Heritage Strategies to Sea Level Rise
Protection and Adaptation in The Hague

DESIGN 4 *EXTREMES*

International Workshop Report

The Hague - Netherlands
2024-06-17 / 2024-06-21

nx r
netherlands exchanges recife

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Yoshifumi Demura
Yuri Tomaz Neves

+ 0.5 m Sea Level Rise

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WORKSHOP SCHEDULE

17-06-2024 // 9H-17H30

Welcome by the host
Beate Begon, Marlies Augustijn
(Municipality of The Hague)

International Cooperations
Jean-Paul Corten
(RCE - Ministry of Science, Culture and Education of the Netherlands)

Scientific Cooperation
Carola Hein
(TU/Delft, UNESCO Chair)

Amphibious Cities - Urbanistic challenges of coastal cities under Sea Level Rise
Paola Viganò
(École Polytechnique Fédérale de Lausanne, University of Venice)

Introduction to the workshop
Mila Avellar Montezuma
(TU/Delft, UNESCO-IHE Delft)

Recife - Park City - Marine (water protection - adaptation)
Mila Avellar Montezuma
(TU/Delft, UNESCO-IHE Delft)

Den Haag - SLR and history
Beate Begon, Marlies Augustijn and Fangfei Liu
(Municipality of The Hague)

Introduction of the teams (in person and online)

Ice breaker

Division in 4 working groups
Mila Avellar Montezuma
(TU/Delft, UNESCO-IHE Delft)

Coffee break

Pitches TUD studio
TU/Delft MSc Students

Guided field visit (offshore and boat trip, walking, sand experiments at beach)
Municipality of The Hague

Define problem and opportunity
Groups & supervisor

SWOT Analyses
Groups & supervisor

18-06-2024 // 9H-17H

Present problem + opportunities statement per group
Groups

Define intervention proposal
Elaborate on intervention proposal
Groups + expert Paul Gerretsen
(Delta Metropool)

Lunch break

Elaborate on the intervention proposal
Groups

Clinic: Introduction of the experts
Test your intervention proposal on the municipal officers during the intervention proposal Group work
Hanneke Scholten (GDH)
Jorrit Bakker (Delfland)
Arthur Hagen (GDH)
Roel de van der Schueren (GDH)
Chris Zevenbergen (Delta Urbanism)
Alankrita Sarkar (GDH)

Pitches (3min/group)
Groups

Debate
Groups + experts (online)

19-06-2024 // 9H-17H

Elaborate on the intervention proposal
Groups

Lunch break

Inputs local community
4 groups pitch their work-in-progress proposals to the local community in a plenary session (3 mins per group)

20-06-2024 // 9H-22H

Elaborate on the intervention proposal
Groups

Lunch break

Elaborate on the intervention proposal
Gerard Hoogerwaard (GDH)
Esther Vogelaar (GDH)
Martijn van Weert (GDH)
Hielke Venema (GDH)

Clinics: Test your intervention proposal on the experts during the intervention proposal Group work
4 groups pitch their work-in-progress proposals to the local community in a plenary session (3 mins per group)

Academic event
Public Event (TU/Delft)

Welcome by the Host
Carola Hein (TU/Delft, UNESCO Chair)

Luiz Vieira (UFPE)
Roberto Montezuma (UFPE, RCP)
Fernando Diniz Moreira (UFPE, ICOMOS)
Mila Avellar (TU/Delft, UNESCO-IHE Delft)

Dutch reflection on the case
Paul Meurs (former TU/Delft professor)

Q&A

Informal Gathering

21-06-2024 // 9H-17H

Refine proposal
Groups

Prepare Presentation
Groups

Lunch break

Panoramazaal available

Welcome by the host
Beate Begon, Marlies Augustijn
(Municipality of The Hague)

Opening / keynote
Martiene Branderhorst
(Algemeen Directeur DSB, portefeuillehouder Duurzaamheid GMT)

Pitches
Meike van Ginneken (MI&W)
Jean-Paul Corten (RCE)
Eddy Moors (UNESCO-IHE Delft)
Moacyr Araujo (Vice-Rector UFPE)
Felipe Matos (Recife City Hall)
Felipe Marques (Embassy of Brazil in The Hague)
Carola Hein (TU/Delft)
Mila Avellar Montezuma (TU/Delft, UNESCO-IHE)

Final Presentations
Groups (10min + 5min debate)

Round Table
Groups

DESIGN FOR EXTREMES

International Workshop Report

Heritage Strategies to Sea Level Rise
Protection and Adaptation in The Hague

nXr - Netherland Exchange Recife / The Hague-NL

Recife, September 2024

SUMMARY

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PRESENTATION

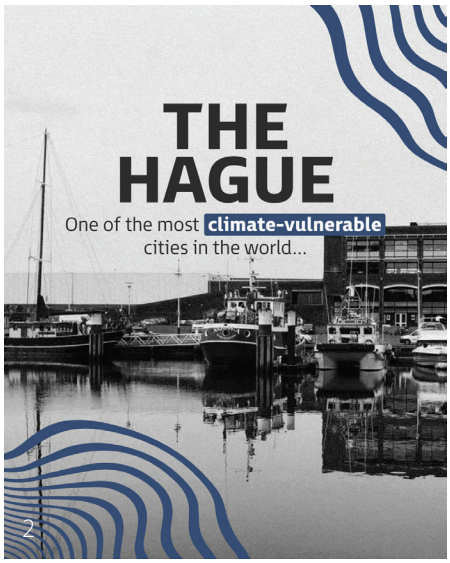
This document aims to summarize both the process and the results obtained at the workshop **nXr | designing for extremes**, held in The Hague between June 17-21, 2024. It gathered professionals from different fields from the Netherlands, Brazil and among 40 countries across 6 continents, to find solutions to the Hague, one of the most vulnerable cities in the world to climate change.

This workshop celebrates a partnership of over 10 years between the Cultural Heritage Agency of the Netherlands - Ministry of education, Science and Culture of the Kingdom of the Netherlands (RCE) and the Federal University of Pernambuco (UFPE) to develop heritage strategies to water challenges. The knowledge produced aligns with the Sustainable Development Goals (SDGs) and the New Urban Agenda (NUA) and wants to contribute to the 30th UN Climate Change Conference of the Parties (COP30) in Brazil in 2025.

For this workshop RCE and UFPE joined forces with the Municipality of The Hague, Delft University of Technology, PortCityFutures (Leiden, Delft and Erasmus), and the Institute for Water Education UNESCO-IHE, along with Brazilian counterparts such as the Climate Network (Ministry of Science, Technology, and Innovation of Brazil) and the Municipality of Recife. This workshop was preceded by the MSc course Building Green held at TU Delft organized by professors Carola Hein and Mila Montezuma, in which students had the opportunity of conducting research and advance some solutions to the area of Scheveningen through the lenses of Protection and Adaptation, also culminating on a manifesto, mirroring the experience in Recife.

1. Flood at The Hague
2. Event Post at Social Media
3. Workshop Design Process

The Hague faces the threat of being submerged due to rising sea levels. The event's goal is to find ways to protect the country's oldest capital—celebrating its 800th anniversary in 2042—from becoming permanently flooded. The focus of the discussions was the Port of Scheveningen, its vulnerability in the face of climate change, how it affects its water systems and cultural heritage, and the port terminal's climate adaptation strategies. While water management in the Netherlands has historically emphasized "protection" technologies, our strategy on this moment was to develop a new approach for protection, adaptation, and mitigation to combat the adverse climate effects projected for The Hague, thereby adapting and safeguarding the port city against the encroachment of the North Sea.



The aim of the workshop was to develop a future vision for the Port of Scheveningen for the next century, using innovative and interdisciplinary tools and methodologies. We hope this new urban vision for the city will lead to public policies to address its environmental and socio-spatial challenges.

This document is structured into five parts, including this presentation. Initially the methodology adopted is presented, which is based on previous exchange experiences between the institutions and professionals participatin in the workshop. Subsequently it presents the Scheveningen district, raising the major challenges it faces today. The third part offers an analysis of the major problems and potentialities of the area, its weaknesses and strong points. The fourth part introduces the major proposals, which are divided into protection and adaptation. The last part presents a series of Policy Recommendations derived from the outcomes of the workshop.

3

Sea Level Rise Simulation - Temperatures Increases in 0.5° C

Sea Level Rise Simulation - Temperatures Increases in 1.0° C

Sea Level Rise Simulation - Temperatures Increases in 1.5° C

Sea Level Rise Simulation - Temperatures Increases in 2.0° C

1. METHODOLOGY

The methodology adopted for the workshop activities comprised two phases: preparation and execution. The first phase, **preparation**, involved four interconnected steps:

- **Definition of the target area:** Scheveningen, a port and tourist area in The Hague, Netherlands, was selected based on its scale, regional-national relevance, and complexity of local issues.
- **Data collection and analysis:** Relevant information was gathered from scientific documents (articles, research), normative documents (urban planning, environmental, and port legislation), and institutional documents (surveys, plans, projects).
- **Academic course development:** The Building Green/Adaptive Strategies/PFC "Summer School" course developed at TU Delft (Delft University of Technology) by Carola Hein, in collaboration with Mila Avellar, provided a foundation for the workshop.
- **Team integration:** Remote and in-person meetings were previously held to integrate the co-organizing teams from both countries, involving specialists and support staff.

1. Field Visit to The Hague
2. Scheveningen Harbour
3. Scheveningen Pier


1

2


3

The second phase, **execution**, corresponded to the **nXr | designing for extremes** workshop**,** held from June 16 to 21, 2024. Activities are detailed below:

- **Welcome and official introduction: T**he Brazilian team was welcomed by the RCE (Sunday). Lectures were given on the cultural heritage of the Netherlands, particularly Scheveningen, and its relationship with water. On Monday, the official welcome was held by the Municipality of The Hague.

- **Workshop activities (NLD):** Activities at the Scheveningen Yacht Club.

  - Field visits to the target area, both land and sea;
  - Presentations of existing studies, plans, and projects, and discussions with key stakeholders to understand the context, identify priorities, and define potential solutions;
  - Collaborative planning and design activities using tools such as SWOT analysis, problem matrices, and scenario building;
  - Public multidisciplinary lectures on the cases of The Hague and Recife
  - Participants discuss proposals with specialists.
  - Test intervention ideas with stakeholders from the municipal government, academic and civil society
  - Inputs from the online participants to the proposals via shared platforms.

- **Feedback:** Workshop results were presented at the Muzee Scheveningen in June 21, when participants had the opportunity to debate with relevant authorities future perspectives (of the historic features) of Scheveningen Harbor and The Hague's territory.

- **Dissemination:** New events are expected, as Future Market, exhibition of Building Green students work at Muzee and exhibition of small ports (Netherlands/ Europe) Port City Atlas. At an academic level publications pairing Den Haag + Recife via Blue Papers, lectures conferences and symposium presentations.

The workshop activities were divided into two thematic axes: **protection** and **adaptation**. The protection team focused on safeguarding cultural heritage from rising sea levels, while the adaptation team focused on promote coexistence between society and water.

Final Presentation at Musee Scheveningen

Workshop Schedule Overview

The procedures and results achieved by participants were organized as follows:

Day 1 - Monday 17 June
Introduction

Objective

- Welcoming and Introduction of the participants
- Presentation of the w orkshop
- Introduction to the harbour of Scheveningen
- Field visits to the target area, both land and sea;
- Refine the Challange

Output

- All participants have an understanding of the problems and issues concerning harbour of Scheveningen

Day 2 - Thuesday 18 June
Workshop - proposal

Objective

- Analise and draft interventions proposal
- Test proposal on the public stakeholders (Municipality, Bauhaus of the Sea Sails)

Output

- A first fraft intervention proposal tested on the public and academic stakeholders

Day 3 - Wednesday 19 June
Workshop - development

Objective

- Elaborate the draft intervention proposal
- Test the proposal with the civil society and on the private sector

Output

- An elalborated intervention proposal, tested on the civil society and private sector stakeholders

Day 4 - Wednesday 20 June
Workshop - to reflect

Objective

- Elaborate the draft intervention proposal
- Test the proposal on specialists and the academia

Output

- An elalborated intervention proposal, tested onacademia and public stakeholders

Day 5 - Friday 21 June
Presentation - public debate

Objective

- Debate the future perspective of the Scheveningen Harbour, and The Hague, with the relevant authorities.

Output

- A broadly debated intervention proposal in 4 scenarios for adaption and protection to extreme climate events

2. INTRODUCTION


Dunes Park

Nestled along the North Sea coast, Scheveningen is a vibrant seaside district that has played a pivotal role in the history and culture of the Netherlands. Now a part of the city of The Hague, it has evolved from a **traditional fisherman community** from the 11th century to a thriving coastal resort. Due to its location close to The Hague, the administrative capital of the County of Holland, the village supplied fresh fish to the nobles and bureaucrats residing in the nearby city. In the 19th century, Scheveningen experienced a transformative shift as it emerged as a popular **seaside resort destination**, due to the arrival of the railway in 1870, connecting the village to major cities like Amsterdam and Rotterdam. The village's transformation into a resort was further fueled by the construction of the iconic Kurhaus hotel in 1885, a grand, neo-Renaissance-style building which became a symbol of Scheveningen's newfound popularity, attracting aristocrats, artists, and intellectuals from across Europe.

