

< Open_Sailing >

<!-- Participate -->

<Version> 2009.02.27 </Version>

<URL> <http://opensailing.net> </URL>

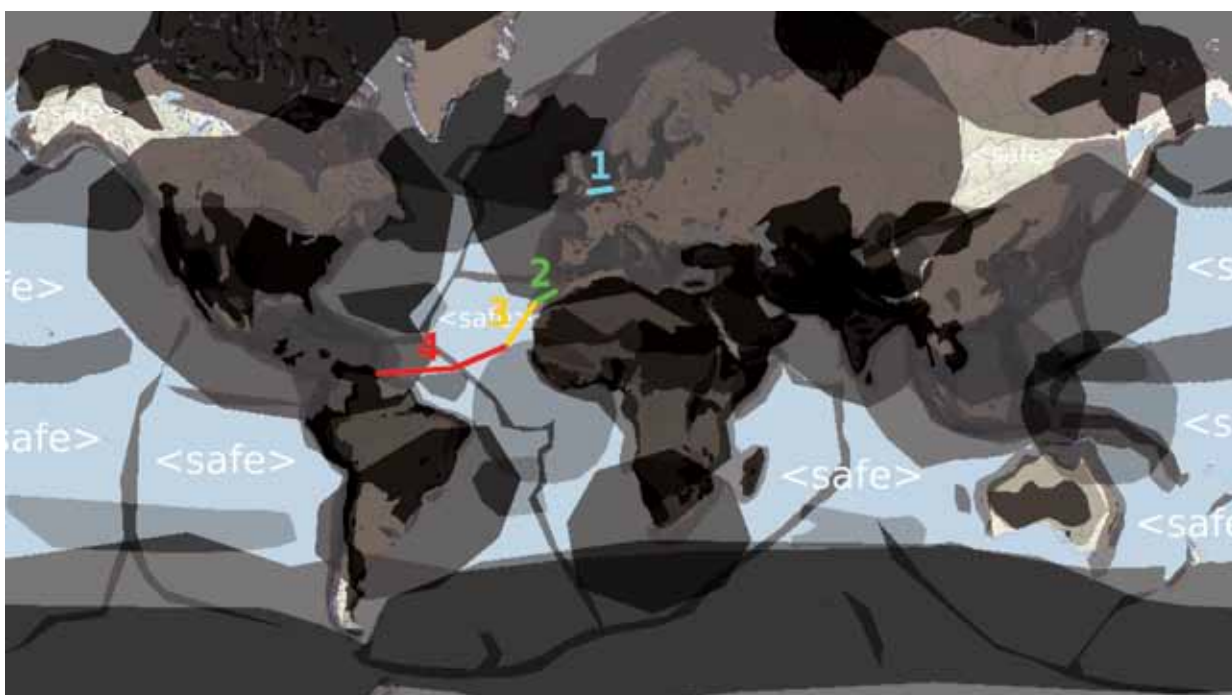


<subtitle> We are building a floating architecture that evolves like a living organism, a laboratory for techno-social experiments.</subtitle>

<tags> future, open architecture, liquid, lifestyle, ocean, farming, lifeboat, shelter, renewable energies, biology, swarm computing, open source, design interactions, technology, hardware API, instinct, animal </tags>



Living : nourish, excrete, grow, breathe, reproduce, respond to stimuli, move.
Open Architecture : "pluggable" shape, change over time, social construction.



Civilization and natural threats (dark) and safe areas.
Journey 00 (explained in this leaflet), 01, 02 and 03 of the Open_Sailing-01.

< What_How >

We are building a floating architecture that evolves like a **living organism**, a laboratory for techno-social experiments.

"Open_Sailing" aims to design an attractive technological lifestyle to overcome any possible natural and man-made disaster, stimulating people's ingenuity and sense of solidarity. Be it overpopulation, global warming or energy conflicts, we are living in a time where "Apocalypse" beckons. We need to collectively invent and spread bootstrapping DIY technologies for the forthcoming challenges, not only to survive but to re-invent how we inhabit this planet.

We are trying to create a truly "**Open_Architecture**". This is a drifting village of solid and comfortable shelters surrounded by flexible ocean farming units : fluid, pre-broken, reconfigurable, sustainable, pluggable, organic and instinctive. The Open_Sailing_01 is about 50 m in diameter, for 6 persons.

In the process we are developing and testing numerous novel technologies, such as "Instinctive_Architecture", "Energy_Animal", and "Life_Cable" within an innovative nomadic ecosystem. The "Swarm_Search_Engine" is a distributed operating system that suggests a general safest location and a form for the overall structure that constantly reconfigures itself in order to provide intelligent distribution of supplies, energy and information.

