

Life beyond the Dike

Deciphering the ability to connect people to water
through the historic urban landscape

An inventory of the Uiterwaarden in the Waterdriehoek

Jules Bresson

Reinterpreting the methodology developed by

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in the Urban Archipelago Studio of 2023,
under supervision of *Carola Hein*.

We analyzed separate architectural elements in the city of Trieste, Italy. Placing them in the context of a broader network of paths and nodes. It proved to be highly effective method to provide a design direction for facilitating interactions with water.

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INTRODUCTION

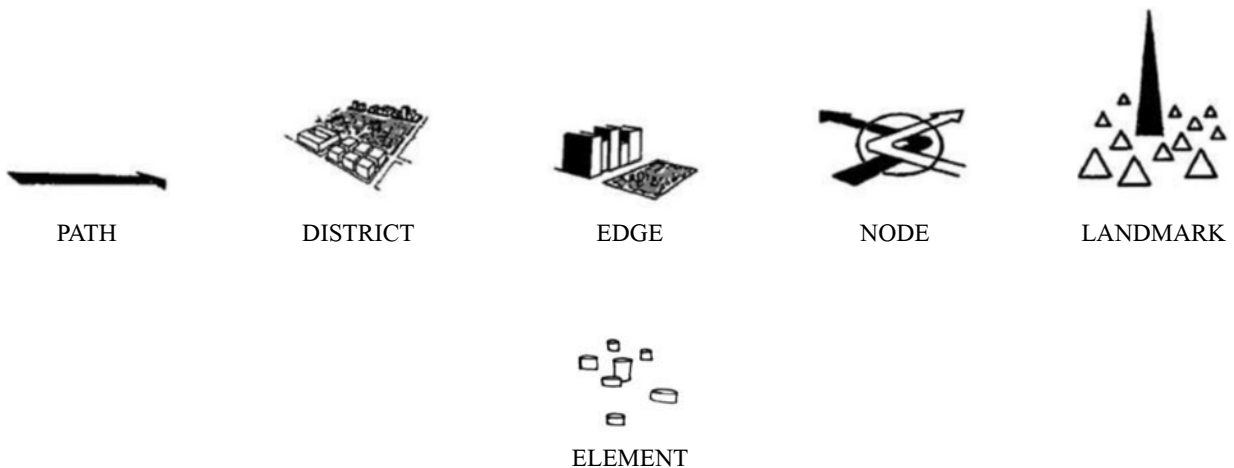
The Inventory is part of a strategy to identify and analyse how urban and rural spaces interact with the water. These spaces located in the areas outside of the dike, referred to as uiterwaarden, are particularly prone to the dynamics of the rivers Noord and Merwede in the Waterdriehoek. Climate change and continuous urbanization of these areas will inevitably impact the way people interact with water. As a result the design of riverfronts and their accessibility from the polder needs to be reimagined.

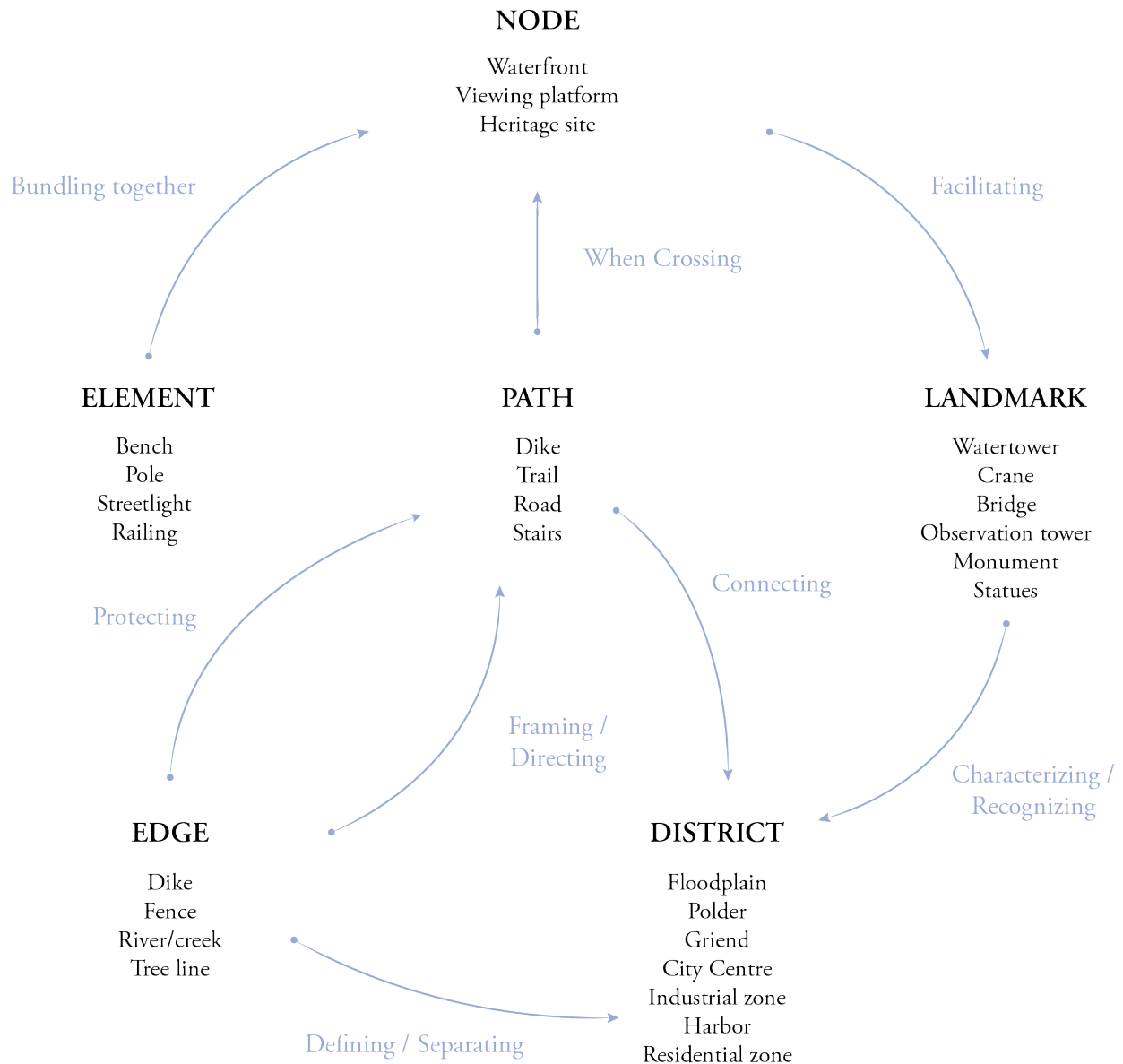
Looking at the Dutch Delta, a comprehensive system has been developed to examine places at both tangible and intangible levels. By analyzing how these spaces fit in their context and how specific elements facilitate interactions with water, the inventory delves into the identity of the Dutch Delta. The objective is to uncover the tangible and intangible qualities and practices associated with these places and objects, and bundle them so they can be reinterpreted for future design proposals in the uiterwaarden. Ultimately, bringing about a recognizable network that connects traces of water and maritime related heritage sites in the Waterdriehoek through water.

KEVIN LYNCH - ELEMENTS OF THE CITY

Kevin Lynch's elements of the city (Lynch, 1960) serve as an effective tool for analysing the perception of specific urban environments. This framework remains applicable even when examining individual objects at a smaller scale, where they can be viewed as landmarks, nodes, edges, and paths that collectively shape distinct districts.

