AMMA
Magazine for Australia & New Zealand

Volume - 4 Issue – 2

Autumn 2025
Quarterly Magazine

AMMA
Australia & New Zealand

Contents

EDITORIAL

Welcome to the AMMA Quarterly Magazine.

Nuclear Driven Vehicles

Who is going to build the first Nuclear Driven Vehicle.

I thought the least favored vehicle fuel of choice may have created a rush to get NDV's (Nuclear Driven Vehicles) on our roads.

From the World Wide AI Web.....

Nuclear-powered public transport could include trains, ships, and electric vehicles (EVs). Nuclear power could be a reliable, cost-effective, and environmentally friendly energy source for transportation.

Nuclear-powered trains

- The idea of nuclear-powered trains was first proposed in the 1950s.
- Nuclear-powered trains could reduce costs and carbon dioxide emissions.
- However, there are concerns about the safety of having a moving nuclear reactor on rails.

Nuclear-powered ships

- Nuclear power is well-suited for ships that need to stay at sea for long periods of time.
- Nuclear-powered ships include submarines, aircraft carriers, and icebreakers.
- There are concerns about the environmental impact of nuclear-powered ships.
- Special procedures are in place to ensure the safety of the public and environment when nuclear-powered ships visit ports.

Nuclear-powered electric vehicles (EVs)

- Nuclear power could be a reliable and cost-effective energy source for EVs.
- Nuclear power plants can produce baseload electricity 24 hours a day, regardless of weather conditions.
- However, the power source is radioactive, so the vehicle would need lots of shielding.

A nuclear-powered car uses nuclear fission to create energy that powers the car. The idea was explored in the 1950s and 1960s, but the automotive industry has since abandoned the concept.

How it would work

- A small nuclear reactor would be installed in the car.
- The reactor would split atomic nuclei to create heat.
- The heat would be used to create steam.
- The steam would drive a turbine that generates electricity.
- The electricity would power the car's motor.

Safety concerns

- The car would need to be heavily shielded to protect against radiation.
- The shielding would need to be resistant to earthquakes and other trauma.
- The shielding would need to be airtight to prevent radioactive molecules from escaping.
- The car would be at risk of radiation poisoning in a crash.
- The radioactive material would be a security and public health concern.

Other designs

- **Ford Nucleon**: A concept car designed by Ford in 1957.

Rather than a full-size prototype of the car, Ford produced a three-eighths scale model. While the Nucleon was designed to be 200 inches long, or close to 17 feet, the prototype was just 75 inches long, or a bit over 6 feet.

- **Seattle-ite XXI**: A concept car designed by Ford for the 1962 Seattle World's Fair.

The streamlined two-seater had six wheels (four in the front and two in the back) and was slated to be powered by either "fuel cells or a compact nuclear device," a Ford promotional brochure said. The Seattle-ite existed only as a three-eighths scale model, making it another concept car that was more concept than actual car.

- **Studebaker-Packard Astral**: A concept car designed to balance on a single wheel.

The Astral was a full-size mock-up of a car that was designed to balance on a single wheel stabilized by a gyroscope. Additionally, the vehicle was supposed to generate a forcefield around itself to prevent collisions, providing some reassurance to anyone worried that a fender bender might end in a mushroom cloud.

So, in my opinion and not that of the AMMA, I see benefits going forward for onboard nuclear reactors are: -

1. Vehicles would glow in the dark – safety benefit.
2. Life of the vehicle onboard fuel – economic benefit to owners.
3. Non-stop touring over thousands of kilometers - heavy transport operating benefit and reduced cost to consumer at the retail end.
4. Extreme nuclear shielding will increase accident safety for drivers and passengers.
5. Nuclear waste management industry would grow exponentially.

Readymade brand name: HOLDEN Australia's Own Nuclear Driven Vehicle.

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The PRESIDENT's REPORT

Welcome to Autumn 2025 Magazine

Hi Folks,

Your roving delegate has been on the road again travelling the Eastern Seaboard, catching up with old, existing, and potentially new members.

First stop was McFeeters in Forbes with Bill and Helen still keeping the doors open seven days a week, longing for retirement. Bill managed to sell me some memorabilia from his extensive shop, stock from the amazing model shop in Peak Hill, if anyone has been there.

Then on to The Depot in Deniliquin, a very impressive new museum, displaying a huge collection of Golden Fleece and Ampol signage.

