New!

G-Force 1700 C

STUDY PLANS

G-FORCE 1500 “MOJO”

Schionning DESIGNS

Design Profile...

Design Overview...

LOA	17.0 Metres
BOA	8.15 Metres
Draft	0.525 Metres
Headroom/ Bridgedeck	2.00 Metres
Headroom/ Hulls	2.00 Metres
Mast Height	21.50 Metres
Beam to Length Ratio	14 : 1
Displacement	9500 Kilograms
Payload	2000 Kilograms
Motor Option	2 x 40-75hp Diesels
Sailing Speed—Cruise	10-12 Knots
Sailing Speed—Top	20+ Knots

With a huge amount of interest in our G-Force 1700 design, this cruising version just had to happen. Everyone loves the concept and look, and dreams of being the young at heart racer they probably once were, but now having matured into a sensible, almost balanced individual, they realise some common sense needs to be put into the mix. No, not enough to be boring - just enough to allow fast cruising in a cutting edge lean but not too mean cat.

For round the world cruising, and this is where most are aimed, a little more displacement is needed to carry the payload of enough food, water and those few essential toys like surfboards, a kayak or dive tanks that make cruising so much more fun. A cat this size really demands some luxury and better room in the individual hulls to feel like home. These are the changes she accommodates very well yet she remains nice and slim at 13.4:1 waterline beam ratio. There is that little bit more headroom in the saloon and easier walk-down headroom over the steps, things racers can live without in their quest to win but for cruising make life a lot more comfortable.

The G-Force 'C' styling is fresh and new defining her slightly from her faster heritage. The cabin front is quite different being upright with all opening hatches for very good vision and heaps of ventilation. The deck area ahead of the hatches acts like a forward cockpit, just scatter a few cushions around and this becomes a great place to watch the sunset, or to relax while effortlessly eating up those ocean miles. She'll be good for 300 mile days without trying too hard.

The cockpit is very spacious with an option of twin wheels for that bit of racing and easy docking from either side. Steps are set safely inwards and the cabin roof extension has handholds making it very safe heading forward on deck. The bulkhead between the cockpit and saloon is, as usual on our designs, very open, offering solid engineering and secure closure but with the bi-fold doors and drop down windows that open fully give the feeling of being almost one area.

The door is not the trendy huge sliding household type but in keeping with our designs and with many thousand ocean miles of experience, small enough to close securely in extreme conditions. We also suggest having wash boards for the bottom section up to seat level and the aft walkthrough areas also have washboards to prevent water washing into the cockpit in big following seas. These washboards include simple flap valves to allow the quick drainage of water should a wave break into the cockpit. This is a very rare scenario but still, it is sensible design in a good cat.

Her overall beam is moderate but you would not think so with her huge luxurious saloon and dinette that also includes a very comfortable navigation/office area and the galley up. The galley is very spacious and has extra pantry storage in the hull next to it. King size bunks are luxurious in the two forward cabins. A separate single cabin is forward in the port hull with a very big head and separate shower aft. The starboard hull has an en-suite bathroom forward of the main sleeping cabin and a double cabin aft in the hull - this could have twin single berths or be used as an office or workshop. Layout options are open for discussion, there's no doubt the G-Force 1700C offers exceptional opportunity to customise her to perfectly suit your cruising lifestyle.

The dinghy is carried under the cockpit day bed, this neat storage location keeps the sun and rain out of the dinghy which is held securely to prevent swinging around and it is completely clear of waves washing out from under the bridgdeck. Bridgdeck clearance is nice and high which is normal on our designs, forget slamming in pretty much all conditions. Weight is well centralised with good fuel and water capacity. A watermaker would be a no brainer as they add so much comfort with endless hot showers to wash off the salt and spray. Daggerboards are essential for acceptable windward performance, not something we dream of doing but when you have to, it may as well be done well. Boards are pretty much invisible inside and very easy to raise or lower from the cockpit and pull up completely for shallow areas and beaching.

With beaching, fish traps and floating logs off the Amazon in mind, her reinforced box beam hull bottoms offer bulletproof

strength and combined with kick-up rudders and shaft drive motors, she's easy to beach anywhere. You'll also feel much safer when navigating waters where logs are prevalent.

The G-Force 1700C rig is moderate for a cat of this size making handling and sail sizes smaller and keeping costs lower, yet we achieve a light build and higher power to weight ratio's than most competitors, due to the high tech materials used in the construction. This makes her centre of effort much lower and her rotation forces far safer. She is a fast cat with a moderate rig - there is no better catamaran concept. All sail can be handled from the cockpit, main halyard and reef lines are led aft, furler lines for the screecher and jib are led aft, dagger controls are led aft making her a very easy and safe cat to handle, ideal for a couple cruising the world or anyone needing to sail shorthanded.

