

L A T E R A L

NAVAL ARCHITECTS

BALANCE

In collaboration with



SINOT

YACHT ARCHITECTURE & DESIGN

oceAnco



# LATERAL

**Lateral Naval Architects** provides complete engineering expertise to the superyacht industry, from project conception to delivery.

Our core competence is engineering, but our unique focus is on meaningful innovation, to enable superyachts that meet the demands of today's owners.

We believe that meaningful innovation starts with asking new questions.







Engineering is a search for answers.

Innovation is a new answer to an old question.

**L A T E R A L** is an answer to a new question.

**Ask new questions.**





## QUESTION

**How can the application of technology achieve a more effective and balanced use of technical and luxury space?**

We do not live in a linear world. We live in a world governed by complex and interrelated systems. Everything is connected.

The world is in balance, our Earth and its ecology acts as a co-ordinated system to maintain the balance of nature and a state of equilibrium. A small change in a seemingly benign parameter is balanced out by another to ensure the complex system remains in balance.

The natural world is in balance. The inspiration for **BALANCE**, a yacht with natural balance of proportion, form and space.



L A T E R A L



Traditional motor yacht design often begins with the conception of interior layouts, or an exterior profile. Following the development of these the naval architect is left to determine the resulting Gross Tonnage and optimise a hull and propulsion package around the design.

This process frequently leads to yachts of a significant volume in relation to their dimensions and the demand for relatively high maximum speeds results in a design which is in a vicious circle of ever increasing Gross Tonnage, driving more weight, driving more power, driving more technical space, in turn driving the need to increase Gross Tonnage further.

