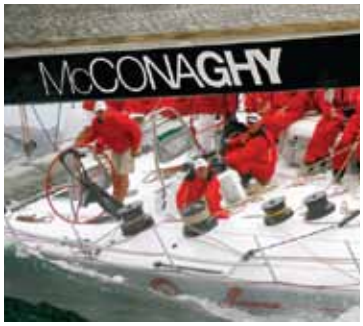
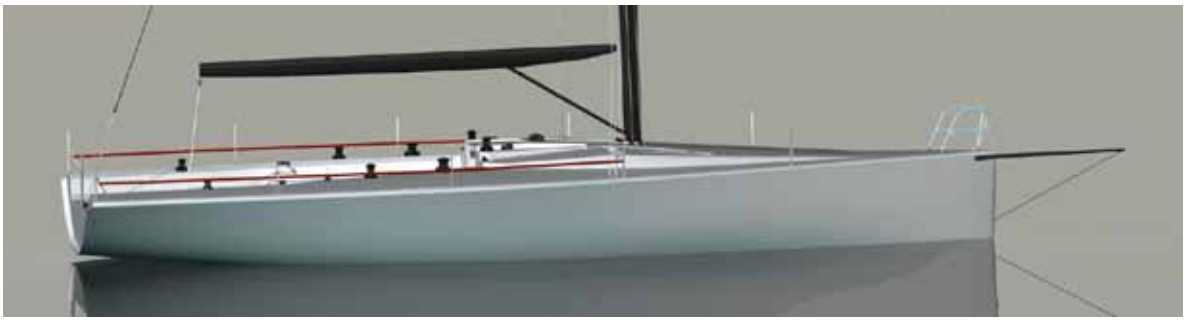
McCONAGHY





KER 40 One Design

IRC RACE YACHT

DESIGNED BY KER YACHT DESIGN

The Concept

The Ker 40 is an exciting new yacht that has been specifically designed for higher performance around the racetrack but more importantly to win races on IRC, ORCi and IMS handicap systems.

The new Ker 40 is a fast offshore yacht, with large open cockpit that makes sail handling and crew work a breeze. The boat is fitted out with a lightweight interior that complies handicap regulations. It is comfortable and practical with a dedicated nav-station, basic galley, and ample accomodation.

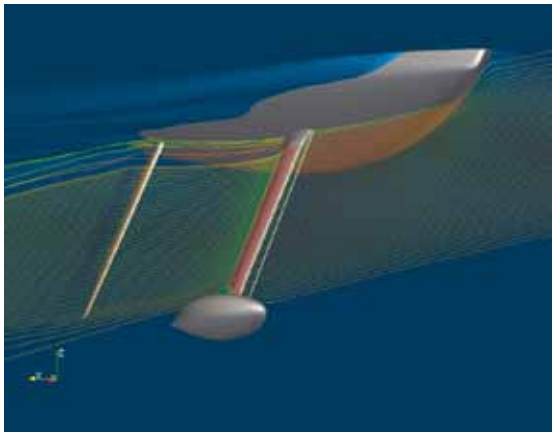
The rig is moderate, with a high aspect sail plan, which will ensure that this boat will perform above its weight across all wind ranges. The spar package is supplied by none other than world-renowned mast makers Hall Spars. A highly refined, carbon fibre double spreader rig, Carbon boom and prodder, this boat will cater for a wide range of sailing skill and level of racing.

The standard boat is set up for Asymmetrical Spinnakers off the detachable bow prodder. As an option, for those who intend to do "round the buoys" windward leeward racing, a Spinnaker pole and rigging option is available.

The boat is easy to sail with less crew numbers, e.g. for short handed sailing like twilight, or it can be driven hard and sailed at the highest level.

FAST.....
EXCITING.....
EXCEPTIONAL RATING.....
WINNING TEAM.....