Next stop, Lincoln Land in the Grampians in Victoria. Jim and Karen Leithhead, who are keen to join us.
Just down the road in Hamilton is Glen and Margaret Campe's museum. Upon arrival we were devastated to hear that Margaret had recently passed away. Our thoughts are with Glen and his family at this time.
On to Portland where we popped into the Powerhouse museum who have, after founding membership, have retired from AMMA. I am hoping they may change their mind.

Home via Canberra and Ollies Garage with Ian and Tina's collection of Ford, Holden, Rolls Royce and Bentley. It was timely, as we were able to make contact with fellow Sir Henry Royce Foundation members who were meeting that weekend. Ian's forward thinking and passion for Virtual image touring, in my mind, is the way forward for supplementing incomes for all museums the World over. More information will be in the next edition of the magazine.

Recently I have been contacted by the custodian and good friend of Brad Bonning now deceased. Brad was taught the art of aluminum body building by his father and has built a unique three-wheel roadster on a Honda 1,000 cc motor bike. The vehicle has been on display at Motorlife for some time and is now looking for a new home, and possibly for sale at a reasonable price.

Brad's father was Warren Bonning who I had the pleasure of knowing. I have one of Warren's replicas in my own museum. Unfortunately, I just do not have enough room for Brad's roadster. Warren joined the RAAF in WW2 and spent the war years in Canada building fighter aircraft for the allied campaign. Upon his return, Warren used his experience and talents as a hobby, creating many specials for racing and hill climb. It is my understanding that Warren, who passed away a few years ago aged 95, at 80 years, set the record for the Rob Roy hill climb which still stands today. Certainly a family worth remembering and honouring. If anyone is interested, they can contact me and I can put them in contact with the current owner.

That's all for now, your current Chairman,

Colin Kiel.

FEATURE ARTICLE

BRAD BONNING ROADSTER

(as displayed at MotorLife Museum, Dapto NSW)

A one-off creation that stormed the Australian motor show scene over a decade ago, the Bonning Roadster remains a head turner to this day.

Words: Mike Ryan
Photos: Brad Bonning

Australians are a pretty inventive lot. We can claim the rotary clothes line, black box flight recorder, wine cask, the bionic ear and even the electronic heart pacemaker in our list of home-grown inventions. In the automotive arena, Aussie inventions include the orbital engine, variable rack and pinion steering and, of course, the ute.

The vehicle featured here may not be as ground-breaking, but it's just as inventive.

The ‘Bonning Roadster’ was the result of one Aussie’s vision to a bring a light, fun and affordable commuter to the masses.
Designed and constructed by Queensland-based Bradley Bonning between 2001 and 2005, the Bonning Roadster was really the culmination of two decades of Brad’s passion for automotive design and development.

A Case of Timing

Those that did the rounds of the motor shows in 2007 (back when Australia still had motor shows) may remember the Bonning Roadster, as it featured at that year's Melbourne Motor Show, followed soon after by the Adelaide Motor Show and others. It made a hell of a splash at the time, with interest from potential owners, as well as local and international manufacturers.

However, just when it looked like Brad's labours would bear fruit, the Global Financial Crisis hit, and while Australia wasn't as badly affected as other economies, the fiscal caution of the post-GFC times was enough to stop the Bonning Roadster in its tracks.

Since then, the motoring public around the world have embraced the SUV, while economical small cars and fun, quirky roadsters like this have largely been left behind. As such, the vehicle you're looking at here was the sole Bonning Roadster built.

