PRESS KIT

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STX Europe confirms its environmental leadership

Batilus, Sovereign of the Seas, Millennium, Gaz de France Energy, Queen Mary 2, MSC Fantasia.
For decades now, the history of Saint-Nazaire yard has been marked by records and successive technological jumps forward. One common characteristics for all those ships : they integrate clean technological solutions.

Heir to a long tradition of innovation, the teams of STX Europe's Basic Design department, under the direction of Xavier Leclercq, SVP Design, settled in Saint-Nazaire the first steps of a program for R&D (Research & Development) in 2007. This global and structured program aims at strengthening STX Europe's leadership for designing and building more environmental friendly ships.

In 2009, this project reached maturity. This program delivered after 2 years of R&D actions is named ECORIZON®. It is divided into 5 axes : energy management, air emission management, water management, waste management and sustainable design. Now it benefits the whole STX group through Saint-Nazaire yard environmental competence center.

The ECORIZON® axes are practically implemented in the cruise world with the concept ship EOSEAS. It has been developed in cooperation with STIRLING DESIGN INTERNATIONAL company, and thanks to a joint financing of the Regional Council in the frame of their plan for supporting Research & Development actions.

''With ECORIZON®, STX is the first shipbuilder granted with a global and structured tool that's allow to design today the ships for tomorrow. This program is built upon years of technological evolution. It is a guarantee for a long term reduction of the ship's environmental impact while ensuring their economical profitability. Thus it is the best answer to the ship owner's requests. It is also a competitive advantage for STX Europe" says Xavier LECLERCQ, Senior Vice President, Design for STX Europe, Saint-Nazaire.

ECORIZON® : 5 development axes serving the environment and efficiency

ECORIZON® is a strategic environmental program born from decades of R&D and based upon the latest technological innovations. ECORIZON® aims at protecting water and its ecosystem, at preserving the Earth natural resources and at limiting the environmental impact of human activities in order to help all of us making a step towards the future.

Leadership and environmental responsibility go hand in hand

STX Europe is one of the world leading shipbuilder. As such, the group is responsible for offering a continuous improvement of environmental technological solutions.

For our clients, the most attractive products and solutions are the ones that take sustainable design into consideration. For decades, we have implemented every possible solutions to solve the environmental challenges and generate added value for our clients and shareholders.

Close to its clients, STX Europe is playing an essential part offering and implementing the most innovative and eco- friendly technical solutions in order to perpetuate our activity in a sustainable and profitable way.

The ECORIZON® program is operating on the basis of 5 axis giving a structure to our environmental concern from the ship design to their recycling : energy management, reduction of air emissions, water management on board, waste management and sustainable design.

A shared challenge

Ship owners and ship builders' challenge is to reduce the environmental impact of ships.

STX Europe's goal is to remain the leader in shipbuilding including clean technologies.

National and international authorities commit themselves in challenging the environment goals. Regulations are becoming more stringent. At the same time, owner's associations are editing their own environmental regulations.

Classification societies (Det Norske Veritas, Bureau Veritas) are delivering environmental notations to ships assessing the fact that they are designed, built, maintained in such way that the environment is respected and protected.

Public attention towards environment is as well growing. Maritime disasters with consequences on environment are drawing people's attention giving rise to debates. Finally, as the fossil energies are becoming scarce and more expensive, alternative solutions are sought for.

These statements are enhancing our actions on each step of the ship's life, from her birth to her recycling. ECORIZON® program gathers them into a global and structured strategy.

Energy management

Propulsion is the most energy consuming function. Then come air conditioning, hotel operation and miscellaneous auxiliaries.

Our goal is to limit the use of non sustainable energy to 50% by 2015.

3 levers

ECORIZON® target in terms of energy management is organized around 3 means of improvement :

- Reduce the consumption of all equipment,
- Improve the global ship energy efficiency
- Use alternative energy assistance

Practical solutions

Today, STX France Cruise offers its clients practical solutions leading to 20% savings on energy consumption among which we find :

- Optimization of hull and appendages
- Optimization of the electrical load with efficient HVAC systems, advanced lighting control systems,
- Advanced Heat Recovery Plants on diesel engines and waste treatment plants.

The French teams have also developed simulation tools to assess the fuel consumption. Functions where savings can be achieved according to various operating schemes are then identified.

Alternatives to non sustainable energies

Studies are still undertaken to go on offering our clients ever more efficient solutions. The most promising ones deal with cutting edge architectural concepts, alternatives to the use of non sustainable energies such as wind, liquefied natural gas or hydrogen, development of energy storage solutions or optimization of air conditioning systems.

