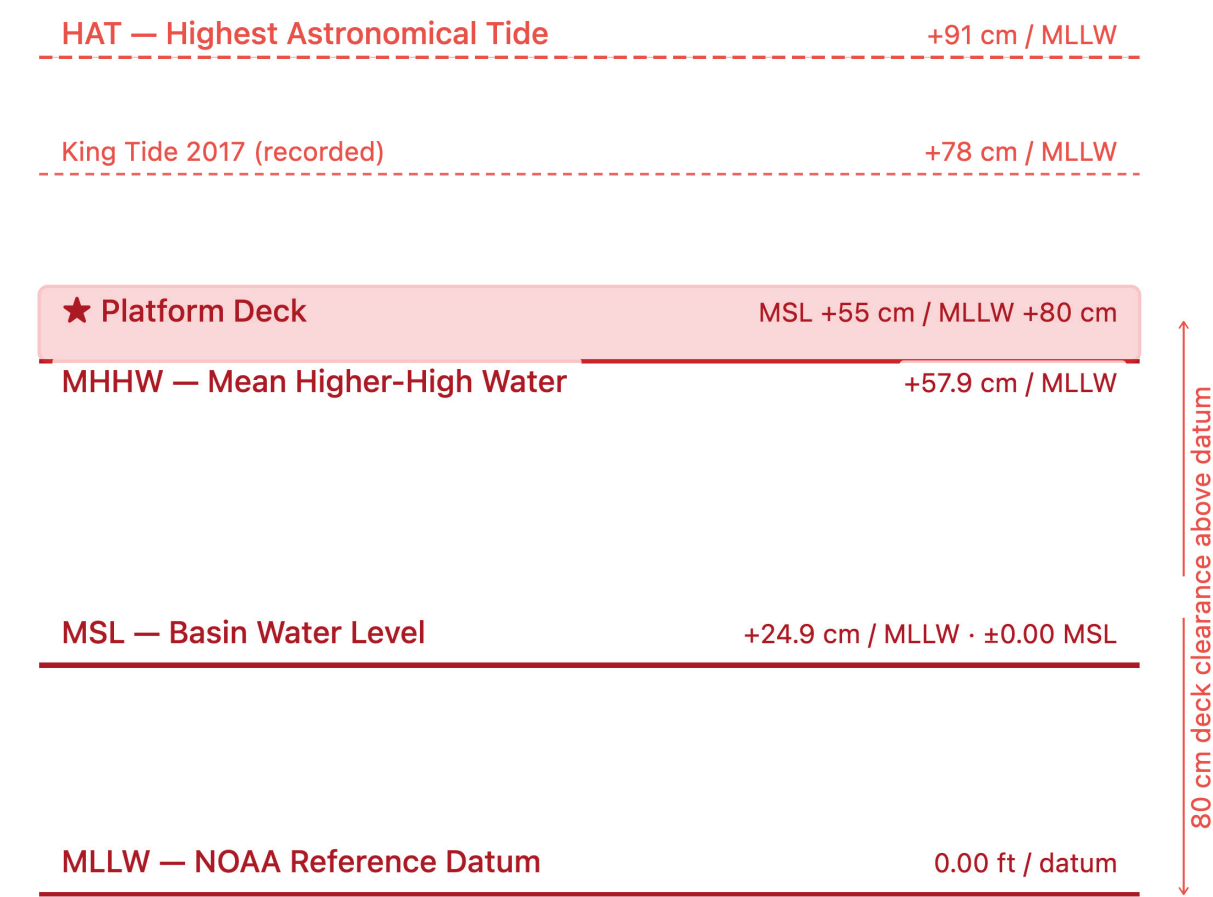


Fig. 50: Platform height calculation data

Cross-sectional division

The 7-metre path width is divided by a 1-metre thick retaining wall, positioned at the centreline of the path on every side of the loop, producing two roughly symmetric 3-metre cantilevers, one extending back over the basin interior and one extending out toward the ocean or the bleacher structure depending on orientation. Both the wall thickness and the floor slab beneath the basin, set at 1.3 metres, are sized for a combined load case rather than static hydrostatic pressure alone: hydrostatic uplift when the basin is drained for maintenance while the external tide is high; wave impact and dynamic surge transmitted through the re-engineered exchange openings; and the cyclical, unpredictable nature of tidal loading itself. Checked against hydrostatic uplift alone, using the 2017 King Tide as the governing extreme case, the 1.3-metre slab achieves a factor of safety of approximately 1.0 to 1.15 by self-weight an adequate baseline margin against the static case, with the additional mass beyond this baseline reserved deliberately for the dynamic wave and tidal forces a live, ocean-connected basin experiences.