Self-Taught and Teaching

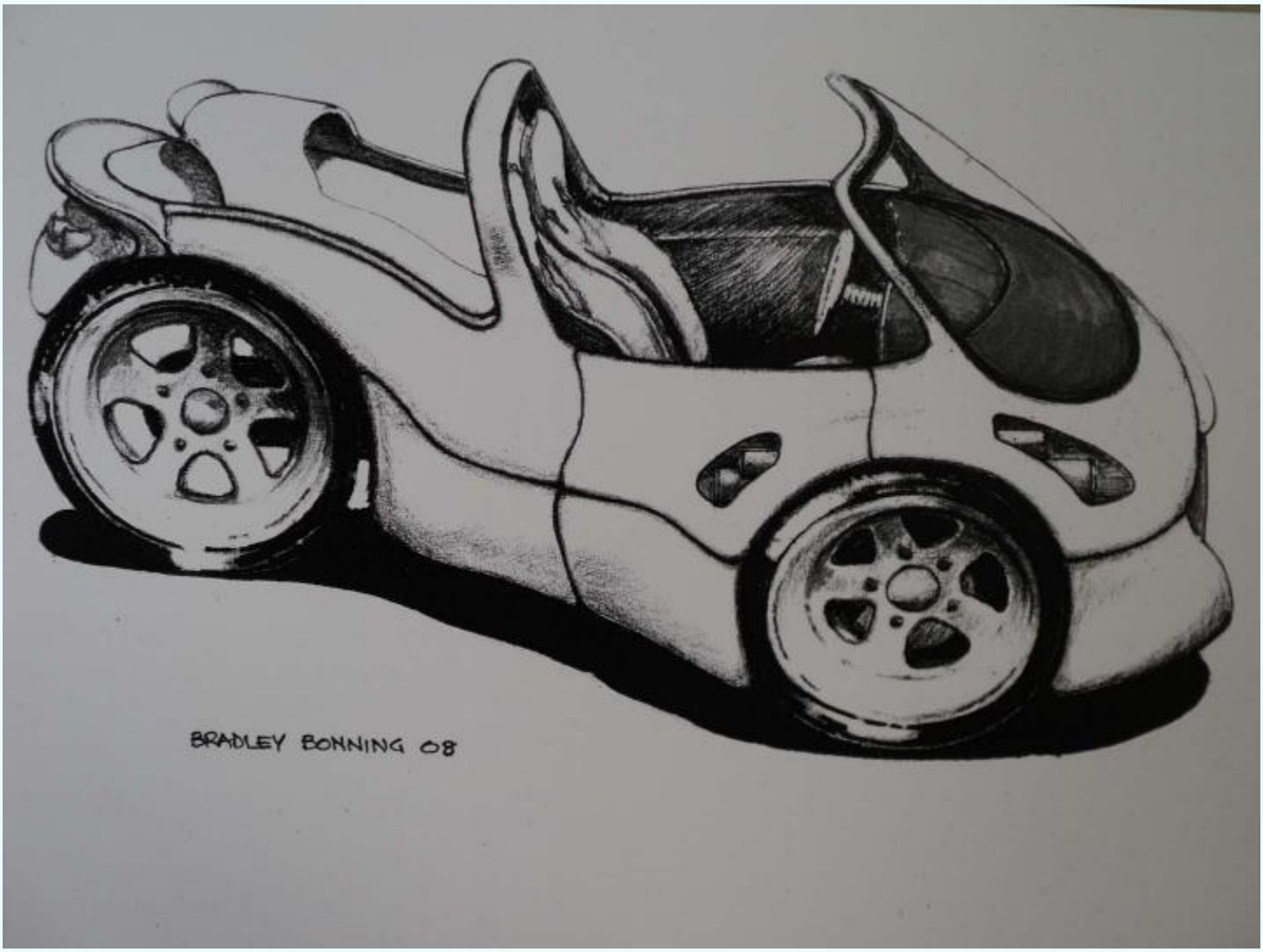
The remarkable thing about Brad is that he built this car without any formal training in engineering. He did study art and design at university, though, which explains the Bonning Roadster's striking aesthetics, but the underlying form of the trike was largely the result of Brad's own gut instincts.

Through the 1980s and '90s, Brad secured design and prototype fabrication contract work in the R & D departments of Ford, Nissan and Holden - through persistence as much as anything else! These roles gave Brad a good grounding in the process of turning ideas into reality, but as you can see from the roadster, there's no 'Commodore' or 'Falcon' styling cues – Brad is very much his own man in this respect.

Later in the '90s, Brad developed a three-wheeler, in both pedal and electric form, for high school students to use for driver-training in a facility that he also established himself.

The trike configuration of the learner vehicles was designed to get students familiar with the human impact on vehicle dynamics, not just driving technique. Getting students more connected to a vehicle with these three-wheelers was an approach Brad would apply to his next three-wheeler – but this one definitely wasn't for students!


BRADLEY BONNING 08



New Millennium Movement

While Brad had the idea of a compact, economical three-wheeler in his head for some time, work on the Bonning Roadster didn't actually start until 2001.

"This vehicle was a monumental project and by far the most exciting concept I'd ever tackled," Brad recounted in a book he's produced on the roadster and its creation.

Before a tool was lifted or a welder ignited, abundant sketches and diagrams, including complex cutaways, were produced to determine how the various components would work on the ground-hugging two-seater. Aesthetics were a big part of this process, with Brad stating that the vehicle had to look unified from every angle, and not like it had bits and pieces tacked on.