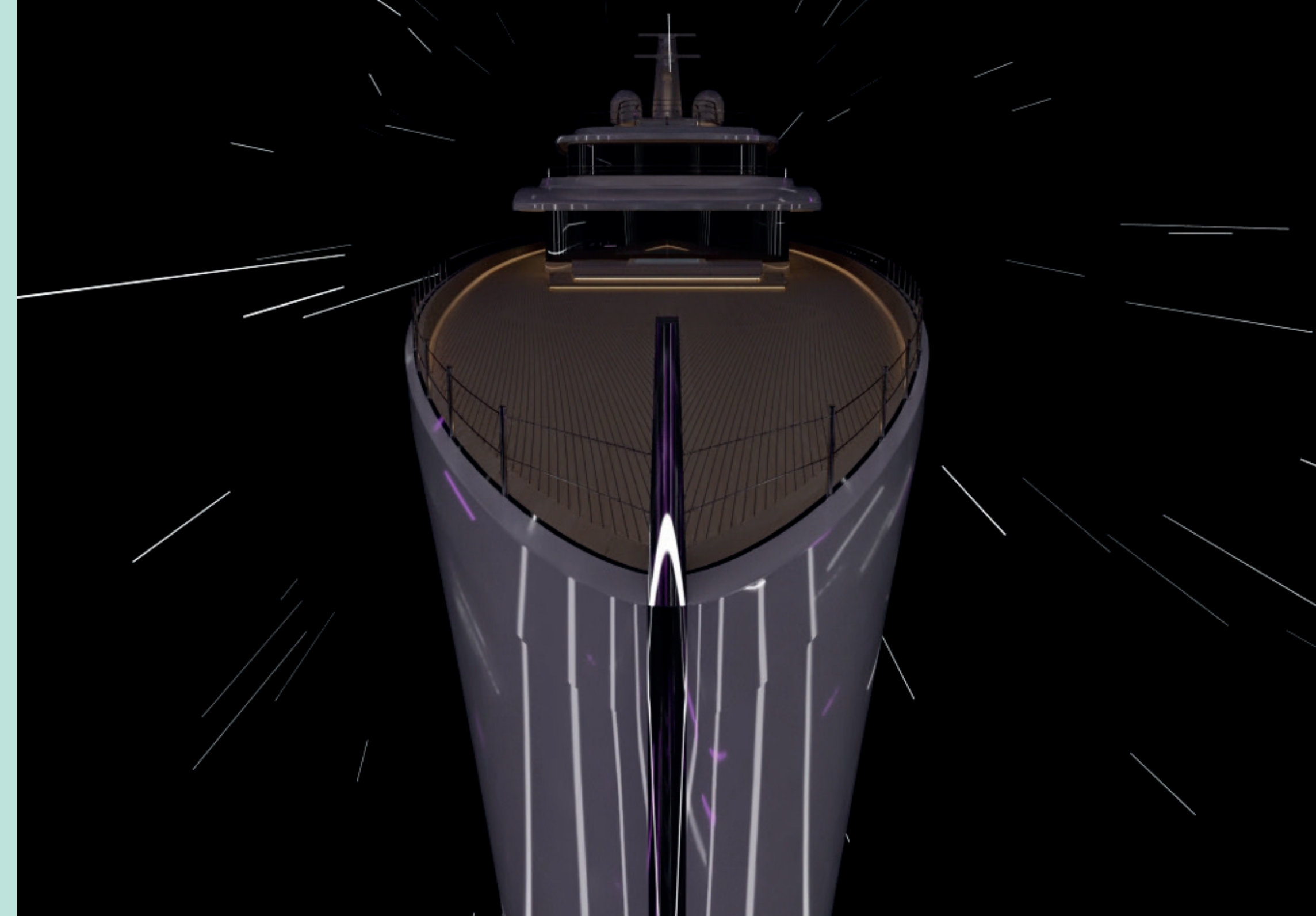
## BALANCE IS DIFFERENT

Enabled by Oceanco's LIFE platform, developed in collaboration with Lateral, this platform leverages a number of fundamental naval architectural principles to deliver a design which operates in a *virtuous* circle; less weight, less power, less technical space, in turn driving the need for a lower overall Gross Tonnage and afford a better balance of technical and luxury space on board.

This virtuous circle results in being able to select a lower engine block series, which in turns means a significant reduction in the vertical height required in main machinery spaces. At the centre of the virtuous circle is the result; a single tier engine room.

Where conventional designs of this size would employ a full height engine room, Balance is able to utilise a single tier design. Coupled with a hybrid propulsion system delivers exceptional performance and is configured to offer multiple operational modes, each matched to the variable operating profile of a yacht designed to adventure autonomously across the world's oceans.

The single tier engine room at the heart of the LIFE platform delivers greater accommodation and lifestyle space, more flexibility in layout, and ultimately a yacht of perfect Balance.











# SINOT

YACHT ARCHITECTURE & DESIGN

The first item that catches the eye is the beautiful well-proportioned profile of MY BALANCE. With its 102 Meter length and nicely balanced superstructure the yacht's appearance lives up to its name. The exterior lines are clean and architectural, with high glass windows around the superstructure. Teak detailing in the ceilings, the stern and on the side grills provides the yacht with a warm and pleasant appearance.