Figures in brief

20% : it's the amount of savings that can be achieved by the implementation of our solutions.

50% : is the goal we aim to reach in 2015 for the proportion of non sustainable energy used.

Air emission reduction

Studies to reduce air emissions are connected to those carried out in the frame of energy management. Thus, improving diesel technologies will have consequences in both areas, as well as the hull optimization.
The global approach, which is one of the ECORIZON® main characteristic is then a guarantee of efficiency.

Operation of diesel engines and oil fired boilers generates CO_2 (carbon dioxide), NOx (nitric oxide), SOx (sulphur oxide) and PM (particles) emissions.

The actions carried out in the field of air emission reduction aim at reducing the impact of the ships on climate warming and air quality and to offer solutions to anticipate the international regulation evolutions.

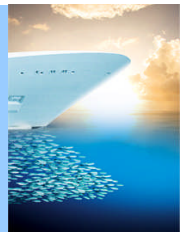
First of all, significant improvements are possible when less consuming and more performing engines are used. Other systems have proven also their efficiency such as multi-parameters online emission monitoring systems linked with GPS position, dual-fuel systems with online monitoring depending on the ship position, or exhaust gas cleaning systems with particles separation.

Figures in brief

Thanks to our technical solutions, in 2012, air emissions will be reduced as follows :

- 50 % for CO_2
- 95 % for SO_X
- 80 % for NO_X
- 100 % for visible smoke and other kinds of particles

Water management



ECORIZON® water management project has a double objective :

- Protection of the marine ecosystem
- Optimization of the water cycle, from fresh water generation to post-treatment.

Protecting the marine ecosystem supposes to take various steps to stop waste water discharge by installing purification of recycling systems, to avoid transportation of foreign invading species in the ballast waters, and to use also eco-friendly anti-fouling hull paint.

Optimization of the water cycle is reached thanks to :

- Installation of optimized systems for fresh water production
- Reuse of air conditioning condensates
- Waste water recycling after treatment for technical use.
- Use of biodegradable lub-oil and seawater lubrication for engine bearings and shaft lines.

Managing the water cycle has also consequences on energy consumption and air emission reductions. The owner gains in operating flexibility while remaining eco-friendly even in the most sensitive areas such as Alaska.

In brief

Today, the systems proposed by STX France Cruise in terms of black and grey water treatment are twice more efficient than the most stringent regulatory requests.

Waste management

In the field of waste management, ECORIZON® increases the proportion of recycled waste, valorizes wastes into energy, generates lowest air emissions and water discharges and proposes more compact equipment and operational improvements.

Today, the systems proposed by STX France Cruise SA are as follows :

- Global systems for waste treatment and recycling
- Briquetting machines, making their storage on board and disembarking easier
- System for recovering thermal heat on incinerators
- Flue gas cleaning systems

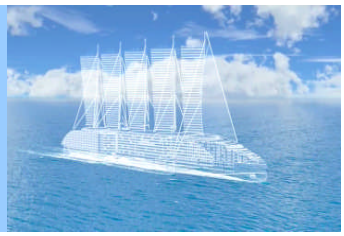
Thanks to more compact equipment, space is recovered for other kind of more valuable activities. Above all, the onboard energy statement will be optimized due to weight reduction. At last, more efficient systems will reduce energy consumption and an increased recovery of it.

Tomorrow, a gasification system will transform the waste organic part into clean energy after treatment.

In brief

In 2012, the systems under development will be able to treat and valorize 100% of the waste generated on board.