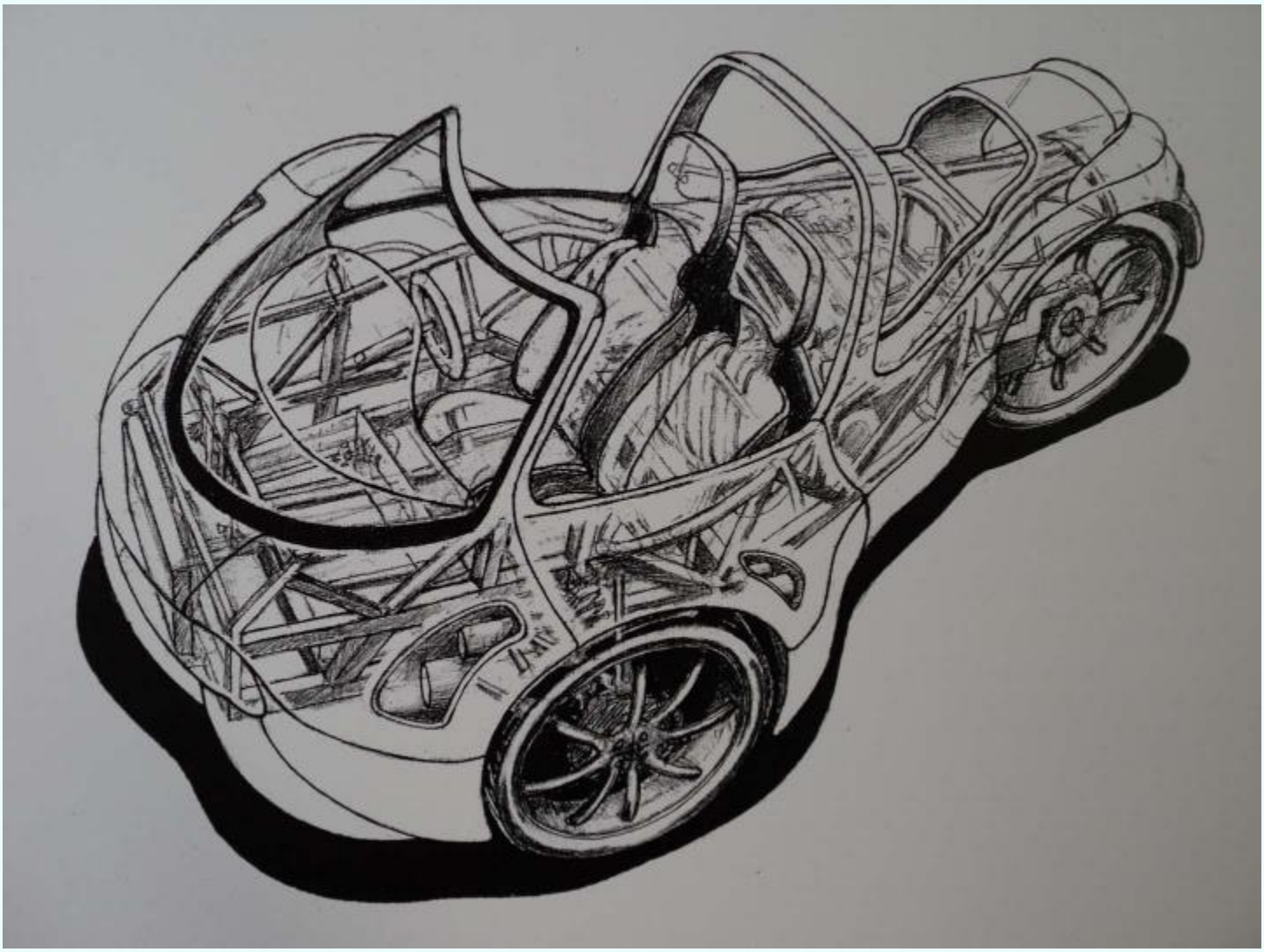
"The process of designing and constructing the roadster began with plan, side and end elevation drawings, in addition to a multitude of three-dimensional sketches."