The tidal exchange openings

The western wall’s two re-engineered exchange openings make the deck-elevation and basin-level calculations meaningful at all: without controlled exchange, the basin would track every tidal swing between MLLW and MHHW directly, a range of roughly 43cm twice daily. By sizing the openings to achieve six exchange cycles per day, the basin’s working water level is held close to MSL while still drawing on live, circulating seawater.

Walking the loop

The loop is walked without a fixed starting point or directional requirement, consistent with the soft-fascination argument developed in Chapter 3. At four points around the loop, positioned where the path crosses directly above one of the re-engineered exchange openings, the glass floor panel is detailed with a wider field of clear, unfritted glass roughly 1.2 metres square set within the otherwise anti-slip frosted floor surface, so the visitor can pause directly above an opening and see the tidal flow itself.

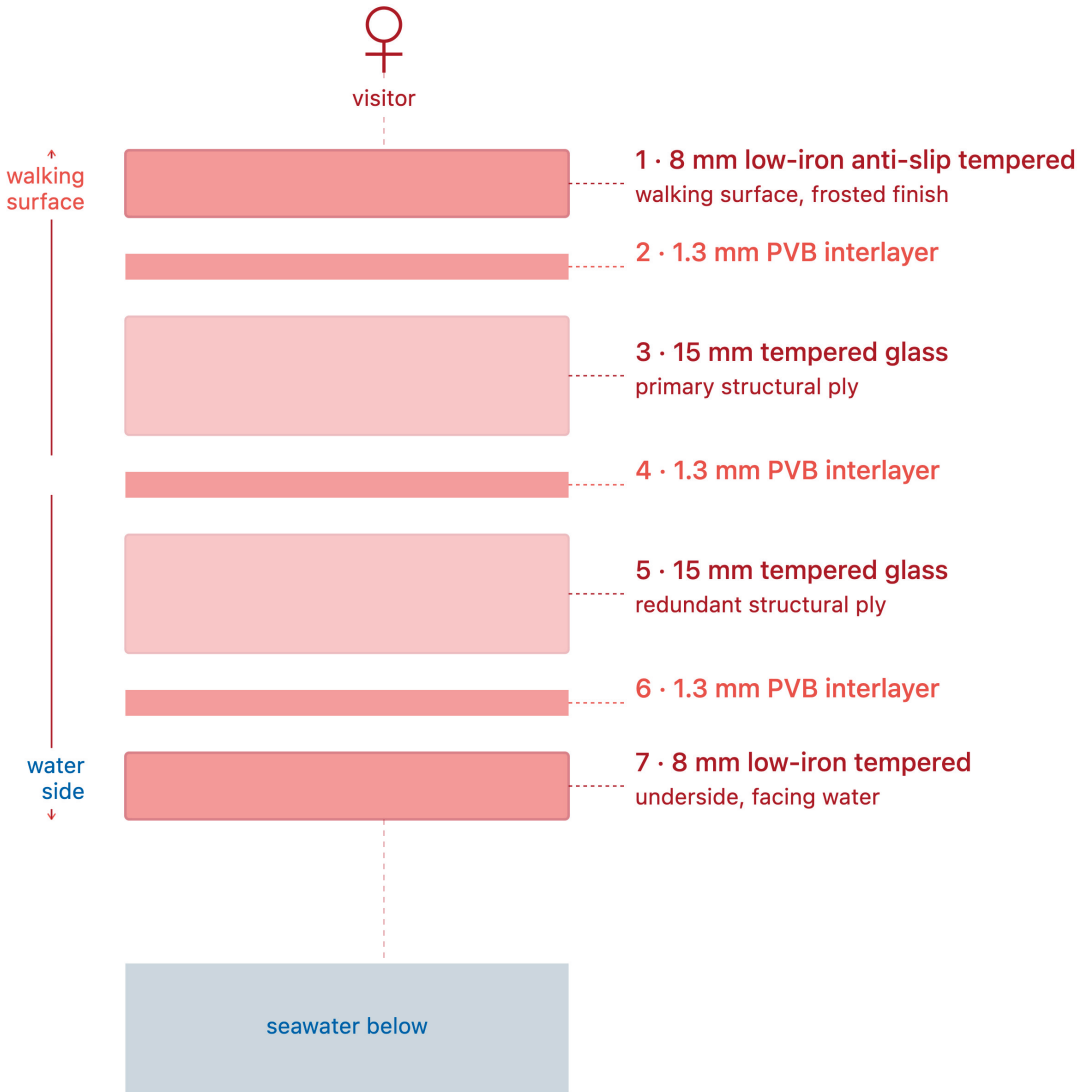


Fig. 51: Glass walking path layers

Chapter

07

The Final Project

- 7.1 Site Plan (final master plan, dark mode)
- 7.2 Plans
- 7.3 Sections - Elevations
- 7.4 Circulation

This chapter presents the completed design as a set of construction-grade drawings: the final master plan, level-by-level plans, sections and elevations carrying the project's key dimensions, and circulation diagrams confirming the wet and dry experiences argued for in Chapter 6. Where Chapters 5 and 6 established why and what, this chapter shows that the proposal is dimensioned, coherent, and buildable.

Chapter 07

The Final Project

7.1 Final Plan



Fig. 52: Site plan

The final master plan brings together every element developed across Chapters 5 and 6 into a single, dimensioned drawing: the monument piazza and its niho manō glass boxes at the Kalākaua-facing threshold, the 1927 arch, the exhibition beneath the north bleacher, the administration, shower, and restroom functions occupying the remaining bleacher levels, the 100-metre by 40-metre basin, and the 7-metre glass walking path looping its full perimeter. Presented in dark mode to match the project’s complete diagram set, this plan is the drawing against which every other drawing in this chapter plans, sections, and circulation is read, and the point at which the thesis’s separate arguments are seen, for the first time, as one continuous site.

