

# NEEL 47 KEY POINTS

**JUST  
MAKES  
SENSE.**

*Non-contractual document*



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## Why a NEEL Trimaran is safer at sea ?

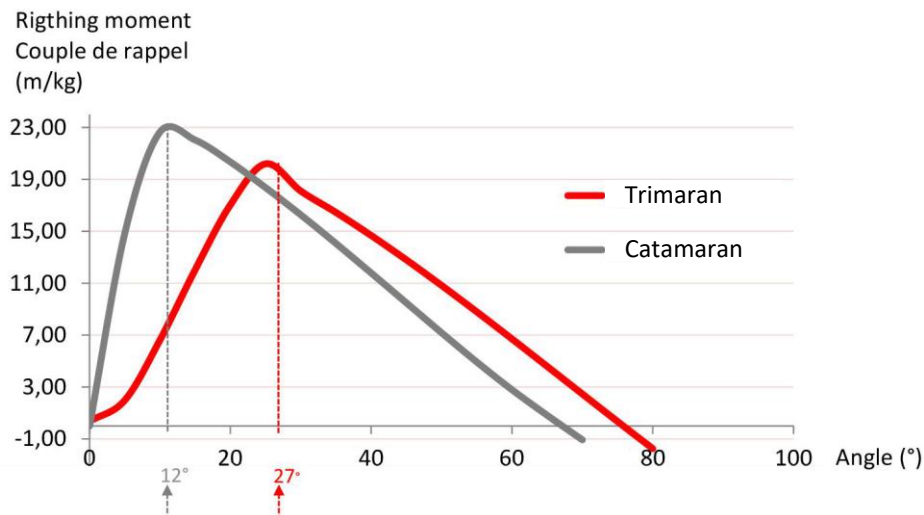
The width of NEEL trimarans is an important factor for **safety on the high seas** because it is a guarantee of **stability**.

On a catamaran the maximum righting moment occurs at 12° heeling, as shown on the stability curve.

This angle can be reached relatively easily when sailing in strong winds and heavy seas.

However, on a trimaran, this maximum righting moment does not occur until 27° heeling, therefore in normal multihull conditions of use, this angle is never reached.

For this reason, and thanks to the centered weight distribution, a trimaran is much more stable than a catamaran.



At 12° it is necessary to begin to shock the listening on a catamaran, whereas the trimaran is extremely on up to 27° heeling (angle of heeling never reached anyway on a cruising multihull). At 12° the trimaran is in a very comfortable sailing pace, while the catamaran is pushed to its limit of use.



## Why a NEEL Trimaran is more comfortable at sea ?

Let's consider both the trimaran and the catamaran heeling by 12°, which is the **safety angle** not to be exceeded on a catamaran.

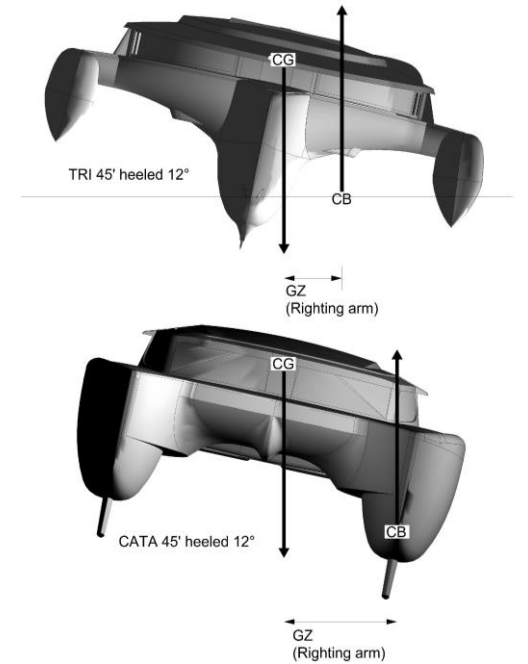
As shown in the graphics, the righting moment (GZ) is much higher on the catamaran than on the trimaran.

A high GZ means more brutal and uncomfortable seakeeping.

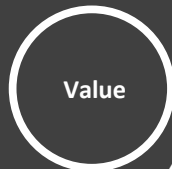
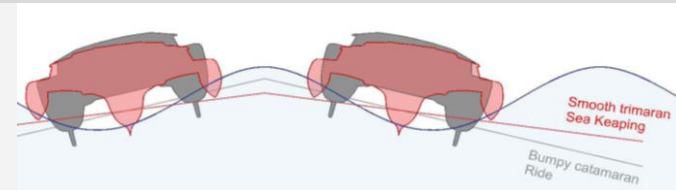
At this angle of heel the catamaran's GZ is double that of the trimaran.

Therefore, sailing the trimaran is much smoother than sailing the catamaran.

The trimaran has less roll motion than the catamaran, as the center of buoyancy is never far downwind like on a catamaran. Again, **centered weight** is the key to success and comfort. In fact, all significant heavy equipment is located in the main central hull on a trimaran whereas it is distributed half and half in each hull on a catamaran.



The superiority of the trimaran is even **more significant** in heavy seas as shown on the illustration here.



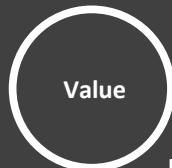
## Why a NEEL Trimaran is faster at sea ?

As shown in offshore racing, the trimaran is significantly faster than monohulls or catamarans.

This is also true for cruising trimarans, as proven by the last ARC rally won by a NEEL 45 in December 2015.

The superiority of the trimaran is even more obvious when sailing upwind, especially due to the rig : on a catamaran, the forestay pulls from the front beam, the mast compresses a central beam and the shrouds pull the two floats supporting the forestay and mast beam: this platform deforms in many directions. Consequently, it is then impossible to have a rigid forestay. On a trimaran, the forestay, mast and mainsail tension are structurally bonded to one strong, longitudinal beam : the main hull.

This configuration, as per a monohull, allows for a rigid forestay and good performance up-wind. Performance is also enhanced by the centered weight. **The extra speed of the trimaran is an additional safety factor.**



## Why a NEEL Trimaran is more manoeuvrable ?

NEEL trimarans are conceived for fast cruising.

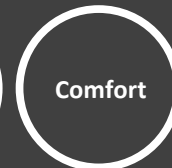
With an average cruising speed of **10 knots**, over **200 nautical miles** are easily achievable **each 24 hours**. Speeds from **15 to 18 knots** are often reached when the breeze freshens. Weight centering is managed in order to limit pitching. The centre hull is rockered to facilitate tacking.

Floats are of a stretched form to privilege **directional stability** and **passage through the sea** (thin bows). The rigging is directly derived from racing trimarans, thereby achieving full cruising speeds of **1.5 to 2 times** faster than **conventional cruising yachts**. The sail surface area is generous with some **17m<sup>2</sup> per tonne**.

Finally, the trimaran configuration also facilitates **sustained speed under motor propulsion**. The low prismatic coefficient of the central hull means drag is very weak. The side floats are only very lightly in contact with the surface of the water.

The manoeuvres reported to the steering **station have been designed for navigation** with a reduced crew or even for easy **solo manoeuvres**.

- Choice of 2 possible rigs: **classic** or **carbon performance**
- 3 sails with berths (including a self-tacking and releasable staysail)
- Up to **3 headsails** : genoa, staysail and asymmetrical spinnaker (option)