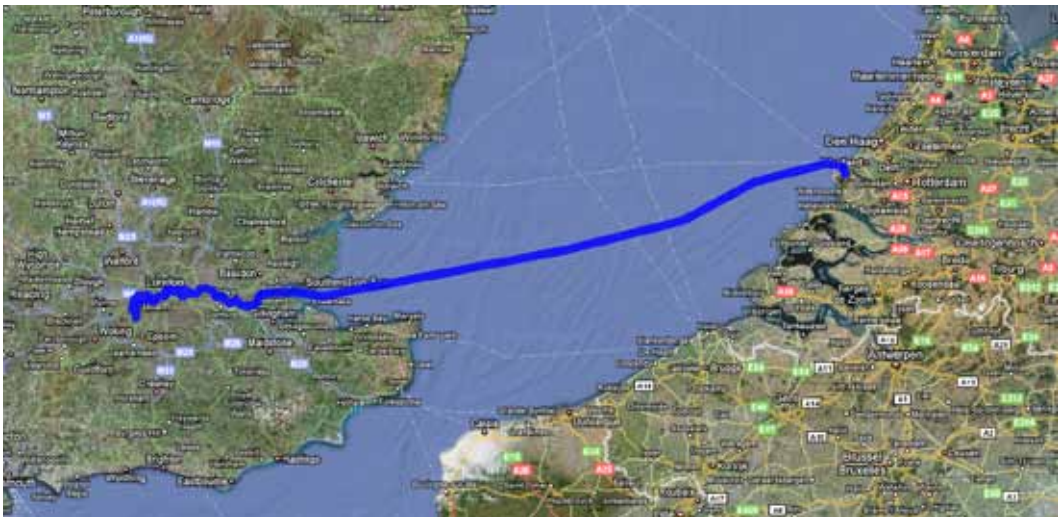
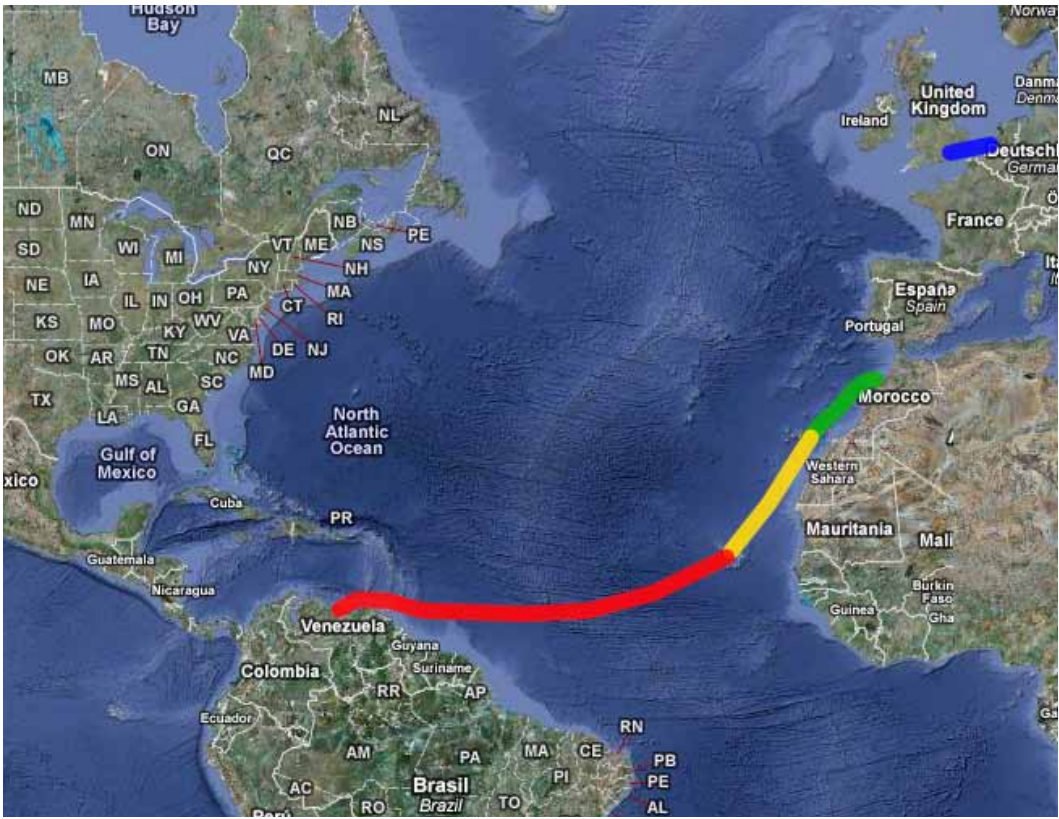
Open_Sailing aims to ask questions about the way we currently inhabit our planet. Can we reach a harmonious dynamic state of interdependence with each other and the earth? Is this **the next step for civilization**? Will we disassociate our concept of progress with rigid infrastructure and metropolis? We believe that we can, and we must try.

We are a constantly growing, multidisciplinary, international team of about 15 people designing and engineering the prototype that is being built now in the UK, France and Morocco under the mentoring of numerous experts. **Open_Sailing_01 will set sail in may 2009**, attempting to drift from [London to the Netherlands](#), followed by a normal escort boat for safety. If we succeed with the first journey, our second phase [Open_Sailing_02](#) will focus on enhancing the fleet operating and hardware system, travelling from El-Jedida (Morocco) to Las Palmas in the Canary Islands (Spain), than [Open_Sailing_03](#) to the Azores Islands (Portugal).

Finally [Open_Sailing_04](#) is the proper long term test the from The Azores, under the power of currents and drift, to Brazil.

Open_Sailing is a high-technology, green, innovative, exciting project!

Join the crew and be a part of it!



Open_Sailing_01 : London to Rotterdam 346 km

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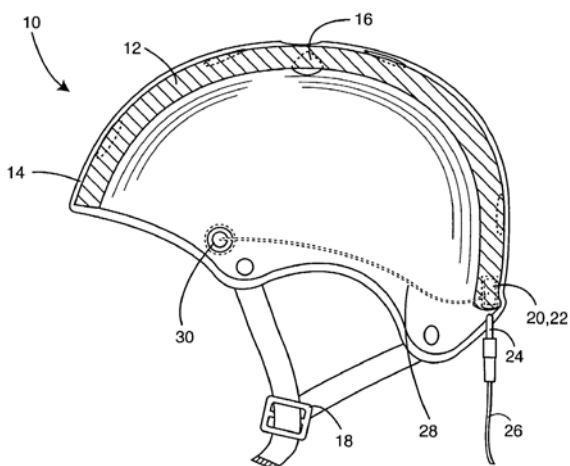
< Design_problem >

< Tsunami_ready_maritime_design >



Every week a large boat disappears in the world oceans. May it be an immense containership, a fishing boat, a cruise boat, every week precious lives and equipment could be saved.

We are trying to invent a radical new way to resist the worst hurricanes and rogue waves (>30m high waves applying a 100t water impact per m² on a ship) by having a layered skin alternating soft shock-absorbing material with rigid layers, a bit like motorbike helmets.

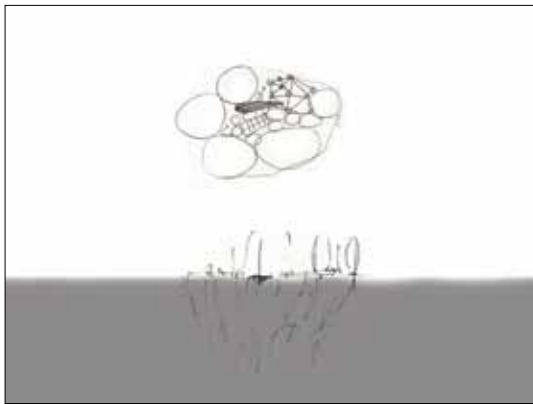


Our second idea is to distribute the "ship" functions in many independent modules, and being able to easily reconfigure the Open_Sailing structure according to the weather conditions. In the storm, the passengers are in the central invincible shelter.

