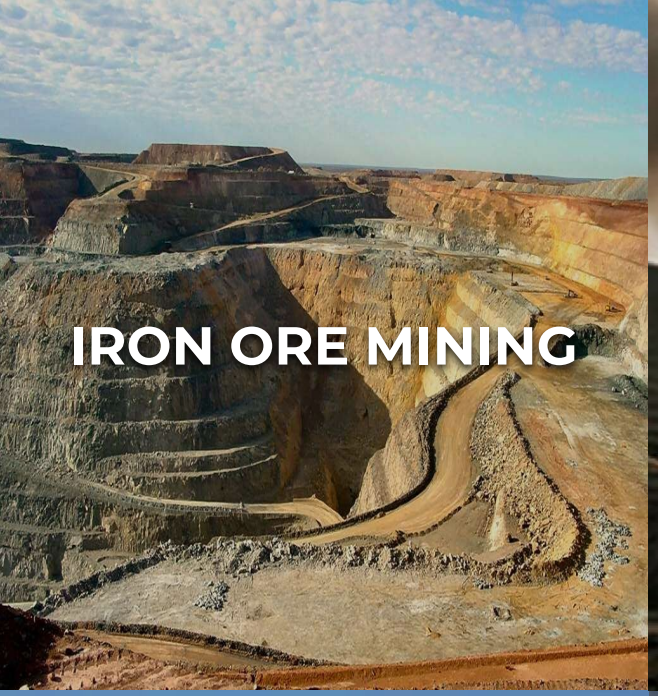
SAILCARGO INC.

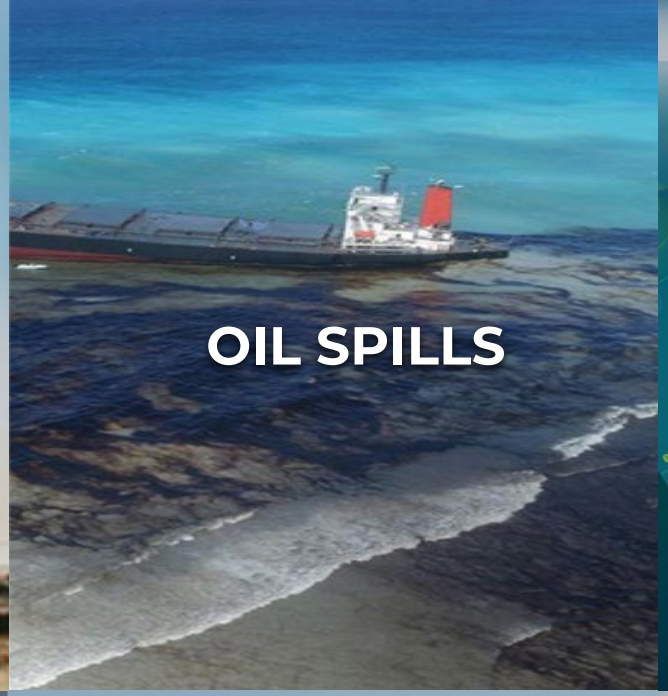
Modernizing the past: Powering wooden sailing cargo vessels with electric & hydrogen technology

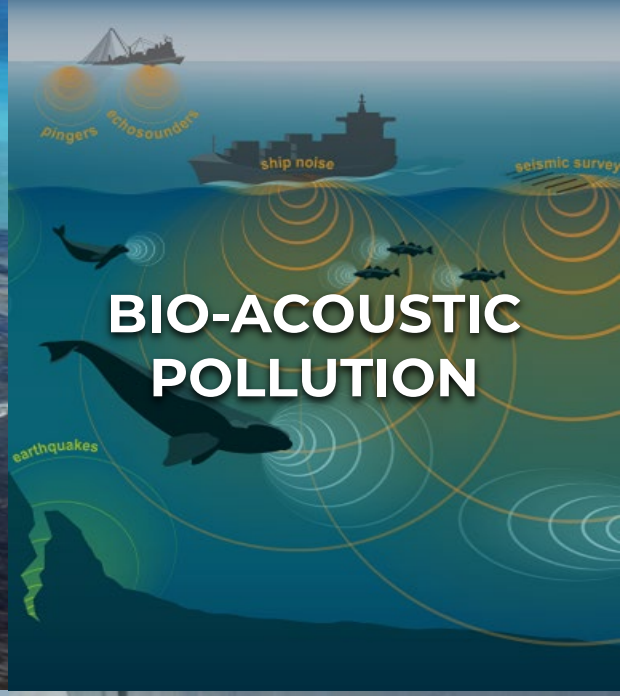
Sailing cargo vessels were the workhorses of global commerce