Main sheet and traveller lines are handy to the steering stations, the main is double ended and controlled from either side. With our new spokeless "Rimfire Wheels" the jib winch is set inside the wheel rim, there is nothing this easy to sail out there. Jib sheets can be crossover type for easier control. Reefing is single line slab reefing from the cockpit run from a Park Avenue Carbon boom. The sail cover fits to the wide boom wings the main drops into the cover guided by the lazyjack lines, just zip it shut.

The mast can be either fixed or rotating, carbon is a common option being lighter and very well proven and also not that much more expensive than alloy these days. The mast sits at 49% LOA exactly where we want it (contrary to some opinion), and more importantly it sits directly on the main high load bulkhead. Mast compression loads are high and not something you want landing just anywhere.

We've used the best balance of sensible technology no carbon just for show. We use carbon caps in the bulkheads for better global stiffness, 'S' glass cloth for the shell giving a weight reduction of 33% for equal strength and we use ATL Composite's Duflex? panels in all the flat panel areas. This is really a world beating combination of exceptional Australian products. The higher tech choices used do cost a little more but they improve the structure a lot making this very much appropriate use of technology we feel.

Motors: ideally shaft drive as they are lighter and cheaper and less prone to damage. A motor choice I suggest for the more serious sailor is a smaller motor, something like the Yanmar 39 HP would suit very well at 186KG's, or for a bit more grunt for those a little less patient, the Yanmar 54 or even the 75HP which is much the same weight at 230KG's. With her slim hulls she will be very efficient under power with good cruising speeds. Decks are spacious and safe, the cabin tucks in neatly offering very wide safe side decks. She uses the G-Force fixed prodder system carrying the Screecher on a furler, a spinnaker is set on the end.

The jib can be either a moderate overlapper or self tacker with furling an option.

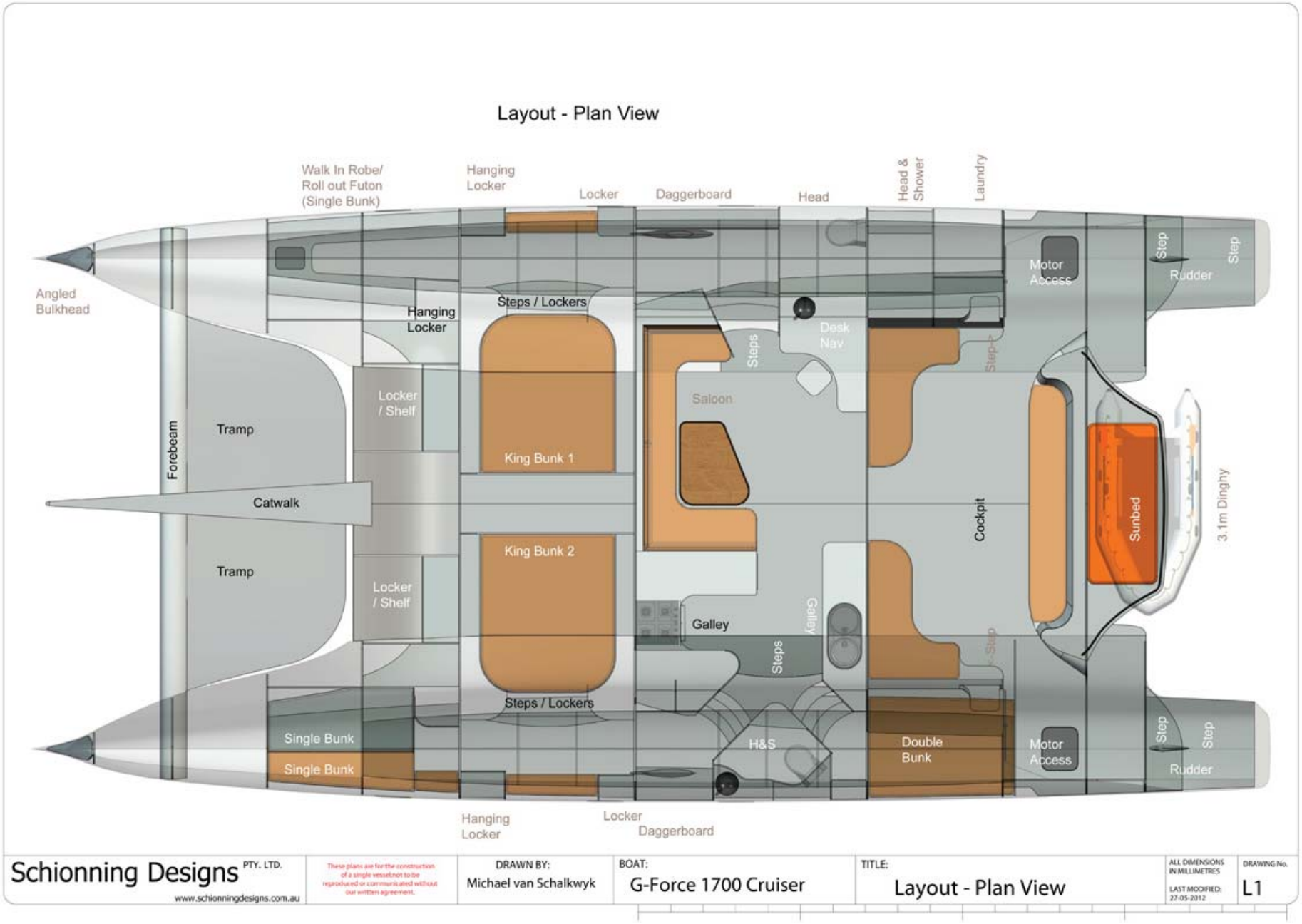
The foredecks are nice and level with tramps for lounging, she uses the full carbon forward beam getting rid of the striker and wire strops reducing windage and looking sharp.