< Design_innovation >

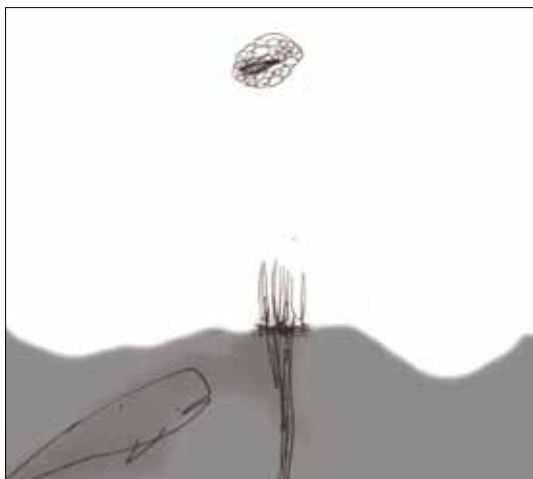
< Instinctive_Architecture >

< Harvest >



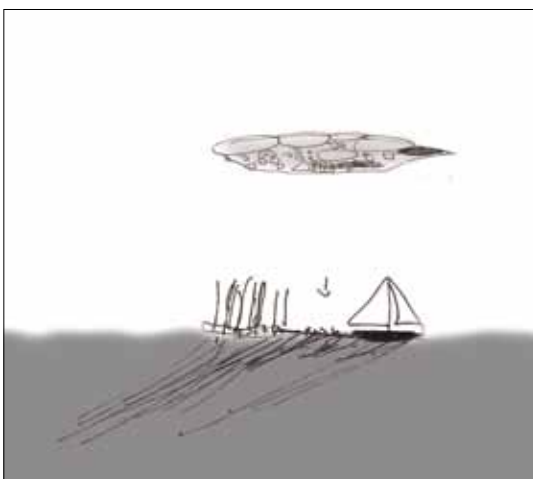
When the weather is good, the Open_Sailing aims to spread to offer its farming facilities the maximum volume to thrive. We harvest algae, plankton, fishes, birds and a few salty atmosphere resistant land vegetables and fruits. Solar ovens, wind turbines and pendulum solenoid generators all move in order to achieve optimum energy harvest.

< Protect >



When the weather is bad or a threat approaches, the village amalgamate to become compact and dense.

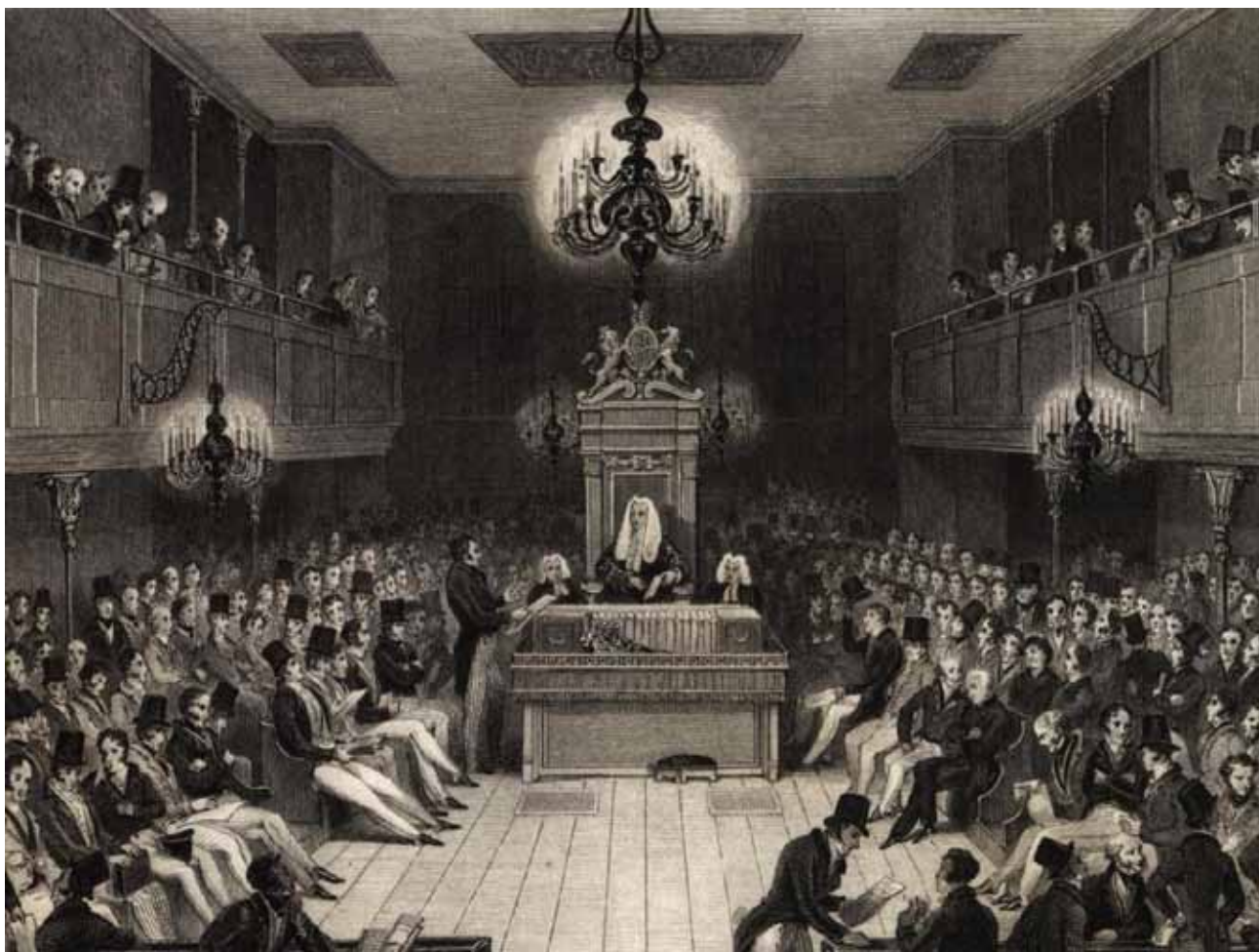
< Move >



The Open_Sailing is for most a drifting loose structure riding the main currents, but it can deviate its trajectory using massive kites and underwater sails and nets, the propulsion units dragging the village.

