presentation 01

NYC Offshore

- a resilient city approach

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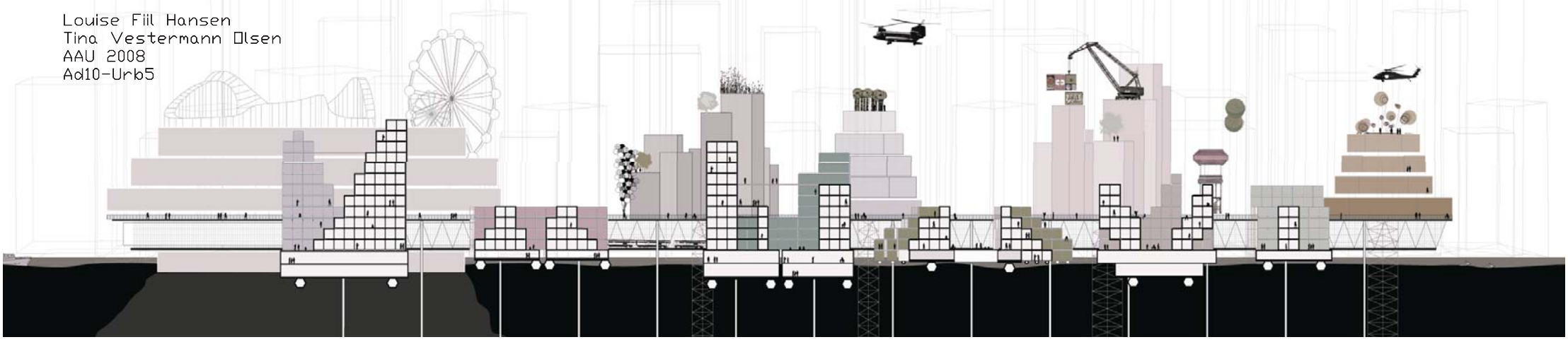
AAU 2008
Ad10-Urb5



p01 NYC Offshore

- a resilient city approach

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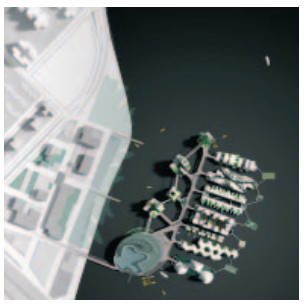
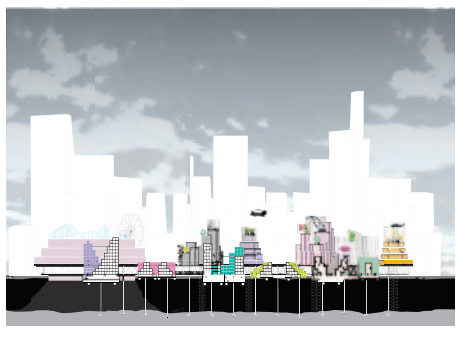
Executive Summary

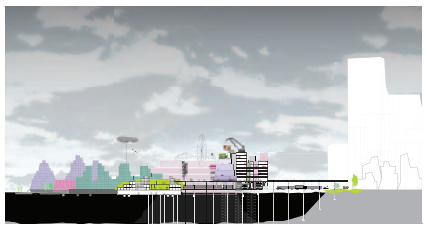
'Offshore NYC - a resilient city approach' takes its starting point in a design competition concerned with a hurricane disaster scenario: the temporary accommodation for a displaced population.

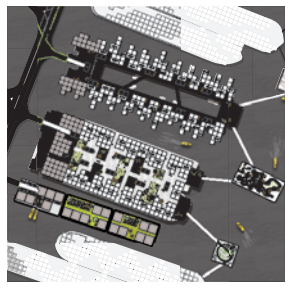
However; the project proposes a critical, resilient approach to contemporary planning practices in flood-prone areas advocating proaction rather then reaction through a design that materializes as a scenario based master plan incorporating a time variable. Instead of isolating one situation it emphasizes the importance of thinking in an overall dynamic coherence of designing for several situations instead of static moments. 'NYC Offshore' is designed not for a specific site but for a hypothetical neighborhood resulting in a design with low contextual dependency but a high contextual adaptability.

Drawings









Reading Guide

The project 'NYC Offshore' is presented through two rapports: 1.0 Presentation and 2.0 Documentation. 1.0 Presentation contains the description of the design project through diagrams, plans, sections, collages and text thus being representative of a delivery for a design competition. The documentation rapport presents the development of and background material for 1.0 Presentation Rapport.

Illustrations not made by the author are listed in the end of each report along side reference lists organized according to the Harvard method.

p02 Introducing

The project 'NYC Offshore' takes its staring point in the competition 'What if New York City were hit by a category 3 Hurricane?' This was an international design competition formulated by the New York City Office of Emergency Management that wished to reach design proposals answering the question: How should a displaced population - due to hurricane and following storm surge - of a hypothetical made up site in NYC live during the rebuilding phase? This entailed designing provisional housing that could meet the NYC standard of high density on scarce land.

Although addressing the same disaster scenario 'NYC Offshore' proposes a different approach. It turns the question around and develops a strategy of anticipatory design thus thinking ahead of disaster - planning for what will come instead of merely reacting to what is: a narrative expecting a before and an after.

In that way the project has a foundation in the competition brief – but seeks to redefine the focus. 'NYC Offshore' builds on an agenda of pre-disaster interventions – addressing issues additional to those described in the competition program.

A series of dilemmas dominate the presented discussion:
- The existing post disaster planning only provides low density – area consuming solutions in the post-disaster period. They are not operational in dense urban areas such as NYC.
- The existing design responses such as trailers and tents address the need for housing on a unit level while the functioning of areas is ignored. Furthermore they are short term reactive solutions to a long term reoccurring problem.
- Vulnerable land is being inhabited. Coastal areas are being developed with immense speed and as side effect risks of structural damage increase.

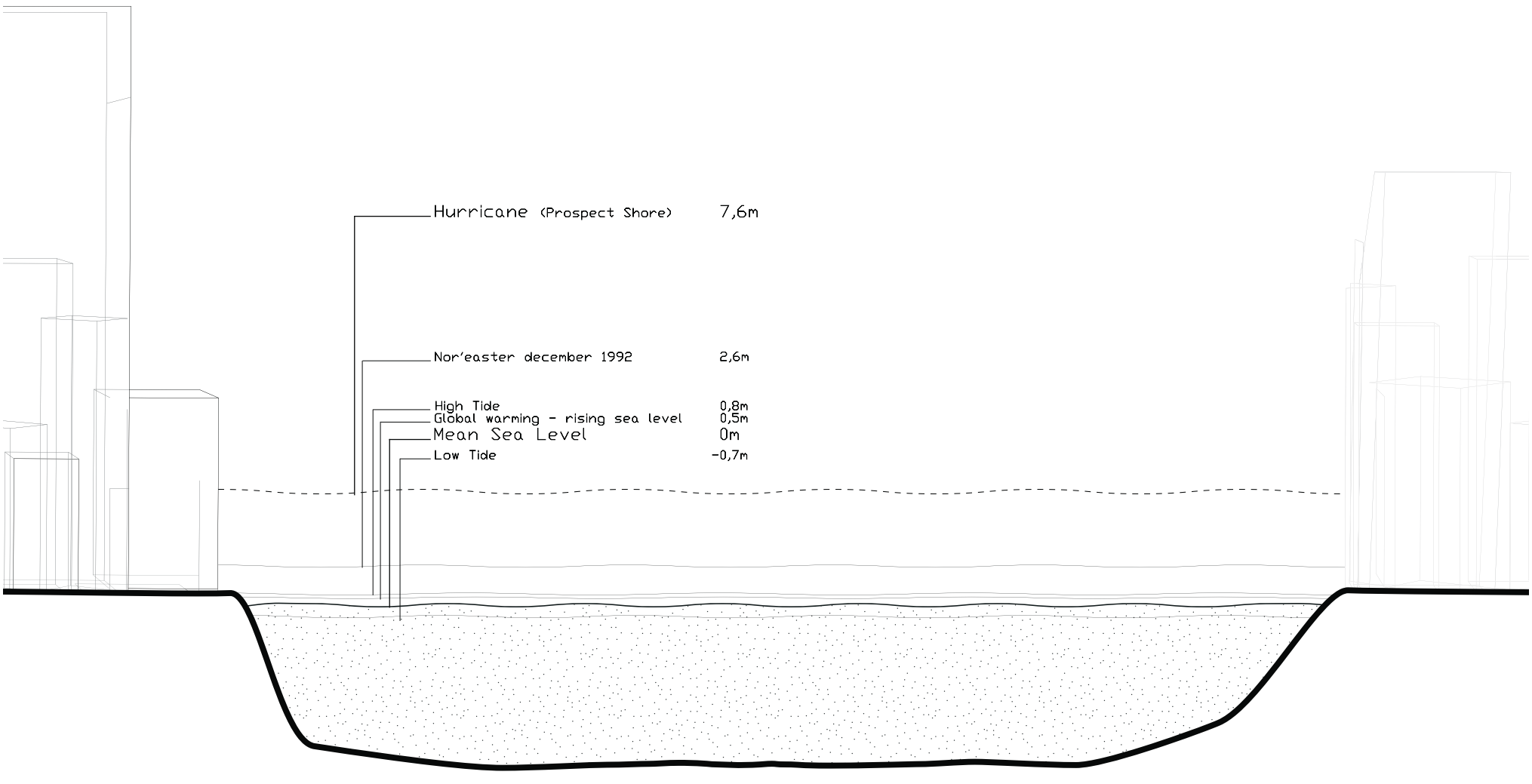
As an alternative to building on the vulnerable edges of New York the project proposes an offshore strategy that inhabits the water surface through different strategies; elevating surfaces from the water, anchoring structural elements to the river-bed and introducing in-coming floating elements.
As such the proposed design response challenges the edge conditions, meaning the relation and/or interchange between the shore and the water surface, by replacing vulnerable land with resilient structures.
As such the design proposal operates in an urban scale approximating the design from overall urban considerations. Analysis and research (See: 2.0 Documentation) indicate that the challenge lies in the developing off overall structures – the functioning of entire neighborhoods and not only the living unit.

A set of what, why, how describes the intentions of the project - the motivations and the approach;

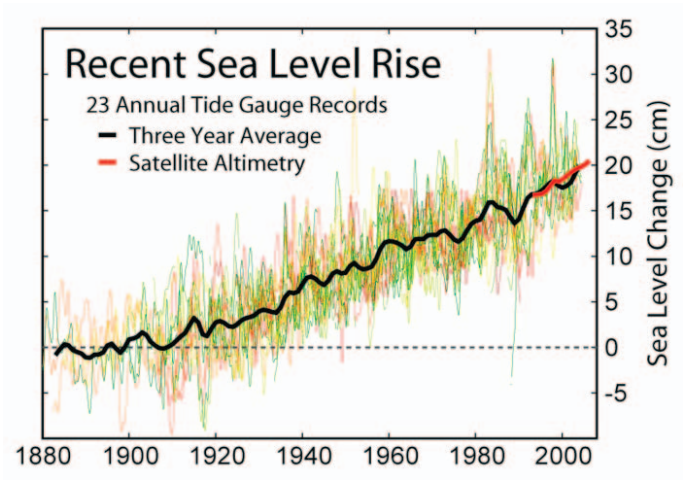
What
'NYC offshore' proposes a resilient approach to planning in vulnerable coastal cities. Utilizing the flooded landscape and creating a water based urbanity of offshore neighborhoods the projects acknowledges the need for an immediate design response to the long term impacts climate changes pose on cities.

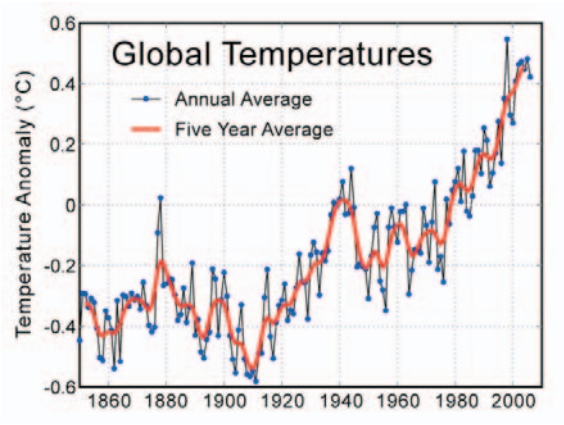
Why
New York is a mega city facing a mega disaster.
A hurricane will impact both the physical urban condition and the social pattern of habitation. Erasing whole neighborhoods and displacing its inhabitants calls for alternative design solutions. The existing post disaster planning provides only low density responses – they are short term solutions to a long term problem needing an anticipatory approach.

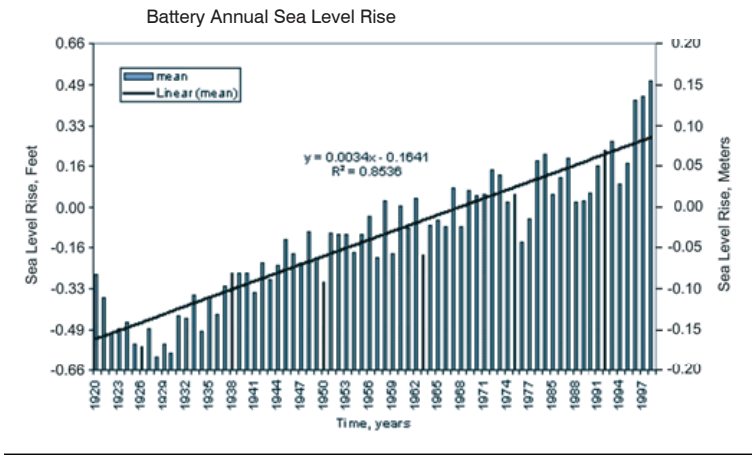
How
The design response is manifested through a scenario based master plan that operates in different timeframes comprising both temporary and permanent elements thus designing a system that is resilient adapting to changes in climate and the following displacement of populations: a transitional city as an offshore neighborhood addressing issues of temporality, density and social diversity.



Ill.1: Diagram showing rise in sea levels

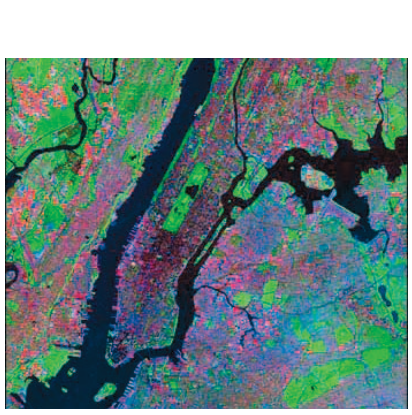


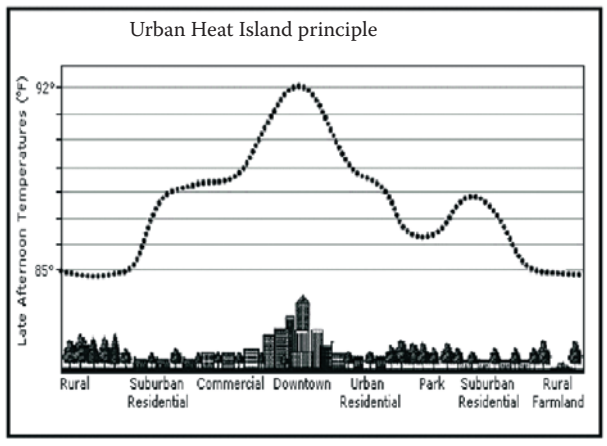





5 8 NEWS REVIEW JANUARY 21, 2007 THE SUNDAY T

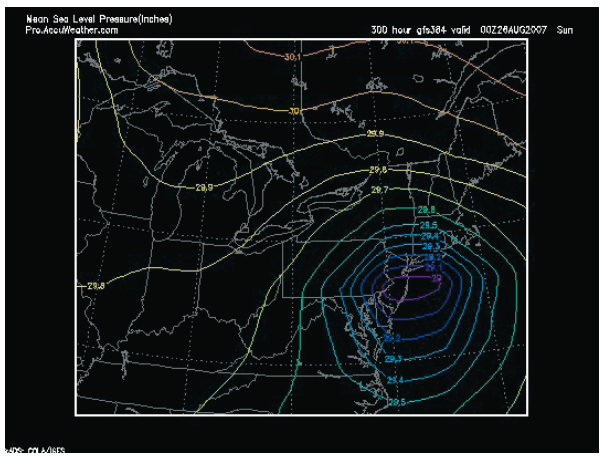
The climate game says brace yourself





La Guardia Airport, Queens, NY. November 25, 1950.

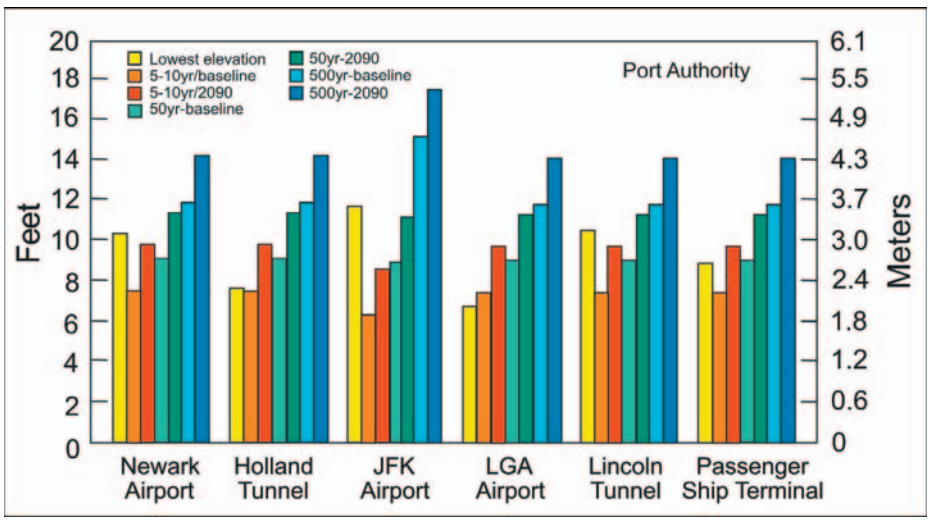
GFS now shows hurricane hitting NY?
Believe it or not...

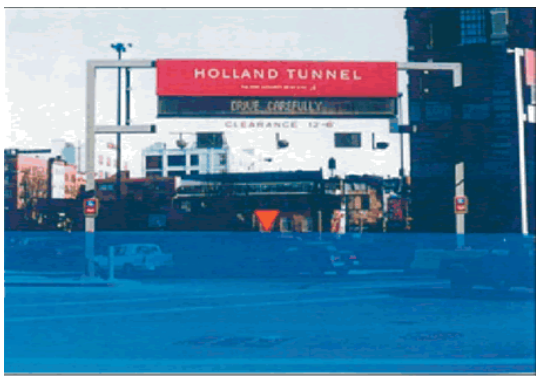


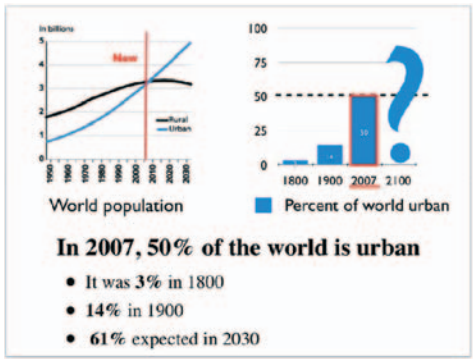
Storm Flooding

High population densities are presently concentrated near the water's edge at several locations throughout the region and coastal populations are growing.

