

The Legend 60

Study Plans





Specifications	
LOA	18.30 metres
BOA	8.60 metres
DRAFT	0.575 metres
HEADROOM (HULLS)	Full Standing
HEADROOM (B/DECK)	Full Standing
MAST HEIGHT	22.00 metres
SAIL AREA	226 sq metres
PAYLOAD	3500 kilograms
DISPLACEMENT	12400 kilograms
B/DECK CLEARANCE	0.950 metres
BEAM TO LENGTH	14:1
MOTOR OPTION	2 x 75hp Diesels
CRUISING SPEED	12—16 knots
TOP SPEED	25+ knots

Schionning Designs is excited to announce a new performance cruiser design that sports a new cabin shape, something not seen before from the Schionning drawing board. The Legend 60 cabin shape follows the more classic lines of some of the French designs with almost vertical cabin windows, an option



that some sailors prefer. But don't let the cabin fool you, the Legend 60 is sitting on G-Force hulls, with high bridgedeck clearance and will display some very frisky performance. The long waterline length and light weight will of course get you where you're going quickly, but also in comfort with sailing controls in the cockpit and a single steering station to port with an opening hatch set in the cockpit roof for easy visibility. Despite her size the Legend 60 could be crewed by a couple if desired, or even single-handed with the right configuration but there is plenty of room down below for the entire family.

The accommodation is generous, as you expect on a design of this size. On the customized design (pictured) the owner has decided on a forward queen cabin in the starboard hull with twin bunk beds forward of the bulkhead in place of an ensuite, this provides a single cabin that can accommodate a family of two

adults and two children. The owner's cabin is located in the port hull and plenty of space for storage and hanging cupboards is provided. Each hull has a queen berth aft, meaning this layout can sleep 8 adults comfortably, and two children in the small bunk beds. A head and shower is set amidships in both hulls, giving access from both the forward and aft cabins.

The owner has also chosen a galley up option, mean-



ing the cook will not be tucked away in the hull preparing food and drinks, instead everything is kept on the bridgedeck level including the large fridge and freezer. Sharing the cabin is a spacious 'U' shaped saloon with comfortable seating and unobstructed views out of the almost vertical cabin windows.

The cockpit is open plan with plenty of comfortable seating for entertaining in any anchorage. The steering

*Tully Too' shown in the images has been customised and differs from the standard design layout shown.



station is set to port, keeping it out of the way when not underway but giving a clear unobstructed view of activities on deck. A large daybed is a feature of this design, this gives extra space to relax as well as acting as davits for the dinghy to be lowered and raised easily. The walk-through transoms and wide aft steps make boarding and disembarking easy for every member of the family, and is pet friendly for those cruising with animals aboard.

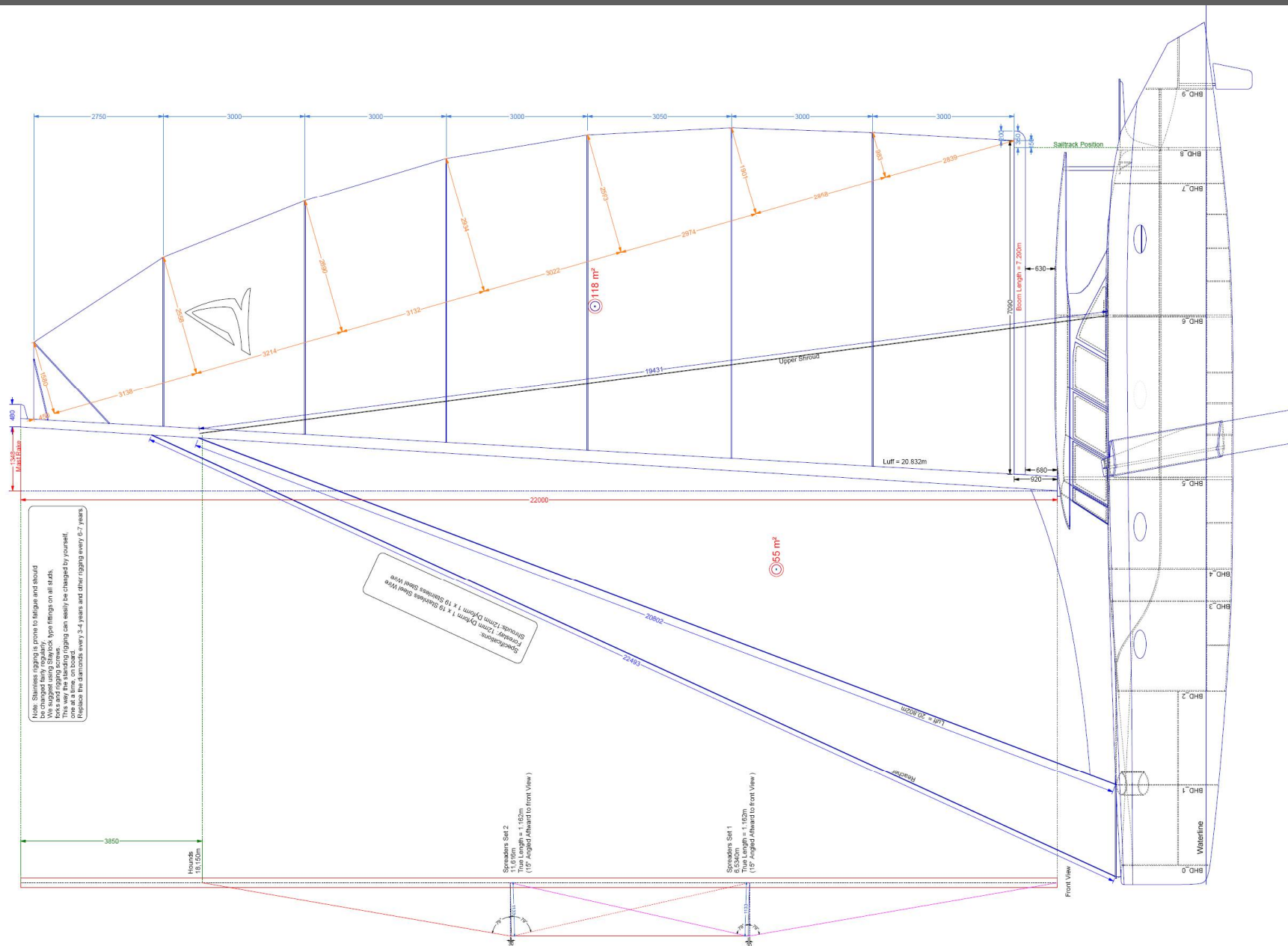
Construction of the Legend 60 uses the Schionning kit system of CNC-routed high-tech composite panels. DuFlex panels are used, with an end-grain balsa core with 600g laminates on each side. These panels are easily joined to create full size components that are then simply taped in place. Some areas utilize strip planking techniques to achieve the soft curves that give these designs their aesthetic styling.