Sustainable design



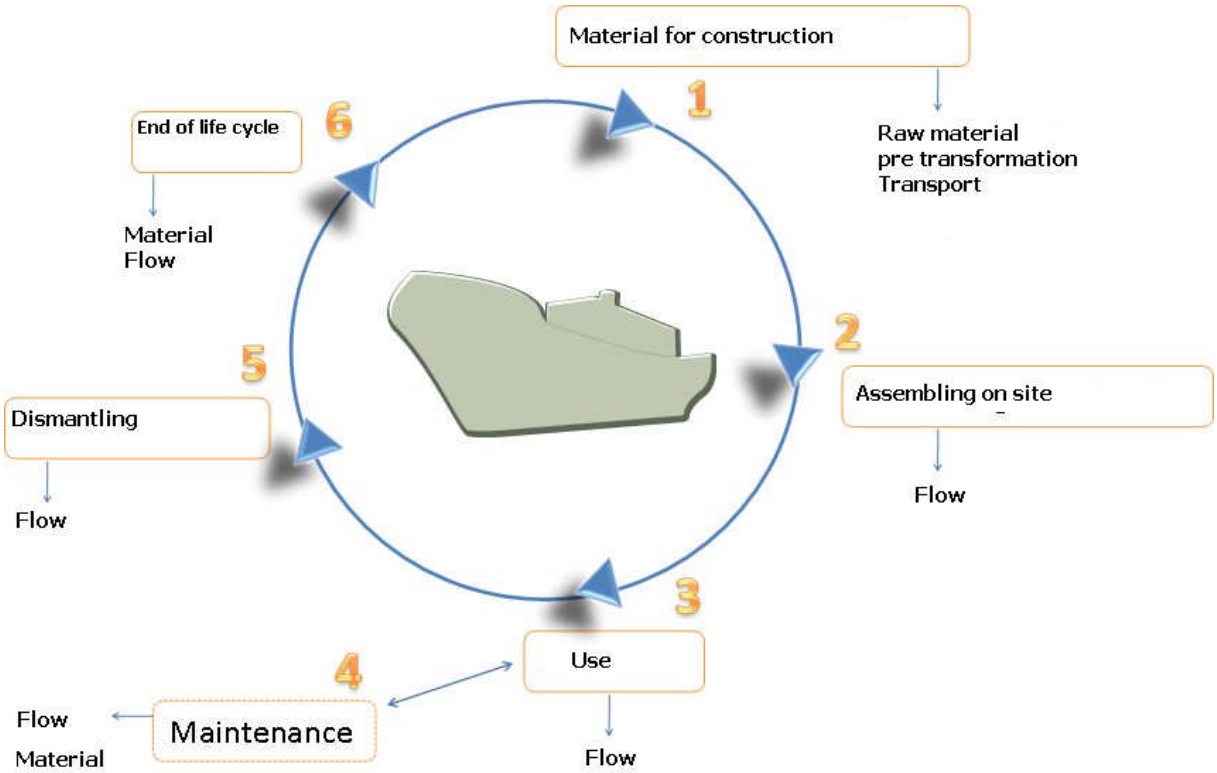
This part of ECORIZON® program takes the environmental issues into consideration from the early stage of ship designing. Doing so, the impact on environment is optimized throughout her life cycle up to her dismantling.

For example, SSD tool (Sustainable Ship Design) has been developed in the framework of a collaborative project gathering various local and national authorities as well as local companies acting in the shipbuilding industry, inside a group called NEOPOLIA.

