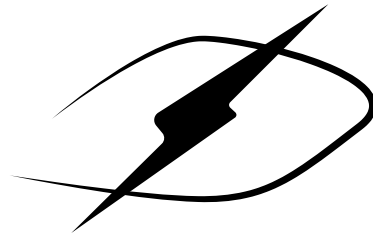


L A T E R A L

NAVAL ARCHITECTS



S E E

IN **COLLABORATION** WITH  
GILL SCHMID DESIGN



# 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 and those of the future.

We believe that meaningful innovation starts with asking new questions.



L A T E R A L





## lateral

*/ˈlat(ə)r(ə)/* **adjective**

involving lateral thinking.

synonyms: unorthodox, inventive, creative, imaginative

## futurology

*/ˌfjuːtʃəˈrɒlədʒi/* **noun**

systematic forecasting of the future,  
especially from present trends in society.

synonyms: futuristics, foresight, forward-looking

## Lateral Futurology

*/ˈlat(ə)r(ə)/* */ˌfjuːtʃəˈrɒlədʒi/* **way of thinking**

ability to conceive innovative superyacht  
technical platforms which enable design  
via the application of engineering and  
technology. Breaking from established  
thoughts, theories, rules, and procedures;  
changing the paradigm.

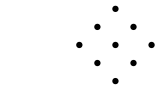
synonyms: meaningful innovation, ask new questions

## QUESTION

### Design should challenge engineering.

In turn engineering must respond to enable more creative design  
in the simplest way possible. Engineering must deliver fresh ideas  
underpinned by a spectrum of technology enabling design to explore  
new avenues, ask new questions and challenge existing paradigms.

**How can the application of commercially available technology and  
engineering deliver a platform offering greater design flexibility with  
fewer constraints?**