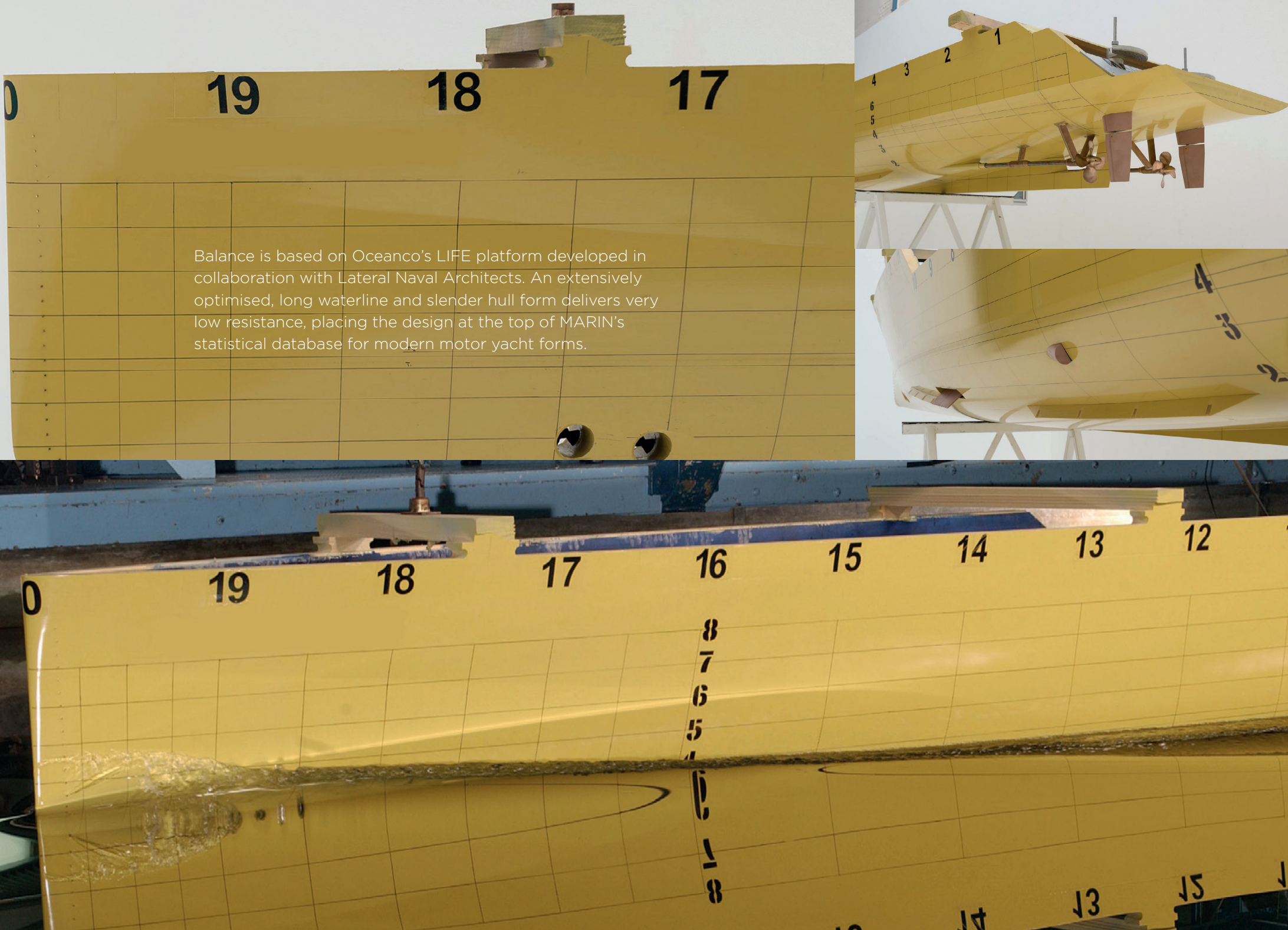
The Yacht has a great balance between the inside and outside spaces. From the Beach up to the Observatory the five decks provide vast space for outdoor activities, lounging and dining, featuring a 10-meter pool on main deck and an outside cinema on bridge deck. Although space is abundant, BALANCE features various more intimate areas to retreat and relax.

The Yacht has a smart balance between crew spaces and space for the Guests and Owners. In addition to the private Owner's deck with a forward situated comfortable Owner's Apartment, the yacht has four Guest Rooms and two VIP apartments, the latter of which could easily be transformed into four Guest Cabins. On the lower deck the efficient single level engine room creates a very spacious area for the stunning open Beach Club, the Laguna Lounge, a large Gym and a fully equipped Spa with Hair & Beauty, Sauna and Massage.

In short, BALANCE is the perfect Family Yacht; her innovative layout and design will set the new standard for future generations.