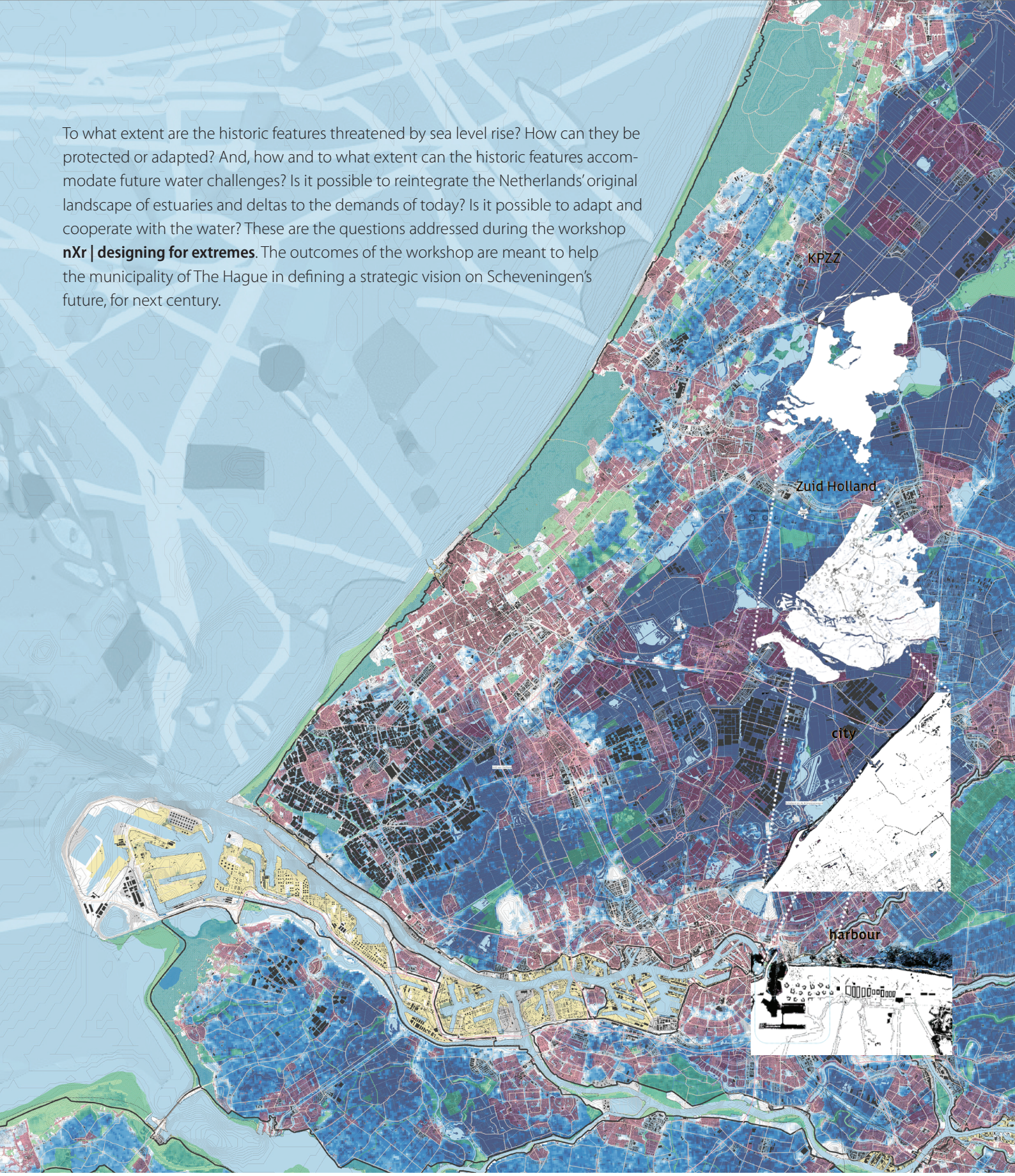
As Scheveningen's popularity grew, so did its infrastructure and amenities. The construction of the **Scheveningse Pier** in 1901, provided a picturesque promenade for visitors and offered a variety of entertainment options, including restaurants, shops, and amusement park rides. The early 20th century also saw the development of Scheveningen's iconic beach pavilions, known as "**strandhuisjes**" in Dutch. During this period, Scheveningen's fishing industry continued to thrive alongside its burgeoning tourism sector. The village's **historic harbors**, such as the Vissershaven (Fishermen's Harbor) and the Tweede Haven (Second Harbor), remained active hubs for the local fishing community, preserving the area's maritime traditions and way of life.

Like many cities in the Netherlands, Scheveningen suffered significant damage during World War II. The German occupation and allied bombings left parts of the village in ruins, including the historic Kurhaus hotel, which was heavily damaged. The **period of reconstruction** saw the Kurhaus meticulously restored and new infrastructure and modern amenities built due to the growing demand for tourism and recreation. The 1960s and 1970s witnessed the construction of high-rise apartment buildings and hotels along the coastline, catering to the increasing number of visitors and permanent residents seeking a seaside lifestyle. This period also saw the development of the **Scheveningen Boulevard**, a lively promenade that runs parallel to the beach, dotted with restaurants, cafés, and shops.

Today, Scheveningen remains one of the most popular seaside resorts in the Netherlands. While embracing modernity and adapted to the changing times, it has also preserved its rich maritime heritage and traditions. The Vissershaven and Tweede Haven continue to be active fishing ports, with daily fish auctions and a thriving community of fishermen carrying on the legacy of their ancestors. Moreover, the area's diverse cultural offerings, including museums, art galleries, and festivals, celebrate Scheveningen's unique identity and history. The Scheveningen harbor is considered a valued historic city and landscape.

But the conservation of Scheveningen´s historic values faces some **challenges due to climatic change**. While significant sea level rise may not occur within the next 50 or even 100 years, it is crucial to address this issue now in face of a high degree of uncertainty. Conservative projections show an increase from 0.4 meters by 2050 to 1.2 meters by 2100, which could be higher, more intense and faster than these forecasts.

To what extent are the historic features threatened by sea level rise? How can they be protected or adapted? And, how and to what extent can the historic features accommodate future water challenges? Is it possible to reintegrate the Netherlands' original landscape of estuaries and deltas to the demands of today? Is it possible to adapt and cooperate with the water? These are the questions addressed during the workshop **nXr | designing for extremes**. The outcomes of the workshop are meant to help the municipality of The Hague in defining a strategic vision on Scheveningen's future, for next century.



Building

Landcover (Coastal Areas)
- Continuous urban fabric (IMD =>80%)
- Dense urban fabric (IMD =>30-80%)
- Low density fabric (IMD <30%)
- Industrial, commercial, public and military units (other)
- Port
- Airports and associated land

Landcover (Non-Coastal)
- Continuous urban fabric
- Industrial or commercial units
- Port
- Airports
- Natura2000 Area Marine & Coastal
- Natura2000 Area Terrestrial
- Proteted Area (NNN)

Coastal Flood Depth 2021-2050 RCP45 1000 Years Probability
Depth (in m)
6.04458
0.000521
Water

Bathymetry and Heightlines
Dyke (Line)
Railway Lines
Railway Stations

Roads
-32768
Primary Road
Secondary Road

3. ANALYSIS

In order to align our knowledge with the multidisciplinary teams, made up of different nationalities and professionals from integrated skills, including architects, designers, engineers, water specialists and citizens of the Hague, we began the workshop activities with the implementation of a technique to identify strengths, weaknesses, opportunities and threats (the so-called with an urban SWOT analysis), related to the recognition of Scheveningen area, considering essential aspects of heritage, culture and society.

2.1. Strengths were considered internal aspects of how the Dutch community are used to take advantage of nature like the diversity of uses that activates the area of the port, leisure activities at the beach, navigation, fisherman tradition, ancient dunes system, heritage of tourism industry and other activities that increase the traditional water relationship at the Hague.

Other strengths include the continuous and well mantained urban fabric, a great diversity of buildings, made in different periods and integrated to a large heritage of water management and the fact that there is only one inlet sea water.

2.2. Weaknesses were related to disadvantageous characteristics regarding aspects of Scheveningen like the cultural car-oriented society, and limited green public spaces availability. Potential conflicts between different functions, like the port being used by tourists and fish market. On a small scale, adopting short-term solutions based on limited future possibilities regarding engineering strategies, instead of design with nature, and the low awareness of public opinion about the sea level rise, which ends up creating a lack of civil liability in practices that could solve problems in a collaborative manner.

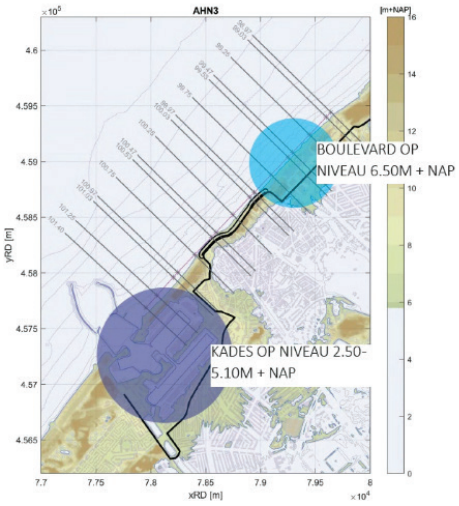
2.3. Opportunities were considered from external factors emerging in the community, forces that take in consideration the economy, future trends in the organization's field. Others like the proposal of a the second outlet, with the restoration of an old Inner port, and the new infrastructure as a public green area, that could be vivid and created for people instead of cars. Strong opportunities are the economy itself, with funding availability and opportunity to learn from mistakes and solutions from the past, based on technological and engineering approach instead of based on humanity and walkability.

2.4. Threats were external factors as well substantiated on subjects that we don't have any or few power to change which is our master problem that guided all this workshop: the sea level rise, climate changes like floods and droughts and the challenge of designing urban areas for extremes. situations

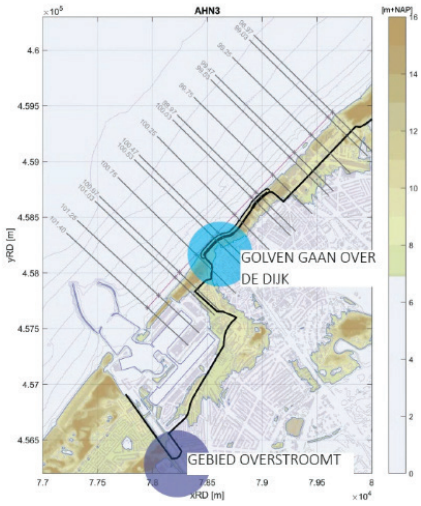
1. Scheveningen Port
2. Design Workshop

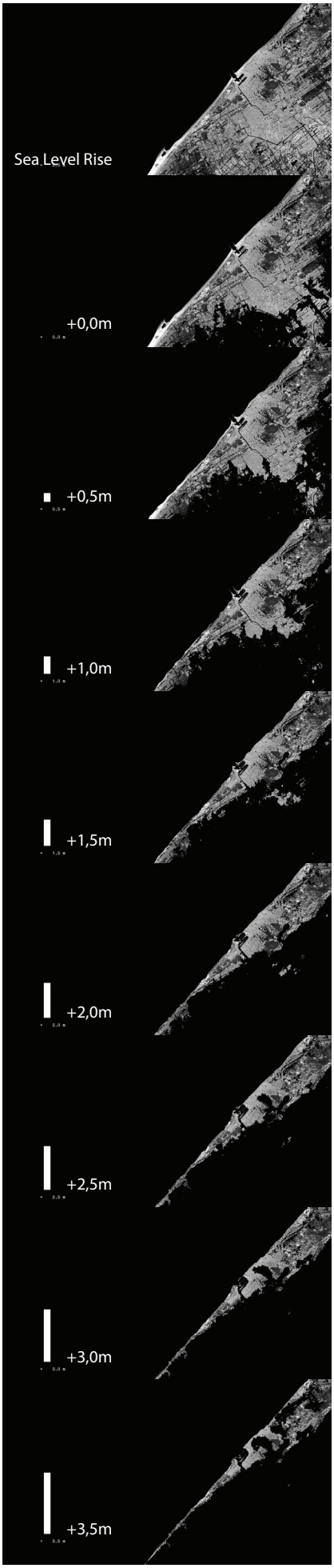
Bottleneck on the Scheveningen Coast (Barrier: Spring Tide + Storm 1:10,000 Years)