90%
OF GOODS ARE SHIPPED
BY CONTAINER SHIPS


IRON ORE MINING


SHIPBREAKING

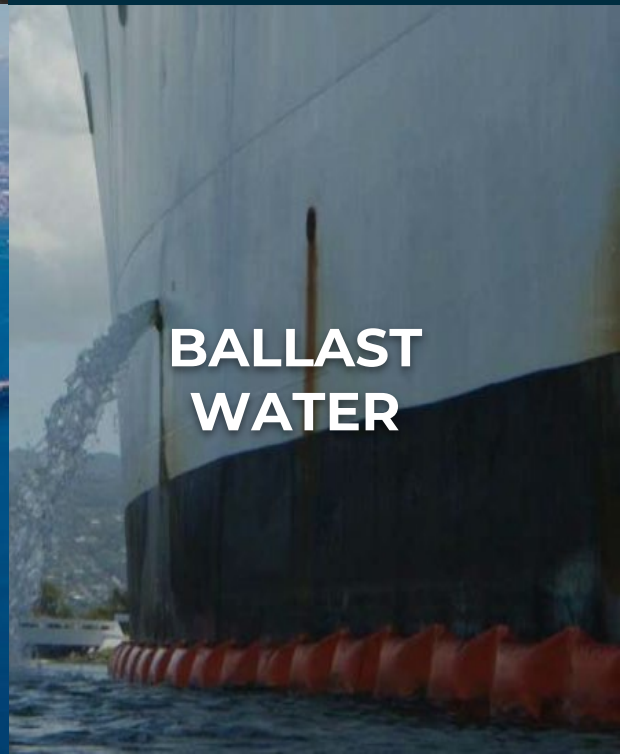

OIL SPILLS


pingers
echosounders
ship noise
seismic survey
earthquakes
BIO-ACOUSTIC POLLUTION


MAERSK
ACCIDENTS AT SEA


AIR POLLUTION


DELAYS


BALLAST WATER


SUSTAINABLY
HARVESTED
WOOD


LOW IMPACT
SHIPYARD


REFORESTATION
INITIATIVES


ZERO EMISSION
TRANSPORTATION


SUSTAINABLY HARVESTED WOOD
LOW IMPACT SHIPYARD
REGENERATIVE FROM INCEPTION
REFORESTATION INITIATIVES
ZERO EMISSION TRANSPORTATION

FASE I

THE FLAGSHIP

CEIBA

46M / 150FT

250 TONS OF CARGO

14 SAILS & ELECTRIC PROPULSION SYSTEM

FASE II

FLEET EXPANSION

THREE MORE SHIPS

OVER 5,000 TONS OF CARGO ANNUALLY

CLEAN HYDROGEN PROPULSION

FASE III

CONTAINER SHIPS & BEYOND

GREEN STEEL
CONTAINER SHIPS

EXTREME SCALABILITY

CLEAN HYDROGEN
TAKEOVER

CEIBA DESIGN

Inspired by ‘Ingrid’ (1907), a three-masted schooner sailed cargo in Scandinavia long after sooty steamships and diesel engines came to dominate the seas.

VESSEL SPECIFICATIONS

Length Overall (LOA): 46m / 150ft
Length on Deck (LOD): 38m / 124ft
Length Water Line (LWL): 32m / 106ft
Height of Rig: 33.5m / 110ft
Beam: 8m / 26ft
Draught: 4.3m / 14ft

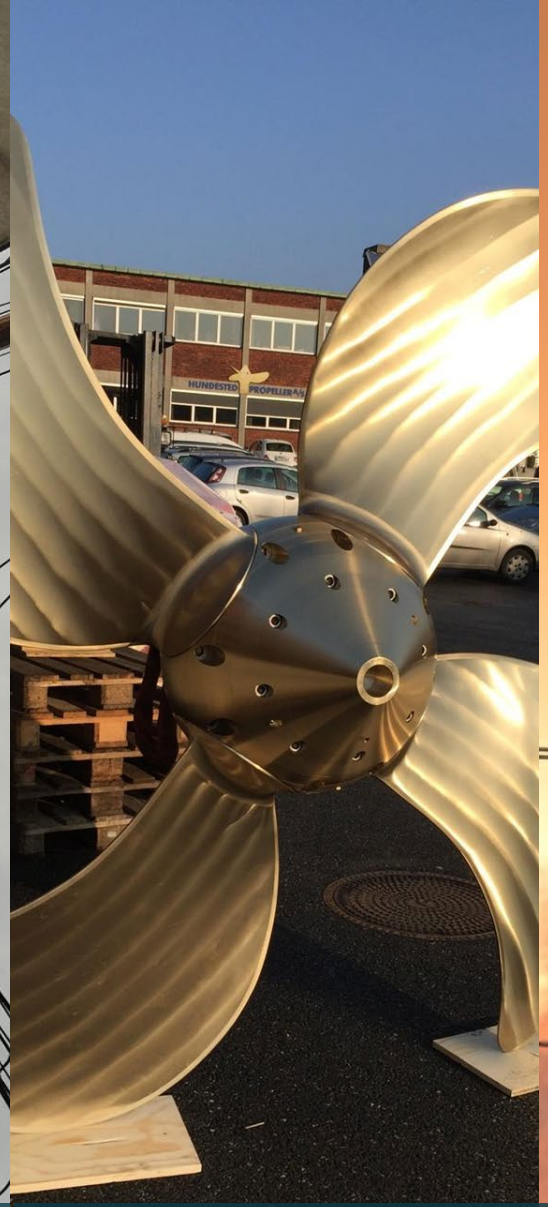
Cargo Capacity: 250 metric tonnes / 350 cubic meters (9 TEU)
Tonnage 281 GT

Crew 12 crew + 12 guest crew

Mechanical Auxiliary Propulsion System
100% Electric Engine, Lithium-ion (NCM) Batteries

Wood Species Used for construction:
- Hymenaea courbaril (Guapinol)
- Dialium guianense (Tamarindo)
- Cedrela odorata (Spanish Cedar)
- Picea sitchensis (Sitka Spruce)

Naval Architect *Pepijn van Schaik* of Manta Marine Design is the lead architect behind Ceiba.



Rocket Company™
ASTRA

PRIMARY
For 90% of the voyage, our ships will be propelled by the power of wind.

AUXILIARY
The remaining 10% of the time, the ships will be propelled by electric engines powered by variable pitch propellers, solar panels, and green hydrogen.

