
Resume

Peter Schwarzel – Professional Engineer

PERSONAL DETAILS

Name: Peter Schwarzel



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Bachelor of Engineering, Queensland University of Technology

Registered Professional Engineer in Queensland

AREAS OF EXPERIENCE AND EXPERTISE

- VARTM of glass, carbon and Kevlar parts from small hatches to 50' Catamarans. Running training programmes in Infusion Technology
- Structural design of vessels to AS4132, Lloyds and ABS
- Design of Marina Structures to AS3962
- Structural design to AS/NZ 1170- Wind Loads
- CAD, CAM, CNC, FEA, Lean
- Robotic and manual welding, Robotic trimming of fiberglass parts and robotic machining of moulds
- Structural design to AS1664, aluminium structures
- Composite Mould Design and Manufacture. Design and manufacture of RTM Lite Moulds
- Project Management
- Destructive and non-destructive testing, Prototyping
- Experienced in operating lathes, mills & various manual & automatic machinery
- Metal Tube manipulation - Bending, Drawing, End-forming & associated tooling design
- High performance structures - Design & Manufacture in Composites, Magnesium, Aluminium & Titanium

Email - peter@carbon-works.com.au

see www.carbon-works.com.au

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2012-2013 - CarbonWorks

Production Engineering, process improvement, steel structures FEA, welding, fatigue calculations and steel trailer designs

Conversion of metal 17m EWP structures to structural composites

11m trimaran rig analysis and wing mast laminate

Consulting to Bill Hollier for keel modifications to Etchells yacht

Certification of Roll Over Structures (ROPs) for Sovereign Automotive

Analysis of 250 tonne tub for Caterpillar Type 793 mining dump truck

Certification of building panel for Norman Wrights & Sons Brisbane

Design of composite parts for Redmond Gary's Elevated Work Platforms

Consulting to Stallion Marine on their 8m catamaran project

2011 - CarbonWorks

Design of cross beams for 11m demountable trimaran

Advisor for AUSAC34 Americas Cup consortium see www.ausac34.com.au

Certification of Dolphin Heads highway sign for "Mental" movie

Contract work for Superior Jetties- Marina Structures, pontoons & gangways

Certification of fiberglass pressure vessels for Advanced Aquarium Technologies

Certification of Prime Composites Drain Gates and Flap Valves

Beltscan Rip Detector machine development

Design of Gangway and bridge structures for Cure Composites

"I Want Energy" upgrade of wind turbine blades, Work Instruction and Materials Specification

Design of fiberglass platforms for "KIP" amusement device for SugarWorld in Cairns

2010 - CarbonWorks

Structural consulting for rebuild of 60' racing sailing yacht Helsal. FEA of Helsal hull to ABS, centerboard & casing, chain plates, deck and mast foundation. Rig and hull engineering of an ECO60 <http://garrygolding.com/archives/863> Analysis of hatch for unlimited class power catamaran www.maritimo.com.au/racing.aspx

Continued development of Beltguard Machine for Beltscan, review of field trials.

Certification of Fibreglass Jellyfish Tank for Hotel in China. Design of carbon mast for Current Marine in South Africa. The mast is for a 14m Cruising Catamaran. Design &

Certification of several Marina and Jetty projects for Superior Jetties.

www.superiorjetties.com

2009 - CarbonWorks

Continued development of Beltguard Machine for Beltscan. Development of fiberglass power pole crossarms for PLP Aust. Development of composite timber/fibreglass poles for Koppers Timber Products. Structural analysis to AS4132 of 13m and 14m power Catamarans for Pacific Power Catamarans (PPC). Analysis of Vessel Derrick for PPC. Certification of large fiberglass Aquarium Tanks for Advanced Aquarium Technologies.

www.advanced-aquariums.com. Design and development of Jetty Systems for Superior Jetties. FE Analysis of tubes for Composite Spars and Tubes Sydney.

