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High voltage

Audi charges up with 570kW/830Nm all-electric PB18 e-tron supercar concept

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3 **Coming of age**
Audi's new PB18 e-tron concept could preview new-generation R8 sports car



9 **The Equaliser**
Mercedes pays homage to 1930's racecar with Vision EQ Silver Arrow concept



11 **Zed's not dead**
Australian-born BMW designer births new-generation Z4 convertible

6 **Apex predator**
Corner-carving Bugatti Divo strips weight and keeps 8.0-litre W16 engine



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Coming of age

Audi's new PB18 e-tron concept could preview new-generation R8 sports car



By JUSTIN HILLIARD

AUDI has officially revealed the battery-electric PB18 e-tron supercar, a racecar-inspired concept that could preview a zero-emissions successor to its V10-powered second-generation R8 flagship.

Revealed at Pebble Beach Concours d'Elegance in Monterey County, California,

the 1550kg PB18 e-tron produces 500kW of power – or up to 570kW on overboost – and 830Nm of torque, enabling a sprint from standstill to 100km/h “in just over two seconds”, according to the German brand.

The PB18 e-tron is motivated by three electric motors, with one unit delivering 150kW to the front axle, while the other two

units output 350kW to each of the rear wheels.

As such, an electrified version of Audi's quattro all-wheel-drive system is employed, headlined by the Torque Control Manager that works with the electronic stability control to actively distribute power to either axle on demand.

Furthermore, the PB18 e-tron's 95kWh

battery pack uses liquid-cooled solid-state technology to provide more than 500 kilometres of driving range on the WLTP cycle.

With support for a charging voltage of 800 volts, the marque says the PB18 e-tron can be fully recharged in about 15 minutes. It also can be wirelessly charged



via induction technology.

Moreover, the PB18 e-tron can also be charged via regenerative braking, which uses the electric motors to bring it to a complete stop when decelerating moderately. Hydraulic brakes are only used when brake

pressure is heavy.

The independent suspension on both axle's lower and upper transverse control arms consists of a motorsport-derived push-rod setup up front and a pull-rod system at the rear. Adaptive magnetic shock absorbers

are found on either end.

Rolling on eight-spoke 22-inch alloy wheels wrapped in a mixed set of tyres (275/35 front, 315/30 rear), the PB18 e-tron features 19-inch carbon-ceramic brake discs.

Measuring 4530mm long, 2000mm wide

and 1150mm tall with a 2700mm wheelbase, the PB18 e-tron owes its light weight to a mix of aluminium, carbon and multi-material composites.

The front end is punctuated by LED Matrix headlights with laser high-beam technology, as



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well as a wide, pinched version of the signature Singleframe grille without an insert.

However, the side profile's resemblance to the current R8 does not translate over to the chunky rear end, which is headlined by its adjustable diffuser, horizontal tail-lights and extending spoiler.

Inside, an inner monocoque shell moves laterally and houses the cockpit and driver's seat. It can be centrally positioned or moved to either side to accommodate a passenger, thanks to the by-wire setup of the steering and pedals that requires no mechanical connection.

The cockpit features an OLED digital instrument cluster that can adapt to the driving conditions, whether on the racetrack or road,

while a complementary head-up display is located above.

Styled as a coupe-cum-wagon shooting brake, the PB18 e-tron offers 470 litres of cargo capacity – significantly more than a traditional supercar.

The PB18 e-tron's nameplate refers to the location and year of the concept's reveal, while it is also a reference to the car-maker's LMP1 racecar, the R18 e-tron, which has won the 24 Hours of Le Mans.

Audi has tried its hand at a battery-electric supercar before with an e-tron version of the original R8 that was revealed in production form at the Geneva motor show in March 2015, but less than 100 units were ever sold. **BMW**

Apex predator

Corner-carving Bugatti Divo strips weight and keeps 8.0-litre W16 engine



By JUSTIN HILLIARD

BUGATTI Automobiles has revived its coachbuilding tradition by transforming the Chiron hypercar into the Divo, a model that is “tuned for agility, nimbleness and optimum handling performance on winding roads”.

Limited to just 40 units, the Divo sold out upon

reveal to select well-heeled buyers, who each paid €5 million (\$A7.93 million) to own an example. It is not yet clear when deliveries will start.