L A T E R A L





GILL SCHMID DESIGN © 2020

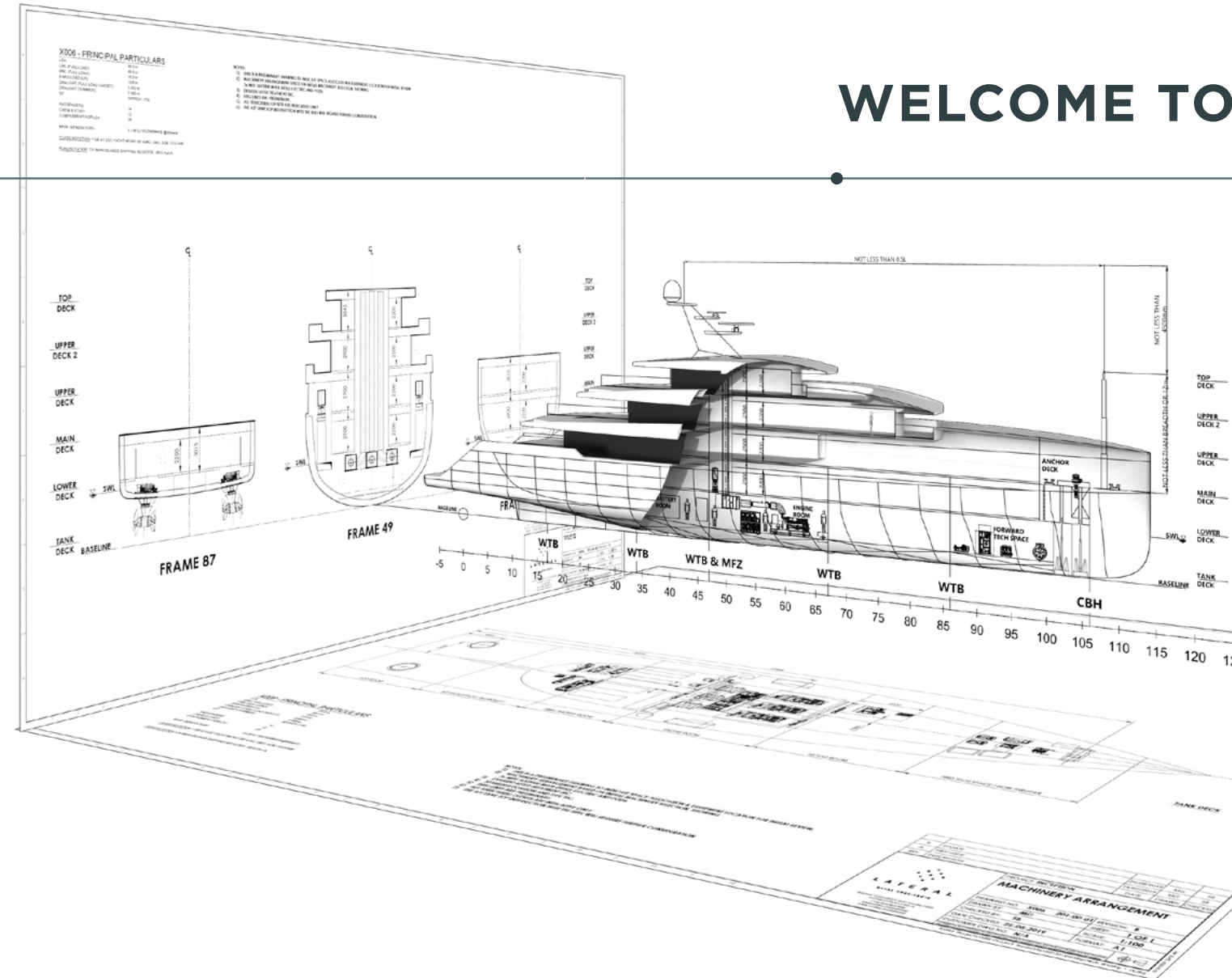
# WELCOME TO PLATFORM INCEPTION

Conceived not as a specific design, but rather as a technical platform. A backbone and skeleton upon which a wide range of creative design intent can be applied in the development of a superyacht project.

SEE employs Lateral's innovative e-Hybrid all electrical architecture to not only maximise the envelope of creative space available for design and layout, but also the flexibility of configuration. At the same time e-Hybrid architecture places the Inception Platform ahead of the leading edge with an all electric power storage and distribution architecture.

Lateral invited the design studio of Gill Schmid Design to develop a design based on the Inception Platform. Within these pages you can find out