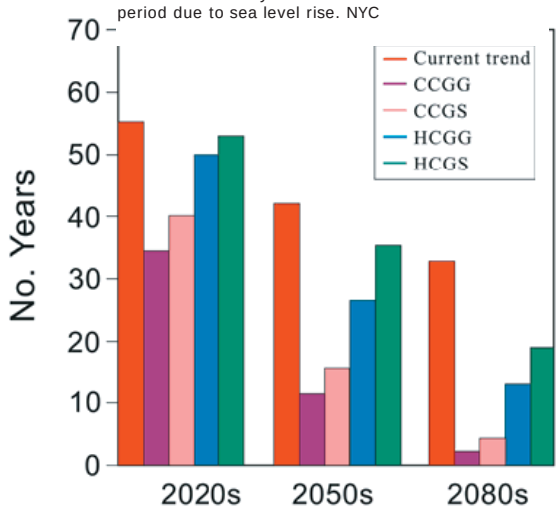
"if we continue... in 50 years we will need a 2nd planet"

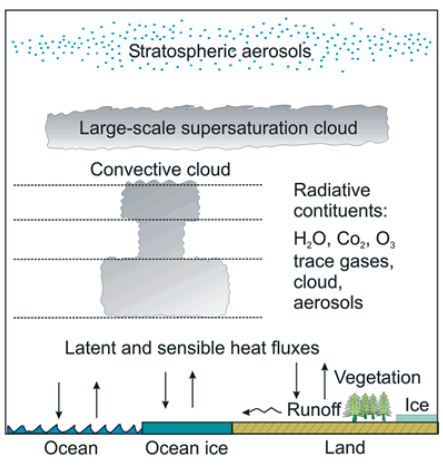


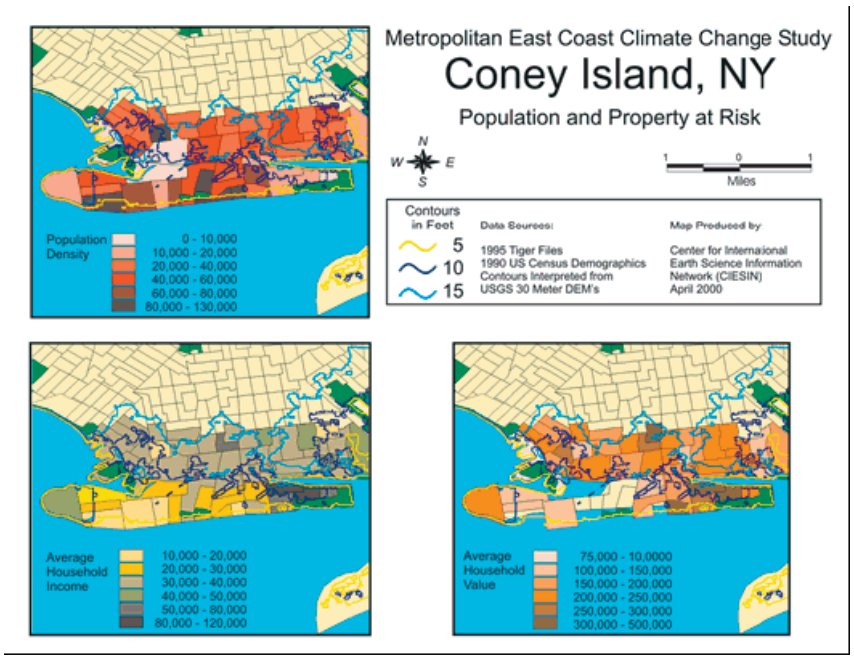




Reduction in 100-year flood return period due to sea level rise. NYC







Ill.2: A collection of data, information and news articles testify to the relevance of the subject

p04 The City and the Site

The impact of climate changes on cities and citizens is becoming ever more intense. With over half of the worlds population living in cities it is important to understand how climate changes might affect urban areas in the immediate future. As the world's population continues to grow, so will the size of mega-cities across the globe, and a frightening but far from unlikely scenario would truly be to have a mega-disaster in a mega-city.

In New York City over eight million people live on land that has 930 kilometers of waterfront, and by 2030 the population is expected to reach nice million. Global climate changes have put the city at an increased risk for severe costal storm placing it among the top three cities in the US vulnerable to the destructive effects of storm surge from a hurricane. (Design Competition Program)

In recent years, storms have become more intense, occur more frequently, and continue farther north than they have historically. Sea levels are predicted to rise faster in our lifetime than they have since before the first cities were built and costal regions face an extremely significant challenge in the years to come. (See ill. 1)

Climate disasters are situations that require serious contemplation concerning their urban consequences. Catastrophes demand effective solutions for the transfer, relocation and rapid housing of populations in transit. As such the threat is not as much the hurricane itself but also the after effects.

The city

A Hurricane with following storm surge would leave large areas in Brooklyn, Queens and the south of Manhattan dealing with the debris of a flood and damaged building structures. As a result the New York premise of density: large number of peoples pr square mile and a large multiplicity of ethnicities as well as the dense structural layout of buildings will be in danger.

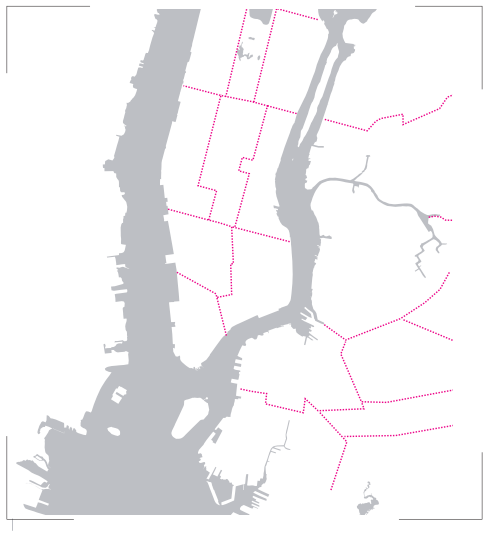
As a city of neighborhoods each with unique names, narratives, ethnicities and densities it is organized as a condensate of people and buildings on scarce land. Furthermore the city is defined by a dynamic relation between water and land – a line continually redefined during the years.

The site

The design competition presented a hypothetical made up neighborhood: a collage of a typical NYC neighborhood both in terms of demographics, programming and morphology, as the grounding place for the design proposals. 'NYC Offshore' also design for this site but to some degree expands on the provided information by drawing lines to the realistic NYC layer. (See: 2.0 Documentation)
The structural layout and the heterogeneous uses of the area correspond in full to the NYC context from which it has been drawn.

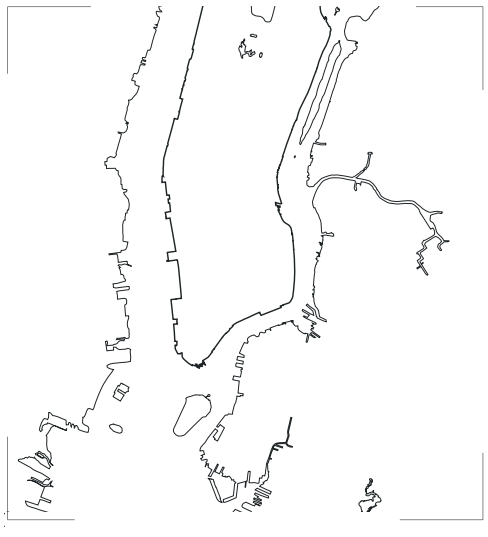
Ill.3: A skyline view of Manhattan

NYC

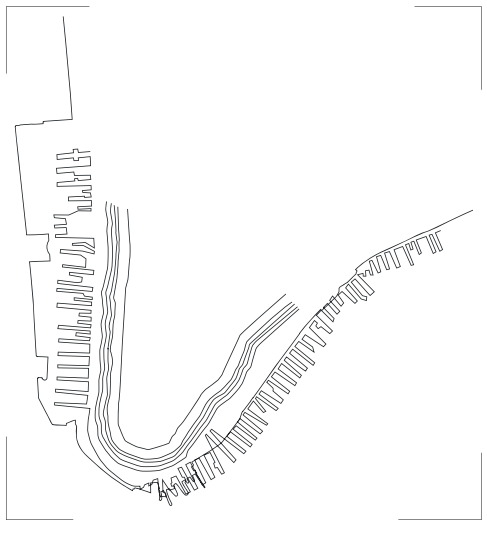


Neighborhoods

Water



Edges



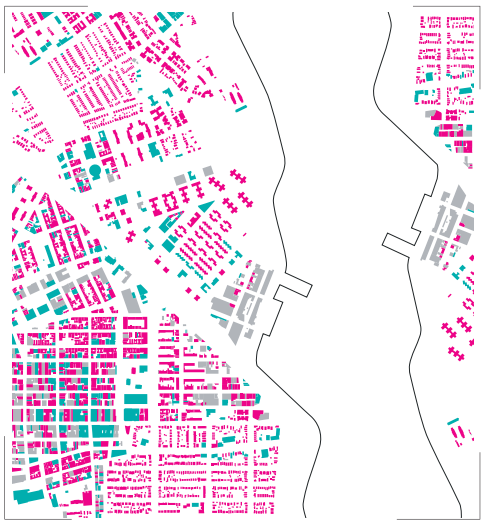
Edge Transformation

PROSPECT SHORE

NYC-Prospect Shore

Figure Ground

Grid



Uses

Residential

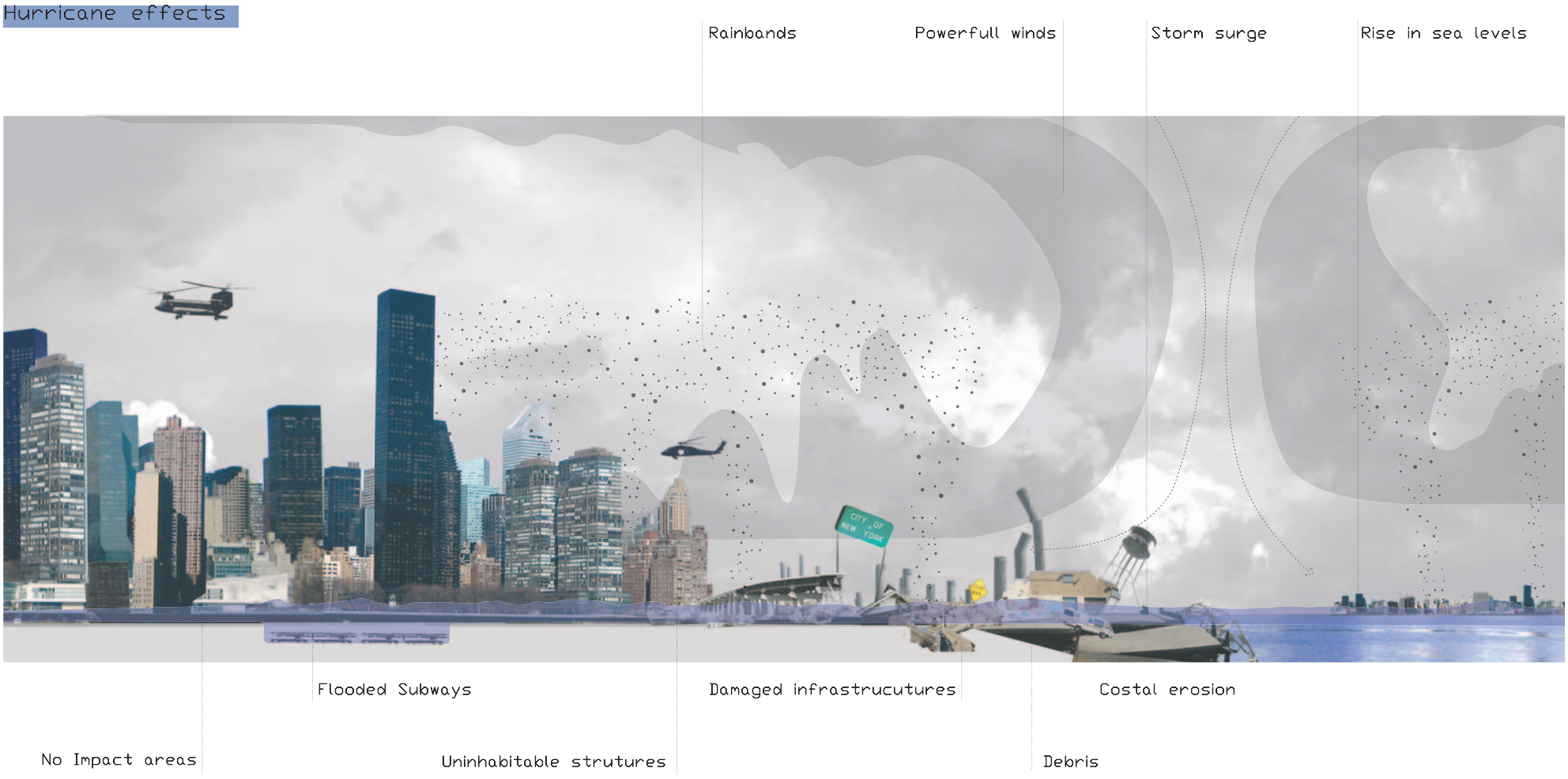
Industry/Business

Commercial/Trade

Presenting a hypothetical disaster scenario

p06 Scenario

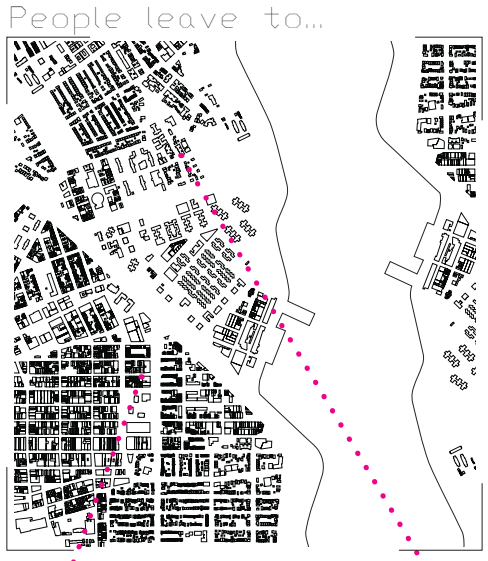
The competition presented the flow of events as a category 3 hurricane strikes a New York City neighborhood. As a representation of a NYC neighborhood the storm damage and recovery processes here would be typical – therefore a design response for Prospect Shore could have application through out the city.
The following maps and illustrations present the most important consequences of the disaster and milestones as the event unfold; a category 3 hurricane will cause immense impacts on both the physical and social structures of the neighborhood and the changing urban conditions will be an important issue in the design response.
An extensive number of people will be displaced from their homes giving rise to the question of where these displaced households should live during the years of reconstruction? The rapid return of people to their local neighborhoods is of vital importance to ensure the establishment of urban life.
Furthermore the hardware of the city will be affected: some buildings will be left totally un-inhabitable thus ready for destruction while others will be needing repair in order for them to once again become functional. In addition hereto the infrastructures will also be damaged leaving the area non approachable and somewhat isolated.



Ill.4: Diagram that illustrates the effects and consequences of a category 3 hurricane

SCENARIO (from day -1 to several months after)

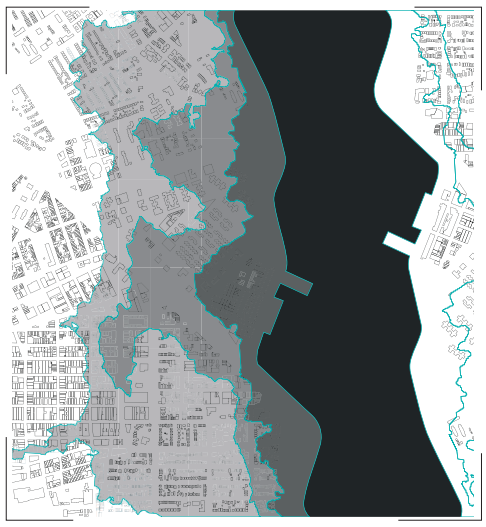
People leave to...



