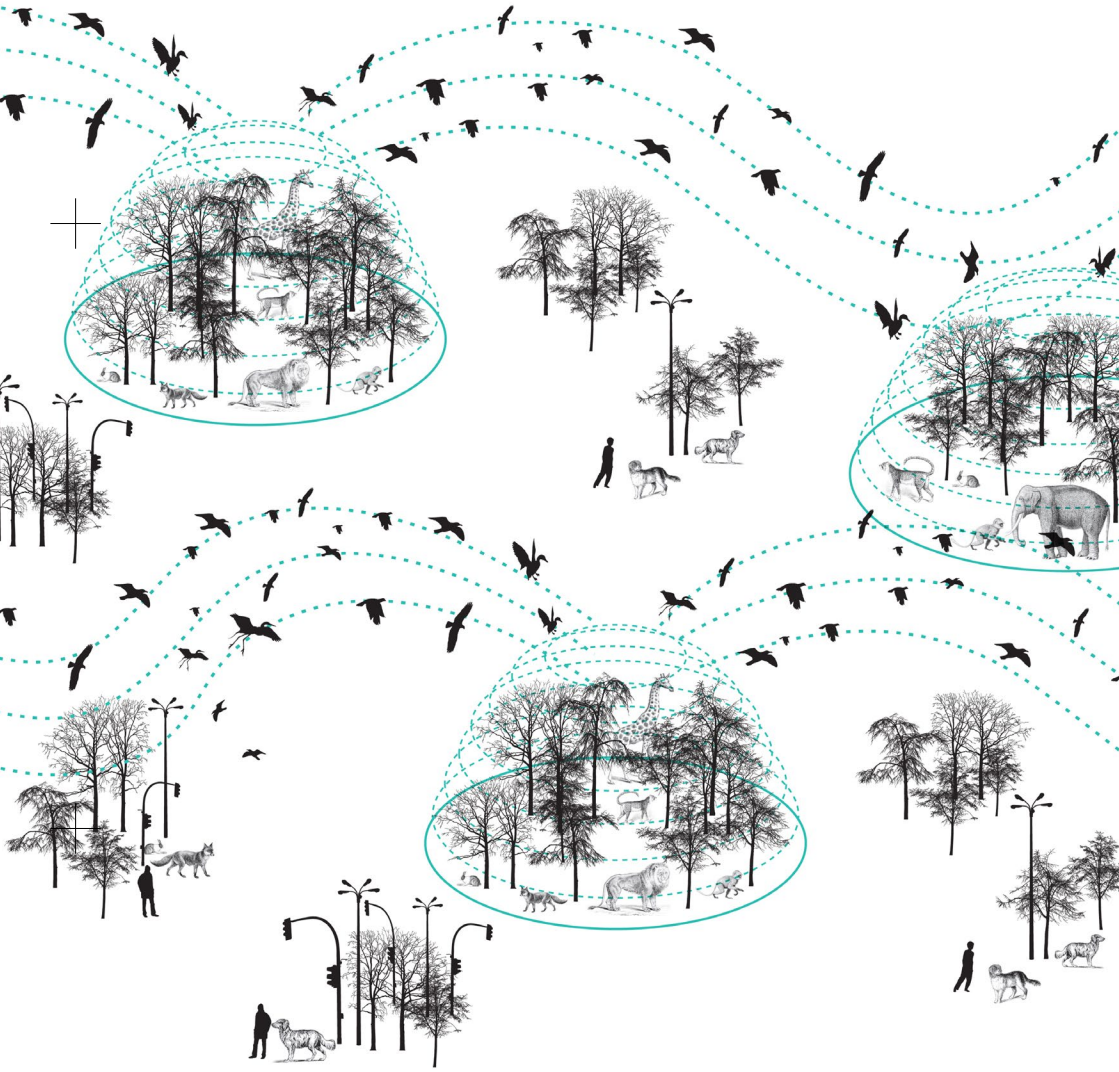
Is·land



Enrico Forestieri

Is·land: a Pragmatic Utopia
A project by Enrico Forestieri
Collaborators: Pilar Díez, Helena Muñiz Muñoz, María Martínez Ureta, Chiara Novello, Matteo Pace, Pietro Pezzani
Madrid, 2011

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Speculative Proposal | Concrete Utopia | Realized Project

Visionary Utopias of the 60s and 70s, fluctuating between **idea(lism)** and **(mega)structures** had been blown away by the first oil crisis because of their reduced adaptability and scalability.

From the 90s, more urgent material constraints and important technological advances influence and drive a serie of **mature, pragmatic, opportunistic, impure** projects. They reject the previous naïf schematism and are now able to manage **complexity, different scales and multiples actors**.

IS-LAND aims at being there, in this middle earth.

1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2005
2010

Floating fishing village
Anonymous
100 - 2000 inhabitants
Moored
Natural aggregation of productive cells

US Army - Gyroscope stabilizer for ballistic purpose, ~1940

Victoria 1955-2000
Ralph Erskine
Refurbishment of 1905 barge
12 inhabitants
0 - 4 m/s
Self-organised chaos

Cloud Nine 1960
Buckminster Fuller, Shoji Sadao
Collage
7.000 inhabitants
Theered or moveable
Floating dream

Marine City Hawaii 1961
Kiyonori Kikutake
Speculative scenario
15.000 - 30.000 inhabitants (250 tower)
Moored
Hyper infrastructure

Tokyo Bay Masterplan 1961
Kenzo Tange
Feasibility Study
2.500.000 inhabitants
Moored
Hyperinfrastructure

James Anderson - Closed cycle OTEC patent, 1967

Triton City 1963-1979
Buckminster Fuller
Feasibility study, Execution project, Approved by US Navy's Bureau of Ships
5.000 - 100.000 inhabitants
Moored
Sanitized Modernism

Sea City 1968
Hal Moggridge for Pilkington Inc.
Speculative scenario
20.000 - 30.000 inhabitants
Moored
City as an harbour

US Army - Remote controlled UAV, ~1970

Marine City Hawaii 1971
Kiyonori Kikutake
Feasibility study, Construction scheme
5.000 - 10.000 inhabitants
Moored
Tech against Nature

FIRST OIL CRISIS, ~1973

Teatro del mondo 1980
Aldo Rossi
Built
just for a little audience
0 - 2 m/s
Moving landscape

Atlantida 1975-1983
José Miguel Prada Poole
Feasibility Study. Execution Project
500-5.000 inhabitants.
Drifting
Soft, scalable environment

TEPCO - First operative 120 KW OTEC power plant, 1981

Nexus marine colony 1986
Eugene Tsui
Crayon sketches
10.000 - 30.000 inhabitants
Drifting
New age biomorphic dream

US Army - Autonomous UAV, ~1985

Daimler Mercedes - Prometeus Project, 1987-1995

Sea Keeper, Ship Dynamics - Antiroll Gyroscope for ships, ~1990

GLOBAL MATERIAL DEFICIT, ~1994

Den Hague Offshore 1992
Neurelings & Riedijk
Feasibility study:
3.000 - 5.000 inhabitants
0 - 2 m/s
Realistic alternative

Intelligent Engineering - SPS (Sandwich Plate Sandwich), 1996

Marshall Savage - Pneumatically Stabilized Platform PSP, 1996

Narco semi-submarine 1993-...
SPSS operating from Costarica, Mexico, Colombia, ...
3 mariners; 4-12 T of cocaine
4.0 m/s
DIY stealth technology

MV Blue Marlin 1993-1999
China Shipbuilding Corporation
Heavy lift semi submergible ship
55 inhabitants
Moored 0 - 1.5 m/s
Capsules negotiating space on a fluid element

Rex Wall FCP, 1999 patent pending

Aerosonde Laima - Scientific resarch UAV crosses Atlantic Ocean, 1999

Pocket Property 1998
Andreu Zirel
44 T concrete island
2 inhabitants
Moored 0 - 1.5 m/s
Capsules negotiating space on a fluid element

Drijvend Museum 1999
Federico Soriano
International competition
up to 1.000 visitors
Moored
Reversing the perspective

Freedom Ship 1998-2008
Freedom Ship International
Feasibility study. No financial backing
40.000 - 100.000 inhabitants
7.5 - 8.0 m/s
Tax evasion spot

Megafloat 1998-2000
TRAM
Floating 1000 m runway
2 inhabitants
Moored
Abstract mark on water

Parque playa de la Espasa 2003
Izaskun Chinchilla
International Competition
50 - 300 tourists
Responsive fixed spots
Calculated sprawl system

Pyramid 2004
Dante Bini, David Dimitric for Shimizu Inc.
Feasibility study
750.000 inhabitants
Traditional pier foundations
Egyptian Blade Runner for Tokyo Bay

Sylt 2 2004
Judith Reitz, Daniel Baerlecken
Territorial control infrastructure
2.000 inhabitants
Moored
Economic, social, territorial device

Water dwellings 2001-2010
Marlies Rohmer
Modular floating dwellings
1.000 inhabitants
Moored 0 - 1.5 m/s
Lost chance

Jan Van Keusel - Air Cushion Mega Floaters, 2005

Fluid City 2006
Dominic Stevens
Urban proposal for Irish Pavilion at Venice Biennale
200.000 inhabitants
towed and floating elements
Atomised urbanism

Happy Isles 2006
WEST 8
Hippie and protective islands
10.000 - 30.000 inhabitants
Artificial topography
Global warming scenario

Adriatic LNG 2006-2010
Aker Solutions
Liquid natural gas offshore terminal
50 inhabitants
0 - 2.2 m/s
Moving 220.000 m³ for 1.700 Km

Lylipad 2008
Vincent Callebout
Sketches
50.000 inhabitants
Drifting
Wannabe cool

Flooded London 2008
Anthony Lau
Fluid urban scheme for Thames estuary
50.000 - 100.000 inhabitants
Floating and Moored
Global warming scenario

Floating Utility Unit 2008
DeltaSync
Utility unit
for 50 - 500 inhabitants
Moored
Plug and Play infrastructure

Enric Ruiz Geli, BOMA, PGI - Once a Wave - flexible unit for wave energy, 2008

MSS Batelier 2007-...
Bauhaus Universität - Weimar
Refurbished Barge
10 - 22 students
0 - 1.20 m/s
Mobile workshop unit

Maya Reef 2008
Enrique Soriano
Territorial protocol
100 - 300 tourists
Moored
speculative Heaven

New Orleans Arcology Habitat 2010
Kevin Schopfer
Commercial project
40.000 inhabitants
Drifting if necessary
Apocalyptic scenario

SOUTH KOREA TO LEASE 50% ARABLE LAND OF MADAGASCAR, 2008

Floating Garden 2009-...
Anne Holtrop, Studio Noach
Maquette
50-50 inhabitants
Moored 0 - 1 m/s
Affordable Beowall Eden

The Swimming City 2010
Andrin Gotth
Seastading Institute ideas competition
100 - 2.000 inhabitants
Suspended
Steapause in the high sea

Liquid City - Water Wonen 2010
NL Architects
Restricted competition
... inhabitants
Moored or floating
Continous interaction with territory

Enric Ruiz Geli - Biblioteca, Figueres - flexible unit for wind energy, 2010

Google - Driverless car - 230.000 Km without accidents, October 2010

IS-Land 2011-...
ef + ...
Maquette
1000 inhabitants
0 - 1.6 m/s
...

Utopia Reloaded

Visionary utopias of the Sixties and Seventies, fluctuating between **idea(lism)** and **(mega)structures** have been blown away by the first oil crisis because of their reduced adaptability and scalability.

Since the Nineties, more urgent material constraints and important technologcal advances have influenced and driven a new series of **mature, pragmatic, opportunistic, impure** projects. They reject the previous naif schematism and they are now able to manage complexity, different scales and multiple actors.

Is·land aims at being there, in this middle earth.

Is·land:
a Pragmatic Utopia

Is·land is a research on forms of cohabitation and land management in vulnerable areas.