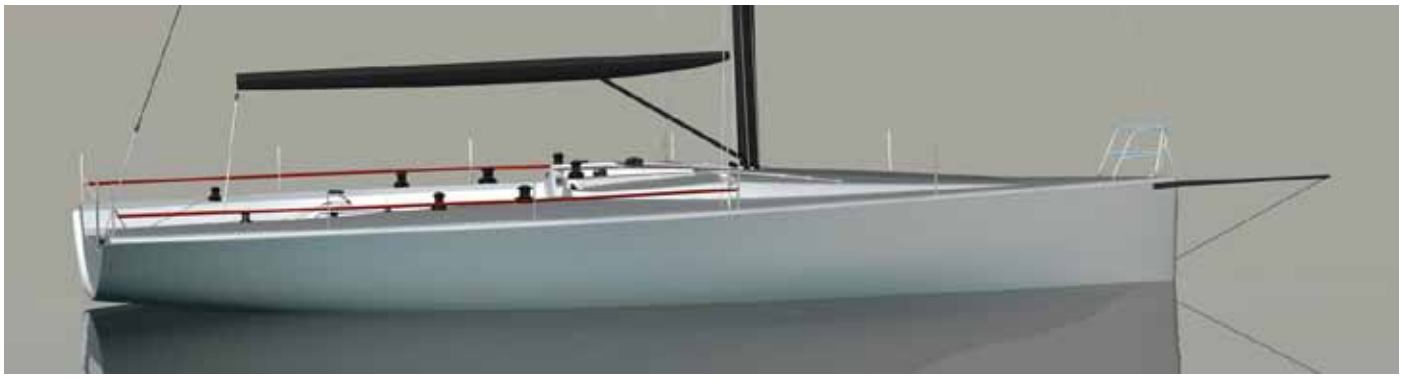
Yacht Science
Ker Yacht Design



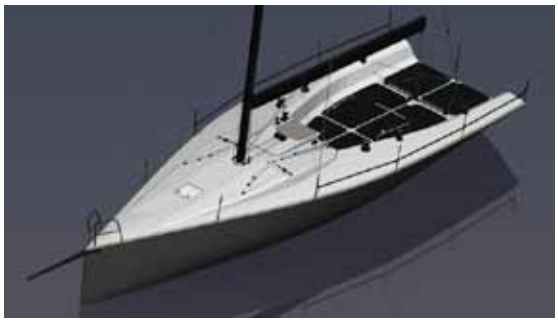
Ker Design continues to develop and improve on their winning designs. With the experience of Americas Cup technology and a dedicated team of design experts.

With the use of Computational Fluid Dynamic (CFD) Ker is at the cutting edge of yacht science. The results speak for themselves.

This yacht will be fast across the range, it will be easily driven and reacts well to gear changes. The stage is set for some truly fast, exciting and competitive racing. Designed and constructed to meet ISO structural regulations to Class A with plan approval by Germanischer Lloyd.



KER 40
Grand Prix Race Yacht



The Ker 40 is a light displacement high performance IRC race yacht, designed by talented British designer Jason Ker. Over the last 10 years his designs have stormed onto the international sailing scene in no uncertain terms. In what has been termed the "perfect team" Ker's creation will be expertly crafted by McConaghy Boats.

The Ker 40 is for top level racing in local and international regattas. Designed and optimized for the IRC and ORC rating rules. The concept and the design features are dedicated to providing the next step in one design and mixed fleet racing. A lighter, faster boat that still rates very well under various handicapping systems. McConaghy will ensure that all boats are as identical as possible in terms of construction, hull shape and appendages, weight, deck layout, sail plan and performance.

The boat is built to the highest standards utilizing the latest hi-tech materials and building techniques comparable with the ones used in America's Cup yacht construction and fit out. It is a top end race boat that will be exciting to sail and will have the diversity to race across a wider range of racing categories.

McConaghy Racing Yachts

Stronger. Lighter. Faster!

For more than 40 years McConaghy has been driven by these imperatives and it continues to push the boundaries in pursuit of better performance in their products.

Each new project is seen as a new opportunity to reset existing benchmarks and reinforce the company's reputation as builders of the worlds best grand prix performance racing yachts.