< Design_problem >

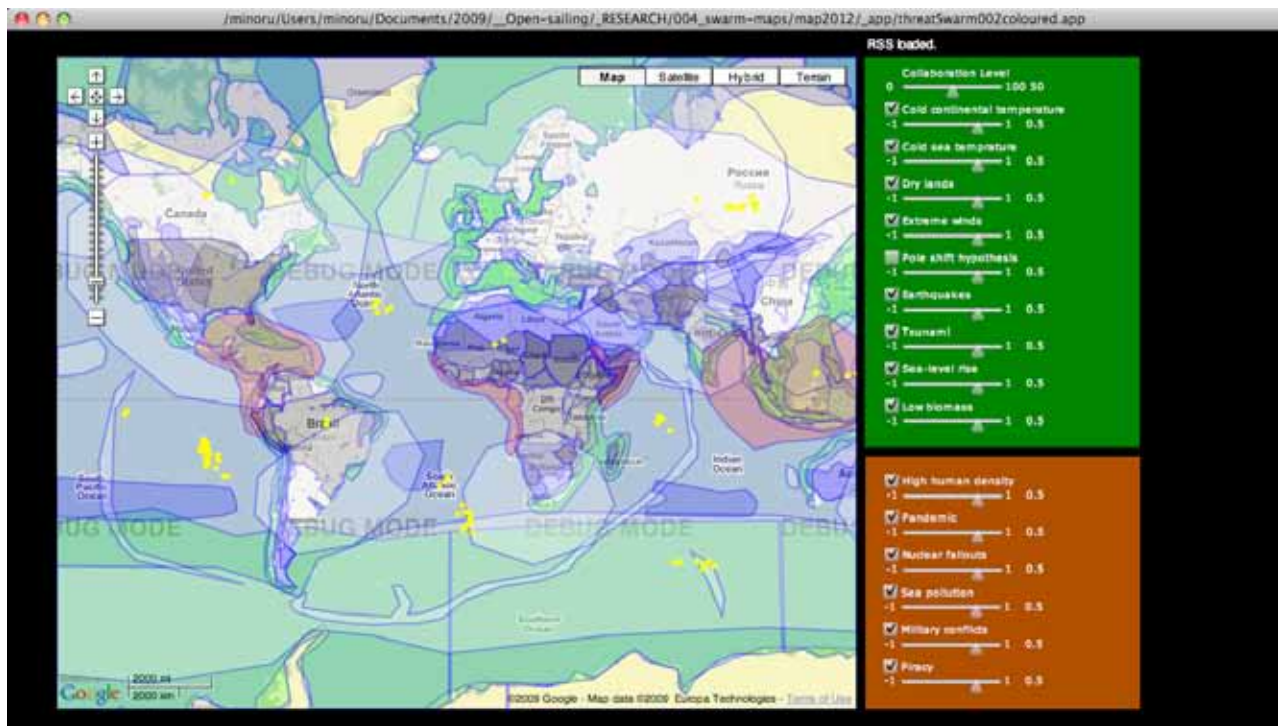
< Democracy_2.0 >



Since many years, political think tanks and technologists advocates we should re-think our political system in order to provide a more efficient governance using contemporary technology, going toward a "Object oriented politics ("Dingpolitiks" Bruno Latour 2005), a more participative (democracy 2.0) and specific political operating system that would concentrate on "debugging" particular problems, rather than trying to organized a complex number of issues according to a single ideology, or opposing ideologies.

< Design_innovation >

< Swarm_operating_system >



The "Swarm search engine" works using RSS web feeds including weather forecast, but also real-time pollution analysis, news, dangerous and attractive spots (peace, food, good weather, good things) : each shelter (yellow point) can constantly compute its desired position and aim for the safest and nicest location, while interacting with other shelters (the fleet); an object-oriented politic, a computer-assisted decision-making tool for each and everyone.

< Design_problem >

< Over_fishing,_Industrial_Aquaculture >



Many industrial fishing processes are destructive (explosive fishing, electric, poison...) and intensive closed aquaculture often leads to the development of diseases due to overpopulated fish farms in semi-stagnant waters.

< Design_innovation >
< Mobile_Ecosystem >



Anything that is left to float on the surface of the sea gets a lot of biological fouling (algae, parasites) unless you are using a highly pollutive paint. We encourage biofouling, as it creates a habitat, for the very small to the very big, a nomadic ecosystem, a drifting open farm. Instead of enclosing fishes, we create an open environment they are free to come in and out. Above is a solar oven coupled to a heat dissipation system to create a micro-climate underwater.

< Design_problem >

< Growing_population_and_food >



Everyday thousands of people attempt to immigrate legally and often illegally out of many die without traces. What if ocean living was attractive? More attractive than living on earth?

< Design_innovation >

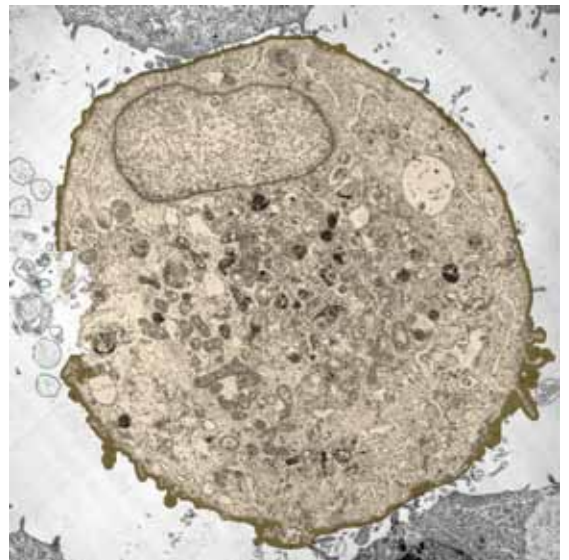
< Aquaculture_Dietetic >



Since centuries, explorators had difficulties standing the high-seas for long periods, mostly because of a lack of drinking water, carbo-hydrates, vegetable fibers and several vitamins. We have the technology today to prove we can live from sea yummy resources only. Aquaculture is a farming sector that recently boomed and will keep on growing with the evergrowing population, the seas are the next fields. Today, in many places we are in a situation of overfishing, nomadic farming could be a remedy to diseases fishes develop in semi-stagnant waters.

< Growing_flexible_architecture >

What if we had an architecture that can grow, divide, depending on the usage and dynamic?



< Design_problem >

< Energy_crisis >



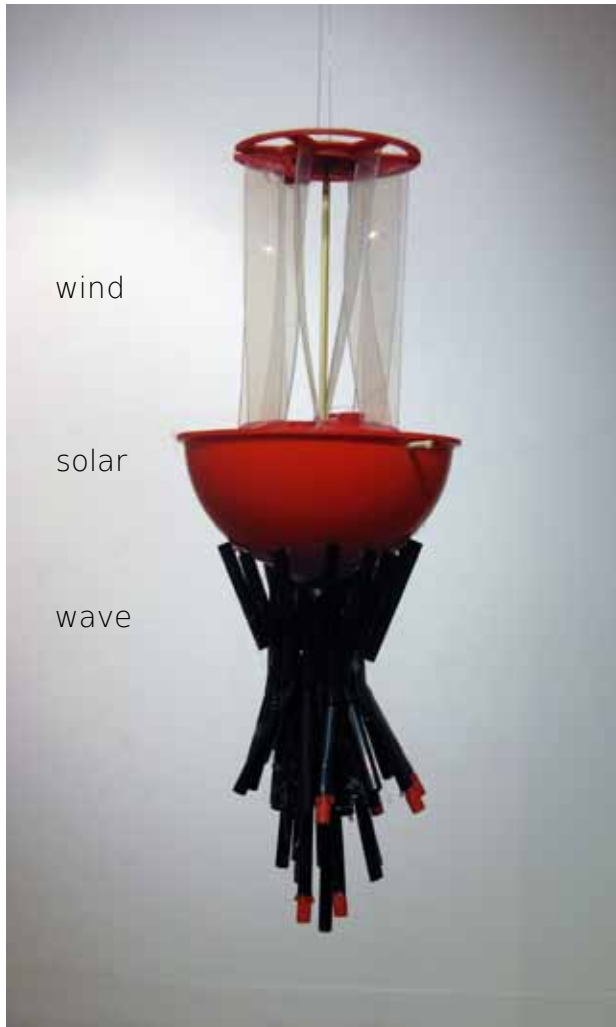
Energy crisis often rimes with war.