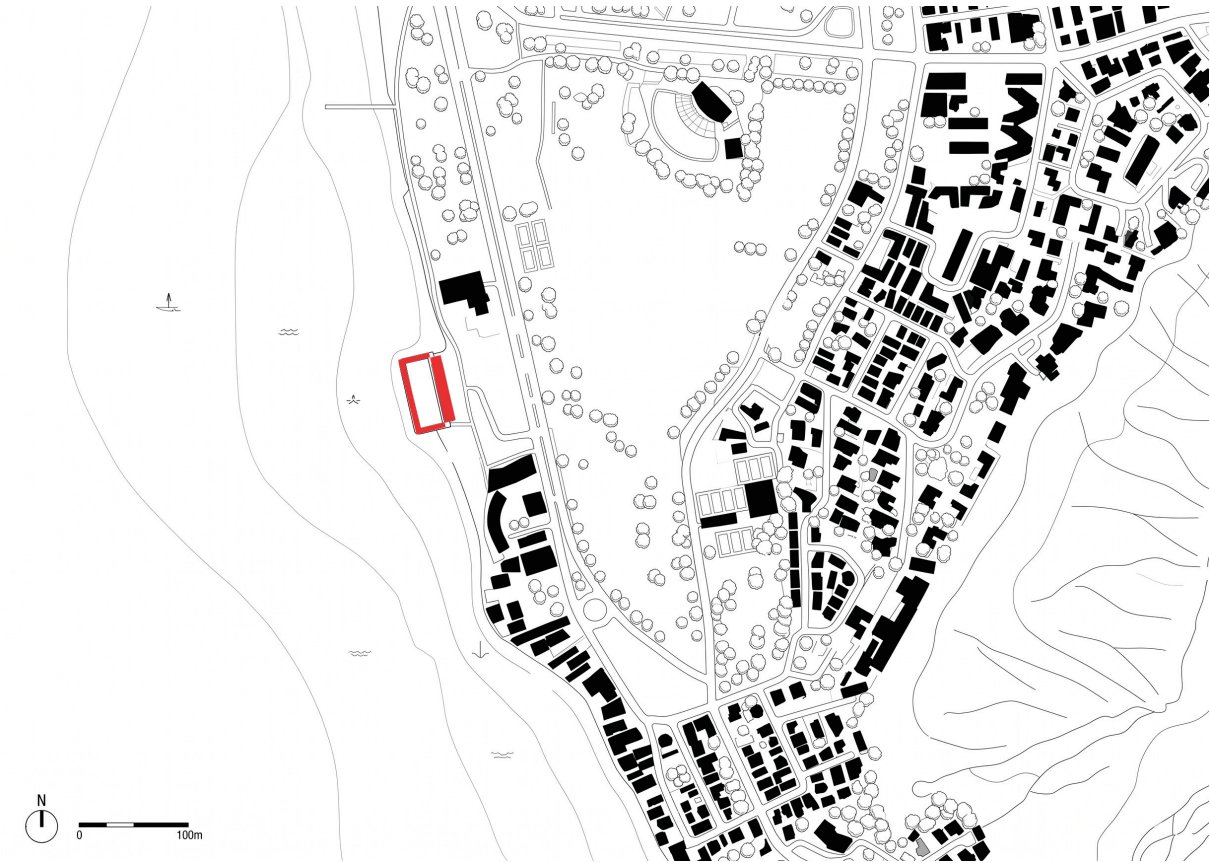