The diagram on the right illustrates the objects and categories included in the catalogue, forming an interconnected web. Additionally, the diagram proposes an expanded interrelation between Kevin Lynch's categories, incorporating the additional category of 'Element'.



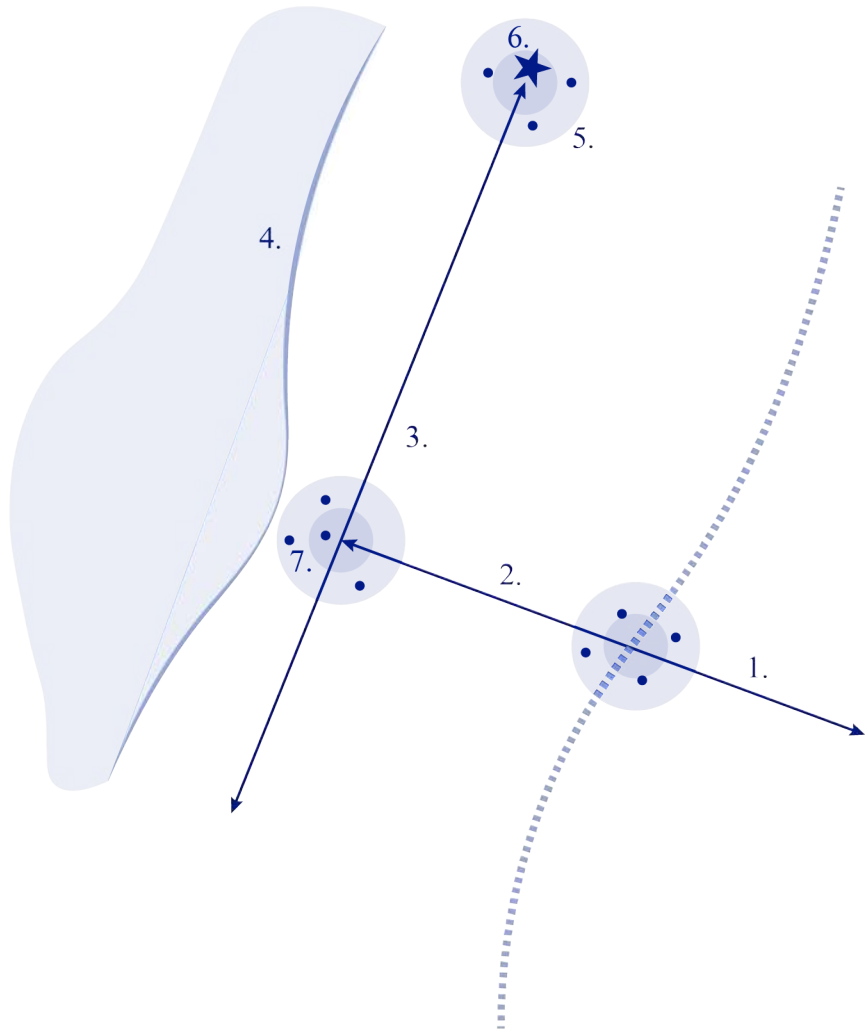


READING THE DUTCH RIVER LANDSCAPE

Reading the Dutch river landscape as polders, dikes, uiterwaarden and waterfronts, helps to understand basic urban structure but also forces to adapt unambiguous and plain solutions.

Understanding the ‘elements of the city’ of Kevin Lynch in the Dutch landscape lays bare reoccurring patterns and sequences. By splitting spaces in seven different basic categories, this catalogue aims to index existing combinations of nodes, paths, edges, landmarks and elements within districts. Documenting these existing combinations and reinterpreting them will lead to more ambiguous solutions when designing spaces where people and water interact.

1. BEHIND THE DIKE
2. TO THE WATER
3. ALONG THE WATER
4. WATER/LAND BOUNDARY
5. PLACES TO STAY
6. WATERFRONT LANDMARKS
7. ELEMENTS



CATEGORIZING WATER PRACTICES: BLUE PAPERS

The Blue Papers journal suggests the set of icons to categorize tangible and intangible objects and practices related to water. (Hein et al., 2022) The categories help identify different scales, functions and forms of both maritime and water management related heritage objects, as well as generic water-related structures.

Some of these categories appear more present through this study than others.

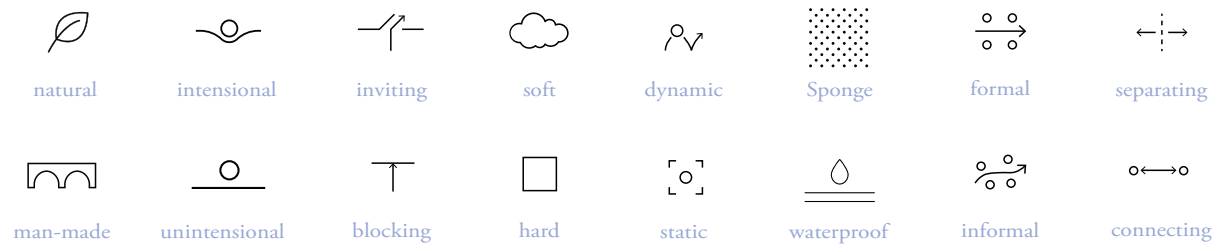
Tangible subjects include: Drinking, irrigation & agriculture, drainage and sewage, shelter and defence, energy & industry, transport and places of leisure. Intangible subjects include: Recreation, laws & policy, institutions, education, and preservation/adaptation/reuse.



DEFINING THE QUALITIES

Similar to the categories in the Blue Papers, a set of icons that symbolize distinct qualities is presented. They are presented as opposites, although in reality the places and objects investigated appear to be on a spectrum in-between qualities. In the inventory, the icons are presented as an interpretation and are not definitive or mutually exclusive. Together with additional notes and sketches, they intend to offer a holistic overview of each place/object.

Given the changing dynamics of the Delta, the physical existence of these objects tends to evolve overtime. This method proposes identifying and preserving their intangible qualities as well as their ability to create a certain spirit of place. When reimagined or revitalized in new designs, it is the qualities inherent in these elements that hold importance rather than the objects themselves.





natural

Everything in the Dutch polder landscape seems to be man-made, therefore 'natural' is defined as: 'Existing in correspondance or derived from nature'.



man-made



unintentional

If an action is done with conscious planning and purpose, it's intentional. If it happens without premeditation or awareness, it's unintentional.



intentional



inviting

The physical design of spaces or the overall atmosphere of an area, reflecting the intentional efforts to either welcome or keep out certain activities.



blocking



soft

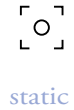
The key differences between soft and hard lie in their nature, form and material within the context of the landscape.



hard



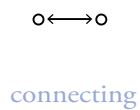
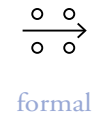
Dynamic elements are characterized by ongoing activity and adaptability, while static elements are stable and unchanging.



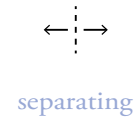
Sponge quality refers to the ability to retain water, while waterproof refers to the ability of a material or object to resist the penetration of water.

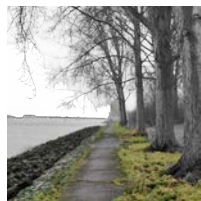


Formal and informal in the context of this analysis refer to the degree of structure, planning, order versus spontaneous.



Connecting involves bringing together and facilitating interaction, while separating involves creating distance, establishing boundaries, and maintaining independence.