NOW:
AREAS OUTSIDE THE DIKES



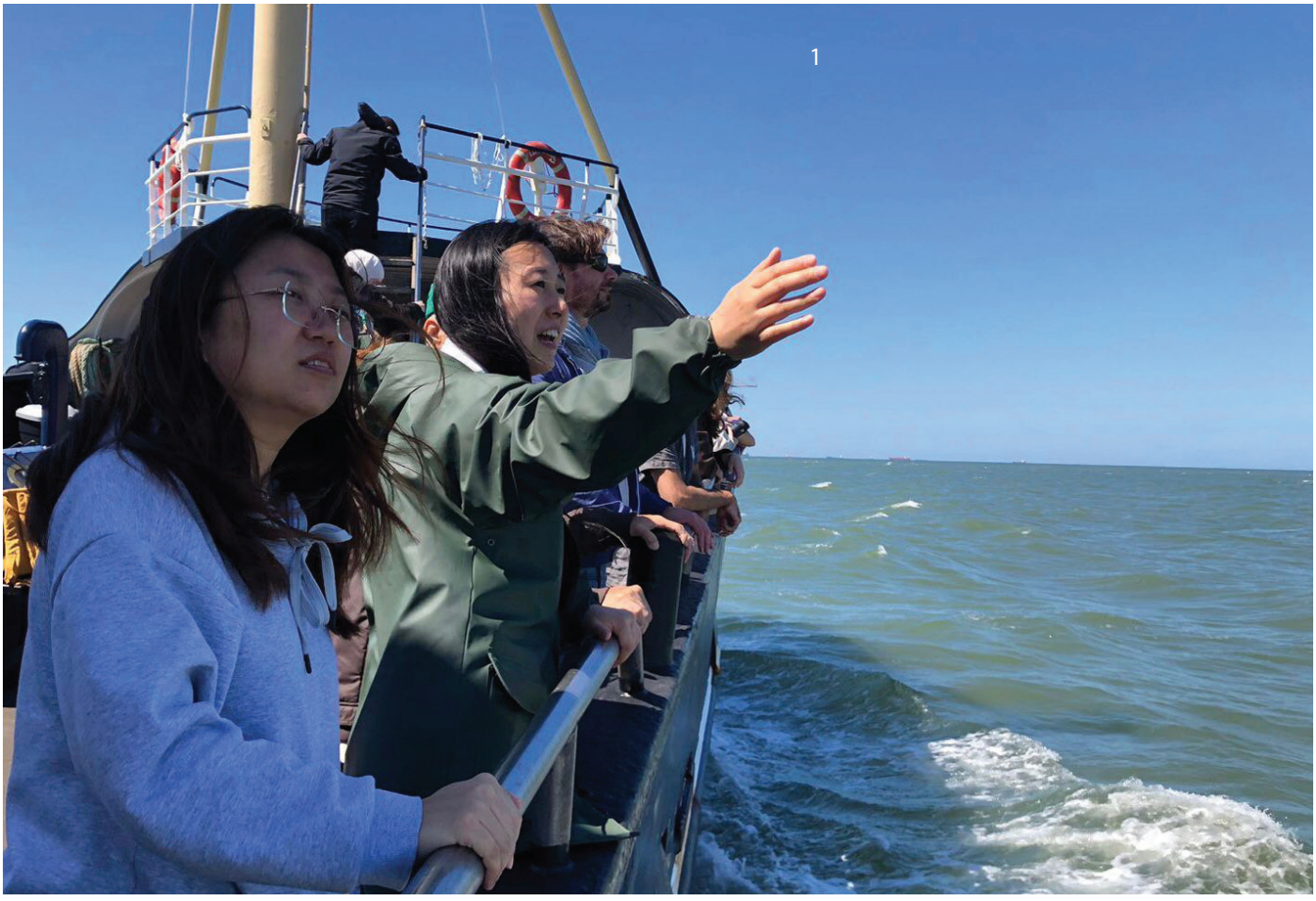
1M SEA LEVEL RISE





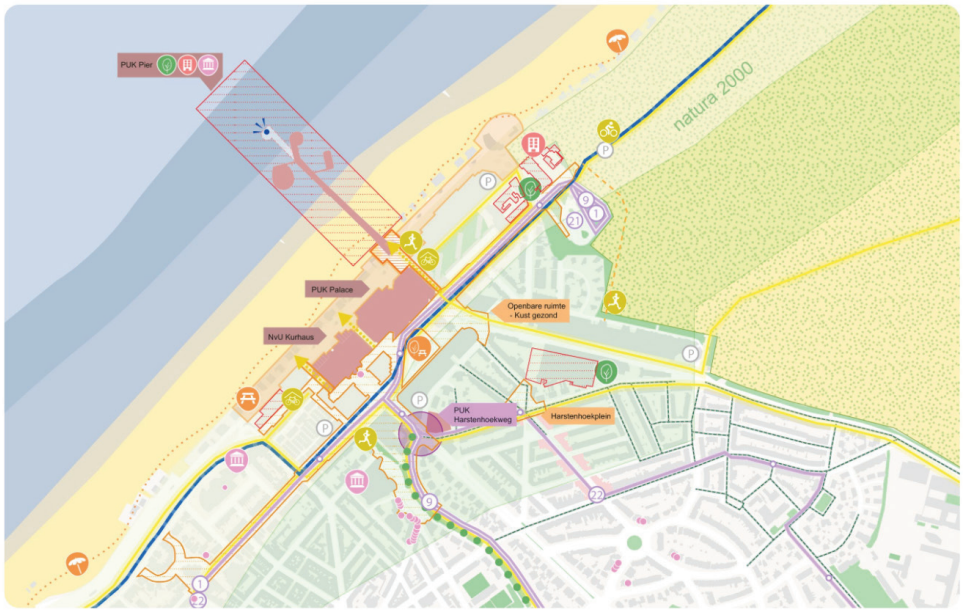
Sea Level Rise - Consequences for the metropolitan area

Scheveningen - Spatial Programmatic Exploration



1

- Above - Public Class at TU/Delft
- Right - Workshop Design Process



Scheveningen - Bad

Scheveningen - Dorp

Scheveningen - Haven

4. DESIGN POSSIBILITIES

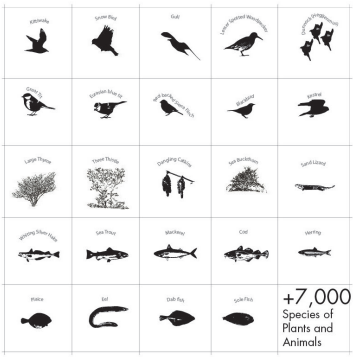
Workshop - Design Process

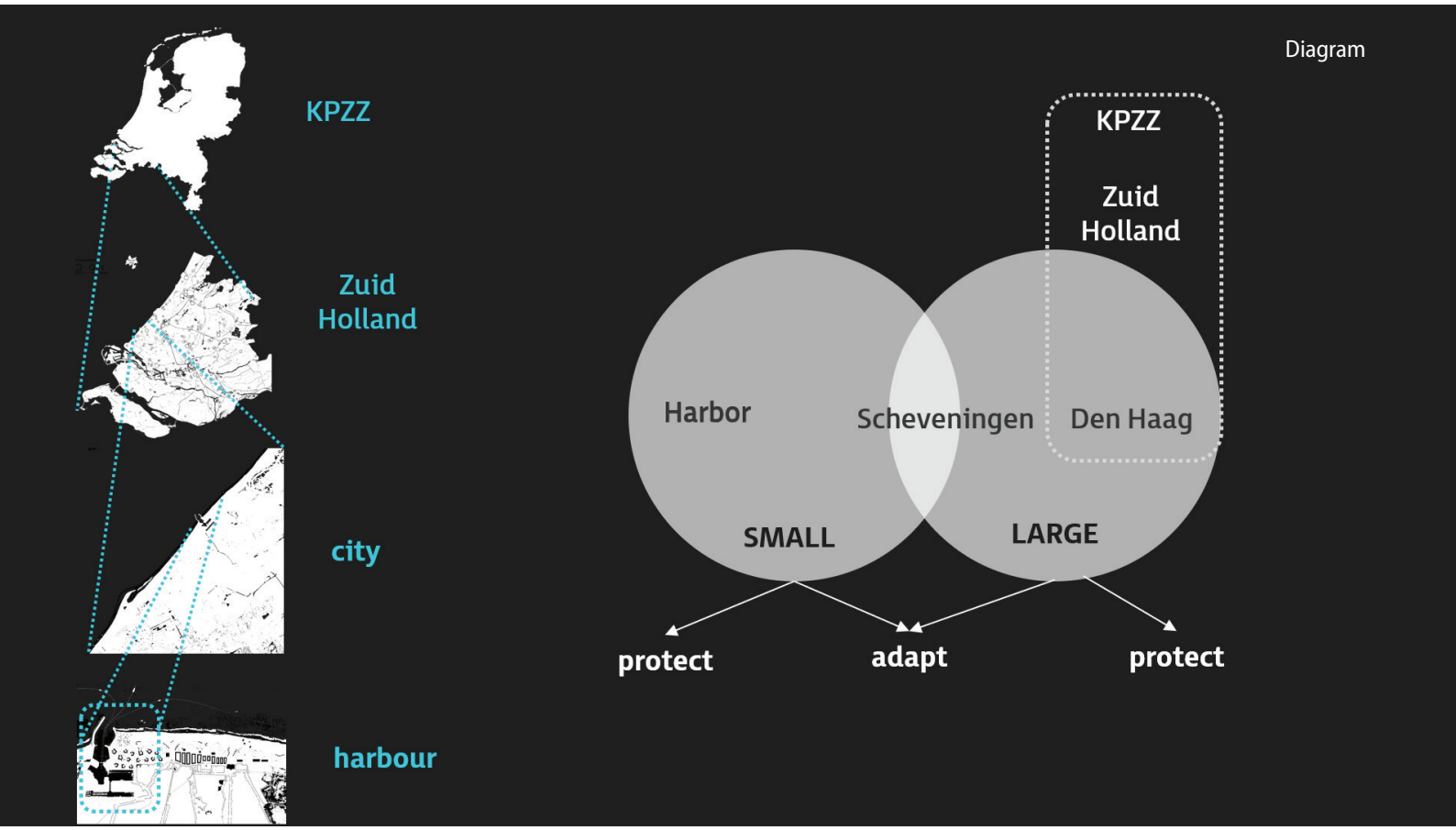
Our proposal aims to combine the two approaches (protection and adaptation) by embracing the dunes to act as a natural connector element, creating a new park system which encompasses freshwater, dunes and urban parks into a single entity in ecosystemic vision. The entire region is to be transformed into a park. At the same time we should be prepared for the extreme scenario, of the water entering the city, and learn not to fight against it but take advantage of the presence of water and seek ways of coexistence.

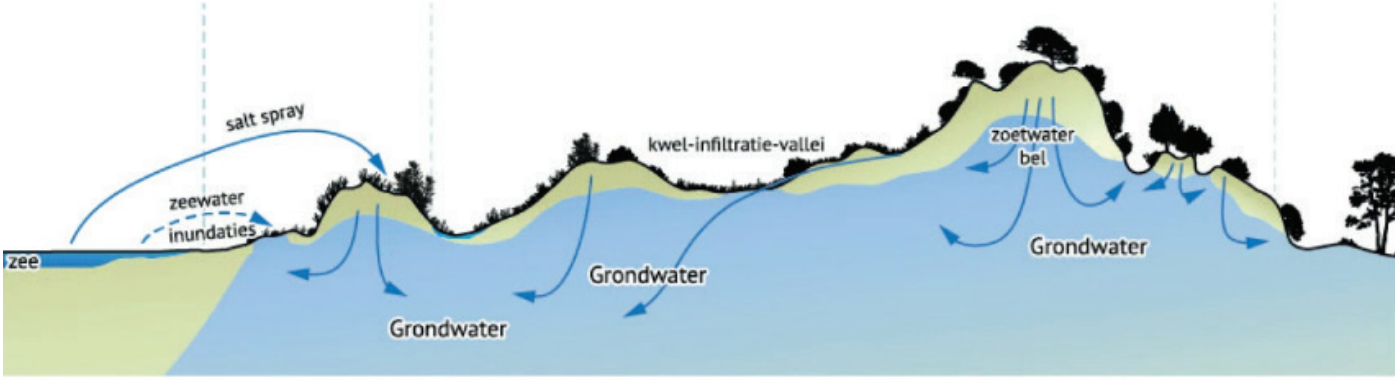
- **Protection** means to safeguard from any sort of threat or damage. When referring to protecting a city, the first image that could come to mind is the one of a medieval wall of a fortified town, or in the Dutch case, the construction of dykes, but today we have a broader understanding of protecting, which also relates to adaptation.

- **Adaptation** means the action or process of adapting or being adapted to a changing situation. In biology, it means the process of change by which an organism or species becomes better suited to its environment. And biology comes to mind also because one of the most brilliant minds behind the emergence of urbanism, as a discipline in the early 20th century, was a biologist by education: Patrick Geddes. Geddes' comprehensive approach reveals a better understanding of the delicate relationship cities establish with the surrounding territory, their natural site and their social and economic aspects. His careful study of the creation, evolution, organization and functioning of cities, and the comparison between them, revealed that the most successful cities had to adapt to the natural conditions.

SPECIES OF SCHEVENINGEN







Duch Dune Coast - Morphology

Scheveninguen - The Hague
sea level rise simulation

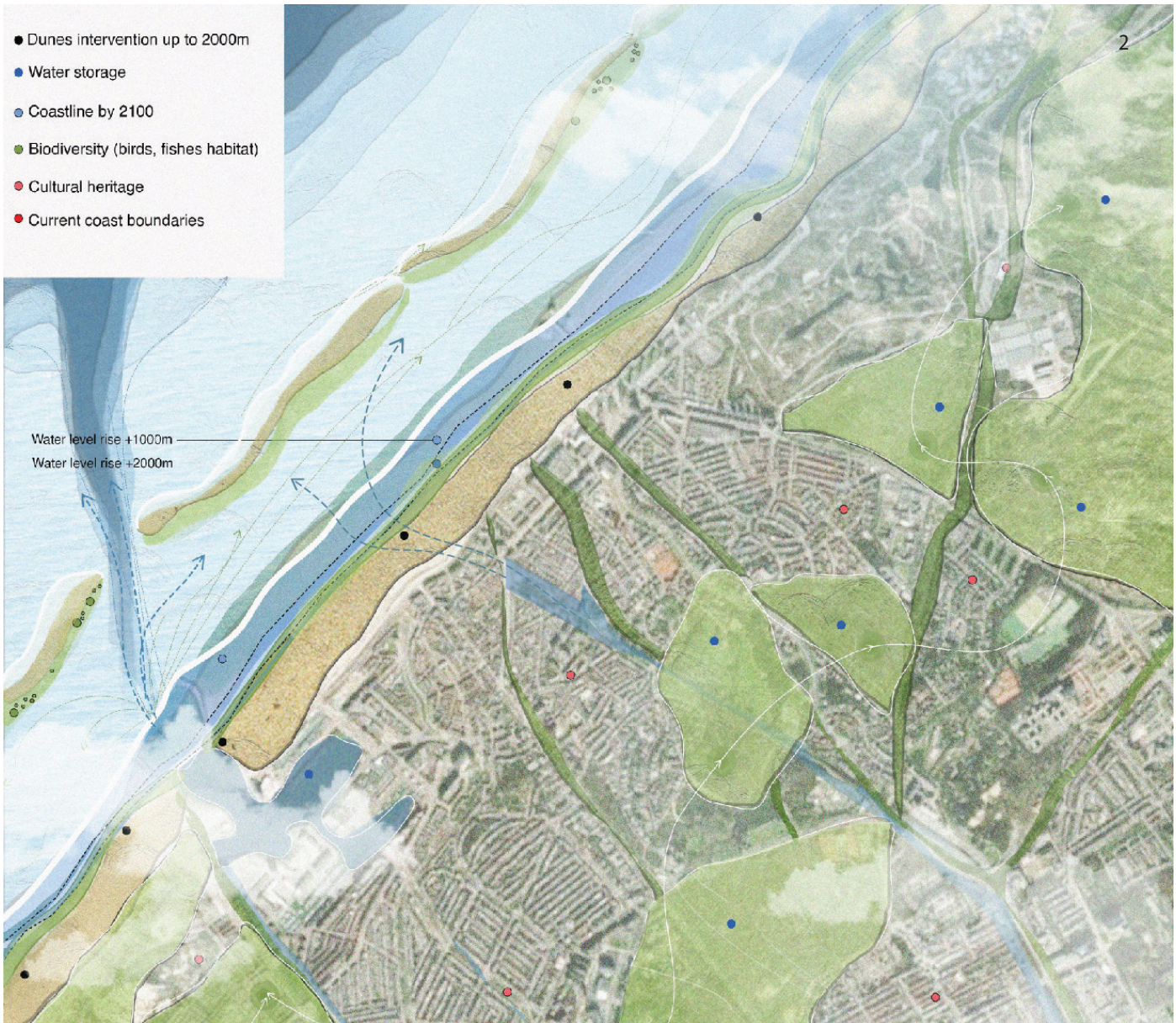
4.1. PROTECTION

4.1.1. Provocative Questions

During the design phase of the workshop, participants developed a series of thought-provoking questions aimed at challenging conventional thinking and stimulating creative problem-solving. These questions are intended to encourage deep reflection on the implications of climate change for coastal urban environments.