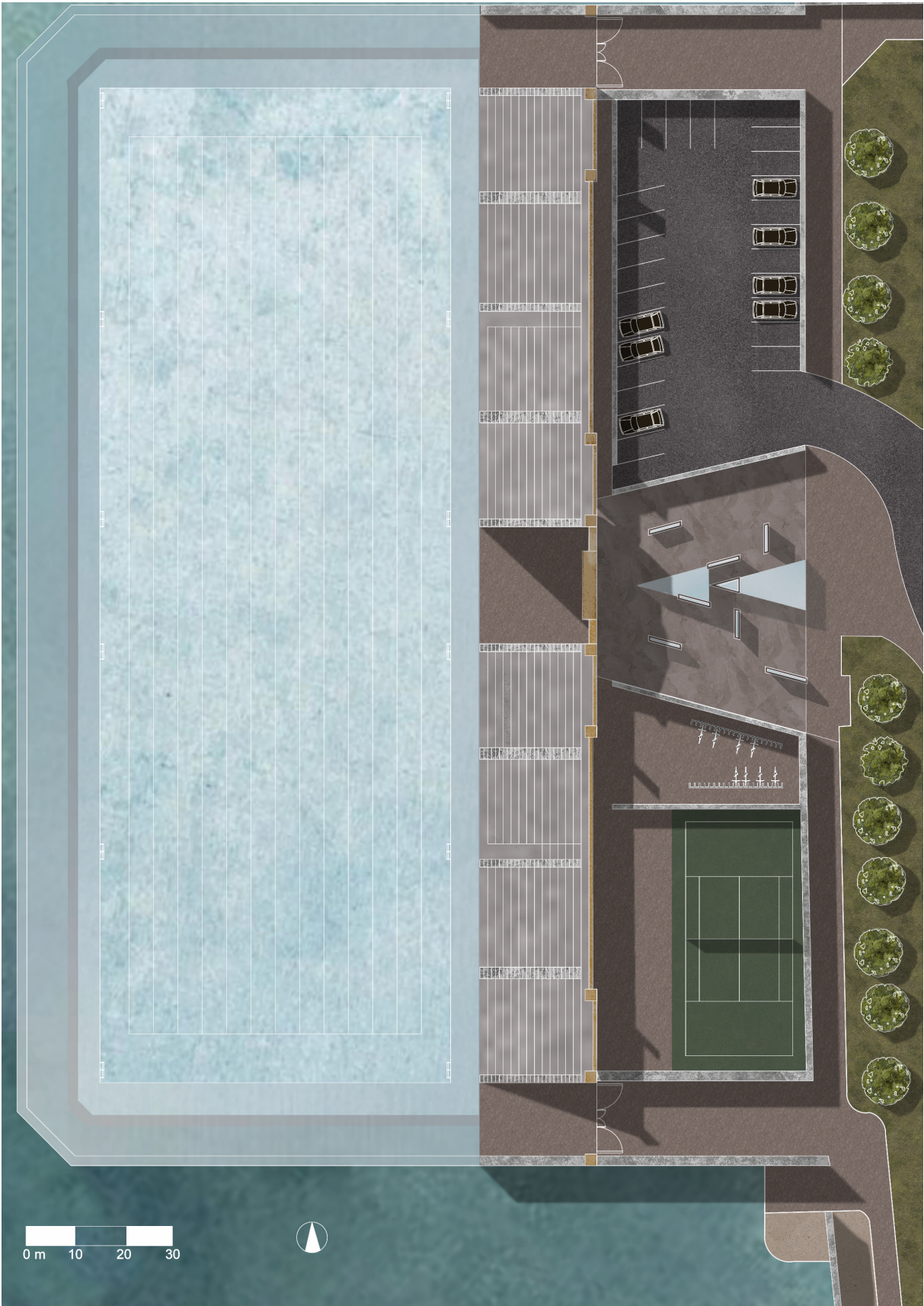