SUSTAINABLY HARVESTED

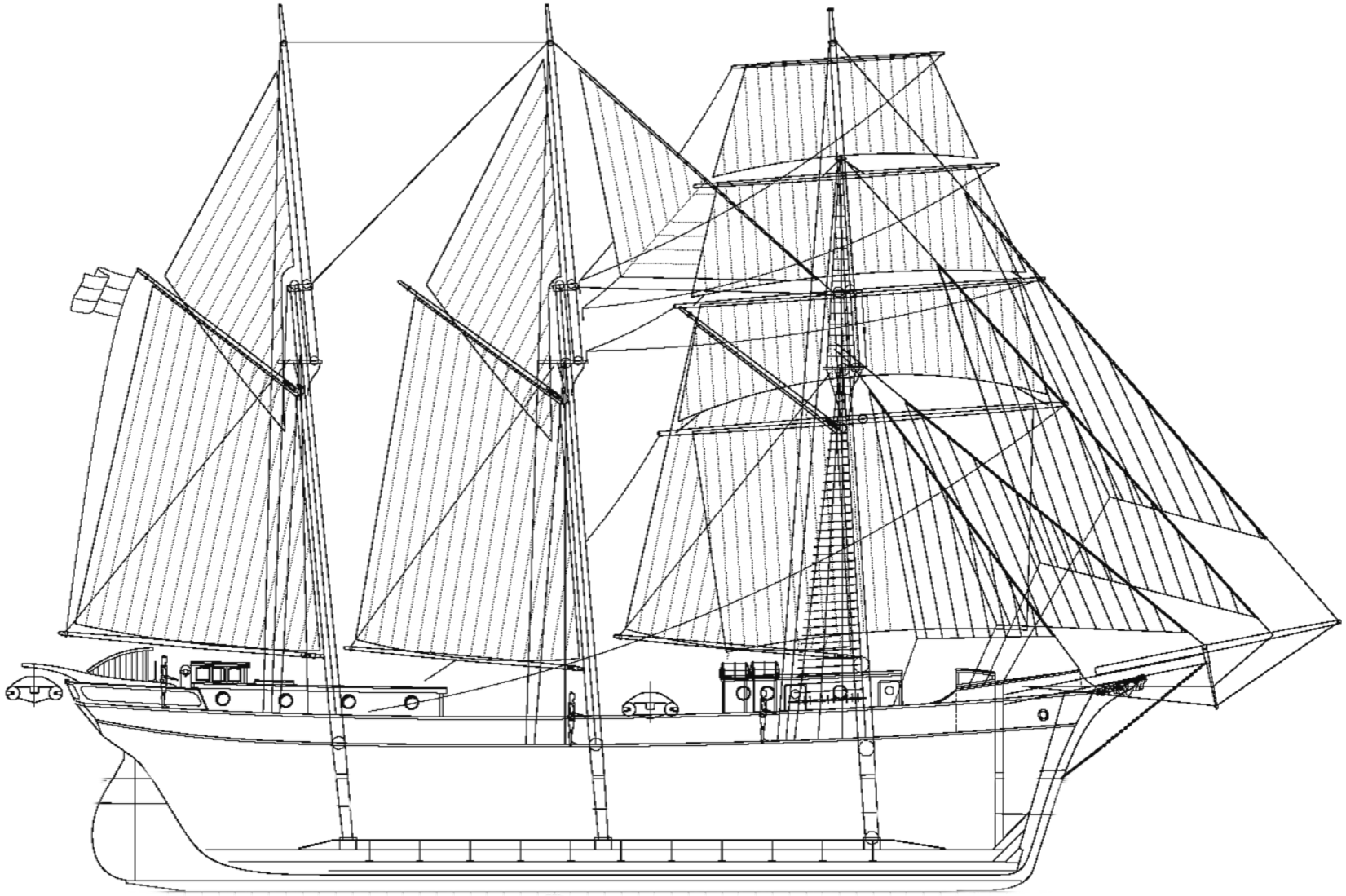
WOOD

- ➔ THE ONLY TRULY RENEWABLE REGENERATIVE RESOURCE
- ➔ WHERE POSSIBLE, WE UTILIZE NATURALLY FALLEN TREES
- ➔ COSTA RICA HAS SOME OF THE MOST PROTECTED FORESTS IN THE WORLD
- ➔ NO NEED TO MINE IRON FOR STEEL
- ➔ DURABILITY