State/City

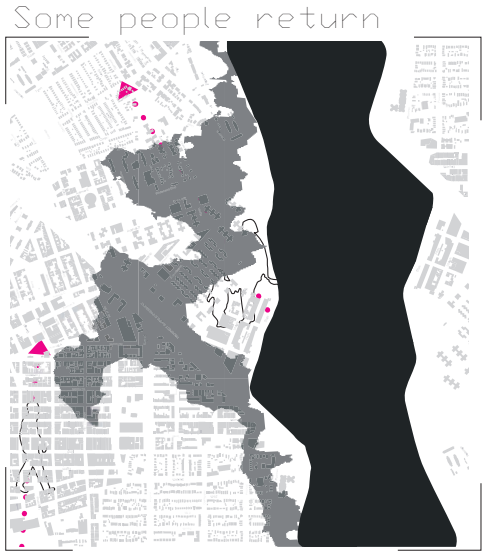
Region/Country

Flood reach



Damaged zone

Some people return

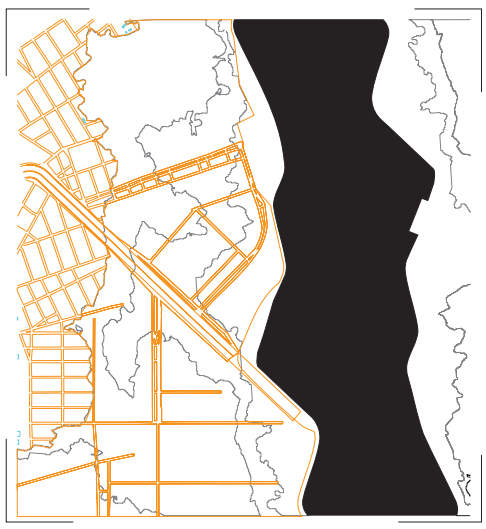


State/City

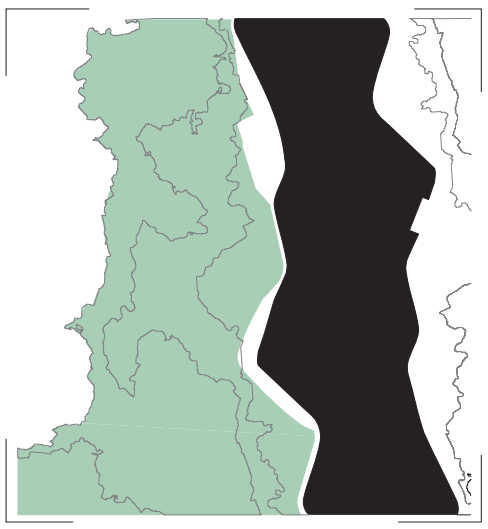
Region/Country

Consequenses

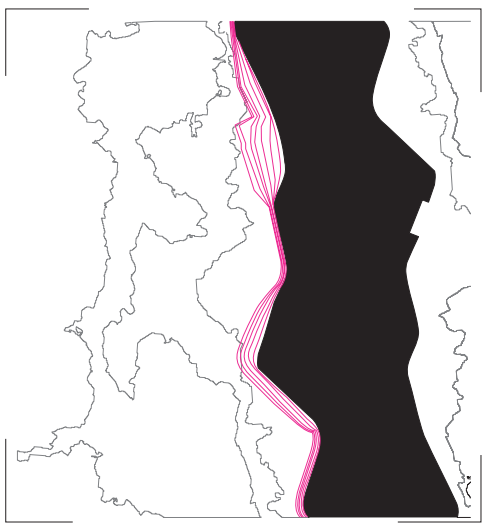
Permanently uninhabitable structures



Poorly accessible infratructures



Debris cover



Costal erosion

p08 Concept

The strategic approach to the project deals with the issue of designing resilient cities emphasizing the importance of operating with situations. The continually changing environment calls for an approach that take into account the dynamic situations related to consequences of climate changes. The project looks at three continuous situations – different, time specific urban conditions, referred to as
00 – pre situation
01 – post situation
02 - After post situation

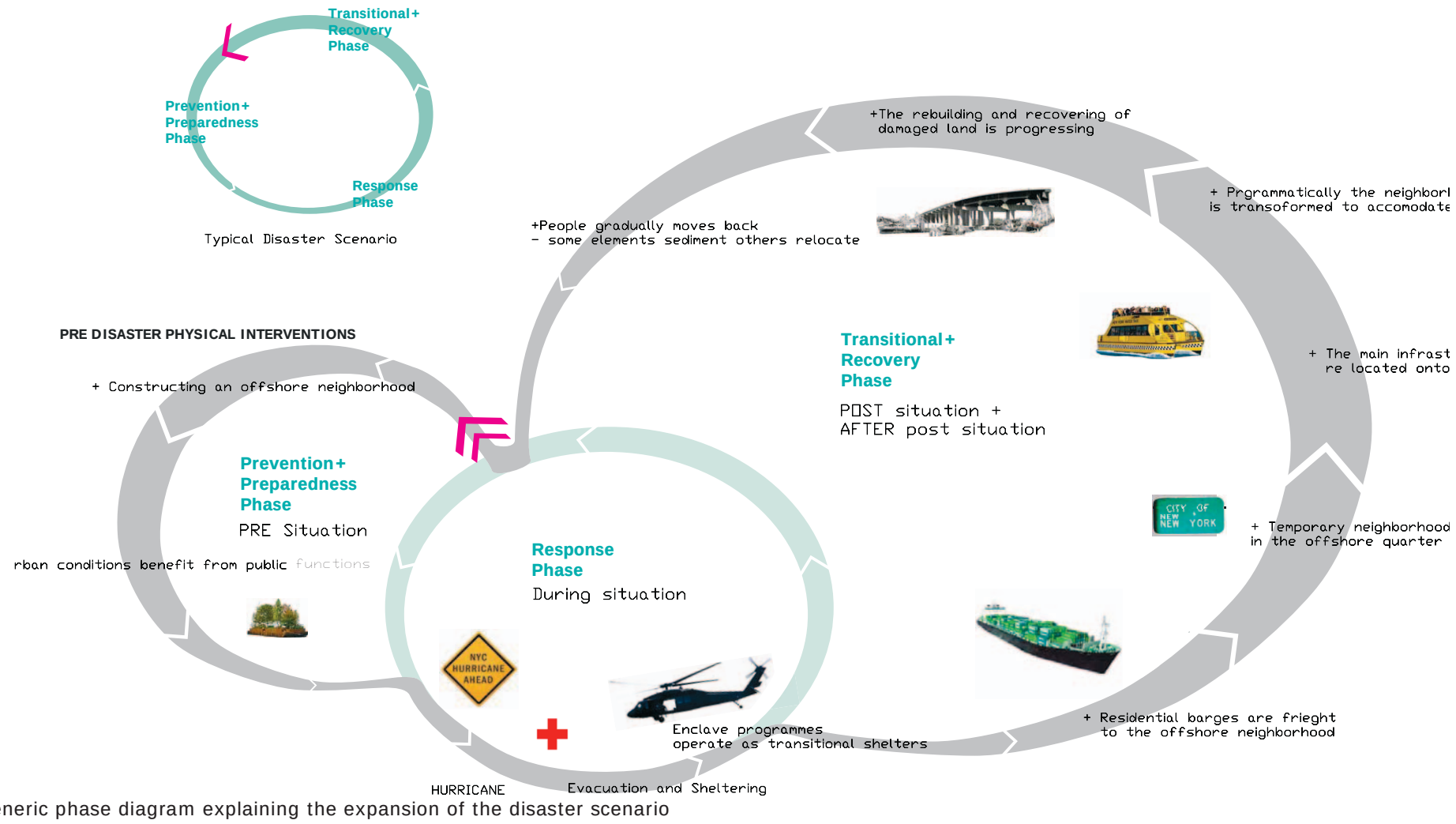
00
The pre situation acknowledges the importance of immediate action as a response to the changes in sea levels. As a counter act to the ascending tendency of building on the vulnerable edges of New York we propose a resilient displacement strategy that accentuates the relationship between the water and the coast. The idea is to displace the vulnerable structures on the coastal edge and relocate them onto the water by creating new offshore neighborhoods. These offshore neighborhoods are structurally and programmatically extensions of the Prospect Shore Neighborhood. They are designed as resilient neighborhoods in that they can physically adapt to the changes in climate. Furthermore programmatically flexibility ensures a possible transformation according to changing urban conditions and social, programmatic needs.
The operation furthermore entails a coastal edge intervention: creating green urban spaces as buffer zones along the coast. The green spaces are planned as urban wetlands – artificial marches that discharge of wastewater and storm water. To a certain extent they provide a protection zone – they are laid out to orchestrate which areas in the hinter-lying land can be flooded. The wetlands provide an added recreational value for the inhabitants.

01
The post situation refers to the timeframe from immediately after the hurricane has hit the area until approximately three years later. A section through the area illustrates how the impacts of the disaster have created zones of different urban conditions in the prospect shore neighborhood; a 'no impact zone' where the hurricane has left only immaterial traces, a 'damaged zone' where structures are badly affected and must be either erased or rebuild and the 'Receive' zone where the offshore neighborhood is located. The damaged zone creates a buffer between the vaguely affected area and the water. The infrastructural connections will be damaged leaving large areas of the site disconnected to the surrounding context.

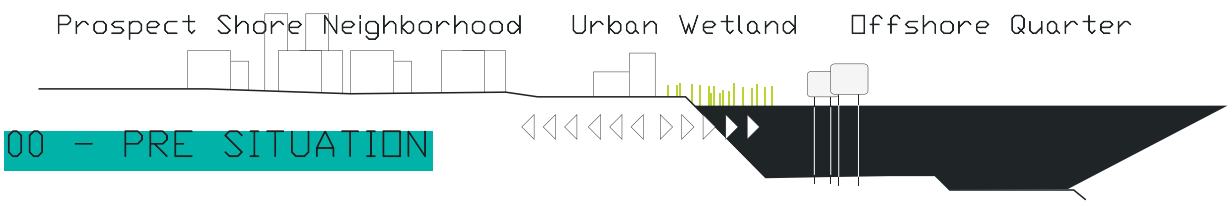
We propose to actively consider the implications of a damaged in-between zone and as a response relocate people and infrastructures onto the water surface. The established offshore quarter function as an anchor point for the displaced population. To accommodate the shift in density and need for housing and public service additional floating elements are transported by means of water infrastructure and attached to the offshore system.
Another consequence of the damages is an erosion of the coastline. Instead of restoring the eroded edge the coastline is redrawn and reprogrammed as a continuation of the coastline intervention initiated in phase 00.

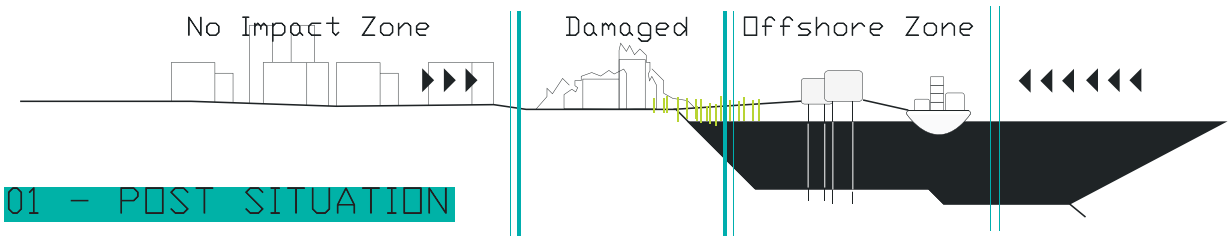
02
As the rebuilding of prospect shore gradually progresses people migrate from the waters back into the mainland. This dynamic process takes place over a duration of years creating a interchange between the water and the land and in this way contribute to a dissolution of the coastal border creating a neighborhood continuum. The temporary elements in the system will continuously be rearranged; some will relocate to other positions while others will eventually become more permanent and sediment as an expansion of the offshore neighborhood established in 00.

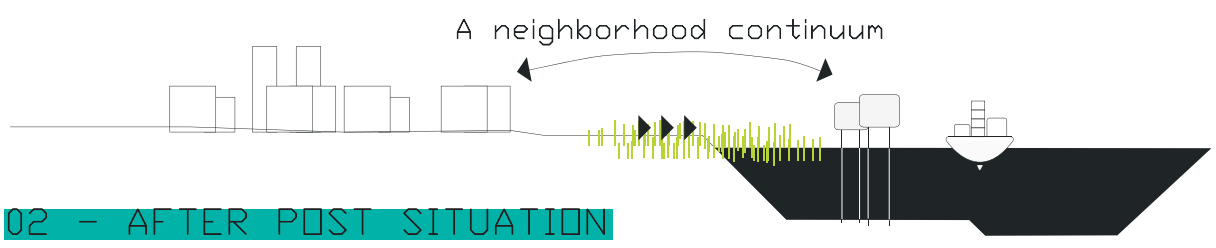
On a strategic level the project outlines the relevance of situation specific design. On a conceptual design level it engages primarily with the 01 post situation contemplating this timeframe as the situation where the system is most stressed. Following sections presents a design response – illustrated through plans, diagrams and sections.

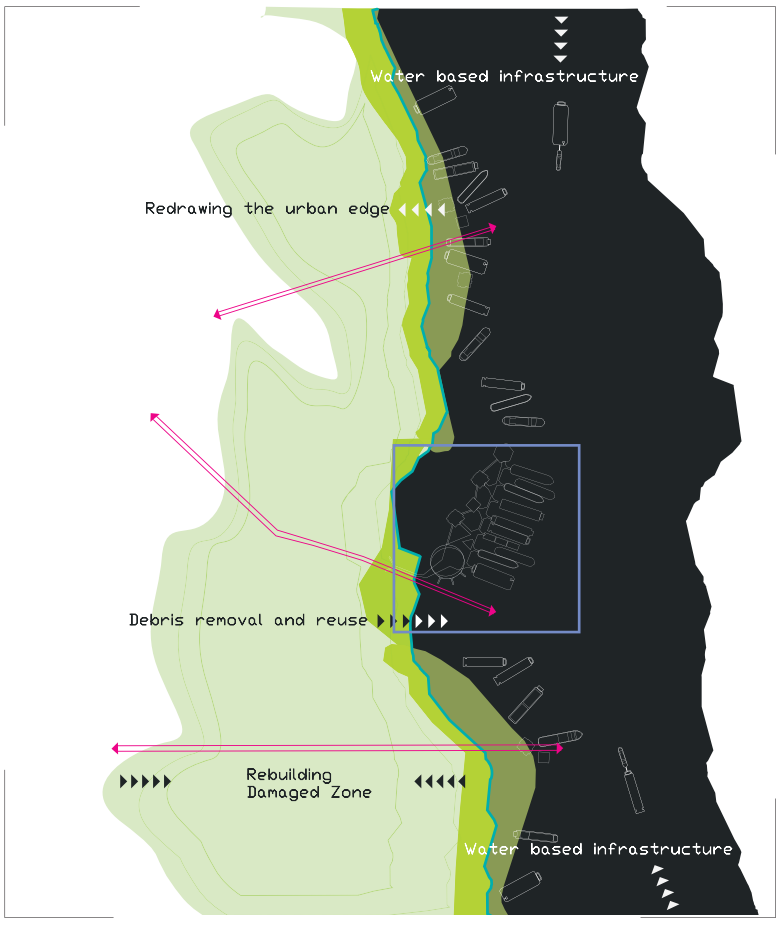


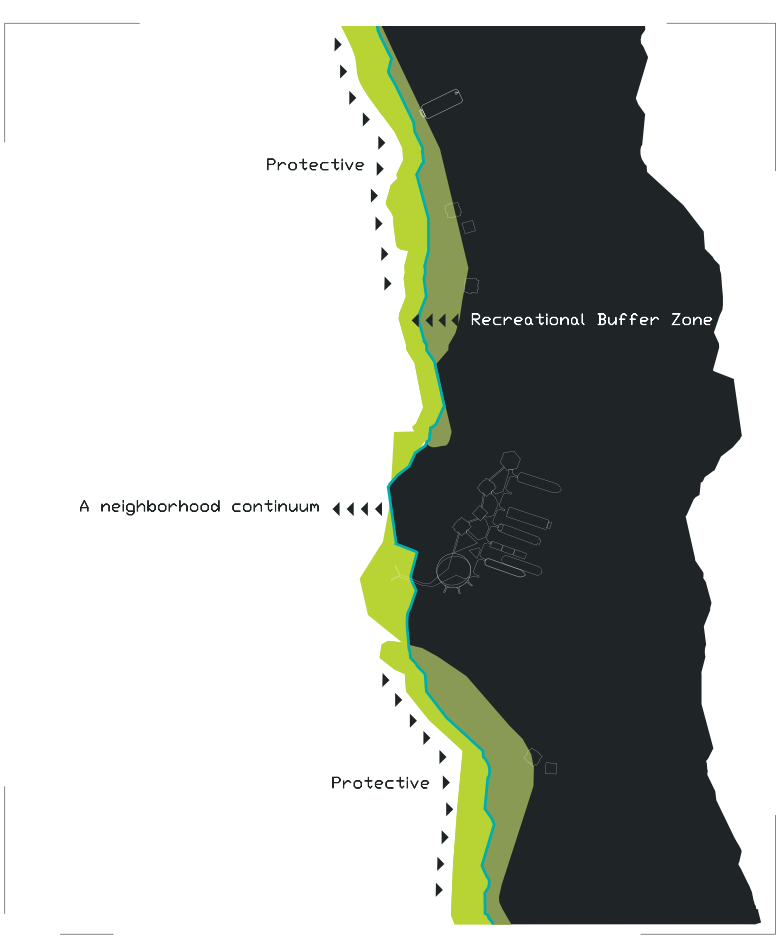
III.5: Generic phase diagram explaining the expansion of the disaster scenario











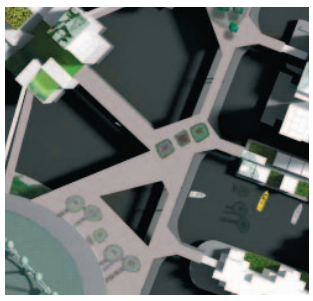
III.6: Conceptual diagrams that outlines the three situations of intervention

Top view plan of the water based system

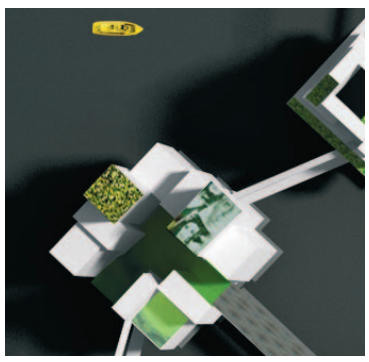
p10 An Offshore Neighborhood

It’s day 120 - post hurricane in Prospect Shore; An estimate of 5000 people currently live in the Offshore neighborhood. Rather than a master plan the offshore neighborhood is a puzzle system – a kit of diverse parts, where each part ensures a quality of urban life and when intermingled creates a neighborhood of variety and differences that is capable of acting with disaster and not against it.

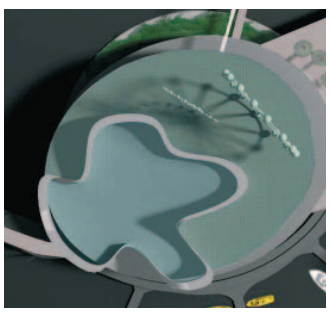
Operating both permanent and temporary structures in the shape of three quarters: an elevated platform city and an anchor venue subjoined by a series of floating residential barges, the flexibility and resilience of the system is challenged. Each part of the kit plays a significant role for the functionality of the entire system and structurally and programmatic the parts are interwoven together contributing to a flexible, resilient system;
Each part of the kit has a certain lifespan and role to fill out with respect to the functioning of the system in general:



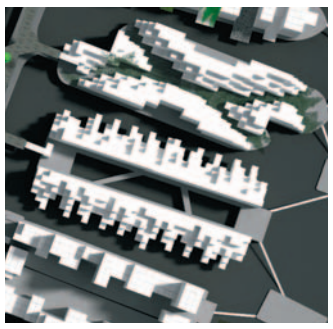
A Spine
An elevated, permanent infrastructural system. Raised to adapt to changes in sea level it facilitates both permanent and temporary elements.



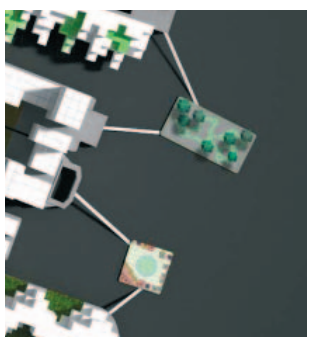
B Platform City
Structures pile foundered into the water bed. Reminiscent of oil rigs with strong legs claiming their grounding: a permanent, fixed part of the structure containing living, service and business programs.



C Anchor Venue
An artificially created island that takes up space in a cross sectional area of the rivers water volume. The most fixed element in the system, a structurally stabilizing element and home to a venue with large programmatic volumes.