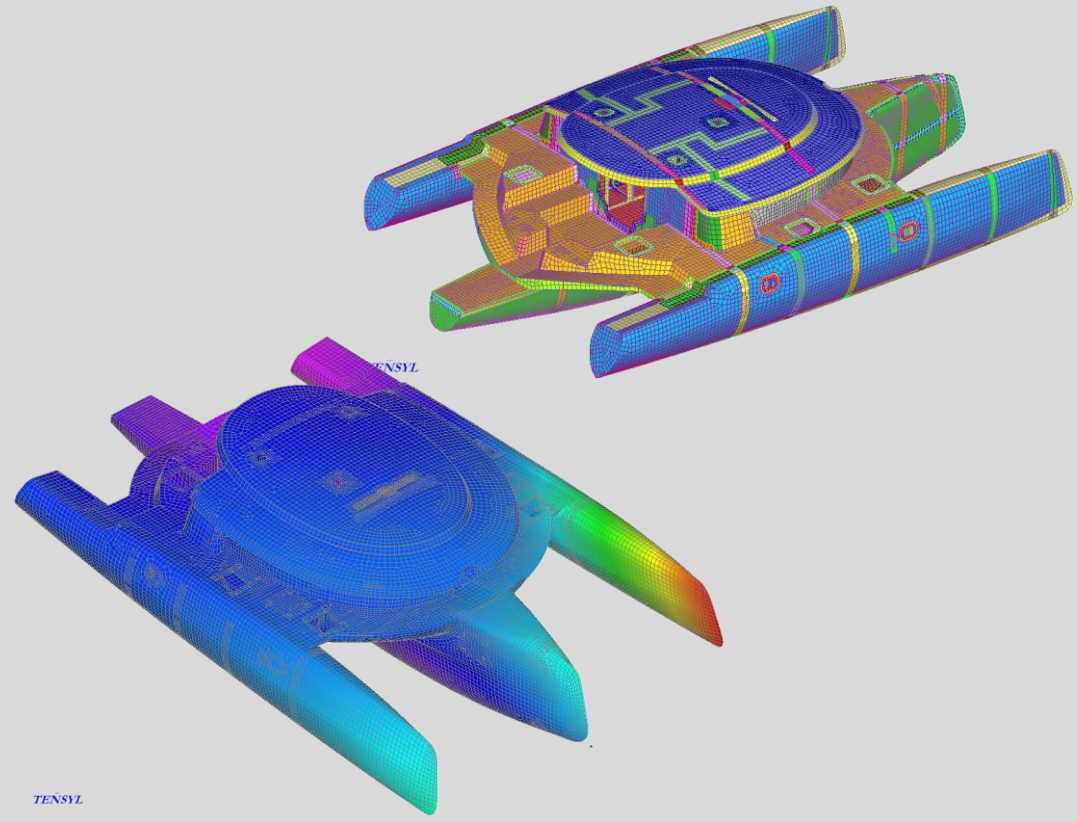


## A thorough story

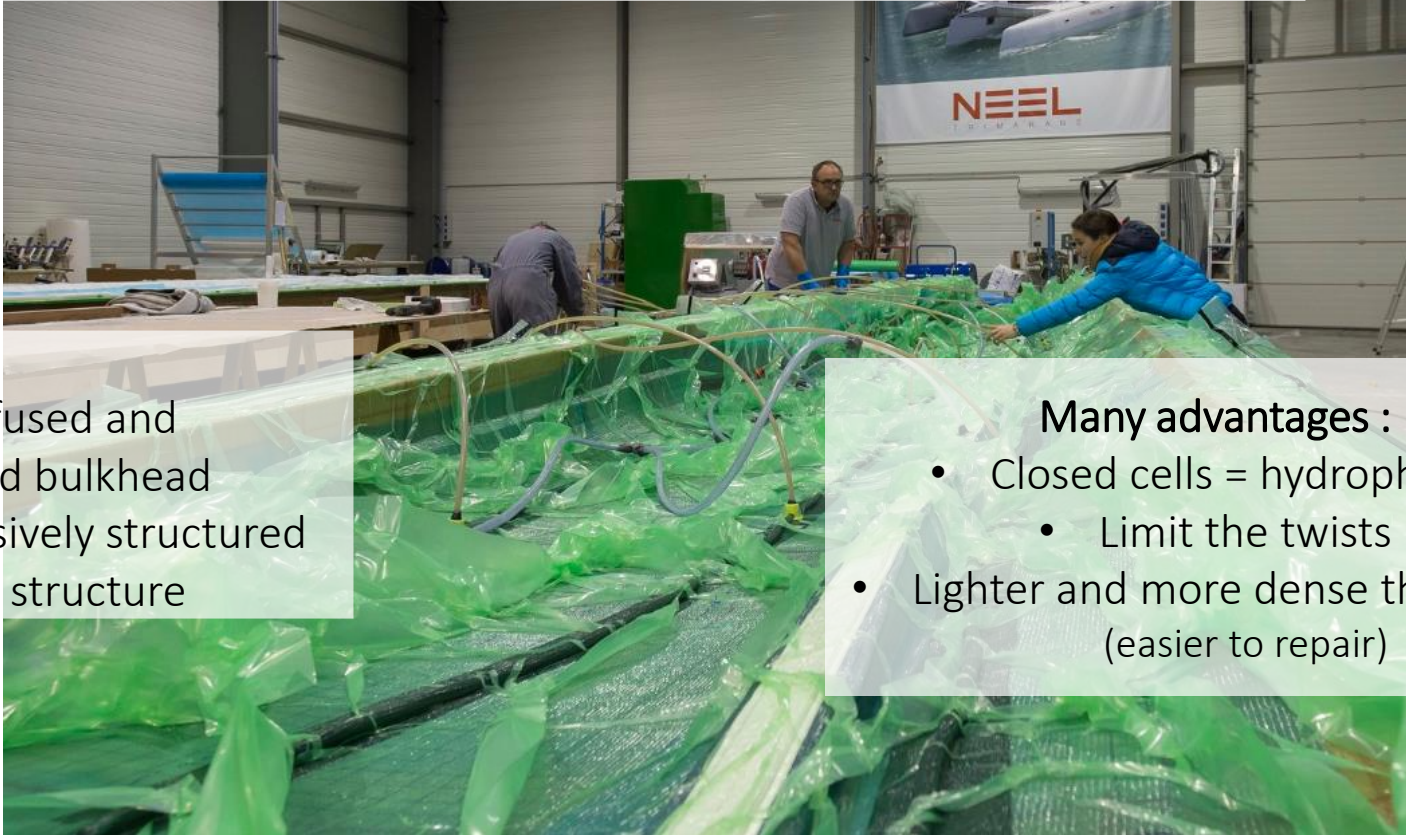
To optimise the structure of NEEL trimarans, we collaborated with TENSYL and Cabinet Lombard with whom we have previously worked on the structure of the racing trimaran TRILOGIC.

TENSYL and Cabinet Lombard have made a speciality of the structural design of multi hull racing and cruising composites. Sampling is determined from the most critical cases of offshore loading on the structure, for example catching a wave at high-speed or sailing with the wind on the beam.

The analysis programs transmit relevant information which are compared to nominal values in the specs. Colour displays are particularly instructive in sample determination. The overall research programme aims to define type and quantity of construction materials best suited to each zone in order to eliminate unnecessary weight and apply suitable safety margins to load bearing elements.



High strength rigid foam | Isophtalic polyester resin with 1<sup>st</sup> layer of vinylester (better protection against osmosis)



## Rigidity

Set of infused and laminated bulkhead  
→ Excessively structured and rigid structure

## Many advantages :

- Closed cells = hydrophobic
  - Limit the twists
- Lighter and more dense than balsa (easier to repair)





## REGISTERED INNOVATIONS

Cockloot<sup>®</sup>

Full Beam Cockpit<sup>®</sup>

Antireflex Window<sup>®</sup>



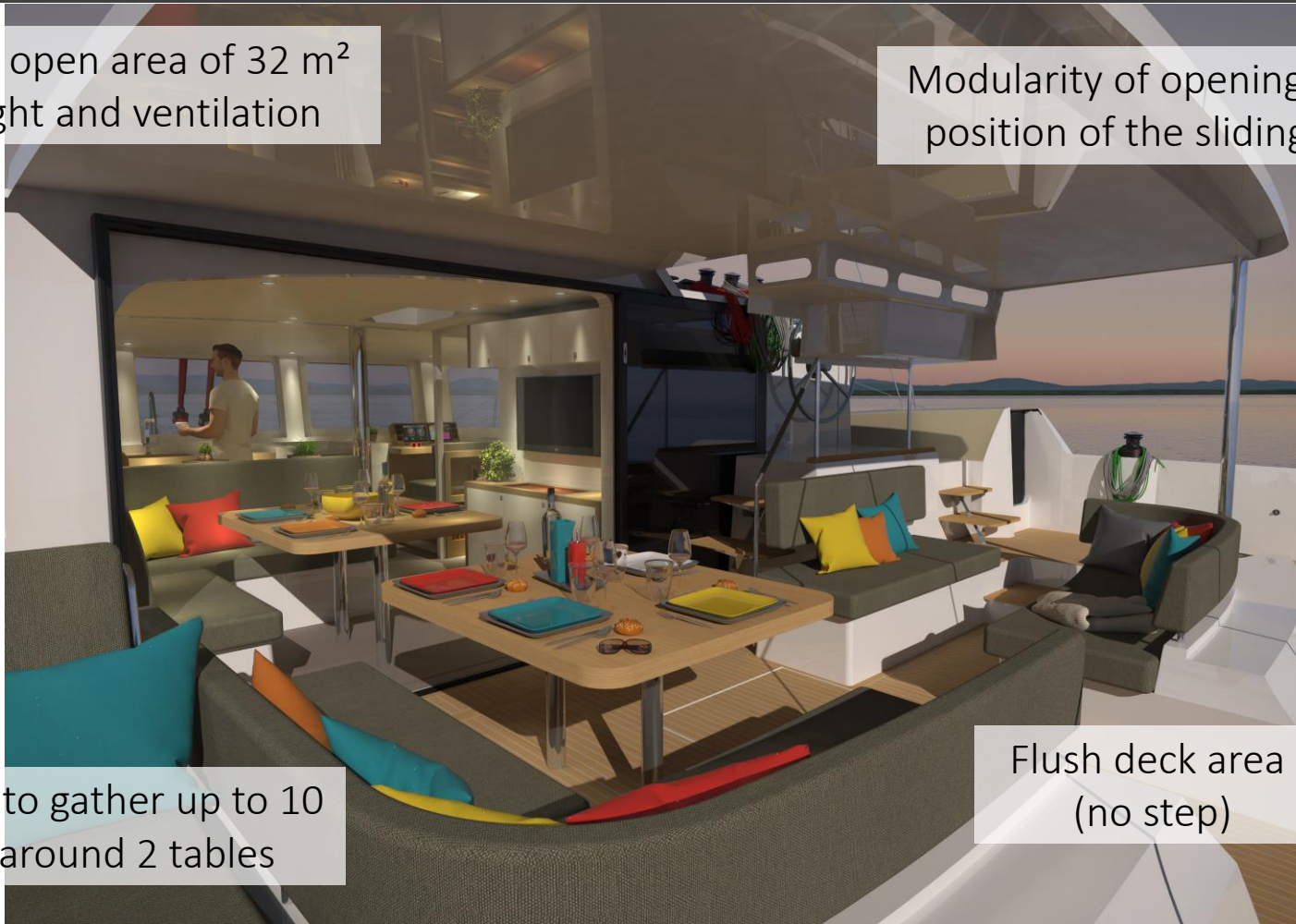
## MODULARITY

3 to 5 cabins  
Private areas  
Perfect correlation of life and  
watch areas



Large and open area of 32 m<sup>2</sup>  
full of light and ventilation

Modularity of opening (multi-  
position of the sliding door)