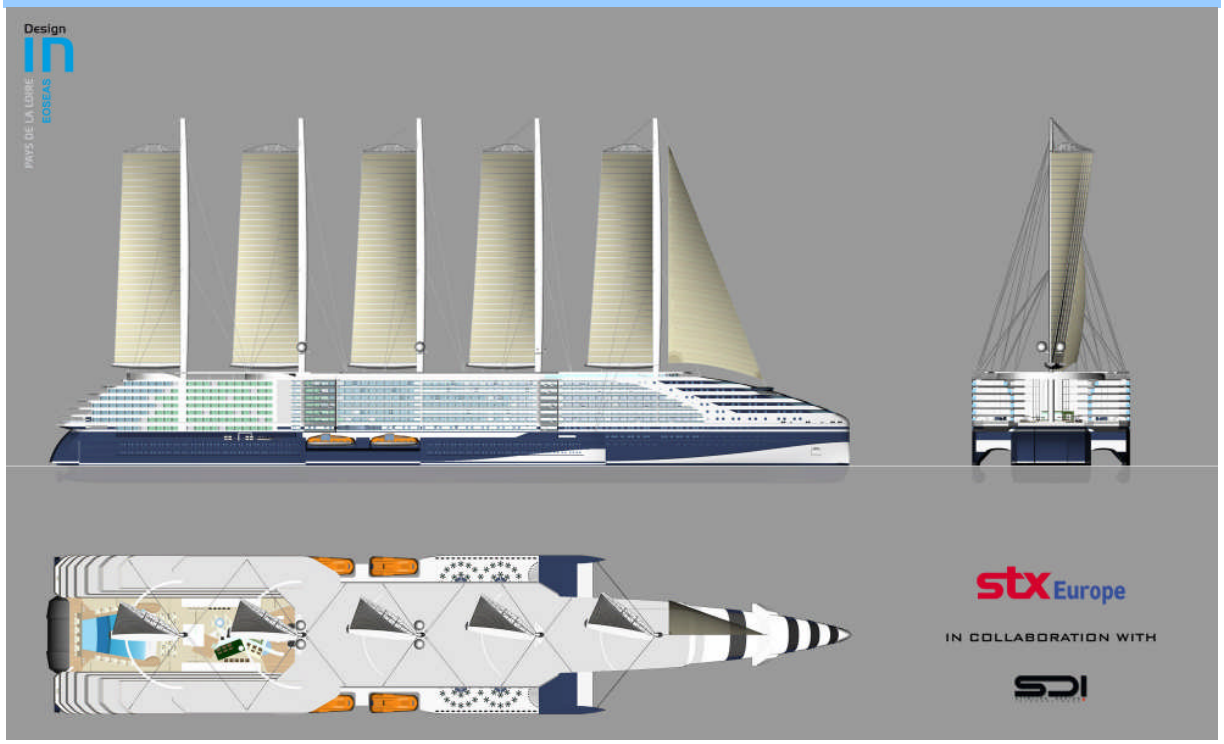
Towards a green passport

Today, we are in position to offer our client the IHM – Inventory of Hazardous Materials, being a true green passport describing the potentially hazardous materials installed on board as well as their location and quantity, facilitating the ship recycling operations.

We also propose an environmental impact assessment for each ship using recognized tools. This will enable us to take the best design options as early as the design stage.



EOSEAS : leaving marks on people's mind, not on the sea



As a logical step forward for ECORIZON® program, STX Europe Saint-Nazaire teams have studied a ship integrating all the technical solutions reached in the field of the 5 axis. This action has been held in cooperation with Stirling Design International company and thanks to the joint financing of the Regional Council in the frame of "Design'In" project.

Eoseas is a 305 meters long and 60 meters wide five hulled ship. She gathers in one ship all the environmental solutions developed in Saint-Nazaire :

- Use of alternative energies for propulsion, thanks to sails installed on 5 masts covering 12.440 m² surface
- Use of natural gas for operating new generation generators electrically feeding the ship and supplying the heating and cooling needs.
- Setting of solar panels for electrically feeding the ship and of a double skin acting as a natural air conditioning system
- Use of the energy recovered from the waste treatment
- Water recycling
- Optimization of hydrodynamics characteristics thanks to an air cushion under the main hull.
- Innovative propulsion system
- Limitation of air emissions
- Recovery of raining waters from the upper decks

EOSEAS will also allow the passengers to fully take advantages of the maritime environment. Thanks to wide openings over the sea, to highly designed public spaces, the ocean will be ever-present.

TECHNICAL CHARACTERISTICS

Length……	305 m
Width……	60 m
UMS ……	105 000
Number of masts……	5
Sail area……..	12 440 m²
Propulsive power…..……	20 000 MW
Number of passenger cabins……..	1.403 i.e. 3.311 passengers
Number of crew cabins…….……	555 i.e. 1.089 persons

ENVIRONMENTAL MEASURES AT THE YARD

STX Europe is also concerned by reducing the impact of its industrial activity on the environment.

HSE teams (Hygiene, Safety & Environment) are working also on various fields to turn the French yards in a reference in this matter. Pollution sources are identified (chemical and hydraulic matters and miscellaneous wastes) and measures are implemented to eradicate them. This method is duly managed. The yard is ISO 14001 classified.

Reduce VOC emission

VOC are generated by painting work. Regulations on them are currently changing. As soon as 2000, Saint-Nazaire yard has installed incinerators outside painting cells. These equipment is recovering and burning the polluting emissions. At the same time, the yard has launched a new organization transferring a part of the painting work done at the open pre-mounting area to the covered cells. In 2008, all these measures have led to a 53% reduction of VOC emission compared to the figures registered in 2000.

Forbid water pollution

Loire river estuary where the yard is settled is an ecologically sensitive area. Concerned by its protection, STX Europe is permanently monitoring the quality of sediments which are making it.

Water quality is mainly threatened by hydraulic leaks as those ones can pollute the rain water network. Studies are under way to provide this network with shutters. Docks opening directly onto the estuary are also closely monitored and waters in the bottom of docks are for example directly treated thanks to mobile systems.

Protect the ground

Grounds are threatened mainly by hydraulic or chemical leaks. To contain those leaks, HSE teams have developed different kinds of containment systems : smooth buckets installed under the trucks proceeding to ship bunkering, dedicated intervention truck with all the necessary equipment for pollution fighting, intervention kits handed to high lifting capacity trucks drivers in case of hydraulic leaks.

Wastes

As far as waste management and treatment are concerned, the yard commitment is materialized through various investments. For example, compacting systems are installed on the outfitting quays for all kinds of packages and a covered area has been implemented near the waste sorting area to make sure that wastes stored there are not lifted by wind. Other kind of practical means are also available such as buckets on board and all over the yard.