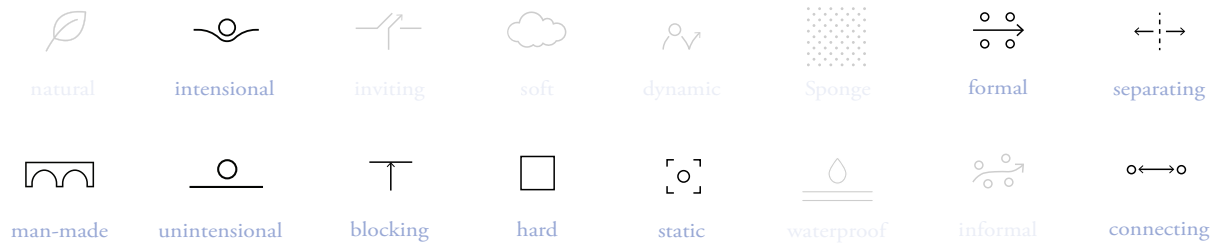




BEHIND THE DIKE

In the polder the connection to the water is not so evident. A great deal of inaccessible districts such as industrial zones, grienden and big infrastructure, form barriers between the polder and the river. The nodes and edges on these paths are of great importance of guiding people to the water. Landmarks seen from afar can also play a big role in making these routes recognizable. Often these paths are overlooked in making them accesible for all. Steep stairs, empty areas and big fances/buildings often make these corridors feel unpleasant.

The Open Road



‘A narrow stone path connecting the residential area to the dike, purely functional’

‘Little to no integration with the landscape, with fences blocking the empty areas around’

‘Wide open field gives a spacious feeling, even though the field is inaccessible’



Formal Dike Treeline

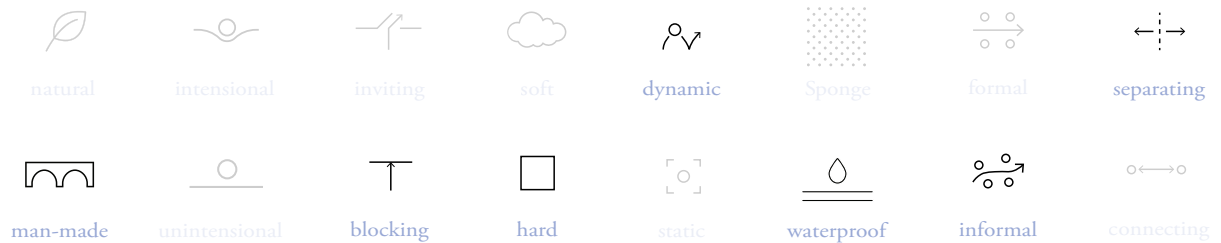


‘Trees positioned on either side at the base of the dike, path becomes closer to the branches’

‘Impressive height, rhythm and orthogonal direction of the treeline evokes a feeling of formality’



Transition between Territories



‘Hard barrier that cuts off connection to the riverfront’

‘Purely functional and informal entrance that can be closed and opened for security purpose’

‘Lack of cohesion between materials, randomness of the harbor’

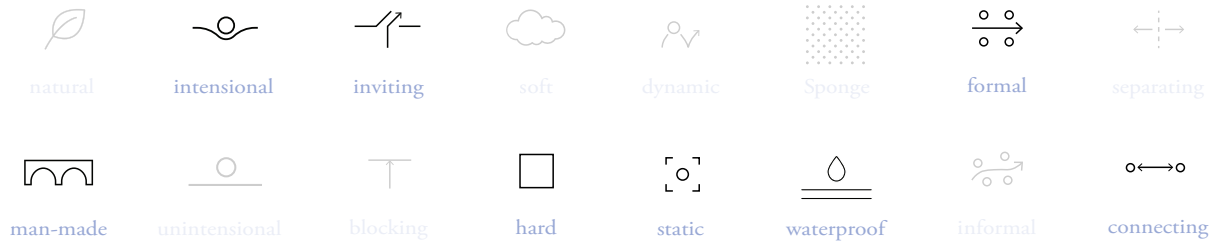


Ingang
kerkeplaat
13 en 15

P

10

Dike Stairs



‘Straightforward tool to overcome height differences between polder, dike and uiterwaard’

‘Steep and not accessible for all, mostly used by pedestrians’



Path of Willow Trees

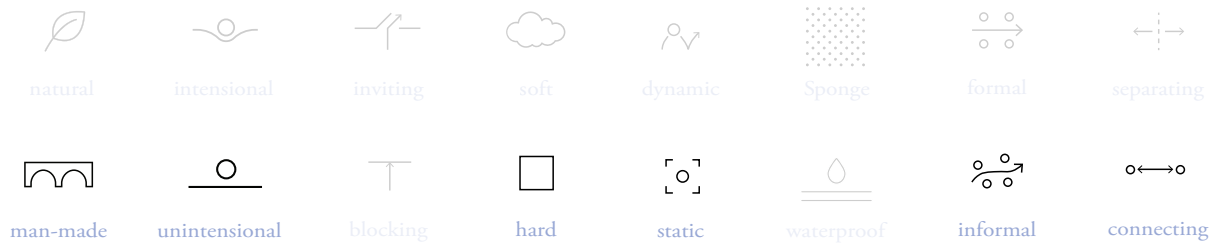


‘Willows serve as an effective edge because of their size, guiding people down the path’

‘Aesthetic that embraces the Dutch polder-dike landscape’



Wooden Footbridge



‘Small, informal and unsafe path connecting the dike to a natural friend’

‘Simple construction and biobased materiality to blend into the wilder surroundings’

‘Heavily affected by the weather’



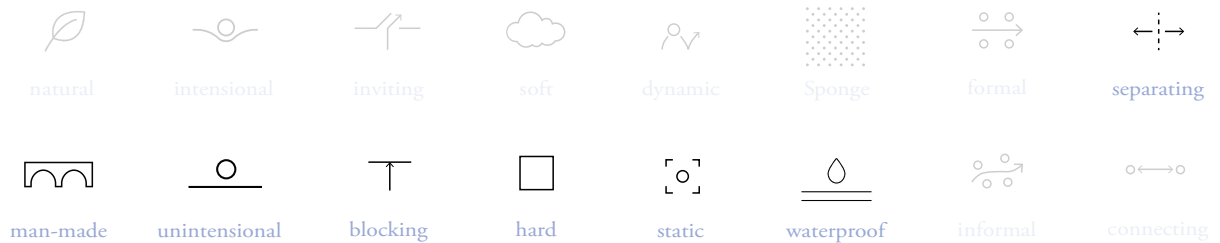
Wetland Sign

Wetlands are important ecosystems that provide many benefits to humans and the environment. They are home to a variety of plants and animals, and they help to filter pollutants from the water. Wetlands also provide a natural buffer against flooding and erosion.

Wetlands are a vital part of our natural heritage and we must protect them for future generations. Please do not disturb the wetlands and their wildlife.

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The Wall



‘Large footprint along the river claiming large portions of the riverfront’

‘inhuman scale that towers above the rest of the landscape, blocking both access and sight’

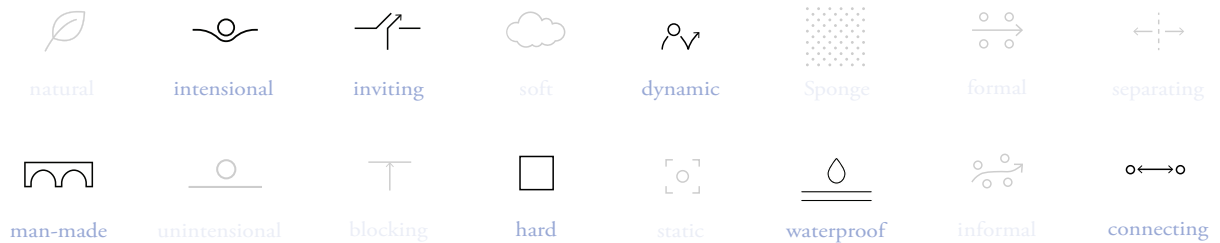
‘Completely impenetrable to water, causing rain pools in winter and urban heat island in summer’



TO THE WATER

Paths perpendicular to the water are of great importance, having a strong visual connection or sloping down helps when directing people to the water. In addition edges give a sense of depth and make the experience of arriving at the waterfront pleasantly surprising.