- How can we integrate nature-based solutions with advanced technologies to protect urban areas from rising sea levels?
- Which natural features can be considered part of our cultural heritage, and how can they be preserved in urban environments?
- How can the existing built environment withstand both sudden and permanent flood scenarios?
- Can a regenerative design strategy enhance the city's value while also improving protection against extreme climate events?
- What new urban forms can emerge in response to recurring flooding?
- How can we design solutions to new and existing buildings ensuring accessibility during flood events?

1. Dunes Landscape
2. Masterplan



4.1.2. Core Protection Idea

Building on the insights gained from the analysis, the protection group progressed to the development of two core design ideas. These ideas serve as the conceptual backbone of the proposed solutions, addressing the provocative questions posed earlier. The concepts are crafted to be bold yet practical, with a focus on adaptability and resilience.

- ***Connect green and blue networks with a new marine park that embraces–and safeguards–the city.***

- ***An extreme flood resilient building is extremely accessible and water proof.***

The future vision involves creating a new dune park, seamlessly integrated with the existing dune system, to serve as a natural protection for the city. This new marine park will be realized through the expansion of the current beach area. The newly established dunes will act as natural filters, purifying freshwater for human consumption while simultaneously holding back the rising sea. They will function as an active membrane, providing critical defense against environmental threats, enhancing biodiversity, and allowing the passage of marine traffic and other goods.

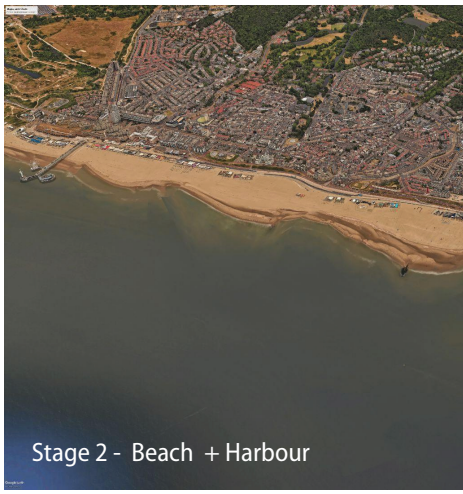
An essential component of this vision is the recovery and enhancement of the city's water infrastructure. The new marine park will play a pivotal role in managing excessive inland water, creating new outlets that allow water to be efficiently pumped to the sea. This system will help alleviate flood risks and ensure the resilience of urban areas against extreme weather events.

1. Current Scenario
2. Proposal

The area where the city transitions into the marine park will offer opportunities for additional economic activities, such as recreation and hospitality. Current boulevard bars and restaurants will benefit from their new locations between the city and the vibrant dune transition zone. Beach pavilions will be strategically positioned to face the sea on one side and the lush green dune landscape on the other. Additionally, a 'fish experience' will be introduced in the harbor, extending the tourism appeal of the boulevard and forming an attractive destination for visitors. This initiative will also strengthen the connection between the inner city and the coast by focusing on green pedestrian and cycling routes, with inviting entrances linking the city to the dune landscape. Enhancing connections within the harbor and along the coastline will increase opportunities for spontaneous meetings and exchanges.

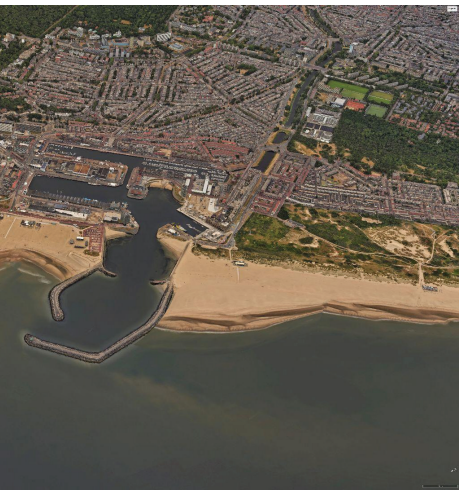
As a result, the living environment in The Hague will become even greener, more pleasant, and more resilient with the establishment of the new marine park and its integrated water management system.

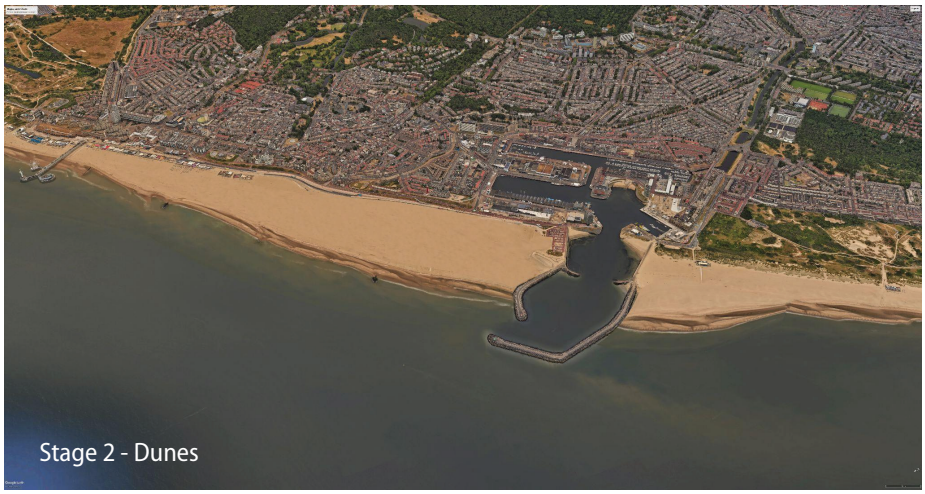
Stage 1 - Current Scenario



Stage 2 - Beach + Harbour

Stage 4 - Marine Dune Park



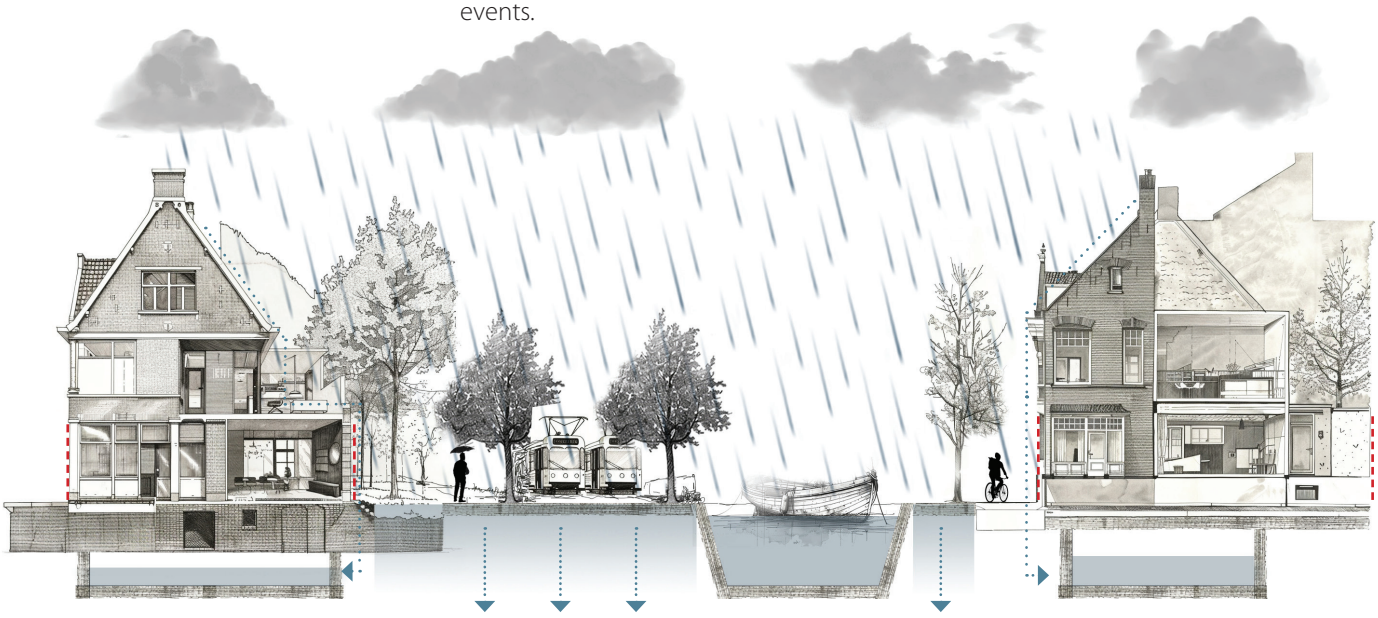


In the context of urban design solutions for climate change-induced floods, creating a resilient and **flexible built environment** is essential. As cities face the growing threat of extreme flooding, the design of buildings and infrastructure must emphasize both water resistance and adaptability to ensure safety and continued functionality. Key elements, such as facade materials, exterior doors, and windows, should be constructed with water resistance in mind. This involves the use of materials and technologies capable of **withstanding prolonged exposure to water** without compromising structural integrity. Facades may incorporate advanced coatings or impermeable barriers to prevent water infiltration, while exterior doors and windows should be sealed and reinforced to resist high water pressure and prevent leakage.

Beyond water resistance, the built environment must also be designed for flexible accessibility during flood events. This requires the creation of **multi-level entry points** that allow buildings to remain functional even when lower levels are submerged. For instance, structures could feature elevated entrances or adaptable ramps that maintain access from higher ground, ensuring that critical functions are preserved during a flood. These multi-story access points enhance safety and provide a means for emergency evacuations or the delivery of essential services when ground-level access is compromised.

In the case of significant heritage buildings, additional tailored solutions may be necessary to protect these valuable structures. These buildings could be equipped with innovative technologies such as floating foundations or pneumatic structures, allowing them to respond differently to flooding. Floating foundations would enable the **building to rise with water levels**, minimizing damage, while pneumatic structures could temporarily elevate the building or create protective barriers in response to rising water. By integrating these specialized solutions, heritage buildings can be preserved and protected in ways that respect their historical significance while adapting to the demands of a changing climate.

Through the integration of water-resistant materials, flexible accessibility, and innovative solutions for heritage buildings, urban environments can be designed to withstand the challenges posed by extreme flooding, ensuring that communities and their cultural assets remain resilient and operational even in the face of severe climate events.



Integrative water management

4.1.3. Intervention Strategies and Project Guidelines

In response to the growing challenges of climate change and the increasing threat of sea level rise and flooding, a comprehensive set of intervention strategies and guidelines has been developed to enhance the resilience of the urban environment. These strategies are designed to protect both the built environment and the natural landscape, ensuring that The Hague can adapt to extreme climate events while maintaining functionality and preserving its cultural heritage. The guidelines and strategies varies from large-scale to small-scale interventions, each targeting different aspects of urban space to create a cohesive and resilient response to flooding.

4.1.3.1. Guidelines - Large-Scale Protection

How can we integrate nature-based solutions with advanced technologies to protect urban areas from rising sea levels?

- **Design with Nature:** Embrace natural features and processes in urban design, working with nature rather than against it to create resilient landscapes.
- **Restore the Dune System:** Reestablish the dune system in urban areas to safeguard city infrastructure and enhance natural flood defenses. This historical natural feature protects and maintain the city's cultural and environmental heritage.
- **Integrate Green and Blue Networks:** Strengthen connections between green and blue infrastructure to reduce the impacts of extreme flood events, enhance biodiversity, and provide additional leisure spaces for residents.
- **Marine Park as a Buffer Zone:** Expand public spaces by creating a marine park that serves as a buffer zone for the city, promotes tourism, and offers recreational opportunities for local visitors throughout the year.
- **Territorial Gain through Green Spaces:** Counteract the loss of territory due to sea level rise by creating new green areas for public use and environmental restoration.
- **Create new outlets for excess water:** As there is only one pumping station that directs excess water to the Scheveningen harbour.

1. Proposal Aerial View
2. Marine Dunes Park

1. Dunes Park
2. Aerial View

4.1.3.2. Strategy - Large-Scale Protection

How can we integrate nature-based solutions with advanced technologies to protect urban areas from rising sea levels?

- **Phased Implementation of Dune Park System:** Gradually expand the dune park system in phases aligned with sea level rise projections, ensuring ongoing protection and adaptation.
- **Floating Foundations and Pneumatic Structures for Heritage Buildings:** Implement innovative solutions such as floating foundations and pneumatic structures to protect significant heritage buildings from flood damage.
- **Protect the Coastline with Nature-Based Solutions:** Use nature-based solutions to protect the coastline and enhance flood resilience in urban areas.
- **Restore old canal and small port:** Give more space for water and create alternative routes to outlet the excess water off the drainage system.

4.1.3.3. Guidelines - Small-Scale Protection

- **Building-Level Flood Protection:** Strengthen building structures with water-proof materials, reinforced doors, and windows at lower levels to resist flooding and water damage.

- **Multi-Level Accessibility:** Implement vertical circulation within buildings, including multi-level entry points, to maintain accessibility during varying water levels.