While the Chiron is famous for its straight-line performance, the Divo covers all aspects of the track due to its lower weight (down 35kg) and increased down force (up 90kg), with the latter a result of much improved aerodynamics.

Essentially a reskinned Chiron, the Divo optimises front-end air flow via its new bumper intakes – which receive more air due to the shape of the redesigned front spoiler – and wheelarch slats. This setup also improves cooling for the brakes, tyres and radiator.

Additionally, the roof has been tweaked to form a space-inspired NACA (National

Advisory Committee for Aeronautics) air duct that increases air flow to the engine bay in combination with the latter’s new cover.

The rear end is punctuated by its height-adjustable spoiler that acts as an air brake when tilted forwards. This wing is 23 per cent wider than the Chiron’s at 1830mm.

The redesigned rear diffuser houses the Divo’s



four exhaust tailpipes, contributing towards its 456kg of total downforce.

Aside from the Divo's aerodynamics-focused upgrades, its exterior design is instantly recognisable as that of a Bugatti, with the slim LED headlights and three-dimensional tail-lights

providing the greatest points of differentiation.

The Divo's interior more or less carries over from the Chiron, aside from the removal of the storage compartments in the centre console and door trims to reduce weight, as well as the different trims and upholstery.

Changes have also been made to the chassis, which have resulted in the Divo's top speed being electronically limited to 380km/h, down 40km/h on the Chiron, which is rumoured to be capable of a 463km/h terminal velocity.

As such, the Divo lacks the Chiron's Top

Speed driving mode that is required to hit its 420km/h terminal velocity, with the reduction made to increase camber, while lateral acceleration reaches 1.6g.

The steering and suspension have been retuned "to ensure more direct response

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and significantly sportier driving behaviour", according to Bugatti, while the Divo's aforementioned weight loss is partly due to its lightweight alloy wheels and carbon-fibre intercooler cover, among other changes.

Motivated by the same 8.0-litre quad-turbocharged W16 petrol engine as its Chiron sibling, the Divo produces an eye-watering 1103kW of power at 6700rpm and 1600Nm of torque from 2000 to 6000rpm.

Claimed fuel consumption on the combined cycle test is 22.5 litres per 100 kilometres, while carbon dioxide emissions have been tested at 516 grams per kilometre.

According to Bugatti Automobiles president Stephan Winkelmann, the Divo represents a change in approach for the French brand and the response to it has been positive.

"To date, a modern Bugatti has represented a perfect balance between high performance, straight-line dynamics and luxurious comfort," he said.

"Within our possibilities, we have shifted the balance, in the case of the Divo, further towards lateral acceleration, agility and cornering. The Divo is made for bends.

"The feedback from our customers was overwhelming. The Divo is a further project intended to thrill people and the world. Our fans are very important to us."

Revealed at Pebble Beach Concours d'Elegance in Monterey County, California, the Divo is named after French racing driver Albert Divo, who was a two-time winner of the Targa Florio race in Sicily, Italy, during the late 1920s. **MM**

The EQualiser

Mercedes pays homage to 1930's racecar with Vision EQ Silver Arrow concept



By ROBBIE WALLIS

MERCEDES-BENZ has used the Monterey Car Week to unveil its eye-catching Vision EQ Silver Arrow all-electric concept car, a one-seat racer that pays homage to the successful W125 Grand Prix car from 1937.

At approximately 5300mm long and 1000mm

tall, the Silver Arrow cuts a striking figure with an open-top cockpit and massive, 168-spoke fixed-hub rose gold wheels measuring 24 inches at the front and 26 inches in the rear.

Painted in alubeam silver to match the W125, the Silver Arrow's body is constructed from carbon-fibre, with a lighting strip along the side and rear skirts, and a digital display

screen integrated into the front bumper.

The roofless cockpit folds forward to allow easy ingress and egress, while the rear of the vehicle is characterised by a large fin stretching from behind the driver's head to the tailgate, similar to the Project One hypercar.

Two rear spoilers can extend from the back of the car's body, to assist deceleration by

increasing wind resistance.

Powering the Vision EQ Silver Arrow is a pure-electric powertrain outputting a hefty 550kW with an unspecified amount of torque. 80kWh batteries are placed in the underfloor of the vehicle, and will enable an approximate driving range of 400km.