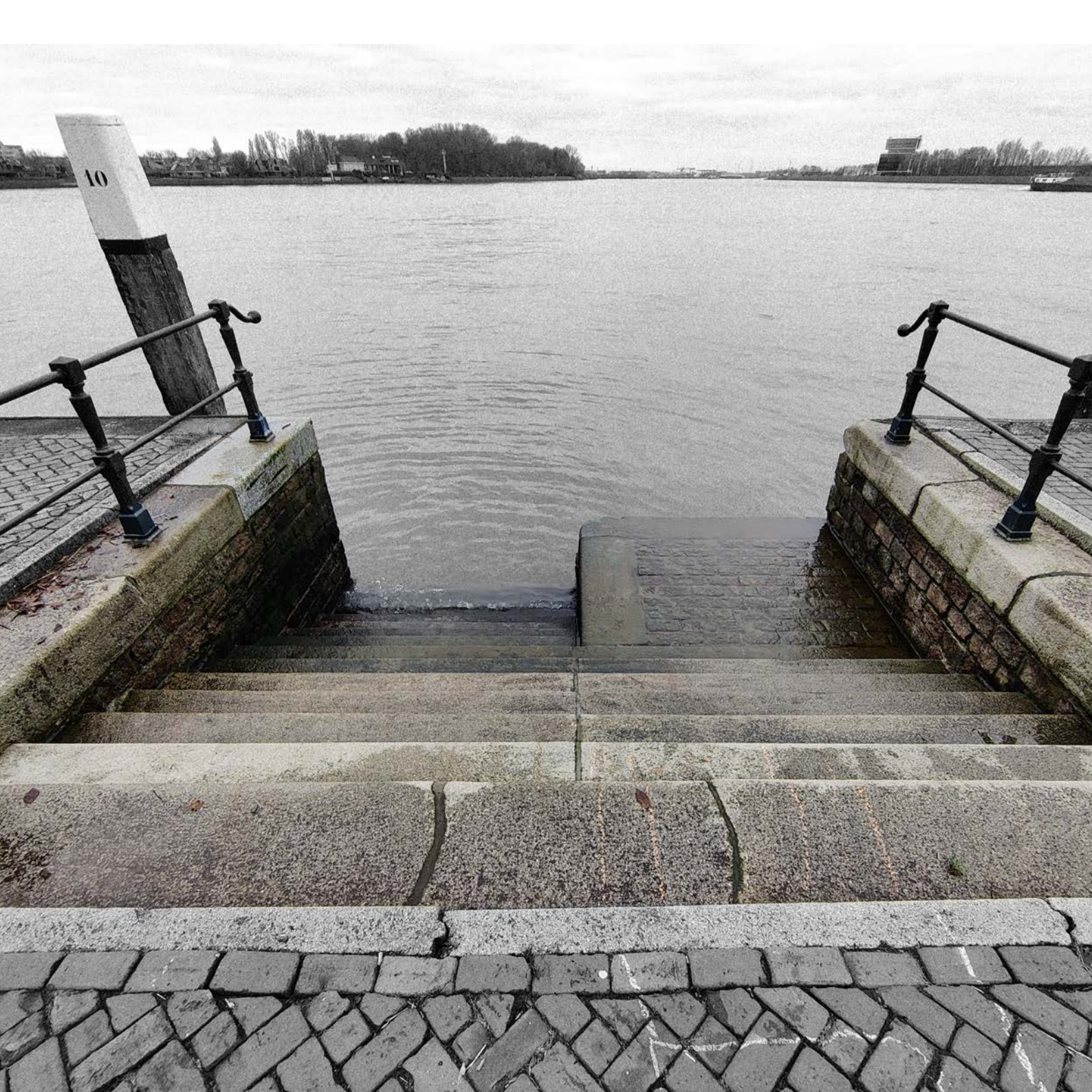
Walking into the Water



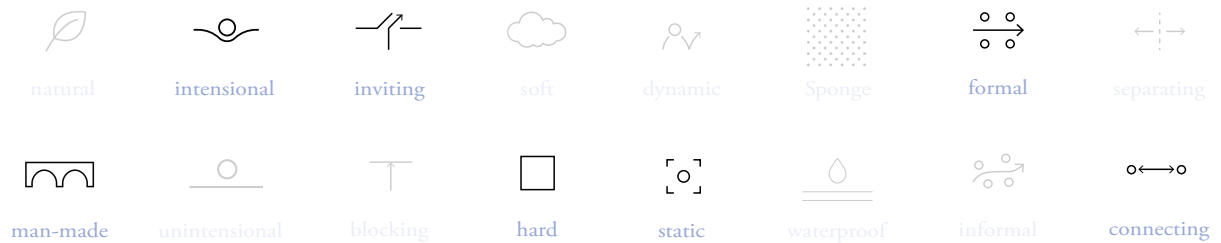
‘Breaking up the quay and providing place to stop and sit close to the water’

‘Poetic element that invites the public to touch and feel a connection with the water’

‘Rivertide makes the stairs dynamic, visualizing the difference in water levels over time’



The Gate



‘Framing the view of the otherside like a window or painting’

‘Different tiling distinguishes the waterfront territory from the inner city’

‘As a remnant of the historic city wall it is still providing a sense of protection’

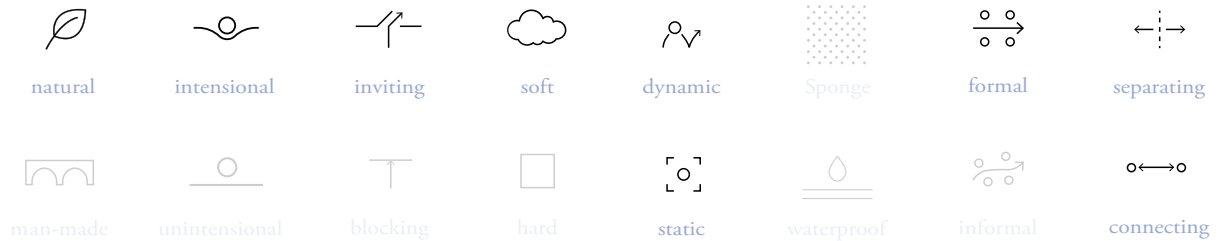


ANNO

1652

DELTA Bunker Service

Framing Willows



‘A natural way of framing certain elements of a view’

‘Drawing in people by announcing a destination’



The Perpendicular Jetty



‘As a dynamic element the qualities of this path vary dependent on how many boats are docked’

‘When occupied the place feels inaccessible and uninviting, also blocking the view’

‘The form and repetition of dock elements give formality and identity’



Sloping Down



‘Meant as a place to get boats in and out of the water, the down slope has a function’

‘Feels surprisingly pleasant and serene because of the sudden opening and lowering of the quay’



Channeling Water



‘A little detail that connects an inland body of water to the river’

‘It provides both an ambient scene and sound when walking by’