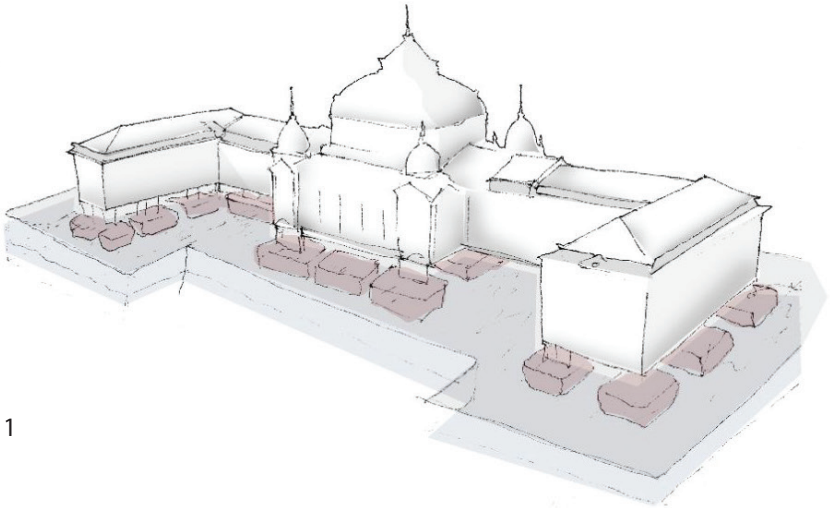
- **Block-Level Flood Management:** Design block interiors to serve as protected zones with natural light, ventilation, and flood mitigation features, incorporating green spaces for communal use.

- **Innovative Building Typologies:** Encourage the adoption of new building typologies such as structures on stilts, pneumatic buildings, underwater constructions, and floating platforms to adapt to extreme climatic conditions.

- **Public Policies and Building Regulations:** Develop and promote building regulations and public policies that encourage resilience and adaptability in new developments and retrofits, considering the scenarios of extreme climate events.

- **Preservation of Built Heritage:** Ensure that every intervention respects the significance and authenticity of the built heritage, integrating protective measures that maintain their cultural value while enhancing resilience.

1. Floating Foundation
2. Amphibial Architecture
3. Waterproof Facades



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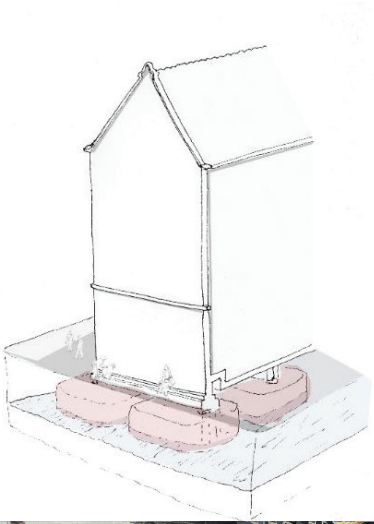

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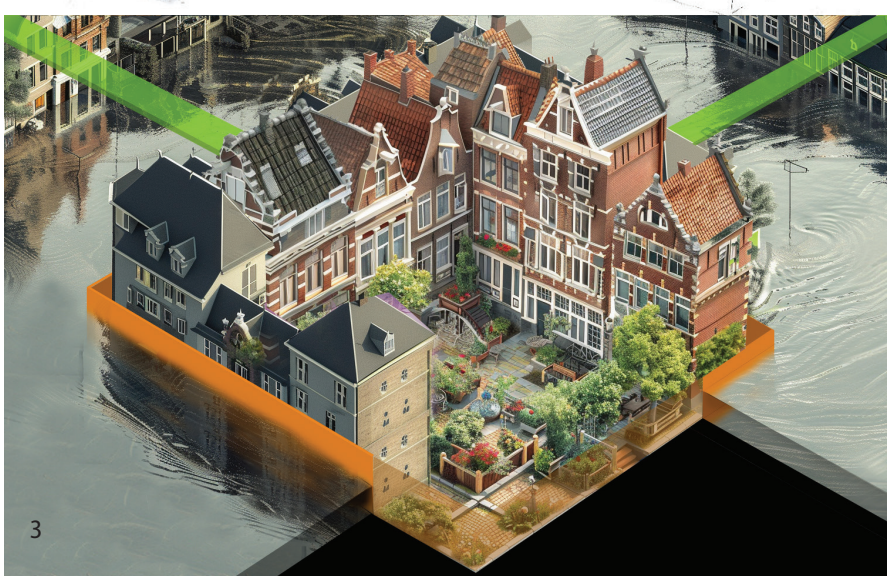
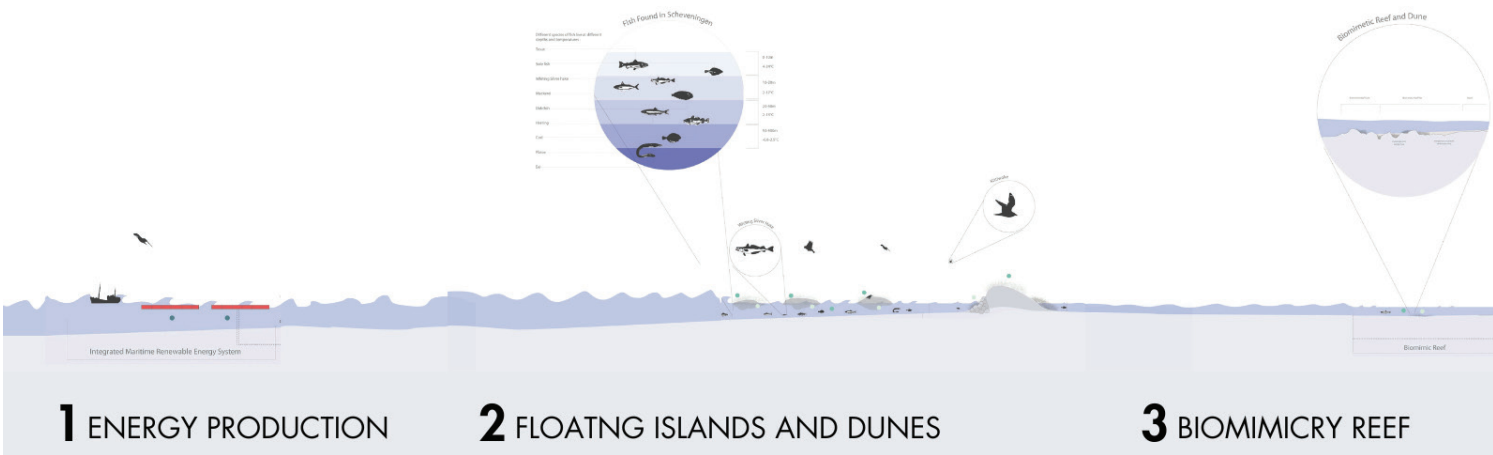


3

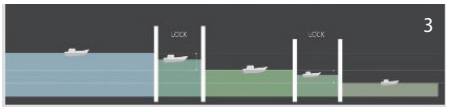
Scheveningen Harbour Proposal

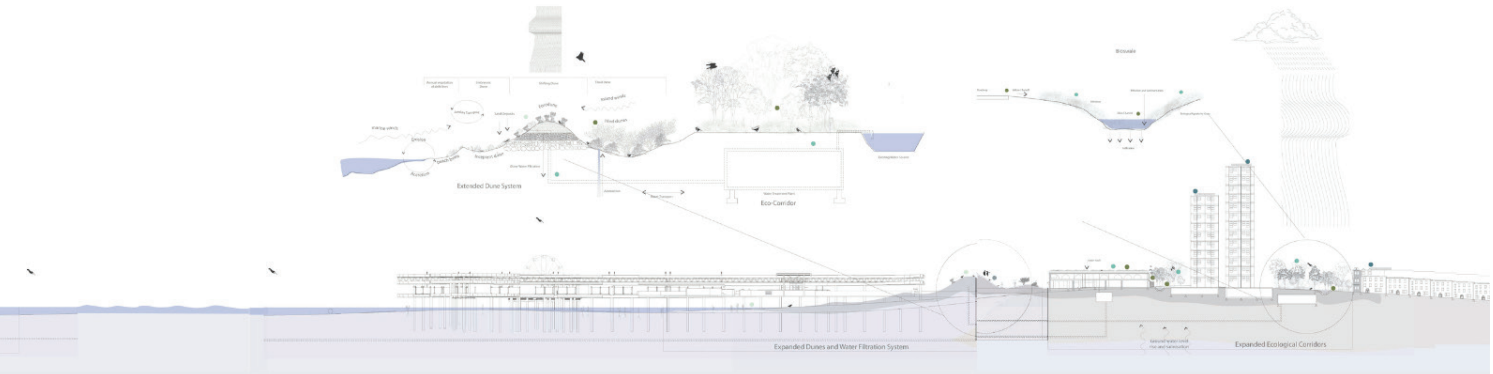
4.1.3.4. Strategy - Small-Scale Protection

- **Harbour and Floating Infrastructure:** Enlarge the harbour entrance to accommodate new floating docks and create space for a fish market, ensuring resilience against sea level rise and attractiveness to visitors.
- **Movable Bridges and Connectivity:** Promote the use of movable bridges in the harbour area to maintain connectivity and adaptability during flood events.
- **Enhance Block-Level Planning:** Manage and divert floodwaters effectively through block-level planning, integrating multi-level access points and flood mitigation features.
- **Adopt Water Resistant Building Materials:** Strengthen building structures with waterproof panels and reinforced doors and windows in lower levels to resist flooding and water damage.
- **Create Temporary Wetlands:** Be ready for eventual fresh water overflow.



1. Present - Harbour
2. Future - Harbour
3. Locks and Lifts Proposal





4 EXPANDED DUNE SYSTEM

5 ECOLOGICAL CORRIDOR

4.2. ADAPTATION

4.2.1. Provocative Questions

1

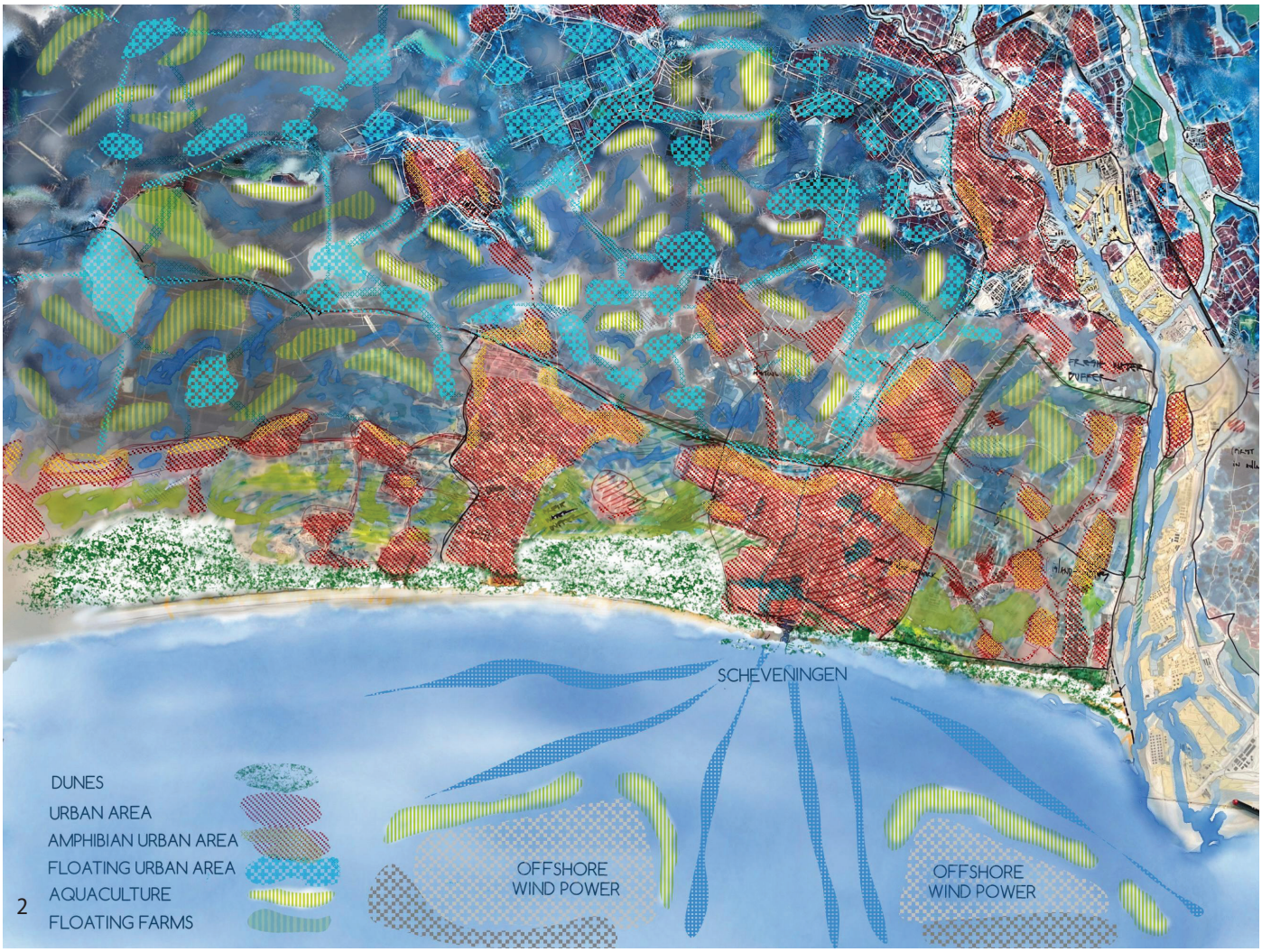
The development of reflections for adaptive interventions was driven by a central question, stimulating proposals focused on the challenge posed to participants: how to design the conservation of Scheveningen's cultural heritage in the face of extreme transformations whose impacts are still difficult to predict and measure. Thus, the guiding question, as well as its offshoots, takes on a practical bias around the interrogative adverb "how" (how to do something) and the interrogative pronouns "what" and "which" (what kind of solution is it).

- ***How to leverage extreme weather events as an opportunity to initiate a transformation towards resilient or anti-fragile, regenerative, and culturally rich societies?***

- ***How can we harness the waters that are at the city's birth, and which now threaten its existence, as an articulating element of a renewed architecture, urbanism, and landscape dedicated to humans and more-than-humans?***

The answer to the above question is developed from the reflection on three other questions that, in turn, can be answered according to the scales and nature of the interventions they target, becoming guidelines for the elaboration of the guidelines and strategies outlined in the workshop.