In the Wadden Sea Region (WSR), a 1 million hectares Natural Park between the Netherlands and Denmark, (a geographical and functional spot for **migrating** bird s, an **hyperprotected** area and a region with evident socio-economic **imbalances**), Is·Land suggests a post-environmental (Branzi, 2010) scenario of cohabitation with humans and socialized non-humans (Latour, 1993), based on the constant negotiation of **Spaces, Time, Cycles**.

Is·land questions the prevailing sedentary attitude of humans, looking at birds **cyclic nomadism** as a smart strategy of managing natural resources. Beyond actual ecotouristic segregated model, it rethinks WSR as a thick and porous "Mixing Chamber" and suggests Is·land moving platform as the infrastructure able to support positive forms of interactions and virtuous circles between migrating birds and a heterogeneous nomadic community.

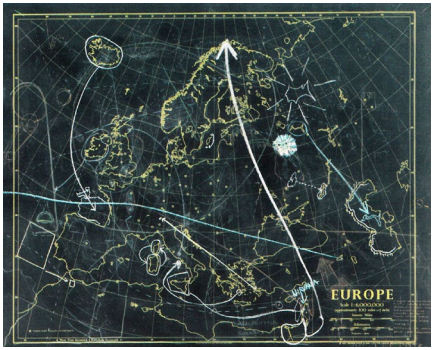
Is·land is a **transient, functional landscape**. It operates in the WSR everchanging tidal area, generating a brand new **hybrid context** for human and non-human cohabitation. It's a middle earth suspended

between landscape and domestic scale; its semi-submerged portion and its slow movement blurs its visual presence as if it were an unstable mirage, a supplementary island of the Friesland archipelago. Is·land's movement responds to and takes advantage of local conditions (as the reduced wave motion behind Friesland Islands) and cyclical contingencies (such as tidal streams).

It's not intended as a self sufficient monad: it enhances and strengthens relationships between regional scattered communities (5 million people along 500 Km of coastline) and it establishes a tight interdependence (a social, economical and environmental one) between the territory and itself. Everytime it lands, it receives **material and energetic inputs** from the territory in exchange of material and intangible products developed in its interiors. Is·land accepts agricultural-food products planted in selected areas within the "Mixing Chamber" ribbon, recharges its batteries thanks to Magenn rotors network; in return it converts itself in an **Instant City** for each of the guest communities.

Is·land is a marina, a mobile market, an exhibition space, a conference room, a workshop center, a regional-bio delicatessen shop, a restaurant, a love boat, ...

Is·land is a **pragmatic utopia**.



George Brecht: Blackboard for landmass translocation project (1970).

From Environmental-Environmentalists Crisis to Post-Environmental Models

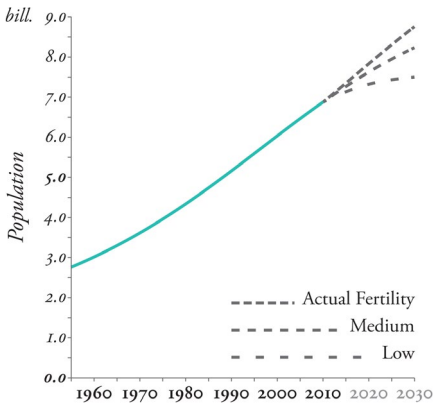
Is·land is a research about forms of cohabitation and territorial management in vulnerable areas. In the Wadden sea region (a geographical and functional spot for migrating birds, an hyperprotected area and a region with evident socio-economic imbalances), Is·land suggests a post-ecological (Branzi, 2010) scenario of cohabitation with humans and socialized non-humans (Latour, 1993), based on the constant negotiation of Spaces, Time, Cycles.

Is·land questions the (prevailing) sedentary attitude of humans, looking at birds cyclic nomadism as a smart strategy of managing territorial resources.

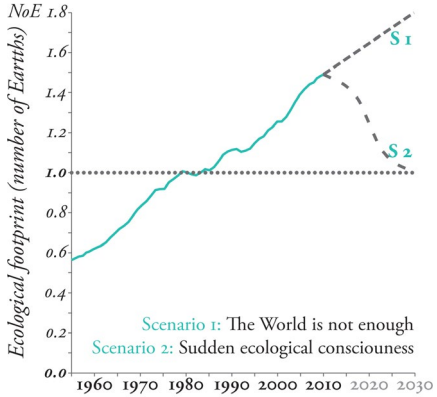
The Earth is a reduced space of negotiation. Up until recently, environmental problems dind't assume patently conflicting characteristics because of the resources surplus and the reduced anthropic pressure.

Separate to protect has been the environmentalists' answer to the environmental crisis. During the last decades, the extent of protected areas has been growing exponentially, nevertheless the environmental problem persists and worsens; it could be a sign that, once again, the "indian reservation" strategy doesn't seem to work properly.

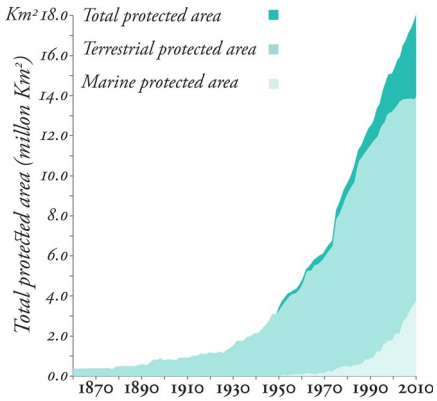
A


bill.
Population
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1960 1970 1980 1990 2000 2010 2020 2030
Actual Fertility
Medium
Low

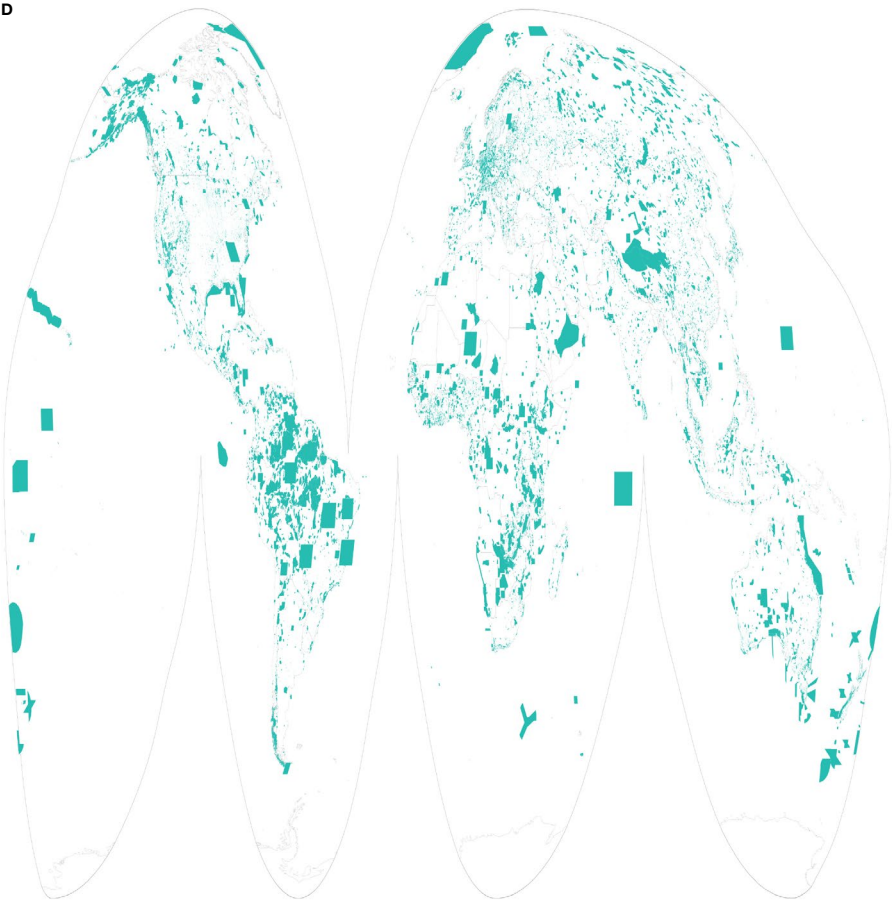
B


NoE
Ecological footprint (number of Earths)
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
1960 1970 1980 1990 2000 2010 2020 2030
S 1
S 2
Scenario 1: The World is not enough
Scenario 2: Sudden ecological consciouness

C


Km²
Total protected area (millon Km²)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
1870 1890 1910 1930 1950 1970 1990 2010
Total protected area
Terrestrial protected area
Marine protected area

D



A Ecological footprint. Global Footprint Network 2010

B World population trends. UNEP 2008

C Growth in nationally designated protected areas (1870-2010). IUCN and UNEP-WCMC 2010

D World protected areas map 2011. WDPA 2011, Protectplanet.net 2011

Learning from Migratory Birds

A Natural Park, though extended-wide, still remains a zoo at a "landscape scale", designed and tailored on sedentary animals. The insula strategy can only guarantee partially the potential quality of the ecosystems, because legal constraints are simply crossed by harmful volatile or soluble components, produced in surrounding areas.

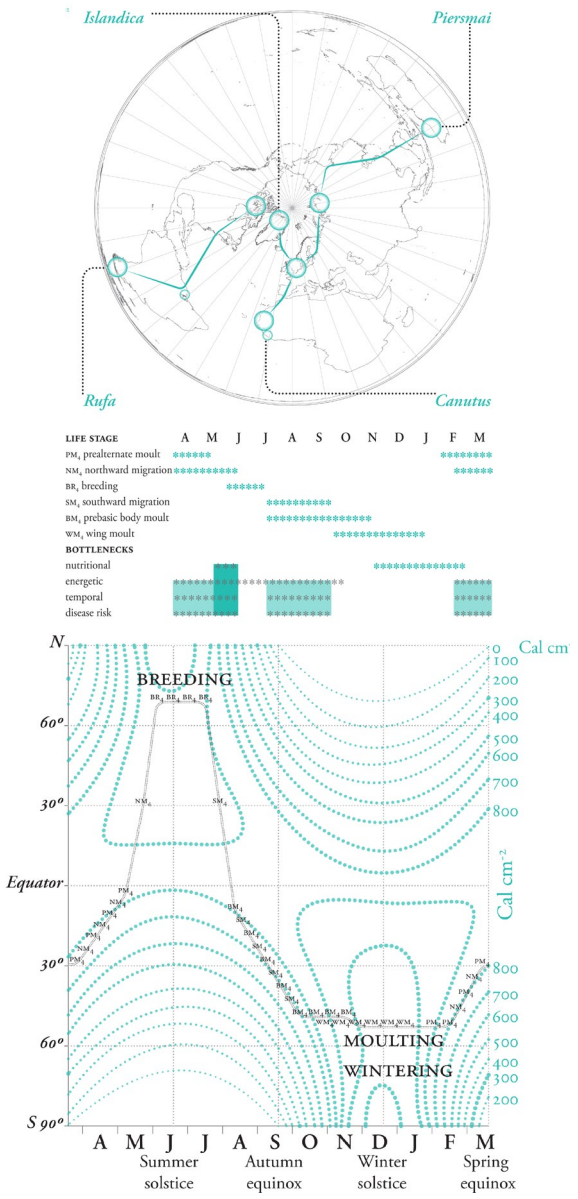
Migrantory birds, with their way of using the extended territory, stress clearly the limits of such a strategy, but at the same time, they unintentionally point out a model where habitats boundaries might be less univocally defined and where intensity and duration of environmental pressure should be linked to energetic parameters and cyclic, temporal constraints.