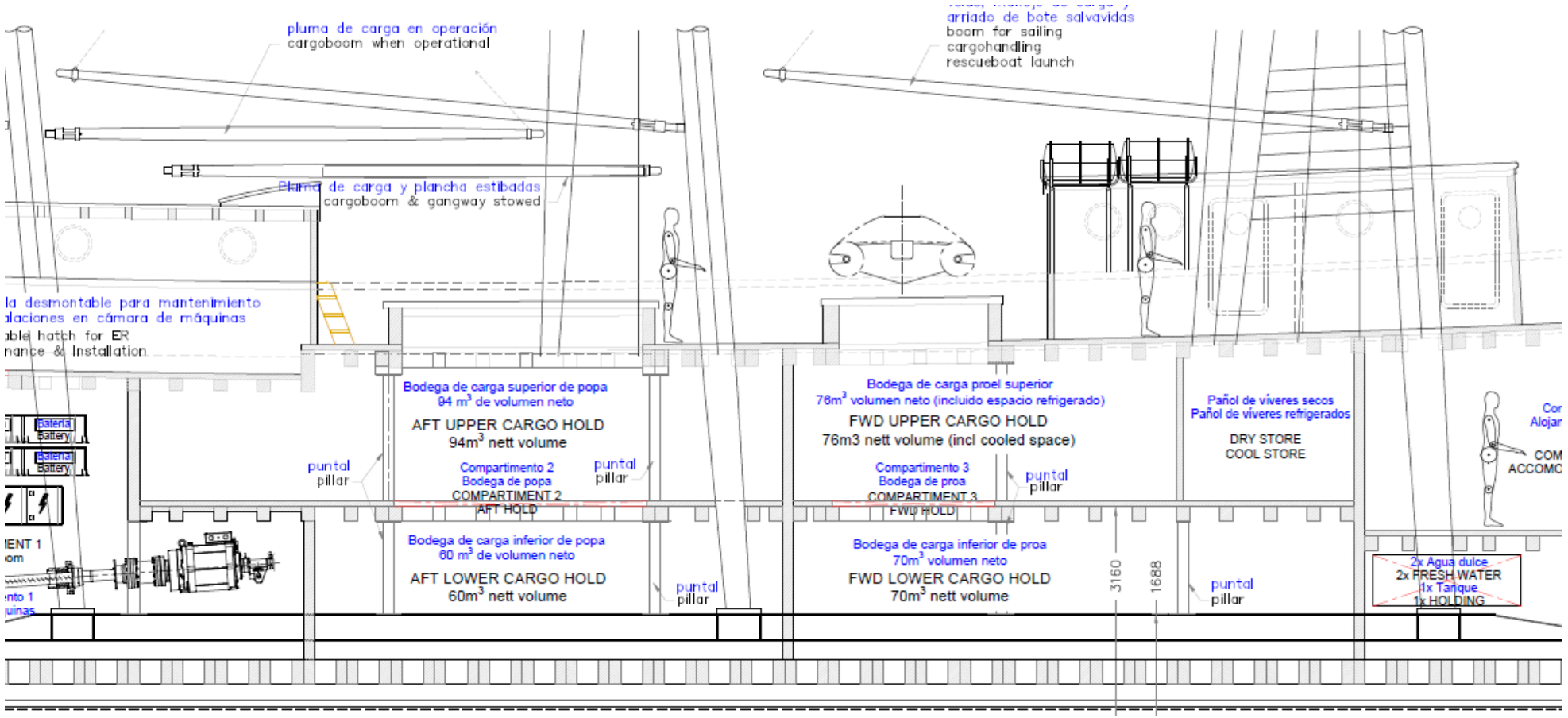
ONLY 3 PARTS

STEEL

- STRAPPING: In order to secure Ceiba against the extreme forces of sailing heavy cargo, steel strapping was inlaid to the top deck of the ship. This lattice work of half inch steel was welded in place and will prevent the ship from twisting and turning as the ship sails through the open ocean.
- GALVANIZED NAILS
- KEEL