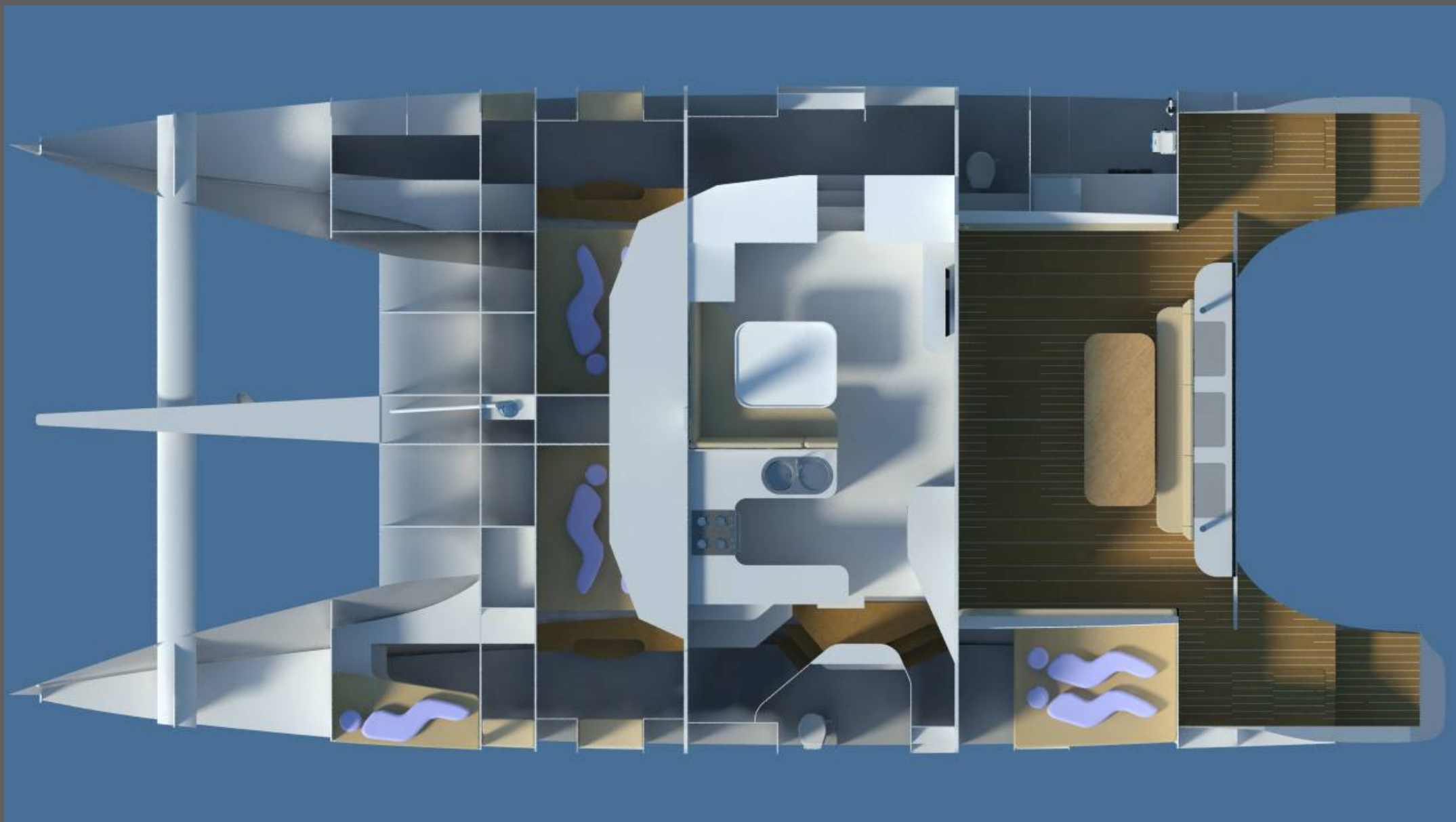
The recommended engine choice are two 75hp diesels, set in engine rooms behind the aft cabins. Insulation ensures that vibration, noise and fumes are not an issue and they can be easily accessed via hatches in the transom, meaning easy servicing and maintenance.