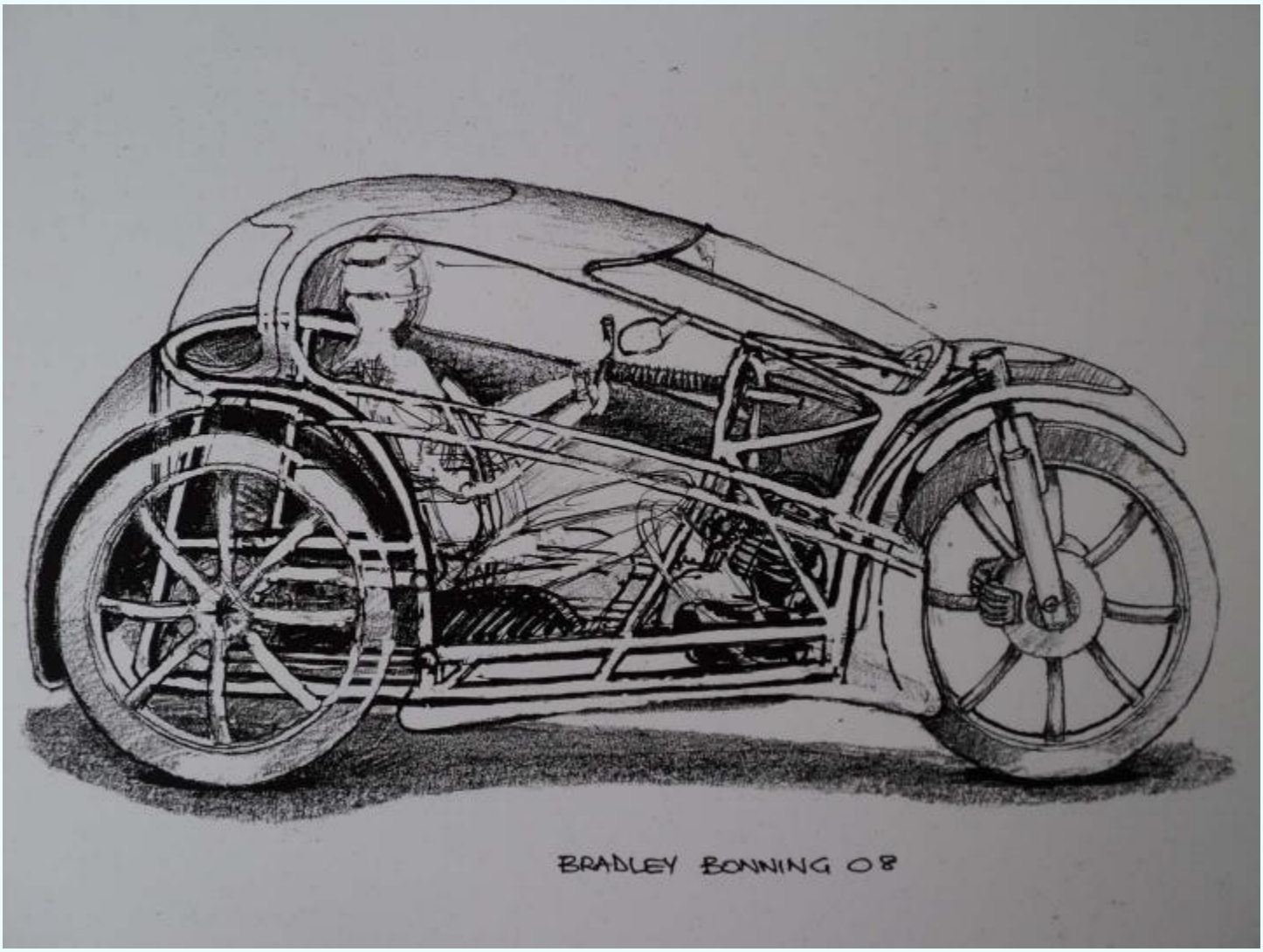
Once the configuration of the independent front suspension and wheel package – a double wishbone set-up and 17-inch aftermarket wheels all round - was finalised, work on the main chassis began, using

40x80x1.6mmm rectangular section tubing to form a “base” to which the rest of the chassis would be added.

A sheet steel bulkhead was next, positioned behind the seats to separate the cabin from the rear-mounted engine. Further strengthening sections, including dual rollover hoops, were added before a spider’s web of smaller round-section tubing was tacked in, spaceframe-style, for attaching the aluminium body panels, as well as things like lights and indicators.

There was also a ‘two-stage’ approach to the front of the chassis, with the main section supporting the suspension, steering, pedals, etc., while a secondary section served as a kind of sub-frame for the nosecone, which tilted forward to allow access to the front suspension, steering box and fuel tank. Interestingly, Brad designed the instrument panel to lift up with this section.