Cyclic nomadism is at the bottom of a refined strategy of reversible management of territorial resources; a model much more sophisticated than the sedentary one, where moving is the extrema ratio in case of end - lack of resources. At this moment of environmental-istic crisis, could people rethink about their sedentary condition in favour of a more fluid model? **What can we learn from migratory birds?**

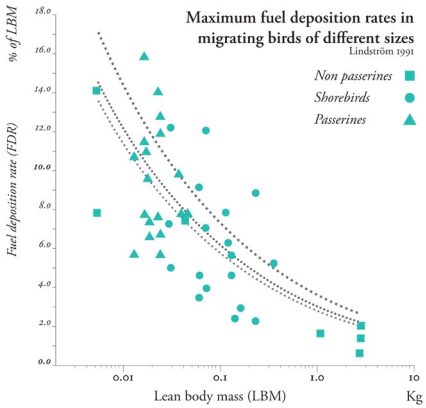
Migratory Instinct:
- Spatial-Temporal Constraints through Annual Cycle
- Physiological and Biometric Constraints
- Flight Strategies as a Function of Environmental and Physiological Constraints

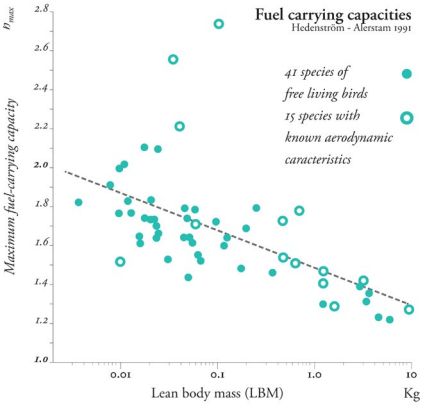
Birds migrate following solar radiation peaks, that means following food peaks. Extreme pattern of migration in Calidris Canutus Rufa is intended to maximize quality and quantity of food intake and reduce sophistication of immunitarian system and death risk in juvenile birds, although severe and prolonged bottlenecks appear during life cycle. Overall weight and fuel deposition rates fix another set of constraints.

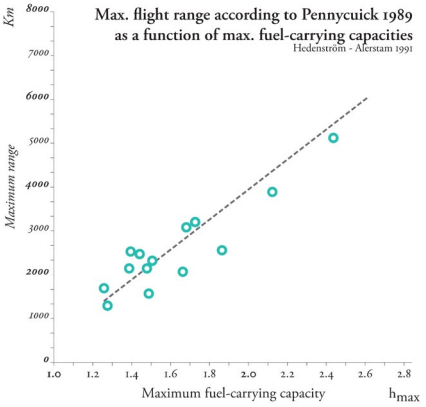
We could describe birds migration and their refined territorial management with only three generic variables: **energy, space, time**.



Spatial and Temporal Constraints through Annual Cycle: Calidris Canuta Rufa extreme pattern of migration, chasing for maximum solar radiation despite severe energetic bottlenecks.

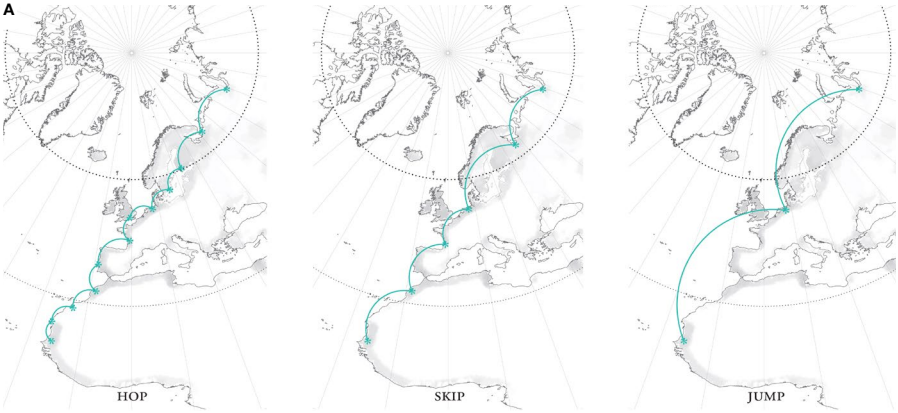




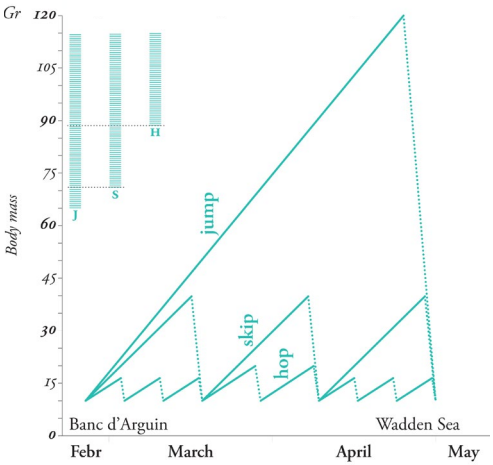


Physiological and biometric constraints fix another “limit to performances”.

A



B



A, B Typical flight strategies of bar tailed godwits Limos Lapponica during spring migration.

Piersma 1987

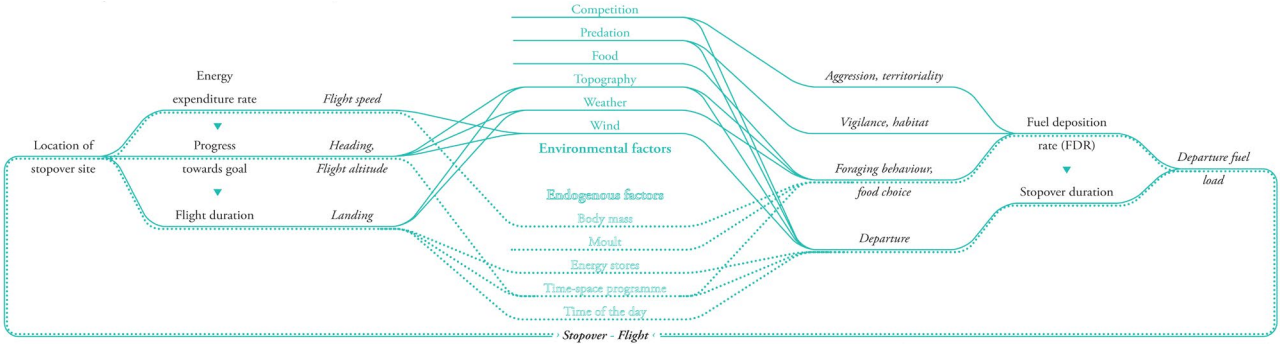
C Environmental and endogenous factors affecting stopover and light during migrations.

stopover= Fuel Deposition Rate **(ENERGY) x TIME**

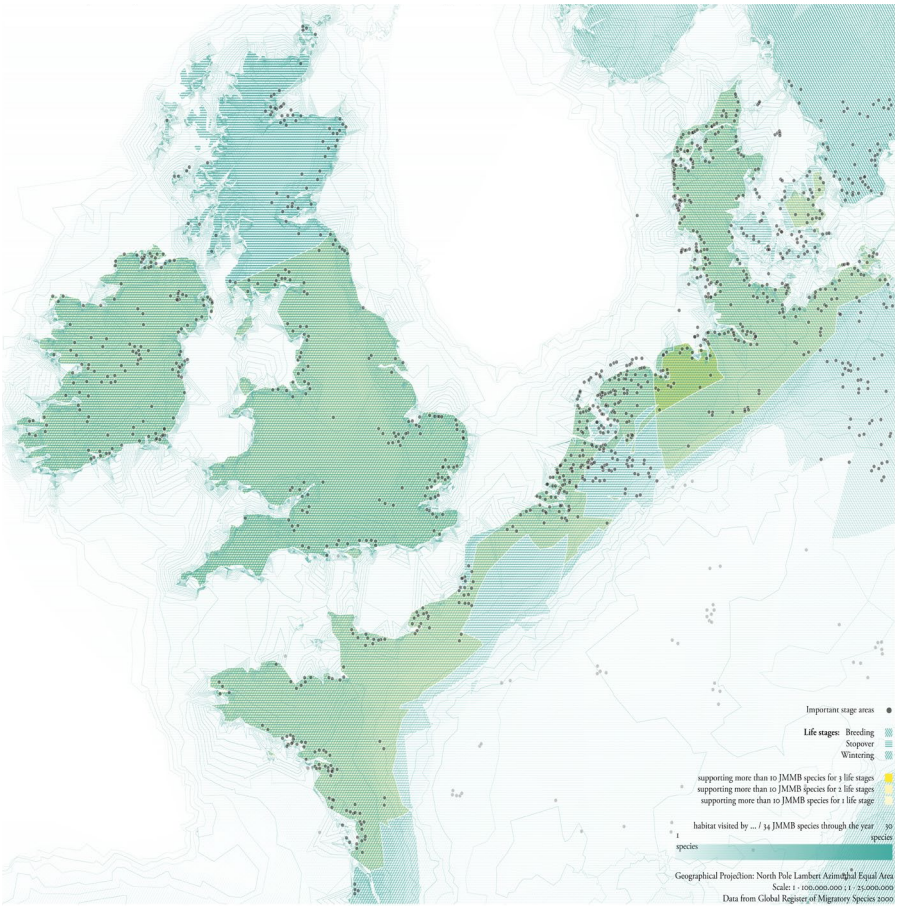
flight= Energy Expenditure Rate **(ENERGY) x TIME x DISTANCE**

Adapted from Jenni, Schaub 2003

Flight Strategies as a Function of Environmental and Physiological Constraints: one can describe birds migration and their refined territorial management with only three **generic** variables: **energy, space, time.**


Location of stopover site
Energy expenditure rate
Progress towards goal
Flight duration
Flight speed
Heading, Flight altitude
Landing
Competition
Predation
Food
Topography
Weather
Wind
Environmental factors
Endogenous factors
Body mass
Moult
Energy stores
Time-space programme
Time of the day
Aggression, territoriality
Vigilance, habitat
Foraging behaviour, food choice
Departure
Fuel deposition rate (FDR)
Stopover duration
Departure fuel load
Stopover - Flight

Differences in Land Use for 34 JMMB Shorebirds:
- Temporal and Spatial Overlay of Breeding, Stopover and Wintering Areas
- Annual and Daily Cycle at Wadden Sea

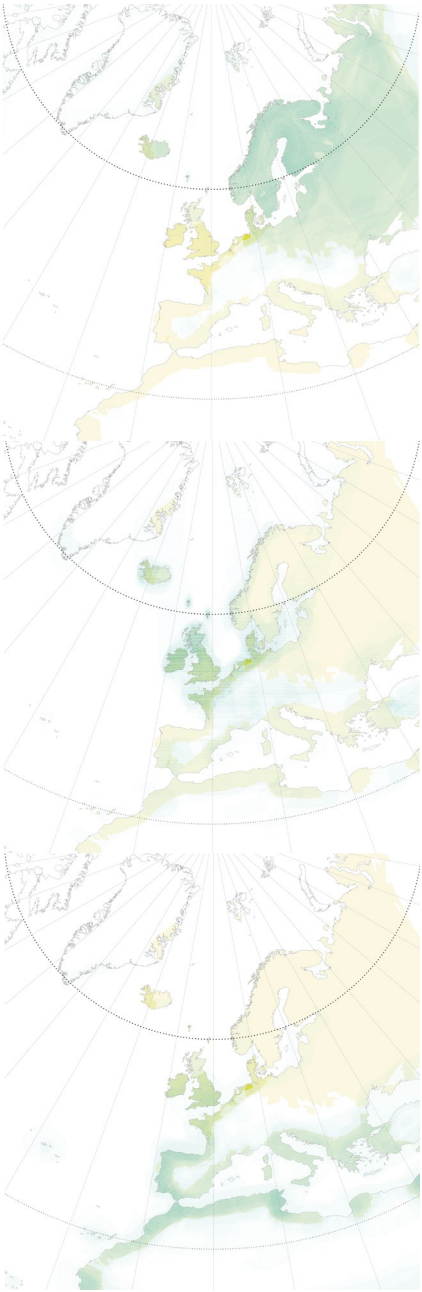


A Central Europe and in particular Wadden Sea Area is an heterogenous interchange area supporting at least two bird life stages for more than ten JMMB species through the annual cycle.

B Spatial occupancy and functional areas along the East Atlantic and Mediterranean flyway: (1) breeding (summer), (2) stopover (spring and autumn) and (3) wintering areas (winter).