The Legend 60 is a true ocean greyhound that will take you around the world in comfort and style. She has enough accommodation for the entire family and friends, and will surprise you with her performance capabilities. With a good beam to length ratio and realistic weights, this is a performance cruiser that is hard to beat.

So what are you waiting for?







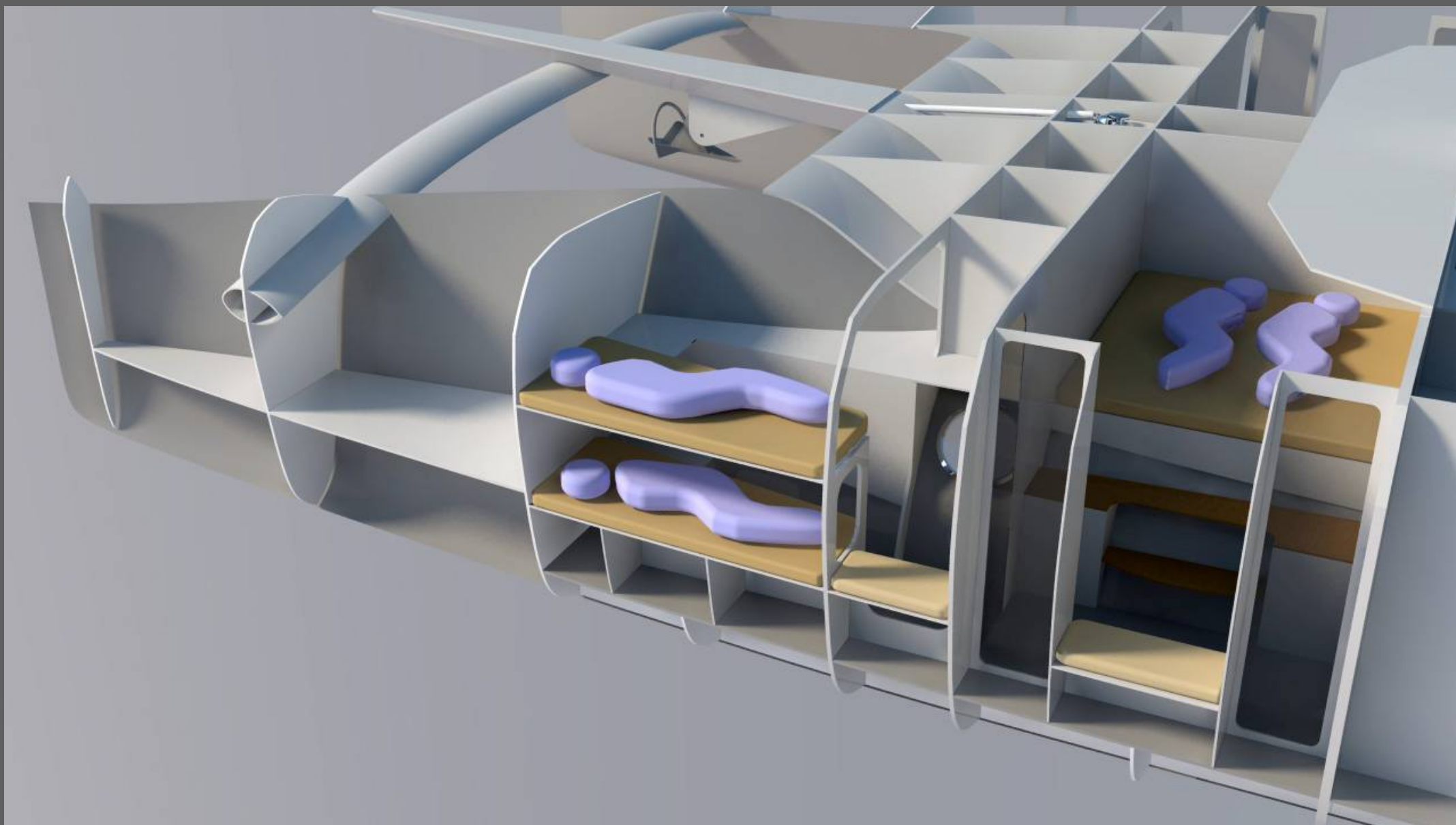


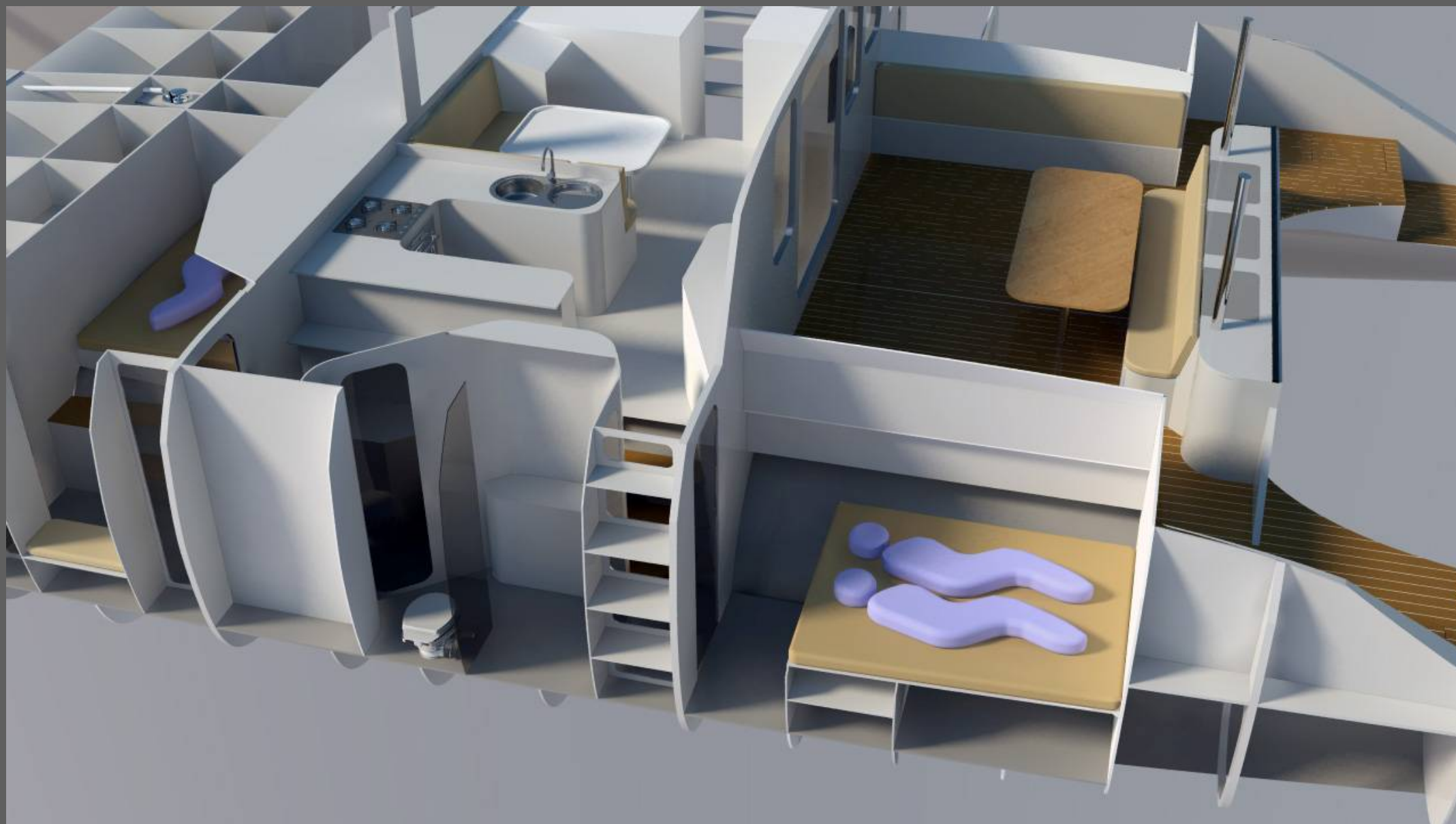




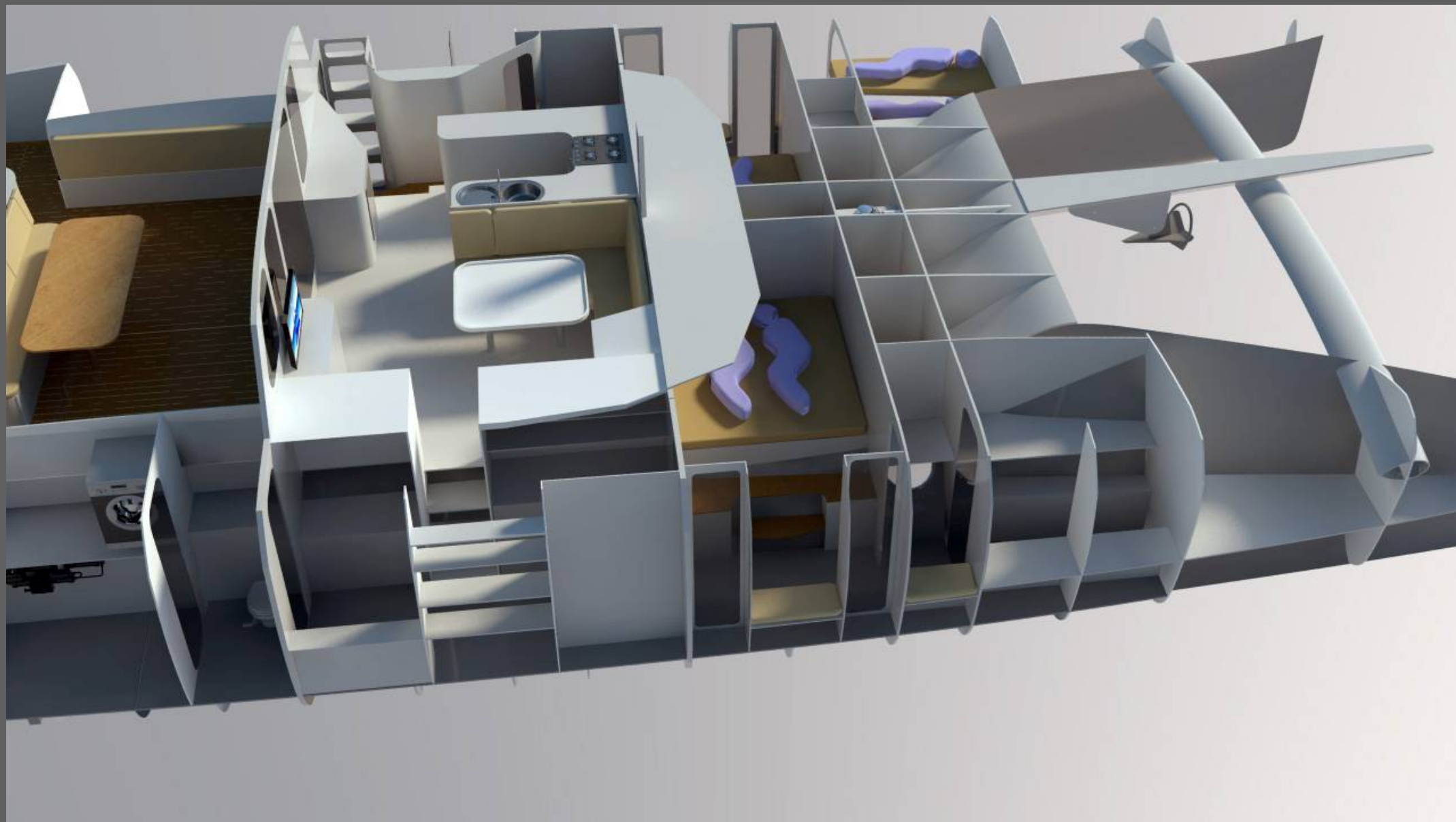


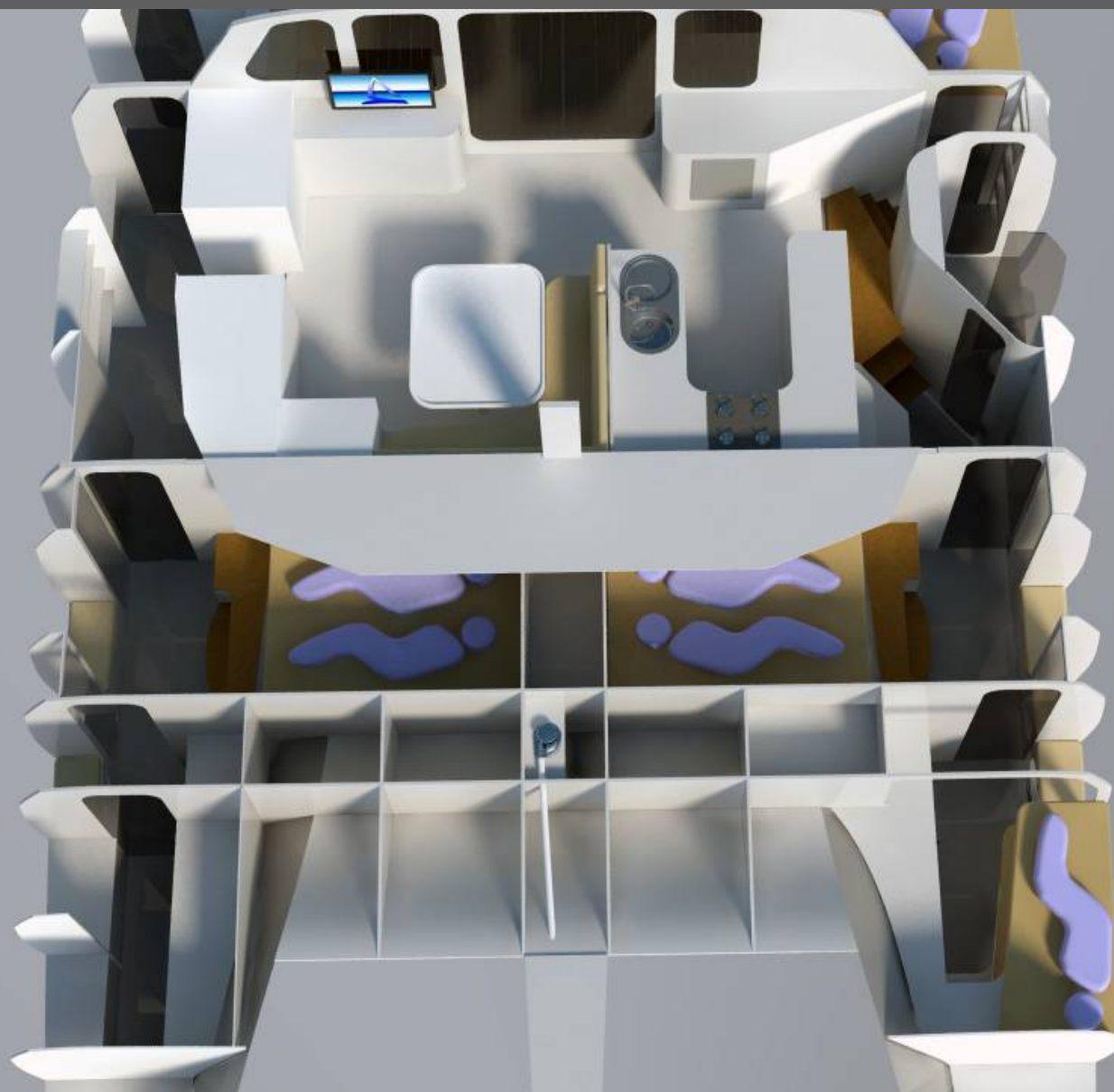
















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Photos (Cont...)

The Legend 60

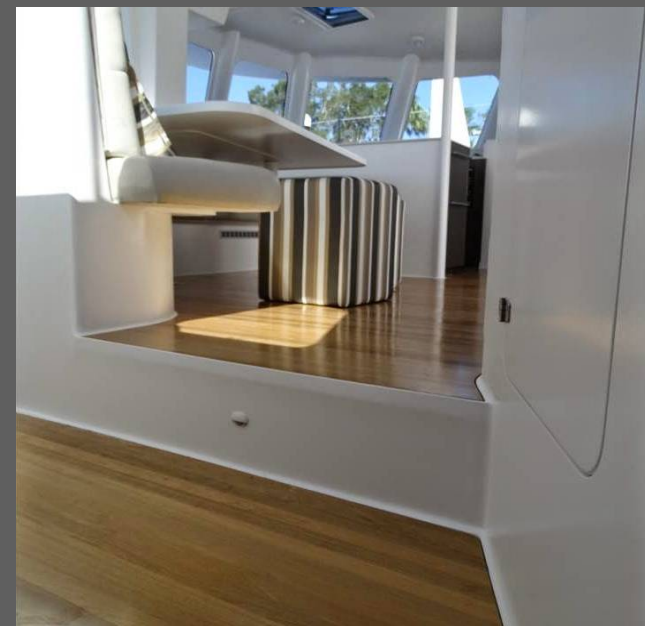


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The Legend 60



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Our designs are based on cored composite construction techniques using epoxy resin and knitted fabrics. But given the range of today's composite technologies, which solution works best for catamarans and why?

Resin Choices