Possibility to gather up to 10  
people around 2 tables

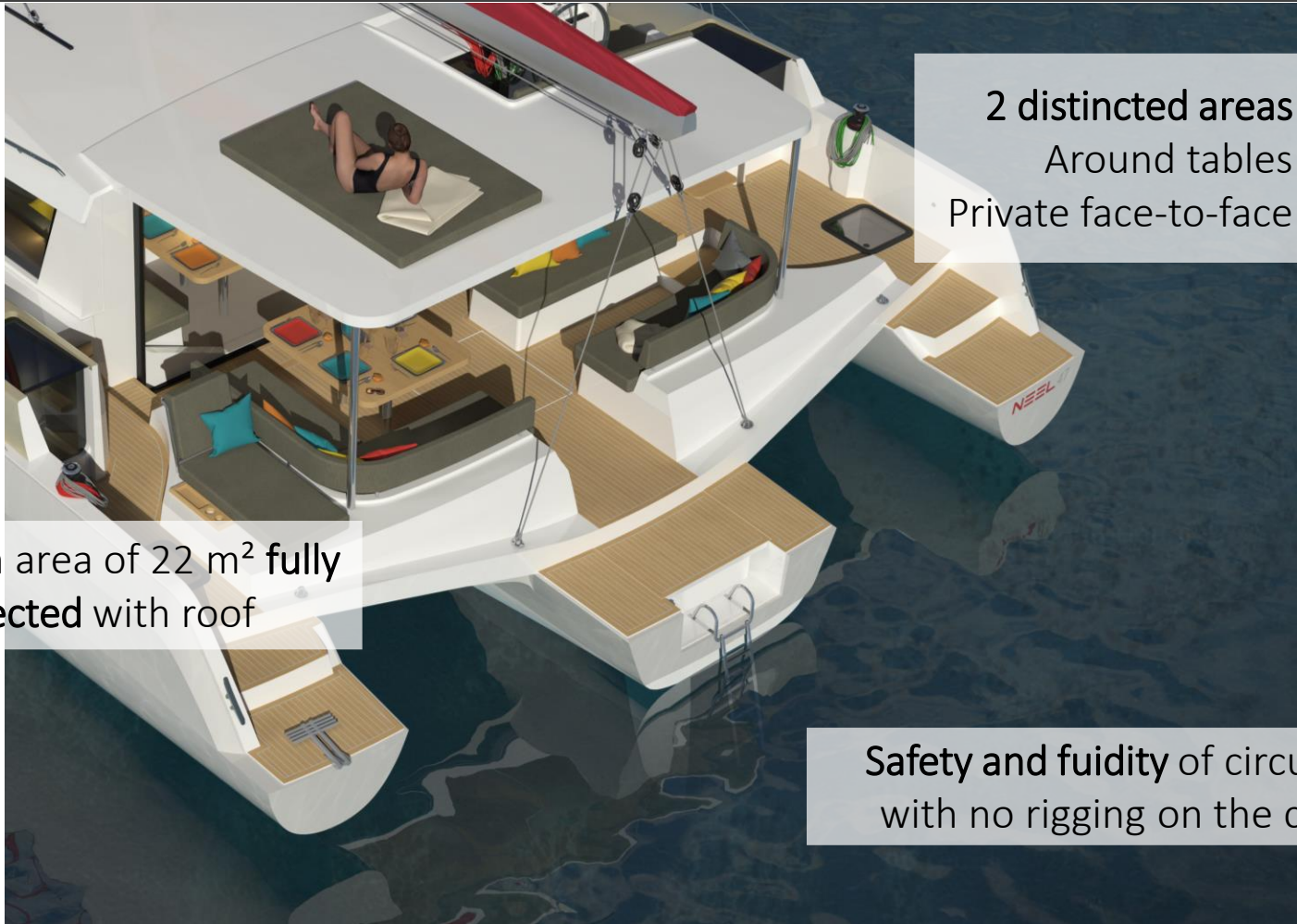
Flush deck area  
(no step)



# NEEL 47 | FULL BEAM COCKPIT®

JUST  
MAKES  
SENSE.

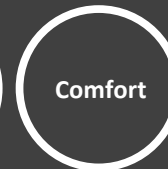
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2 distinct areas  
Around tables  
Private face-to-face

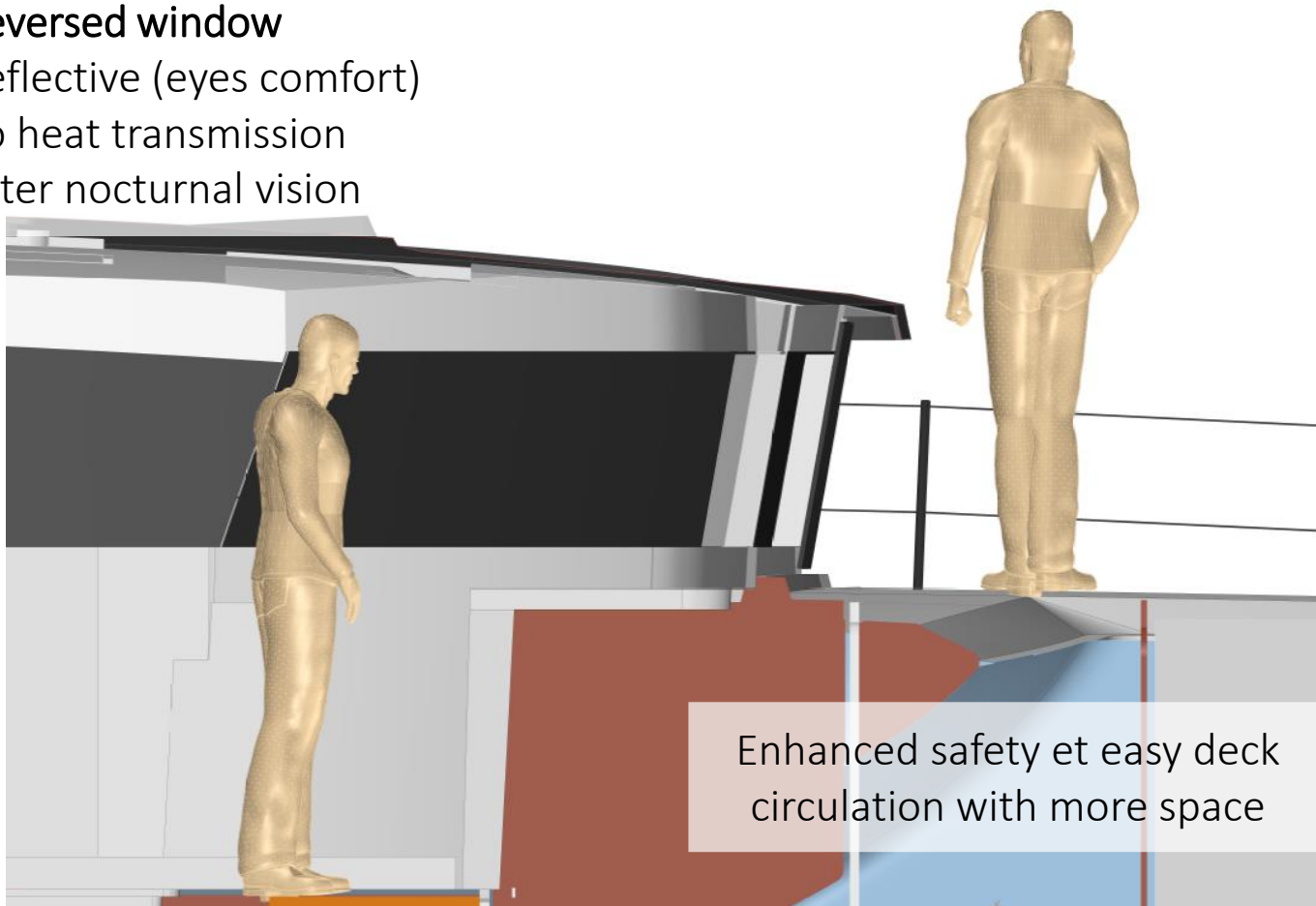
Flush area of 22 m<sup>2</sup> fully  
protected with roof

Safety and fluidity of circulation  
with no rigging on the cockpit



## Reversed window

- Anti-reflective (eyes comfort)
  - No heat transmission
  - Better nocturnal vision

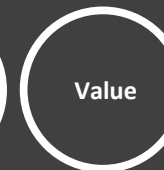
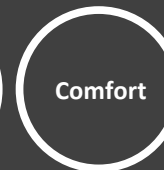




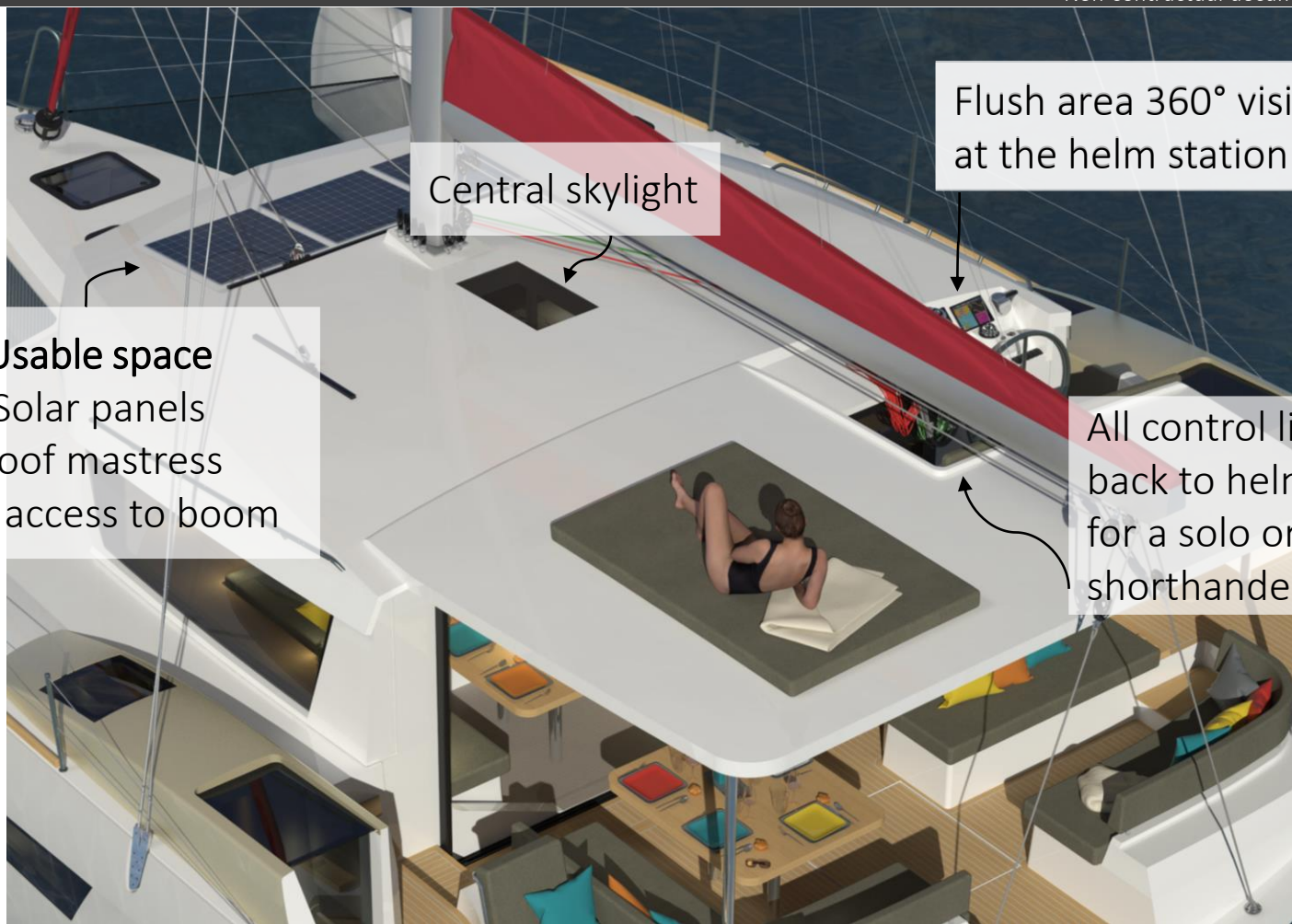
Easy and safe circulation  
+ central access to helm  
station and transom