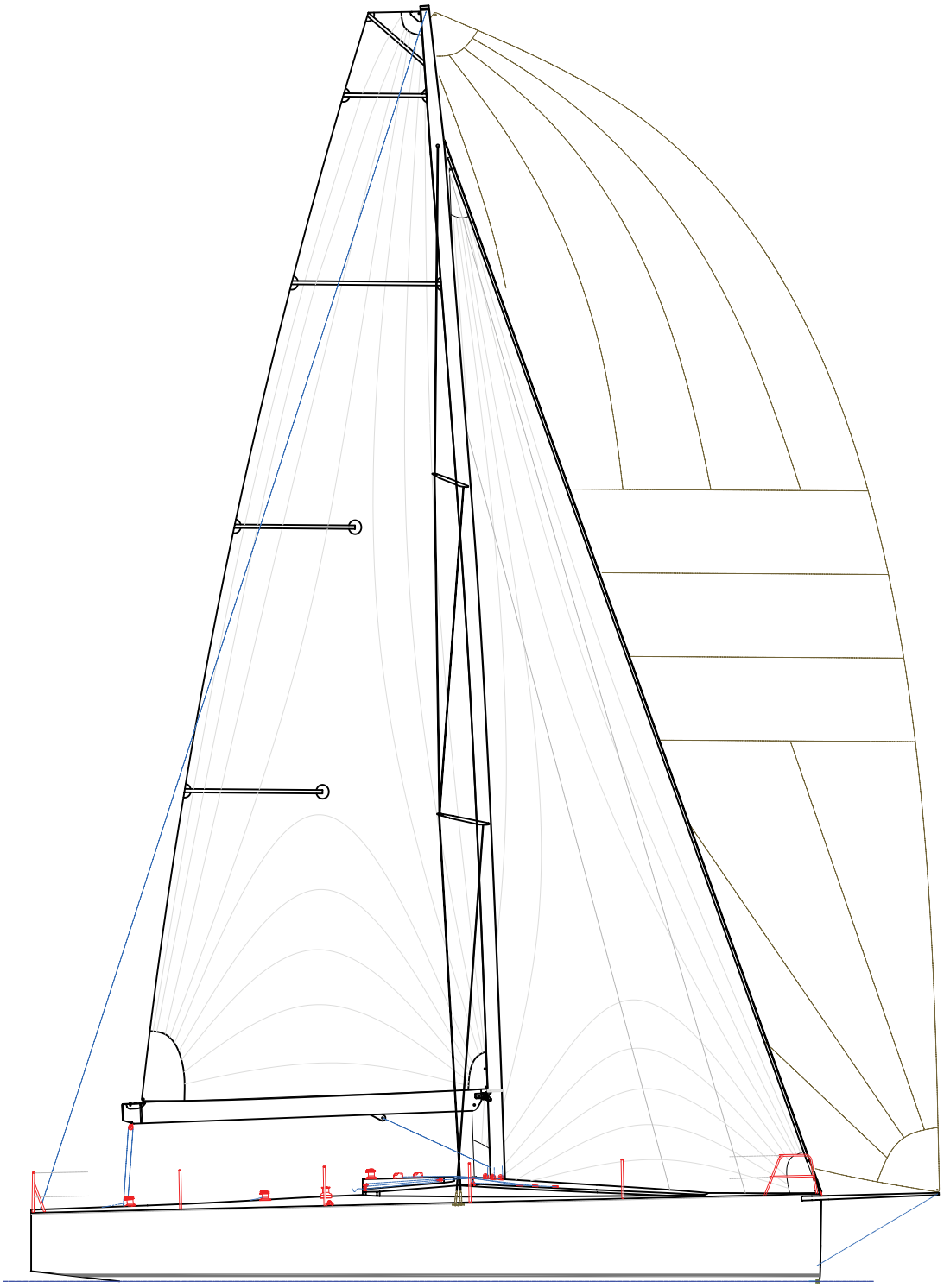
That reputation has been earned through an enviable record of reliability and race success, involving the best designers, engineers and technicians.

McConaghy: a dedicated team involving some of the best craftsman in the industry, time and time again meticulously creating the fastest and most successful yachts in the world.

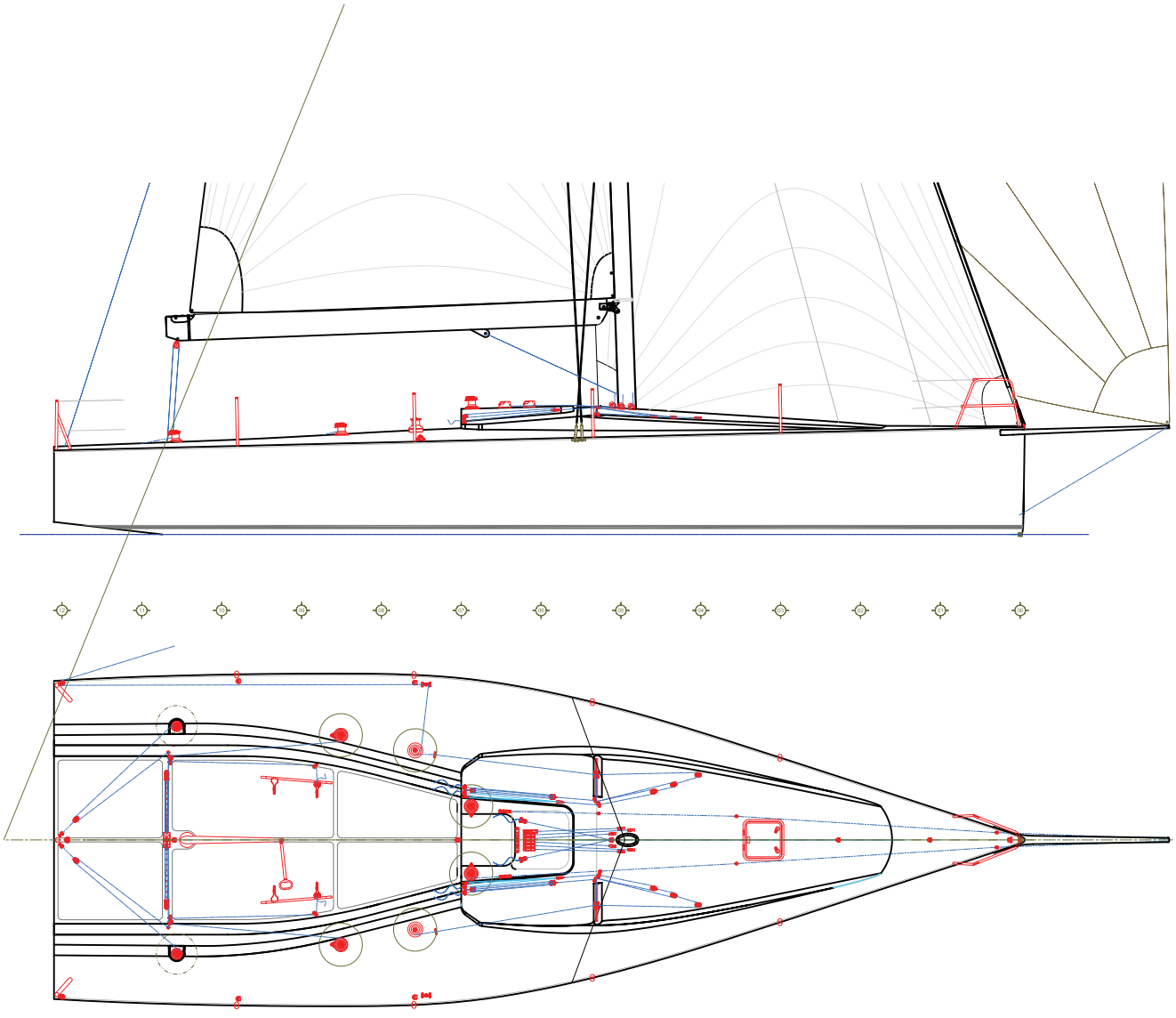
Alfa Romeo II, Wild Oats XI. & ICAP Leopard 3, finished 1st, 2nd and 3rd in the 2009 Rolex Sydney Hobart Race, 82 nautical miles ahead of the next closest Maxi in a race which featured the largest convergence of Maxi yachts the world has seen in recent times.

