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Superyacht

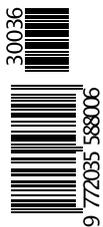
international

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AZIMUT YACHTS AZIMUT 84
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CANADOS 120 FAR AWAY

DESIGN TERRACED,
A STONE'S THROW AWAY FROM SEA...AND SKY

TECHNICAL PERINI NAVI - PICCHIOTTI
INTO VITRUVIUS'S GREEN HEART

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PERINI NAVI - PICCHIOTTI INTO VITRUVIUS'S GREEN HEART

by Stefano Ruia

Much has been said about Vitruvius motor yachts, above all for the revolutionary water lines re-invented by the eclectic Philippe Briand. The third model of the fortunate series is an innovative 73 metre which is about to be delivered to its lucky owner. Nevertheless little has been published on what makes this superb yacht's heart tick, pulsating energy through kilometres and kilometres of cables, which form an immense looping circuit the "masters" at Perini Navi - Picchiotti Yachts knowingly carry out their work with surgical precision.

It's no surprise of course that Gruppo Perini Navi with a fleet of 54 superyachts cruising is the world's leader in project design and construction of large sailing ships. Equally the company has since 2007 become involved in the construction of motor yachts with the renowned "Picchiotti" brand name which was taken over in the early nineties. As of today a further two motor propelled superyachts have gone to increase the score from the existing 54 sailing ones. "Galileo G" (a 55 metre yacht) was rewarded with a prize for the "Best motor yacht in the 40 to 65 metre range" during the Fort Lauderdale Yacht show in Florida last year. The coveted award crowns a season rich with prizes among which features the "Showboats Exterior Design and Styling Award" offered by the American magazine Robb Report. How can the second model of a motor propelled superyacht produced by any yard albeit world leader in the sailing yachts branch obtain such esteemed recognition? Any yachtsman specially a sailing enthusiast surely knows the answer. Vitruvius's hulls are very special and look a lot more like sailing yacht hulls than they resemble classic motor yachts' ones. It's no coincidence that the man behind the idea and the water lines is Philippe Briand, a very famous name in the sailing field.

With an extended water line, a narrow beam, a well proportioned distribution of the volumes below the waterline and low superstructures is all very revolutionary in a motor yacht.

But we don't want to revert to this topic which we've already dedicated several articles to since what we wish to explore are the features and characteristics that make up this third Vitruvius® model with the "Picchiotti" brand name which is currently being completed at the Gruppo di La Spezia ship yards and scheduled for delivery in the course of this

year.

As far as water lines are concerned this model obviously remains unaltered in comparison to the two preceding models even if increasing the overall length to 73 metres. What we're highlighting is the fact this new model features the "green" philosophy right from the drawing board as requested by the owner. Emphasis has been shifted from performance to all round reduced environmental pollution. This translated into re-planning all previous installations in func-

