

# Yacht première

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THE INTERNATIONAL QUARTERLY OF 100' PLUS YACHTS

EUR 19.00 / USD 19.99 / GBP 13.50 / CHF 29.00 / CND 20.99



ISSN 2240-2608





## GRACE E

*73 metres of eco-friendly technology by Picchiotti - Perini Navi Group  
with Philippe Briand/Vitruvius Ltd and Rémi Tessier*

At the last Monaco Yacht Show we had the pleasure of visiting “Grace E”, a Vitruvius® series 73-metre yacht built by Picchiotti, part of the Perini Navi Group. The yacht can be seen as a milestone for the Italian company for several reasons, one being that Grace E is the largest motor yacht ever built by Picchiotti, and therefore the flagship of its fleet. She has strong technical characteristics, meaning that the right Owner is someone who understands what she is capable of as well as appreciating her striking aesthetic and functional content, starting with the sophisticated propulsion and transmission systems. Let’s look first at the hull, which was developed by Philippe Briand, just like Picchiotti’s previous 50- and 55-metre motor yachts Exuma and Galileo G, both of which have been on a round-the-world cruise since their launch. From a technical point of view, the propulsion system as a whole is one of the target areas in the search for alternative solutions to the traditional ones, i.e. those based on diesel engine power alone.

In this case, propulsion is provided by diesel-electric systems powering Azipods (PODs) with a 360° rotating capacity. All of this means that the energy consumption required to generate movement is optimised, thanks to the fact that the propellers operate exclusively in unimpeded flows that are never disturbed by appendages in front of them. The underwater elements for operating the vessel are reduced, in that there is no need for rudder equipment because this has been replaced by the rotating capabilities of the PODs, and there are no shafts, casings or other elements normally present in traditional propulsion systems. With this system, it is also possible to manage manoeuvres that are normally difficult, if not outright impossible, in vessels with traditional propulsion systems, such as traversing for boarding parallel to the quay. However, that’s not all, because a sophisticated electronic system – a dynamic positioning system – combined with the potential offered by the propulsion system used, also makes it possible to remain in a fixed position without dropping anchor, ➤





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i.e. to maintain the vessel's position entirely automatically and with GPS precision in the same way as the most advanced large commercial vessels already do. However, let's go back to the design developed by Philippe Briand, who was brought in by the Italian shipyard for his specialist skills in developing high-efficiency hydrodynamic hulls. Picchiotti's management asked Briand to transpose his previous development work for

THE RESULT IS  
A TOP SPEED  
OF 17.5 KNOTS  
AND AN ECONOMY  
CRUISING SPEED  
OF BETWEEN  
10 AND 15 KNOTS.

maximum hydrodynamic efficiency in sailing boats into the development of a motor yacht hull. The intention to extend the length at the waterline as far as possible is immediately apparent in the vertical prow, which has also made it possible to increase the volume, offering an attractive increase in the GRT of the whole project. This results in a max beam of 13.30 m and design solutions to increase internal volume, bringing Grace E's gross tonnage to 1,876 GRT. This value is approximately 10-15% higher than normal in vessels of the same size. As mentioned before, this result comes from a combination of very precise design choices intended to increase volume and performance, and consequently to achieve the lowest possible energy consumption for a vessel of this size. The combination of the high hydrodynamic efficiency of the hull and the power system based on the use of electrical drive units combined with diesel drive units makes it possible to achieve the performance levels mentioned above at the same time as providing electricity for the vessel's needs. All of this is done using six relatively small engines, four Caterpillar C32 and two Caterpillar C18. We now move on to look at the extensive development work on Grace E's propulsion system as a whole. One of the Owner's two representatives, Pete Towning, explains: "Grace E has some exclusive technical solutions, notably including the propulsion system, but also the complex management system we produced to integrate with the vessel's system as whole. She can sail serenely in total silence with no vibrations, manoeuvre in any direction very easily, and at the same time stop at a given point with no need to drop anchor. All of this is possible purely thanks to the use of PODs and a sophisticated but safe, effective management system. We have tested out maintaining a GPS position with a wind speed of 35 knots and everything worked perfectly, even with very strong currents."