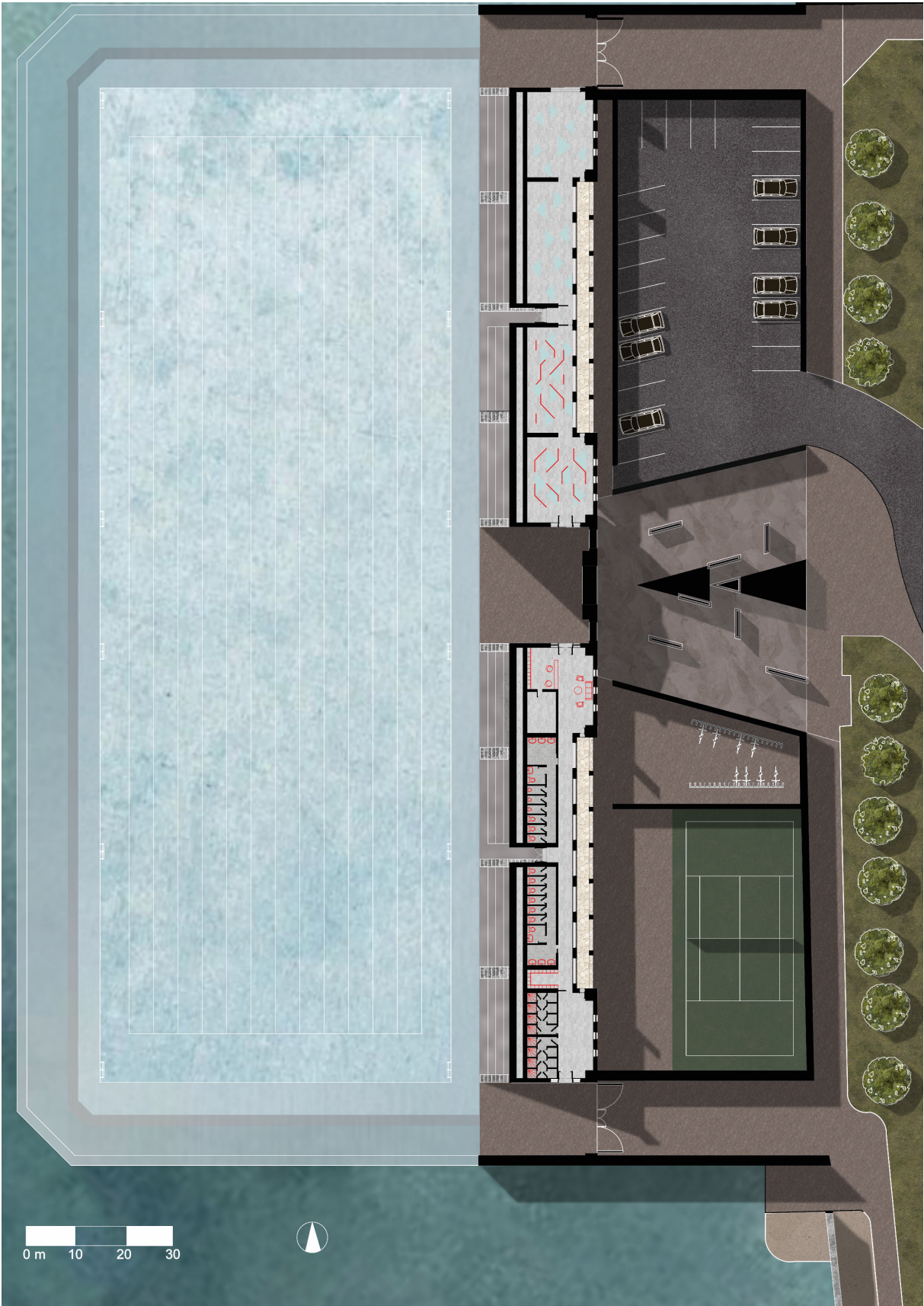