1. Archipelago City Proposal
2. Archipelago City Proposal



2

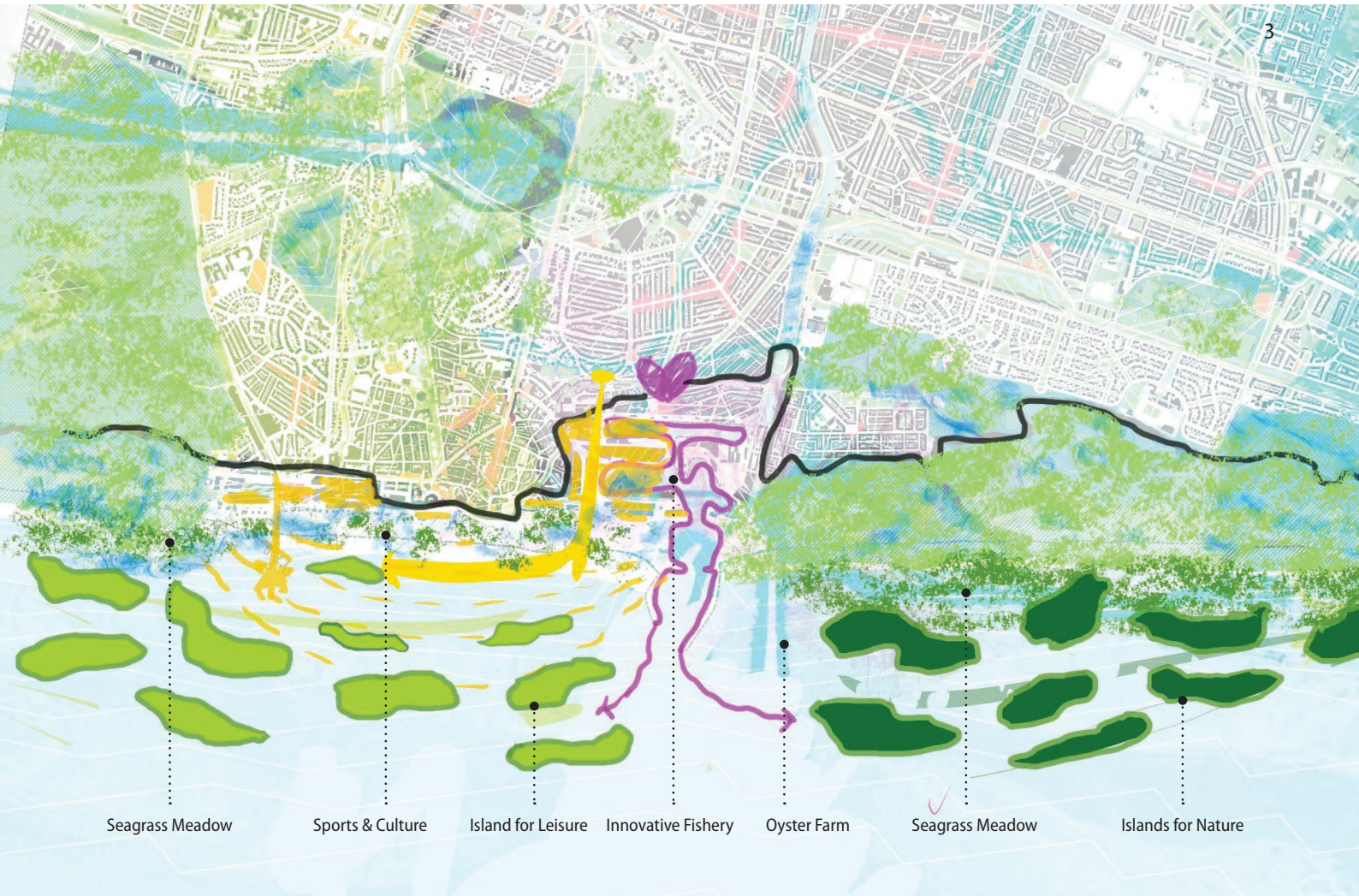
- **How** can we make nature flourish in (and within) the city, reconnecting them and placing them in an equilibrium that guarantees their conservation?
- **What** kind of approach should be adopted to promote this reconnection in favor of the conservation of the city and nature as cultural heritage?
- **Which** repertoire of solutions and interventions, physical or non-physical, can be mobilized to promote adaptation from a perspective of socially inclusive and environmentally regenerative resilience?

4.2.2. Core Adaptation Idea

The guiding ideas of the adaptation process are grounded in two fundamental concepts. The first is **resilience** in a broad sense, which encompasses not only the ability of human-urban organizations to recover and rebuild from potential impacts of accidents and disasters caused by rising sea levels but also, from an adaptive perspective, the capacity to restructure themselves to confront these impacts, absorbing, mitigating, and even strengthening themselves in the process.

The second concept, related to conservation as the **accommodation of the city to nature** (and vice versa), defines the desired characteristics to address this challenge. This involves being sensitive to the dynamics of waters, sands, vegetation, and non-human elements; adopting natural ecosystem processes as the basis for interventions; and integrating social knowledge and practices into decision-making, implementation, control, and replanning of solutions capable of promoting the desired adaptation.

1. Present - Fragmented
2. Strategy - Re-connect
3. Future - Expand



Oportunities at the Harbour - buildings by year

As previously mentioned, the central ideas developed in the adaptive field are also applicable to protective proposals.

- **Establish a blue and green network** that promotes territorial connection based on blue and green infrastructures, offering the city spaces to absorb the impacts of intense rainfall upstream. This network would form a "blue and green arc" embracing the city and integrating coastal and continental ecosystems.

- **Develop innovations** that allow for the implementation of adaptable construction typologies, such as structures on pillars or floating platforms, permitting both the protection of heritage buildings and ensuring resilience and sustainability for future urban developments.

Associated with these ideas, two lines of orientation were drawn for adaptation:

- **The reconstitution of an Archipelago:** reconnecting city and nature in a way that conserves both of them based on their interdependence.

- **The reinvention of the Harbour:** remaining, growing, and prospering in the face of adversity.

The vision of the future drawn to adapt the port city is founded on the **awareness of the limitations** of continuing to invest massively in **protection and control measures** for waters, as well as in the management of dune environments. The synthesis of this idea, outlined in the large scale of the region where The Hague and Scheveningen are located, is the **reconstitution of the environments** under the influence of oceanic dynamics as a vast estuarine and lacustrine environment, **forming an Archipelago.**

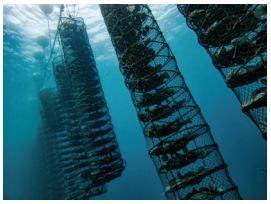
This idea has several implications. The first relates to the appreciation of the regional role of Scheveningen as a **fishing port** and marina. The fishing activity is at the birthplace of the city, imprints its image and meaning in the three herring of the district's flag. The **leisure port** stands out for its proximity to the open sea, the lower flow of navigation, and the maintenance costs. The presence of beaches with sands and dunes is an attractive element that supports tourism on the North Sea coast. Together, these characteristics promote greater integration of the neighborhood in its regional insertion, which can be further valued as a stopover point in a territory that will restructure itself anchored in the waters that tend to rise.

The second repercussion of this idea is the potential for valuing strategies of ordering the occupation in **islands**, more employed in the north of the Netherlands, but with the potential to support the conservation of the territory in the south in an adaptive approach. The capacity of aquatic transport modes can highlight the potential of the relative position of the fishing neighborhood, already pointed out. This perspective should generate another implication, related to the restoration and expansion of **lagoon and dune** ecosystems, reinforcing heritage aspects that were greatly impacted by centuries of artificialization through urban occupation.

The heritage of Scheveningen encompasses **material and immaterial** dimensions consolidated over time in its formation. Evidently, the specific characteristics of human and natural dynamics, the transformations that the city and nature have undergone, are the focus of interest for their conservation in the face of the risks of rising sea levels. Adaptation, understood as the action of molding oneself to external changes, also foresees the capacity to take advantage of **transformations** as a basis for its reinvention.

1. Current Scenario
2. Proposal - Archipelago

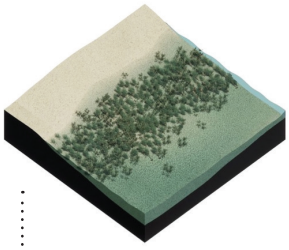
Island For Nature Habitat



Innovative Fishery

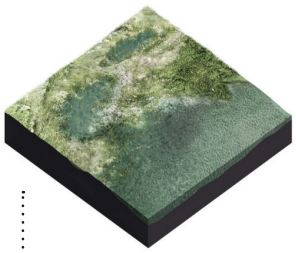
Leisure Island

Energy Island

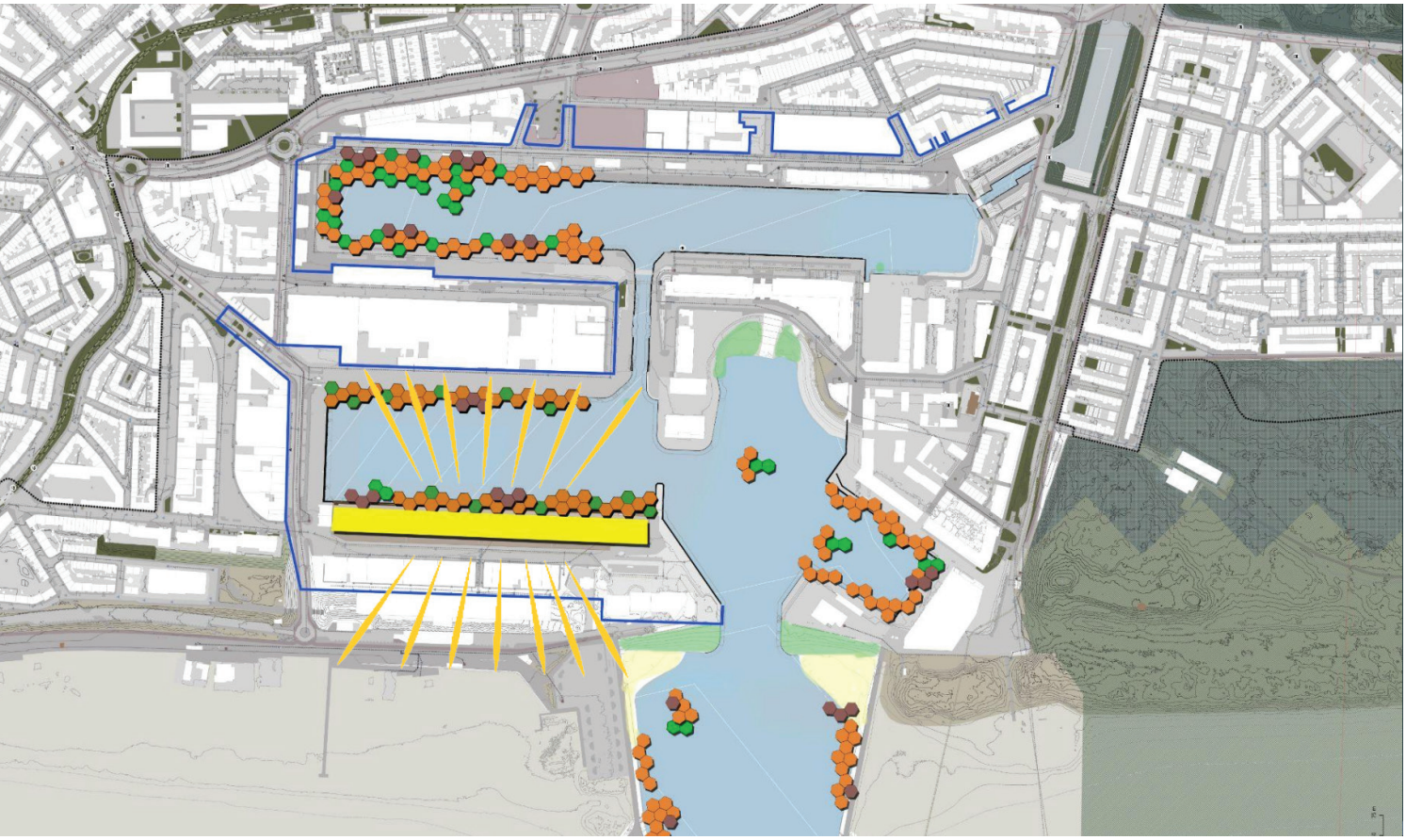


Seagrass Meadow

Sports & Culture



Restore Wetland



Scheveningen Harbour

The case worked on in the **nXr | designing for extremes** workshop has an ideal level of complexity for an exercise of this nature. On the one hand, the specific characteristics of the environment in which the neighborhood was implanted, as a port and a point of **connection-distribution** of fish, today represent the greatest threat to its existence and permanence in the future. On the other hand, the urban structures - networks, infrastructures, buildings, equipment - due to their attributes and values, incorporate cultural meanings recognized as local, municipal, and regional heritage pillars.

The means of confronting the great challenge presented in the workshop, of preserving heritage in harmony with the needs that extreme changes present, has as its key idea the use of reflections of these changes commonly perceived as negative to conserve and make prosper the dynamics of a **fishing and leisure port,** of a tourist neighborhood. As a port, the rise of waters can be used as an opportunity to, on the one hand, expand the space for anchoring sailboats in protected areas further away from dry land - welcoming the fishing activity -, and on the other hand, adapt the leisure marina to higher levels of tides - and with it, adapt the surroundings, public spaces, and buildings.

The landing, processing, and logistics facilities for fish distribution must assume a more prominent heritage role, safeguarding it with combined protection and adaptation measures, ensuring its permanence as a reference for the port-fishing activity, and adapting its connection with the heritage spaces. **Tourist activities** can be reinforced by expanding the port, inserted in the archipelago territory, using the dune environment (berms, especially) and submerged structures as means of mitigation to rising waters.

In the historic city center, the adoption of solutions that replicate natural aspects of berms (dykes) and marshes (retention basins) are capable of constituting, adaptively, a supplementary layer of protection. In other areas of the city, this same type of solution can be used to guarantee greater capacity for coexistence with waters, adapting the urban morphology by inserting public spaces that reduce the speed of floods, innovating constructive solutions for amphibious buildings and taking advantage of waters to restructure the mobility system.