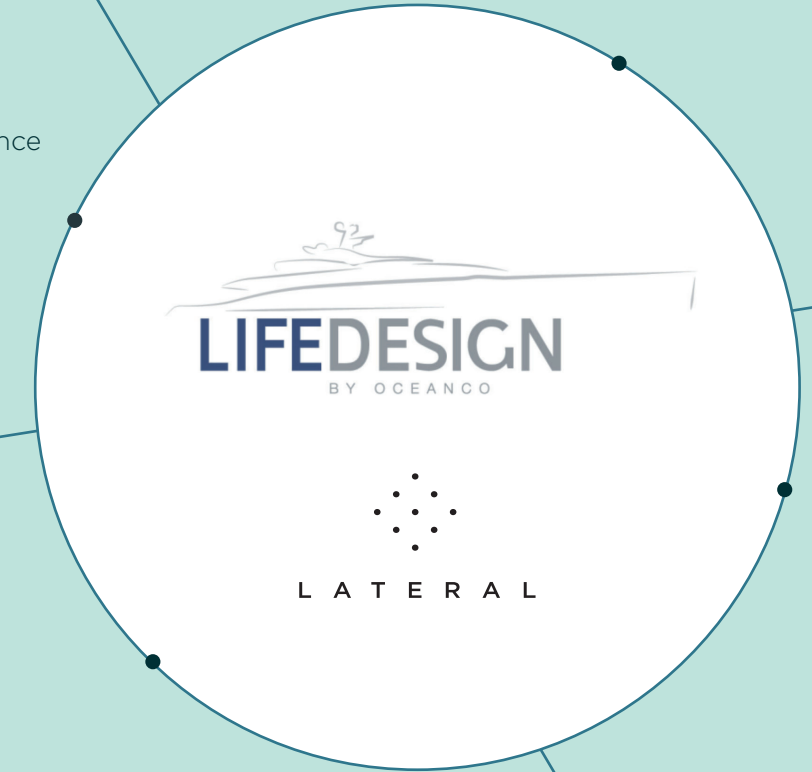


## LONG

- Extended hull concept with optimum balance between luxury, volume and performance
- Slender underwater hull shape

## INNOVATIVE

- Maximised luxury interior spaces by optimised Engine Room arrangement
- Hybrid hull shape design optimised for low resistance
- Hybrid propulsion installation optimised for the various operating conditions



## FUEL EFFICIENT

- Optimised energy balance by reusing wasted energy
- Optimum propulsion and generator loading in all operational conditions
- Low overall installed propulsion power in comparison with conventional motor yacht
- Optimised underwater appendages for overall low resistance

## ECO CONSCIOUS

- Silent operation capabilities
- Optimum energy balance by peak-shaving
- Zero discharge capabilities
- Lloyds Register IHM notation (Inventory of Hazardous Material)
- ECO notation for reduced environmental impact
- Reduction of harmful exhaust emissions
- Optimised water management by waste water recycling