The protected front cockpit deck area forward of the mast adds a safe working area for handling the spinnaker etc.

The unusual hull 'indents' referred to as the "Schionning dimple" identify her blue blood G-Force heritage.

The G Force 1400 has fine bows with lots of reserve buoyancy higher up and high bridge-deck clearance Composite, striker-less forward beam, catwalk and prodder just as the 1700 will also have.

Interior Layout



Schionning Designs PTY. LTD. www.schionningdesigns.com.au	These plans are for the construction of a single vessel not to be reproduced or communicated without our written agreement.	DRAWN BY: Michael van Schalkwyk	BOAT: G-Force 1700 Cruiser	TITLE: Layout - Plan View	ALL DIMENSIONS IN MILLIMETRES LAST MODIFIED: 27-05-2012 / DRAWING No. L1

A NOTE FROM THE DESIGNER....

The success of our designs I feel, stems from the practical commonsense approach of a boat builder, coupled with many years of live aboard experience and 50 - 60,000 sea 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.

CHOOSING A DESIGN...

Choosing a design can be difficult so we hope that this introduction helps clear the way a little. 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. One of the first steps in changing this 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 the same to build overall. Designers' estimates of materials are often inaccurate and sometimes minimized to lead one to believe their boat will be cheaper. This is definitely not the case, ***similar boat, similar price!*** Your choice should therefore be towards the boat that suits you best and offers you good backup 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.

WHAT MAKES A GOOD MULTIHULL?

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 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 Multihull.

THE BASICS ELEMENTS OF A GOOD DESIGN:

- GOOD ENGINEERING. Our boats are well proven.

- FLAT DECKS. The flatter deck lines have a number of advantages. Secure footing while reefing, anchoring etc. in rough conditions, life lines are at a sensible protective height instead of set down a level. A flat deck is great for socializing, sunbathing or as a kids playground.

- BUOYANCY. Buoyancy distribution is the placement of buoyancy in the hulls. Our designs have between 50 and 60 separate buoyancy tanks built into every shell so they

> ***"Sailing ability is important. We feel that good performance in a sailing cat is a real safety feature."***

  are almost unsinkable. Most old designs hobbyhorse a lot making 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 in the forward hulls this adds an enormous amount of safety and gives you confidence off the wind.

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

- 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.

- 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 as per our designs, it's easy to run the cats up on any old beach. 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, giving the best of both worlds.

LOW DRAG. This 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 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 then we accommodate personal comforts and lifestyle choices.

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

Reverse bows, curved forward beam and stunning sails.
"Bulletproof" was built by Andrew Crick Boat Building, Maryborough Qld for Scott and Vanessa Gralow

All photo's used are courtesy Scott Gralow and Mark Giles

Construction

G-Force 1400 shown below.