We use West System, Gurit and other good quality epoxy resins for their high strength, adhesive values and higher (HDT) heat distortion values. It also fully protects the boat against water absorption and it can't develop the dreaded Osmosis. Having worked closely with the ATL Composites team and their products for many years, we recommend their materials and service highly.

Cloths

We recommend Colan brand Australian made cloths for their excellent quality being easy to work with and having low resin absorption but prices can be quite high. Be aware that cloths vary a lot in the way they are made, some cheaper cloths use more resin to wet out and make it hard work, and they can be difficult to layout around corners and curved areas. This may not seem important but when working with a material for an extended period of time, the small things make all the difference.

CORES - Which one to use?

The core choice is usually quite confusing. Cores have different capabilities and properties, and their benefits I feel are utilized fully in our catamaran designs. A quick look at their abilities:

Balsa end grain (150 kg/cubic metre) has exceptional qualities including very high compression strength, extremely good sheer capabilities and fantastic sheer stiffness. Compressive strength is the resistance to collapsing when pressure is applied perpendicular to the

surface as when pushing directly onto the material with the point of your finger. Balsa is far stronger than Foam (80kg/cubic metre) in compression. Foam is stronger than honeycomb type cores, both the paper and the plastic.

Balsa is also far better than foam or honeycomb in sheer. This is when the core sample is held flat between your hands, one hand slid one way and the other slid the opposite way, when the core tears through the middle the core has failed in sheer. The amount of stretch you feel before the core shears is sheer stiffness. To compensate for sheer weakness the core is made thicker. So 13mm Balsa may be equal in sheer to 19mm Foam.

Our hull skin thickness is quite thin, we therefore find the core works harder and it's stiffness is noticed in the finished structure (sheer stiffness). Generally a balsa or WRC shell is noticeably stiffer than a foam boat using equivalent laminates. Balsa has very good values and we can produce a shell using a very light laminate. It will be very stiff and very resilient to fatigue.

There are many boats sailing that are built from **foam** so even with its poorer values it works well as a core. Initially one would expect this cat shell to be lighter as it is ½ the weight of Balsa. We do have to compensate for its weaknesses by adding at least double the reinforcement on the outside to spread that compression load over more core and we need a tri-axial type of cloth weave to compensate for the veneer content that runs fore and aft on the Durakore. Secondly, we need to increase the Core thickness to compensate for the sheer value, usually neutralizing the weight advantage. Thirdly, foam absorbs a lot more resin into the open surface cells than timber and so increases weight. Fourth, foam is an inert type material tending to follow the surface and not naturally stay fair,

fairing usually uses more bog and again adds weight. Fifth, because of the inert characteristics, foam requires a much more complex mould for control during construction, this takes more time and is slightly more expensive.