Owners enjoy not only the 40 years of experience that goes into each and every yacht, they also benefit from the performance, singular style, unfailing quality of workmanship and attention to detail that distinguishes each and every McConaghy yacht. Making them the builder of choice and one that sailors all around the world aspire to.

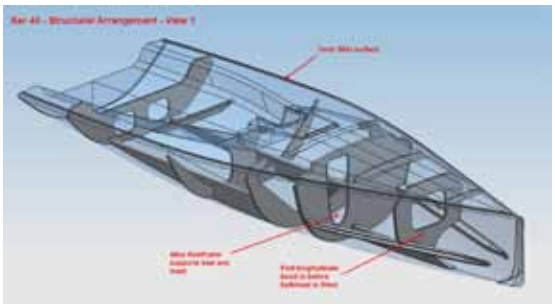
Sail Plan



Deck Layout



Yacht Specifications



General Specifications

LOA	12.20	Mtr.	
Beam	4.15	Mtr	
Draft	2.60	Mtr	
Sheer Height	1.62	Mtr	
Displacement (lightship)	4,800	Kg	
Fresh Water Capacity	70.00	Ltr	
Fuel Capacity	40.00	Ltr	TBC
Engine Power	30.00	Hp	
ISO Structural	CAT. A		
ISO OSR	CAT. 1		

Designers & Manufacturers

Naval Architect	Ker Yacht Design
Manufacturer	McConaghy Boats

Sail Plan

P	16.60	Mtr
E	5.30	Mtr
I	16.15	Mtr
J	4.75	Mtr
SPA	170	Mtr Sq
STL	6.75	Mtr

Construction

• Hull and deck precision female tooling

• Hull and Deck: E glass epoxy/foam sandwich construction, resin infused, vacuum bagged.

• K eel: SG iron keel fin strut with composite fairings and lead bulb

• Rudder: Autoclaved Carbon Fibre rudderstock, Tiller steering standard (with dual wheel steering option.)

• Light weight yet robust and stiff construction incorporating modern race boat technologies.

• A fully optimised structural design using advanced Finite Element Analysis Techniques.

• Designed and constructed in accordance to ISO structural regulations to Class A with plan approval by Germanischer Lloyd

• The hull and deck constructed from vacuum consolidated e-glas s/epoxy/foam sandwich resin infused

• Additional reinforcements in way of all deck fittings and other highly loaded areas

• Structural internals: vacuum consoldidated e-glass/epoxy/foam with sandwich construction, with uni-directional fibre reinforcement

• Non structural internal components built from e-glass/epoxy/foam sandwich construction

Finish

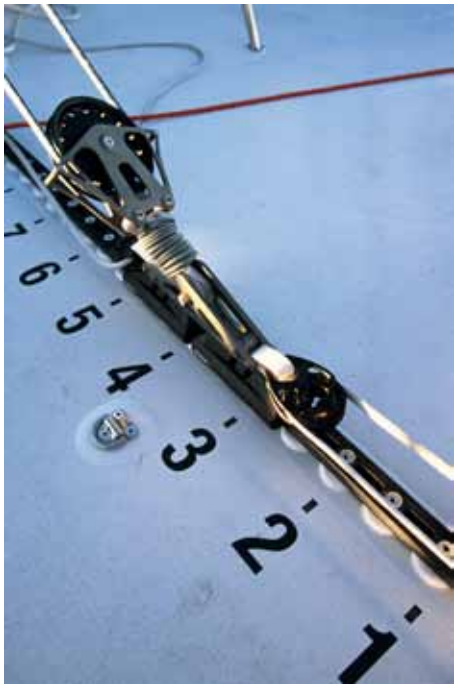
• Hull and Deck: Finished in high-grade polyurethane. Plus Non-skid areas on deck

• Cockpit Floor: Non-skid areas or 3M grip tape non-skid areas as an optional extra.