*The combination of diesel-electric systems and POD transmission offers many advantages, including a total absence of vibrations, manoeuvrability that is unthinkable with other systems, high efficiency and undeniably unusual management of the stern volume."*

The captain of Grace E, Eddie Cooney, also describes his experience: "We carried out a large number of tests and sea trials, which confirmed everything we had intended in the design. The use of Azipods offers genuinely exceptionally low levels of noise and vibration, which translate into total comfort throughout the vessel and in all running conditions, from top speed to the roadstead. To give one example, I like to describe what happened during one phase of the tests with some of the engineers on board. We didn't tell them when we cast off from our moorings, and after a while, when they looked out the windows and realised we were sailing at a sustained speed, they were surprised as they thought we were still in the harbour. Another thing I appreciate a lot as the captain of this vessel is the dynamic positioning system, which allows the yacht to maintain her position even in adverse weather conditions. Similarly I really appreciate the ease of manoeuvre even in narrow waters. This project's other strengths certainly include the fact that she is eco-friendly, a green ship in the true sense of the word and not just due to her propulsion system, although that is certainly a plus point. All the waste management systems also form part of her environmentally friendly aspect, separating and compacting the waste and keeping it in specially prepared areas, some of which are cooled. Then there are also the systems for reducing greywater bacteria, collecting food waste, and processing glass and plastic waste for later processing as separate waste. In addition, each diesel engine on board, including the generators, is equipped with a catalytic converter system to reduce the quantity of harmful exhaust gases emitted. Moreover, the complex onboard power management system is very simple to use and ensures that we can always use the right amount of the energy produced, without ever wasting any or keeping a generator on unnecessarily, for example. Partly for these reasons, Grace E can stay at sea without needing to take on supplies for weeks, meaning that she can undertake ocean cruises even in remote areas. The two previous hulls produced by Picchiotti have already tested this kind of operating capacity, and they are still cruising the world and – it's worth emphasising – have never had any kind of technical problem."







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If we now move on to describing Grace E, we can start with the steel hull and the aluminium superstructure, both designed by Philippe Briand as mentioned above. The interiors were developed by renowned designer Rémi Tessier, who chose a variety of materials combined to guarantee exclusive levels of elegance in every space with uncompromising comfort. For the lighting systems, LEDs were used extensively, in line with the desire to make Grace E a vessel capable of offering the utmost style while at the same time minimising energy consumption. All the interiors are marked by their contemporary design and the warmth they convey, a style defined as “casual chic” that has been achieved with materials such as leather, light-coloured surface-treated woods, onyx, steel and ebony. As we would expect from a ship of this size, the Owner's suite is located on the main deck and covers an area of 90 m<sup>2</sup>. This area is made even more

welcoming by naturally treated furniture echoing the action of the sea and the wind on the materials. Each piece of furniture has been carefully designed and produced for this vessel, like the ceilings covered in palladium leaf for example. The guest area consists of six more cabins offering accommodation for another 12 or 14 guests. There are two VIP cabins on the main deck, then two cabins with king beds and two cabins with twin beds on the lower deck. The two cabins with twin beds, which also have pull-out beds, can be converted into a very large third VIP cabin by opening a door specially designed for this purpose. Every cabin includes windows so that guests can enjoy natural light and a very pleasing view over the sea. Another area that is well worth highlighting on board Grace E is the wellness deck, which offers another 238 m<sup>2</sup> in total across the interior and exterior areas, entirely dedicated to wellness and spa activities. ➤