Shell Stage


Bulkheads in—Note hull planking

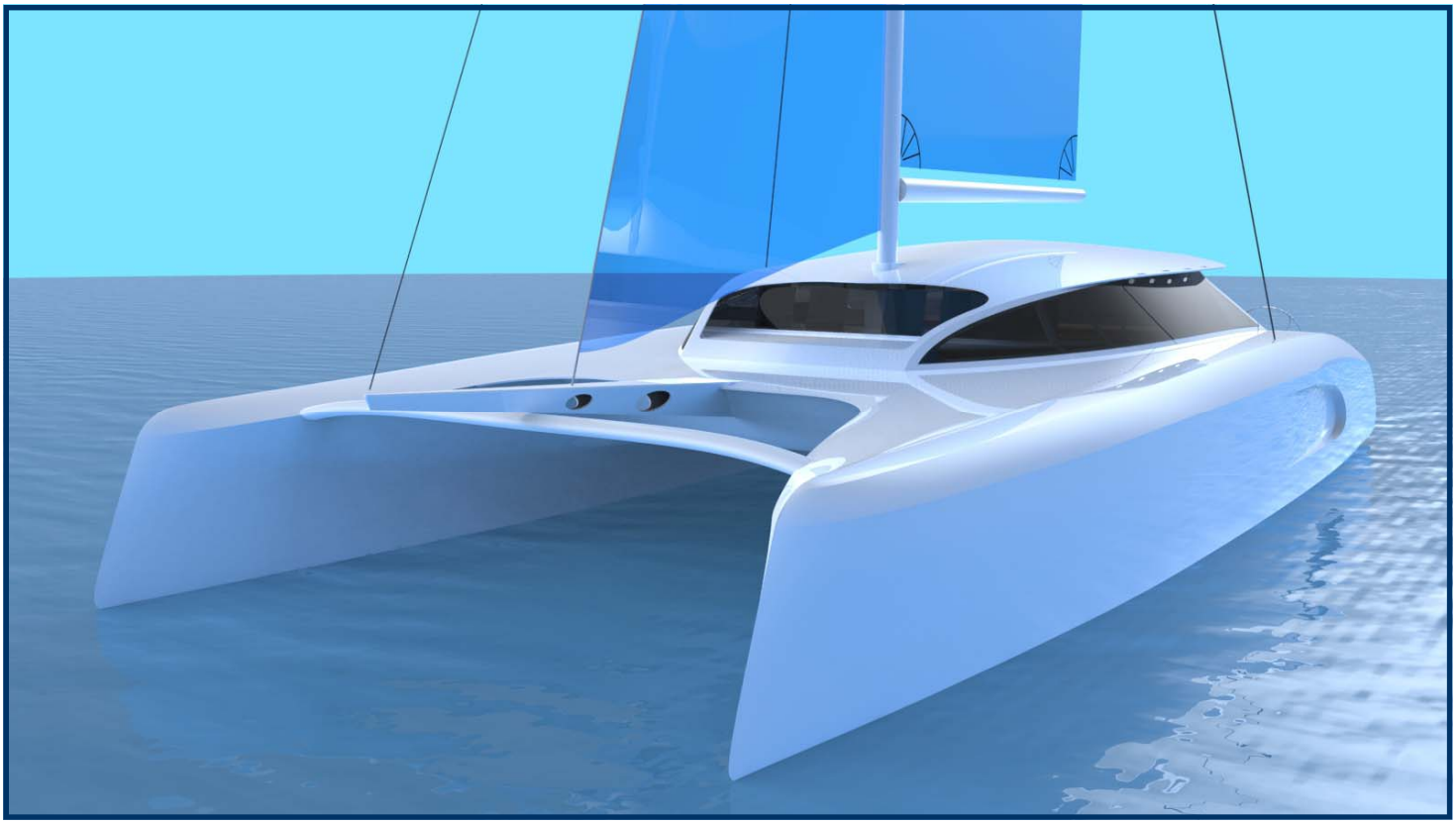
Steering station and cockpit seat

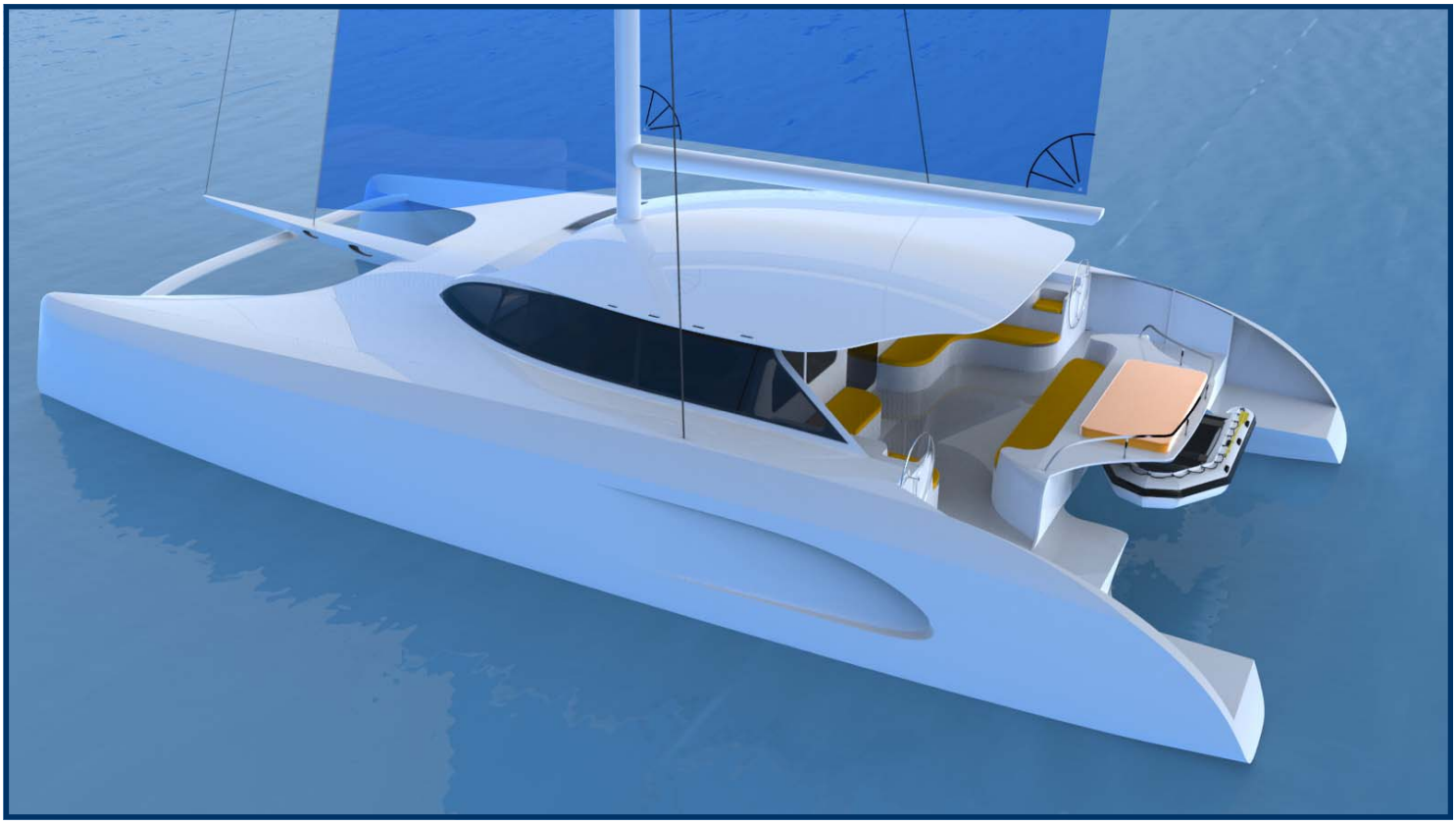