• Under water plane: Finished with Epoxy primer ready for factory antifouling. Wet rub finish as an optional extra

• Interior: Clear finished

Deck Equipment
Rigging



• 7/8ths, 2 Spreader Carbon Mast, with 20º of sweep on the spreaders manufactured with high modulus HR40 carbon

• The carbon boom has a deep section for stiffness and lightness.

• Mast, boom and poles are painted in a clear lacquer, giving a gloss carbon finish

• Detachable fixed bow sprit with bobstay

• Harken Carbo headstay foil

• 2:1 Mainsail halyard, 1 fractional headsail halyard, 1 staysail halyard and 2 masthead spinnaker halyards

• Rod kicker with integral purchase system for a final ratio of 38:1

• Simple & effective external main sheet system leading directly to main sheet winches

• Transverse jib tracks with efficient up/down and in/out controls

• Dedicated backstay winches

• Single or split backstay options

• Integrated composite chain plates

•Headstay attachment to accommodate load cell

Winches and Deck Gear

• 2 Primary winches Harken B48.2

• 2 Pit winches Harken B44.2 ST

• 2 Main sheet winches Harken B 44.2 ST

• 2 Backstay winches Harken B 32.2 ST

• 4 Aluminium Lock in Winch Handles

• All tracks, cars and purchase systems from the race boat specification Harken parts

• Spinlock clutches along with custom organisers

Safety on Deck

• 1 Set of stainless steel pulpits

• 2 Stainless steel aft pushpits

• Double life line with Stainless steel stanchions

• 1 Stainless steel CL stanchion aft

• Foredeck toe rails to ORC standards

• Clipping on points using Wichard folding pad eyes to ISAF OSR standards

Hall Spars

Solid Science. Seamless Spars. Faster boats....

Experience is the most important tool in Composite construction.

The key element in rig and sail aerodynamics is the mast's ability to bend optimally for sail design shape – for minimum weight. Without the baggage of lap joints, glue, screws and filler that masts with full-length seams require, a Hall seamless mast is lighter for equal bending stiffness. Yachts with lighter masts, have less angle of heel therefore maximizing the sail plan aerodynamic efficiency.

Experience

Hall is the only mast builder with more than two decades of experience working with carbon. Using the highest quality Hi Modulus pre-preg carbon fiber along with their molding process (utilizing the benefits of using autoclaves), the results speak for themselves. Through thorough in house and independent testing, we have proven that Hall Spar products are lighter, stronger, and faster.

The same attention to detail is afforded to the rigging, running rigging and control systems. Hall provides the very best, lightweight and functional gear to make the boat as efficient as possible.

Hall Spars.World Wide Service

Pacific Rim

Silverdale Auckland New Zealand

North America

Bristol Rhode Island USA

Europe

Breskens Holland

Mediterranean Region

Civitanova Marche, Italy

Mast Particulars

• Aerodynamic mast section in HR40 C arbon or Equivalent

• Split 2 piece mast option

• Boom in T800 Carbon or equivalent

• Spinnaker Pole in C arbon (price as option)

• Two sets of spreaders with 20o sw eep back .

• One covered Kevlar/PBO/Carbon masthead backstay, led to backstay winches for additional forestay tension and bend control

• Internal hydraulic jack system, with jack bar hole for external backup (priced as option)

• Mast heel adjustable fore and aft on screw adjustment (price as option)

•Halyards : 2x masthead spinnaker halyards

1x fractional spinnaker halyard, doubling as a spare genoa halyard

1x genoa halyard

1x staysail halyard

1x mainsail haly ard with 2:1 purchase (exit below deck)

• Outfitting : Lightweight solid vang gas-strut (priced as option)

Tuff-Luff headfoil or equivalent

Fitting of supplied electronic cables, plus mounting for windex and wand (will be standard on all masts)

Other Information:
Max Expected Wt Approx 170 kg (includes rods, instruments, 20/20's etc.)
Engineering is entirely the responsibility of the mast supplier .
Mast suppliers engineer will liaise with designer to design to longitudinal stiffness distribution as specified by a chosen sail designer if requested.

Foils
Keel, Fin and Bulb

• A genouroulsy sized deep 'T'shaped lead bulb keel with high ballast displacement ratio

• Keel and keel attachment is in accordance to ISO structural regulations to Class A with plan approval by Germanischer Lloyd

• Deep SG Iron fin keel

• Lead T-Bulb

• Highly structural effcient anodized internal aluminium alloy keel structure transferring keel loading to boat structure

• Fin and bulb are delivered faired, primed and topcoated ready for antifouling

Steering System

• The Rudder is a deep draft blade type

• Carbon fibre rudder stock

• Carbon fibre tiller (twin wheels and pedestal optional)

• Bottom bearing -Water tight self aligning roller bearing with rudder retaining ring

• Top bearing -Water tight self aligning roller bearing.