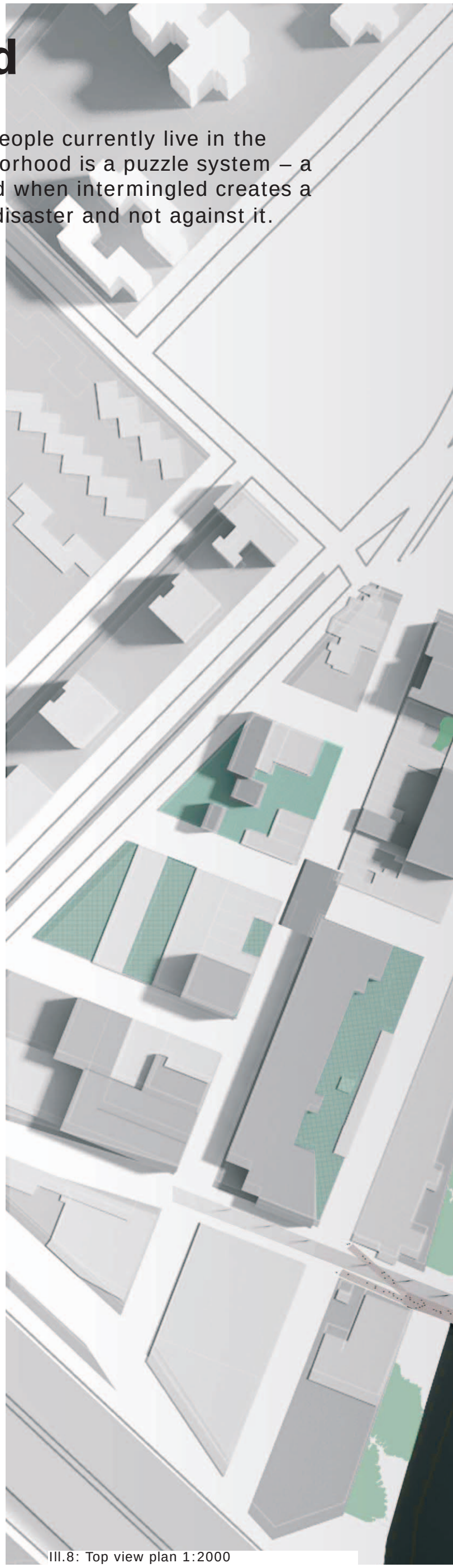
D Residential Barges
Temporary, floating elements anchored lightly to the waterbed latches on to the structurally expanding system of flows. They are super mobile, temporary residences consisting of barges and prefabricated living units.



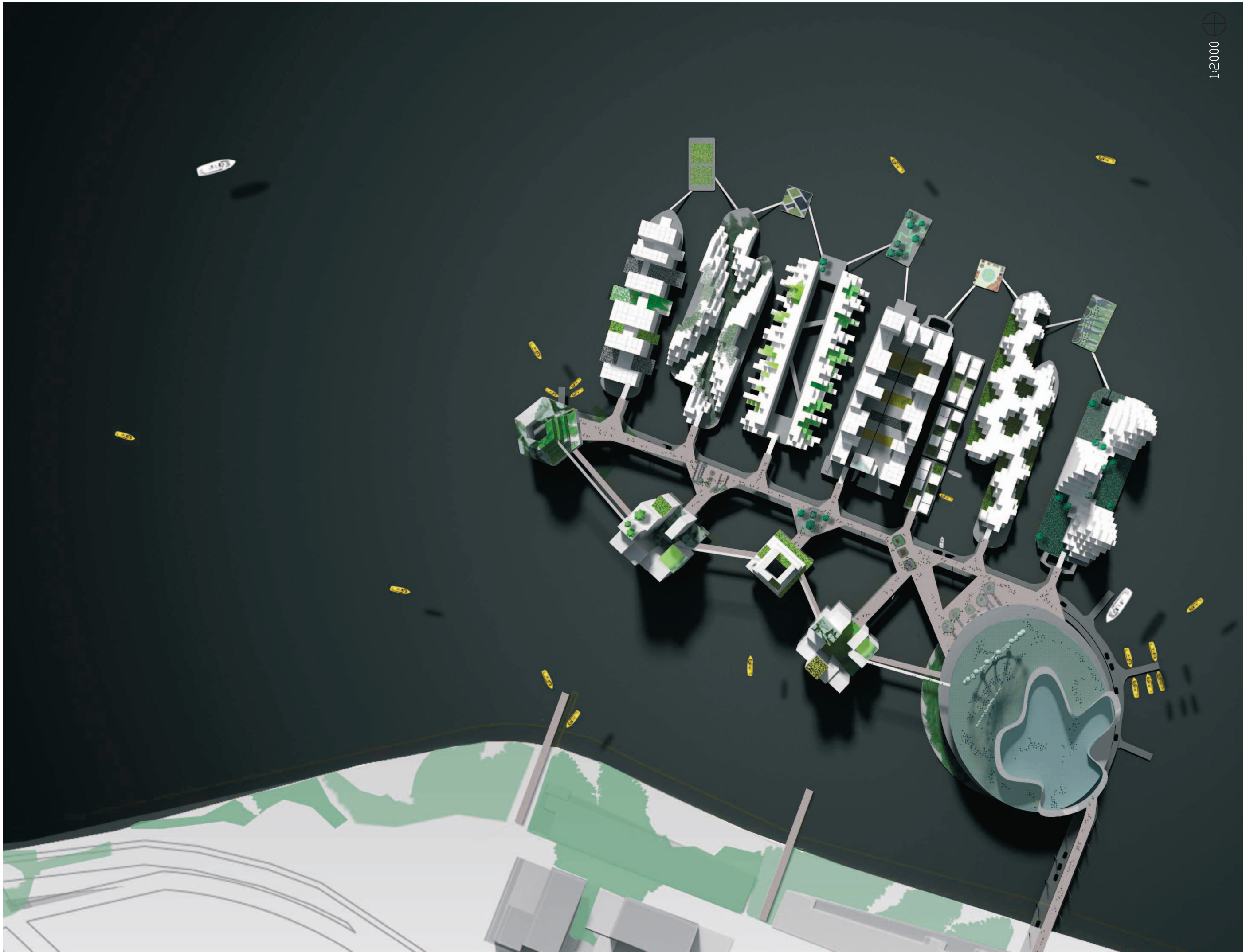
E Public barges
To ensure local public programs floating barges are attached to the residential barges – interviewing them in a net of neighborhood characteristic functions.

F
The coastal edge is redrawn creating green urban wetlands af bufferzones and recreational spaces.

Ill.7: Icons explaining the elements of the plan supported by reference pictures

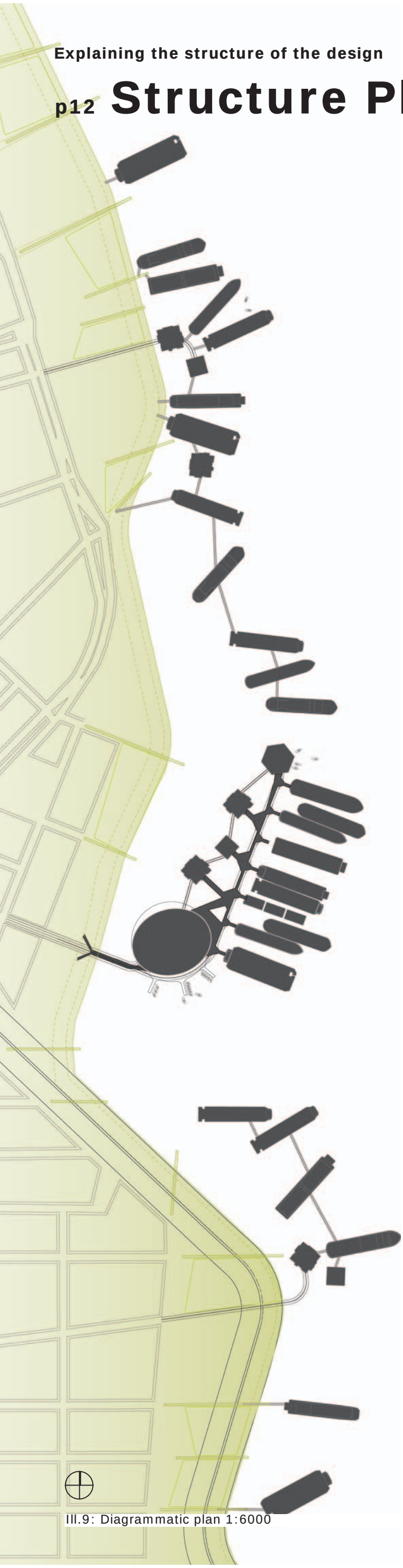


Ill.8: Top view plan 1:2000


1:2000

Explaining the structure of the design

p12 Structure Plan 1:2000



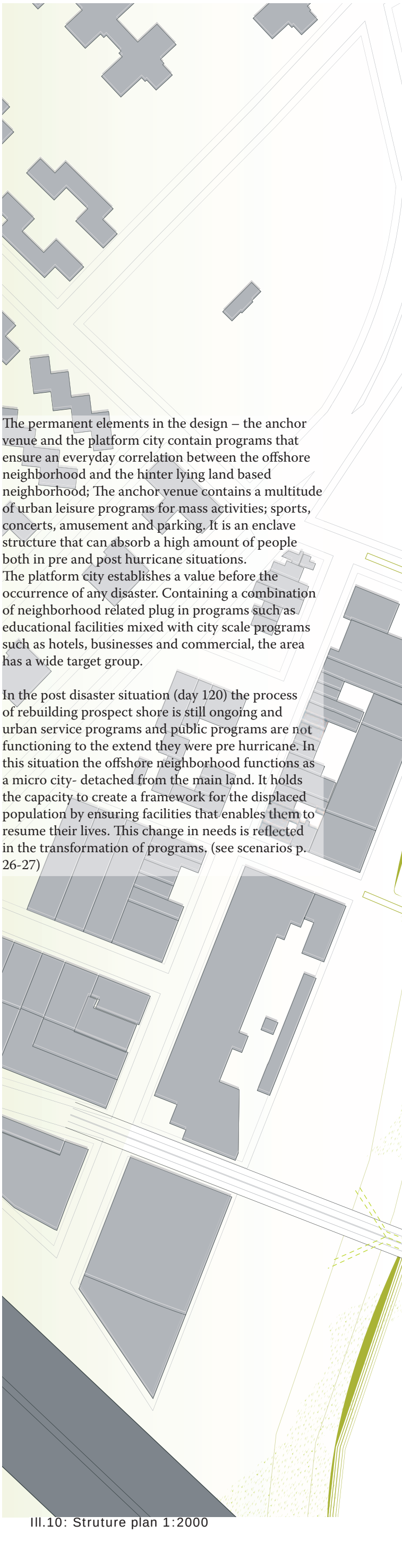
III.9: Diagrammatic plan 1:6000

Layout
The structure of the plan is a physical representation of the dynamic situation related to the disaster scenario. As an urban environment programmed and structured for change the offshore neighborhood resembles an ever changing and flexible system that expands and shrinks according to needs. The form and organization of the plan resembles the layout of an airport; a central terminal containing main public programs, adjacent service towers and a number of gates facilitating in and out going elements that can be continuously rearranged.

The coherence of these elements is physically established as a spine that links the different quarters. As a layered structure sutures the neighborhood both vertically and horizontally creating a network of connections. The relation between the permanent and the temporary elements presents a hierarchy; the residential barges are located by the edge facing the rivers to ensure rapid deployment and to minimize obstacles related to logistics. The permanents structures – the venue and the platform city are sited in proximity to the coast thereby establishing relations based on visual connection and the interconnection of programs.

Infrastructure and contextual relation
Located on the water the offshore neighborhood has three forms of external access: a water based infrastructure using the public New York Water taxis, an air based infrastructure of helicopters and zeppelins, and a land based two layered elevated bride that provides access for both pedestrian and cars from the main land neighborhood. Located on the water the infrastructural connections to the neighborhood are vital to ensure an infiltration of the area into the existing context. In times of disaster road infrastructures will be damaged, leaving the neighborhood somewhat detached from its immediate surroundings and mainly accessible from the water.

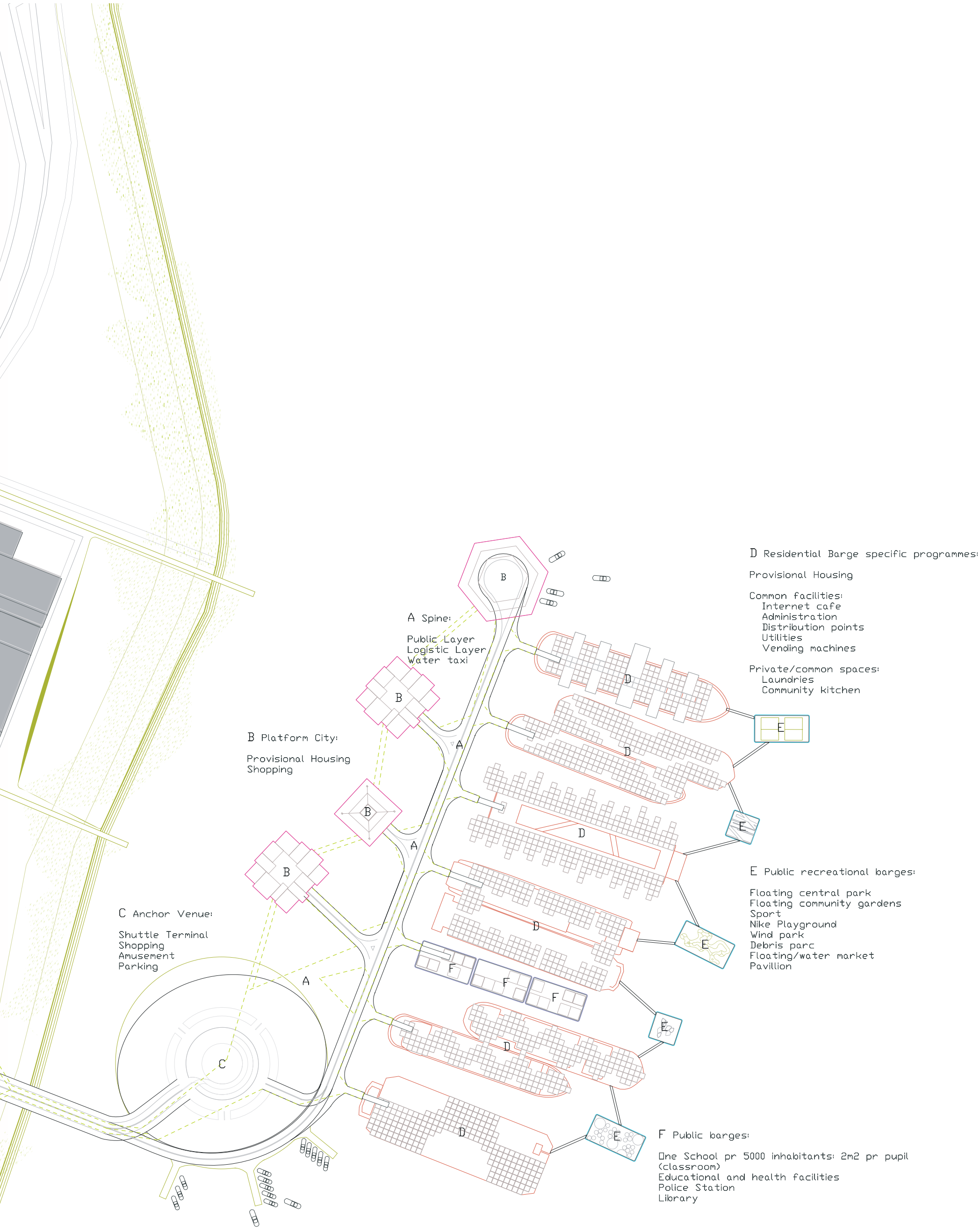
Programming
The programmatic layout of the design is based on different zones of public and private that ensure an everyday functionality of the system. Consisting of a mix of both impermanent and permanent structures with different life spans and accordingly different functions, the system has a high degree of adaptability according to needs. The character of the area changes according to the different situations and programmatically the inherent qualities of the system is the ability to transform and adapt to the variations in physical and social conditions that emerge in a disaster situation.



III.10: Struture plan 1:2000

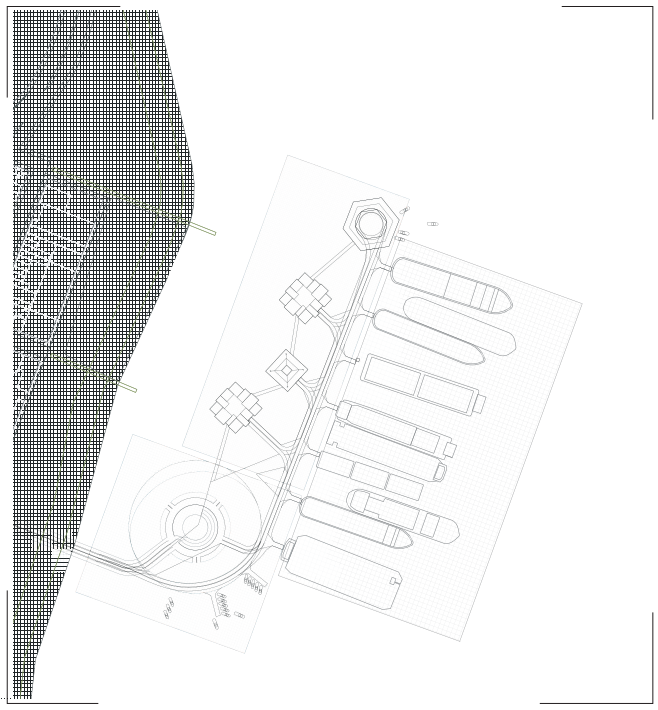
The permanent elements in the design – the anchor venue and the platform city contain programs that ensure an everyday correlation between the offshore neighborhood and the hinter lying land based neighborhood; The anchor venue contains a multitude of urban leisure programs for mass activities; sports, concerts, amusement and parking. It is an enclave structure that can absorb a high amount of people both in pre and post hurricane situations.
The platform city establishes a value before the occurrence of any disaster. Containing a combination of neighborhood related plug in programs such as educational facilities mixed with city scale programs such as hotels, businesses and commercial, the area has a wide target group.