Bow section with carbon forebeam attached

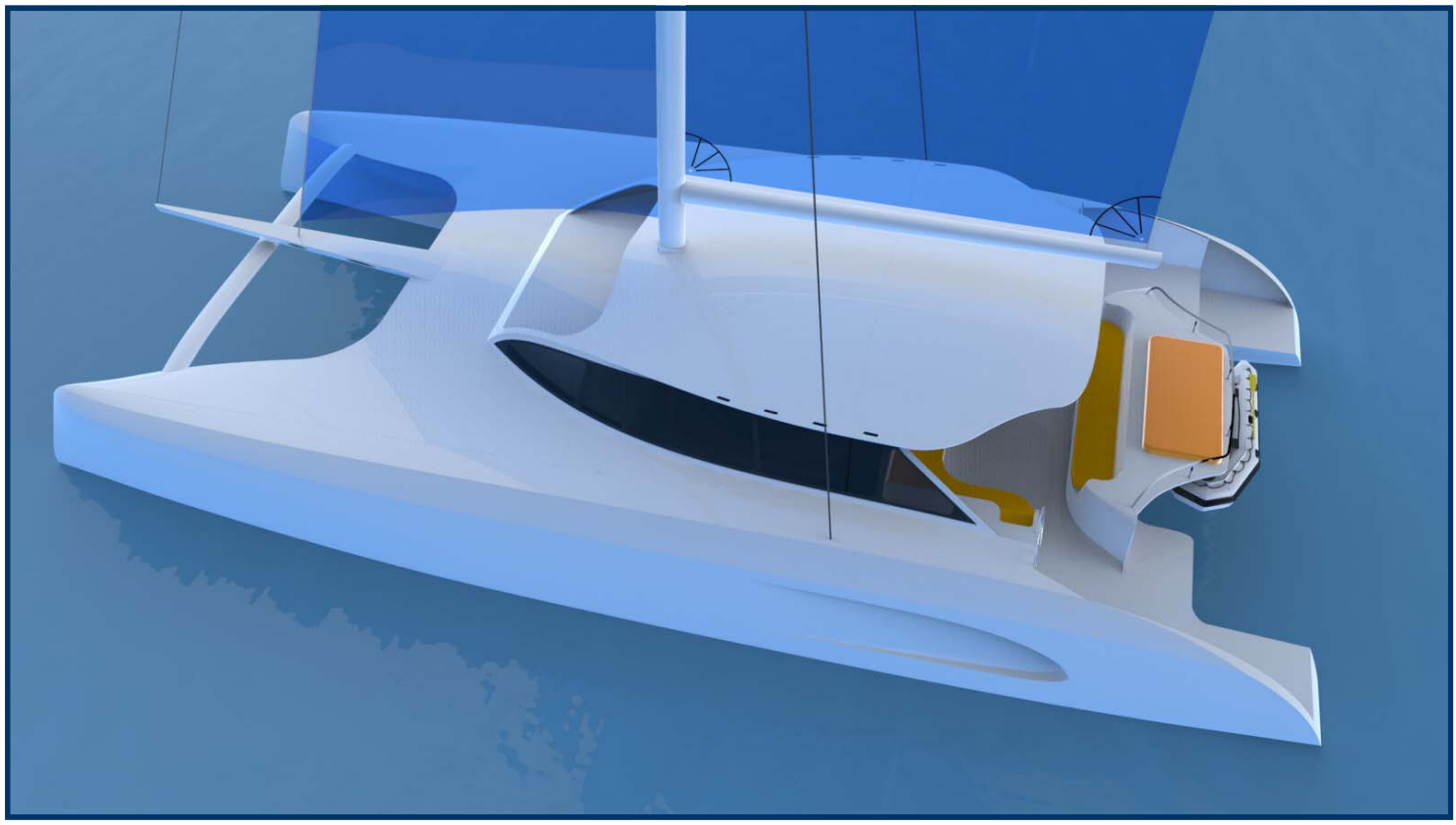
Interior furniture—Saloon seat