B

1



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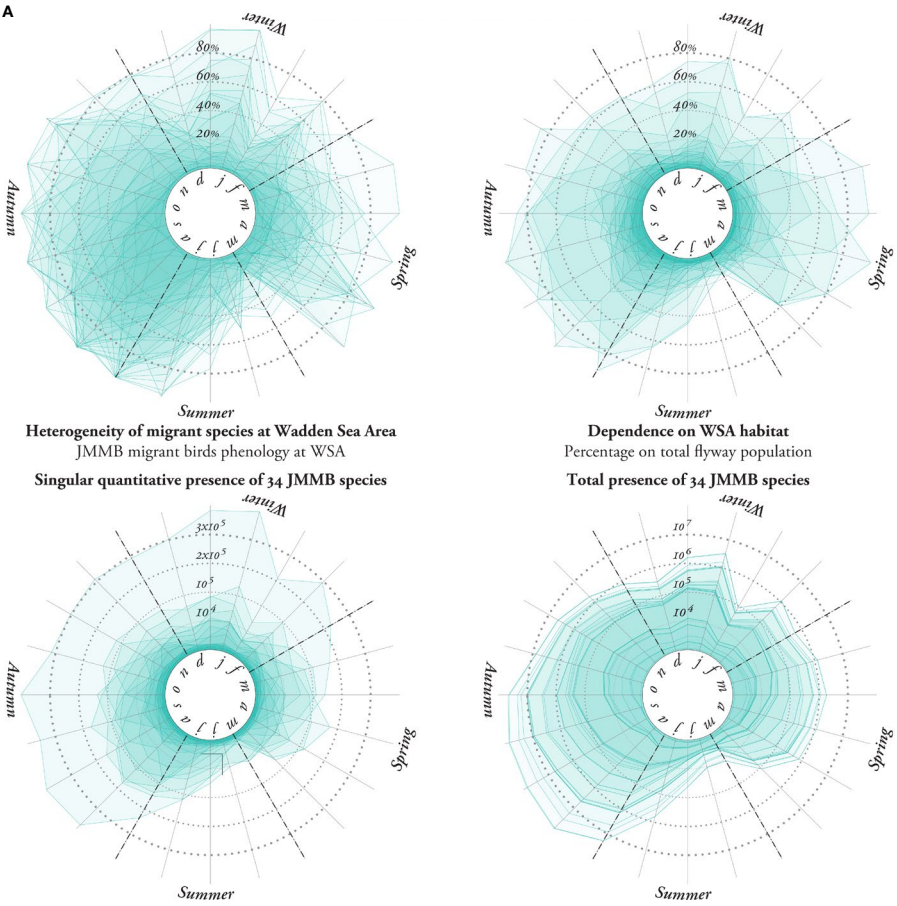
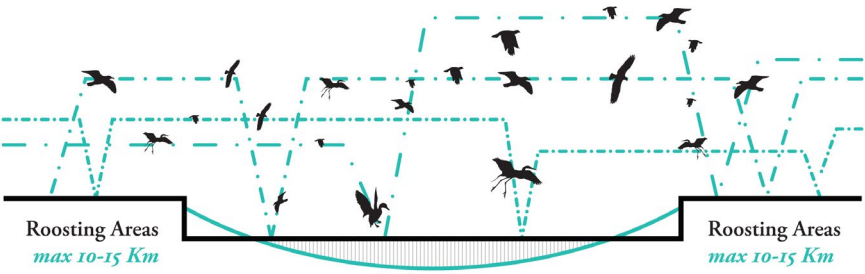
3



A Annual cycle: presence, heterogeneity, singularity of birds at Wadden Sea. Based on Wadden Sea Secretariat data 2009

B Daily cycle: syncronization of tidal fluctuations (6h15min): spatial occupancy and daily activities.

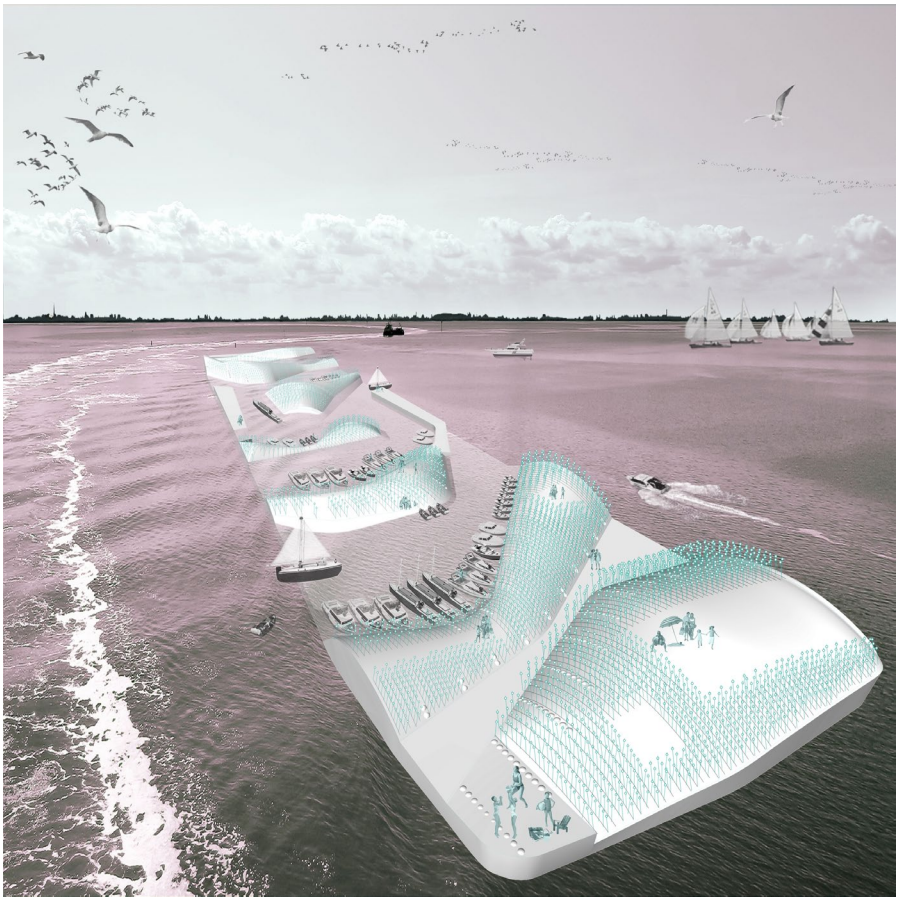
B



Feeding Areas
Exposed Intertidal Flats at Low Tide

Habitat and food of JMMB Species

EU cod	Species	Preferred food	Preferred habitat
0720	Great cormorant	Fish	Open water
1440	Eurasian spoonbill	Fish/shrimp	Intertidal Flats
1680	Brent goose	Grass	Saltmarsh
1670	Barnacle goose	Grass	Saltmarsh
1730	Common shelduck	Molluscs	Intertidal Flats
1790	Eurasian wigeon	Grass	Saltmarsh
1840	Common teal	Seeds	Low Sal Intertidal
1860	Mallard	Seeds/benthos	Intertidal Flats
1890	Northern pintail	Seeds/benthos	Intertidal Flats
2060	Common eider	Shellfish	Open water
4500	Eurasian oystercatcher	Shellfish	Intertidal Flats
4560	Pied avocet	Benthos	Intertidal Flats
4700	Great ringed plover*	Benthos	Intertidal Flats
4860	Grey plover	Benthos	Intertidal Flats
4690	Red knot*	Benthos -Shellfish	Intertidal Flats
4970	Sanderling	Benthos	Intertidal Flats
5120	Dunlin	Benthos	Intertidal Flats
5340	Bar Tailed Godwit*	Benthos	Intertidal Flats
5410	Eurasian curlew	Benthos	Intertidal Flats
5450	Spotted redshank	Benthos -Shellfish - Shrimp	Intertidal Flats
5460	Common redshank*	Benthos	Intertidal Flats
5480	Common greenshank	Benthos -Shellfish - Shrimp	Intertidal Flats
5610	Ruddy turnstone*	Benthos	Intertidal Flats
5820	Common black - headed gull	Benthos -Shellfish - Shrimp	Intertidal Flats
5900	Common gull	Benthos	Intertidal Flats
5920	Herring gull	Benthos -Shellfish	Intertidal Flats



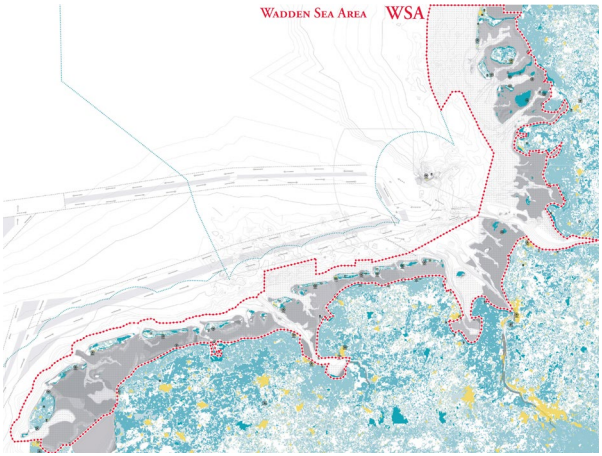
A moving landscape supporting migrating birds and a heterogeneous nomadic community

Is·land:
a Moving Landscape Through Wadden Sea Area

Actual management model is reducing room for innovative territorial politics because of the environmental hyperprotectionism. Prognos (2002) points out that, although ecotourism is considered an high added value sector, regional GDP is 5-10% lower than average; job market is subjected to tourism strong seasonality and accomodation sector is not generally interested in skilled workers; so, although the important Universities presence, it's rare that young graduated people decide to settle and work in WSA.

Natural forces reshape continually Wadden Sea Area. Cyclical fluctuations of the sea level modify the landscape and the field where Is·land and can move freely. Along its route, Is·land flows through ever changing scenarios (wild nature, intensive agriculture, shrinking cities, post-industrial districts, vacation Meccas, dense urban cores,...) interfacing with more than 5 million people along 500 Km of the coastal ribbon.

Is·land is a transient territory, a temporary plug, which re-organizes the structure of territorial nodes at WSA.



Actual Scenario

Future Scenarios

Environmental crisis and environmentalist impasse.