Fig. 53: Schwarzplan plan

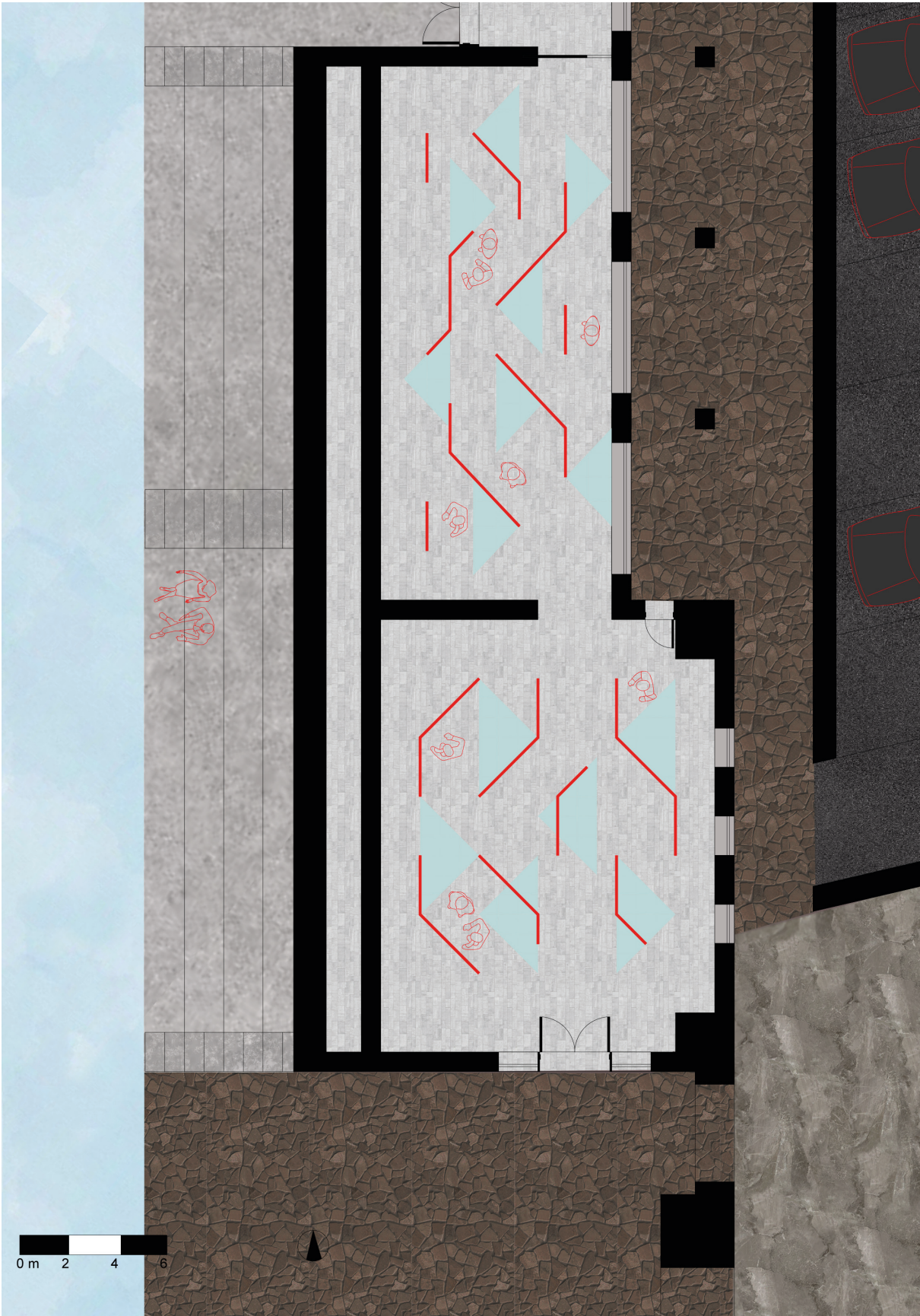
7.2 Masterplan



7.3 Ground floor plan



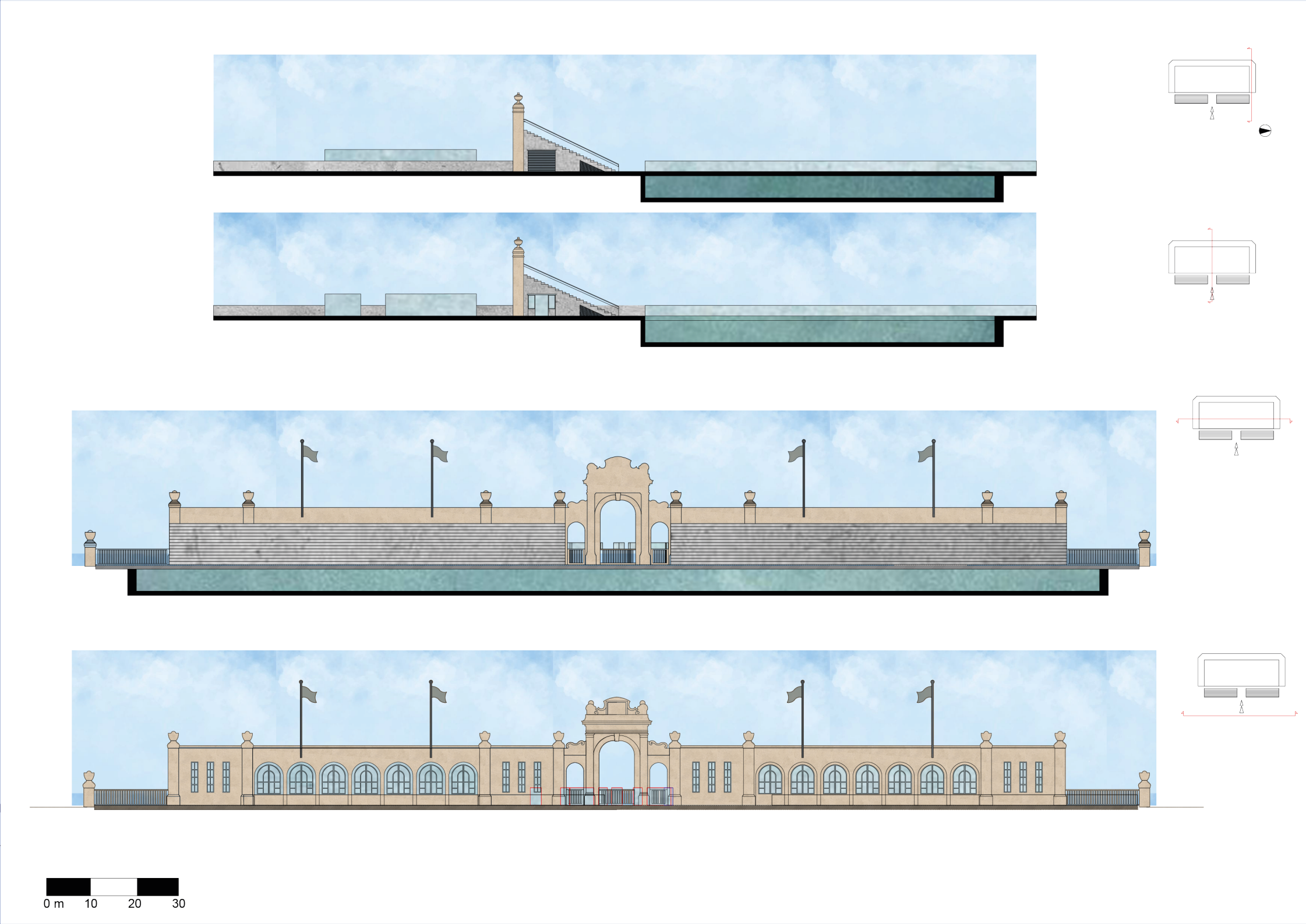
7.4 Exhibition Area Floor Plan



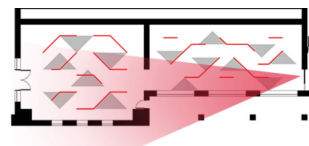
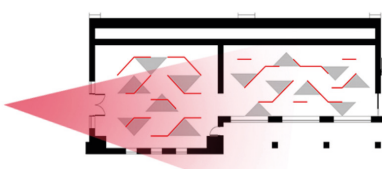
7.5 Monument Piazza Floor Plan



7.6 Sections & Elevations



7.7 Renders



Chapter

08

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