Moto Power

Given the compact overall dimensions of the Bonning Roadster, a motorcycle engine was always going to be the best drivetrain option, but which engine to choose was the big question.

Aiming for something producing around 100 horsepower (75kW) meant capacities in the 750cc to 1200cc range and, most likely, a four-cylinder configuration.

Morgan has shown a big V-twin can work with their modern '3-Wheeler', but an air-cooled Harley engine would have been hard to incorporate into Brad's sleek body design. Similar packaging, cooling and style concerns ruled out a BMW boxer twin, too, but Brad did give this serious consideration.

"I was able to borrow a number of different engines and bring them home to evaluate their individual suitability," Brad recalled. "As much as I would have preferred a shaft drive system, I knew that the only logical choice was chain and sprockets for the final drive."

Ultimately, a 998cc Honda four-cylinder engine was settled on. A strong, proven unit in Honda's CBR 1000 litre-class sportsbike, the liquid-cooled four produced around 120hp (90kW) in C2001 form. The Honda's 6-speed transmission was also used, but this would carry a sequential shift more commonly found in race cars.

Another benefit of the Honda drivetrain, Brad recalled, was its popularity at the time, meaning parts would be plentiful.

The decision to run a wider, car-spec wheel and tyre at the rear meant the Honda swingarm was out of the question. Instead, a custom made, single-sided swingarm was fabricated from similar box section tubing used for the lower chassis. This also allowed a larger rear disc brake and calliper to be fitted.

Body Beautiful… Remotely

By 2003 and with more than 2,000 hours already sunk into the project, the Bonning Roadster was close to being structurally complete: the swingarm rear was still to be finalised, but most of the "bones" were in place.

The tack-welded chassis was taken to an engineering workshop close to Brad's Noosa Heads home for access to professional welding equipment: "MIG welds in most parts, with TIG being used for more delicate parts, like the suspension and roll bars."

Now fully welded together, the roadster was then reassembled, with the drivetrain, steering, suspension, etc., in place, so measurements could be taken for things like the fuel tank, exhaust system and seats.

The first aluminium panels were hammered out at this time, too. "Within a few weeks, I had a visit from the council," Brad recalled. "They informed me that, if I continued, I would be in court very promptly for noise violations!"

That forced the project to relocate to a mate's shed in a more remote part of the Sunshine Coast.

Months spent hand-forming the panels out there paid off, while keeping most of the body in bare aluminium gave the Bonning Roadster its futuristic, racy look.

With that sinuous body complete, the latter part of 2003 was spent sorting things like oil and fuel lines, wiring, lighting and brake lines, as well as the linkage for the gear shift, which due to the cosy nature of the cabin accommodation, resides to the driver's right, level with the steering wheel that was made from scratch by Brad. The seats were all Brad's handiwork, too.

While most of the roadster was hand-built, some of the bought-in parts included the steering column (Daihatsu Charade), tail light (C1999 Honda VFR 800), side indicator/tail lights (Ford Taurus) and front indicators (Toyota Camry), while the headlights are Hellas, the instruments are off the same Honda CBR 1000 that provided the running gear and those funky aero screens came from a pair of Aprilia motorcycles.

By the middle of 2004, the roadster was getting closer to completion.

On the Merry Go Round

Making the Bonning Roadster economical had always been a driving force behind the project, so Brad was open to using alternative fuels. When the head of a sustainable living company in Queensland contacted Brad with the idea of running the trike on methanol generated from household waste, he was intrigued.

That company, Eco Nova, invited Brad to display the roadster at their launch event, which became the first public appearance of the vehicle.

That presentation, in November of 2005, was also the first time Brad had driven the trike any distance, as it had only been completed to running spec the week before!

“I had the help of a lot of friends to make the vehicle both driveable and aesthetically complete – we all worked big hours, seven days a week, to complete the task.”

Receiving a permit to drive the vehicle on public roads shortly after, Brad spent plenty of time bringing the Bonning Roadster to a wider audience.