Strongback down with temporary frames up

CAD Images...







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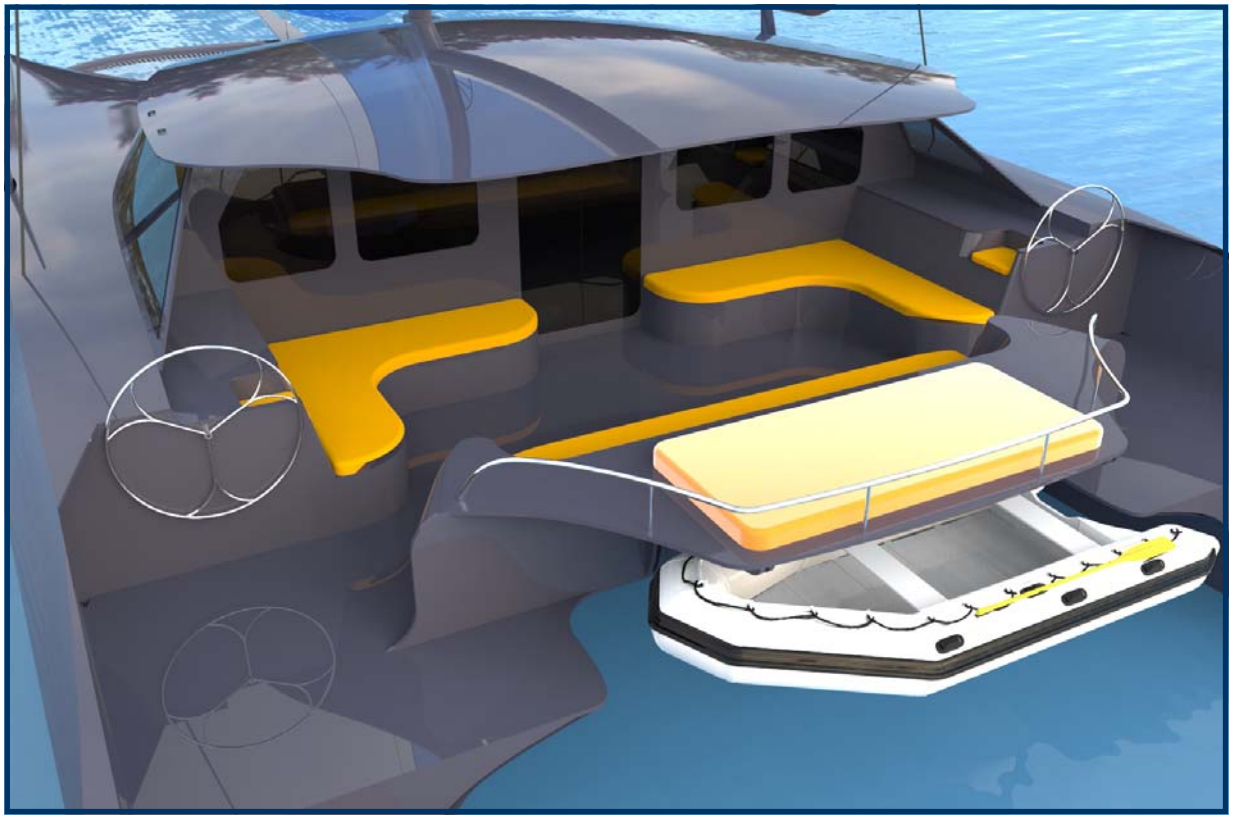