The Corridor



‘Dense edges provide direction and frame the view on the river’

‘By first narrowing down the path and view, suddenly opening up feels surprising’

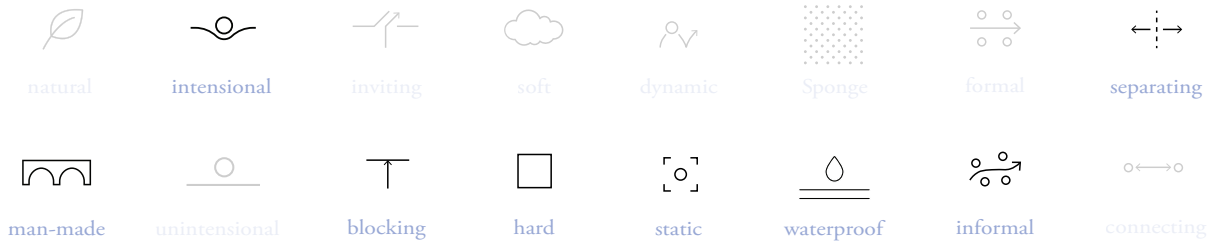
MAASPAD



ALONG THE WATER

When looking and moving along the water, spaces inherently get direction from the river or creek, which acts as an edge. In most cases there seems to be a path and another edge on the other side, such as a fence, buildings and in more rural areas a treeline or dense vegetation. These paths connect different nodes and districts and are the main infrastructural connection along the water. Having them be continuously accessible greatly enhances the experience.

Modern Urban Waterfront

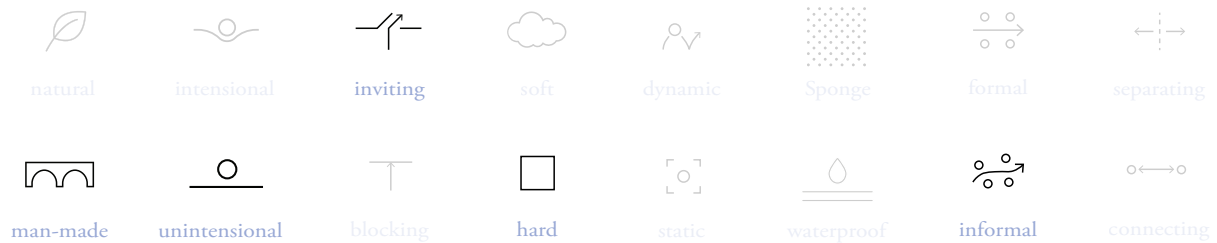


‘Flats and their carparks give an unpleasant feeling when walking along the waterfront’

‘Walkway is relatively high compared to the water, in combination with the fences it feels disconnected’



A dike of Stones



‘Walkway separated from the main road to split up slow and fast traffic’

‘Walkway is lower, boosting a connection with the water, whilst also being semi-closed off from the road’

‘The stones give a nice texture to the dike fitting for a more urban environment’



Narrow Secondary Dike



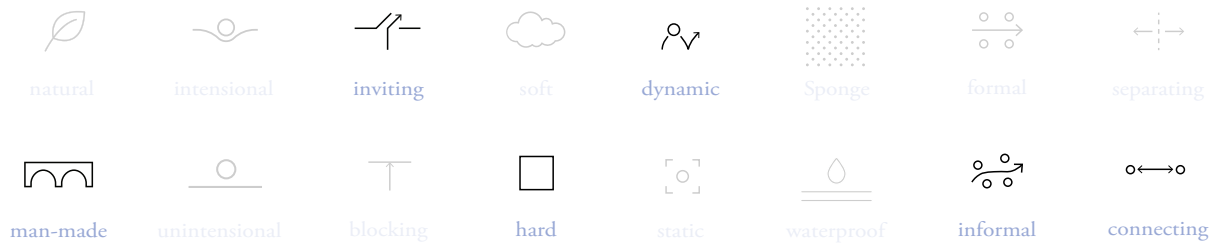
‘The secondary dike forms a small barrier separating the river from a small woodland area’

‘The walkway is gravel, making it a designated pedestrian route’

‘Vegetation is slowly taking over the dike, blending the stones with the landscape’



Elevated Duckboards



‘Recreational experience changes with the seasons, a scenic route through the dynamic floodplain’

‘Sometimes the railing disappears, evoking a exposed but freeing feeling’

‘As it is in a bird reservoir the walkway is stained with bird feces, making the walk less pleasant’



The Muddy 'Path'



‘The experience changes with the seasons, sometimes it becomes inaccessible’

‘The path appears and then disappears and blends into the natural landscape’

‘Water and vegetation shape and transform the path over time’



Threefold Quay



‘There is a clear division between Stones to break waves, walking path and grass area with trees/vegetation’

‘Once it was presumably formal, and overtime it has deteriorated and become infomal and overgrown’

‘The brances of the trees provide shade and cover, making the walkway more pleasant’

‘The loose stones form an interesting barrier between water and land, adding texture to the quay’



The Griend Path



‘Very closed off, there is only forwards and backwards’

‘Serene walking route with incidentally traces from the griend labor’

‘Once the willows are cut an open griend field with rows of stumps appears,
completely different from the griend path’



Grassland for Grazing



‘Not accessible for humans, the open field is appreciated from afar’

‘Peaceful and rural approach to dike management’



BOUNDARIES

Where water meets land a variety of edges are created, all vastly different. They appear to be hard or soft, becoming softer and less formal the more rural the area. Some edges are more accessible than others. Separate elements such as piers and docking areas with walkways bring about a recognizable marine identity. The age and materialisation of the quays also shows the area's history.

Groyne



‘Groynes stop the river from meandering, working against the will of the river but vital for water defence’

‘Made of loose stones they blend well into the riverfronts’



Hiding behind the Reed

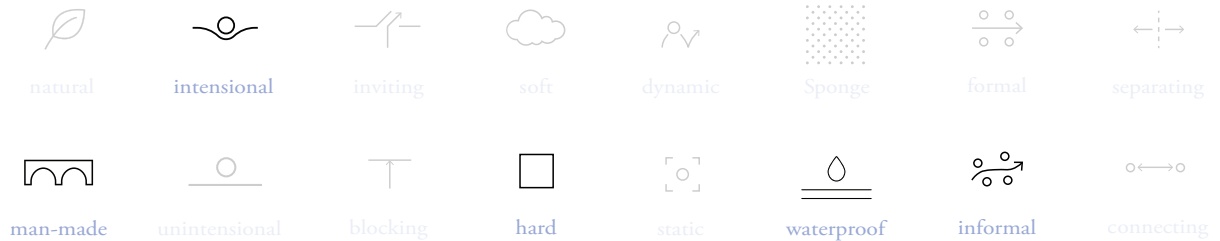


‘The reed is just high enough to hide the docking area’

‘Aesthetical riverfront vegetation and a great natural barrier used in waterfronts’



The Quay End



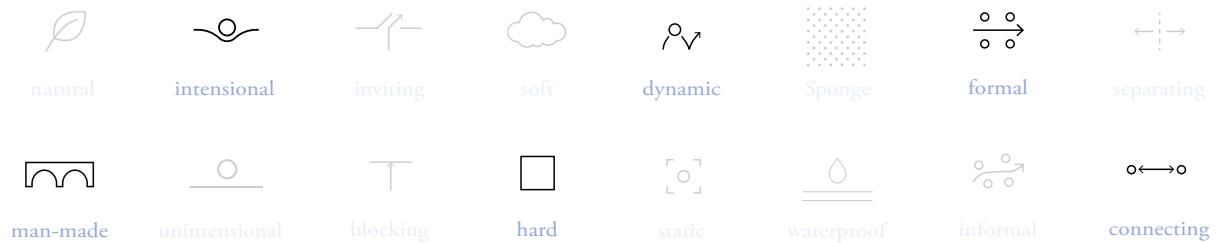
‘At the end of a quay there is a small area surrounded by water on both sides,
creating a spot to place an eyecatcher’