Engine

- 30hp Volvo Penta diesel engine
- Transmission Sail Drive
- Folding 2 bladed 'racing' style prop
- Spinlock flush throttle control mounted on stbd side of cockpit
- Below deck engine instrument panel
- Litre rigid plastic fuel tank (TBC)

Electrical

- Red/white cabin lighting in saloon, galley, heads and navigation areas
- 12 volt DC switch panel and battery indicator mounted by the Chart Table
- Battery isolator/selection switch mounted on Engine Box
- 1x 65 AH gel type batteries & 1 x 17 AH battery for engine start
- 12 V electrical panel for Engine, with fuel gauge, rev counter and start/stop switches mounted close to the engine
- Navigation lights on pushpit and pulpit, steaming light and windex light on rig

Plumbing

- Manual tap at galley sink
- Plumbed in seawater head
- 2 Manual bilge pump one cockpit one below deck
- Flexible 70 litre water tank behind bunk fronts

Interior

• Designed to meet ORC, IMS and IRC regulations

• Constructed from light weight e-glass/foam mouldings

• Dedicated navigation station with consideration given to the use of the latest navigation aids and equipment

• Galley with two 'camping gas' style burners and sink with manual fresh water pump

• 4 netting style bunk tops strung between bunk fronts and hull side with zip access underneath for stowage

• 4 pipe cots and associated tackle

• Centreline forward hatch

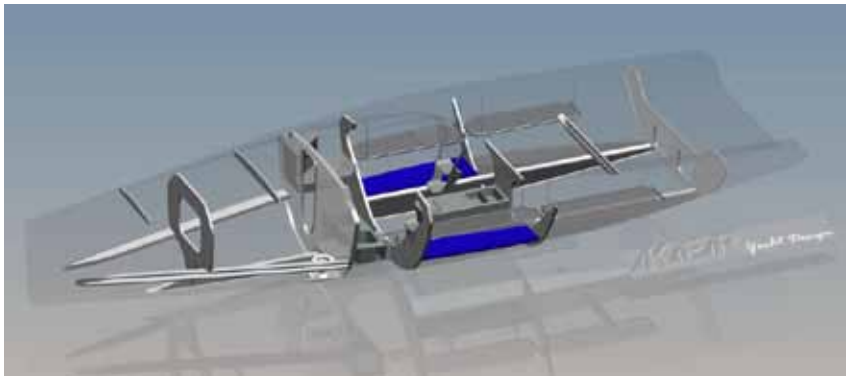
• 2 clear dinghy hatches in the cockpit sides to allow for rope stowage

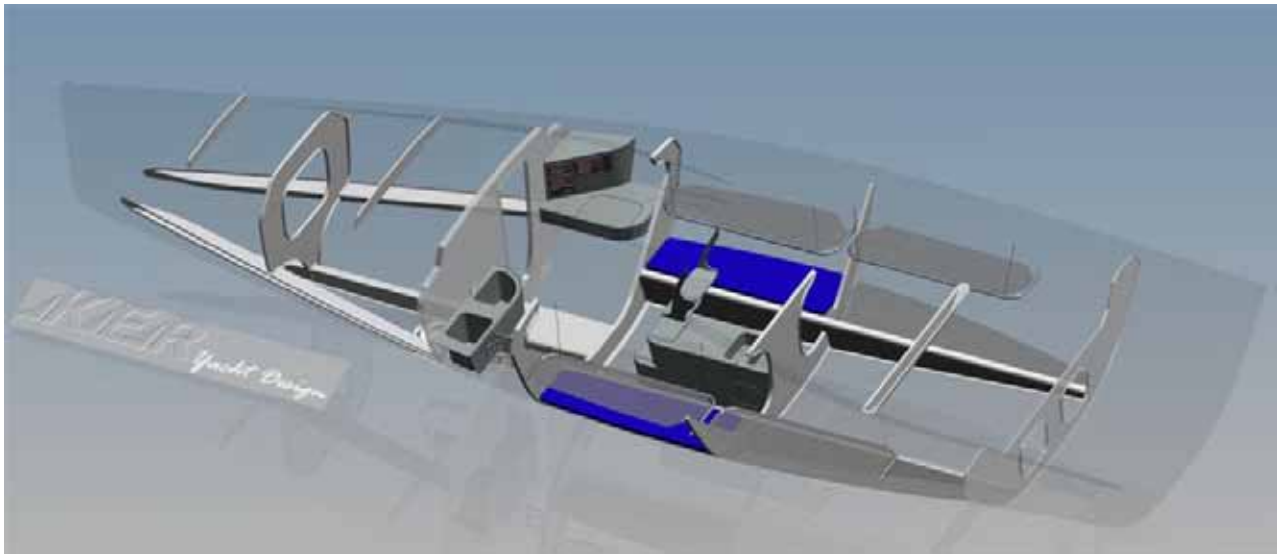
• Engine box with access to engine and integrated bottom steps