more about the technology behind the Inception Platform, and how this has been interpreted by Gill Schmid Design to the advantage of the design.

**The result we believe is engineering enabling design.**



L A T E R A L



SEE NATURE, QUIETLY



# THE FUTURE IS ELECTRIC...

## Electrification is the gateway to future technologies.

With an electrical architecture on board, the Inception platform is configured to take advantage of future technologies, within an integrated energy system covering both hotel and propulsion loads.

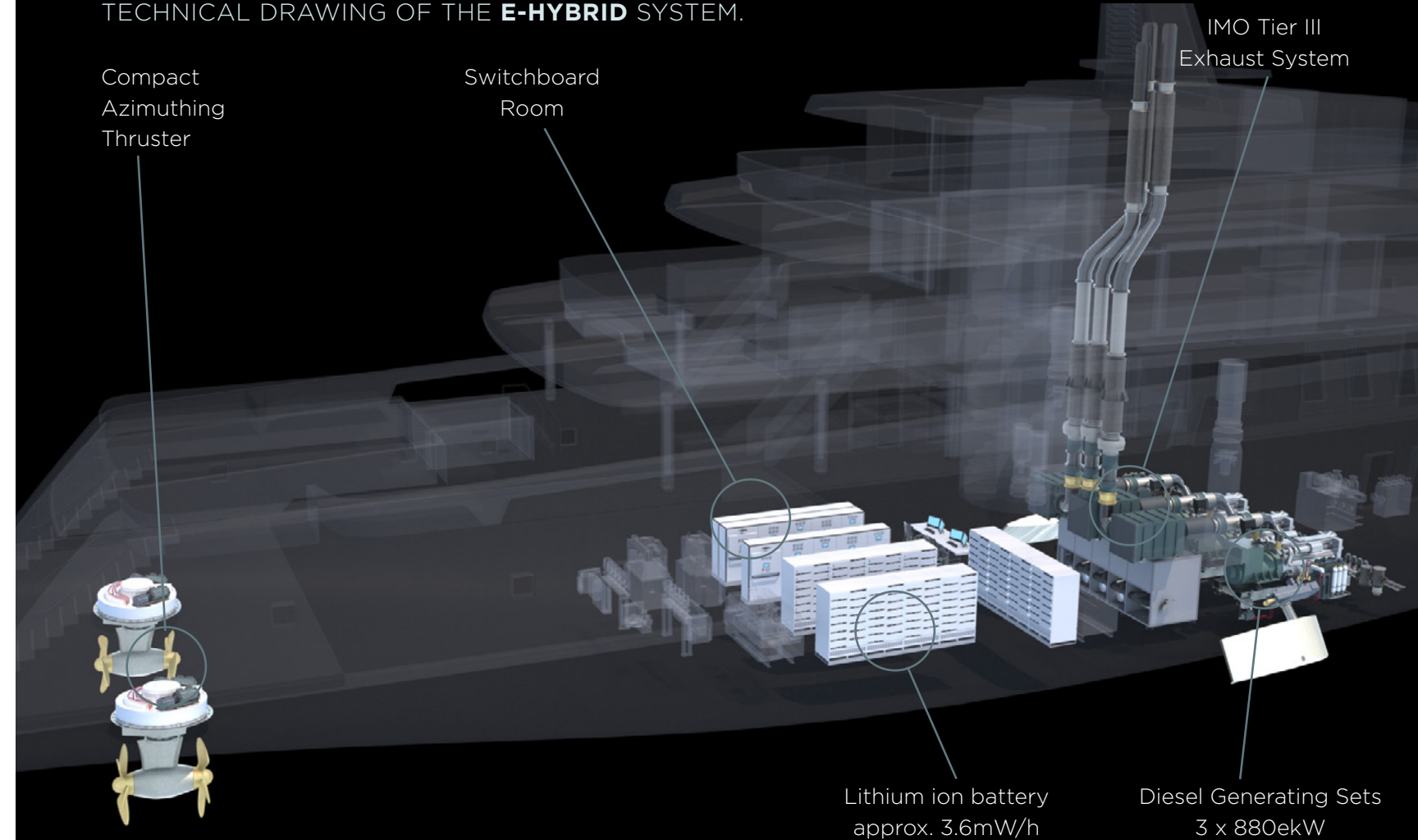
Keeping pace with rapid advancement in battery technology, the next development of hybrid will see batteries becoming the primary power source on board, dictating that the next step beyond hybrid is perhaps not diesel electric, but rather electric diesel.