Very secured catwalks  
« Interior passages »  
between roof and  
access cabin domes



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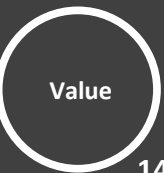


Central skylight

Flush area 360° visibility  
at the helm station

Usable space  
Solar panels  
Roof mastress  
Easy access to boom

All control lines led  
back to helm station  
for a solo or  
shorthanded sailing





**Centralized:** All manoeuvres are carried out at the helm station: mainsail, sheeting, reefing....

**Comfortable and convivial:** 3 to 4 people can stand near the helm station without embarrassment

**Secured:**

- **Direct and secure** access from the cockpit to the helm station
- Excellent visibility for manoeuvres



Up or down table



Comfortable and friendly living space



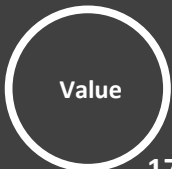




Modern, open, ventilated and bright kitchen



Panoramic view  
Ergonomy  
Storage capacity  
Conviviality on board





Panoramic view 270°  
Sea view and chart table view

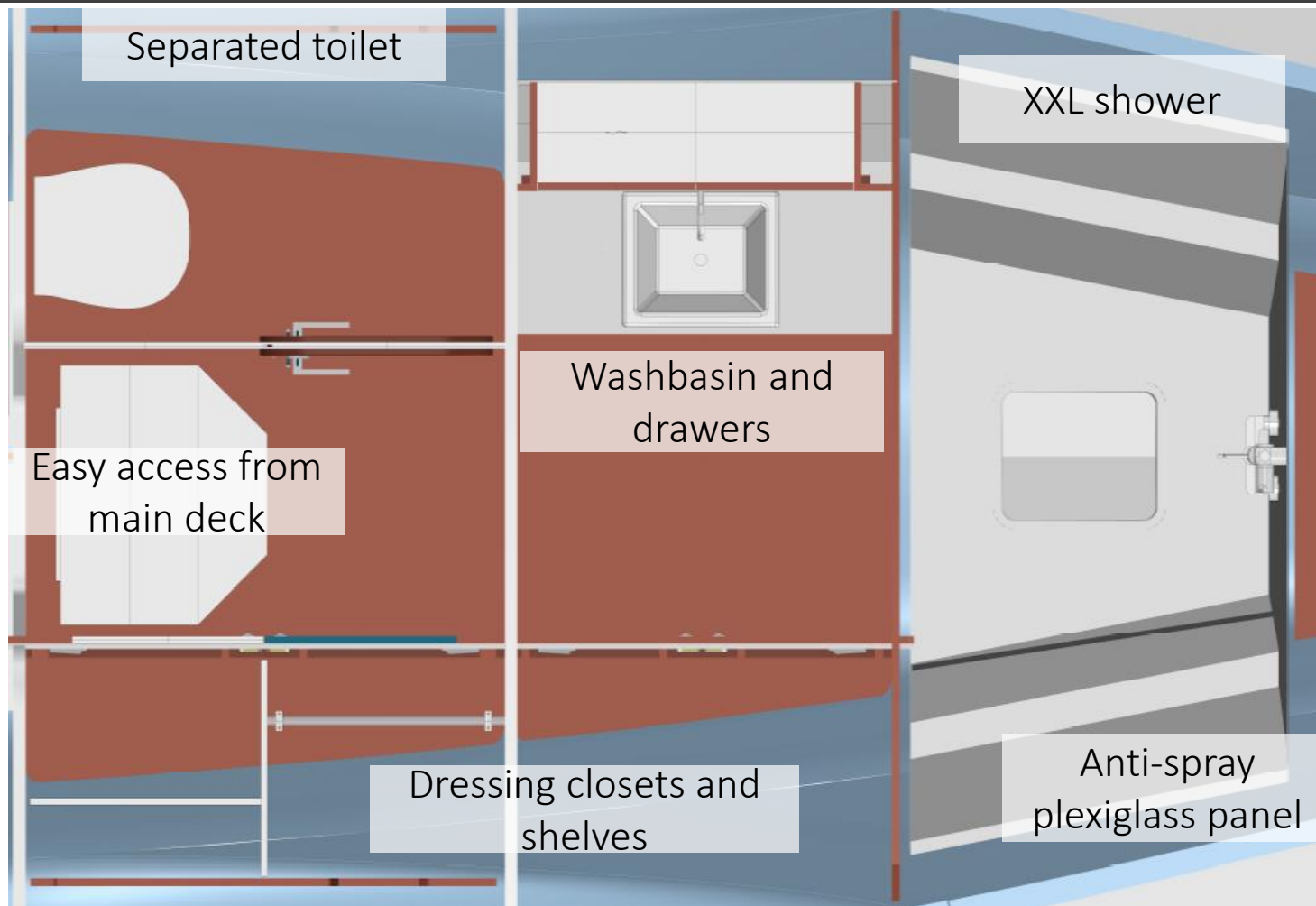
Extra large windows

Optimal ventilation and  
plenty of storage space

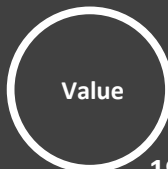
Possibility to vary the  
atmospheres: cosy and intimate  
or bright and friendly

© Olivier Blanchet / Neel Trimarans





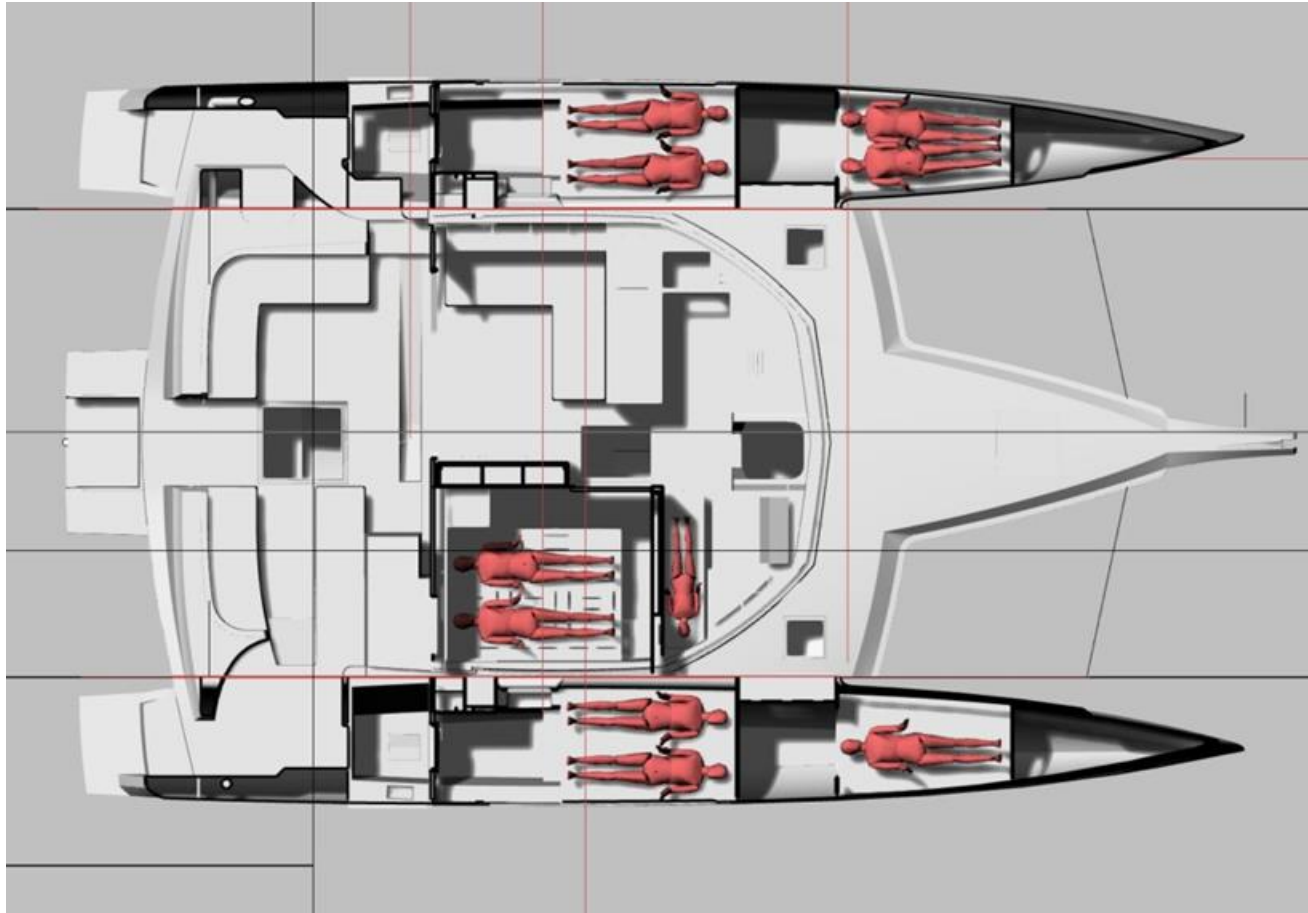
+ of 33% of the main hull dedicated to well-being