# SINGLE TIER ENGINE ROOM DESIGN

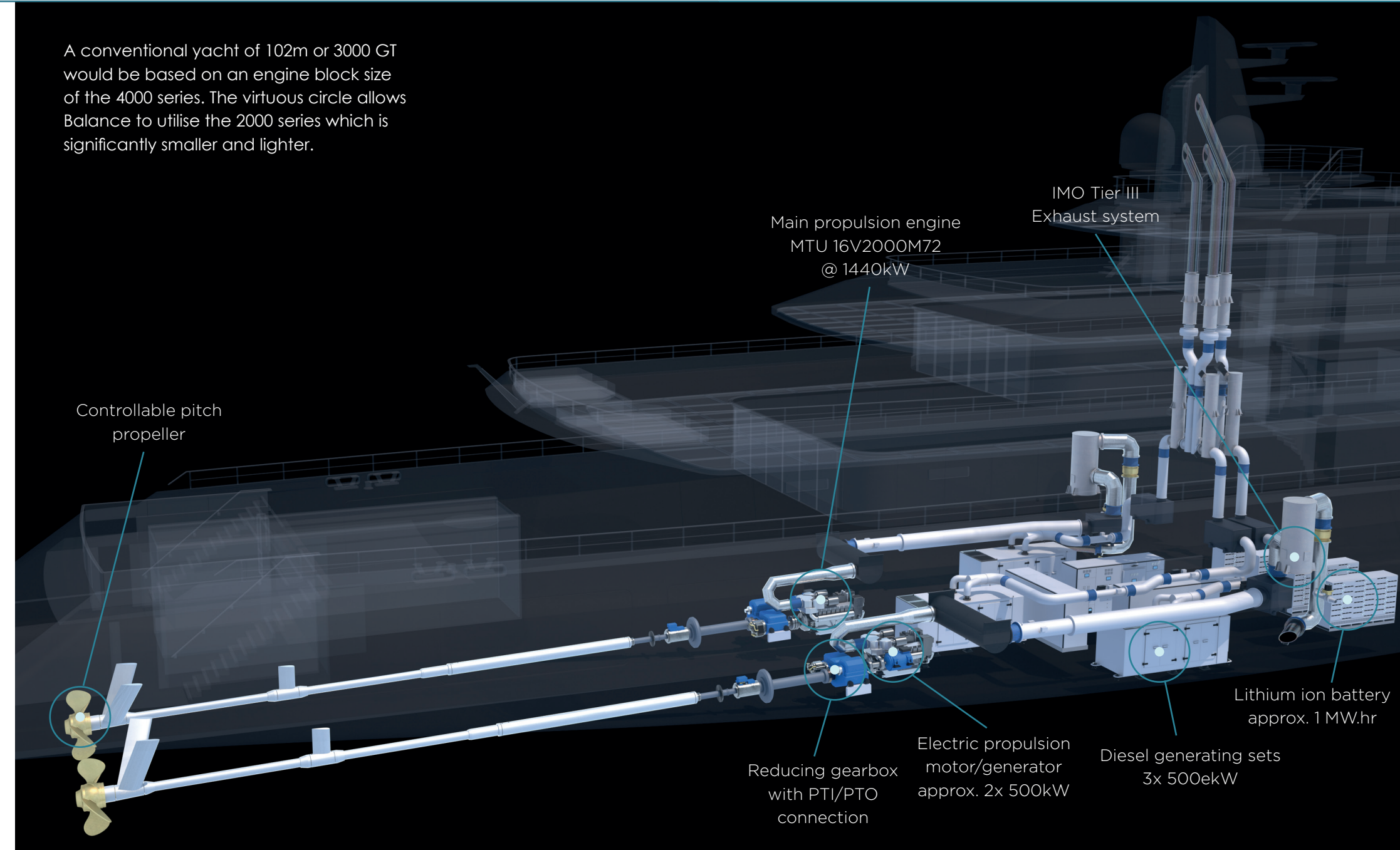
## LEVERAGING TECHNOLOGY TO OPTIMISE TECHNICAL SPACE

The single tier engine room design is enabled by three fundamental features;

- A highly efficient, extensively optimised, long and slender hull shape leading to a reduction in overall propulsion power demand.
- The design is developed with a maximum speed and operational profile representative of real world operation.
- The hybrid propulsion system is optimised to minimise machinery space whilst allowing the yacht to make use of the latest energy saving technology.

These principles result in the design entering a 'virtuous circle'. At the center of the virtuous circle is the result - a single tier engine room. As the yacht becomes more efficient the technical space volume reduces, which in turn allows greater utilization of space to luxury areas.

A conventional yacht of 102m or 3000 GT would be based on an engine block size of the 4000 series. The virtuous circle allows Balance to utilise the 2000 series which is significantly smaller and lighter.



## PROPULSION SYSTEM OBJECTIVES

- Compact design to fit on a single deck.
- High efficiency.
- Reduced environmental footprint.
- Flexible in operation.

## DESIGN FOR ENERGY REDUCTION

- Best in class hydrodynamic efficiency.
- Integration of battery systems to allow optimum machinery operation at all times.
- Heat and energy recovery systems.
- Intelligent energy optimised air conditioning.
- Intelligent specification of systems combining commercial marine best practice with yacht requirements.

## DESIGN FOR ENVIRONMENT

- Carbon use - reduced fuel usage, reduced energy consumption, higher fuel efficiency.
- Able to meet all possible ECO class requirements.
- Air emissions - able to operate in all Emission Control Areas (ECAs).