The Lateral e-Hybrid system incorporates batteries as the primary means of energy delivery, permitting the varying power demands of hotel, propulsion and manoeuvring loads to be seamlessly met.

Diesel generators are provided for battery charging and high speed cruising, selected free from the constraints of a conventional diesel electric and purely on the basis of efficiency and energy density.

The result is an elegant solution for now and the future using technology currently available.

## TECHNICAL DRAWING OF THE **E-HYBRID** SYSTEM.



## ELECTRIC ARCHITECTURE

- Noise – silent mode at anchor and underway. Flexible in operation.
- Optimised generator loading.
- Future proof.
- Compact design to fit on a single deck.
- Enhanced spatial efficiency and layout flexibility.







# MODE OF OPERATION

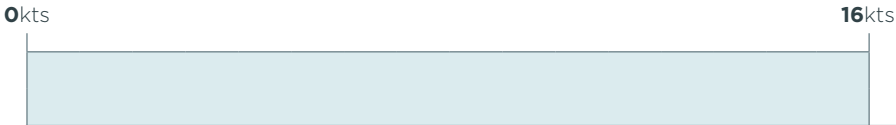
The Lateral e-Hybrid system has two principle modes of energy management;

- Battery Discharge
- Battery Charge

These two modes of energy management are used to support four typical operating scenarios;

- At Anchor
- Silent Cruise
- Extended Cruise
- Performance Cruise

## At Anchor



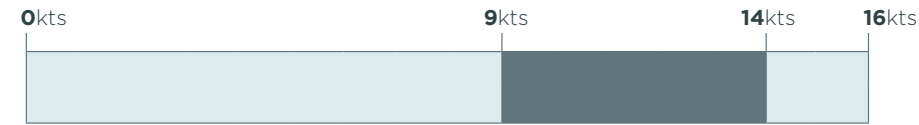
All power is supplied via the battery pack for 6 – 8 hours with zero emissions. The battery is charged during a 2 hour period with generators operating at maximum efficiency. The generators are selected not to match variable power requirements (as is current practice) but to provide optimum fuel efficiency and energy density for the extended operation of the yacht.

## Silent Cruise



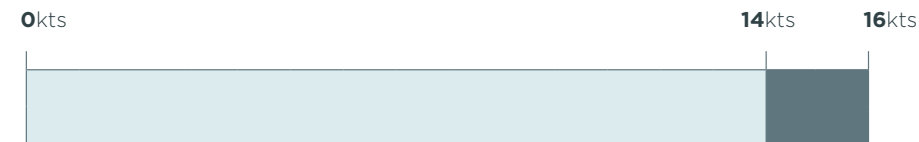
Power is provided via the battery pack only to assure silent cruising and zero emissions. The battery offers 3 hours operation at 10 knots or 6 hours operation at 6 knots.