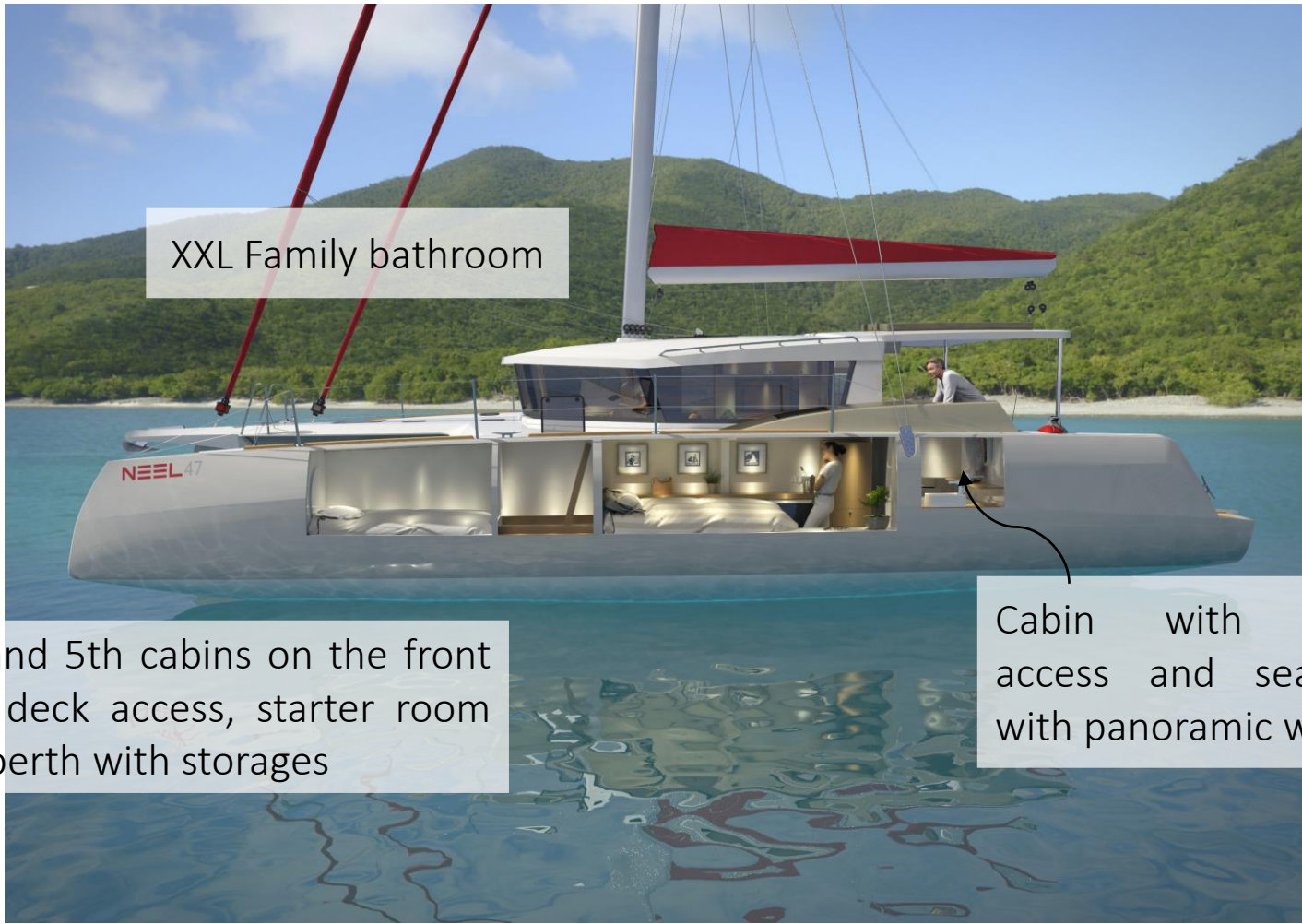




- Facing the route
- Bench seat convertible into a bed (for a kid, near the parents)
- Excellent night visibility (AntiReflex Windows®)
- Many storage spaces



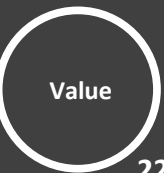




XXL Family bathroom

4th and 5th cabins on the front with deck access, starter room and berth with storages

Cabin with private access and sea view with panoramic window

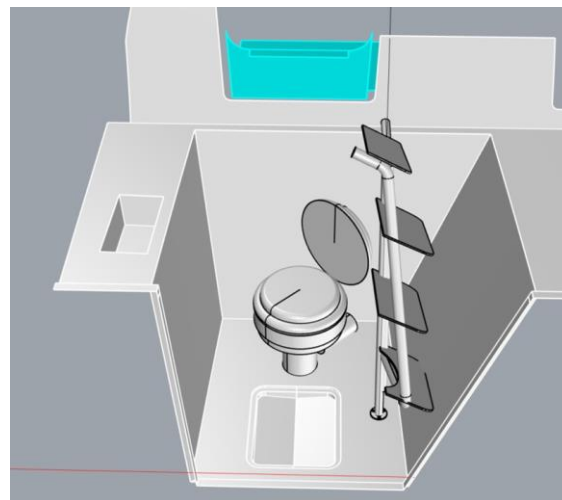
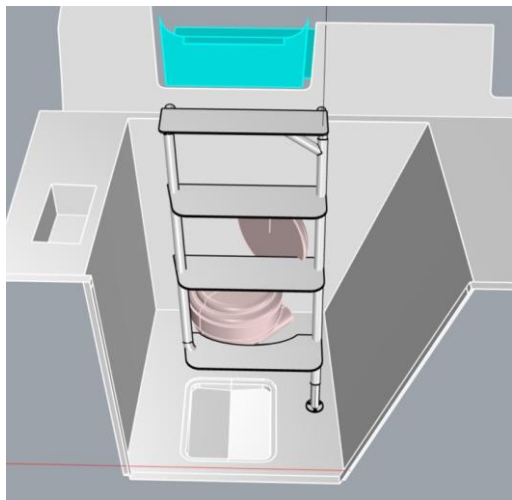




The successful challenge of **performance** and **comfort**!

Thin floats for better **performance**.  
Comfort of life in an **extremely well optimized and private space**.

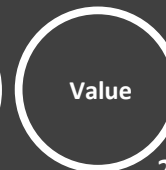




Wet area: shower room and entrance airlock in the cabin

Optimized bathroom ergonomics

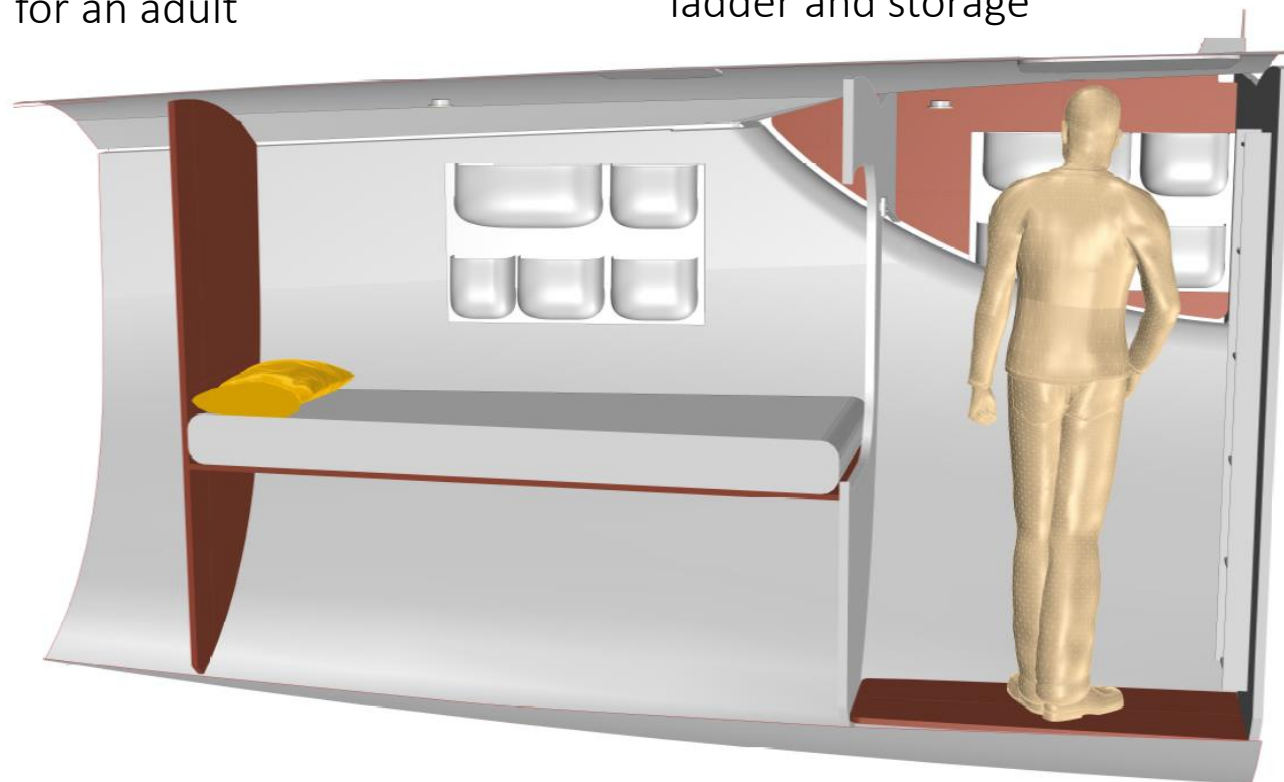
The three functionalities (shower, WC, washbasin) are ensured.