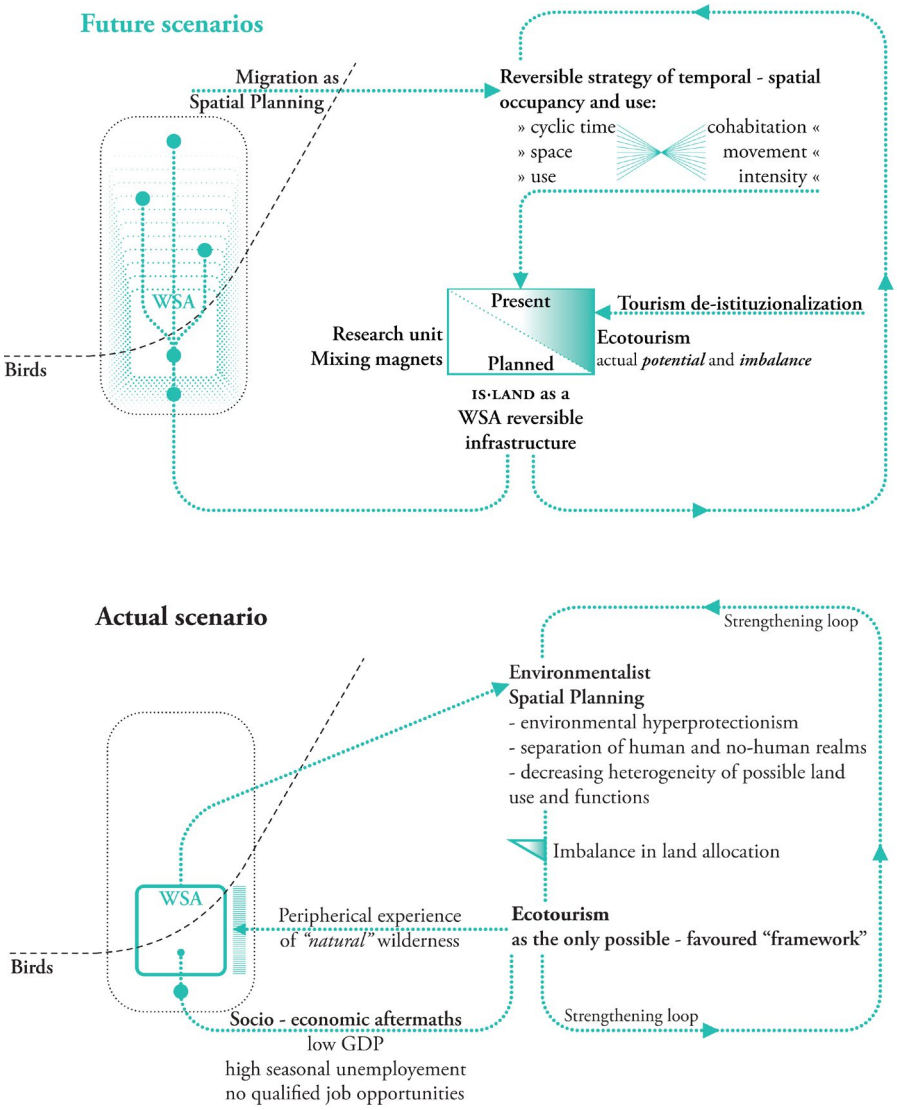
Post-environmental models should be reversible, inclusive, less dogmatic, fluid, open to biodiversity, less anthropocentric, etc.

WSA is loosing attraction capacity because of the environmentalist planning imbalances.

Future planning should encourage a new equilibrium and functional mix, based on cyclical time, space and type - intesity of use.

Tourism is loosing its status of social ritual and it's rapidly de-institutionalizing. Actual scenario claims for a redesign of the entire WSA ecotouristic infrastructure.

Tourism won't disappear. It will merge in daily life: living, working and leisure time will be intertwined seamlessly. Technology, as a mediator among human body, domestic landscape and outer realm will enhance this transition.



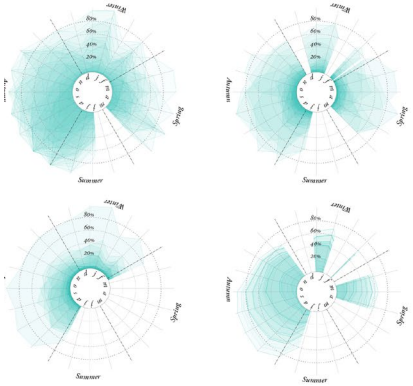
Comparison between different approaches to spatial planning

Blurring Boundaries:
Time, Space and Cycles at Wadden Sea

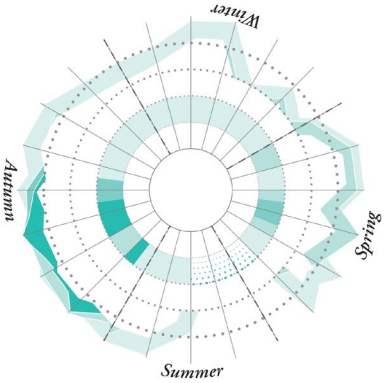
Beyond ecotouristic segregated model, we suggest thinking of Wadden Sea Area as a “mixing chamber”: a post-environmental model of territorial management at regional scale that:
- softens the neatness of the actual protected area limit
- promotes a greater porosity of the “sensible area” borders
- reduces access and crossing constraints (on some control conditions) in WSA
- increases, diversify and overlaps heterogeneous activities through synergies which can manage and take advantage of the cyclical variations at WSA
- promotes an energetic strategy based on a redundant grid of scattered elements

Whitin this plan, we propose developping Is·land: a mobile infrastructure supporting **migrating birds and a heterogeneous nomadic community** (productive, scientific, touristic, residential), promoting forms of positive interaction and virtuous circles among these actors and establishing a tight interdependece between territory and Is·land.

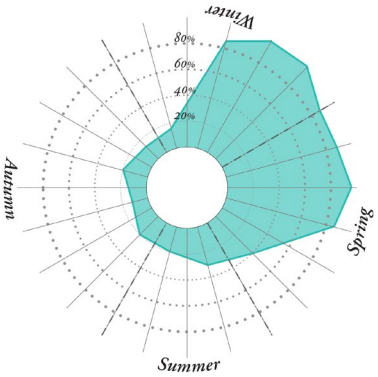
Birds phenology at WSA: peaks



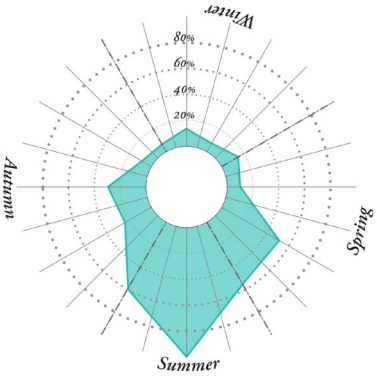
Birds and Ornithologic Researchers Phenology



Mussel & Cockles biocycle and their workers

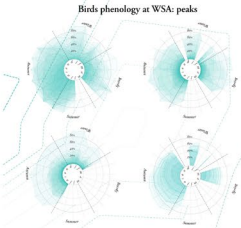


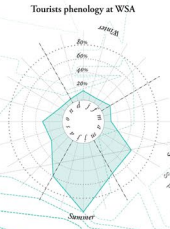
Tourists phenology at WSA

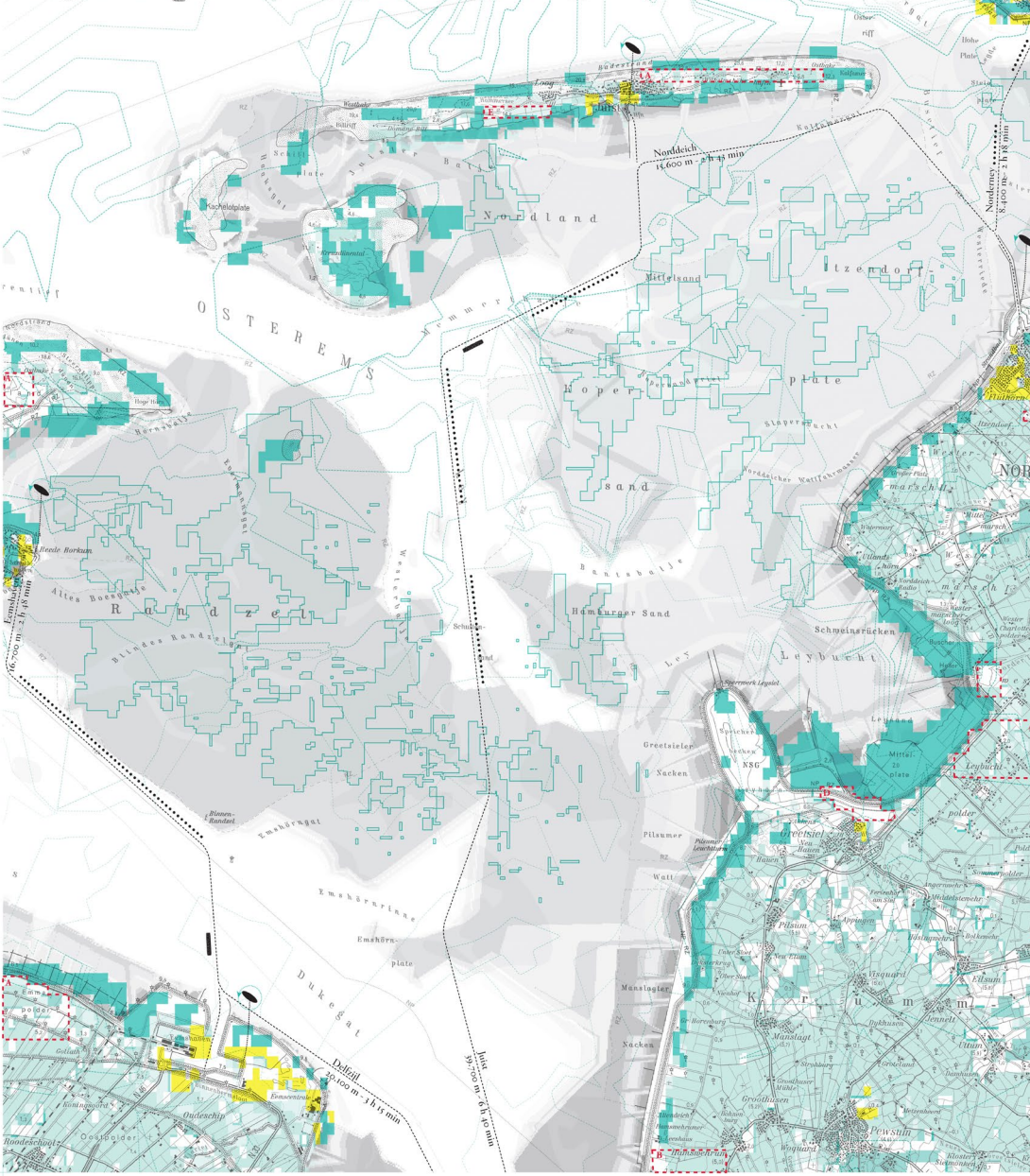


These schemes show activity peaks of different possible users (birds, tourists, researchers, mussel & cokle farmers) fluctuate through the year: by integrating these variations we can superimpose transient programs, overlay compatible activities, loosen the plan rules.

CHRONOPROGRAM:
it's possible to integrate heterogenous activities and users (birds, tourists, research workers, mussel & cockle farmers), **during the yearly cycle, by taking advantage of cyclical fluctuations of mentioned phaenomena**







Scale: 1 : 100.000

Bird Density *(based on GROMS and BAMBAS)*

Area attractiveness for migratory birds
(decreasing)

- **Feeding areas,** intertidal flats and marshes
- Areas lying on regularly flooded soil
- Grassland
- Rainfed cropland
- Mosaic cropland of vegetation
- Urban consolidated fabric

Stranding risk during tidal cycle *(s m draft)*
[% of time on total cycle]