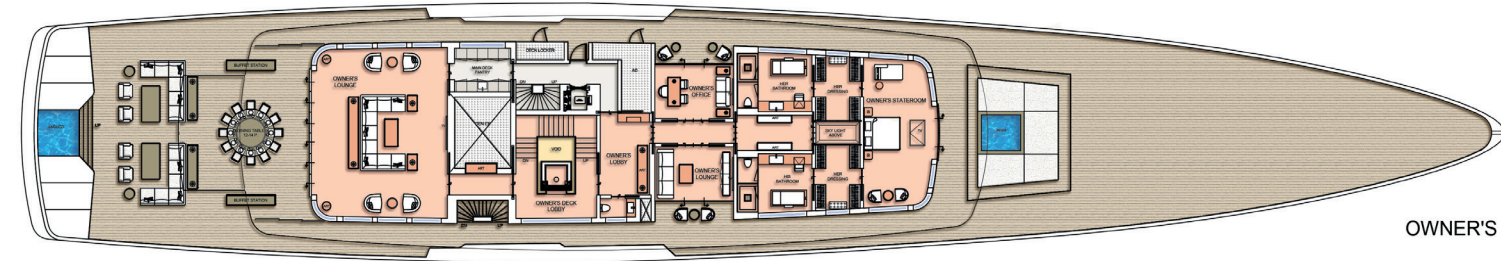
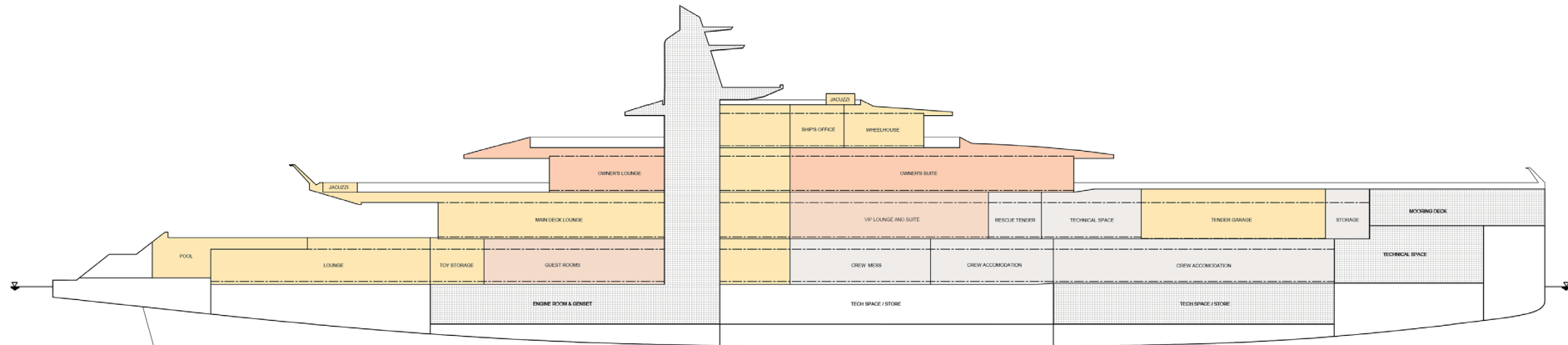