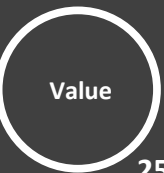




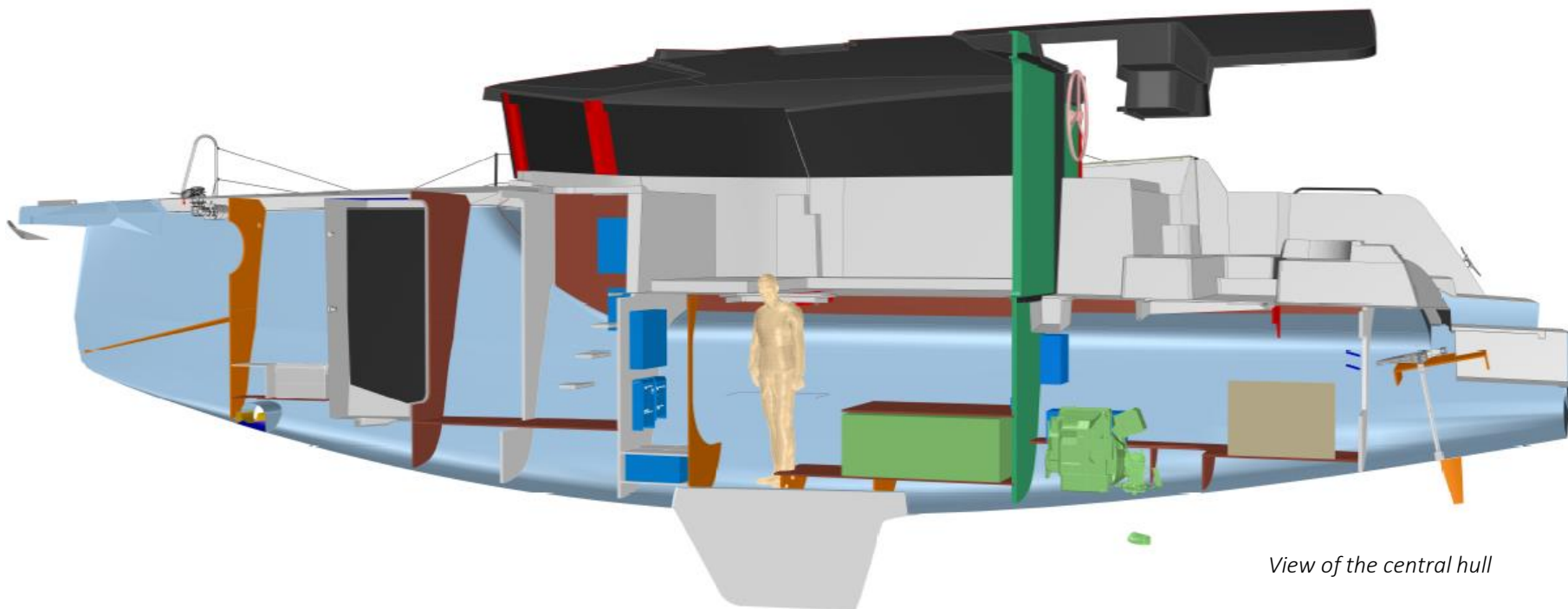
Only front cabin of this kind offering a real berth for an adult



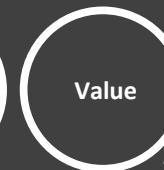
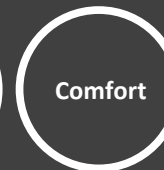
Proper starter room to enter the cabin, with ladder and storage

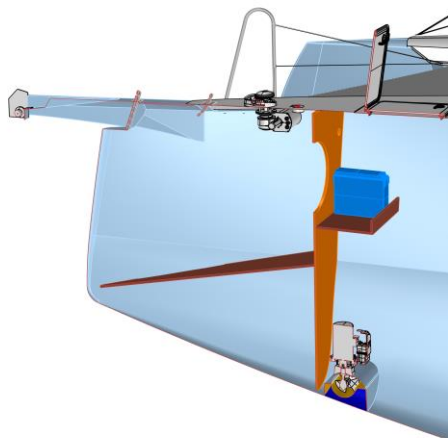


A real « workshop » and storeroom  
Technical zones with easy access  
Central technical area illustrating weight centering

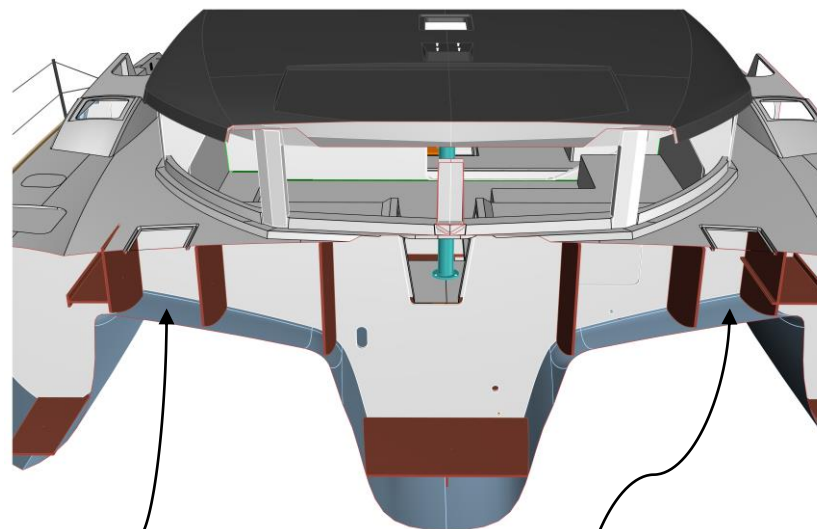


*View of the central hull*



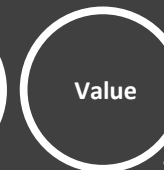
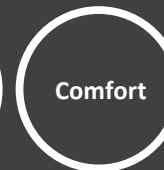


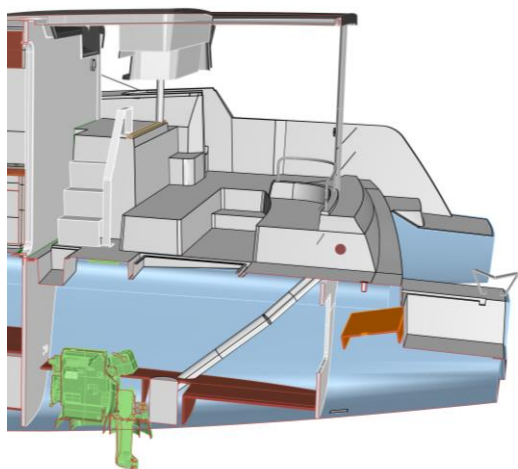
Deep anchor locker and bowthruster compartment easy to access



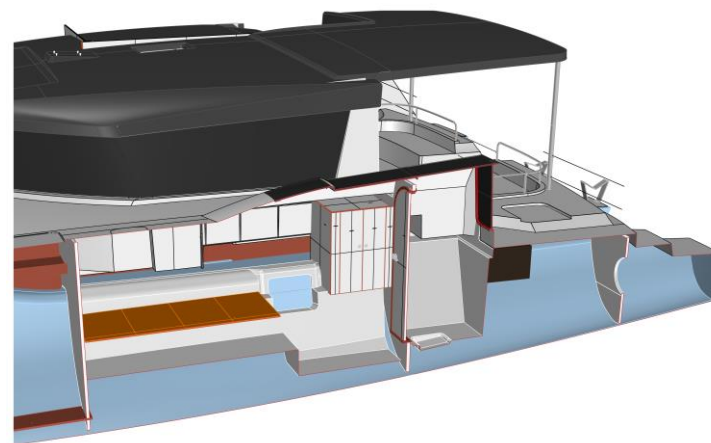
Dedicated gas box for storing gas reserves

Large front trunk for fenders and warps

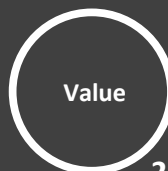


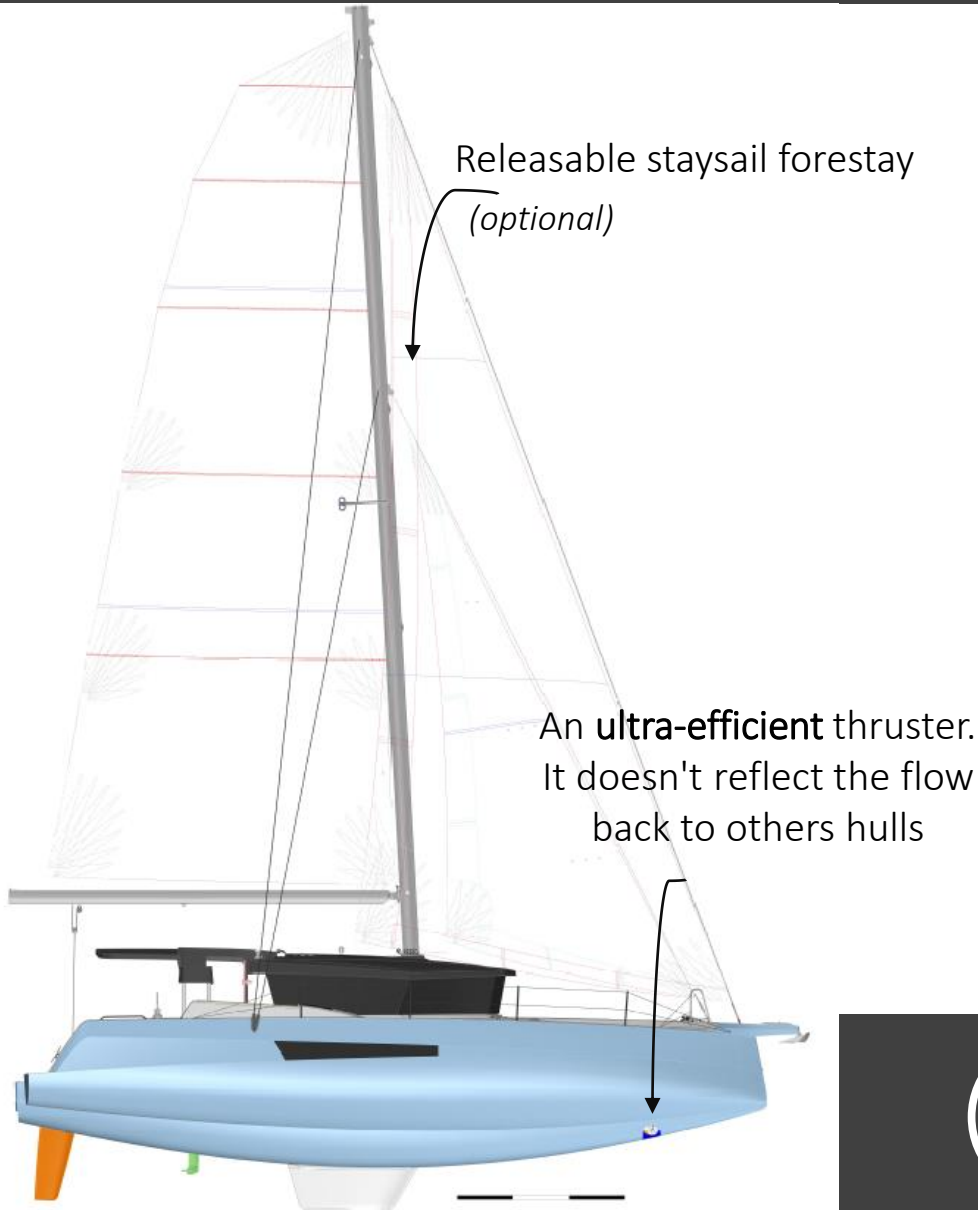


Engine compartment with **direct access** from the cockpit



2 large **rear transom lockers** (port and starboard)