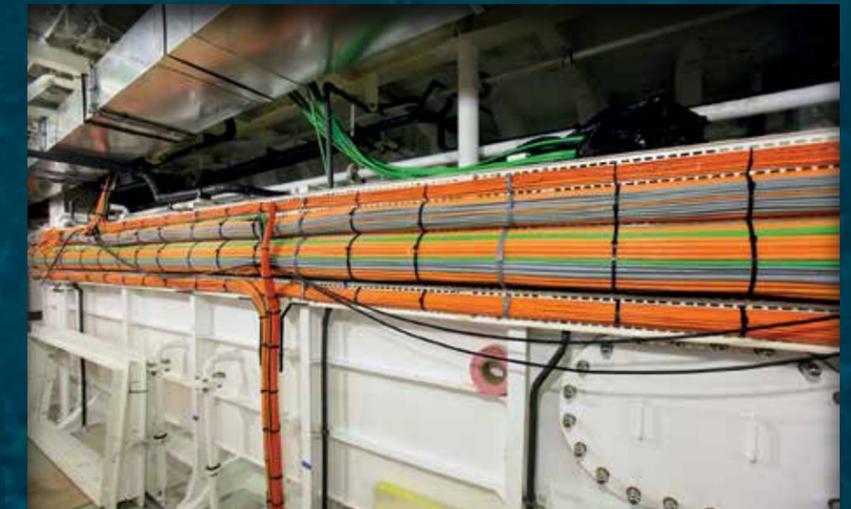
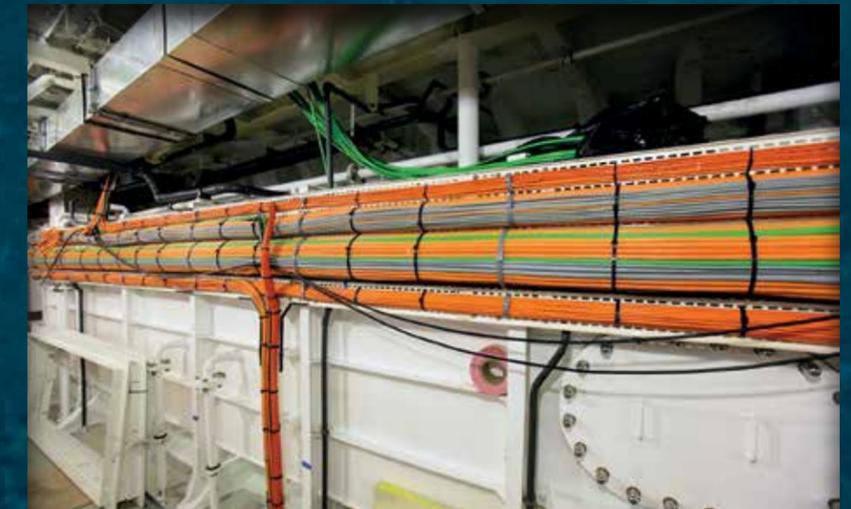
tion of this new challenge which involved many structural changes as well since the top deck now called "wellness deck" had to be entirely dedicated to the well being and fitness of both body and mind. The forward bow portion of this deck therefore hosts a meditation room with a lovely 180° sea view thanks to cut glass panelling with an adjacent external open air observatory. To port an inviting Turkish bath, therapy room, and SPA, while to starboard a massage parlour and astern of that a gym and an open air hydro massage tub. Considering that all of this had to be situated on the top deck, several problems had to be solved in order to make this possible.

We

went to take a look at the yacht in construction to have a better idea of the technical aspects involving new installations of which till now very little has been written but which deserves great attention. Andrea Tanferma engineer and Product Manager for the Vitruvius® 73 showed us round and we couldn't have had a better guide.

Prior to getting involved with this superyacht Mr Tanferma was Production Manager at Ficantieri's yard in Muggiano Italy and among other duties he was to come up with the forward section and ensure the subsequent connection to the stern section of the "Cavour" aircraft carrier which was the Italian navy's flag ship. Mr Tanferma went on to explain that what was essentially important to do in order to satisfy the owner's requests was to opt for electric propulsion combined with diesel fuelled generator sets. A complex installation - even if previously adopted on Eclipse the world's largest superyacht - which Perini Navi was involved with. The kind of flexibility offered by a mixed system coupled to special water lines maximize propulsive efficiency and drive thereby increasing range while reducing pollution all without forsaking top speed.

Four large Caterpillar C32 830 KW generators are all deployed to ensure drive energy and all together put out 100% of the required power.



Perini Navi - Picchiotti
into vitruvius's green heart

Realistically speaking each one of the generator sets is made to work in optimal conditions (which are between 60 and 90% of nominal load) thereby obtaining advantages in terms of yield, and reduced pollution. Should the load fall below 60% of the established nominal figure, non burned fuel increases, performance drops and the injectors get dirty quicker. On the other hand when drive requires little power the captain may decide to shut off one or more of the gen. sets and just deploy the others to propel the yacht through. In this way every generator will always be functioning at best.