## Extended Cruise

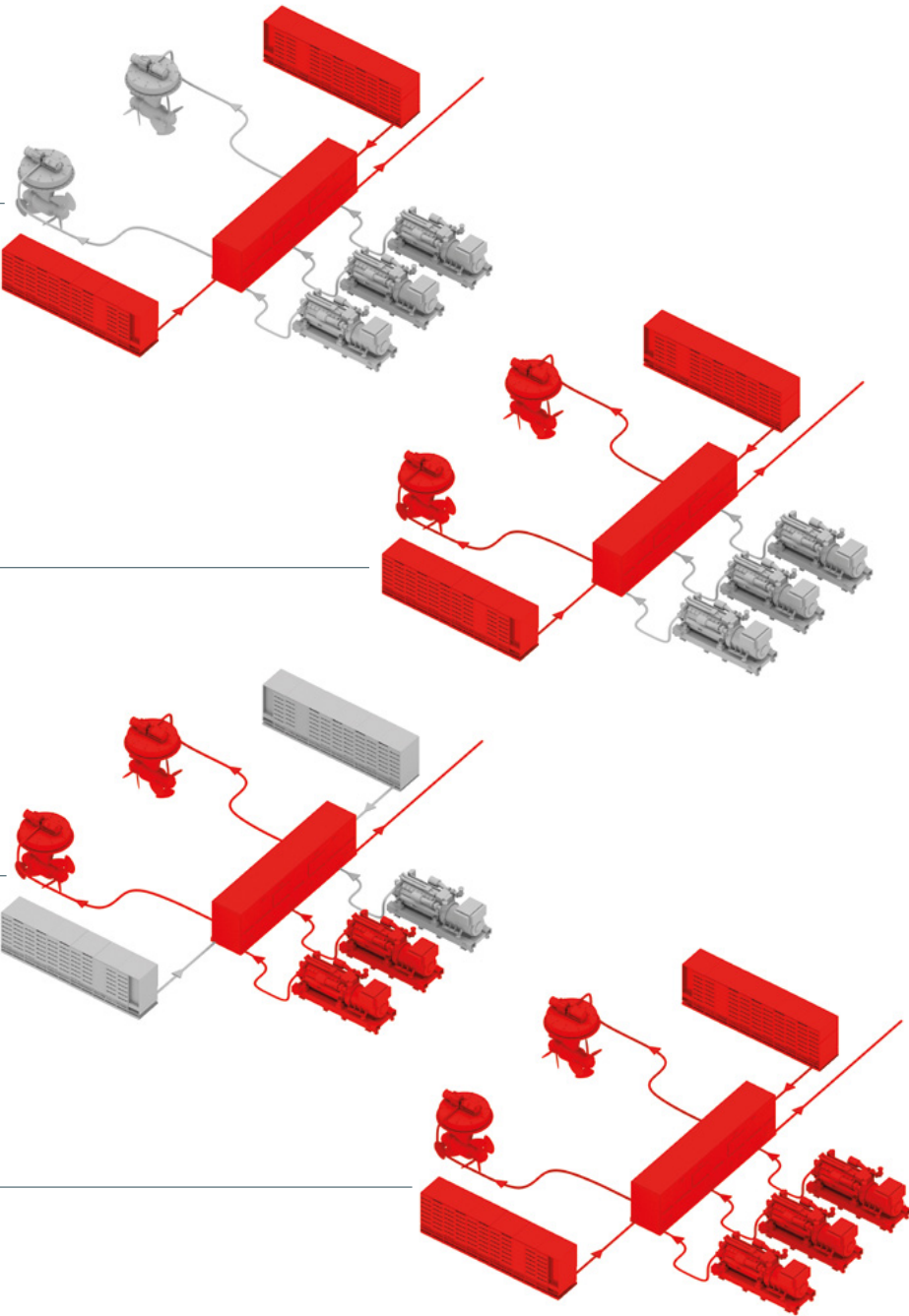


For efficient relocation or efficient long distance cruise, the power is provided by diesel generator(s) depending on speed requirement. Generator(s) will operate at peak efficiency to allow extended periods of zero emission cruising.

## Performance Cruise



All the electric power is used to achieve a top speed up to 16 knots for up to 3 hours. In this mode the three generators and the battery pack work seamlessly together to deliver maximum power.



## WHY E-HYBRID?

- Allows periods of zero emissions to suit sensitive environments and enhance the experience of those onboard with silent mode enabled.
- Offers complete flexibility of power management to suit any yacht operation without compromise, enabling the Captain and Crew to operate at higher operational efficiencies.
- This system is designed with the future in mind. The Owner will benefit from an adaptable system, allowing more freedom when it comes to upgrading to the latest technology.
- Fits in a single deck height engine room. This in turn results in more guest space available at the lower deck, next to the water.
- Lower machinery running hours resulting in reduced maintenance costs.