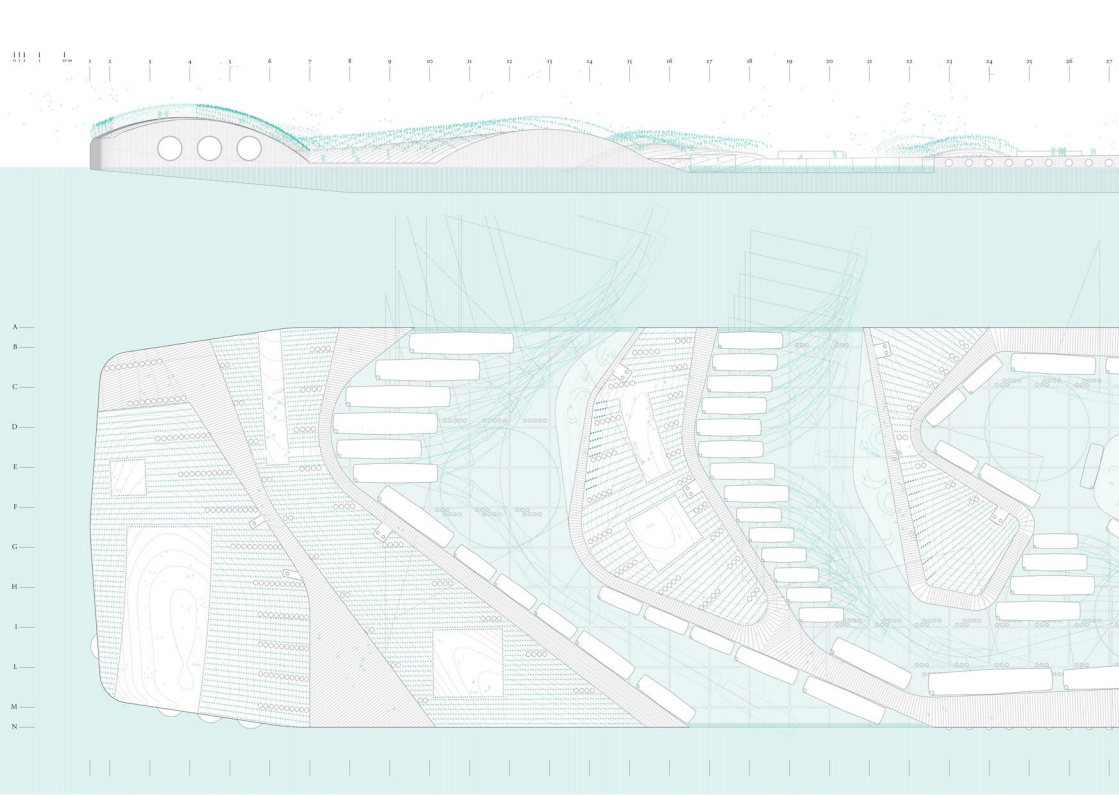
20 30 40 50 60 70 80 90%

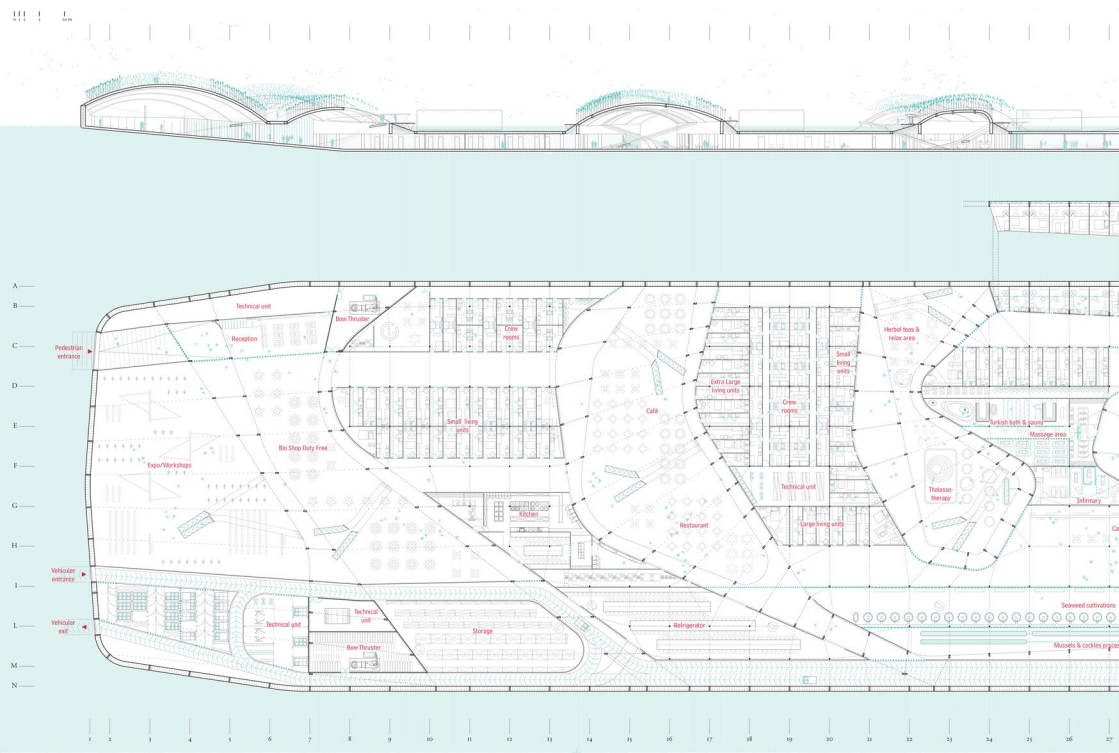
Strategies:

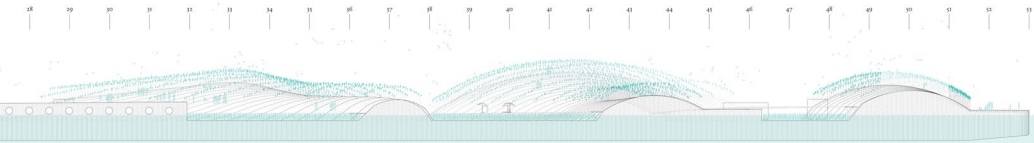
- A Enhancing agricultural use
- B Consolidating grassland
- C Extending grassland
- D Connecting wetlands, marshes, waterponds
- E Extending wetlands, marshes, waterponds
- F Promoting dunal restoration

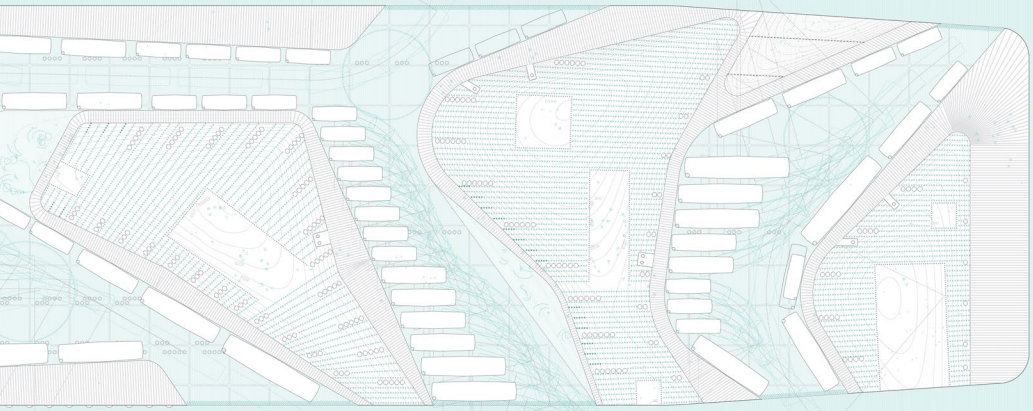
Mussel suspended farms

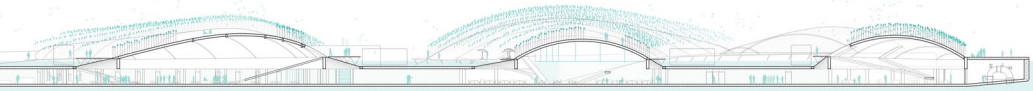
Dispersed net of Magenn 100 KW heolic generators: helium inflated baloons are theetered at 300 m height, where winds are stronger and stables.
They balance local deficit of IS-LAND and sell surplus energy to the national Grid, in favourable moments.



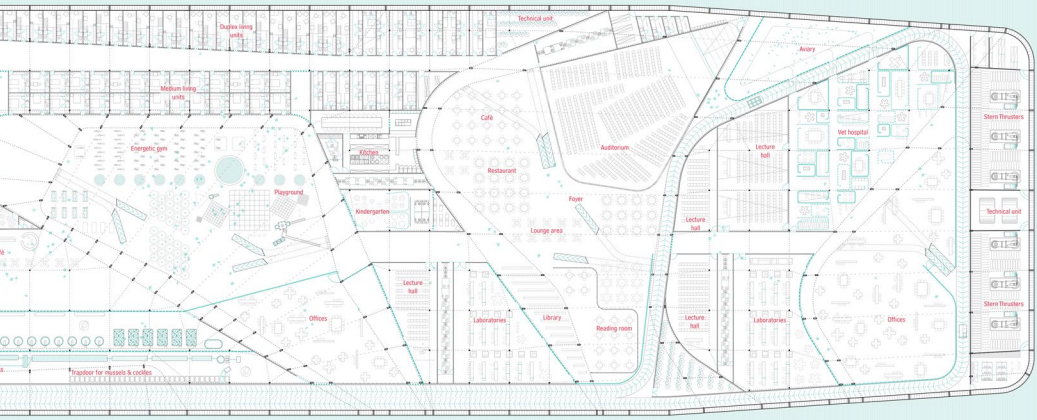

Technical unit
Bow Thruster
Reception
Pedestrian entrance
Crew rooms
Herbal teas & relax area
Small living units
Extra Large living units
Café
Crew rooms
Small living units
Turkish bath & sauna
Massage area
Bio Shop Duty Free
Expo/Workshops
Technical unit
Thalasso therapy
Infirmary
Kitchen
Restaurant
Large living units
Vehicular entrance
Vehicular exit
Technical unit
Technical unit
Storage
Bow Thruster
Refrigerator
Seaweed cultivations
Mussels & cockles procession







Level +0,5


Duplex living units
Technical unit
Aviary
Medium living units
Café
Stern Thrusters
Energetic gym
Kitchen
Auditorium
Vet hospital
Restaurant
Lecture hall
Playground
Foyer
Technical unit
Kindergarten
Lounge area
Lecture hall
Lecture hall
Stern Thrusters
Offices
Laboratories
Library
Reading room
Laboratories
Offices
Roadbed for mussels & caddies

Is·land:
- Strategies and Program
- Synergies
- Structure and Space

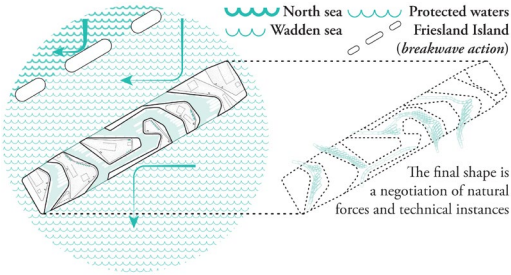
Is·land is a middle earth, suspended between landscape and domestic scale. It'is an extremely **site specific** mobile platform. It's the "visible" element of a strategy (deployed at different scales with diverse intensity an physicity) focused on the management of regional imbalances, and on taking advantage of its inexpressed potentialities.

Is·land is **not a self-sufficient monad** (one of the weakness of floating utopias from the Sixties). Everytime it lands, Is·land receives material and energetic inputs from the territory in exchange of material and intangible products developed in its interior. Is·land accepts agricultural-food products planted-bred in selected areas within blurring boundaries ribbon, recharges its batteries thanks to Magenn rotors; in return Is·land converts itself in a **temporary plug** for each of the guest cities.

Is·land is a marina, a mobile market where one can find fish-mussel products processed in its facilities, an exhibition space, a conference room, a workshop center, a regional-bio delicatessen shop, a restaurant, a love boat, ...

Is·land is a **mobile harbour** floating in a vast area protected by a breakwave ribbon of islands, which reduce significantly wave intensity.

Moreover, the emerged areas of is·land tend to enclose calmer water canals, which contribute to a pleasant mooring. The final shape of the canals derive from the circulation and manoeuvre space of the mooring Floating Living Units.



Is·land moves in an everchanging region. 8 underwater hidrojet thrusters (the most effective solution in case of minimal seabed depths) guarantee both the slow (3 knots) movement of is·land and an exceptional manoeuvrability.

Reduced speed generates a **perceptive ambiguity** (when looking at this "hybrid scale object"), limits its wave generation and, most of all, minimize drag resistance (proportional to the square of the speed) so that Is·land needs only a 3000-4000 KW motor to move forward. Moreover, its movement is **synchronized** with tidal cycle and favoured by tidal streams to reduce even further the energetic request.