4.2.3. Intervention Strategies and Project Guidelines

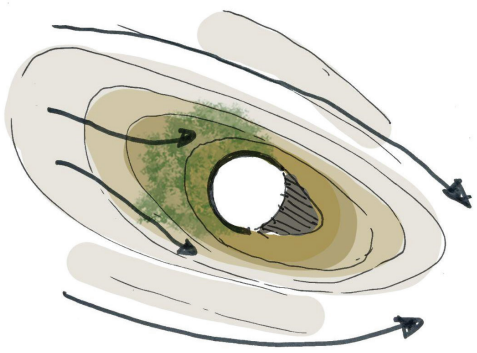
Archipelago City concept in an adaptive approach suggests a vision for urban development that is resilient to climate change and promotes ecological sustainability. This approach envisions the city as a network of interconnected islands or districts, each with its own unique character and functions, but all united by a shared commitment to adaptation and resilience.

By adopting the archipelago city concept, we propose that cities can be not only more resilient to climate change but also more equitable, sustainable, and desirable places to live. To this end, strategic guidelines are drawn up to cover comprehensive key elements.

4.2.3.1. Guidelines - Large-Scale Adaptation

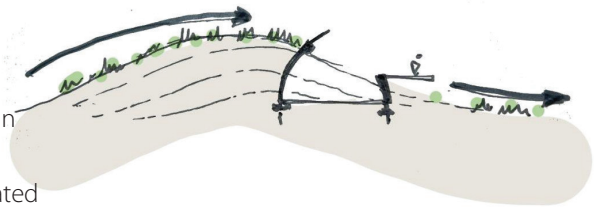
- **Decentralization:** The city is divided into smaller, more manageable districts or islands, reducing the concentration of population and infrastructure in vulnerable areas.

- **Connectivity:** Develop and/or revive urban mobility strategies that are not dependent on cars. The islands are connected by a network of transportation infrastructure, such as bridges, tunnels, and waterways, ensuring accessibility and connectivity between different parts of the city, specially by waterway.



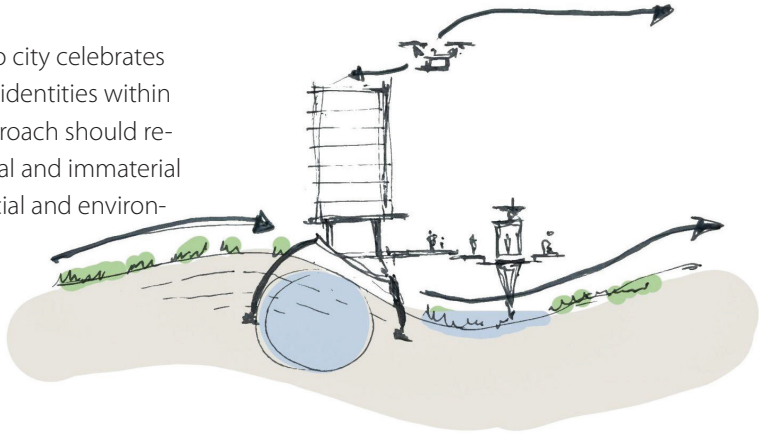
- **Self-sufficiency:** Each island is designed to be relatively self-sufficient in energy production and waste management systems, including food production in order to reducie dependency on external resourcess.

- **Ecological resilience:** The islands are designed to incorporate natural features, such as green spaces, wetlands, and coastal ecosystems, that can help mitigate the impacts of climate change, such as flooding, sea-level rise, and extreme weather events.



- **Coexistence with nature and regeneration of biodiversity:** taking as an essential guide the perspective of resilience based on the coexistence and balance between natural and human dynamics and the ecosystems associated with them.

- **Cultural diversity and Enhanced heritage:** The archipelago city celebrates diversity and encourages the development of distinct cultural identities within each island, fostering a sense of place and belonging. This approach should reinforce the attributes and values of cultural heritage; its material and immaterial meanings can be amplified from the intersection between social and environmental elements.



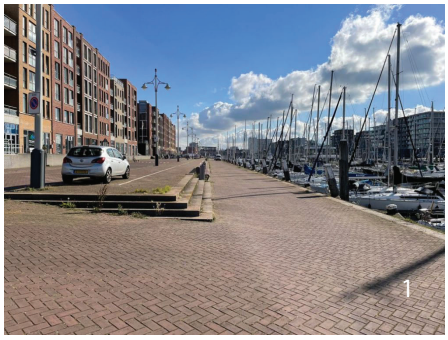
4.2.3.2. Strategy - Large-Scale Adaptation

- **Building an Archipelago**
  - **Reorganizing Urban Spaces:** Restructuring urban occupation within "islands", dry land interspersed and connected by water. These smaller, self-sufficient districts, should involve local communities in planning and decision-making.
  - **Redesigning Amphibious Urban Areas:** Reconfiguring urban areas to accommodate fluctuating water levels without disrupting urban life.
  - **Deploying Floating Structures:** Implementing floating structures for wave energy protection and aquaculture, sports, and leisure activities.
  - **Adopting Diverse Urban Profiles and Transport Modes:** Adopting various urban profiles and low-carbon public transport modes to accommodate rising sea levels.
- **Restoring and Expanding Dune Ecosystems:** Recomposing and expanding the dune ecosystem with seagrass and native shrub cover and implementing conservation measures to enhance biodiversity and resilience.
- **Circular Economy and Waste Management:** Promote a circular economy and invest in waste management infrastructure to reduce environmental impact.

1. Proposal - Scheveningen
2. Proposal - The Hague visualization

4.2.3.3. Guidelines - Small-Scale Adaptation

- **Re-imagine the Port as an Innovation Lab:** As a resilient port, Scheveningen is a heritage asset not only to be preserved, but reinvented, adapting to reinforce its connector role and its significance as the main connection point between the city and the sea and the significance of the heritage they built together**.**
  Increased Livability and Prosperity:
  - Work with nature, not against it, primarily building with nature.
  - Use a holistic and integrated vision of housing, work, services, leisure, and culture.
  - Create transitional zones between the sea and the city, adopting a new waterfront design, extending the beach, creating dunes, lagoons, offshore farming, islands, etc.
  - Promote (re)connection with the city's interior, adopting morphological patterns that help preserve water recharge for a desirable quantity and quality.
- **Develop and Implement Innovations in Construction Standards:** Create nature-inspired solutions that favor flexibility, mobility, and modularity of buildings, infrastructures, networks, and urban facilities.
- **Adaptive Heritage Management:** Implement strategies to preserve and revitalize heritage while ensuring it can withstand climate impacts.
- **Flexible Docking System for the Scheveningen Harbor:** Create a flexible docking system that allows for adaptability over time, accommodating changing needs and incorporating amenities like filter gardens, seating areas, and kiosks.
- **Heritage Revitalization:** Preserve and revitalize significant heritage structures.
- **Adaptive Landscape Architecture:** Employ sponge blocks and other nature-based solutions to enhance resilience and create more sustainable urban spaces.



1,3. Current Scenario - Scheveninguen Harbour
2,4. Proposed Adaptive Harbour - Changing Docks

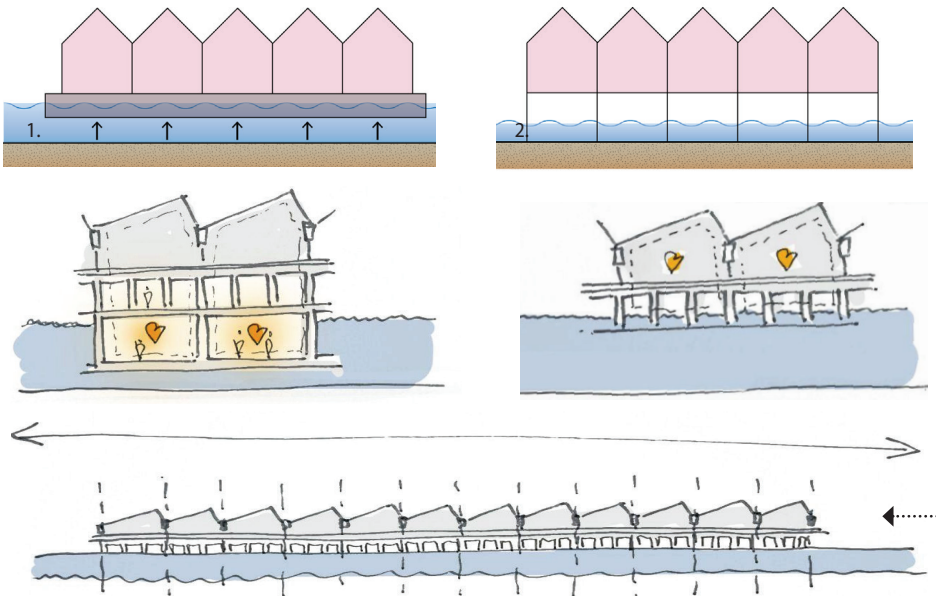
United Fish Auction

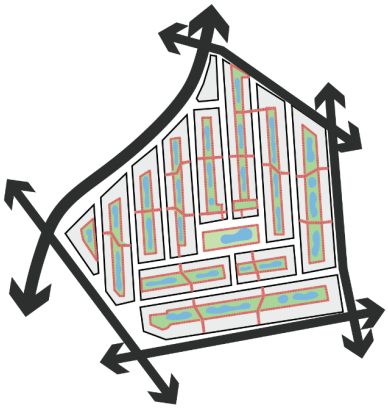
4.2.3.4. Strategy - Small-Scale Adaptation

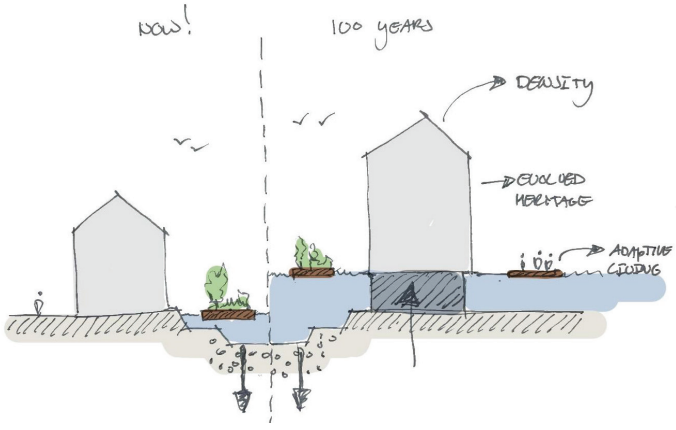
- **Promoting Heritage Revitalization**
  - **Revitalizing the United Fish Auction Building:** Revaluing the building as a cultural asset, combining protective and adaptive approaches, based on floating structures, with innovative uses, adding more tourism and economic activities to this brutalist compound.
- **Developing Adaptive Landscape Architecture**
  - **Creating Sponge Blocks:** Utilizing internal spaces of city blocks as rainwater detention basins, transforming them into "sponge blocks" to mitigate floods.
  - **Adapting Building Typologies:** Developing adaptable building typologies, such as floating structures or buildings on stilts, to withstand rising water levels.
  - **Integrating Dune Ecosystems with Development:** Combining the restoration of dune ecosystems with the development of residential, tourism, and leisure facilities that coexist and mimic dunes.