3 MASTS
14 SQUARE-RIGGED SAILS



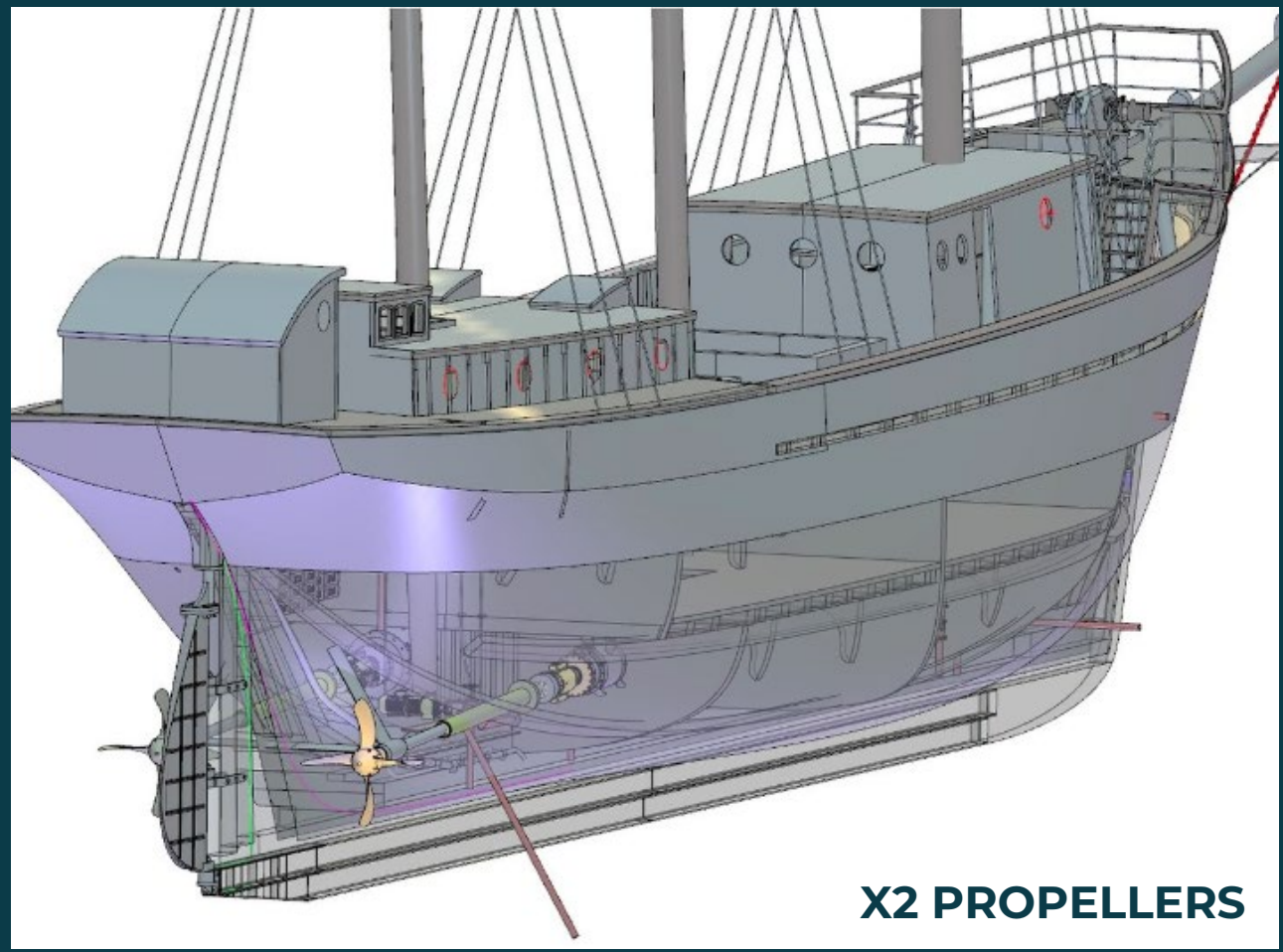
2 CARGO HATCHES

TRADITIONAL TALL SHIPS

VS

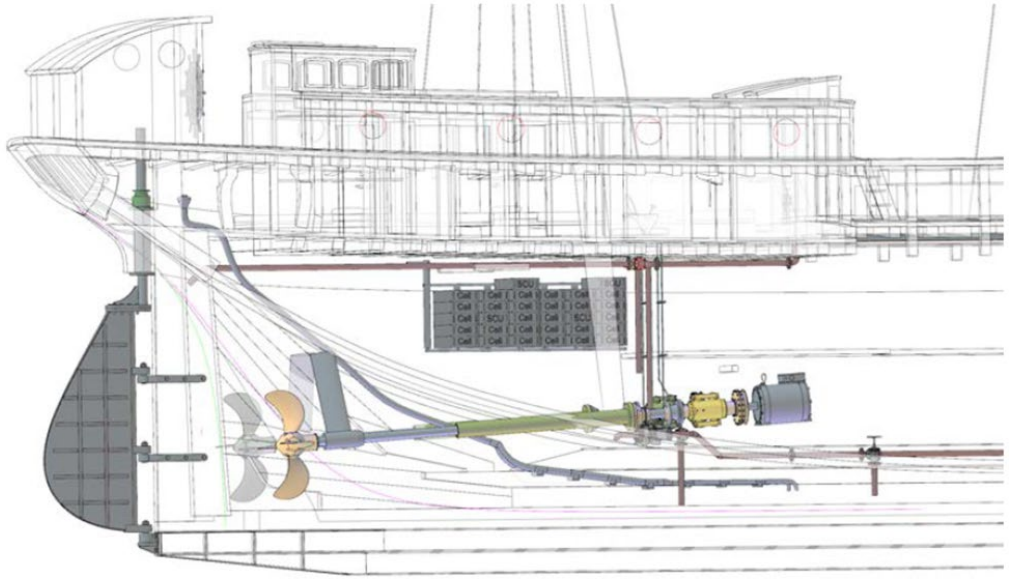
CEIBA ZERO EMISSION DESIGN

X1 PROPELLER



X2 PROPELLERS

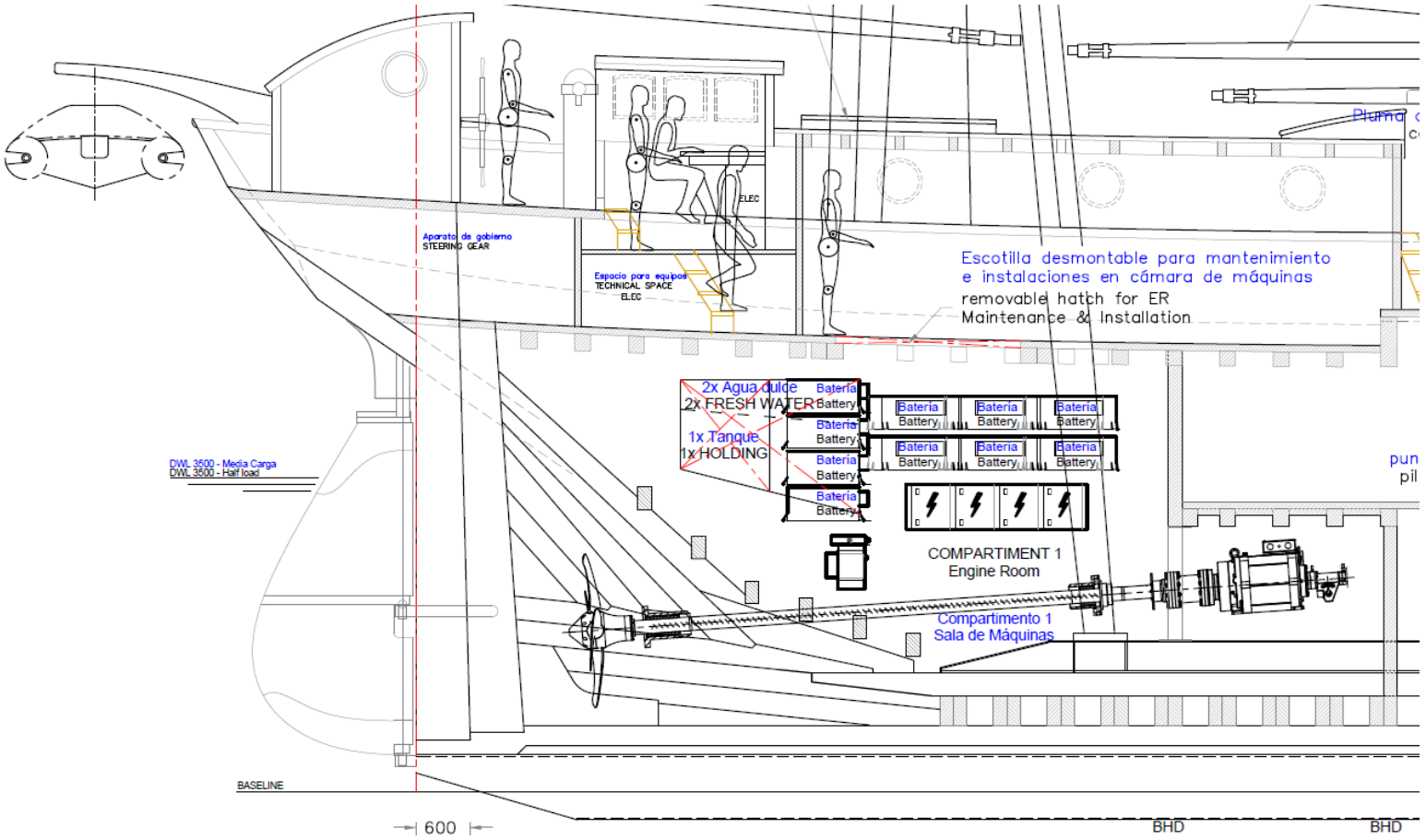
AUXILIARY PROPULSION SYSTEM



Two 150 kW electric motors with twin variable pitch propellers will be installed on board as a secondary propulsion system. Once in the water, the Ceiba will adapt in three different ways to changing sailing conditions to maximize efficiency.