L A T E R A L

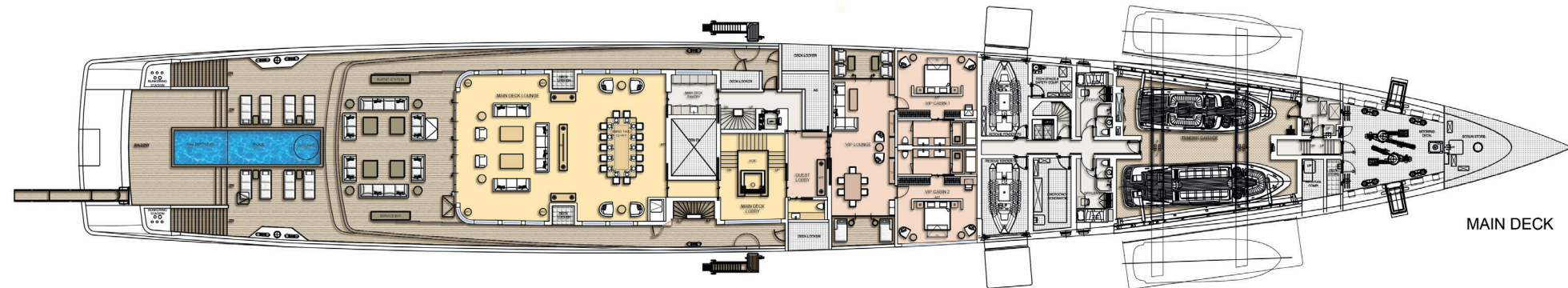




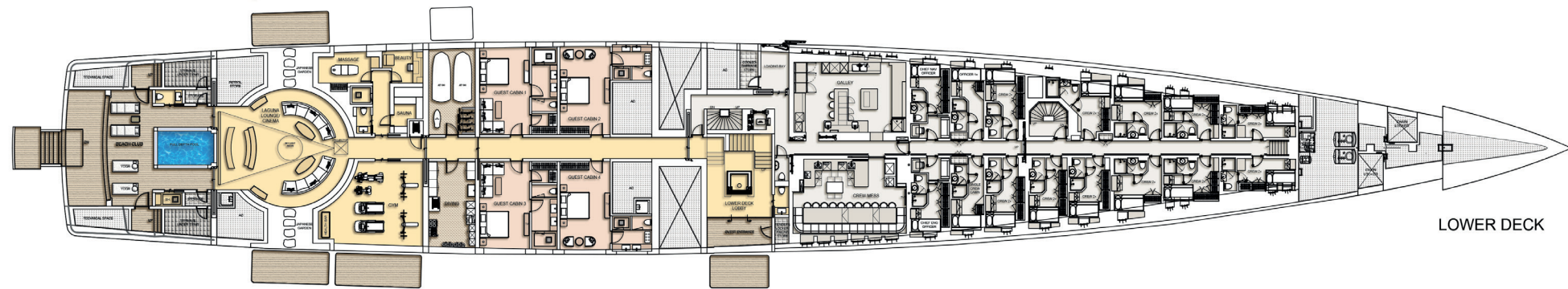




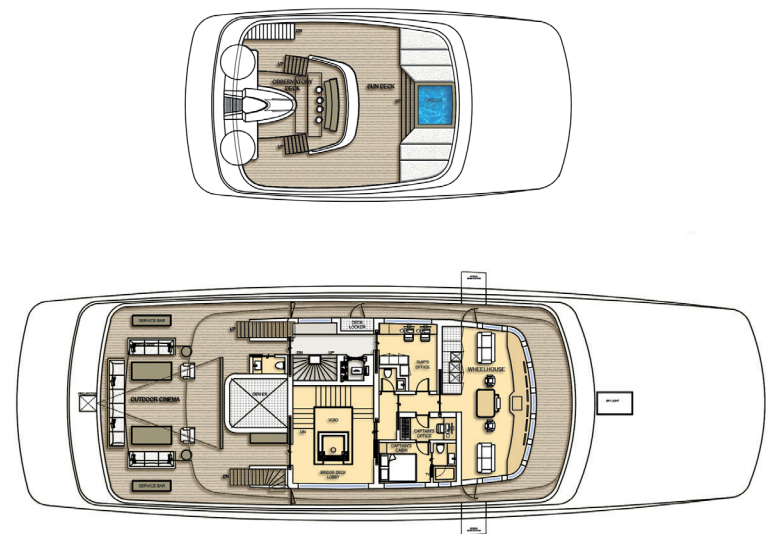
OWNER'S DECK



MAIN DECK



LOWER DECK



SUN DECK

BRIDGE DECK

Exterior and Interior Design:  
 **SINOT** YACHT ARCHITECTURE & DESIGN

  
 L A T E R A L





**Q. How can the application of technology achieve a more effective and balanced use of technical and luxury space?**

**A. Through the use of the LIFE platform in conjunction with an operationally optimised hybrid system, a significant **VOLUME** that would normally be utilised to technical space is made available to enhance the lifestyle and luxury areas of the yacht.**