Adaptive Heritage Preservation

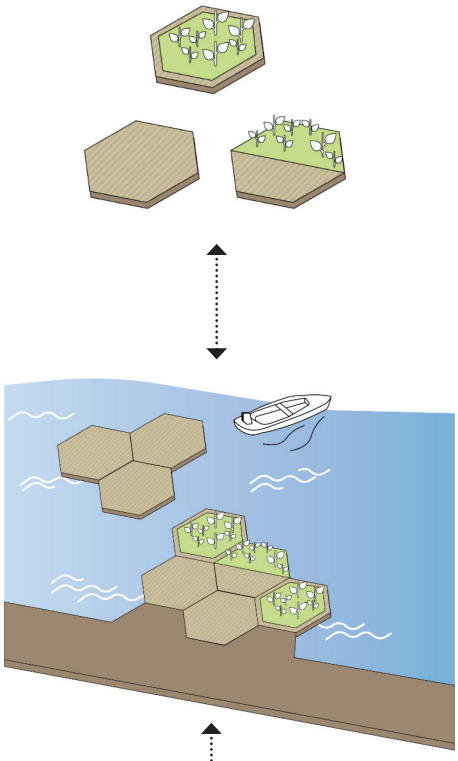
Evolving heritage preservation

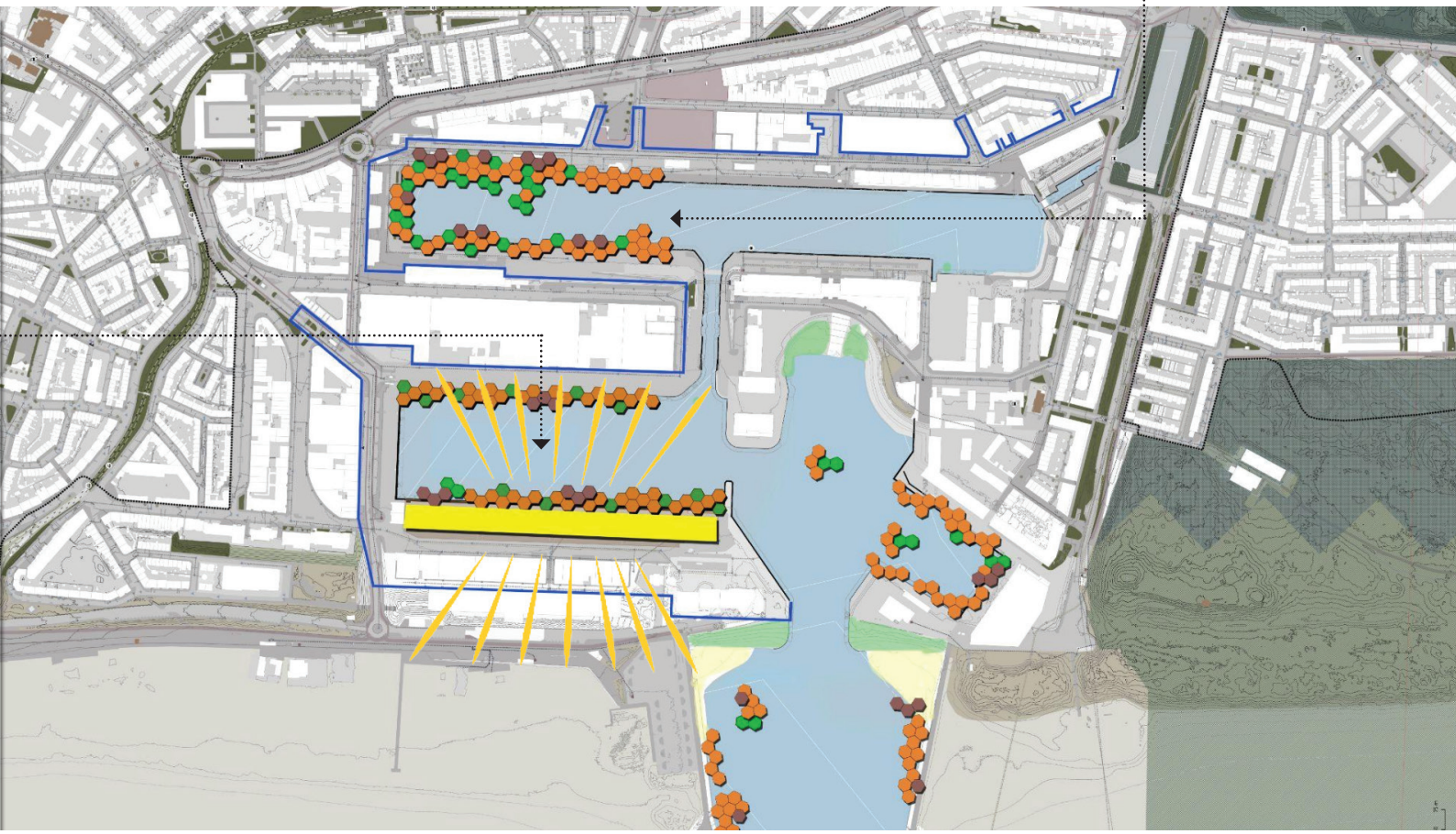






- **Developing Innovative Solutions for Extreme Conditions**
  - **Reorganizing Structures for Adaptability:** Implementing adaptable structural systems, such as suspended buildings, to reduce impact on fragile surfaces like dunes.
  - **Adapting Docking Facilities:** Adapting docking facilities to function at extreme water levels using floating platforms.
  - **Developing Modular Floating Decks:** Creating modular floating decks for flexible use in non-docking areas of the harbor.
  - **Innovation Hub Development:** Establish the Scheveningen Port as a hub for innovation and research in climate adaptation, sustainable development, and blue economy.
- **Applying Existing Knowledge and Innovation**
  - **Waterfront Revitalization:** Reimagine the waterfront as a vibrant public space with green infrastructure and recreational opportunities.
  - **Adaptive Landscape Architecture:** Employ nature-based solutions, like sponge blocks, to enhance resilience and create sustainable urban spaces.





5. POLICY RECOMMENDATIONS

5.1. Implement an Integrated Coastal Protection Plan

5.1.1. Enhance Natural Coastal Defense: Extend and Restore the Dune Landscape: Expand and restore the natural dune landscape along The Hague's coast, through both human and natural processes (such as the "sand river"). This would not only serve as a physical barrier against rising sea levels but also act as a buffer zone, protecting the city's infrastructure and heritage sites. Integrating freshwater storage beneath the dunes can enhance water management while preserving biodiversity. Integrate green networks that connect these dunes with urban green spaces, creating a continuous buffer zone.

5.1.2. Develop Marine Parks: Establish marine parks as part of the dune extension, enhancing recreational spaces while providing ecological benefits. These parks can be connected to green and blue networks within the city, fostering resilience and sustainability. Additionally, designate marine protected areas to preserve critical coastal and marine ecosystems that contribute to shoreline stability and biodiversity.

5.2. Foster Adaptive Urban Planning through Green and Blue Infrastructure

5.2.1. Integrate Green and Blue Networks: Expand and connect existing green spaces, water canals, and the dune system to create a cohesive network that enhances the city's ecological resilience. These networks should serve multiple functions, including flood management, biodiversity enhancement, urban mobility and recreational use.

5.2.2. Update Building Regulations: Introduce building codes that mandate adaptive design for new constructions. This includes incorporating features like stilts, floating platforms, waterproof facades, and multi-level access in flood-prone areas. Existing buildings should be retrofitted with waterproofing and pluvial water harvesting technologies to enhance resilience.

5.2.3. Encourage Floating and Amphibius Technologies Architecture: Support the development of floating structures, including homes, offices, and public spaces, particularly in vulnerable areas like the Port of Scheveningen.

5.2.4. **Strengthen Critical Infrastructure:** Retrofit and reinforce essential infrastructure, such as roads, bridges, and utilities, to withstand extreme weather events and rising sea levels.

5.2.5. **Flexible and Modular Infrastructure:** Plan and construct flexible and modular infrastructure that can function under extreme weather conditions in the Port of Scheveningen, such as transportation systems that can be elevated or flood-proof roads and railways, floating docks, elastic pedestrian bridges, and variable water level areas, to adapt to changing environmental conditions.

5.2.6. **Implement Sponge City Concepts:** Incorporate permeable surfaces, green roofs, and rain gardens into urban design to enhance the city's ability to absorb and manage stormwater and stormsurge, reducing the risk of urban flooding.

5.3. Enhance Cultural Heritage Preservation

5.3.1. **Adaptive Heritage Management:** Implement adaptive strategies to protect and revitalize The Hague's cultural heritage. This includes using advanced materials and techniques to preserve historical buildings while ensuring they can withstand climate impacts. Develop heritage conservation practices that consider the dynamic relationship between the city's cultural assets and the environment.

5.3.2. **Heritage as a Catalyst for Innovation:** Position heritage sites as central elements in innovative urban projects. For instance, reimagine the port as an "Innovation Lab" where heritage, technology, and environmental sustainability converge, fostering a forward-thinking approach to urban development.

5.4. Prioritize Collaborative Governance and Community Involvement

5.4.1. **Multi-Stakeholder Engagement:** Establish a governance framework that involves local communities, governmental bodies, NGOs, and international experts in the decision-making process. This collaborative approach ensures that adaptation strategies are inclusive and consider diverse perspectives and spatial scales.

5.4.2. **Public Awareness and Education:** Launch campaigns to raise public awareness about the impacts of climate change and the importance of adaptive strategies. Encourage community participation in the planning and implementation of these strategies to foster a sense of ownership and responsibility.

5.4.3. **Establish a Climate Innovation Lab:** Create a dedicated innovation hub in the Port of Scheveningen focused on developing and testing new technologies and strategies for climate adaptation, particularly in the context of coastal cities.

5.5. Economic and Financial Strategies

5.5.1. **Create a Resilience Fund:** Establish a dedicated fund to finance climate adaptation projects, including infrastructure upgrades, community resilience programs, and innovative research initiatives. Explore public-private partnerships and international funding opportunities to support these efforts.

5.5.2. **Incentivize Green Development:** Offer tax breaks, grants, or low-interest loans to encourage the adoption of sustainable building practices and the development of climate-resilient infrastructure.

5.5.3. **Assess Economic Impacts:** Conduct comprehensive assessments of the economic risks posed by sea level rise and water challenges, and integrate these findings into long-term urban planning and investment strategies.

5.6. Cross-Cultural Exchange and Capacity Building

5.6.1. **Professional and Academic Exchanges:** Facilitate regular exchanges of professionals, academics, and students between the two cities. This could include joint workshops, internships, and collaborative projects at institutions such as TU Delft, IHE/Delft and UFPE. Such exchanges would build local capacity and foster a deep understanding of each city's unique challenges and solutions. Exchange knowledge and best practices in urban resilience, climate adaptation, and heritage preservation through research (symposium, conferences, public debates), education and implementation.

5.6.2. **Public Engagement and Education Campaigns:** Develop and share best practices for engaging local communities in climate adaptation efforts. Both cities could co-create public education campaigns that raise awareness of climate risks and promote citizen participation in adaptation projects. These campaigns could include educational materials, public forums, and interactive online platforms.

5.6.3. **Global Advocacy and Leadership:** Position The Hague and Recife as leaders in climate adaptation by actively participating in international forums like COP30. Advocate for global policies that support coastal cities in developing and implementing effective climate adaptation strategies.

5.7. Develop Long-Term Vision and Governance

5.7.1. **Develop a Century-Long Vision:** Create a long-term vision for The Hague that extends beyond 2100, taking into account the potential for extreme sea level rise and other climate impacts. This vision should be flexible, allowing for adjustments as new data and technologies emerge.

5.7.2. **Establish a Resilience Task Force:** Form a dedicated task force within the city's governance structure to oversee the implementation of climate adaptation strategies, coordinate between different agencies, and ensure that resilience measures are integrated across all levels of government.

5.7.3. **Regularly Review and Update Policies:** Implement a system for the regular review and updating of climate adaptation policies to ensure they remain relevant and effective in the face of evolving climate conditions.

5.8. Twin Both Cities and Implement Simultaneous Sponge-City Small Pilot Projects

5.8.1. **Create a Bilateral Climate-Adaptation Task Force:** Establish a task force consisting of city officials, urban planners, architects, engineers, and climate scientists from both The Hague and Recife. This body would coordinate the development and implementation of a shared adaptation framework that aligns with the unique needs of each city while ensuring synergies between their respective strategies.

5.8.2. **Urban Dune Systems:** Both cities could simultaneously pilot urban dune systems as a natural defense against rising sea levels. In The Hague, this

could involve extending existing dune landscapes to protect the city, while in Recife, it could focus on creating green buffers in vulnerable coastal areas. These projects could serve as live laboratories for studying the effectiveness of dune systems in different climates and geographies.

5.8.3. **Sponge City Initiatives:** Implement sponge city concepts—urban designs that enhance water absorption and reduce flooding risk—in specific districts of both The Hague and Recife. These pilots could include permeable pavements, green roofs, rain gardens, and water storage facilities. Lessons learned from each city's implementation would be invaluable for improving water management practices in different urban contexts.

5.9. Scaling Up and Replication

5.9.1. **Develop a Roadmap for Scaling Successful Pilots:** Based on the outcomes of the pilot projects, create a roadmap for scaling up successful initiatives across both cities. This could include replicating pilots in other districts within The Hague and Recife, as well as adapting them for use in other coastal cities around the world.

5.9.2. **Global Outreach and Replication:** Promote the twinning model and its outcomes through international forums, conferences, and publications. By positioning The Hague and Recife as leaders in climate adaptation, they can inspire other cities to adopt similar collaborative approaches.

CONCLUSION

The expanded dunes park will serve as protective infrastructure against rising sea levels and will be integrated into a network of urban parks, ecological corridors, filtering gardens, and recreational spaces, creating opportunities for new urban interactions. The archipelago city concept will provide pathways to adapt to the ongoing transformation of territories facing sea level rise and will open an entirely new field of exploration and experimentation on how to coexist with water in a future where extreme climate events continue to threaten our coastal cities.

Facing global challenges, these two strategies will complement each other. A redefined culture of protection will allow the incorporation of adaptation challenges with nature-based solutions for sustainable development. Protected historical heritage will coexist with the Archipelago Cities concept, addressing challenges from dune parks and amphibious urban transitions to floating cities, farms, and aquaculture.

The cities of The Hague in the Netherlands and Recife in Brazil, despite their geographical distance and differing climates, face similar challenges due to rising sea levels and other water-related issues. Both cities have rich Dutch-based historical backgrounds, coastal settings with sandy beaches, fishing communities, and complex water systems. They contend with subsidence, aquifer salinization, and urban populations vulnerable to the impacts of climate change. Twinning these cities around a shared climate adaptation agenda offers a unique opportunity to leverage their collective knowledge, foster innovation, and develop resilient urban models that can be replicated globally.

By twinning The Hague and Recife around a shared climate adaptation agenda, both cities will enhance their resilience while contributing to a global movement toward sustainable and adaptive urban development. This partnership will not only address local challenges but also will serve as a powerful example of how cities worldwide can collaborate to tackle the pressing issue of climate change.

FURTHER DEVELOPMENTS

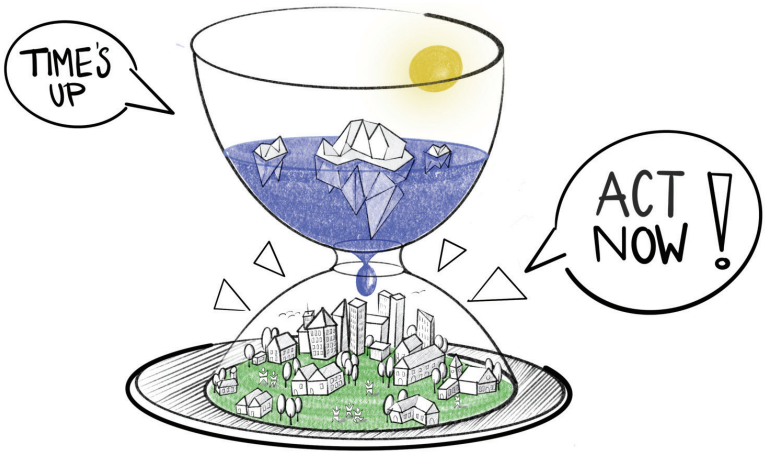
Brazil

- Roundtable: Unify Adaptation and Protection Proposals (31/08)
- RCP Podcast
- Strategic Publications The Hague-Recife
- Ongoing Public Policies
- Recife - Recife City Park Agreement (city level)
- Pernambuco - Economic/Environmental Action Plan of the Pernambuco Government (state level)
- Brazil - Green-Resilient Cities Program - MCTI, MC, MMA (national level)
- Recife Exchanges Netherlands - RxN 2025
- Climate Change Conference (COP30) - 2025

Netherlands

- Expert Session (02/10)
- Scientific and Mainstream Media Publications
- Symposium on (Re-) Connecting Maritime-Urban Ecosystems
- Open Course TUD on Best Practices
- Exhibition at The Hague City Hall
- Catalogue of Best Practices for Small Port Cities
- Climate Change Conference (COP30) - 2025

Urban Activations The Hague X Recife


TIME'S UP
ACT NOW !

Recife - Brazil

The Hague - Netherlands

nx r

netherlands
exchanges
recife

Organization

Partners