‘The absence of fences and the different types of stones used bring about a maritime character’



TEERLINK
MOTOREN REPARATIE

The Parallel Jetty



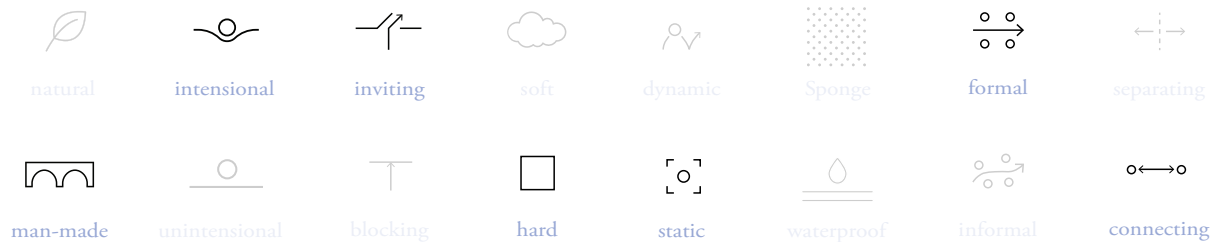
‘A second, lower waterfront area is added where people can sit and walk next to the water’

‘Can be used for small boats to temporarily dock’

‘Jetty is floating and adapts to different water levels’



Bridging the Gap



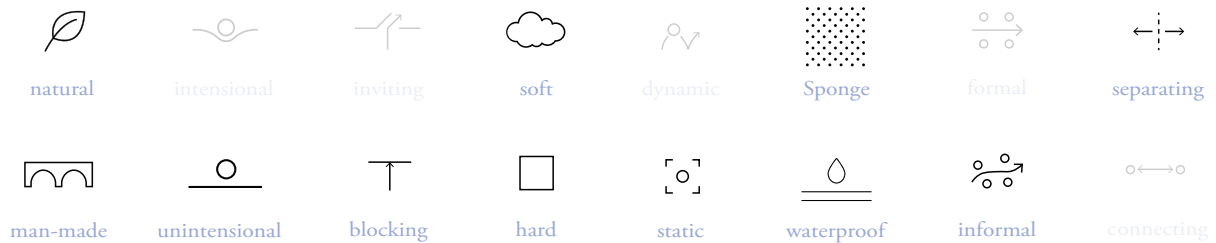
‘When a small harbor is created, usually the path leads you inwards and around. Here a bridge is introduced since the boats entering are small enough, continuing the route along the waterfront’

‘Wood in combination with a simple yet aesthetic construction make it stand out but still fitting the context’

‘The connection is seamless making it accessible for all’



A Waterfront of Variations



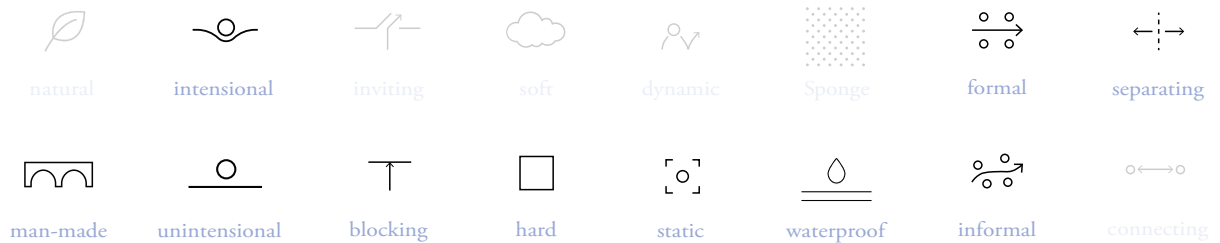
‘The riverfront can take many shapes and from, both natural and man-made it separates land from water’

‘The informality and sometimes messiness adds to the roughness of the area’

‘Poles in the water guide the ships safely away from shallow parts of the river’



The Historic Quay



‘Age-value, the layers of time are literally visible’

‘Materials of the quay in combination with the wooden poles uphold a long maritime history’

‘Once formal and intentional, it has blended into the informality of the urban landscape’



Willow Quays in the Polder



‘Example of traditional woodwork and locally sourced material use’

‘Blends seamlessly into the landscape, fits well in rural areas’

‘In contrary to the rivers, the water in the polder is peaceful, this quay reflects that softness’



Straight into the Water



‘A history of building with water is evident in older settlements’

‘Rarity-value; the hard transition between building and water is a spectacular sight’

‘Difference in water levels over time is shown on the facade’

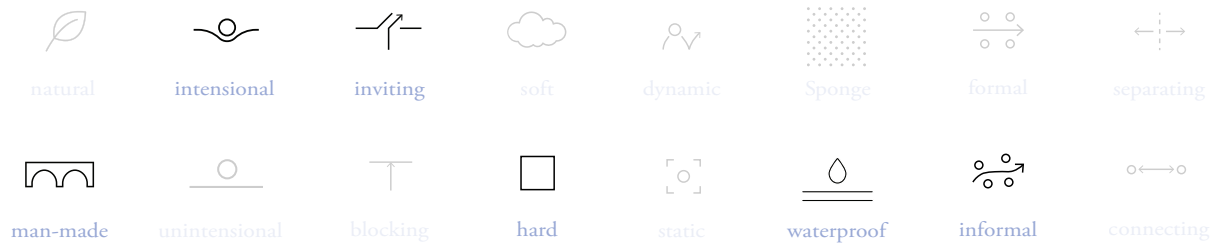
‘Recognizable poles in the water protect the buildings against ships’



PLACES TO STAY

Places to stay can also be referred to as nodes. They appear where paths cross, landmarks are placed or viewed and often they accommodate a collection of separate urban furniture elements such as vegetation, benches, bins and streetlights. Therefore these places are characterized as places to stay. However some places are more pleasant than others, the upcoming series deduces why.

The Quay End (Square)



‘Viewing point with long sightlines contrast the narrow streets in the urban center, opening up to the river’

‘Urban furniture makes it possible to stay for a longer period of time, support function’

‘Absence of fences lets you experience the river without disruptions’



105

104

Waterfront Tribune



‘As a longitudinal square it is both a node and a connecting path with a specific direction’

‘Different tiling and repetition of urban furniture elements give the place a hierarchy’

‘Proportions of tribune, quay and buildings feel well adjusted to human scale’



Quay Square



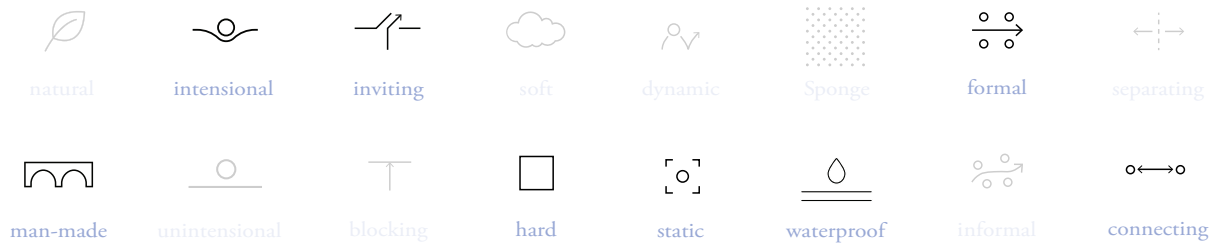
‘Combination of both harbor and park elements provide a well-balanced urban square’