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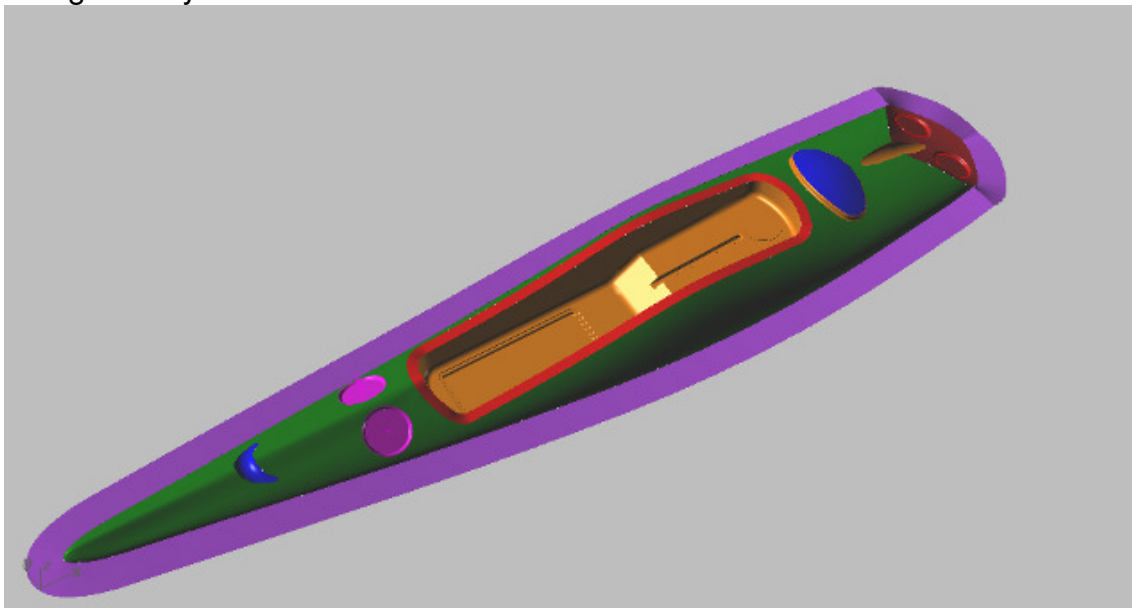
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2008 - CarbonWorks

Design and manufacture of prototype fibreglass power poles and crossarms. Contract design and manufacture of composite and metal components for Electrical Utilities. Design of Conveyor Belt testing machine for Beltscan www.beltscan.com.au. Contract composite engineering for Lavender Engineering - truck parts, desalinators valves and aquaculture raceways www.lavender-ce.com. Racking and Fork Lift attachment certification for Bocar Automotive www.bocar.com.au

2007 - CarbonWorks

Design of kayak deck surface & mould



Design and Analysis of keel foundation for 50ft yacht to ABS Impact requirement. FEA Linear, Non-Linear and Buckling analysis. Design of carbon fibre submarine part for the Australian Submarine Corporation. Design of various carbon & glass parts for a 22m free standing mast for 60ft catamaran

Engineering Certification of special effects for the Movie “Fools Gold”, crane jib attachment for full scale blue screen Cessna flying for stunt scene. Analysis of 24m WIG hovercraft wing for Australian Hovercraft www.australianhovercraft.com. Infusion of water tanks for Combined Composite Solutions. Certification of Utility Pole Decorations for Intrinsic Energy and Gold Coast City Council. Design of Robot Gripper, Checking jigs and stamping press for Bocar Automotive www.bocar.com.au . Assisted in the infusion of 43’ boat hull for Riviera Marine www.riviera.com.au

2005 -2006

Southern Spars www.southernspars.com

Design Engineer – Responsible for the production of manufacturing drawings for Superyacht masts and booms. Responsible for development projects eg converting existing metal parts into composite parts suitable for Southern Spars to autoclave in-house. Responsible for process development eg Infusion of Furling Booms vs the current method of using an impregnator. Work included corresponding with outside contractors and

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consultants and generating regular reports on project results. Working with the in-house Engineering Workshop, Operations Manager and various Project Managers to keep the production and development projects on track.

Mackman Boats www.mackmanboats.com.au

Design of cast iron keel and lead bulb for 15m yacht.

Perry Catamarans - Design Department Manager

www.perrycatamarans.com

Responsible for all design changes and Engineering for the company. Supervised a Design Team of six people. The Design Team created the Production Work Instructions, Manufacturing Drawings and 3D models required to manufacture Perry vessels. I provided technical support for the Infusion Process. Converted many of the parts from hand lay-up to infusion. This included the 43' hull and deck, bulkheads and various large and small parts. Also trained the small parts area to infuse hatches, panels & sandwich parts. Redesigned parts for more efficient manufacture and weight loss. Worked with the QDOT certifying Naval Architect to ensure vessel compliance to AS4132.

Responsible for researching and implementing capital projects. Eg A Robotic Machining Centre and Laser Scanner including Reverse Engineering Software. Investigation of RTM for applicability to Perry Production.

2004 - CarbonWorks

Project management of Aluminium bicycle frame development, double acting pressed metal tool design, welding specifications and material selection for Bocar Automotive. See www.techniquesports.com.au/evolution.html

Specification of repair for 13m composite catamaran bridgedeck. Survey analysis of 18m houseboat to AS4132. Design of carbon fibre underwater camera housing. Consulting Engineering to Marten Spars on Superyacht rigging, mast and boom design. Design of Canting Keel for Hick Marine. Survey analysis of 11.5m composite catamaran for Peter Brady. Mast section non-linear buckling analysis for Formula Spars UK. QDOT Automotive Engineering, seat belt installations, Skelta Sports car QDOT approval process.