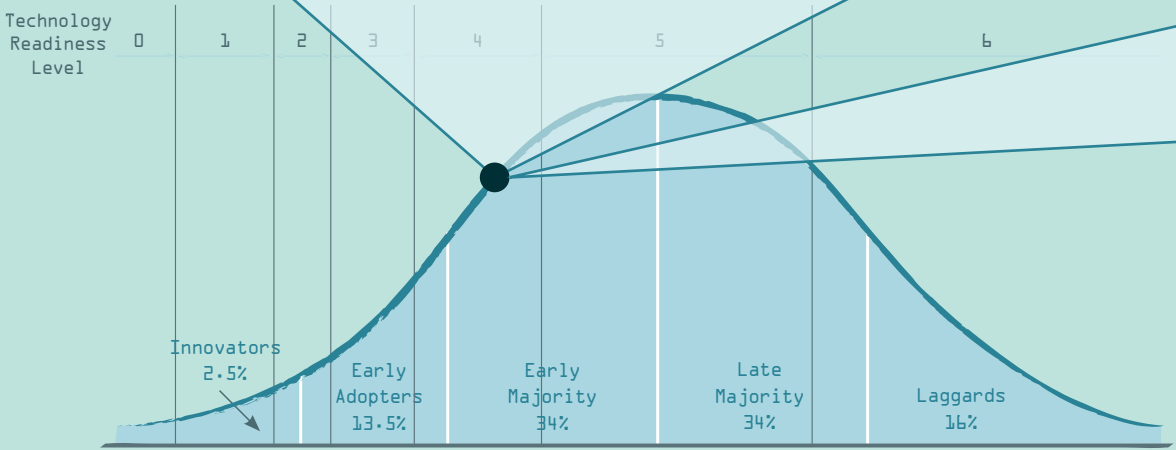
# BALANCE

Lateral employs a structured system to broadly illustrate the potential technical risks associated with the application of new, novel or unconventional technologies. The system gives a Technology Readiness Level (TRL) score and positions this against a diffusion of innovation curve. In this way innovative ideas can be benchmarked.

The individual elements of the Balance project are well proven both in the superyacht industry and wider marine industry applications. The combination of all elements of the design at the scale of a 100m+ yacht is less common. To mitigate technical risks requires expert system integration when compared with a conventional project.

## TECHNOLOGY READINESS LEVEL

- **TRL 0 – Blue Sky Idea**  
Anecdotal concept with no analytical proof of feasibility.
- **TRL 1 – Paper Concept**  
Exists only in paper proposals or academic research, analytically proven.
- **TRL 2 – Industrial Development**  
Product is not being developed for a marine industry application however a test rig or prototype product exists to develop the technology to a real world application.
- **TRL 3 – Marine Product Development**  
Product is not offered for sale, however a test rig or prototype product/ installation exists.
- **TRL 4 – First User**  
At least 1 reference yacht, concept fully certified by authorities for marine use.
- **TRL 5 – Common Practice**  
Multiple reference yachts and vendors available.
- **TRL 6 – Obsolete**  
Obsolete by increased regulation or alternative technology.



Technology Readiness Level vs Diffusion of Innovation







# ASK FURTHER QUESTIONS

## Alex Meredith Hardy

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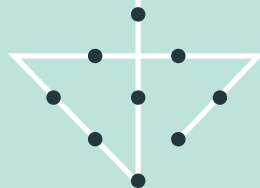


Length Overall .....	102.0m	Maximum Speed.....	18.5 knots
Length Waterline .....	102.0m	Efficient Cruise .....	14.5 ~ 16.0 knots
Beam.....	15.3m	Range .....	5300m
Draught (Half Load) .....	3.7m	Main Propulsion Engine. .	2x 16V2000M72 @ 1440kW
Gross Tonnage .....	3000	Generator Package .....	3x 500ekW
Class .....	✱ 100 A1 SSC YACHT MONO G6 ✱ LMC, UMS, ECO (IHM)		
Notation.....	REG Yacht Code Part A		

Exterior and Interior Design:







L A T E R A L

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