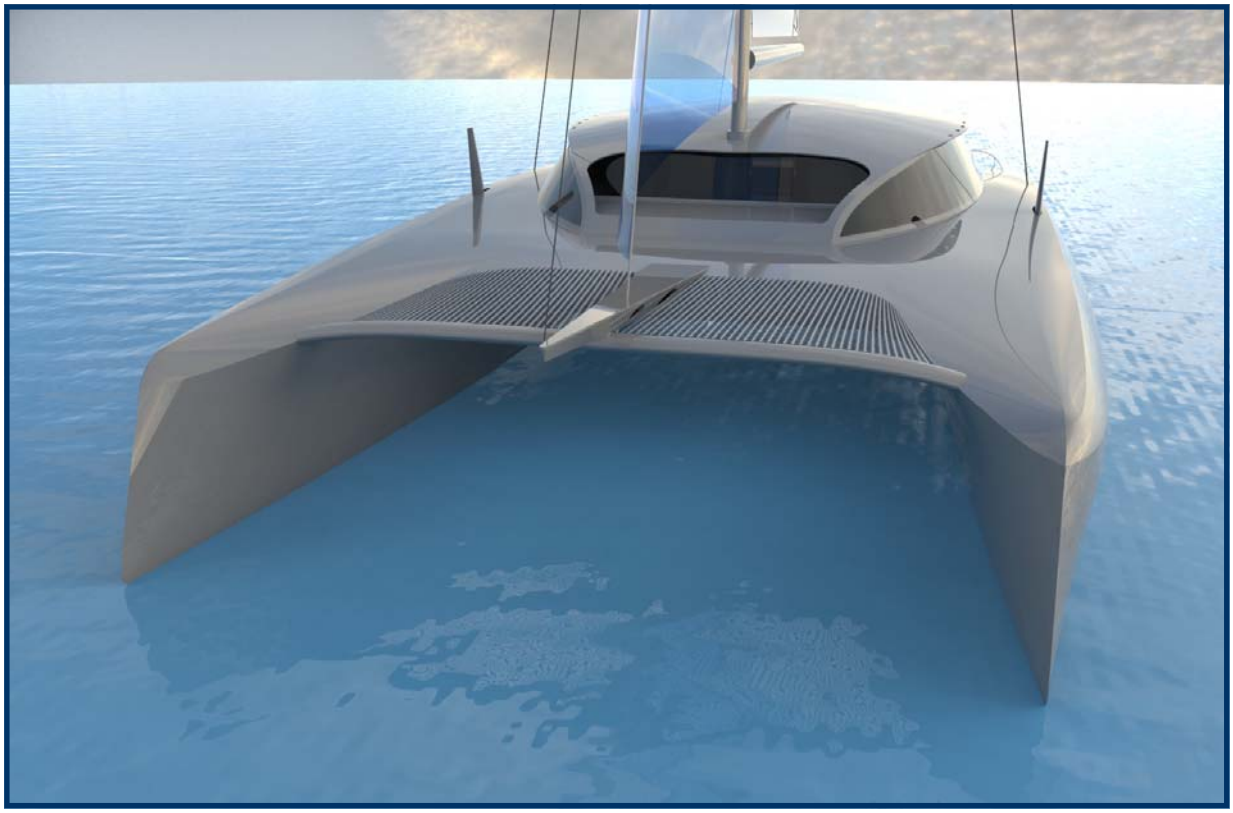

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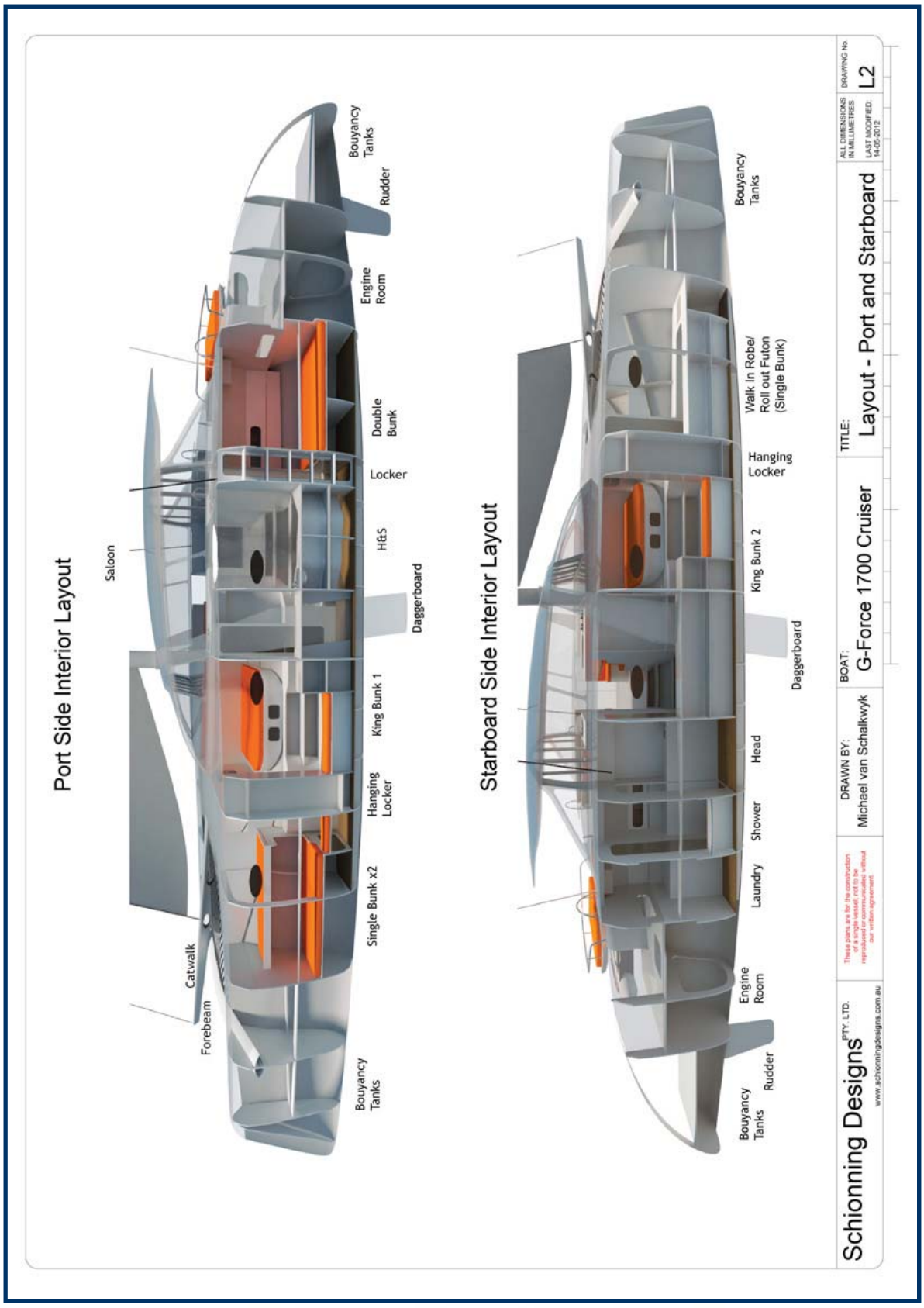
Port Side Interior Layout
Saloon
Catwalk
Forebeam
Bouyancy Tanks
Single Bunk x2
Hanging Locker
King Bunk 1
Dagger board
H&S
Locker
Double Bunk
Engine Room
Rudder
Bouyancy Tanks
Starboard Side Interior Layout
Bouyancy Tanks
Engine Room
Laundry
Shower
Head
Hanging Locker
King Bunk 2
Dagger board
Walk In Robe/ Roll out Futon (Single Bunk)
Bouyancy Tanks
Rudder
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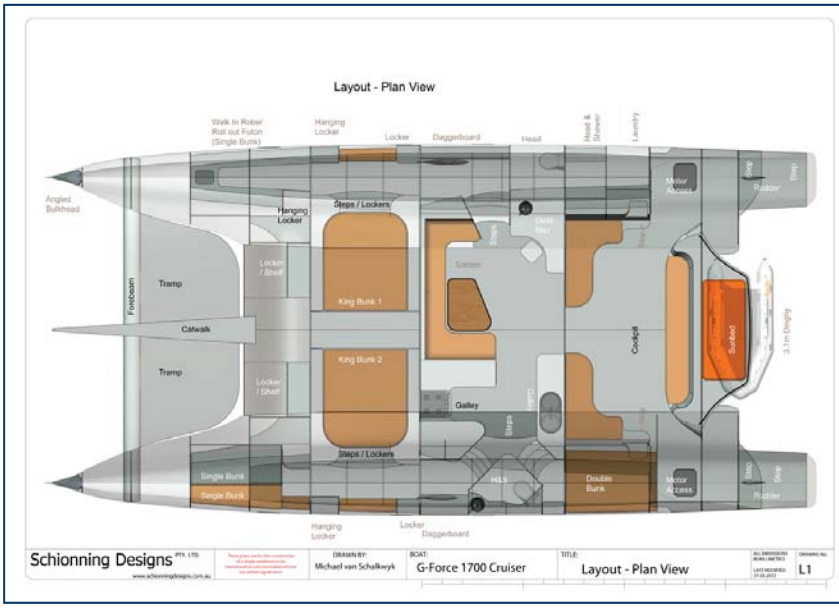
These plans are for the construction of a single vessel, not to be reproduced or communicated without our written agreement
DRAWN BY: Michael van Schalkwyk
BOAT: G-Force 1700 Cruiser
TITLE: Layout - Port and Starboard
ALL DIMENSIONS IN MILLIMETRES
LAST MODIFIED: 14-05-2012
DRAWING No L2

Material List

Email Lorraine in the office at info@schionningdesigns.com.au for an up to date material list for this design.

Construction Plans

What is supplied in the plans?



The G-Force 1700 C Construction Plans are CAD plans, taken straight from the model for accuracy.

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

COST OF PLANS:
For plan cost and more detailed information please email our office at info@schionningdesigns.com.au

UNLIMITED BACK UP SERVICE: Our back-up service is unlimited, our professional boat builder (Jeff 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.

SHIPPING: Plans are sent by express mail within Australia and by courier overseas at no extra charge to you.

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 worth-while, offering a rich life experience, fun reward when you launch her and financially you can cer-tainly stand to gain substantially.

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