1) In ideal winds, she will be propelled solely under sail, with the variable pitch propellers turned so that the batteries can be recharged.
2) In moderate winds, Ceiba will continue to be propelled by her sails, but with the propeller blades set parallel to the current to reduce drag.
3) In harbors or in poor sailing conditions, Ceiba can use the electric motors on board to maneuver.

AUXILIARY PROPULSION SYSTEM



HUNDESTED PROPELLER A/S

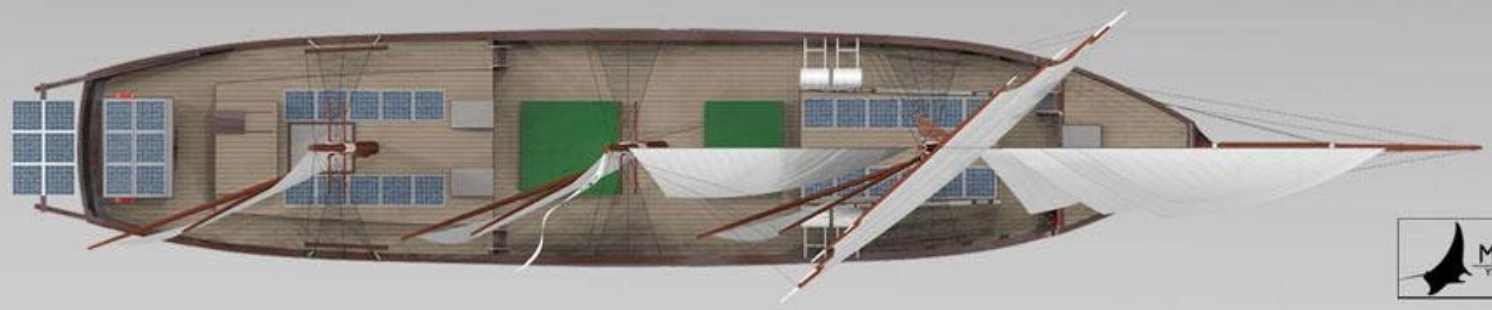
Variable Pitch Propellers

Sensata Technologies | SPEAR

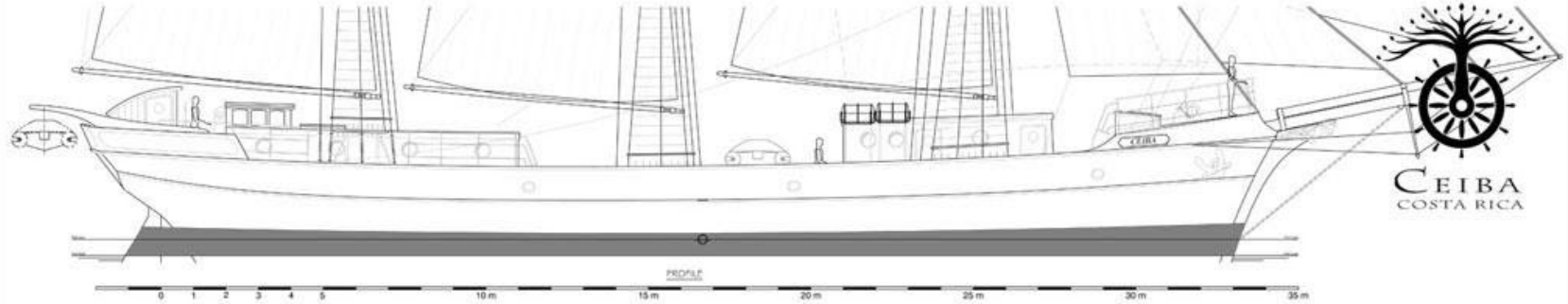
Batteries with maximum discharge power of 350 kW & energy embedded 317 kWh.