To avoid energy conflicts, we can redistribute energy sources in smallest units spread over the territory, where it is needed, having less infrastructure, storage, transmission loss and maintenance.

The problem with renewable energies (using natural forces) is they tend to have an irregular production according to weather variations. Storing a large amounts of energy is too pollutive and expensive, this is why nuclear power is often preferred. What if we could produce a more continuous flow of local renewable energy?

< Design_innovation >

< Energy_Animal >



Sometimes it is sunny, and in that case, there tend to be little waves but a lot of solar energy to be made. Sometimes it is grey and stormy, and in that case there is little to do with the sun, but a lot of energy to be made from the kinetic energy of waves. The "Energy Animal" combines different energy sources to work in various weather conditions, generating a more stable output of energy to use (less to store). It is preferable to spread the resource but it is also very easy to create grid colonies of "Energy Animals".

< Renewable_energy_laboratory >



Solar oven (heat concentrator) and heat dissipation "tail", creating a pole of attraction for life.



Wind electric buoy generator. Multiple inputs immersed battery
We are combining and testing combined renewable energy technologies.

< Design_problem >

< Infrastructure_installation >

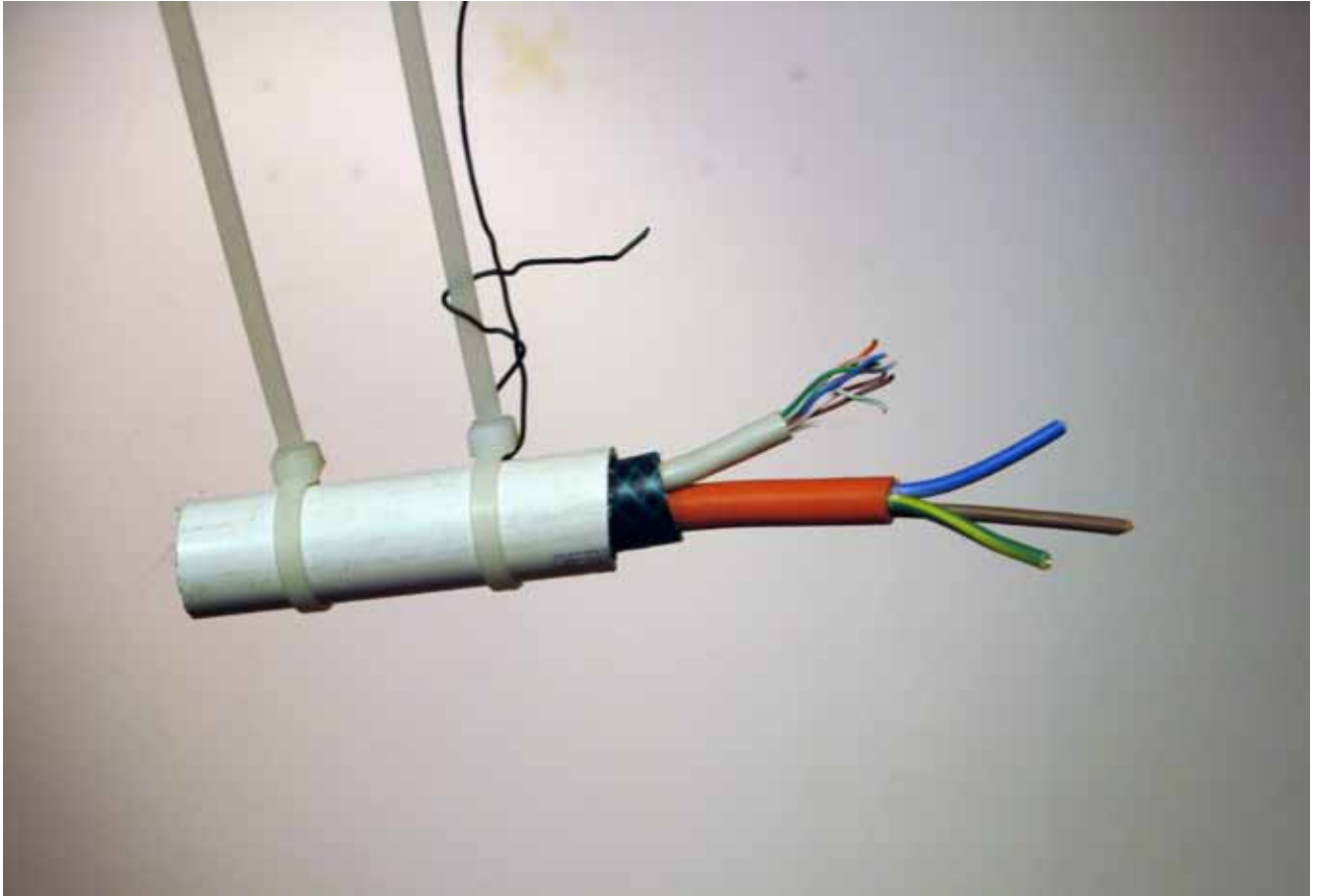


Installing infrastructure sometimes causes huge environmental impact, labour, money and time : for example to provide water, electricity and communication to a remote unit in the Amazon rainforest, it is required to cut a wide ditch for each cable which implies cutting many trees. We can invent a standard solution with these different cables combined into one safe cable, easier to install and maintain, cheaper, safer and more environmentally sound.

Such a cable could find application in space inhabiting research and in the Open_Sailing as a construction API (standards)

< Design_innovation >

< Life_Cable >



The "Life Cable" is a norm of cable that transports energy (electricity), data, water & drain, gas (air, others) in one single versatile cable. We are also designing a "plug" and associated terminal with safety and efficiency in mind.