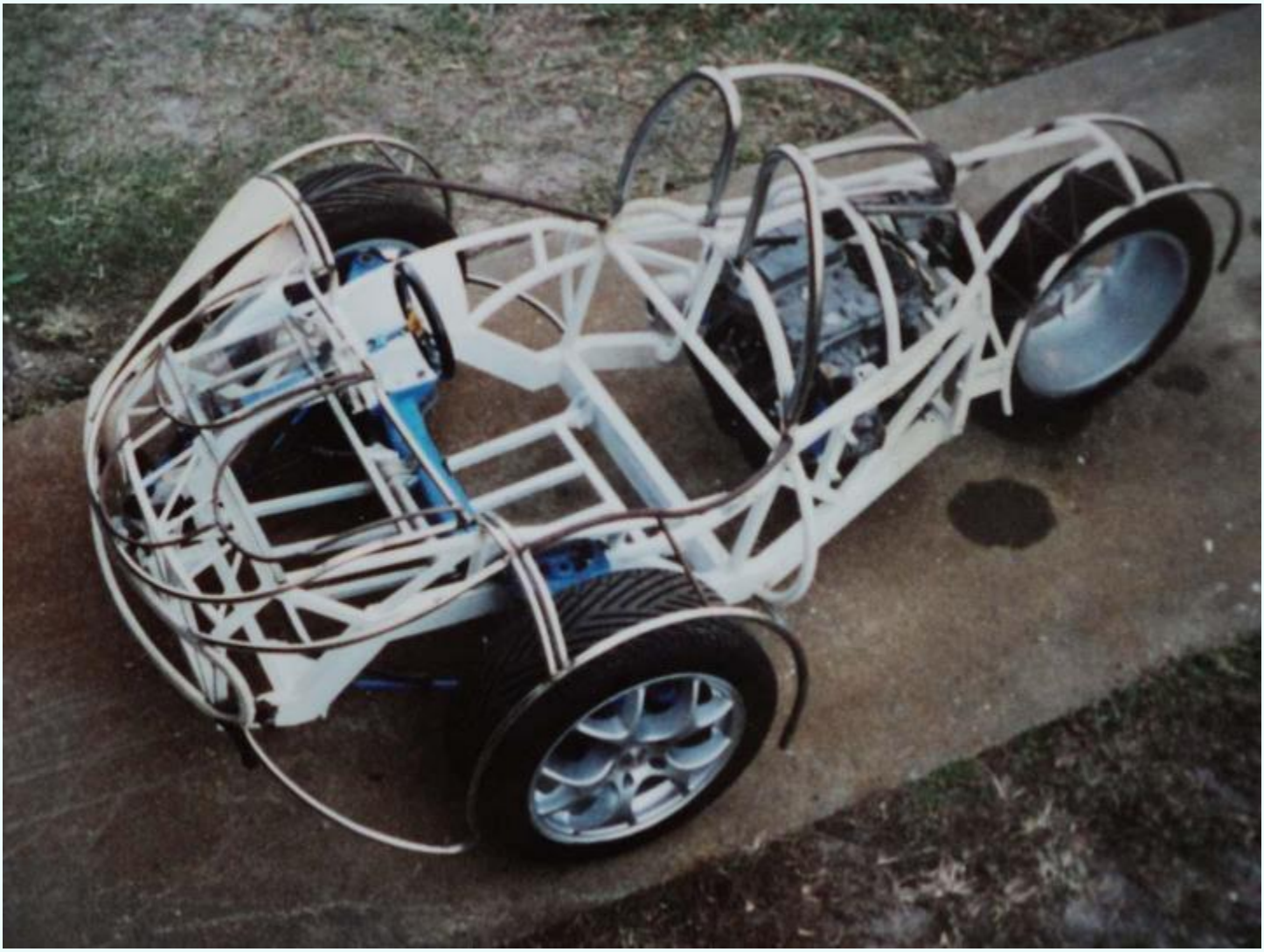
"When we parked the roadster, cars that were driving in either direction just stopped – in the middle of the road – and all occupants vacated their vehicles and came over to check it out!" Brad laughed.

This would be the first taste of a whirlwind of interest that continued for the next three years and put Brad on a merry go round of public appearances that he wasn't entirely comfortable with.

The first show outside Queensland that Brad and the Bonning Roadster were invited to was 'The Next Big Thing' awards in Melbourne in 2006.

The aforementioned 2007 Melbourne Motor Show followed, and Brad chuckles when he recalls the phone call inviting him down – all expenses paid – to Victoria. He thought it was a mate playing tricks on him, so was very, very dismissive of the caller until he confirmed his bona fides.

While the level of interest at both Melbourne and Adelaide motor shows was overwhelming at times, it did connect Brad to many industry contacts, including some who were interested in putting the trike into production. One of these was based in Dubai and another in Hong Kong. Brad says the trike was closely assessed by those Hong Kong interests, but ultimately no deal was done.