Western Red Cedar has all the advantages of strip Durakore, but has a real weight penalty because of its higher core weight.

Paper Honeycomb Featherlight (50kg/cubic metre) is very efficient and lighter than other core choices. This can be used for external use but needs extreme care to prevent water penetration so we don't recommend this. Ideally it is used for internal furniture. Should water get into the core you lose 50% of its values. It can be suction dried and restored back to full strength, though this can be a long process. Paper Honeycomb has similar strength and sheer ability in the vein lines and about 80% across the veins compared to Foam.

Foam Core (60kg/cubic metre) Featherlight Panels We recommend this for our interiors. It is light, has no water absorption issues and when backfilling cut-outs doesn't absorb as much filler and resin as the Paper Honeycomb Featherlight. The foam Featherlight is slightly more expensive than the paper honeycomb Featherlight.

These are the reasons we prefer Durakore and Duflex Panels for our home built designs. The price in Australia of balsa panels is less than foam. For a technical engineering comparison and more information on the foam/balsa core choice, see a document in "Resources" on our web site or email us.



The success of our designs I feel, stems from the practical common sense approach of a boat builder, coupled with many years of live aboard experience and over 100,000 nautical miles in some of the worst conditions in the world. This experience makes one aware of the power of the sea and the need for a boat to be able to survive these conditions, protect her crew physically and psychologically as well as being a fast comfortable vehicle for all the good times. I am sure you will find our designs reflect our sailing and live-aboard experience and will give you the offshore confidence to sail safely anywhere in the world. Multihulls are '*beautiful, safe, cruising boats*'. We hope you find them as exciting as we do.

WHAT MAKES A GOOD MULTIHULL?

Choosing a design can be difficult so we hope that this introduction helps clear the way a little.

Cat design is not just a matter of two hulls floating a cabin above the water. Only in fairly recent years have the basic elements of design and an understanding of their effect on the use and performance of the finished boat been properly understood.

*The basic principles of good design should **ALL** be present in the boat you're considering building or buying. These will blend together to produce an excellent and safe multihull.*

THE BASICS ELEMENTS OF A GOOD DESIGN:

Good Engineering Our boats are well proven. With over 400 Schionning cats on the water, and many performing under extreme stress whilst racing, we proudly claim we have never had a structural engineering failure of any sort

in our designs. We work with some of the best Aerospace engineers in the composite industries to achieve this.

Flat Decks The flatter deck lines have a number of advantages. Secure footing while reefing, anchoring and in rough conditions. Life lines should be at a sensible protective height instead of set down a level. A flat deck is great for socializing, sunbathing or as a kids playground too.

Buoyancy Buoyancy distribution is the placement of buoyancy in the hulls. Our designs have between 50 and 60 separate sealed buoyancy tanks built into every shell so they are almost unsinkable. Most old designs hobbyhorse (rock fore and aft), this makes them uncomfortable and inefficient. Modern designs have the buoyancy pushed towards the hull ends damping down the hobby-horsing tendencies and giving a lot more safety downwind where the buoyant hulls stop nose-diving. Coupled with a lot of reserve buoyancy higher up in the forward hulls this adds an enormous amount of safety and gives you confidence when sailing off the wind.

A soft 'V'd entry, quickly picking up reserve buoyancy with lots of reserve higher up is an ideal combination.

Good Bridgedeck Clearance High Bridgedeck Clearance is essential. A short cabin length with long hull overhangs is a good safety feature. Good clearance on a cruising cat is 600mm – 800mm, a Performance cat 700mm – 900mm and a Racing cat 800mm – 1000mm. Chamfer panels add high reserve buoyancy and need less clearance than a similar cat without them. They also reduce wave slamming and add strength.

SAILING ABILITY AND PERFORMANCE

Power to weight ratios show how well a cat will sail in light conditions. As wind strength increases, one reefs the power to stay at safe acceptable speeds (this is different for different people).

The Bruce Number is a commonly used value and very useful in comparing cats, displacement is not always reliable and will vary with load. A Bruce Number = 1 is very slow, 1.3 – 1.4 is a good cruising value, 1.5 – 1.9 reflects a very fast cat. Boats like the French 60' Tri's and "Club Med" are running to extremes like 2.3.

A light and efficient cat can often sail out of trouble and outrun severe weather patterns, shorten passage times and avoid bad weather by getting there in the existing weather window. Most good designs will tack through 90 degrees at a speed of 8 – 10 knots while reaching at 10 - 13 knots comfortably with Main and No. 1 in 15 knots of wind.

Daggerboards are efficient and allow very shallow draft for beaching. With a strong reinforced bottom and with kick up rudders, it's easy to beach our cats. Should you want shallow keels to protect inboard motors, then a combination of shallow keels and fixed rudders are a good option, daggerboards would still be fitted as usual.