In the post disaster situation (day 120) the process of rebuilding prospect shore is still ongoing and urban service programs and public programs are not functioning to the extend they were pre hurricane. In this situation the offshore neighborhood functions as a micro city- detached from the main land. It holds the capacity to create a framework for the displaced population by ensuring facilities that enables them to resume their lives. This change in needs is reflected in the transformation of programs. (see scenarios p. 26-27)

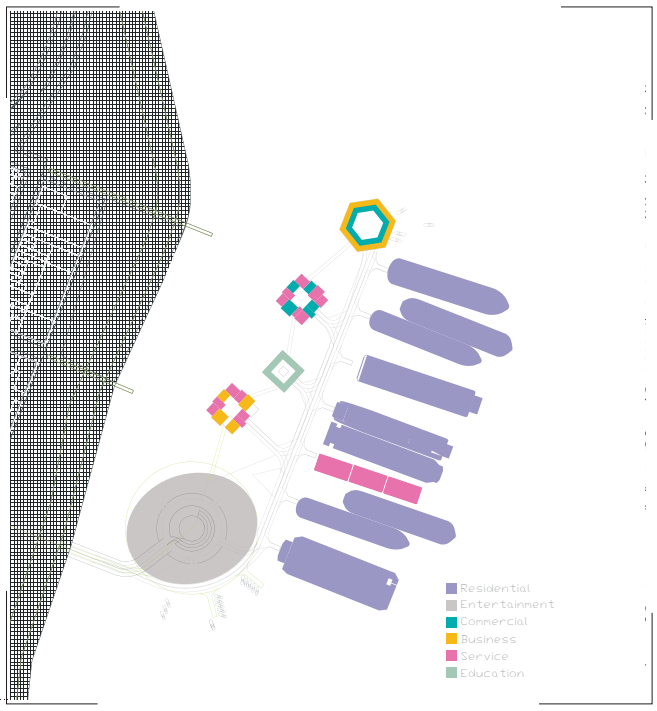

A Spine:
Public Layer
Logistic Layer
Water taxi
B Platform City:
Provisional Housing
Shopping
C Anchor Venue:
Shuttle Terminal
Shopping
Amusement
Parking
D Residential Barge specific programmes:
Provisional Housing
Common facilities:
Internet cafe
Administration
Distribution points
Utilities
Vending machines
Private/common spaces:
Laundries
Community kitchen
E Public recreational barges:
Floating central park
Floating community gardens
Sport
Nike Playground
Wind park
Debris parc
Floating/water market
Pavillion
F Public barges:
One School pr 5000 inhabitants: 2m2 pr pupil (classroom)
Educational and health facilities
Police Station
Library
1:2000

Overview and diagrams

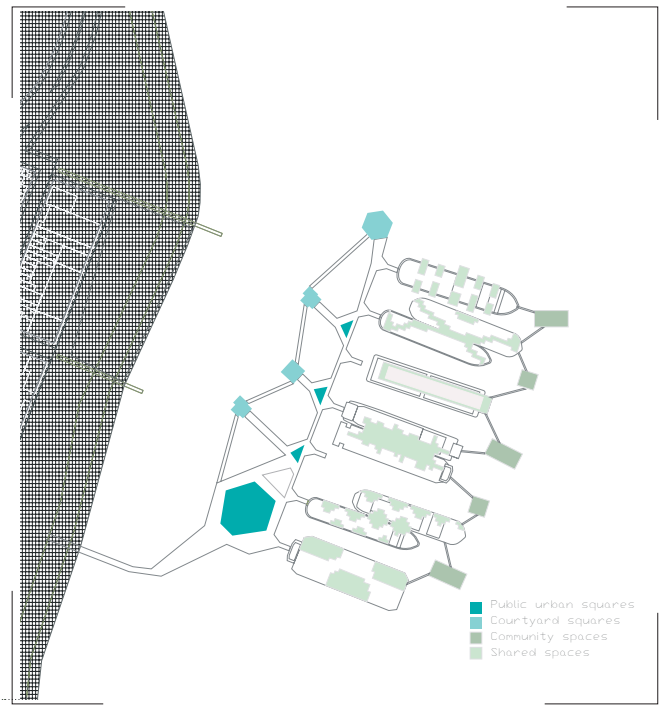
Ill.11: Collage - an overview of the neighborhood



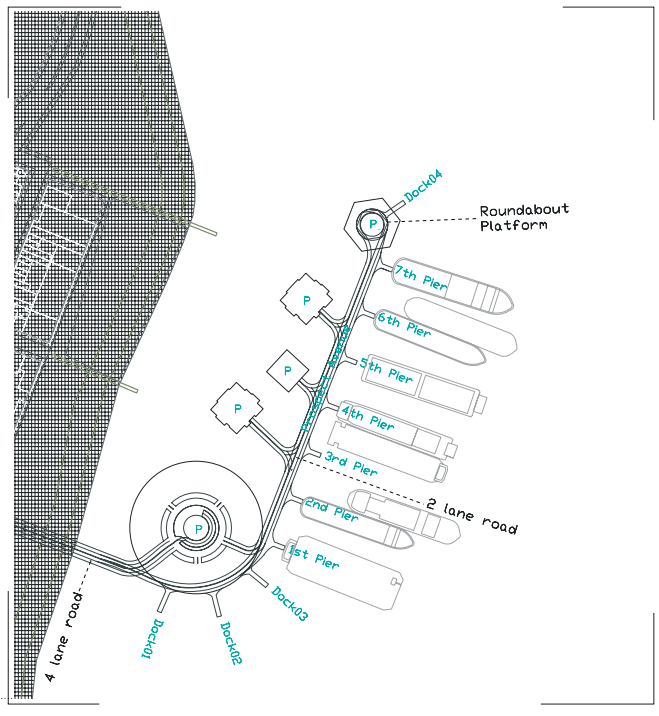
The offshore neighborhoods are comprised of three different typologies: both permanent and temporary



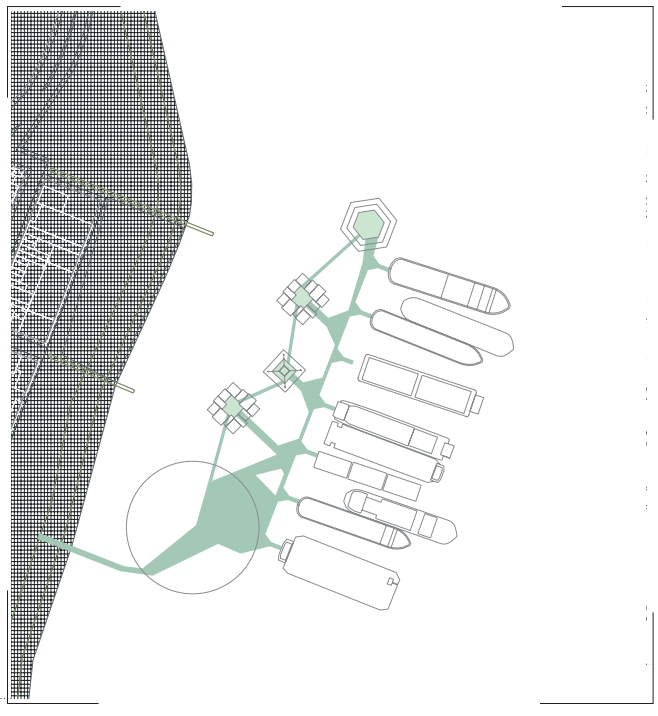
The programmatic layout ensures a variation and dynamic in that it holds the capacity to transform according to needs.



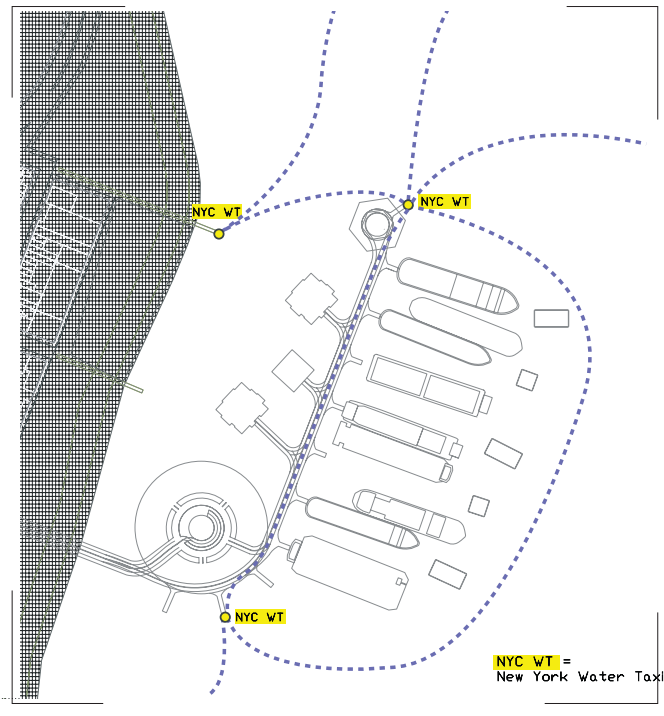
Diversified urban spaces are located through out the neighborhood



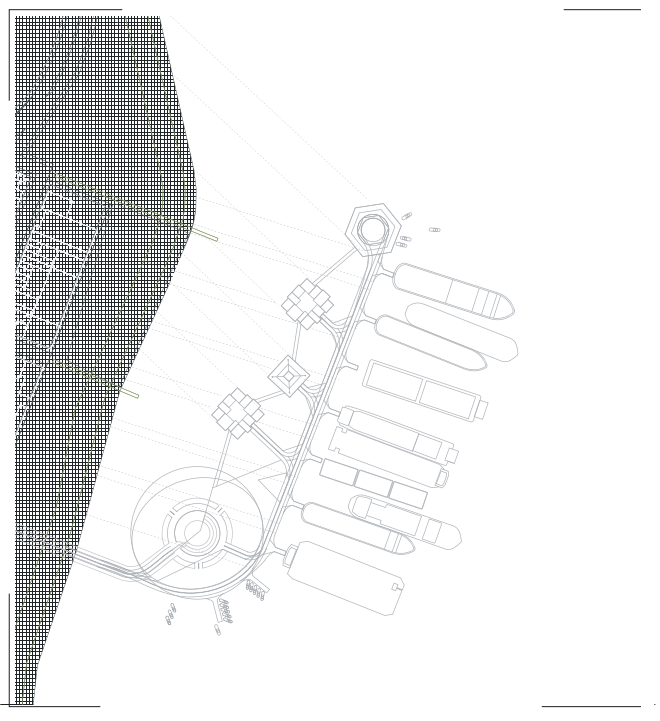
A fixed, elevated logistic system links the neighborhood with Prospect Shore and facilitate both temporary and permanent strutures.



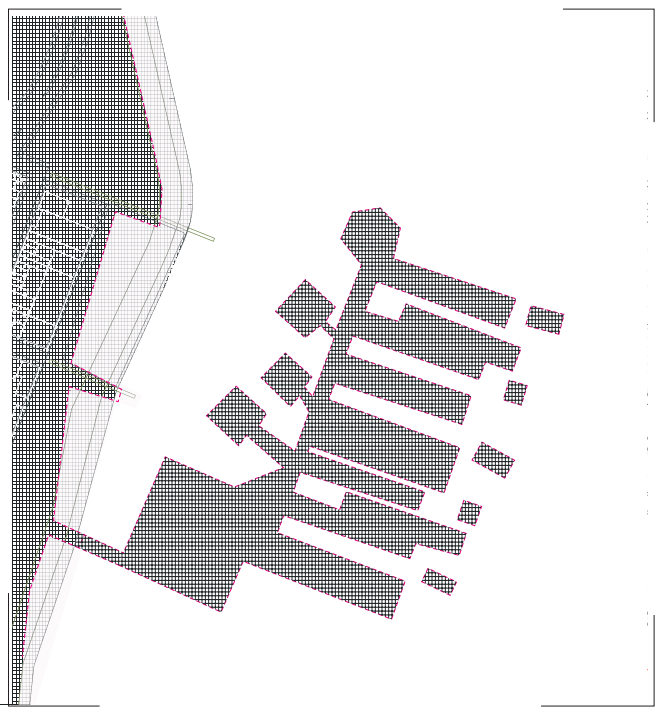
An elevated public boardwalk provides pedestrian access across the neighborhood



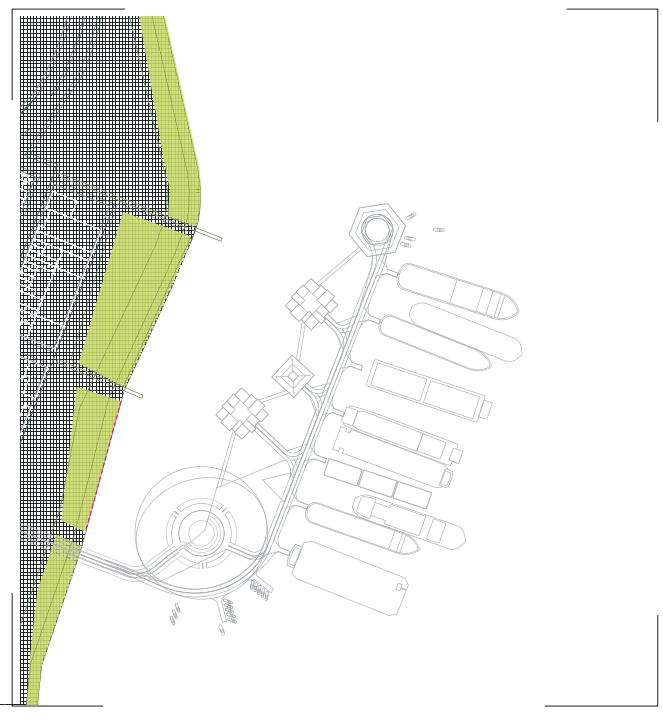
A net of waterbased Infrastructures connects to an exsiting system of water transportation.



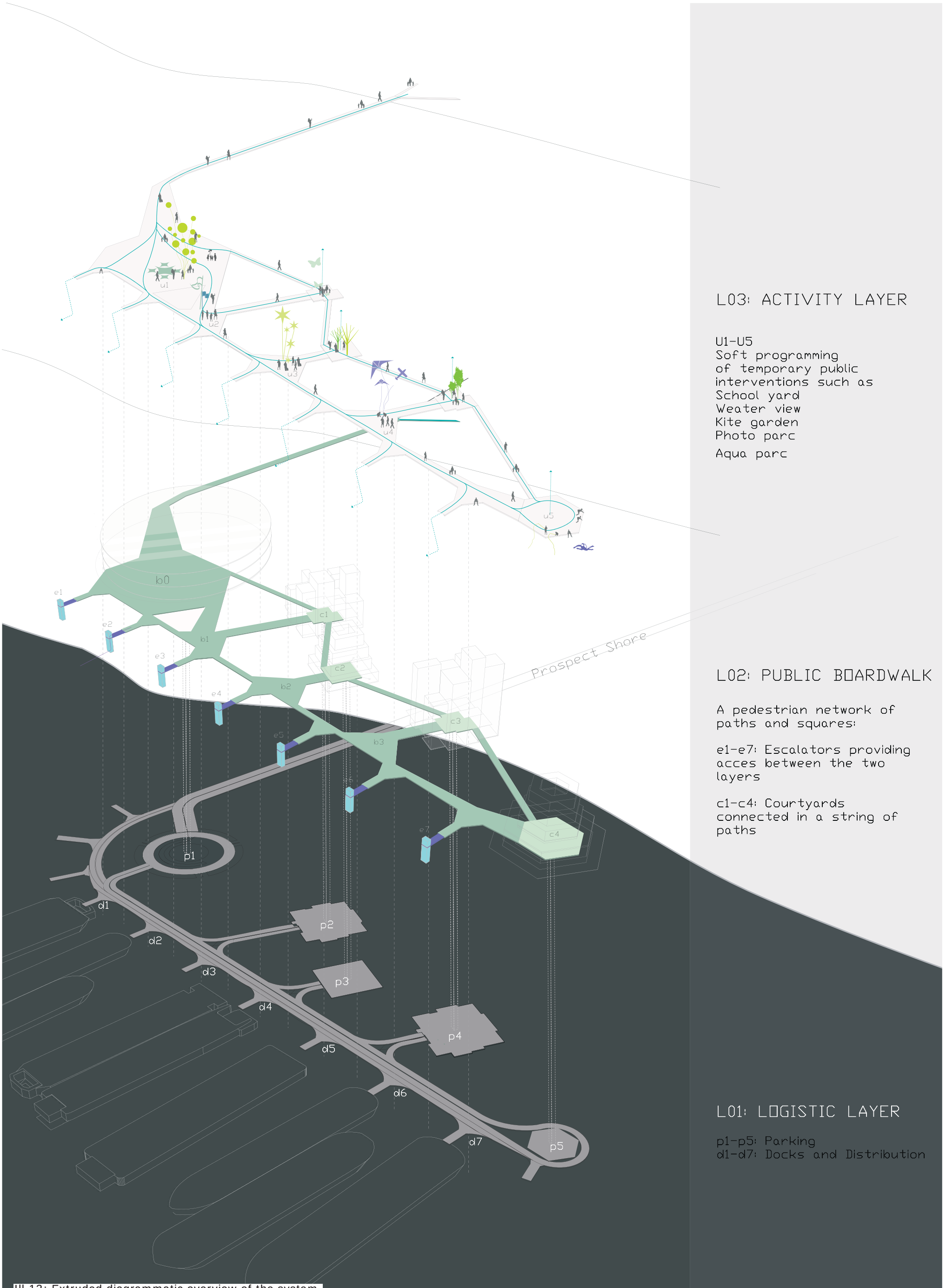
The layout of the neighborhood resemples the characteristics of the NYC grid struture.



The coastal edge is redrawn - extended onto the water surface it aims at establishing a multitude of edge conditions.



To create a resilient edge a series of urban wetlands are established along the shore to provide a bufferzone.



L03: ACTIVITY LAYER

U1-U5
Soft programming
of temporary public
interventions such as
School yard
Weater view
Kite garden
Photo parc
Aqua parc

L02: PUBLIC BOARDWALK

A pedestrian network of
paths and squares:

e1-e7: Escalators providing
acces between the two
layers

c1-c4: Courtyards
connected in a string of
paths

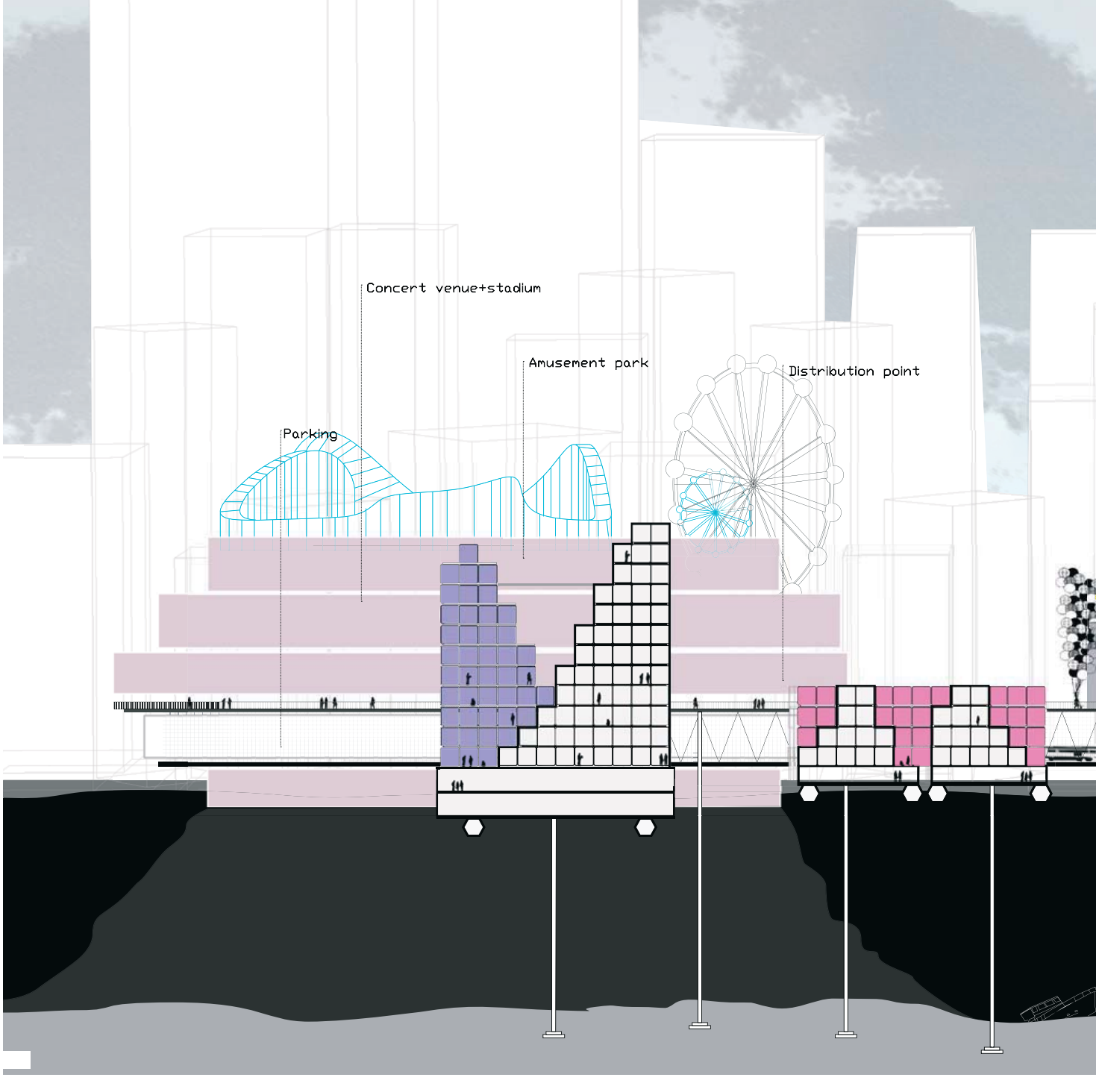
L01: LOGISTIC LAYER

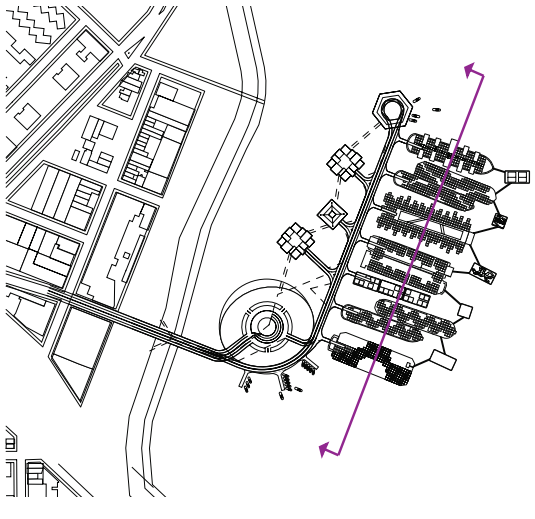
p1-p5: Parking
d1-d7: Docks and Distribution