Full Stop

By the middle of 2008, Brad had a working trike, with only a couple of minor ADR certification hurdles to get it fully complied. What he didn't have was a manufacturer looking to take it to the next stage. Brad estimates around $20M would have been required to take it to some sort of production level.

Brad did get approaches to build the trike as a small-volume, high-priced sports machine – a millionaire's toy – but he wasn't interested in that, believing its potential lay in the broader market as an everyday runaround. To that effect, he had developed a full-enclosed version during 2006 and got that to the scale model stage.

One plan to use the roadster as a mobile billboard for an energy company was posited, but ultimately didn't come to fruition. The proposed methanol fuel project hit a roadblock, too, and, as mentioned, the GFC undoubtedly had an impact.

The car's registration status was another issue: in Queensland, the Bonning Roadster could have been driven on a car licence and without a helmet, but given its configuration and open cockpit, other states may have insisted on a motorcycle licence and a helmet. Its ANCAP rating, had it gone to production, would likely have been another issue.

So, with no takers on the horizon, Brad parked the trike up and it's remained in storage for more than a decade.
More recently, health issues have led Brad to make the reluctant decision to sell his creation (see breakout). Brad says it's not a decision he's taken lightly, but it's one he feels is necessary while the vehicle can still be recommissioned easily.

With its impressive performance – 90kW, an estimated 200km/h top speed, almost perfect front-rear weight balance, approx. 4.44W/kg power-to-weight ratio, go kart-like handling and a 0-100km/h time in the 5.0 second range - the Bonning Roadster has enormous potential as a tarmac rally car in the view of this writer. It would have wowed the field if only Targa Great Barrier Reef been held a decade earlier. Given Targa Australia's recent relaxation of entry rules, there may be a place for it yet, but that's still very much a "maybe".

Unfortunately, there are too many "maybes" and "if onlys" connected to the Bonning Roadster, but one thing that is an absolute is that this one-off piece of Aussie invention is a part of our automotive history.

As such, it deserves to live on.

FOR SALE – November 2019

Advertised Link – [2001 BONNING ROADSTER – JCM5070437 – JUST CARS]

On the market for the first time since its creation, the Bonning Roadster remains a unique piece of Australian automobile history.

The vehicle was close to completing ADR certification when the project halted and Brad says only minor elements remain to be ticked off, so the ADR process could be completed easily by the new owner. For registration, the new owner would also have to confirm the licensing requirements for such a vehicle in their state. Of course, the alternative is to run it as a track day car and not worry about rego at all. As advertised, the trike is complete, but having been in storage for several years, it would need some reconditioning to return to running condition.

(Also refer AMMA Presidents Report this issue)

EVENTS

DATE	EVENT	Comments
2025		
7th June 2025 thru' 14th September 2025	Brisbane Motor Museum	V8 Muscle – Legends Live On
2028		
PROPOSED November 2028 In Australia	WORLD FORUM for MOTOR MUSUEMS	Looking for people to be involved in the planning and presentation stages

AMMA Contacts

CHAIR - 0412 539 634 Colin Kiel - 4C's Motor Museum – Qld		**QLD Delegate** -Vacant
VICE CHAIR - Belinda McMartin – Museum of Fire Penrith NSW		**ACT Delegate** - **0417 260 927** Ian Oliver (Ollie's Garage)
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World Forum of Motor Museums Delegate – 0412 539 634 - Colin Kiel 4C's Motor Museum		**SA/NT Delegate** - (08) 8568 4000 Tony Kanellos (National Motor Museum)
Roving Ambassador - 0412 539 634 Colin Kiel - 4C's Motor Museum		**WA Delegate** Pat O'Callahan - Motor Museum of WA

CONTRIBUTIONS WANTED

Your contributions are integral to creating a successful magazine.
Contributions or suggestions for content should be directed to: -

Ian Bone – ian@qldmotorsportmuseum.org

PHOTO GALLERY

Australian Museums

Have you visited any of these gems?

The Bunbury Geographe Motor Museum - Bunbury West Australia

FOX Motor Museum- Melbourne Victoria

Stories from the Road Museum – Port Perie South Australia

The National Motor Museum of Tasmania – Launceston Tasmania.

Gold Coast Motor Museum – Upper Coomera Qld

National Motor Museum – Birdwood South Australia

And for now, we say goodnight until we spread the news next Quarter