• Free hanging composite top steps

• Composite enclosure surrounding keel frame

• Plumed head located fwds of mast bulkhead





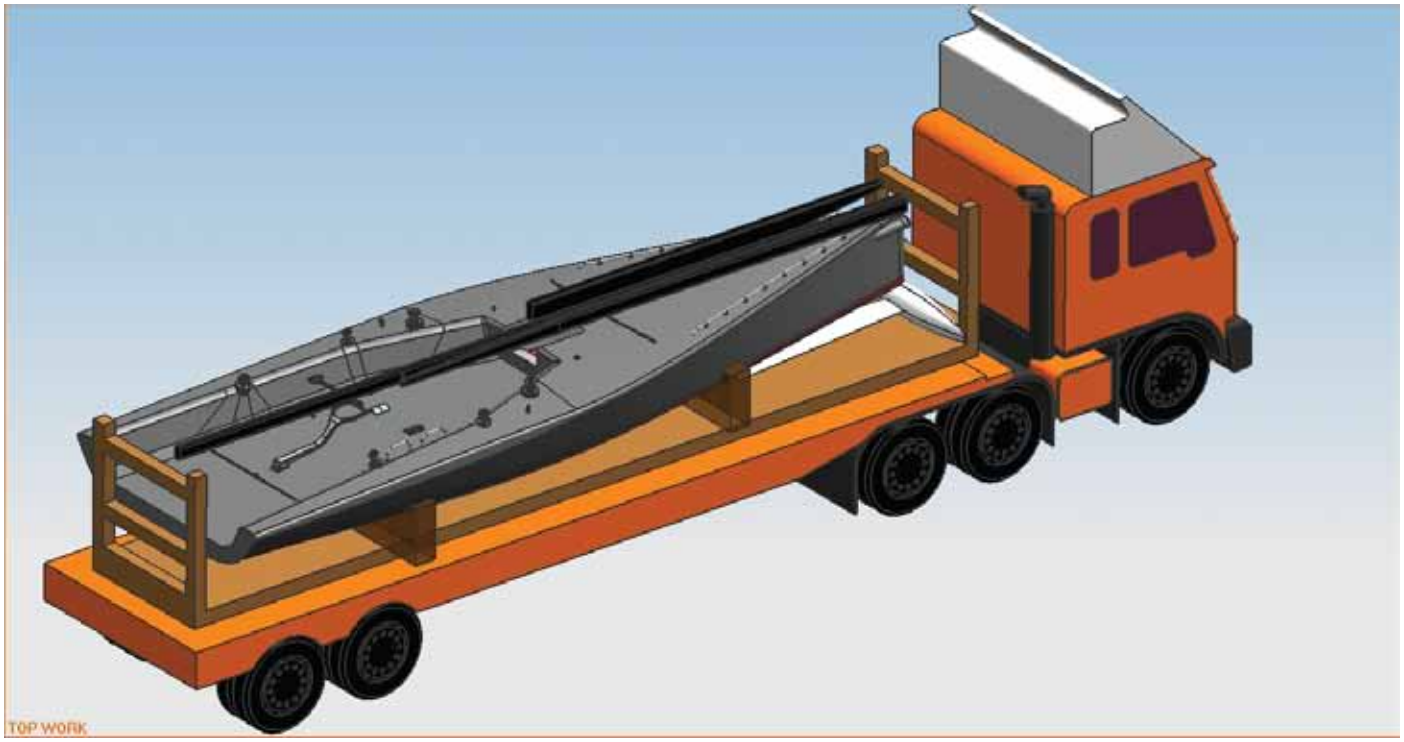
Inspection
During Construction

Owners are welcome at McConaghy. The buyer may appoint a boat representative to have access to the vessel at all reasonable times during construction. Travel to our facility in Zhuhai is straightforward from either Hong Kong (1¼ Hours by ferry) or from Macao which is our neighbouring city. A visit to our facility can easily be accomplished as a return trip from Hong Kong.

For clients wishing to visit during construction we can make all necessary local travel arrangements and provide advice should a longer stay be preferred.

Shipping

McConaghy Boats employs a full-time import export manager to deal with all shipper requirements. Being located close to Hong Kong, one of the worlds busiest shipping ports, world wide shipping is both frequent and easily managed. We work closely with a number of freight companies which allows for competitive rates world wide.



The People
Mark Evans

Evidence of Mark Evans' business acumen and instinct for enterprise emerged early and it was no accident it all revolved around his passion for boats. As a teenager growing on Pittwater in Sydney, he raced dinghies and ran a successful sideline business building, buying, repairing then selling boats.