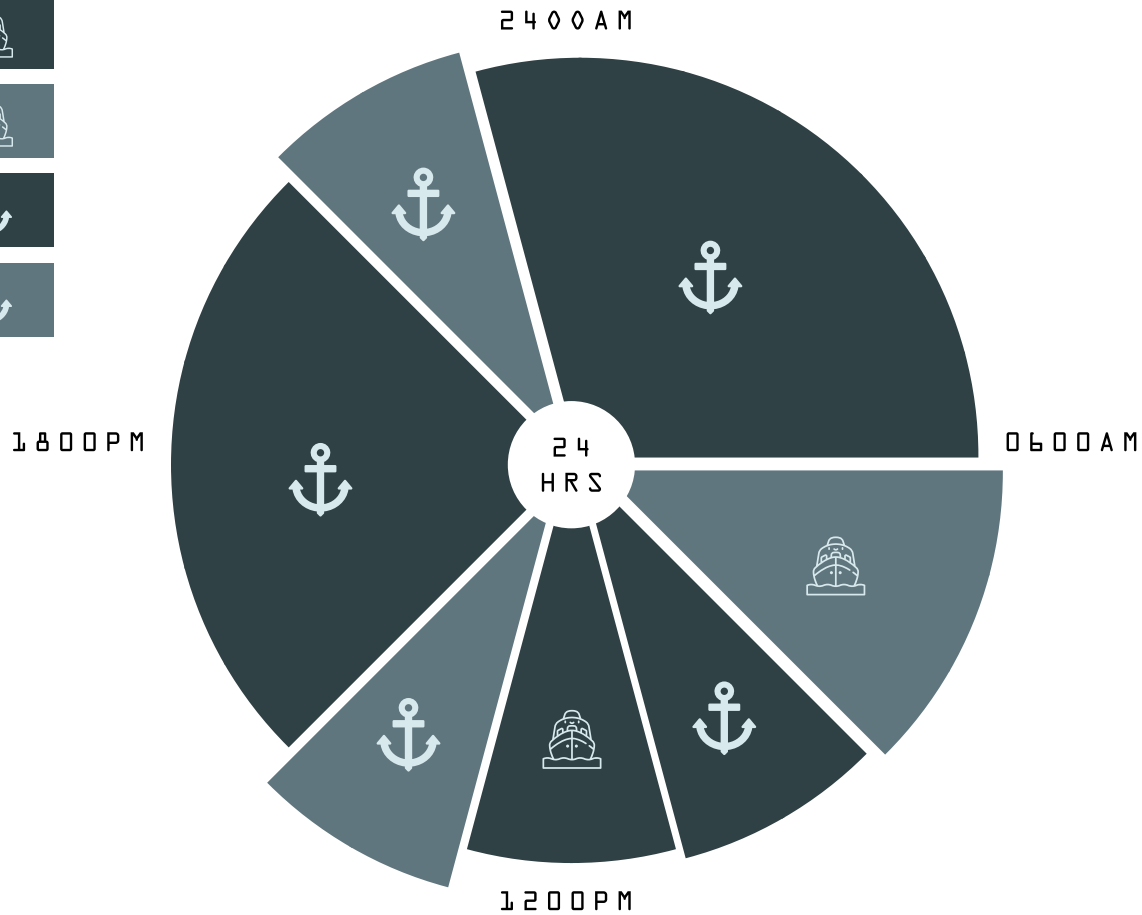




# ONE DAY ON BOARD SEE

The e-Hybrid system is designed to suit a wide range of possible operating scenarios. This illustration presents one possible example of a day onboard SEE.

- Cruising in Silent Mode 
- Cruising in Charging Mode 
- At Anchor in Silent Mode 
- At Anchor in Charging Mode 





LEAVE NO TRACE BEHIND YOU  
AS FAR AS THE EYE CAN SEE







ALISTAIR  
GILL

## GILL SCHMID DESIGN



**SEE**, a next generation in yachting, is based on the innovative technical (e-Hybrid) platform, taking its cue from a more sustainable, state of the art electrical architecture and flexible engineering approach. The design and layout of this vessel reflect today's new sense of lifestyle, state of mind, luxury and innovation, all in a much more relaxed atmosphere, where a world of new experiences abound.

**SEE**-ing places is the new luxury, travelling with family and friends, see-ing the world, making memories, and sharing adventures. Travel light and enjoy life. **SEE** facilitates all of this with spacious pool and spa suites for family, friends and guests, extensive pool and deck spaces, and a vast array of tenders and toys for exploration and fun.

‘Lifestyle’ can be less formalised, more open to the desire to thrive on new experiences. We aim for the luxury of being able to move about freely, with those we cherish, to enjoy what is important in life. We strive for openness, to replace formalities and conformity. Perhaps break taboos. Fill ourselves with as many experiences as possible. **SEE** is more casual than your conventional yacht, with open plan living, flexibility in use, and convertible spaces.

Think Transformers in an architectural context. Innovative openable envelopes enable the vessel to transform from a sequence of separate spaces to a completely open and porous environment of experiences. **SEE** offers a much more laid-back atmosphere with more casual dining, living and

entertainment spaces. You will not find a formal saloon or dining space or a complete separation between guests and crew, but instead, an open concept kitchen with communal/chefs tables, a lounge/movement space with hydroponics and water features or a lounge space/cinema with a large retractable glass element transforming the entire space into an expansive oceanfront terrace. **SEE** is casual luxury. Minimal, but multi-functional, multi-faceted, whilst relaxed and full of the joys of being on the water.

**SEE** is the for the discerning yacht owner/s who want to experience all of this. The vessels length enables unrestricted access to any waters, but whose adaptable spaces allows her to perform comparable to much larger yachts.