< Design_problem >

< International_Space_Station >

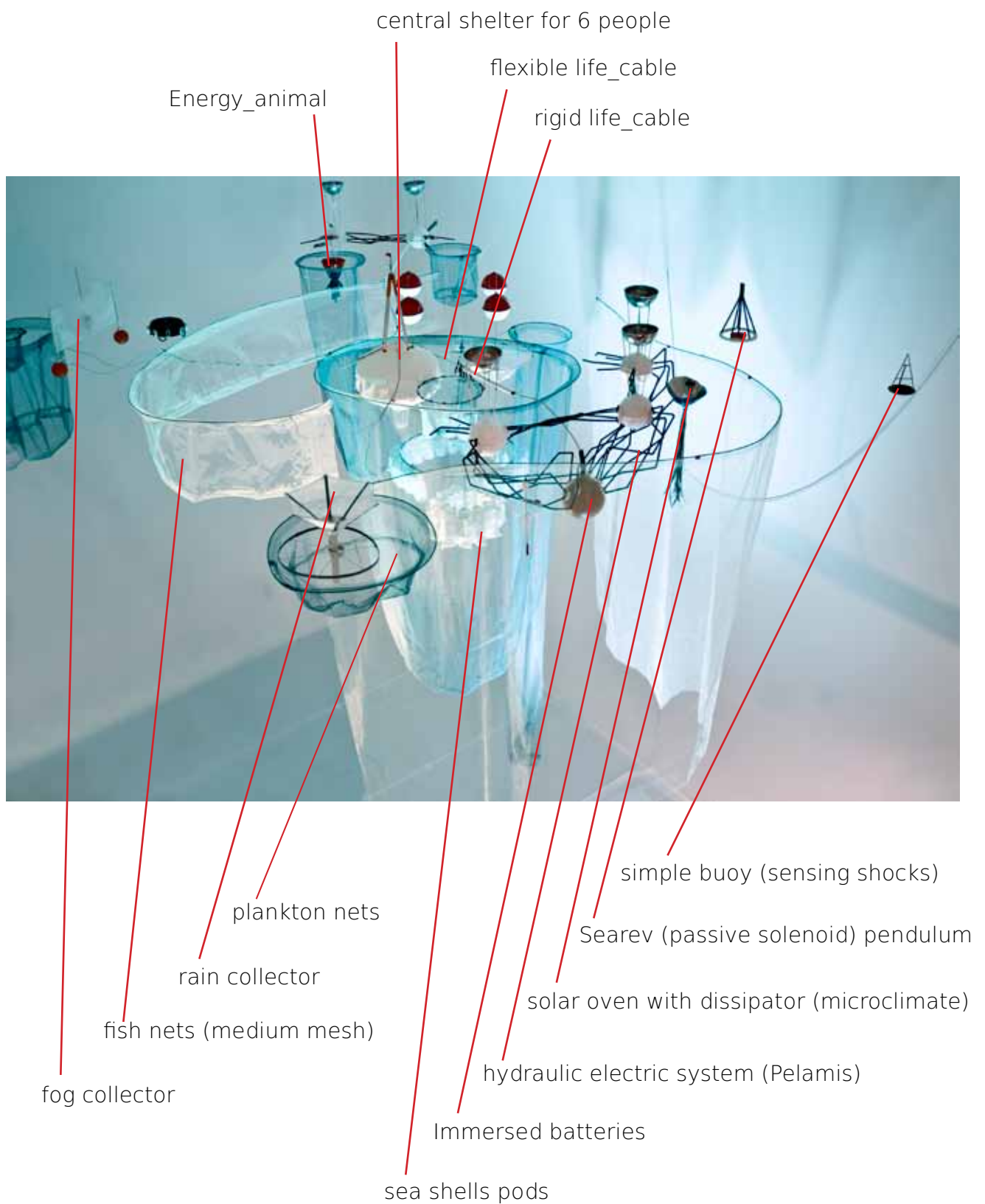


Sixty per cent of the Earth's surface is covered by ocean more than a mile deep and we know so little about it. Just like we have the International Space Station, we need to have an "International Ocean Station", that perfectly seastead anywhere in the deep sea, deploying its modules in all directions in the open space. The Open_sailing contributes to the establishment of such a structure by :

- an effective structural design : functions distributed in clusters, instinctive shape change
- providing an efficient operating system, that provides abundant yet reasonable comfort for the sailors, managing resources distribution and safest location (Tribal_Search_Engine).
- attracting resources instead of having them captive (Open_Farming).
- being a desirable living space where food is locally produced and social life exciting
- being energy autonomous and beyond (Energy_Animal)
- inventing a more effective infrastructure (Life_Cable)

< Design_innovation >

< International_Ocean_Station >



We are developing navigation and drifting technics, especially immersed sailing and kites on complex structure.

< Inspirations >

There have been many attempts to conquer durably the water as a habitat, many failed, we need to learn from them and bring in new ideas.

< Sealand_Havenco >

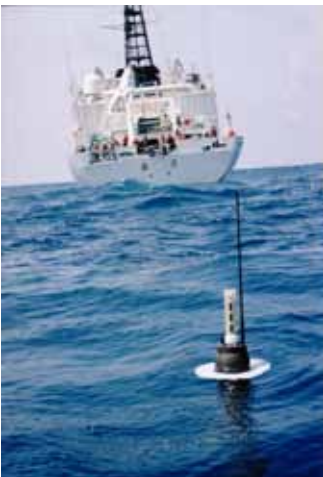
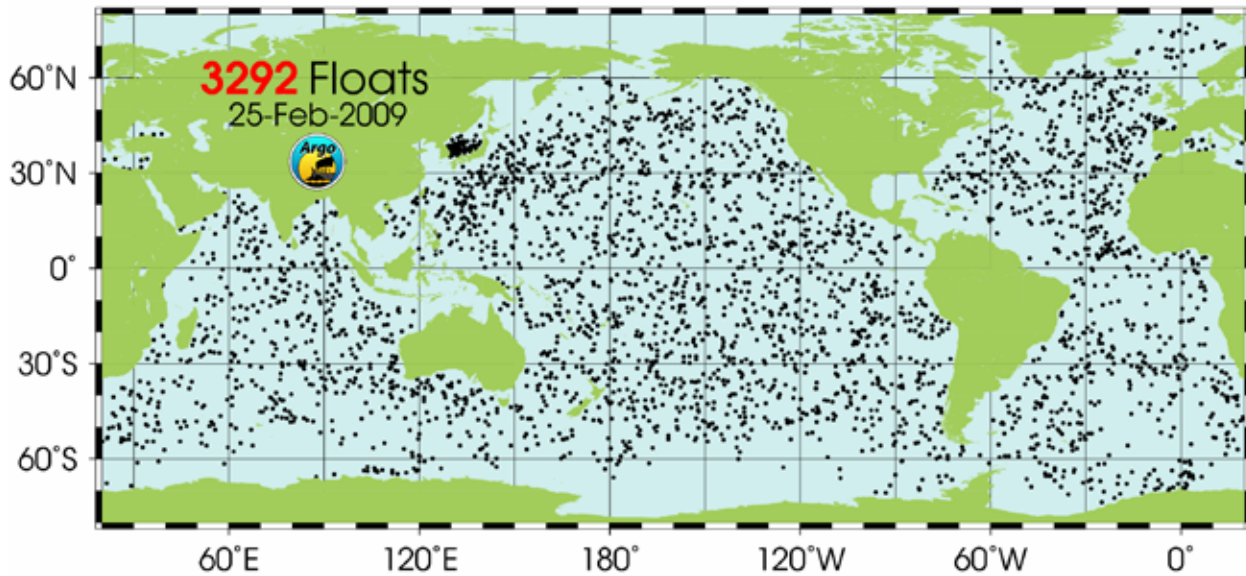


A former World War II Maunsell Sea Fort in the North Sea 10 km (six miles) off the coast of Suffolk, England has been occupied since 1967 by former radio broadcaster British Army Major Paddy Roy Bates. In 2000 the internet host HAVENCO took effective control of the principality of Sealand to make into a data haven. We have a lot in common about technological involvement, yet we are very different : Sealand VS Open_Sailing = anchored | drifting, rigid | flexible, heavy | light, expensive | cheap, libertarian | pragmatic, proprietary | open-source etc.