He formalised his qualifications completing his boat building apprenticeship before travelling overseas in 1991 to expand his experience, working his way around several countries and international boat yards.

Back on Sydney's Northern Beaches with international boat building experience in hand he then joined McConaghy as a shipwright in the mid 1990s, progressing to foreman and head foreman a relatively short time later. In that capacity he worked closely with now-partner Jono Morris on the Farr 40 production project, a close collaboration that was further strengthened when they bought the company in 2000.

Since then, the pair have capitalised on their complementary skills to manage the construction of some of the most successful maxi yachts built anywhere in the world. Since 2006 Mark Evans has been based principally in China and instrumental in the training and skills transfer processes that have underpinned the company's successful expansion offshore. His direct involvement, along with other key Australian and international personnel, has ensured that the usual standard of quality control and attention to detail that is synonymous with the McConaghy name has been maintained. While running the Chinese operation Mark has overseen the production of more than 300 foiling moths including the Mach 2, the worlds fastest moth, more than 100 production racing yachts and nine one-off racing yachts, including Americas Cup and Volvo 70 contenders.

The People
Jono Morris

The talent that Jono Morris brings to the business of high-tech boat building derives from two key sources – his skills as an architect and his immersion in the world of yacht racing.

In a very successful international sailing career spanning the last 20+ years Jono Morris has been part of some of the most professional and successful yachting teams on the world grand prix yachting circuit. This gives him extremely valuable insights into the way the boats he builds are used and handled.

Having been involved in high tech racing yacht construction since 1989, and joining McConaghy Boats in 1994, Jono Morris worked for several years in private architectural practice but was drawn back to boat building again in 1998 by the opportunity to join McConaghy as project manager of its Farr 40 project.

Along with co-owner Mark Evans he embraced the opportunity they were presented in 2000 to take over the company from founder John McConaghy. Since then the company has continued to pursue a very conservative financial strategy while also diversifying to extend its revenue base, a strategy that has seen it triple in size in the past decade. Morris has been able to maintain a very hands-on management approach while staying on top of the ever changing world of professional yacht racing.

The People
Jason Ker

Jason Ker has been at the cutting edge of yacht design for last 15 years. He has stormed onto the international sailing scene with numerous design breakthroughs and continues to be a leading force in supplying fast winning designs.

Ker Design has been steadily building its reputation through a rigorous technical approach that takes full advantage of the most innovative and current technologies. A fundamental philosophy of the office is that all members of the Ker Design team are passionate and capable sailors and that spirit and enthusiasm flows through to their product. Ker Design seeks to leverage its technology and skill to provide clients with the best designed yachts possible and strongly believes that it represents the future of advanced yacht design.

Insight

Ker Design stepped up onto the international stage in the Admirals Cup of 2003, where the Ker 55 Aera (renamed Bribon for the event) won all seven inshore races at the Admirals Cup. Ker's designs have continued to dominate under the IRC rule, winning many important regattas and offshore races throughout the world. The 2009 Fastnet Race featured four Ker designs in the top nine boats of Class Zero, The Rolex Commodores Cup has been a showcase event for Ker Design with a boat(s) in three of the four past winning teams and in 2008 five out of the six yachts in the top two teams.

The success of Aera was shrewdly spotted by Salvatore Sarno of Team Shosholoza and Ker was asked to assemble and lead a design team for the high-tech/low-budget South African Americas Cup team. Over the course of three years, Kers team rapidly surpassed all reasonable expectations and the speed of the boat was highly respected during the Americas Cup racing in 2007.

Background

Following his graduation from Southampton Institutes with a Bachelor of Engineering Degree (Honours) - Yacht & Powercraft design, Jason gained valuable experience working for companies designing custom and production yachts, fast ferries and ships.

The People
Rob Brown

Rob Brown is one of Australia's most celebrated yachtsmen with years of experience in designing, project managing and construction of all types of sailing craft. In 1983 he was a crewmember on the famous 1983 Americas Cup winning Team with Australia 2, when it came from behind to win that amazing seventh and deciding race, ending Sport's longest winning streak record of 132 years.

Other notable achievements have come from much faster sailing craft, by winning 3 World 18' Skiff championships, and seven 18' Skiff Grand Prix titles.

Rob was heavily involved in the design and construction of 25, state of the art 18' skiffs. After retiring in 1996, he formed an events company and took over the promotion and management of the Flying 18's Grand Prix television Circuit, which provided spectacular television shown all over the world.

In 2006 Yachting Australia contracted Rob to manage the Australian Olympic High Performance Sailing Program. The Australian Sailing Team came coming away as the number 2 team in the world, winning 2 Gold and one Silver Medal at the 2008 Beijing Olympic Games.

For the last 5 years Rob has been working with the Seven Television Network in Australia, as expert commentator covering the Sydney to Hobart Race.

Rob is now heading up McConaghy One, the Sales and Marketing arm of McConaghy Boats and has been integral in the development of this boat.