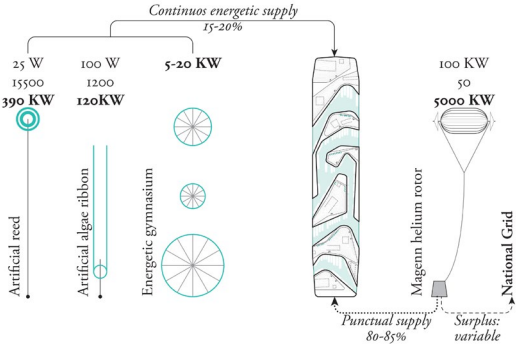
Hidrojet thrusters + Tidal stream

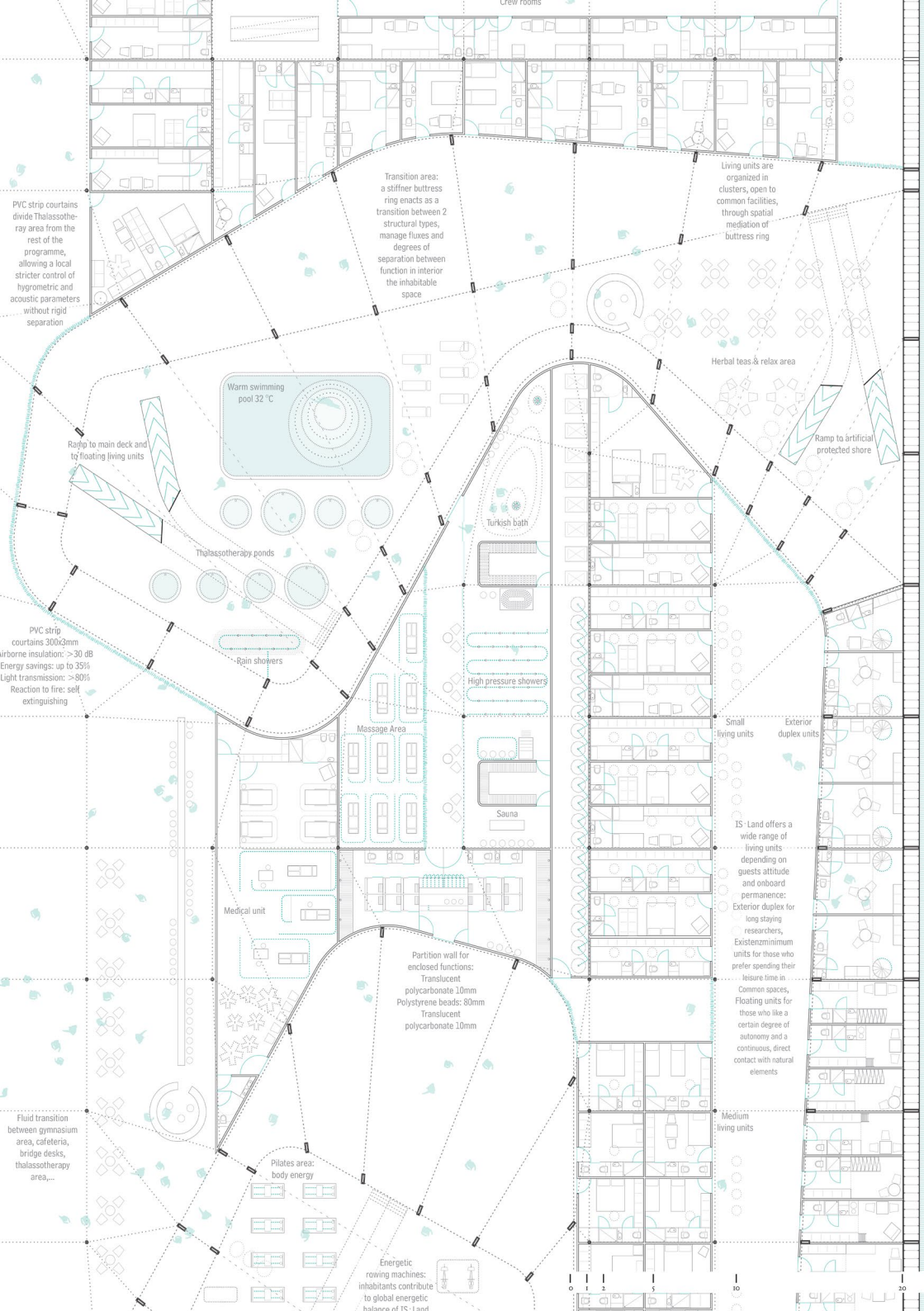
Is·land's propellers and technical units (5000-6000 KW request) are powered by 3 electrical engines. The energy required for navigating between harbours is stored in rechargeable lithium batteries.

About 15-20% of the energy required is supplied directly on board

by a set of diverse productive devices which generate energy through constant interaction both with Is·land's residents and local natural forces:
- an artificial reed, made by 15000 2,5m sticks (25W each) (similar to the Salvador Pérez Arroyo's proposal for the HIV Memorial, San Francisco, 2005) swaying in the Wadden Sea winds, that covers the main deck creating a functional **hybrid landscape for birds and humans**
- artificial algae ribbon: these flexible sticks (100 W each) (technically equivalent to the artificial reed) are placed strategically on is·land perimeter, at water channels entrance, to produce energy and further reduce wave movement for the moored Units
- energetic gymnasium: collects symbolically 5-20 KW through wellness machines (static bycicles, rowing machines, trampolines, etc) claiming Is·land **hedonistic** residents awareness and commitment in energetic issues.

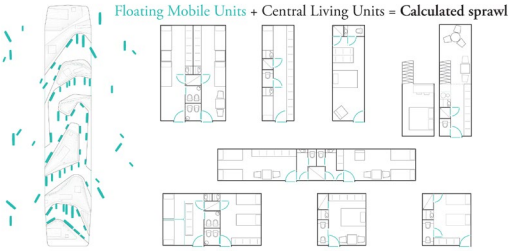
The rest of the energetic share is supplied by 50 Magenn heolic Rotors (100 KW each) located at every landing harbours. When moored, Is·land recharge its batteries, otherwise this **net of scattered elements** sells the surplus to the National Grid, balancing Is·land energetic deficit. Moreover, these helium inflated baloons (tethered at 300m height, where winds are stronger and more stable) convert themselves into a recurring **landmark** able to unify perceptually the WSA and re-structure the nodal hierarchy of the region.



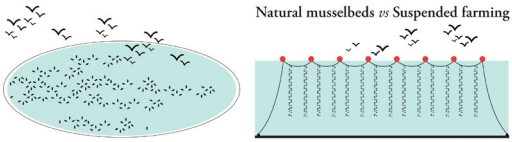

Crew rooms
Transition area: a stiffner buttress ring enacts as a transition between 2 structural types, manage fluxes and degrees of separation between function in interior the inhabitable space
Living units are organized in clusters, open to common facilities, through spatial mediation of buttress ring
PVC strip curtains divide Thalassotherapy area from the rest of the programme, allowing a local stricter control of hygrometric and acoustic parameters without rigid separation
Herbal teas & relax area
Warm swimming pool 32 °C
Ramp to main deck and to floating living units
Ramp to artificial protected shore
Turkish bath
Thalassotherapy ponds
PVC strip curtains 300x3mm
airborne insulation: >30 dB
Energy savings: up to 35%
Light transmission: >80%
Reaction to fire: self extinguishing
Rain showers
High pressure showers
Massage Area
Small living units
Exterior duplex units
Sauna
IS · Land offers a wide range of living units depending on guests attitude and onboard permanence: Exterior duplex for long staying researchers, Existenzminimum units for those who prefer spending their leisure time in Common spaces, Floating units for those who like a certain degree of autonomy and a continuous, direct contact with natural elements
Medical unit
Partition wall for enclosed functions:
Translucent polycarbonate 10mm
Polystyrene beads: 80mm
Translucent polycarbonate 10mm
Fluid transition between gymnasium area, cafeteria, bridge desks, thalassotherapy area,...
Medium living units
Pilates area: body energy
Energetic rowing machines: inhabitants contribute to global energetic balance of IS · Land
0
1
2
5
10
20

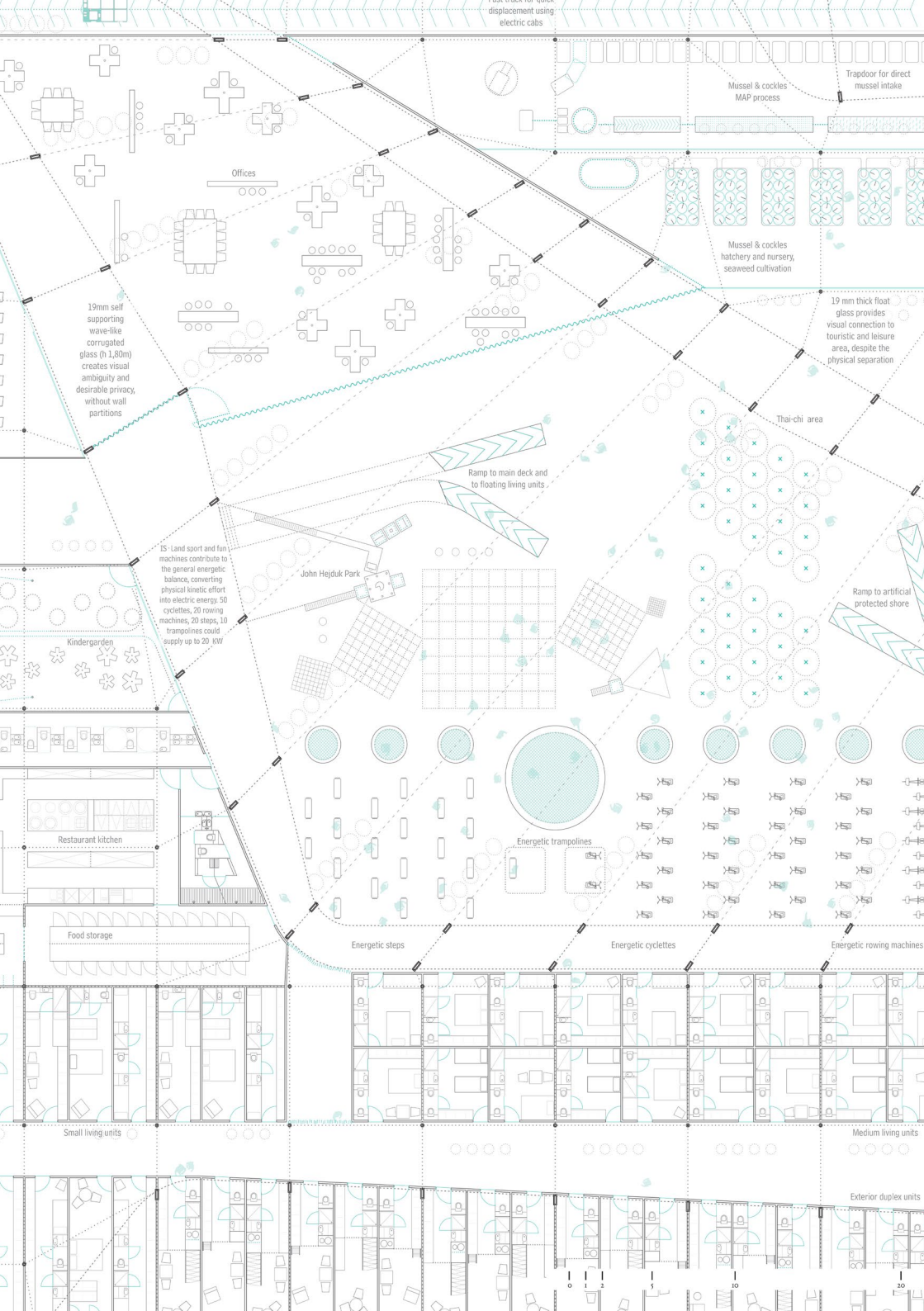
Is·land provides services and common facilities to a **nomadic**, diversified community (1000-1200 people) with different degrees of **autonomy and dependance** from the Is·land. The offer spans from:
- Central Living Units (S, M, L, Duplex, with/without natural light) that open directly on is·land's common facilities,
- Floating Mobile Units (about 100 9 to 25 meters boats; 2 to 12 people per unit)that enable inhabitants and tourists to plan their own movements independently of the "central core".

Is·land promotes a **calculated sprawl** strategy (Price, 1964 - Potteries Thinkbelt) as an operative tool to redistribute "real time" human density and his impact all over the Wadden Sea Area according to post-environmental issues.