‘Line of trees separates the square from the road, focussing the attention to the water ’

‘Introduction of round shapes’



One-end Open to the Water



‘Perpendicular to the water this square draws you in, even though it is a dead end’

‘Lowering the square creates a secluded and intimate area’

‘The square is mirrored on the otherside of the road, connecting both bodies of water’



The Griend Field



‘Local vegetation and the muddy soil act as a sponge, holding rain water for a longer period of time’

‘Serene and quiet place with incidentally traces from the griend labor’

‘Once the willows are cut an open griend field with rows of stumps appears,
completely different from the griend path’



The River Beach



‘Groynes create a bay where the water flows slower, making it safe to access’

‘Sand is a pleasant and soft material to stay on for a long period of time, perfect for recreational areas’

‘The moving water and the sound it makes, in combination with the changing tide makes the place dynamic’



The Floodplain



‘Perfect depiction of how a river can dictate a landscape’

‘Natural watermanagement system that takes pressure of the dikes when the tide is high’

‘Dynamic recreational area that changes with the seasons, experience differs during the year’

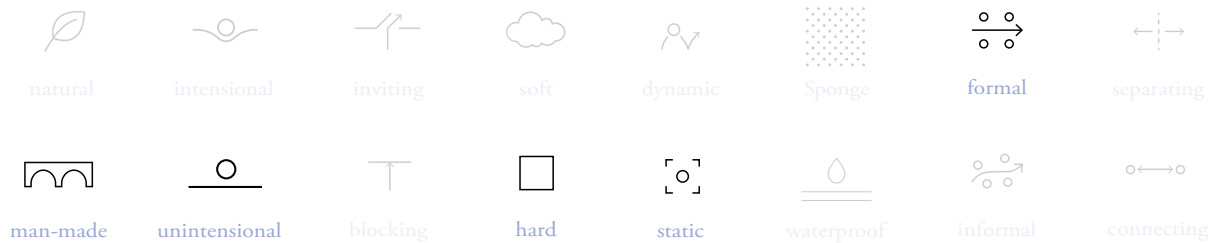
‘High ecological value, is combined with research on adaptable watermanagement practices’



LANDMARKS

Landmarks, are easy to spot from afar. They act as navigation points and direct where paths and edges are going. Intentional or not, they often assure some type of identity and have enormous potential when developing a recognizable network between districts. However, they can also portray an undesired or unfitting identity.

The Watertower



‘Related to water practices of the past, still very present because of their size and typology’

‘Recognizable orientation point because of proximity to urban settlements’

‘Refers back to history where even functional objects were made aesthetically/architecturally pleasing’



The Electricity Pylon



‘Colossal and mysterious structures in the flat polder landscape’

‘Bare steel construction uphold an industrial character’

‘Following electricity lines, connections between different cities are visible’

‘Not one of a kind landmarks, so less valuable as orientation points or identity shapers’



Spiral Down



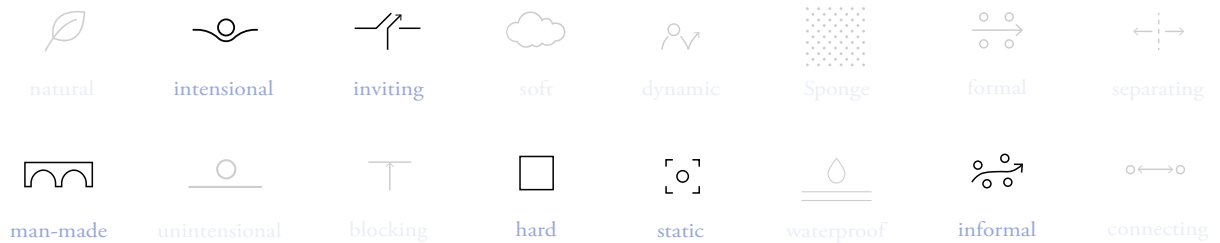
‘Double function as lookout tower and staircase down into the polder, focussing on the polder instead of the river’

‘Deteriorated by the public; graffiti and trash’

‘Landmark has its own architectural language’



The Crane



‘Placed on purpose as a static element to function as a gate to the waterbus stop’

‘Remnant of a once industrial waterfront, preserving at least some identity’

‘Scale of the crane fits the newly build context’



The Ruine



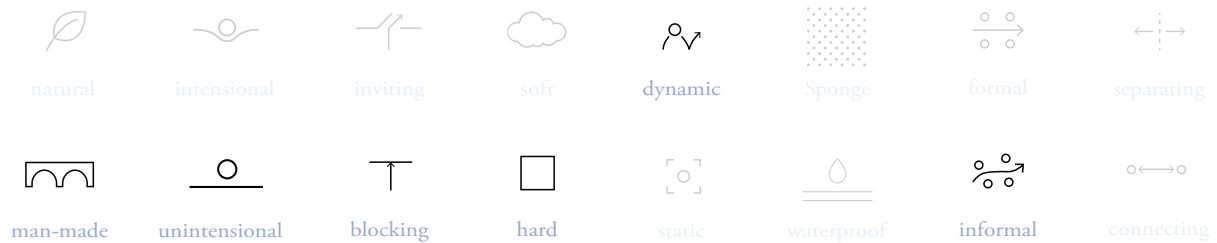
‘Evidence of human presence dating back far into history’

‘Crumbled under ages of weathering, almost becoming one with the surrounding landscape’

‘As a node this place is cut off by industrial sites all around, secluding it from the public’



Industrial Landmark



‘Size is impressive, even from the other side of the river’

‘Unintentional landmark, will it disappear when the function of the area changes?’

‘Dynamic because of maritime activity, evidence of harbor functions along the river’



The Yacht



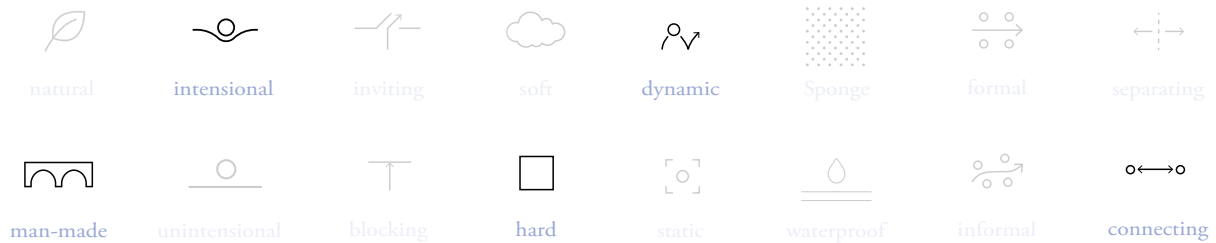
‘Clearly not meant to be a landmark, however it is hard not to be drawn to it’

‘Shows that moving and temporal objects can also function as a landmark’

‘Pride of the shipbuilding business, internationally recognized’



The Bridge



‘While it fulfills a infrastructural function, it is also meant to be an recognizable entrance point of the city’

‘Can be opened to let large boats pass, feat of engineering’

‘While it is meant to connect riverfronts it is not very inviting,
if you have no business on the other side it is a barrier to overcome’



The Lookout



‘Small but recognizable landmark due to its position on a hill’

‘Meant as a lookout to view the river, the polder or even your next destination’

‘Simple construction, not meant to attract attention’



ELEMENTS

Clustered or standing alone, these elements are harder to spot in the urban fabric. Most of the time they have a functional character. However when used correctly they can greatly improve how nodes are perceived. When created in a similar language it can strengthen the overall identity of districts. Although, when used incorrectly they become can also become obstacles. Placing them as an afterthought is not preferred.