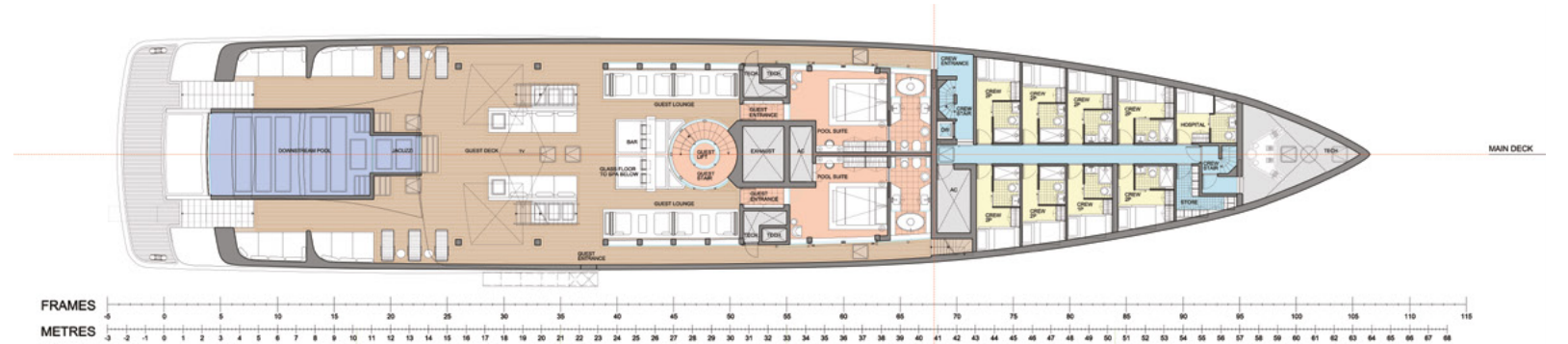
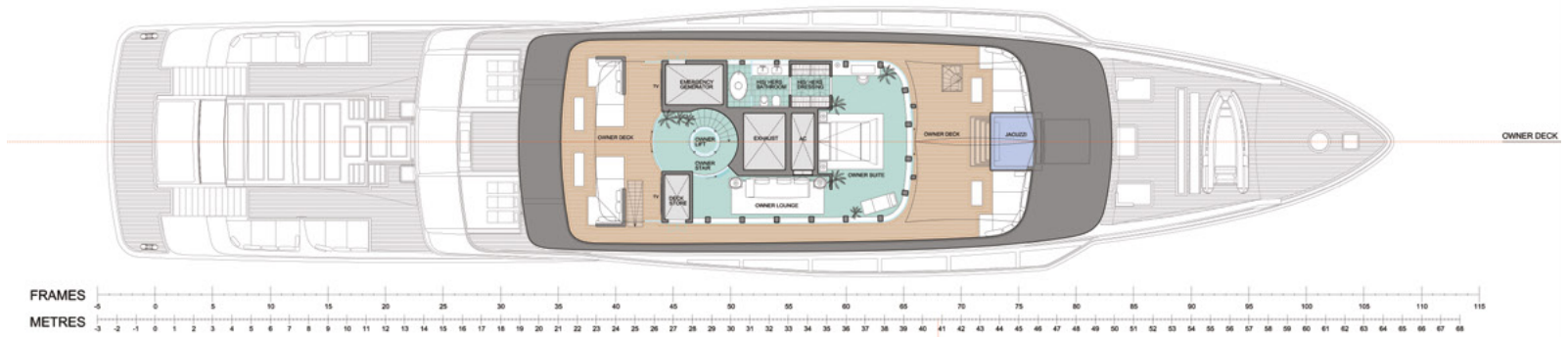
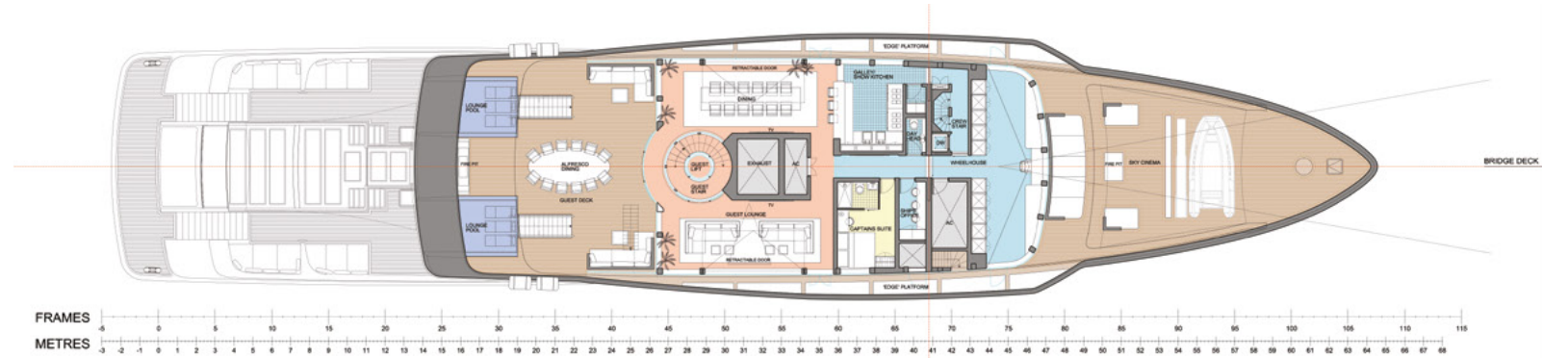
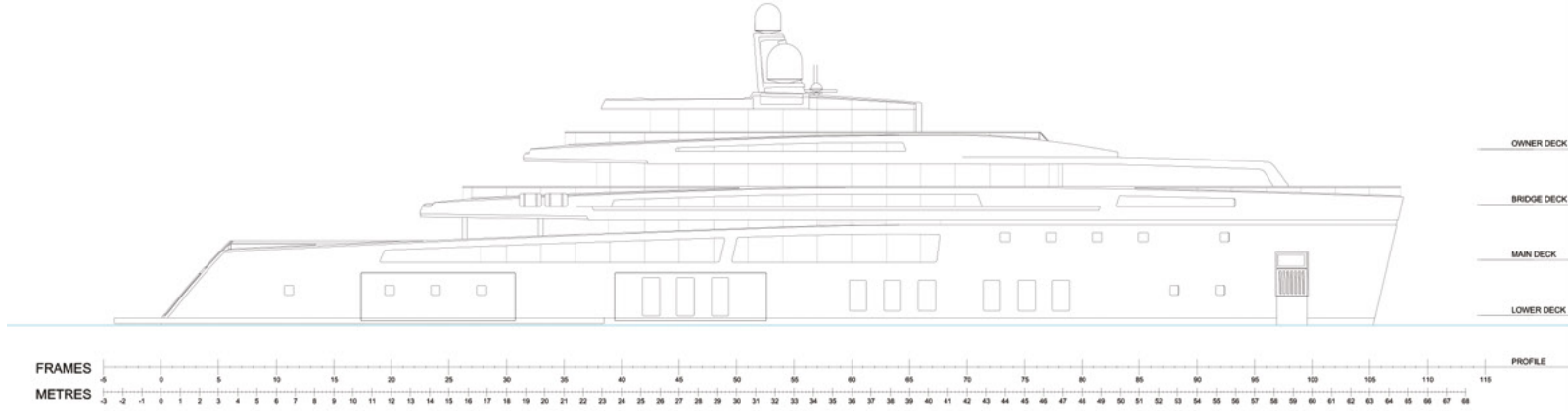
VERONIKA  
SCHMID