Cross considerations between HSE and logistics teams are under way to try to limit the amount of waste on board.

Everybody over the French sites is clearly made aware of the environment stake in order to become eco-responsible and to turn the various investment granted into valuable and efficient actions.

STX Europe ASA (former Aker Yards ASA) is an international shipbuilding group which aims to be the leading builder of cruise and offshore vessels. The group has a strong position in terms of developing state-of-the-art concepts, technology, processes and products for customers around the world. STX Europe ASA comprises 15 shipyards in Finland, France, Norway, Romania, Brazil and Vietnam, and is also a part owner of three yards in Germany and Ukraine. STX Europe has approx. 16 000 employees. Formerly known as Aker Yards ASA, the group changed its name to STX Europe in November 2008.

STX Europe's shareholder, the international industrial group STX, has approximately. 39 000 employees and aims to be a global top player in its core areas; shipping and trade, shipbuilding and machineries, plant and construction, and energy.
http://stxeurope.com

STX Europe plays a part in 3 business areas : Cruise & Ferries, Offshore and Specialized ships, and Other Operations (units for developing and selling arctic and Liquefied Natural Gas – LNG - technologies among others).

Besides these activities, some special areas are also part of STX Europe. They are specialized in pre-fabricated cabins production, maintenance work, repair work, design, engineering or Life Cycle Services.

STX EUROPE'S FRENCH ACTIVITIES

Settled on the Atlantic Coast since the 1860's, French yards know how in the fields of engineering and ship building is renowned internationally on various market segments such as passenger ships, military ships, crude oil tankers, LNG tankers or specialized ships. The French shipbuilding industry has remained through decades among the world's first thanks to a continuous improvement of its industrial tool and a real concern on promoting the R&D policy, thus meeting the requirement of modern economy and ever demanding owners.

Today in France, STX Europe activities are :

- 2 shipbuilding yards offering a wide range of complex ships from 30 to more than 300 meters long
- 1 design and production factory for pre-fabricated cabins – STX France Cabins SAS
- 1 company dedicated to basic and detailed design – STX France Solutions SAS having contract for shipbuilding industry as well as for terrestrial market
- 1 Life Cycle Services office.

More than 3,000 persons are thus directly hired by the group over the various French sites. A network of 1st range partners his completing the action of its qualified manpower, defining STX Europe as the leading manager of complex projects, genuine conductor designing and building a wide range of ships renowned for their qualities and high-tech characteristics.

Shipbuilding

Saint-Nazaire and Lorient shipyards, both located on the Atlantic coast in the south Brittany, complement each others as far as the range of ships offered is concerned.

Saint-Nazaire shipyard has at its disposal a performing industrial tool suitable to build ships up to more than 300 meters long. Recognized as a leader for cruise ships building, it also won fame on other technical segments such as last generation LNG carriers, military ships or offshore units (semi-submersible platforms, and geophysical ships especially).

Saint-Nazaire yard has a workforce of 2.500 with the addition of the staff of 500 subcontractors dedicated to outfit the ships under the coordination of STX Europe staff.

Located in Brittany since 1993, Lorient yard is known for its technical skills in building complex ships from 30 to 120 meters long. Its production covers the segments of ferries, luxury passengers ships, military ships, oceanographic and special ships. 145 people are directly hired by STX Europe while it is dimensioned to welcome 300 persons more working for subcontracting companies.

Other activities

STX France Solutions

STX France Solutions is a renowned center for basic and detailed design. 150 persons are working on them among whom 130 are designers. This company, located un Saint-Nazaire offers their clients engineering solutions in the field of steel structures, machinery and piping, electricity, interior outfitting and integration with a permanent concern on environment and sustainable design.

STX France Cabins SAS

This company with a workforce of 160 specializes in designing and manufacturing pre-fabricated cabins and sanitary modules for all kind of passenger ships. They propose a turnkey service to their client from the mock up cabin to its commissioning on board by the client, being thus able to provide a quality follow-up and optimized fabrication times.

Lifecycle Services

Thanks to its deep knowledge of the technologies connected to ships, Life Cycle Services office offers its competency for lengthening, upgrading or conversion operations for ships as well as consulting for engineering matters.

Stirling Design International (SDI), the French firm of naval designers & architects, has specialized in megayachts and bluewater cruisers.
Stirling Design International offers custom design services: conceptual design and innovative product development, naval architecture, exterior and interior design, and project management

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Design'In Pays de la Loire offers consultancy and expertise for innovative projects in the area of Pays de la Loire (South Brittany).
Design'In aims at promoting creation and innovation through design towards companies, researches and general public.