- Possibility of installing a carbon mast (*optional*) thanks to performance rigging.
- Set of 3 sails ready to sail in any weather conditions
- Centralized helm station set for short-handed sailing
- Helm sensitivity thanks to a system of pulleys and textile bar lines that reduces any friction
- Candlestick rail, anodized titanium-coloured aluminium and fluorescent Dyneema® life lines

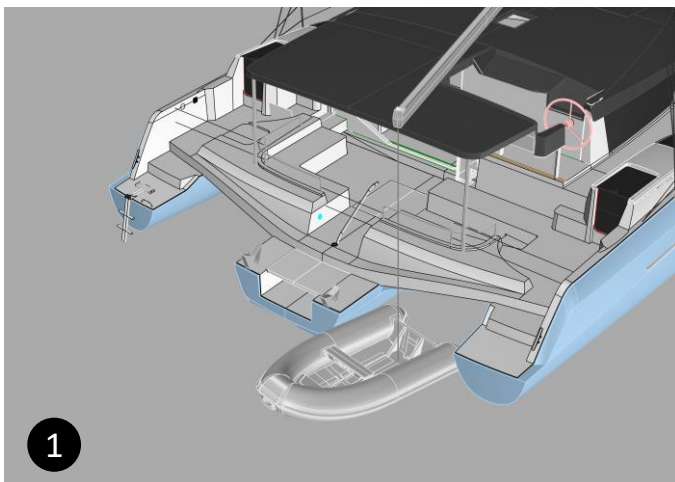
Innovation

Performance

Comfort

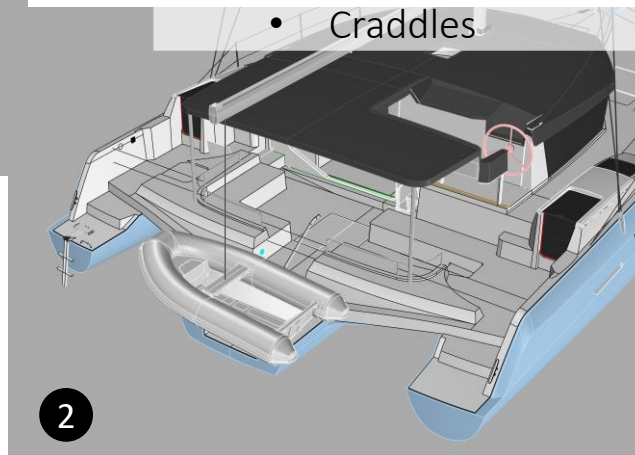
Safety

Value



Lifting / launching of the dinghy by a modern and easy to use system thanks to :

- Topping lift
- Boom as crane
- Line driver
- Remote control
- Craddles



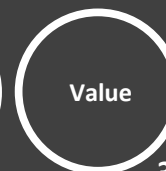
Space-saving on the transom without davits

Short-handed manoeuvre thanks to the remote control

**EASY**

**EFFICIENT**

**FAST**



## THE BEST OF BOTH WORLDS



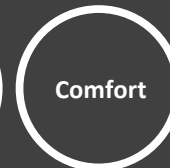
© OLIVIER BLANCHET / NEEL TRIMARANS

The **catamarans constraint** is to find the compromise between:

- floats that are either very "rocky" to facilitate change tack
- or have very tight floats to avoid pitching.

The trimaran offers both a **rocky shape main hull** (facilitating the tacking) and **very tight floats** (no pitching and therefore a real comfort at sea)

Only the trimaran tacks as easily as a monohull (thanks also to its staysail on a drop-down forestay)





© Olivier Blanchet / Neel Trimarans

*Non-contractual document*

Overall length	47 ft
Overall width	27ft
Draught	5,8 ft
Displacement	11,60 T
Air draft	62,3 ft
Close-hauled surface	1 291 sq. ft
Full battened mainsail	753,5 sq. ft
Furling genoa	538 sq. ft
Self-tacking furling jib	215 sq. ft
Water tank	600 L
Fuel tank	300 L
Engine	Sail Drive 60HP
Manufacturer	NEEL-TRIMARANS
Architect	Marc LOMBARD YACHT DESIGN GROUP
CE certification	> ICNN

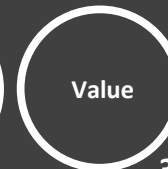
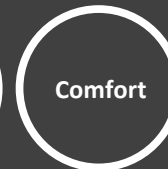




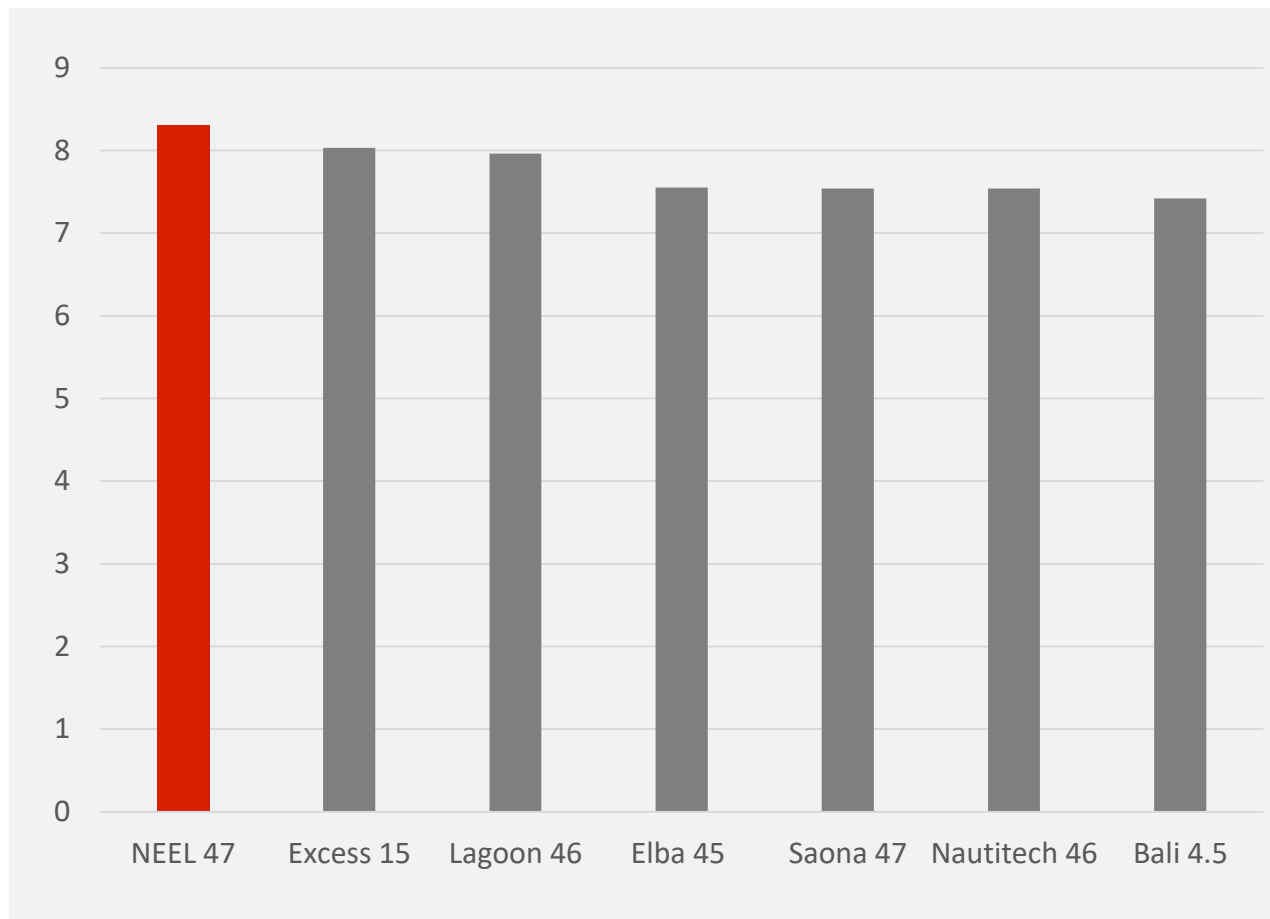


## Number of people on board (CE)

Category A	8
Category B	10
Category C	25
Category D	30



Overall beam (m)