The four already mentioned generator sets also enjoy the company of another two Caterpillar C18 465 KW perfectly sound proofed engines whose exhausts discharge directly into the funnel, and not below the surface so as to further reduce noise factors. The role of these two latter engines is to ensure the necessary energy to run all on board services from lighting to air conditioning. Since a single 465 KW generator may be overly powerful in running the yacht's energy requirements at night and to avoid it working below optimal levels, which would increase pollution, a special device which converts excess electricity into heat by warming water which is then thrown out is deployed even if this seems to be wasteful in a sense, from a pollution view point it's worth doing.

There's no need to thread cables through appropriate leads, since the copper plates weigh less than copper cables of the same diameter; they are tough and can be bent up to 90° which is very useful on a yacht. A single 20mm thick by one metre long Bus bar boasts an overall 2,000 square millimetres whereas a copper cable of the same area has minimal flex by comparison.

Suitable cables are deployed to channel 690 V from the control panels to the two rotating A.B.B. az iPods which act as drives.

Efficiency was again opted for in the choice of the bow thruster model. In actual fact the Vitruvius® 73m has been installed with a Van der Velden EPS 295 KW (the largest of the series) with a circular electric engine which is axle free which is more efficient and offers a larger surface to which the blades are attached to and generates less noise.

The choice of az iPods in conjunction to the bow thrusters translates into stopping the yacht without having to drop an anchor. Zero Speed stabilisers by Quantum Stabilisers greatly reduce roll and pitch motion even when the yacht is stationary.

Each of the above systems can be monitored at all times from a New Zealand black screen which displays all the functions necessary to the helm/controls station in the wheelhouse: radar, compass, G.P.S. radio, alarms, etc.

Several installations for water have been placed for a variety of uses on board. Watermakers for one transform salt water to demineralised water. Nevertheless a special plant by Hydro Electrique Marine has been installed to convert sea water into semi-brackish to serve as deck washing water to best preserve the precious teak wood it is made up of and to lengthen its working life.

Much care has also been taken in A/C systems. As also installed on Cruise liners there's a large 9 A.H.U. installed in 5 areas.



Last but not least there's a 136 KW emergency gen. set as well. All of these generators work on 380 Volts and 50 Hz which are channelled through control panels which elaborate accordingly. Requirements are also transformed as needed. For example the electricity needed to propel the yacht is 690 Volts, the services require 380V while the bow thrusters 440 V (380V was insufficient for the electric engine while 690 V was too much). Bus bars have been installed to convey electricity derived from generators to the control panels instead of cables for convenience sake since they are made of thick copper plates immersed in resin boxes.



Perini Navi - Picchiotti into vitruvius's green heart



Each one of these supplies air humidity levels and temperature as required. In addition to this there are several fan coils expressly installed to supply required temperature to machinery and rooms (electrical, audio-video, navigational aids, and so on) at all times.

An air management device frees air of germs so that maximum hygiene is maintained throughout all A/C tubing and vents. The installation of all these devices would present a series of other problems: if they were to be installed one by one tens of technicians would be getting into each others' way and one would risk not being able to remove this or that component with ease. Therefore a pre installation sequence and lay out plan has been specially carried out in house prior to assembly on board. This major plan involves every aspect from the hull which has been vacuum

bagged in Turkey at the Perini Istanbul-Yildiz yard and subsequently completely finalised in La Spezia right up to the teak lining and stanchions! This method has been a real time saver but in order to put it into practice one had to get all pre assembly planning right from the beginning; which was not easy, was very demanding and Gruppo Perini Navi and Mr Talaferna handled it at best. A proof of this extensive work is that when we visited Vitruvius® 73m, 160 kilometres of electrical wiring had been installed, 60 of which only for audio/visual equipment, while the team of technicians were confidently taking one or the other without making any mistake in the same way as surgeons do in the complex world of the human body. With a difference though that Vitruvius® 73 m sports a...green heart!

For further information: Perini Navi - Picchiotti; Viale San Bartolomeo 428; I9126 La Spezia; www.picchiotti.net



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