Harbor Elements



‘Recognizable elements at waterfronts all over the region, promote maritime identity’

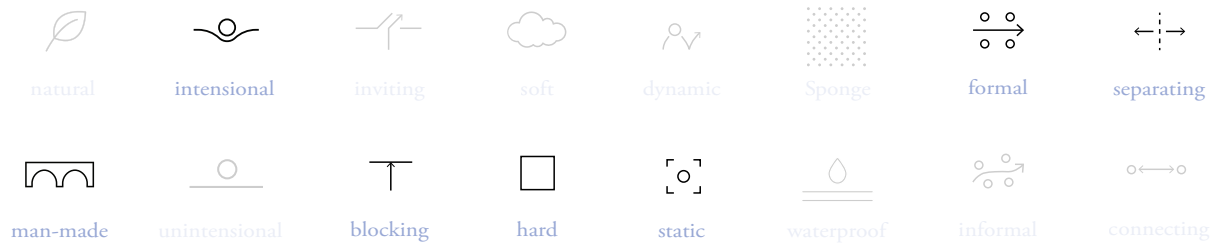
‘While they have a distinct aesthetic, they are intended to be functional’



1

1

Railing

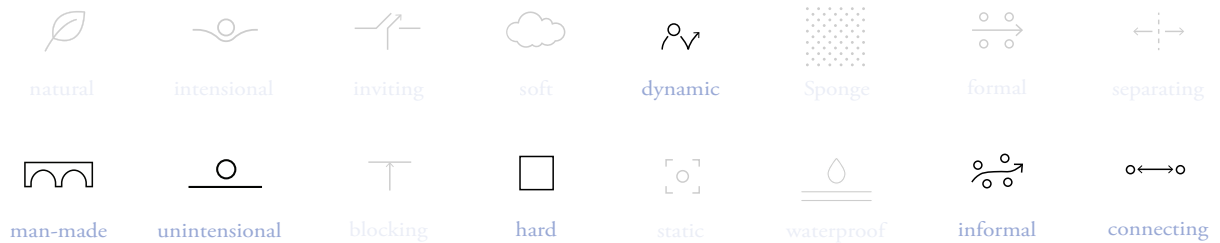


‘Designed with aesthetics in mind, resembles the rich history of the city of Dordrecht’

‘Acts as a protective edge where there is water’



Stairs



‘Purely functional way to reach the bridge, still presents a barrier for some people’

‘Electric rail to support bikes to the top’

‘Dark and unpleasant space under the bridge’



Flagpole

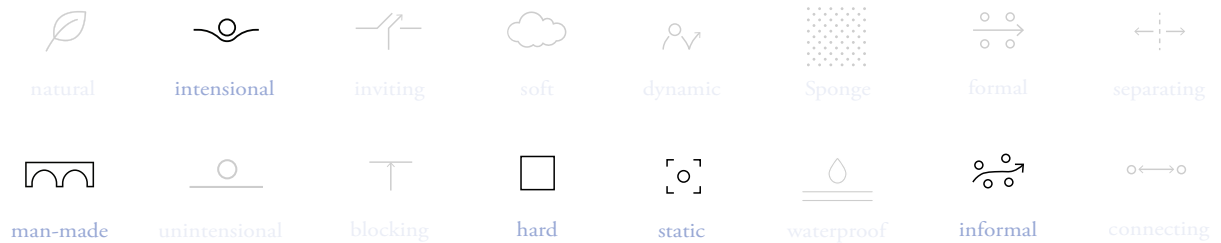


‘Reused old sailing mast as flagpole to display flags of the city, reinterpreting the original function’

‘Placed near the waterbus stop, as a welcome point for tourists’



Historic Canon

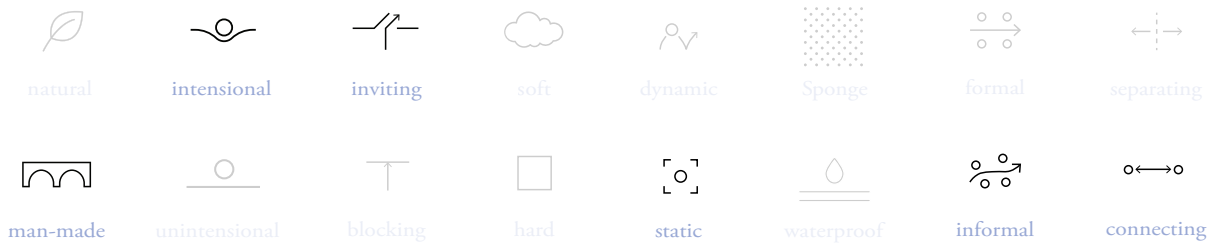


‘Repurposed old canon as an urban furniture element, changing the function of the historic object’

‘Mysterious and peculiar object, but easy to overlook’



Bench



‘Element that allows people to stay for a longer period of time’

‘Placed with seating directed towards a specific view’

‘Playing with the orientation can shift focus to objects or places further away, establishing a visual connection’



Sluice

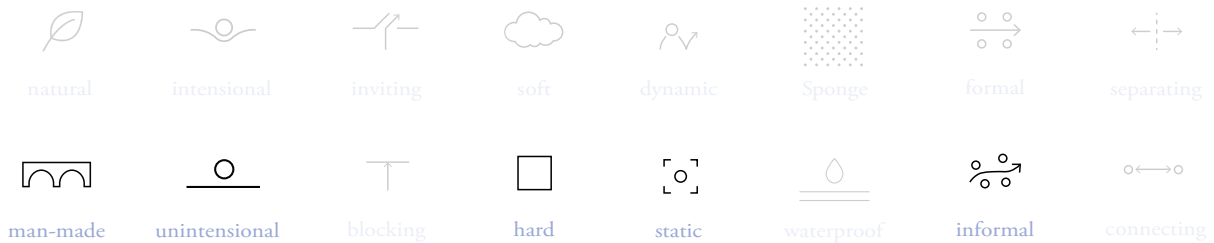


‘Functional element that plays a part in managing the watersystem in the polder’

‘Upholds a Dutch rural character’



Ship



‘While it does not serve a purpose, the remnants of old ships add to the rough character of the river’

‘Decay and abandonment are in line with the ever-changing nature of riverfronts’



SYNTHESIS

The Research map explores how the places and elements of the different categories manifest itself in the Baggermuseum area. Some are implemented literally, while others are re-imagined inspired by the qualities of the original place/element. The categories based on how a typical dutch river landscape is laid out, prove to be a useful tool to guide and let people stay near the water. From behind the dike, guiding towards and along the water, connecting places to stay to eachother with a network of landmarks and elements as recognition points along the way. Proving that introducing this strategy in masterplanning and the design proces could benefit the redevelopment of the waterfronts in the Waterdriehoek.



REFERENCES

Hein, C., D'Agostino, M., Donkor, C., Lin, Q., Sennema, H. (2022). Capturing Water, Culture and Heritage through Icons: A First Attempt. BLUE PAPERS: Water & Heritage for Sustainable Development, 1(1), 12-23, <https://bluepapers.nl/index.php/bp/issue/view/1/11>

Lynch, K. (1997 (1960)). The image of the city. Mass : MIT Press