Low Drag is a good characteristic. Slim hulls reduce drag and are efficient. A good cruising cat would have a Waterline beam to length ratio of 11.5 to 12.5:1. A performance cruising cat 12.5 to 14:1 and a racing cat 14 to 20:1.

It is important to note that **ALL** these elements must be present in a design to make any of them valid. For example, a design can be really good looking, have high bridge-deck clearance,

A Note From The Designer

a powerful rig and sail plan and be built reasonably light and show a fair displacement, but then have an 8:1 Beam to Length ratio. She'll be a good looking, powerful boat but it will be impossible to go forward, except slowly!

There is no reason why a good modern design does not have all of these features. If you find some of these lacking it is usually for the wrong reasons. A lot of cats have very little bridge-deck clearance because the designer is concentrating on a low profile cat which looks good or being dictated by interior accommodation and ignoring the fact that the boat will pound badly at sea. This is not only noisy and uncomfortable but can well be the cause of structural problems. Our designs have been developed around these practical elements of good design and then we accommodate personal comforts and lifestyle choices.

WHICH DESIGN...

We have many different design ranges. All incorporate the elements of good design discussed above so choosing a style, size and layout comes next. Layouts and some things like steering position can often easily be changed so don't be put off if you really like a particular design but find a few small elements you don't like, talk to us and we'll see if we can incorporate your choices.

We've taken particular care with the balance of construction methods in our designs, making them light and strong yet easy to build in small sections, most of which are manageable by a group of friends when they need turning over and moving. The blend of strip planking and light flat panels kept in single plane form, makes building easy and quick and produces a finished catamaran of classic good looks which will not date quickly, giving you very good investment security.

The Legend 60

CAN I AFFORD TO BUILD?

One of the first steps in changing your dream into reality is figuring out whether you can afford the boat (or more likely, how much money you 'don't' have!). Two realities here are, firstly, two similar sized boats with similar displacement, built of similar materials, will cost much the same to build. Designers' estimates of materials are often inaccurate and sometimes minimized to lead one to believe their design will be cheaper to build. This is definitely not the case, **similar boat, similar price!** Your choice should therefore be towards the boat that suits you best and is a good investment. Secondly, we know a lot of people who could not afford their boat at the onset so don't be discouraged. Once you start building it is surprising how you focus your interest, spare time and money into your new project. With our new owner-builders we suggest they start with the smaller items which can be built in the garage, carport, (lounge?) etc. These initial items use very little material and money but use a lot of time, so at the early stages you can get a lot done while you wait for your old boat or car or house etc. to sell. These items are; dagger-boards and cases, motor pod, forward beam and catwalk, cabin roof, rudders, dinghy etc. The experience and confidence gained building these bits speeds up the second stage of larger items and gets the whole project finished much sooner.

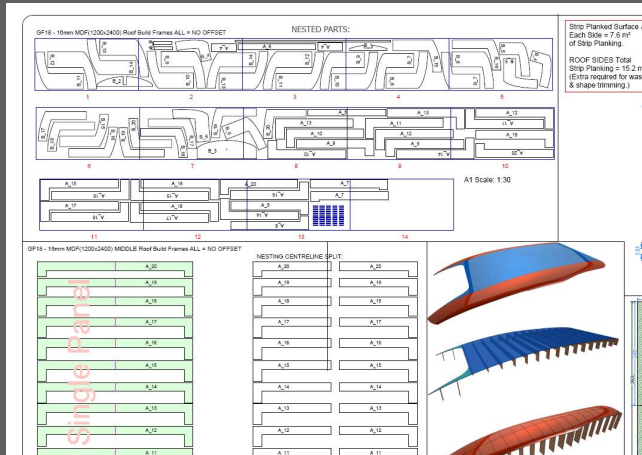
Good luck with your research and project, don't hesitate to contact us should you need further information or a chat about our designs.

Jeff Schionning



Plans and Ordering

The Legend 60



Advice is readily available to help with your design choice and various options available.

COST OF PLANS:

The Legend 60 Plans are **AUD\$45,000.00**. This includes postage anywhere in the world.

UNLIMITED BACK UP SERVICE: Our back-up service is unlimited, our professional boat builder (Brett Schionning) will be here to guide you through any problems throughout your entire project. Email and phone support is available during business hours Monday to Friday.

HOW TO ORDER PLANS: We require a signed and faxed or mailed PLAN ORDER FORM with every plan order. This form explains the terms and conditions and plans will not be mailed until a signed order form is received.

PAYMENT: WE ACCEPT: Bank cheques or direct deposit into our bank account. Please email info@schionningdesigns.com.au for our account details. Credit cards are not accepted for plan purchases.

PLAN DELIVERY: Plans are delivered electronically on a USB drive via mail, or the plan files can be downloaded. The plans consist of A1 and A3 plan sheets and the A4 boat building manual, all in PDF format. Other delivery options can be arranged if required.

Building a boat is definitely a challenge but with good plans, our helpful friendly support and the modern materials available, it's never been easier. The investment of time and money is very worthwhile, offering a rich life experience, fun reward when you launch her and financially you can certainly stand to gain substantially.

We look forward to hearing from you again and wish you the very best with your project.



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