III.13: Extruded diagrammatic overview of the system

A longitudinal section trough the offshore neighborhood

p18 Section 1:1000



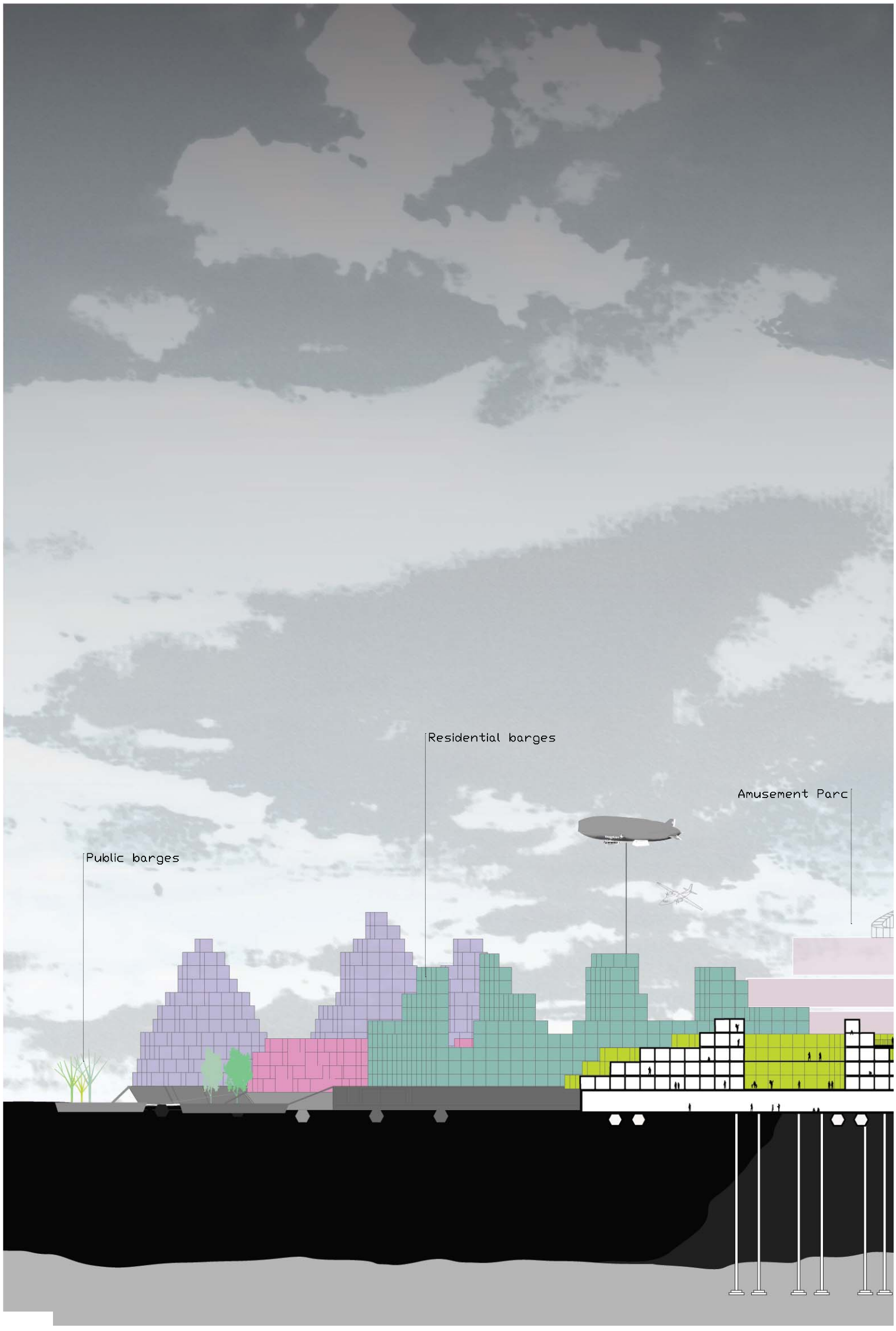


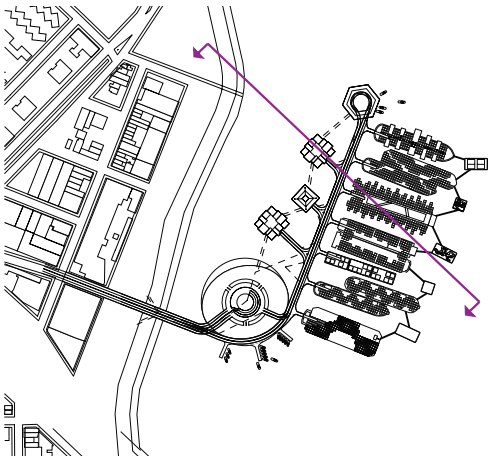
Ill.14: Longitudinal section 1:1000


Hostel
School
Temporary housing
Shopping
Kindergarten
Hotel
Offices
Residential barges
Information centre
Aquatic restaurant
Public Boardwalk
Logistic layer

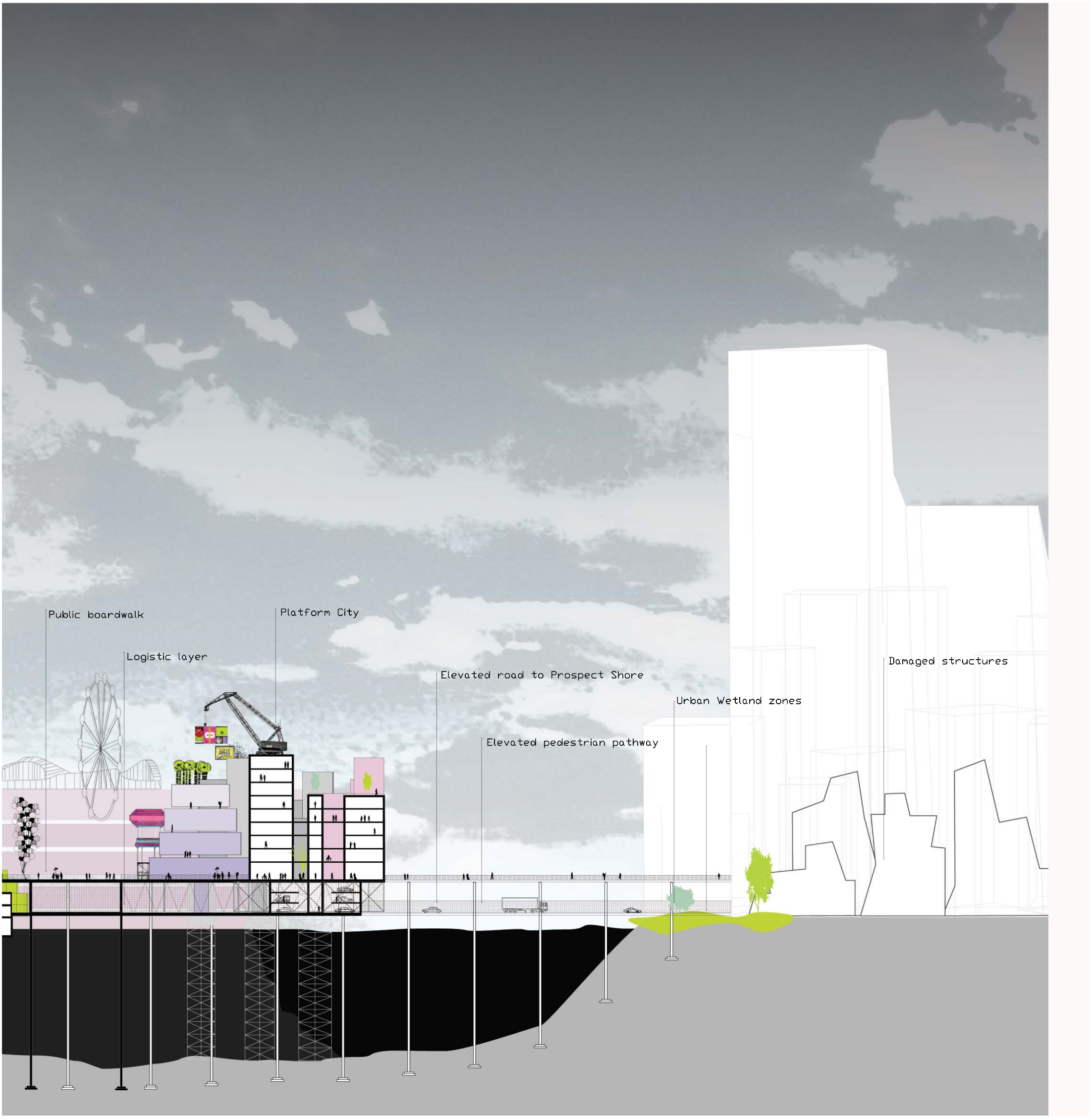
A cross section through the offshore neighborhood

p20 Section 1:1000





Ill.15: Cross Section 1:1000


Public boardwalk
Logistic layer
Platform City
Elevated road to Prospect Shore
Elevated pedestrian pathway
Urban Wetland zones
Damaged structures

The impermanent part of the system

p22 Transitional Living Concept

Extensive dislocation of people calls for dense, temporary housing solutions. The importance lies in the rapid deployment of residential structures that can provide the inhabitants of prospect shore with accommodation. Just as important is the reestablishment of urban programs that provide a possibility for people to resume their everyday life.

As the most temporal element in the system are the residential barges - temporary, floating typologies. In New York barges are a commonly used for river and canal transportation of heavy goods and as such they are an integral feature of the water based infrastructure. The barges of 25x100 m provides a platform, a ground for a system of identical flexible living units of 3x3 meter (see ill.19)

To establish dense and diverse residential areas living units are organized differently on each barge, this way complying with the notion of creating areas that resemble the characteristics of the Prospect neighborhood. The lay out concept is to utilize the features of the characteristic grid structure traced in Prospect shore and principles from the block typologies are translated into new floating barge-blocks. This approach draws upon a combined wish of on the one hand creating alternative floating blocks that utilize the potentials of the water environment at the same time creating spaces the inhabitants can recognize and relate to.

Ill. 17 shows a Listing of different barge typological tests. They are different in concept and layout though all developed on the basis of a common set of quantifiable and programmatic criteria (fig xx)

-To obtain a certain density a minimum four floor coverage of the barges area and to ensure stability a maximum of six floors covering is possible. A barge with six floors can accommodate approximately 500 people. (Estimation based on UN standards and the load capacity of barges)

-The units are placed so the distribution of weight does not destabilize the barge but ensures a logical equilibrium.

- Each barge has a landing surface in each end - where the barge encounters with the two layered spine and where the urban barges are connected.

-The infrastructure on each barge connects to the overall internal infrastructural system in the offshore neighborhood. Furthermore an internal system should provide easy distribution to the apartments.

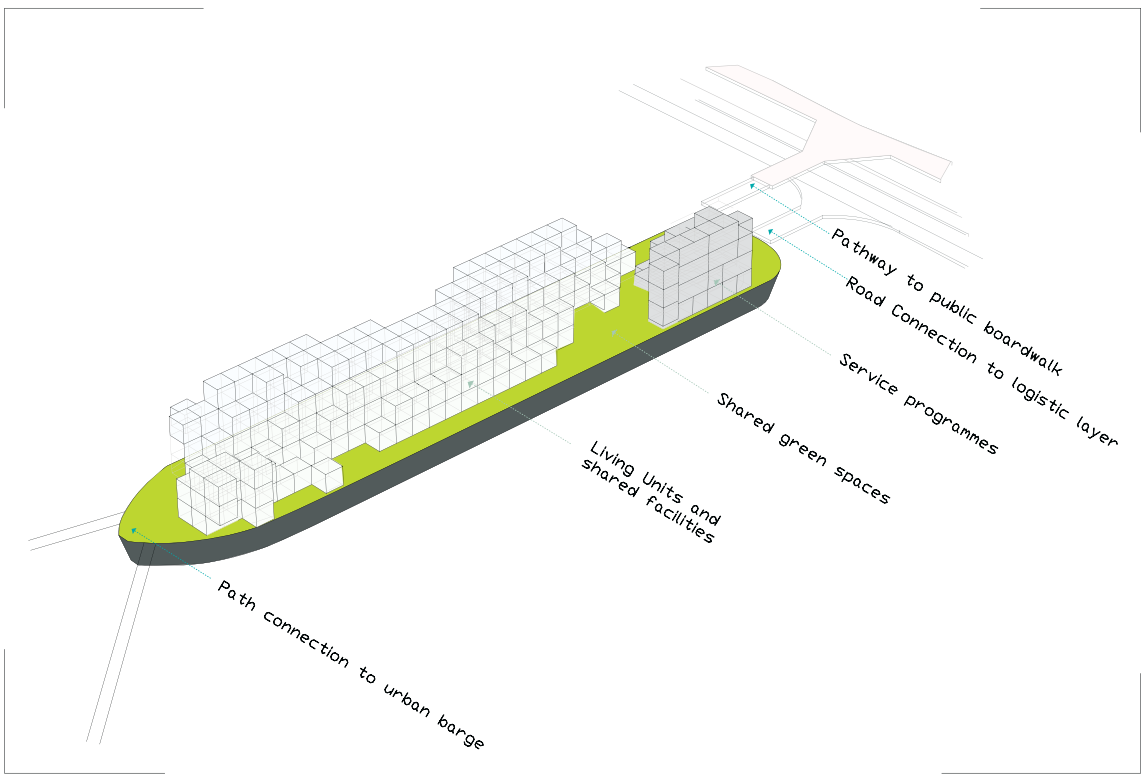
-Views to the water surface and the water-based neighborhood in general are provided through variations in plan layout, sectional perforations and height. Emphasize the quality of living on the water.

-Each barge has a strong inherent direction. The shape of the barge is motivated by the easy transportation and this aspect is maintained though allowing the joining of two barges into a block.

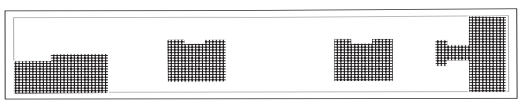
-Zoning differentiates the relation between public and private spaces.

-Each barge facilitates certain necessary service and utility programs. These are located in proximity to the landing areas by the spine.

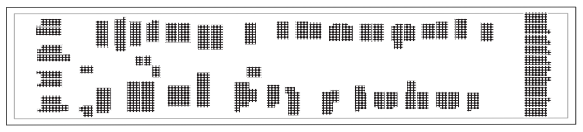
- Shared recreational green spaces are provided for the residents on each barge. These may be offered through different initiatives: big continuous open spaces or smaller ones distributed in the given building structure.



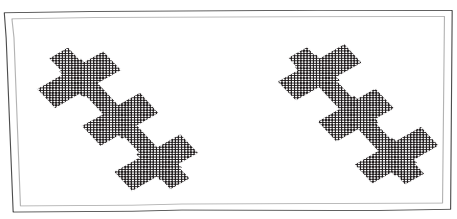
Ill.16: Diagram of standard barge



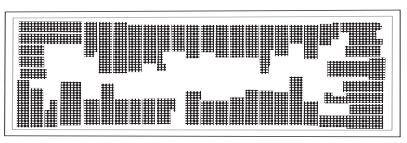
Tower apartments



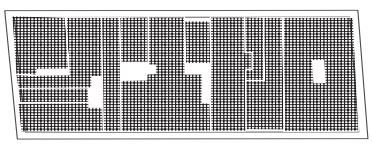
Walk Ups



Tower blocks



Town houses



Closed block

Ill.17: Diagram of Prospect shore blocks - typical in a NYC context

p16 Layer Diagram

The concept of the design is unfolded and presented as a layer diagram. An extrusion of the parts testifies to the flexibility of the system, the concept of ‘kits of parts’ illustrating it as a generic assembly kit.

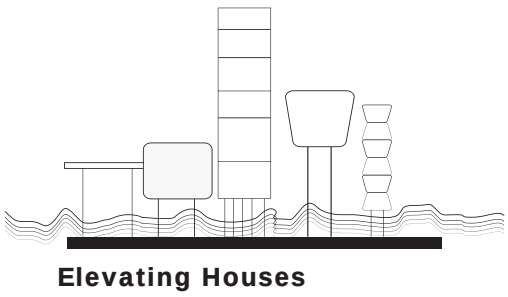
The two layered spine is a net of connections, a mesh that weaves the neighborhood together, creating a structural stabile system and a corridor for flow of people and goods. Joined the structure is programmed for recreation and for easy distribution. As previously stated the layout and structure of the system is reminiscent of the airport layout in terms of the distribution of different flows – carefully filtering local connectivity, programmatic layout – the orchestration of fixed and permanent elements and also the separation of logistic and public layers.

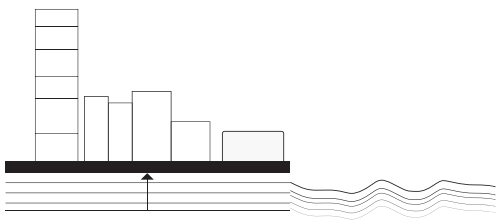
The diagrams illustrate three layers; layer 01: the logistic layer, layer 02: the boardwalk layer, layer 03: the activity layer.