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It features a massage room, a four-person Jacuzzi, a gym, a Turkish bath and a hydrotherapy room with a sauna and cold plunge bath, in addition to the beauty salon on the deck below. The large gym faces an area with a dedicated bar, seats and the yacht's second Jacuzzi offering an extraordinary view of the sea. As if this were not enough, forward there is also a lounge for relaxing with a view of the ocean. Meanwhile, the upper deck offers more than 170 m<sup>2</sup> of open-air space divided into an interior salon and exterior lounge. These two areas are connected by a sliding door eight metres wide, allowing a single huge space to be created. This deck has a multitude of accessories for relaxation to ensure a pleasant cruise in the greatest comfort, even in unfavourable weather conditions, with the option of holding parties even for a high number of guests due to the large areas available. Still on the subject of open-air spaces, the aft offers a protected recessed area inspired by the aft typical of Perini's sailing boats, where a large area for informal dining and socialising is located in a position protected from the sun and equipped with a bar. The main Jacuzzi – a variable speed endless pool in which swimmers can train – is also located on the main deck to aft. There are also two lifts on board: a guest lift, created with magnificent aesthetic taste to harmonise with the decks it links up, and a crew lift large enough to be suitable for all service requirements. The capacity offered by the hull and the propulsion and power management systems means that this vessel can travel anywhere and for long periods, as her smaller sister ships are already doing. As a result, the tender and toys are suitable for these possibilities. Naturally these have also all been designed to ensure the smallest possible environmental impact. Four tenders are housed inside the hull in a protected area when the vessel is moving, but can easily be hauled using custom handling systems. All the tenders have been developed and built to a custom design in order to meet the needs of the Owner, guests and crew, even in the most remote areas of the planet. In addition to the tenders, an area of 113 m<sup>2</sup> specifically designed for the storage of the water toys makes it easy and safe to use and stow them. The crew of Grace E comprises 22 members, who have crew quarters in line with the ship's potential – living spaces suitable for long cruises with relaxation areas, a gym and plenty of space.

After the first two Picchiotti yachts by Perini Navi Group, Grace E sets a new standard for the shipyard, not just in terms of size but also for her naval engineering and design. She is a yacht designed to handle round-the-world cruising in safety and comfort, a state-of-the-art creation from Picchiotti.