BAUMÜLLER

Electric Motors

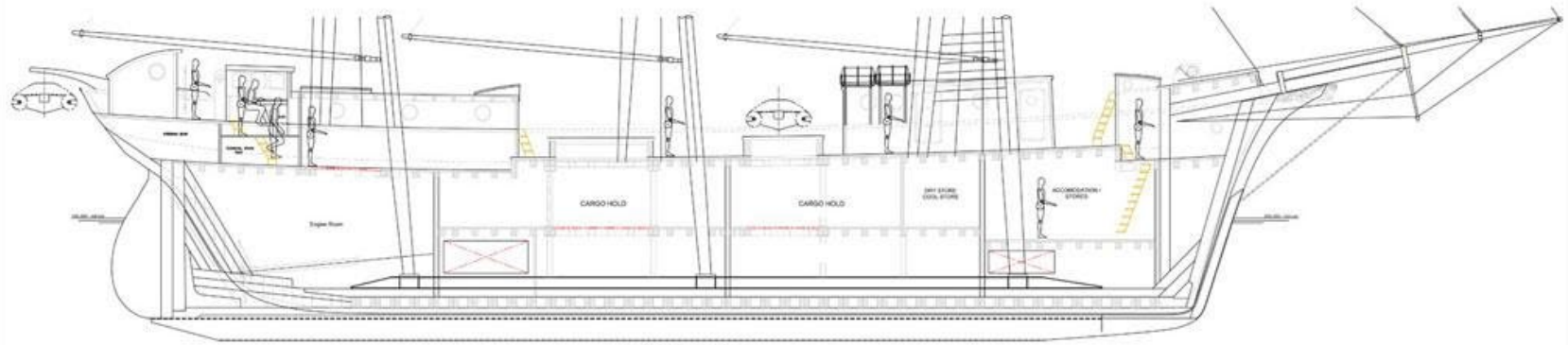


MANTA MARINE DESIGN
YACHT DESIGN - NAVAL ARCHITECTURE - ENGINEERING

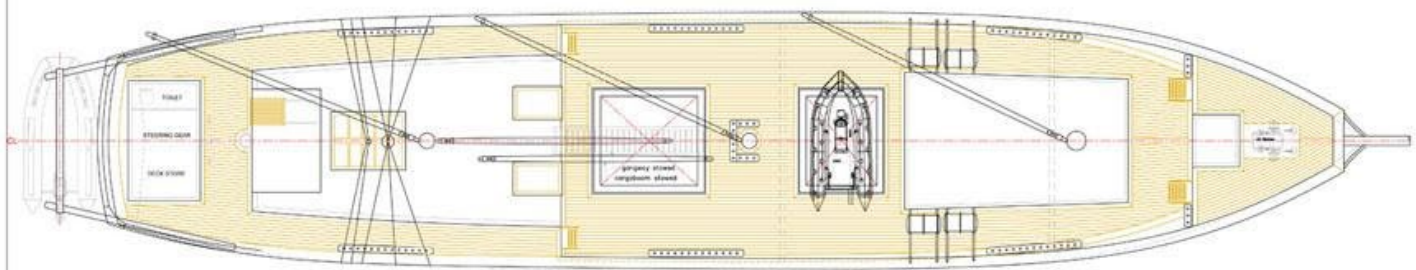


PROFILE

0 1 2 3 4 5 10 m 15 m 20 m 25 m 30 m 35 m

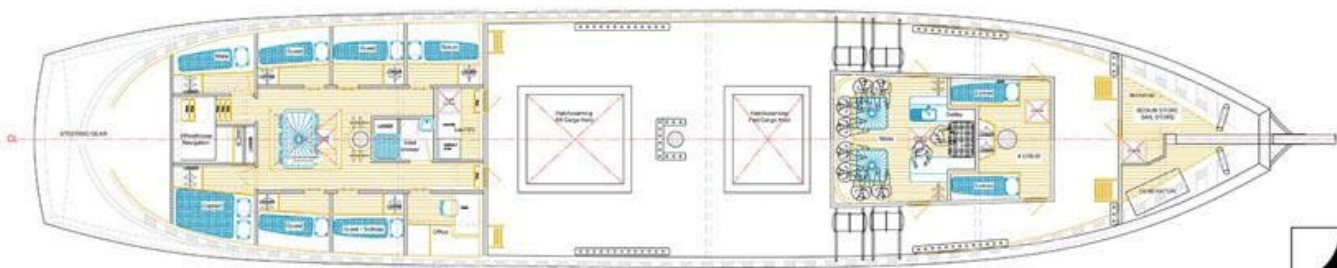


LONGITUDINAL SECTION @ CL



ELEVATION WEATHER DECKS

0 1 2 3 4 5 10 m 15 m 20 m 25 m 30 m 35 m



PLANVIEW ACCOMMODATION @ MAINDECK LEVEL

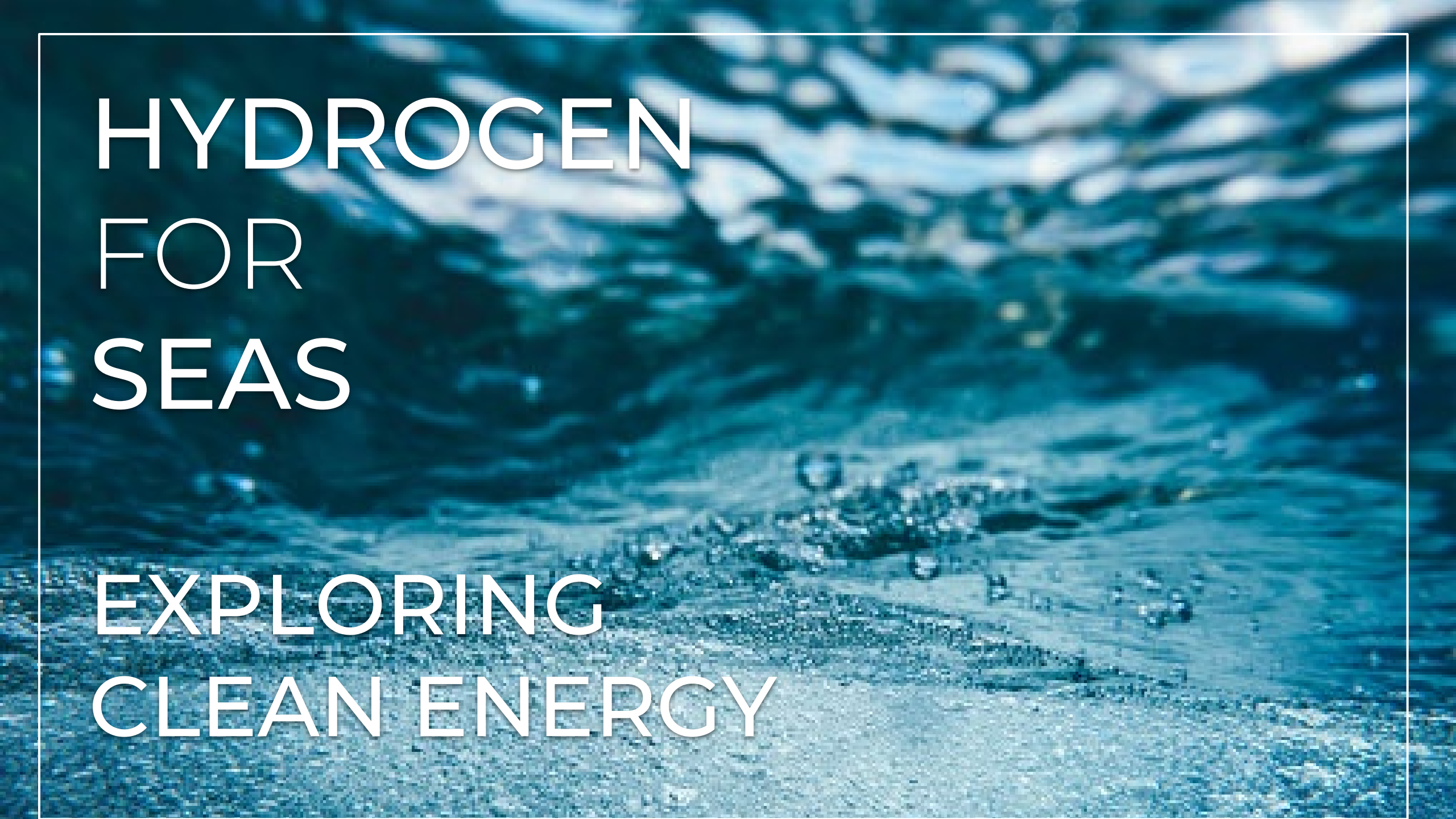
CEIBA
COSTA RICA

'CEIBA'
SAILING CARGO VESSEL

Main Particulars:

Length oa	: 47,00 m	(154' 1")
Length wl	: 35,20 m	(108' 11")
Beam max.	: 7,75 m	(25' 5")
Draught (full load)	: 4,20 m	(13' 10")
Gross Tonnage	: 261 GT	
Sailarea (approx)	: 580 m²	(6300 sqft)