< /Sealand_Havenco >

< Inspirations >

< Argo_System >



The Argo system comprised a fleet of about 3000 autonomous submersible-drifters (black dots) that collect currents, temperatures, acidity, salinity, pollution at the surface and at 2000m of depth, all serving real-time public data via satellite communication. Today Argo is our most precious tool to understand global warming, sea-level rise. Every piece of Argo hardware designs is open-source, usually built as university research projects by students, all the satellite collected data are served for free for everyone to use. Like the Argo system, we are a communicating superorganism and each of our design and data is free of access and re-use.

< /Argo_System >

< Inspirations >

< Uros_people >



The Uros tribe lives on the Titikaka lake in Peru, South America . The floating gardens on which they live are made of totora reed that keep on growing at the edge. With totora reed they also build house appliances, furnitures, houses, solid boat travelling long distances. We are very attracted by the use they make of renewable biodegradable ressources (totora), and the multiplicity of applications they found for it, creating a complex world out of a simple material.

< /Uros_people >

We think our project can succeed because it offers the safety and structural reliability of Sealand, the swarm like distribution of the Argo and the capacity to evolve, grow and reproduce of the Uros totora reed floating gardens. Our project is entirely open source, which signifies we don't want to be recognized as a finished closed entity but rather as contributing group of people with series of experiments.

< /Inspirations >

< Where >

< London_(UK) >

London is where the project was originated and where it is being administrated.

< Lorient_(FR) >

Lorient is a large construction and shipping harbour where we will be trained on different lifeboats at the CEPS (Center for the study and practice of survival techniques). We are designing the Open_Sailing in the submarine harbour under the supervision of the french specialist and instructor Yann Chauty.



< Al-Jedida_(Morocco) >

We are building the Open_Sailing in the harbour of Al-jedida in Morocco. Al-Jedida is a beautiful city classified "World Heritage" by UNESCO but it is also a dynamic and safe city, recently industrialised. The Open_Sailing crew member Nasser Moustakim is a native from Al-Jedida and we will hire a group of fishermen sailors to help us travel from Al-Jedida to Las Palmas. We have 2 large working spaces near the ocean, maritime construction equipment, qualified workers at affordable rates, staff to facilitate food-making and daily life requirements.



< Las_Palmas_(SP) >

Due to its situation as nexus of two continents and its importance as a touristic spot, many foreign workers have migrated and settled in the city. Merchants from Africa, China, Russia and the Middle East mingle with one other in the streets of the city. According to a study carried out by Thomas Whitmore, director of research on climatology at Syracuse University (USA), the city of Las Palmas de Gran Canaria enjoys "the best climate in the world."



We consider Al-Jedida to Las palmas as the phase-01 of the Open_Sailing, we want to take the adventure much further. Our next targets are actually Porto Novo (Azores Islands), and somewhere in Brazil or Venezuela.

< When >

< Phase_01 >

	COMMUNICATION LEGAL TEAM	PRODUCT DESIGN CONSTRUCTION TEAM	COMPUTING TEAM	BIOLOGY, MEDICAL, PSYCHOLOGY TEAM	
2009 March	1-13: London: "Open_Architecture" theory rewriting 14-31: Finding missing members 26-28: Intensive deep sea survival training	14-18: Al-Jedida 18-22: reporting, 22-31: Lorient: shelter design pt1	Swarm operating design pt1	Mobile_ecosystem,	PHASE-00 : Sketching, London - North
April	Find partners for materials Fast medias	Instinctive_Architecture (shelter + Life_cable Energy_animal	Swarm operating system	chology	
May	10-28: Down the thames toward the North sea Testing : Instinctive_Architecture (Harvest, Protect, Move), Navigation_Drifting_technic, Swarm_Operating system, Mobile_ecosystem, Open_Farming, Aquaculture_Dietetic, Energy_animal, Life_cable, possibility of an International Ocean_Station				
June	1-13: Editing the book, the film, finishing website, communication 25-5 (july): Show RCA				
July	Building the community				
Aug.	Enhance, set engineering teams				PHASE-01 : Engineering, Aljedida - Las
Sept.	Find solid sponsors				
Oct.	Meeting partners in NYC. San Fransisco Engineering, commercial applications development				
Nov.	Shanghai construction harbour				
Dec.	Phase-01 : competitive prototypes				
Jan.					
Feb					
March					
April					
May	Drifting & testing				
June					

< Who >

< Crew >

- Cesar_Harada: Coordination, design
- Martin_Gautron: Engineering, survival technics
- Nasser_Moustakim: Metal engineering, quality control
- Hiroimi_Ozaki: Mathematician, technology
- Edward_Murfitt: Mechanical engineering, business
- Adrien_Lecuru: Documentation
- Colet_Castano: Event manager, Public relations
- Ollie_Palmer: Design, photography, communication
- Abigail_Palmer: Communication
- Maxime_Darmon: Documentary film maker
- Vahakan_Matossian: Product designer
- Peter_Von-Batheld: Oceanic advice, plant technician
- Pano_Kroko: Finance, strategy
- Heidi_Wikar: Textile engineering
- Ilona_Gaynor: 3D, Design, computing
- Donald_Stalter: Finance, strategy
- Narito_Harada: Environmental lawyer

- We are currently looking for a
- Biologist_Chemist interested in ocean farming
- Doctor: interested in dietetic and group psychology
- Press-attache: to promote the project to medias
- Fund-raising person
- Material_scientist: choose the right materials
- Electronician: for the instrumentation, radio
- Webmaster-webdesigner: CMS, PHP, CSS, Mysql
- An experimented sailor and fisherman

Any other suggestion is very welcome, please contribute.