*Angelo Colombo*

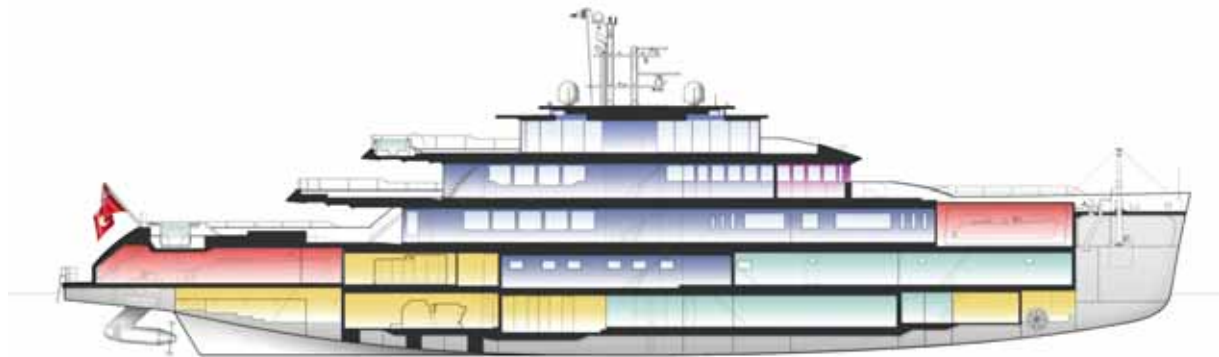
*Photos by Giuliano Sargentini*







Profile



Section



Sun deck



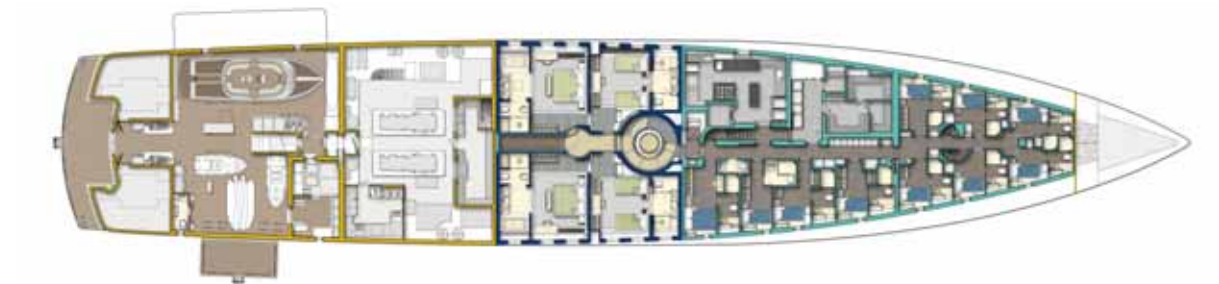
Fly deck



Upper deck



Main deck



Lower deck



Tank top

# GRACE E

MAIN TECHNICAL DATA	
Construction	Steel + Aluminium
LOA	73,00 m
LWL	71,85 m / 236 ft
Beam (max)	13,30 m / 44 ft
Draught (loaded)	4,00 m / 13 ft
Displacement	1740 t
Gross Tonnage	1876 GRT
Diesel Electric Propulsion	2 x 1,6 MW ABB Azipod CO0980S Maker ABB
Electricity generation	4 x Caterpillar C32 876 kW - 2 x Caterpillar C18 492 kW
Speed (maximum/cruise)	max 17,5 kn / cruising 14 kn
Fuel capacity	188.000 litres
Range	7800 nautical miles @ 12 kn
Fuel burnt at cruising speed	285 litres / hour including generators
Exhaust systems C32	Soundown waterdrop silencers + DCL catalytic converters
Quick-Lid DC63 C18	HUG FNS9.4000 catalytic particulate DeNox exhaust filter/cleaner system
Stabilisers	Quantum QC2200 XT
Bow thruster	Voith VIT 1000 - 300 kW
Exterior paint	Boero and Dupont
Water capacity	66.000 litres
Watermakers	2 x HEM 80 SIMPLEX - 40.000 litres / day
Shorepower converter	ATLAS 2 x 125 kVA
Pipe and valve materials	Stainless Steel, CuNi, PVC, Valves by Econosto
Climatic cruising capability	10°C / + 35 °C
Dynamic positioning Kongsberg	Dynamic Positioning system K-Pos-DP11 + Joystick
Number of owner/guest cabins	7: 5 double, 2 twin
Number of crew cabins	11: 2 double, 9 bunk-bedded
Presence of special environmental technology	Uson food waste collection system
Trash Compactor	TONY TEAM TT160
Glass Imploder	Krysteline GP1
Bottle Shredder	Hasswell SB10
Generators	Catalytic systems as above
Noise and vibration levels achieved	Owner's Cabin: 42,6 dB @14 kn / 35,6 dB @anchor Main Saloon: 45,5 dB @14 kn / 43,7 dB @anchor
Tenders	Cockwell 9,5 m YachtWerft Meyer 7m - Yachtwerft Meyer 5m (rescue) 6 Kayaks, 4 SeaDoo wave runners, 2 paddleboards, Full dive equipment, 2 Sea Bobs, 4 bicycles, Multiple towable boards and floating
Classification	Class and LY2 compliance Malta Cross 100 A1, SSC, Yacht, Mono, G6, DP - Malta Cross LMC UMS DP (AM)
Owner's Project Manager	Peter Towning and Jeff Moore
Naval architect	<b>Philippe Briand / Vitruvius Ltd.</b>
Exterior stylist	<b>Philippe Briand / Vitruvius Ltd.</b>
Interior designer	<b>Rémi Tessier</b>
Builder	<b>Picchiotti - Perini Navi Group</b> <b>www.perininavi.it</b> <b>info@perininavi.it</b>