Cargo capacity	: 800 m³ nett volume 550 metric tons	

MANTA MARINE DESIGN
YACHT DESIGN - NAVAL ARCHITECTURE - ENGINEERING

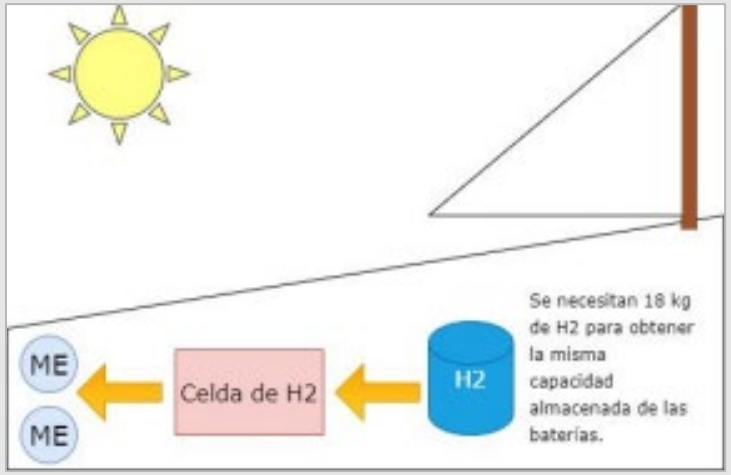


HYDROGEN FOR SEAS

EXPLORING CLEAN ENERGY

Hydrogen for Seas was born as a strategic alliance between Ad Astra Rocket and Sailcargo. Its main objective is to promote the research, development and implementation of **hydrogen technologies as a propellant in the maritime industry.**

Architecture with H_2 storage



- Hydrogen storage space volume size: 15 m3
- Max speed: 8kts
- Motor power: 300 kW
- Autonomy: 7.25 days

Route: Santa Marca CO - New Jersey USA

THE WORLD IS CHANGING

HOW IS UP TO US

SAILCARGO INC.