2003 - CarbonWorks

Design of 22m free standing carbon mast, bearings and abutments. Material testing program for survey vessel. Carbon canting keel. Carbon fibre Paper mill roller design for CST Composites. Carbon fibre Mast Crane Design. Buckling analysis of 450x220 mast section for Formula Spars England. Various QDOT vehicle modifications and inspections.

2002 - CarbonWorks

Bow extension for composite catamaran, Fatigue analysis of Aluminium Police Pursuit Boat drain hole.

Cast iron keel design – Robert Hick Marine. 16m carbon fibre free standing mast design, 13m Composite Catamaran survey report, 18m free standing mast, bearings and abutments. Conventional Carbon Mast design for Robert Hick.

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2001- CarbonWorks

Composite Vessel Temporary Shelters, damaged 20m commercial vessel Insurance Report, Various composite structural details for vessels, Carbon Davit design, catamaran forebeam design and build supervision. Material test program for carbon mast build. Composite tank design for holding explosives. Aluminium Vessel deck analysis for Davit loads. Trimaran Beams, forestay connection and hull details using FEA – www.corsairmarine.com . Carbon Canting Keels and abutments for 30' yacht.

Mar 2001 - Nov 2001

QTB Automotive - Product Development Group Leader

Group Leader of the Product Development Department. QTB develops towbars for OEM supply. QTB is QS9000 & ISO9000 compliant. I was the NATA signatory to their testing laboratory and Senior Engineer for the company. I was also part of the senior management team of the company. QTB produces towbars, sidesteps, and other automotive accessories. I supported the Quality Department and Production staff in technical issues such as Continuous Improvement, Product Design and Tooling Development. I managed a staff of six, two CAD Operators, a Design Engineer and three Development Fitters. QTB carries out in-house static and endurance testing of their designs. I oversaw the testing programs, product documentation, customer liaison, Audits, Capital Expense projects and day to day operation of the Department.

2000 - CarbonWorks - Design Engineer & Proprietor

Various Clients, composite survey vessels, theme park engineering, see www.fxillusions.com.au Mast designs, 20m carbon fibre mast repair, Composite Vessel Shelters, Aluminium vessel FEA, Repair carbon bicycle frames and wheels for Giant Australia www.giant-bicycles.com/en-AU , conduct composite engineering workshops.

1999 - Carbonworks - Design Engineer & Proprietor

Special Effects engineering for FOX studios, Sydney. Conceptualisation and development of effects' machinery

www.sandersongroup.com.au/projects/australia/fox/titanic_the_experience/index.htm

Analysis of Composite marine structures, masts and booms using FEA. (See www.schionningdesigns.com.au)

Structural analysis of Composite sports car chassis. Preparation of drawings and specifications. Supervision of contractors, cost control. Cadkey and Rhino user - CAD systems. LUSAS & Strand user - FEA. Beta tester for Cambridge University Laminate software analysis – CCSM.

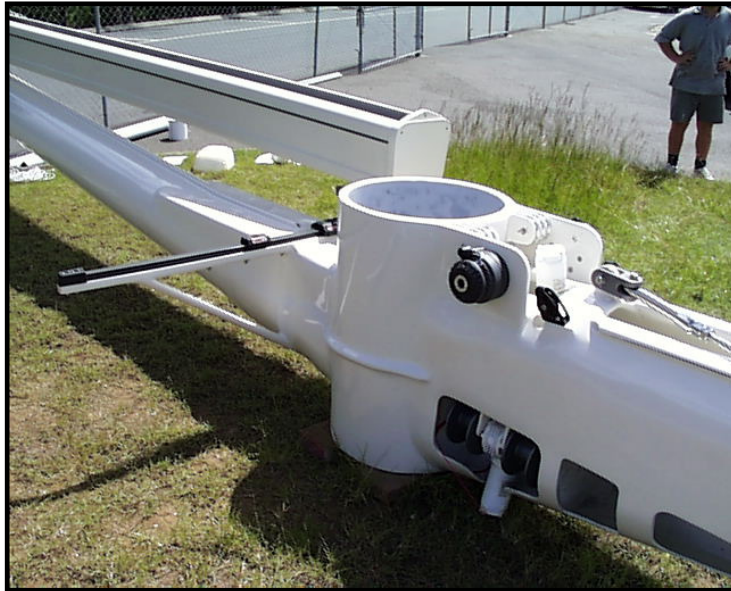
1997-98 CarbonWorks- Design Engineer & Proprietor

Speculative projects in the Marine and Automotive Industries. Composite analysis and manufacturing consulting. Carbon 20m free standing Aerorig Mast design and build supervision. [See <http://www.lusas.com/case/composite/solarig.html>] Composite Material testing programmes. Impact testing of automotive parts, including test program development. Laminate Engineering for Southern Spars 10m furling boom and mould.

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Hawaiian (rudder foils and beams) marine structures. Catamaran Masts and Booms.
Design of carbon chassis for sportscar, Brownhouse Holdings.



Carbon Aerorig boom for 50 foot catamaran