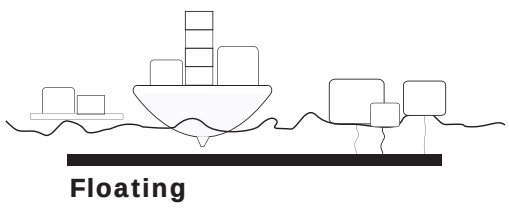
Layer 01
The logistic layer – consisting of hard infrastructure is elevated four meters above mean sea level as a consequence of the changing water levels. The layer links the external (water, land and air based) infrastructures to the internal infrastructural system consisting of organized shuttle systems to an easy and non-disrupted distribution of people and goods around the system. The piers are nodes of transportation. As drop off and pick up zones for inhabitants, visitors and goods they are decentralized transit spaces – dynamic spaces for logistical processes. As point of interchange the layers can be modified, re organized and expanded according to needs.

Layer 02
Elevated eight meters above the logistic layer a surface of soft infrastructure connects across the neighborhood. The surface is stretched out in between the different elements in the system – the permanent, fixed and the temporary. Escalators ensure vertical access to the residential barges and the logistic layer while a visual connection to the logistic layer ensures a transparency. The spots where the layers a fused become transit spaces with high intensity.
The layout of the surface adopts the logic of the underlying logistic layer – a direct path leads inhabitants easily from the residential barges to the anchor venue while widening spaces ensures a sense of disruption in shape of differentiated public spaces. The system creates a layout that is varied and distinct but does not impact the navigability and ease of use.

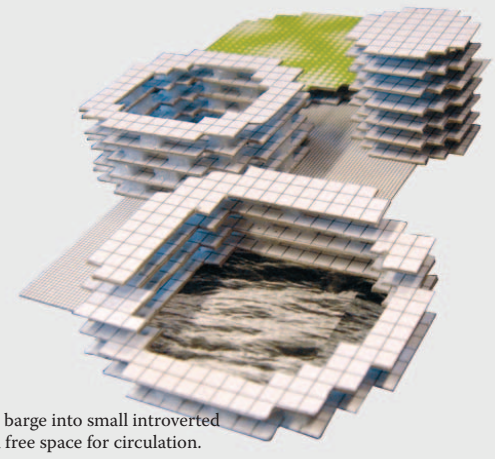
Layer 03
The third layer illustrates the imagined flow of people and indicates a series of less physical and permanent activities. The structure of the spine allows for an array of programs, people and activities; Walking trough the area inhabitants will be directed by a defined path of flow at the same time experiencing punctuated intensities of public activities creating an urban experience that fluctuates between variation and continuity. The activities are soft, temporary interventions that occupy the extensive boardwalk layer – interventions that incorporate and utilize the environment – the weather conditions and the potential of the water. The spaces in closest proximity to the anchor venue and as such the mainland have a more urban character while the spaces located in the end of the spine are programs with aquatic related activities.



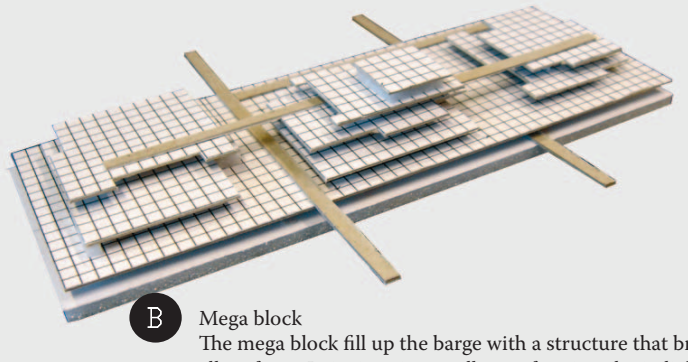




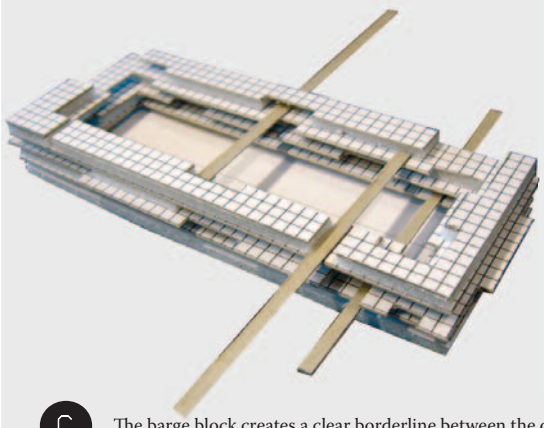
Ill.12: Resilient strategies applied to the struture



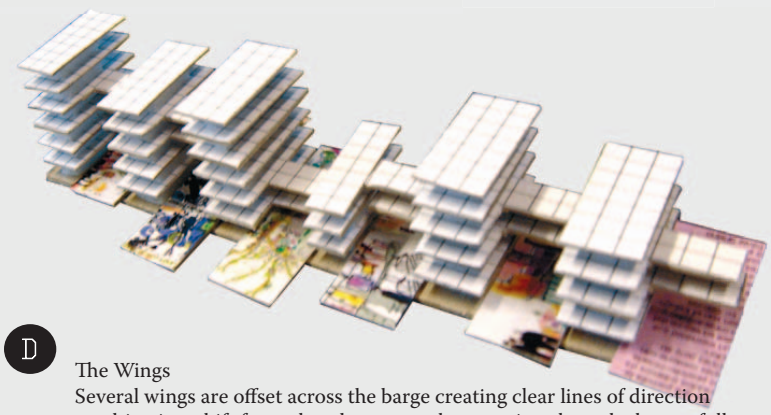
A Circular blocks
The circular block divides the barge into small introverted common spaces and defines a free space for circulation.



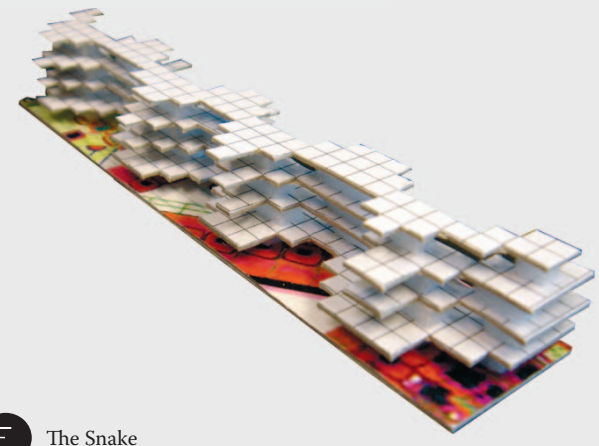
B Mega block
The mega block fill up the barge with a structure that brutally takes up all surfaces. In its interior smaller perforations let in light and on its top surface small elevations reaches upwards extending a landscape like surface.



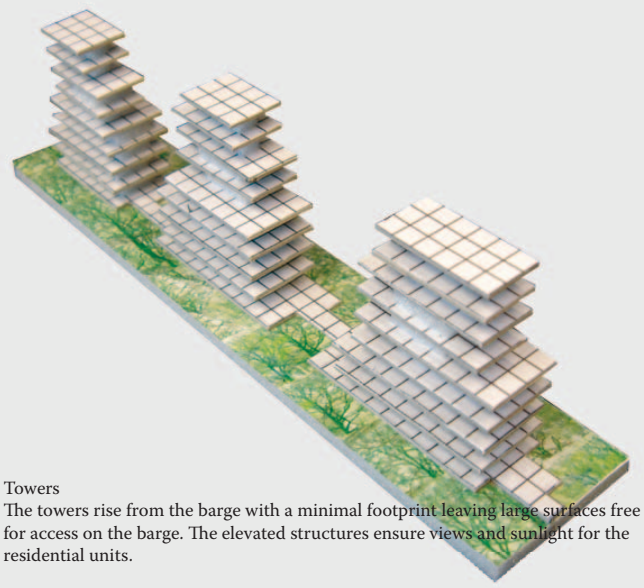
C The barge block creates a clear borderline between the open water and the residential areas. As such it is introverted focused on creating a more soft transition to its inner courtyard.



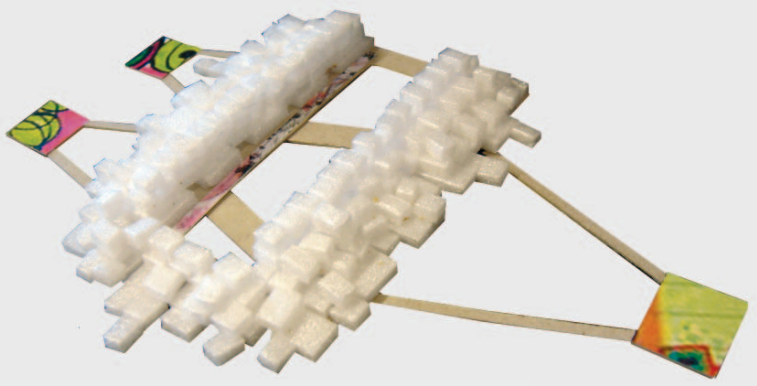
D The Wings
Several wings are offset across the barge creating clear lines of direction resulting in a shift from closed to open when moving along the barges full length. The in between spaces extend beyond the barge differentiating open surface areas.



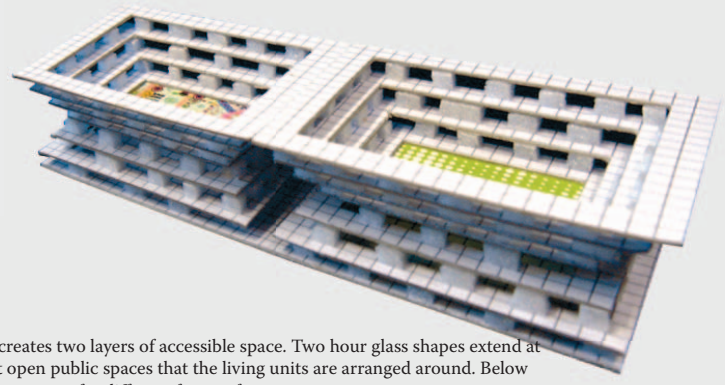
E The Snake
The Snake revolves around the central axis of the barge, extending its volume outwards – reaching for the water thus creating small pockets of common spaces.



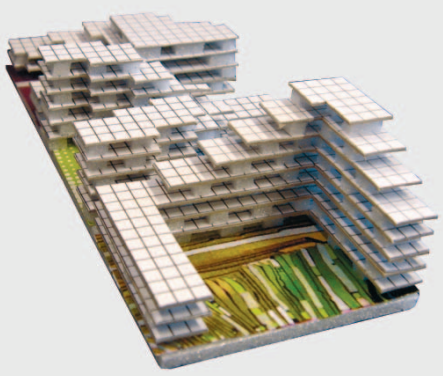
G Towers
The towers rise from the barge with a minimal footprint leaving large surfaces free for access on the barge. The elevated structures ensure views and sunlight for the residential units.



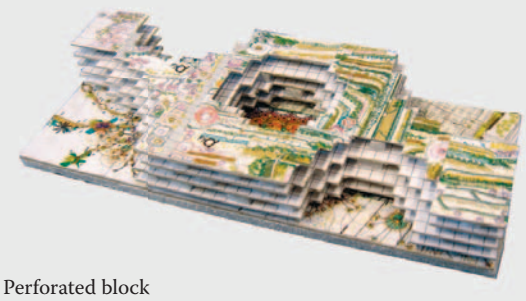
F Extended block
The extended block structure nomadically inhabits the water surface merely latching on to the barge in that serves as a distributive surface that can be hollowed out in order to create the most connection to the water.



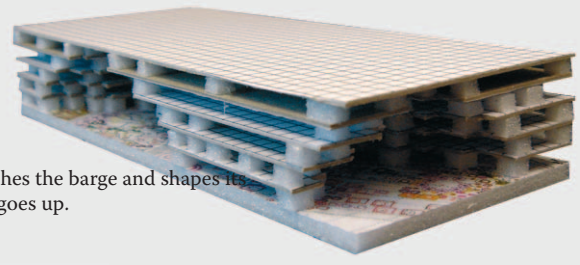
H Hour glass
The hour glass block creates two layers of accessible space. Two hour glass shapes extend at its most narrow point open public spaces that the living units are arranged around. Below large covered atriums are open for different forms of uses.



I The Sign
The sign distributes the living units in a narrow line across the barges' surface. Differentiated heights ensure view for all and the twisting figure varies in either turning away or enclosing spaces.



K Perforated block
The perforated block sets firmly on the barge but is perforated by large holes creating both internal courtyards and spaces creating open access and views to the water.



J Reversed block
The reversed block barely only lightly touches the barge and shapes its internal spaces atriums narrowing in as it goes up.

Ill.18: Examples of different conceptual barge typologies

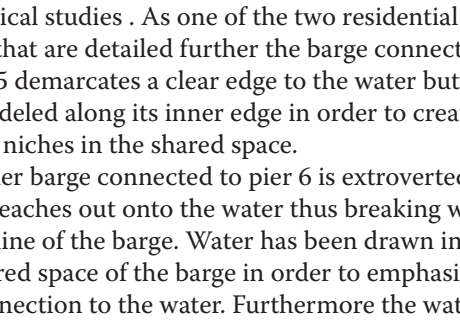
Zooming in

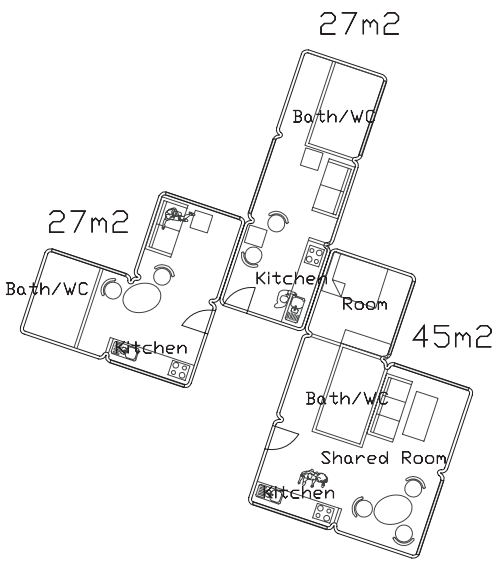
p24 Plan 1:500

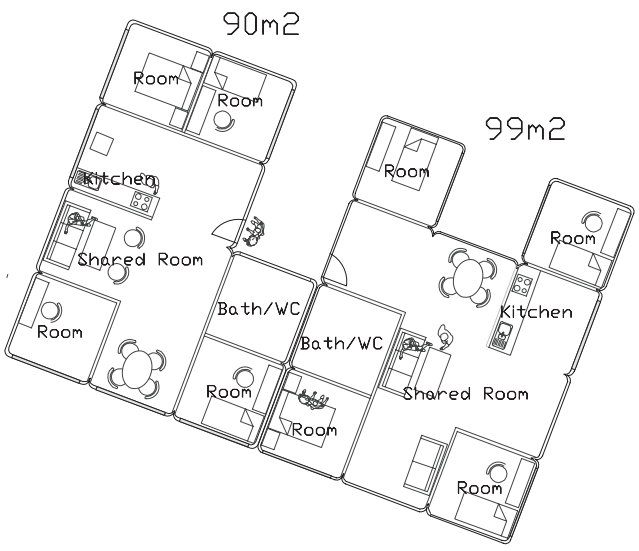
The living units represent the smallest, most flexible and temporary element in the system. Composed in different combinations they constitute different apartment types that meet the needs of the diverse target group: the hypothetical population of Prospect Shore.
The 1:500 plan shows a zoom of two selected residential barges in order to provide an overview of their spatial and programmatic organization.

The lateral positioned barges create a series of free lying blocks that are organized according to different typological studies . As one of the two residential barges that are detailed further the barge connected to pier 5 demarcates a clear edge to the water but is remodeled along its inner edge in order to create smaller niches in the shared space.
The other barge connected to pier 6 is extroverted in that it reaches out onto the water thus breaking with the outline of the barge. Water has been drawn into the shared space of the barge in order to emphasize the connection to the water. Furthermore the water ensures a distance between the adjacent placed apartments.

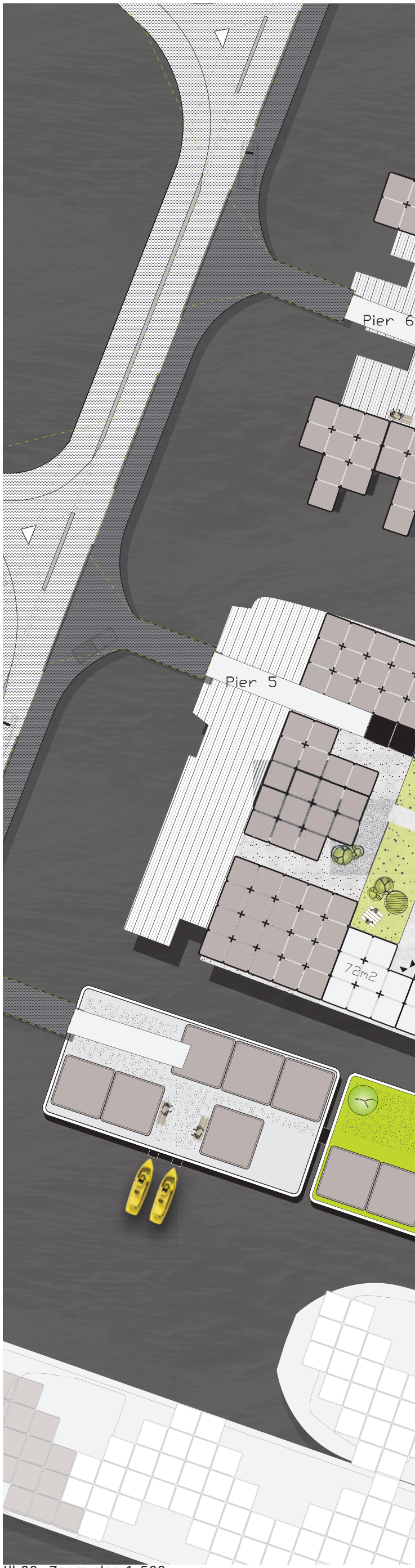
The two residential barges testify to the diversity of layout and organization however they also illustrate how the common restrictions for different zoning manifest. The zoning areas prescribe the relation to the permanent spine and the temporary urban barges; One end of the barge attaches to the spine of the system and from here the level of free access decreases. In that way the barges may be understood as a private shared space. The other end of the barge relates to the rivers water and is woven together by a series of barges that meet the demands for further public recreational surfaces that the inhabitants can share. Thus the structure is divided in zones according to access.