The NEEL 47 is only 34cm wider than a Lagoon 46

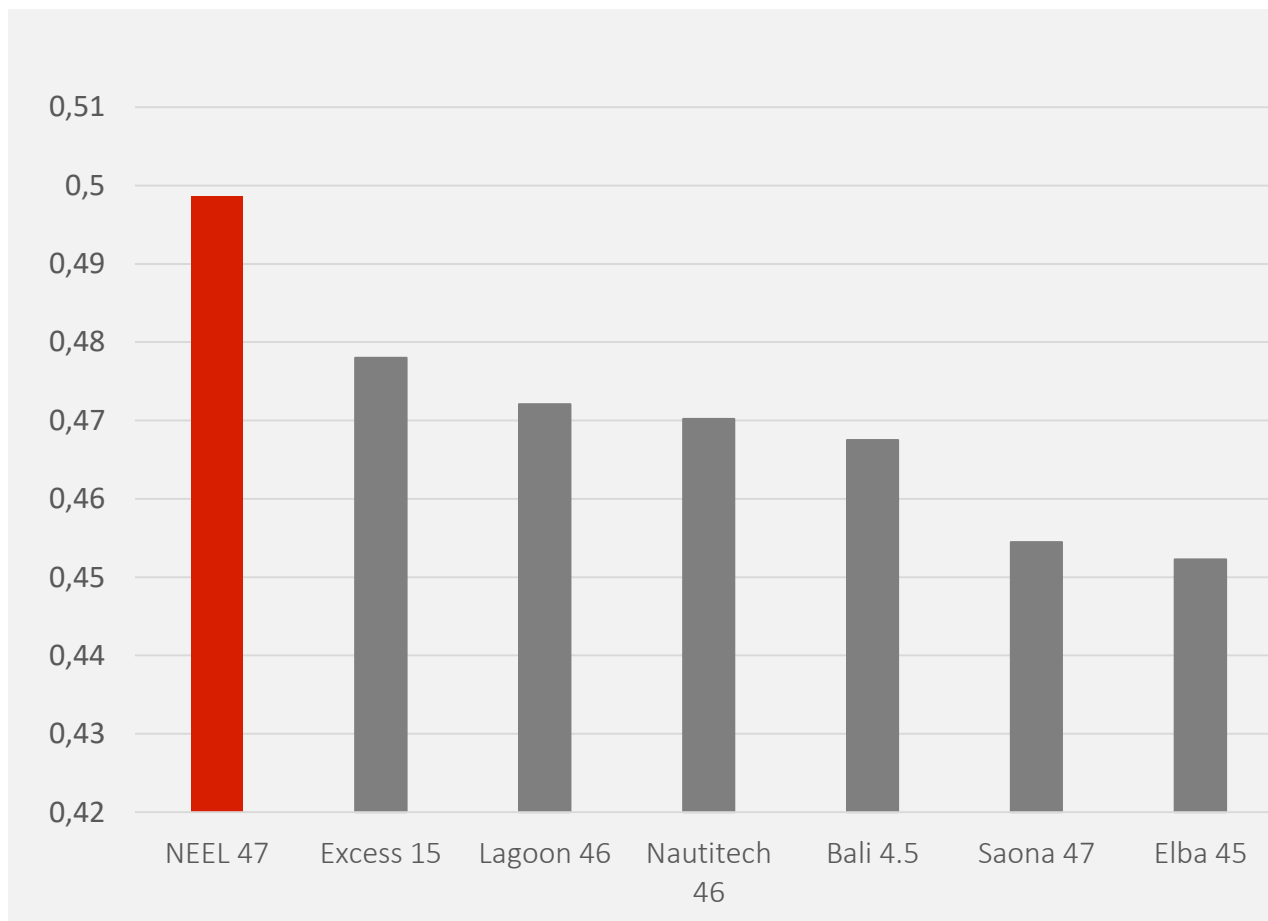


Power-to-weight ratio is used to measure the performance of the boat.

Formula is as following :

$$\sqrt{\text{surface de voile au près}} \div \sqrt[3]{\text{poids}}$$

The NEEL 47 offers the best power-to-weight ratio

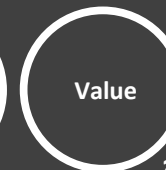
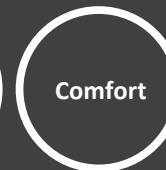
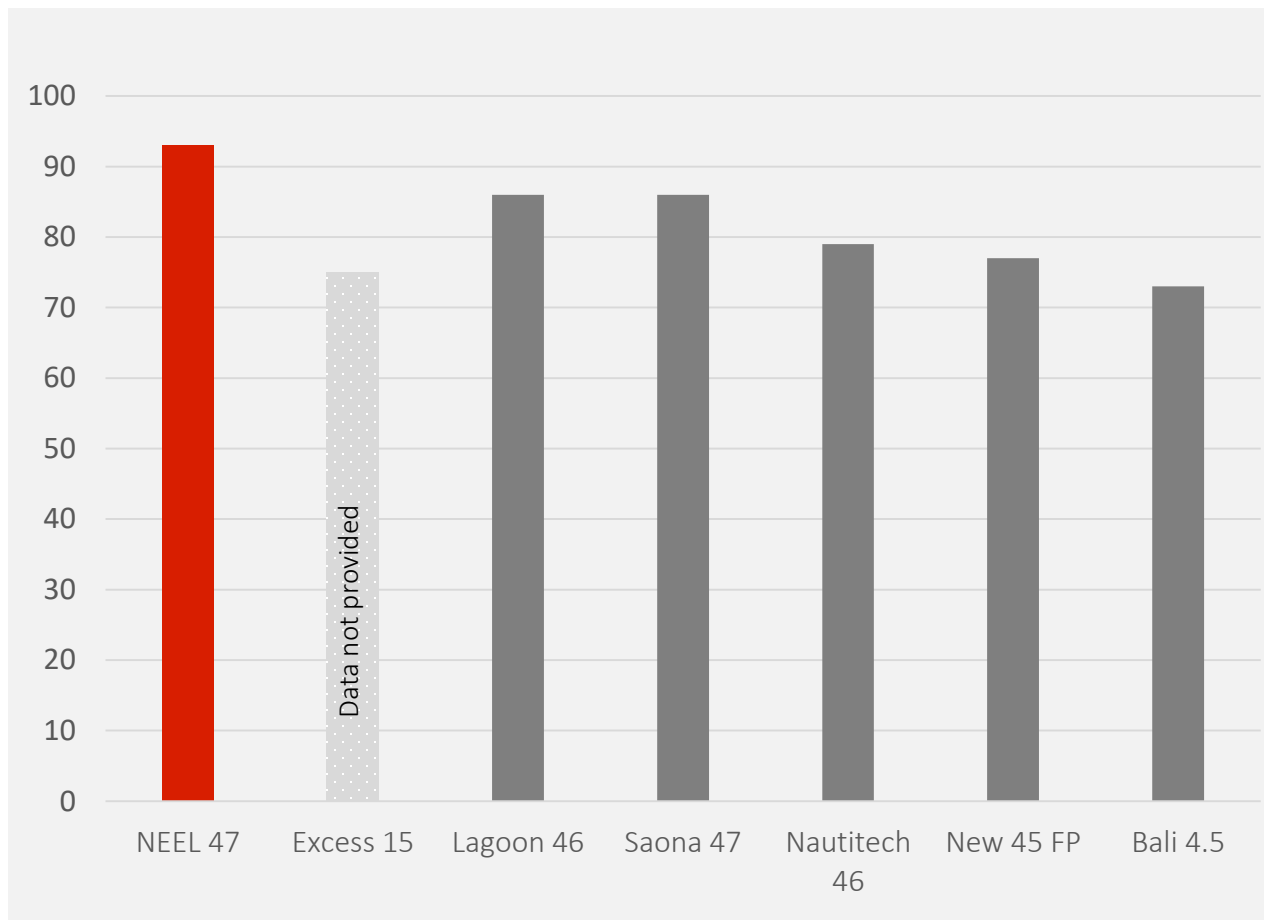


Living space surface (m<sup>2</sup>)

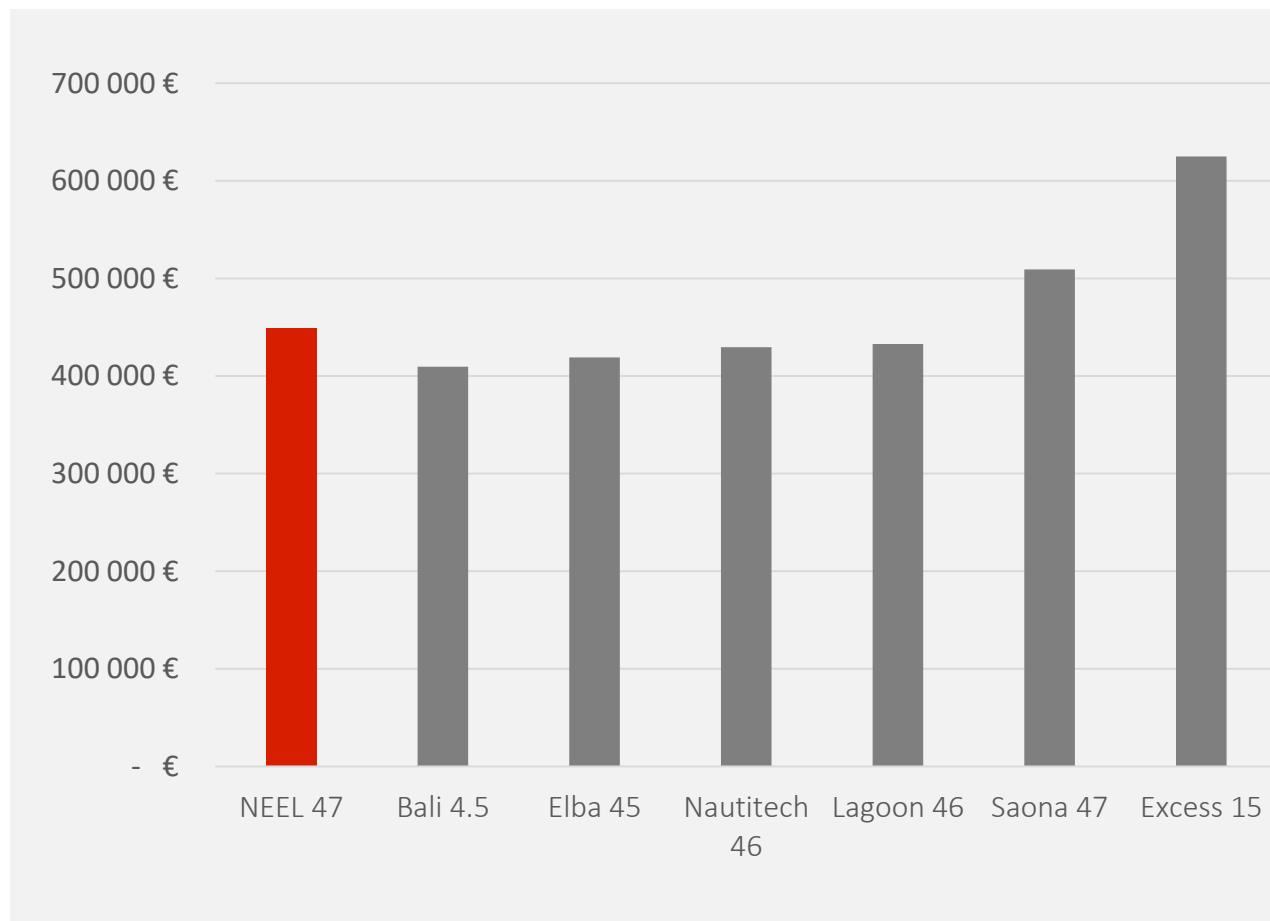
93 m<sup>2</sup> total living space

15 m<sup>2</sup> total technical areas  
(including storage areas)

**The NEEL 47 offers the best  
exploitable surface onboard.**



From 449 000€ ex VAT



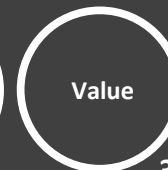
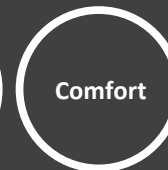
**The NEEL 47 offers an attractive rate positioning**



- SAFETY
- MODERNITY
- MODULARITY
- CONVIVIALITY
- EASE OF MOVMENT
- QUALITY OF BUILDING
- ATTRACTIVE RATE



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# NEEL 47

**JUST  
MAKES  
SENSE.**

NEEL-TRIMARANS

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