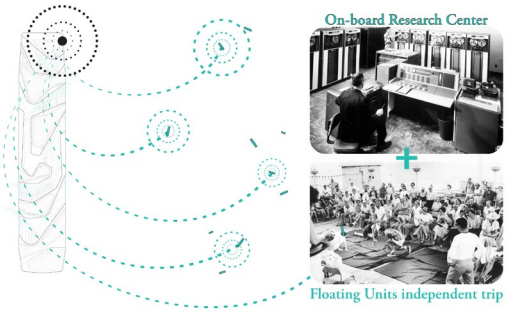


During the last years, dredging activity has reduced so much mussel resources that it has been introduced a very strict regulation. Is·land proposes suspended mussel farming as a strategy to **reduce the human-birds competitiveness on natural musselbeds** and to activate a **regional extended filter against eutrophication**. Moreover, this shift enables a higher surplus value process and could attract more skilled workers, both during the research stage and farming one.




Fast track for quick displacement using electric cabs
Trapdoor for direct mussel intake
Mussel & cockles MAP process
Offices
Mussel & cockles hatchery and nursery, seaweed cultivation
19mm self supporting wave-like corrugated glass (h 1,80m) creates visual ambiguity and desirable privacy, without wall partitions
19 mm thick float glass provides visual connection to touristic and leisure area, despite the physical separation
Thai-chi area
Ramp to main deck and to floating living units
IS - Land sport and fun machines contribute to the general energetic balance, converting physical kinetic effort into electric energy. 50 cyclettes, 20 rowing machines, 20 steps, 10 trampolines could supply up to 20 KW
John Hejduk Park
Ramp to artificial protected shore
Kindergarden
Restaurant kitchen
Food storage
Energetic trampolines
Energetic steps
Energetic cyclettes
Energetic rowing machines
Small living units
Medium living units
Exterior duplex units
0
1
2
5
10
20

is·land is an advanced hotspot on **flora-faunistic research** of WSA and a meeting-working spot for heterogeneous researchers (ornithologists, biologists, oceanographers, etc). Research takes advantage of is·land's inhabitants-tourists trips to collect a useful bunch of environmental data: **involuntary forms of virtuous collaboration**.

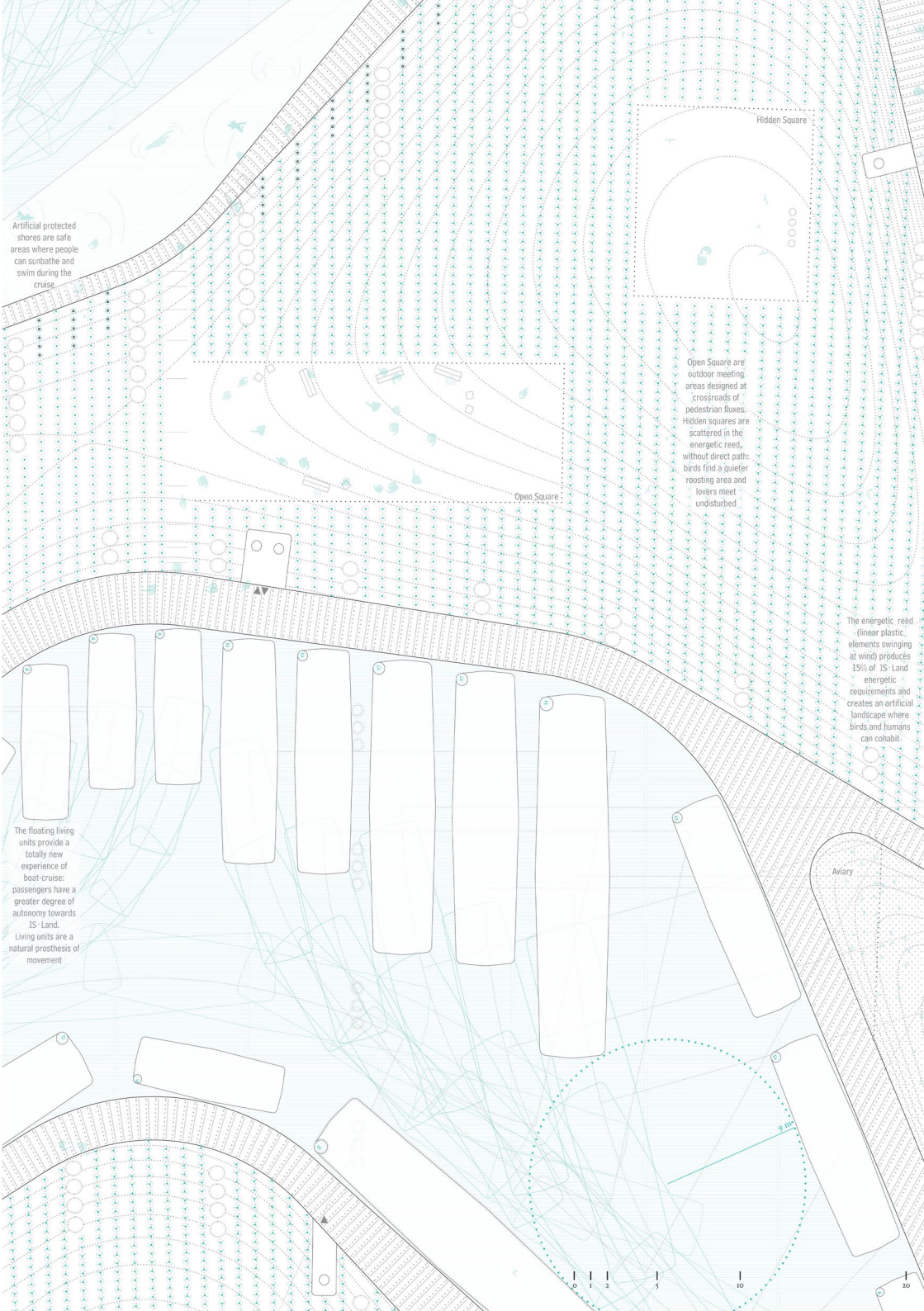


Is·land is a floating, semi-submergible platform; from a technical point of view, it's an hybrid between a smuggler semisubmarine and a cargo barge.

Is·land is a 3d habitable structure. A continuous perimetral hull of steel elements is joined to a structural skin made of SPS (Sandwhich Plate System). Is·land spaces are shaped and rhytmed by **2 structural systems and a stiffening-transitional element**:

- 8x8m array with steel pillars and uniform height ceiling: mainly the ones for private functions. This homogeneous array reduces the risk of buckling of the structural external framework
- vaulted ceiling areas with variable span arks (5-25 m): accomodate public programs. The arks insist on a perimetral rigid ring: a buttress which distribute and dissipate the ark pushes.
- buttresses, linked toghether and connected to the external hull, increase the stiffness of the whole, enact as a transition between 2 structural types, manage **fluxes and degrees of separation between functions** in the inhabitable space of is·land

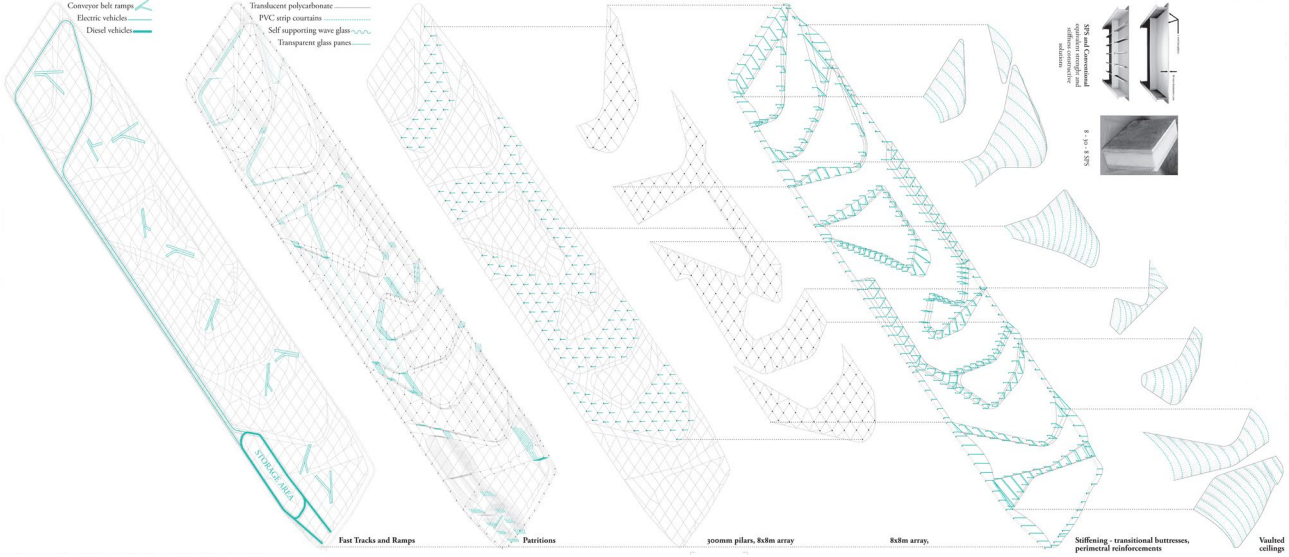
Translucent polycarbonate partitions, PVC strip courtains, self-


Hidden Square
Artificial protected shores are safe areas where people can sunbathe and swim during the cruise.
Open Square are outdoor meeting areas designed at crossroads of pedestrian fluxes. Hidden squares are scattered in the energetic reed, without direct path: birds find a quieter roosting area and lovers meet undisturbed
Open Square
The energetic reed (linear plastic elements swinging at wind) produces 15% of IS-Land energetic requirements and creates an artificial landscape where birds and humans can cohabit.
The floating living units provide a totally new experience of boat-cruise: passengers have a greater degree of autonomy towards IS-Land. Living units are a natural prosthesis of movement
Aviary
9 m
0
1
2
5
10
20

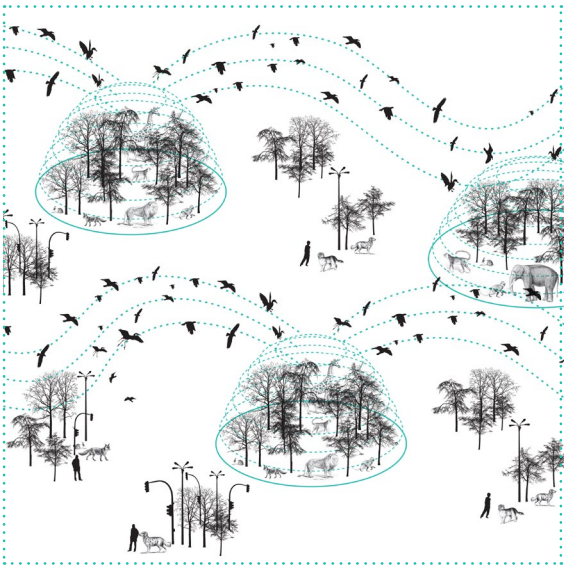
supporting wave-like corrugated glass and transparent glass panes **modify the physical perception of the interior landscape**.

Motorized vehicles circulate on separated fast tracks to guarantee a free and secure access to technical and productive areas.

Residents move freely among the functions grouped on the semi-submarine area while 10 “conveyor belt ramps” connect with fluidity the upper and lower deck **merging outside landscape into the interior one and viceversa**.


Conveyor belt ramps
Electric vehicles
Diesel vehicles
STORAGE AREA
Translucent polycarbonate
PVC strip courtains
Self supporting wave glass
Transparent glass panes
SIPS and Conventional
equivalent corrugated and
reinforced concrete
solutions
8 - 10 SIPS
Fast Tracks and Ramps
Patritions
300mm pilars, 8x8m array
8x8m array,
Stiffening - transitional buttresses,
perimetral reinforcements
Vaulted
ceilings

Is·land



Enrico Forestieri