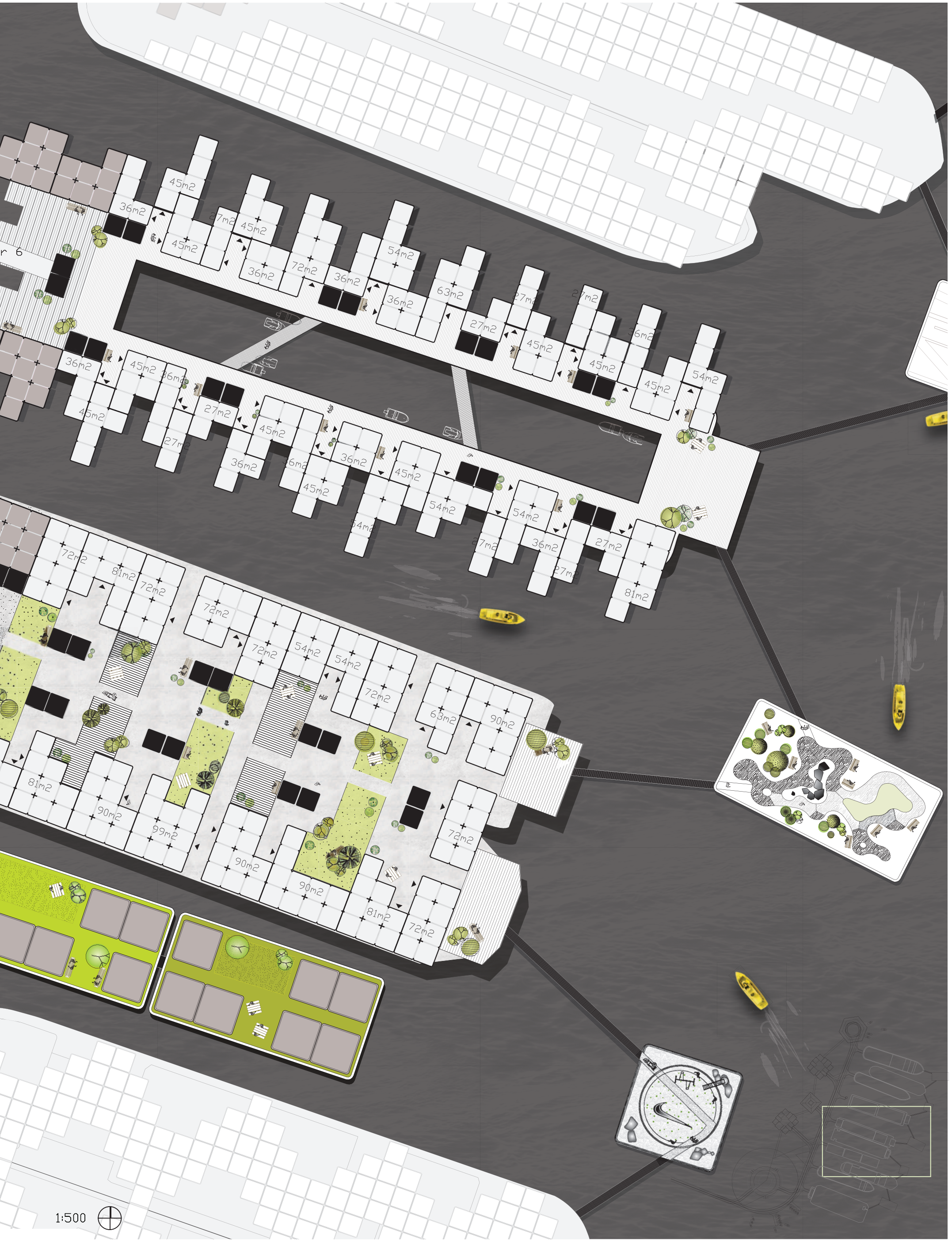




Ill.19: Examples of apartment plans 1:250



Ill.20: Zoom plan 1:500


45m2
36m2
27m2
45m2
36m2
72m2
36m2
54m2
63m2
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72m2
63m2
90m2
72m2
81m2
90m2
99m2
90m2
90m2
81m2
72m2
1:500

p26 Scenarios: pre and post

Extensive dislocation of people calls for dense, temporary housing solutions. The importance lies in the rapid deployment of residential structures that can provide the inhabitants of prospect shore with accommodation. Just as important is the reestablishment of urban programs that provide a possibility for people to resume their everyday life.

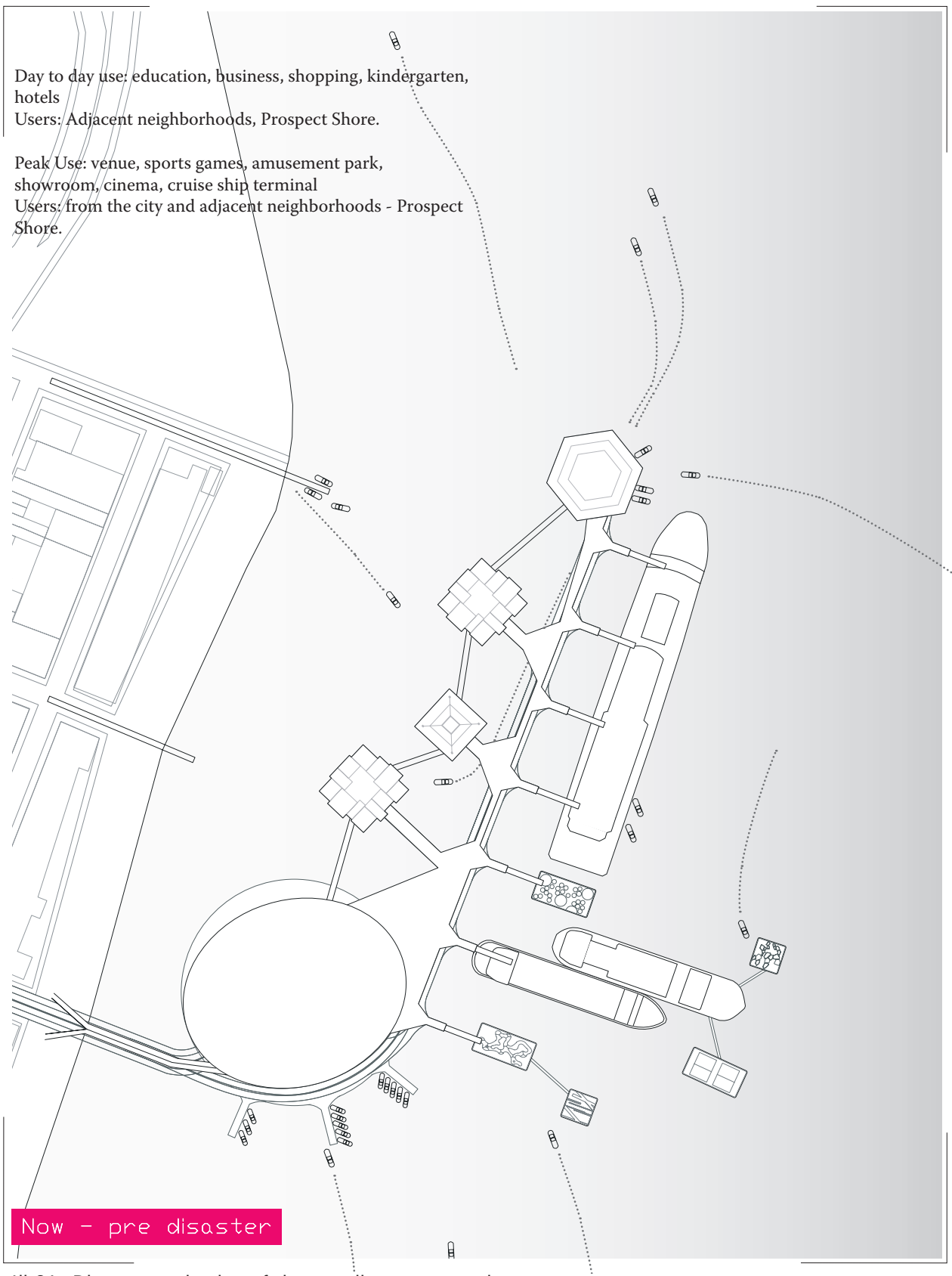
Scenario 00 / pre situation
As previous testified the dependence on situations and the correspondingly changing character of the offshore neighborhood is an integral part of the design response. Through diagrammatic plans of the 01post situation and the 03 after post situation it is illustrated how the offshore neighborhood take on various characters in different periods of time. The flexibility of the system enables the neighborhood to expand and shrink, to concentrate and disperse.
In times of disaster the permanent, fixed structures provides protection and shelter and the programs transform to adapt to the changing needs.

In a pre-disaster situation the system is programmed to create an increased value for Prospect Shore.
As a new water-based extension of Prospect Shore the neighborhood offers educational, business, shopping and recreational facilities. It is linked to the existing infrastructural system and is placed in connection to an already existing multifunctional part of Prospect Shore.

The chosen programs ensure day to day as well as peak activity thus both functionally as well as socially integrating the new water based neighborhood into Prospect Shore.

Scenario 02 : after post situation
The system corresponds to the conditions on land: as the damaged structures are continually being rebuild people move back into their homes and the need for provisional housing will decrease. This process creates an ever-changing fluid landscape of movement and interchange between the prospect shore and the off shore neighborhood.
As it is inherent in their nature the temporary elements detach themselves from the system and relocates to other destinations to other purposes. Some of the elements though maintain their position as add-ons to the system. They continue to facilitate their call as housing of displaced people until this need terminate after which they sediment as more permanent residential blocks, hotels or summer houses.

The edge is being redrawn – the most damaged and eroded costal land is not being reconstructed to the previous state. To create a resilient edge to the adjacent neighborhood a series of urban wetlands is constructed. They protect the area from recurring disasters or changes in sea levels at the same time providing green urban spaces for the inhabitants of Prospect Shore.



III.21: Diagrammatic plan of the pre-disaster scenario

Now - pre disaster

#Anchor Venue:

Amusement parc
Concerts
Sport events
Shuttle Terminal
Shopping
Parking

#Platform City:

Hotel
Appartments
Educational Facilities
Business
Showroom
Shopping

#Public recreational barges:

Floating central park
Sport
Swim
Artificial Beach
Wind park
Green scene
Floating market

#Spine:

Public Layer:
Recreational Spaces
Logistic Layer:
Internal infrastructural connections

After - post disaster

#Anchor Venue:

Shuttle Terminal
Shopping
Parking

#Platform City:

Provisional Housing
Shopping

#Residential Barge specific programmes:

Provisional Housing
Common facilities:
- Internet cafe
- Administration
- Distribution points
- Utilities
- Vending machines

Private/common spaces:
- Laundries
- Community kitchen

#Public barges:

School Block
Educational and health facilities
Police Station
Library

#Public recreational barges:

Floating central park
Floating Community gardens
Sport
Nike Playground
Swim
Artificial Beach
Wind park
Debris parc
Green scene
Green square garden
Theme square
Floating market
Pavillion

#Spine:

Public Layer:
Recreational Spaces
Logistic Layer:
Primarily facilitating water based infrastructures

AfterAfter - post disaster

#Anchor Venue:

Amusement parc
Concerts
Sport events
Shuttle Terminal
Shopping
Parking

#Platform City:

Hotel
Appartments
Educational Facilities
Business
Showroom
Shopping

#Residential Barge specific programmes:

Appartments - condominiums
Common facilities:
- Internet cafe
- Administration
- Distribution points
- Utilities
- Vending machines

Private/common spaces:
- Laundries
- Community kitchen

#Public barges:

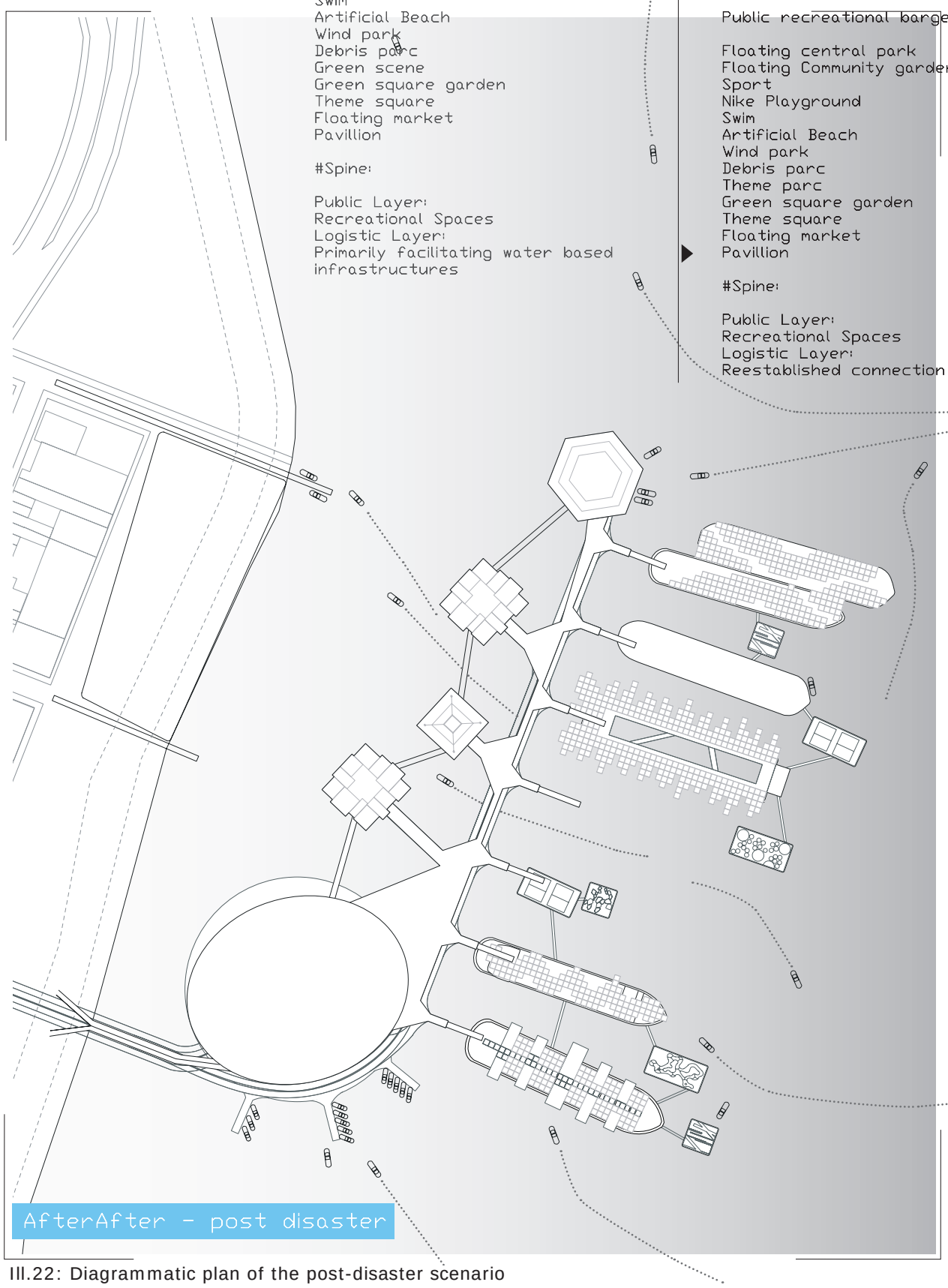
School Block
Educational and health facilities
Police Station
Library

Public recreational barges:

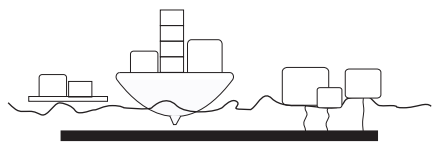
Floating central park
Floating Community gardens
Sport
Nike Playground
Swim
Artificial Beach
Wind park
Debris parc
Theme parc
Green square garden
Theme square
Floating market
Pavillion

#Spine:

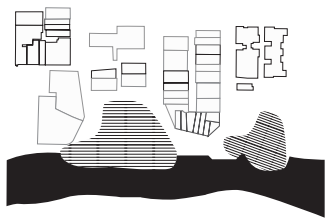
Public Layer:
Recreational Spaces
Logistic Layer:
Reestablished connection to main land



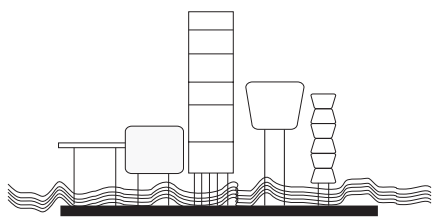
Ill.22: Diagrammatic plan of the post-disaster scenario



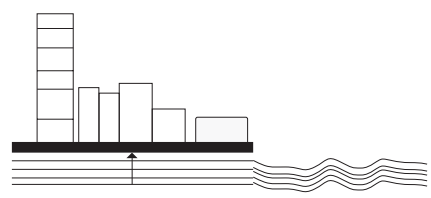
Floating



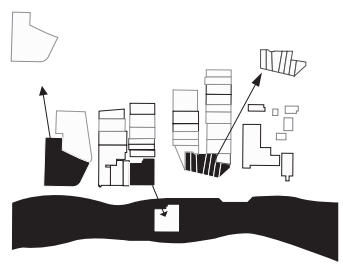
Urban Wetlands



Elevating Houses



Elevating grounds



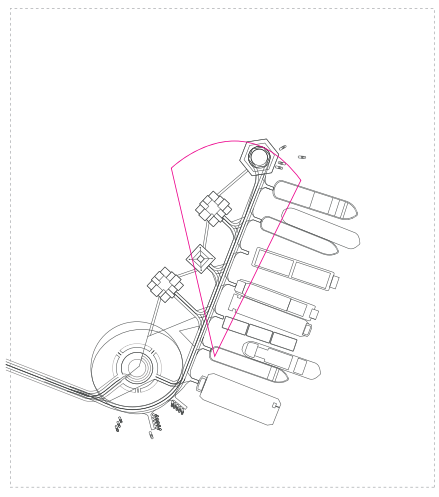
Displacing Houses

Ill.22: Resilient city strategies applied in both scenarios

p28 Collage

‘NYC Offshore’ is a project that advocates acting rather than reacting thus questioning prevailing ways of planning and designing. It maintains that there is potential in temporality and that a transitional urbanity is the way of the future.

The design response materializes as a scenario based master plan that incorporates a time variable. Instead of isolating one situation it emphasizes the importance of thinking in an overall dynamic coherence of designing for several situations instead of static moments.
And because the design consists of parts that have different life spans, thus mixing both impermanence and permanence, it has a high degree of adaptability according to need. As the most temporary fleeting elements are primarily residential, the system is flexible in a timeframe of ‘post’ as it can adjust to needs that emerge in a disaster situation.



Ill.23: Collage showing a view from the barges towards the infrastrutural spine

List of illustrations

Illustrations on page 5 and 7 are based on maps provided in the competition material,
but have been graphically edited by the authors.
When mentioned here, they will not be part of the list below.

Ill. 1 page 2:

Bloomfield, Janine Smith, Molly Thompson, Nicolas (1999): Hot Nights in the City - Global Warming, Sea-Level Rise and the New York Metropolitan Region. The Environmental Defense Fund, Washington.

Kefer, Jennifer (2007): “America´s Flood Risk is Heating Up”. Environmental Defense, National Wildlife Federation.

http://tidesandcurrents.noaa.gov/data_menu.shtml

Ill. 2 page 3:

Websites:
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Ill. 7: page 10

Websites:
www.hydro.com// oilrig
www.icbergan.com
www.inhabitat.com
www.archispass.org

Design Competition Program http://www.nyc.gov/html/whatifnyc/html/home/home.shtml