< Who >

< Mentors >

Tony_Dunne: designer, thinker, educator

Nina_Pope: artist designer, film maker

Noam_Toran: film maker, educator

Usman_Haque: architect

Yann_Chauty: The French specialist of survival technics and technology, instructor

Carla_Teune :Biologist, former director of the Hortus Botanicus Amsterdam, one of the oldest botanic gardens in the world. Advisor on maritime cultivation of land plants

Annie_&_Tetsuo_Harada: Logistic advisor, accountancy

Yvon_Leroy: French maritime safety specialist, liaison with fishermen

Loic_Dussud: IFREMER chief engineer for exploration machines and instrumentations

Jean_Marvaldi: IFREMER renewable energies expert

Anaelle_madec: Ethical product design

Caroline_Le-saint: Biologist, sea shell specialist. Brittany sea shells syndicate

Natalie_Jeremijenko: Prof biologist, mechanical engineer, conceptual advisor

< Institutions >

Royal_College_of_Art (London)

Barbican (London)

Galeria_Capella (Barcelona)

Boat_people (Tokyo)

< Costs >

We are a small team with a big ambition, a lot of energy and knowledge, but we don't have much money. We think this project is fantastic and deserves to be made at its fullest, so we are looking for partners, sponsors, experts, new crew members, or equipment to borrow. Here is an estimate for the Open_Sailing Phase-01 Al Jedida to Las Palmas. If we do not gather this ideal budget we guarantee we are still doing the project, we already have the minimum budget and we can scale down, smaller, simpler as we have sorted our priorities.

Tools : £5'030

To work with metal (TIG, gas cutting), Wood, plastic, fabric (sewing machine), painting tools to cut, bend, assemble, weld, sew, coat. Including transporting them to Morocco and back.

Construction : £6'652

Raw and recycling materials : metal, rope, cables, wood, plastic, paint to build the shelter and structural equipments.

Energy generation and storage : £1'780

Fabrication and customization of energy generators and storage. Solar, wind, wave, animal induced gases and combustible.

Ocean farming and water harvesting : £6'147

Safety "land food" (might not be used) on board, Fish, sea-shells, plankton and algae farming equipments (nets, lines, hooks, buoy, boxes). Rain, fog collectors and distillers. Land vegetables floating pods. (Water desalination filter alone : £5000).

Instrumentation, communication : £5'247.

GPS navigation, Satellite internet, old fashioned compass, VHF radio, (sea Internet alone is £3000)

Safety and health equipment : £2'937

Life jacket, life lines, pump, horns, sleeping bags, dinghies, (A life raft alone : £800)

Documentation, public relations : £7'124

Photo, waterproof video camera, blogging, book, press liaison,

Labor, travel expenses, Legal, Insurance, Safety Training : £87'700

There is about 30 people producing about 11440 hours of work. The work so far is voluntary, we would like to evolve into a viable structure that can pay and protect each participant.

So that' £80'187 of material and logistic (excluding labour), including labour (non voluntary project - private) : £167'887 is the ideal budget to make the Open_Sailing Phase-01, but we can do with much less, any help is welcome.

< Perspectives >

Sponsorship

Get your name and image associated with an incredible innovative project!

We are tagged : "green, sustainable, renewable, energy, ocean farming, ethic trade, open-source, social, innovation, alternative, sailing, technology" and we can offer a great visibility for you:

Exhibition visitors : only the SHOW RCA is Britain 2nd most visited public art event (after a Tate modern major exhibition), in 2008 SHOW RCA once again attracted tens of thousands of visitors and generated miles of column inches in newspapers and magazines. We are also in discussion to show the Open_Sailing at the Barbican (London), La Capella (Barcelona), Boat People Gallery (Tokyo), the ephemeral festival (Seasteading in San Francisco).

Film : we autoproduce our film which means also it has an incredible distribution potential on the internet, on TV, and possibly in cinemas (those screening documentaries). Several Cesar Harada films were screened in international film festivals, TV shows. A related project of Cesar Harada (the Urban Space Station) got more than 5000 views on the internet without advertisement within a few months time on youtube, dailymotion, vimeo, sevenload. Seeing the scale and ambition of the Open_Sailing, it will be much more.

Website : in 2 months existence and without substantial promotion, we have had more than 3000 visitors on our research blog only. <http://cesarharada.com> only gets an average of 1,675 views per day and Open_sailing is on the cover page for some month from now on.

Newspapers : We are expecting a tremendous amount of international and local press as our project encompasses a wide range of architectural, technological and social innovations.

Book : if your logo is on our machine, you will be in RCA catalog sold at thousands of units. We are also publishing the "Open_sailing | Open_Architecture book" out of this research in which you would be, and possibly have a foreword or even a page to describe your involvement in the project and your activity.

Uniform : we can wear your colours, have a uniform with your logo, like this every photo, any piece of film, will promote your activity.

Testing your material : We can test your equipment in conditions you would not usually have access to, we can produce systematical scientific reports on equipment evolution.

Developing new technologies for your business : We can act like consultant trying your products and proposing improvements or new products : we are designers and engineers, this is what we do.

< Health & safety >

<Design>

The design of the Open_Sailing is taking place under the supervision of Yann Chauty, the french specialist of survival technics, fondator and instructor of "the center for the study and practice of survival" in Lorient, south Brittany France. In this institution we have access to a variety of lifeboats to be inspired from and we can try at sea. The center also provides safety training courses, use of maritime equipments and a comprehensive librairy of life in the deep sea, aquaculture, ship construction, navigation... The city of Lorient has several construction harbours at hand, a strong community of kite surfer to learn from. There is no better place we can think of to design the Open_Sailing_01.

</Design>

<Engineering_ &_Quality_Control>

The design team works closely with the engineering team which qualifies the feasabilty and prepares the construction process. We have an aeronautical and steel sheet expert native from El-Jedida that coordinates the construction with local qualified workers.

</Engineering_ &_Quality_Control>

<Construction>

The city of Al-Jedida is fast growing city, all sorts of industries and materials can be found, qualified willing workers fabricating with aproprate tools in decent conditions. In the construction team, we have several experienced welders, carpenters, people knowing how to work with mecanics, sails, nets, hydroponics, watertight structures...

</Construction>

<Instruction_ &_Training>

We are following a lifeboat training at the Center for the study and practice of survival technics for offshore structure staff and militaries.

</Instruction_ &_Training>

<Health_check>

We are being checked by a navy doctor.

<Health_check>

<Psychology>

In a survival situation, psychology constitute 70% of the survival potential. We are consulting a psychologist to assemble the team

<Psychology>

< Legal & press >

The overall project sits within the Moroccan and Spanish legal framework, individual responsibilities are preponderant. The vessel is cover by insurance. The legal aspect of the project is managed by Narito Harada, lawyer specialised in environmental (Greenpeace) and international law.



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<!-- Be_a_part_of_it!-->

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< /Open_Sailing >