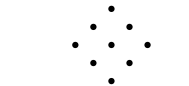






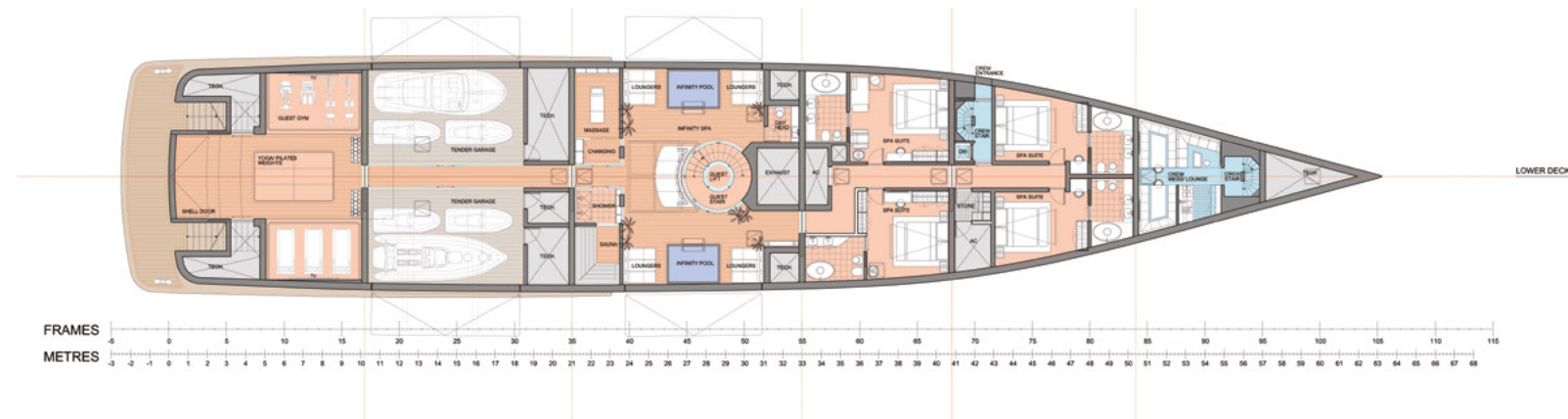


GILL SCHMID DESIGN



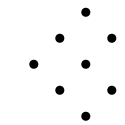
L A T E R A L





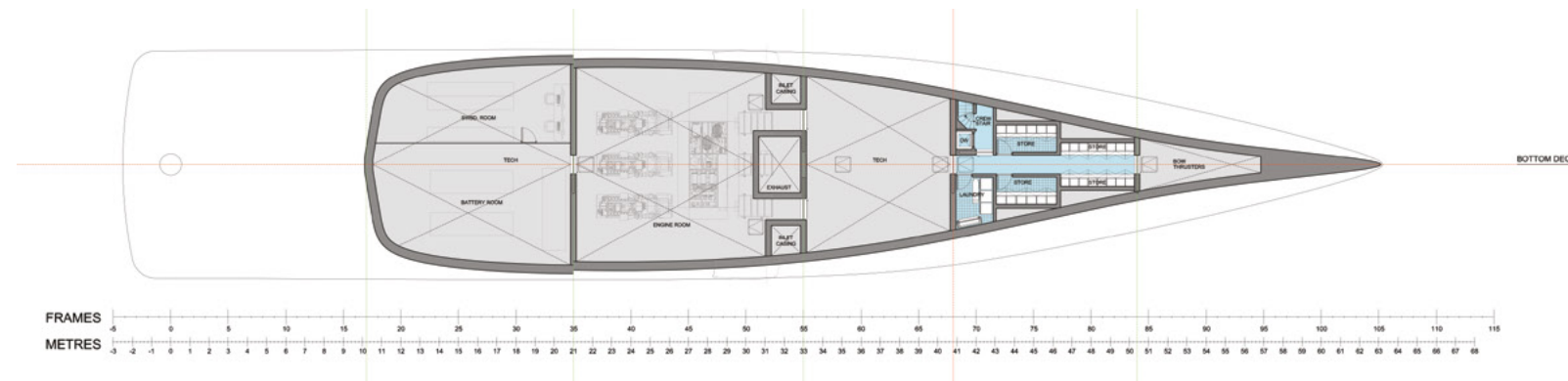
exterior &  
interior design by:

GILL SCHMID DESIGN



L A T E R A L

naval architecture &  
engineering by:



Length Overall ..... **64.5 m**  
Length Waterline ..... **63.5 m**  
Beam ..... **12.2 m**  
Draught (Full Load) ..... **3.65 m**  
Gross Tonnage ..... **1670**

Performance Speed ..... **16.0 knots**  
Extended Cruise ..... **12.0 knots**  
Silent Cruise ..... **10.0 knots**  
Range ..... **3750 Nm**  
Main Propulsion Battery Pack . . **3600 kW/h**  
Generator Package ..... **3 x 880ekW**  
Guest Anchor Silent Mode ..... **6-8 hours**  
Silent Cruise Mode ..... **3 hours**  
Battery Bank Charge Time ..... **2 hours**

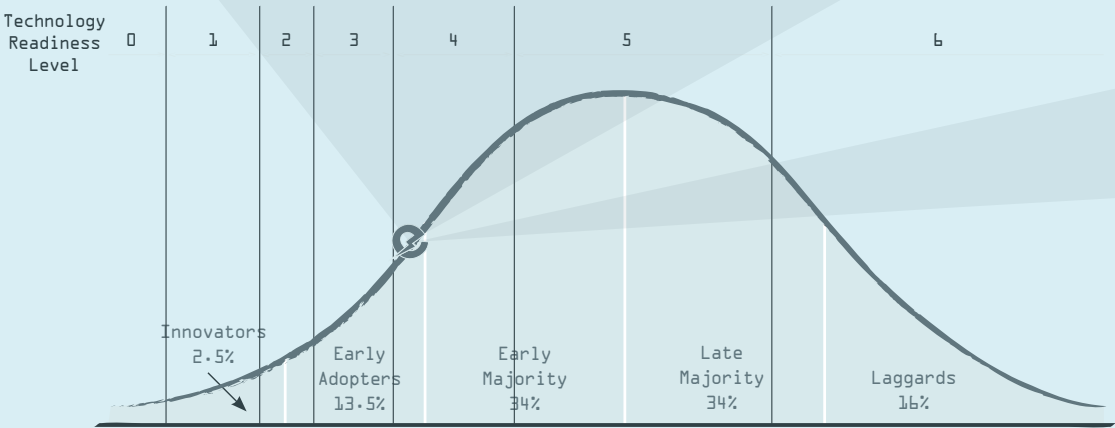
Class ..... **✳ 100 A1 SSC Yacht Mono**  
..... **G6 ✳ LMC, UMS, ECO (IHM)**  
Notation ..... **REG Yacht Code part A**



# LATERAL E-HYBRID

The use of large batteries on-board superyachts is not novel, there are many existing or in build projects utilising batteries at large. The size of battery bank selected for SEE is however large compared with the size of the yacht. This is not a significant technical or commercial risk. The innovative aspect of the Lateral e-Hybrid system is in the holistic integration of the battery as the

primary source of energy delivery and subsequent reduction in installed power and prime movers. This arrangement is in use for some commercial vessels and is a logical development of existing power management systems fitted to large yachts. It represents a low risk development that is optimising current available technology in a novel arrangement.



Technology Readiness Level vs Diffusion of Innovation

## 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.



# ASK FURTHER QUESTIONS

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L A T E R A L

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