Side air vents help to cool the battery, while



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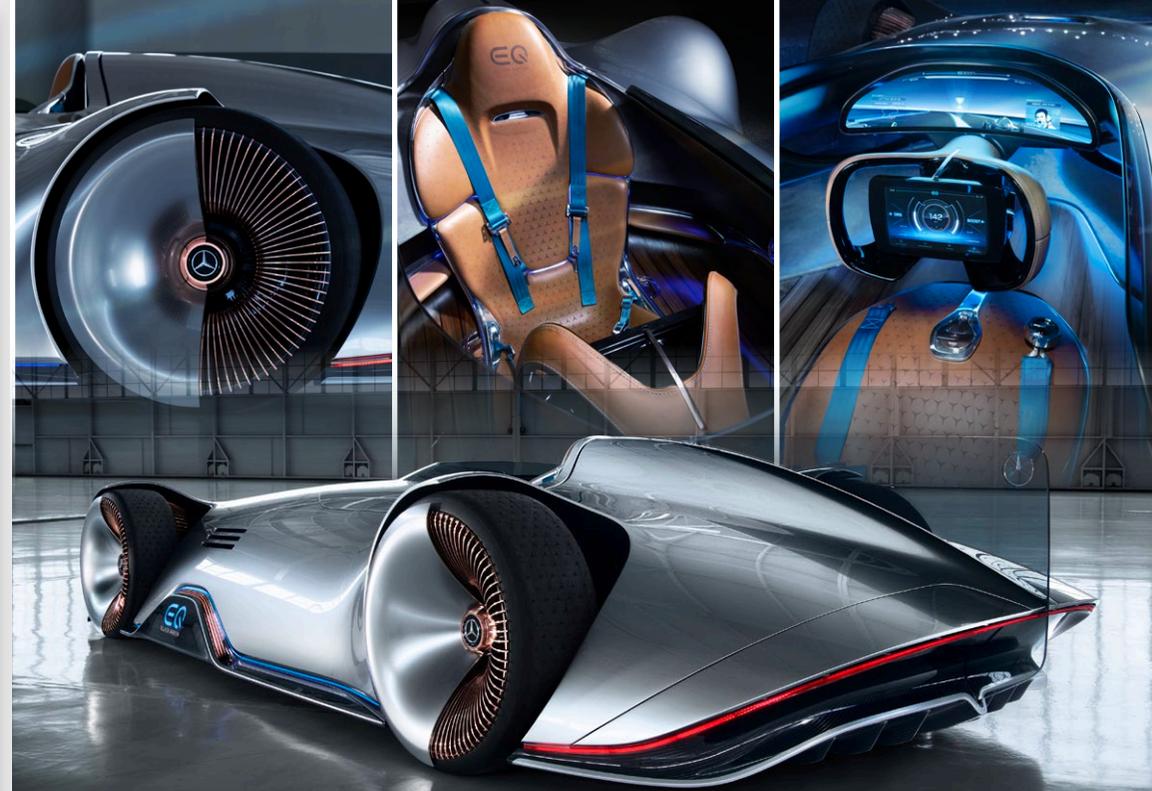
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Pirelli has developed special tyres – complete with star tread pattern – to ensure optimal grip and effective channelling of power to the road.

The one-seat cockpit has been designed to represent a mix of traditional and luxurious materials, with modern technologies and features, described by the brand as “timeless aesthetic appeal with futuristic visions”.

Saddle brown leather upholsters the single bucket seat and racing-style steering wheel with a star pattern matching the tyres, while the floor is decked out in solid walnut and coniferous wood pinstripes.

Polished aluminium also features prominently on the interior, while the side walls are finished in grey suede to match the car’s exterior.

The cockpit features a wrap-around panoramic display screen, capable of projecting 3D images of its surroundings, and

enabling users to ‘race’ against the original W125 or Mercedes’ current F1 car.

To achieve this, a virtual racetrack is superimposed onto the road, as is the ‘opponent’, with the vehicle’s computer systems offering instructions during the race.

For those who want a more immersive race experience, sound settings can be tweaked to simulate the Mercedes Silver Arrow F1 car or an AMG V8 engine.

A touchscreen is also embedded in the centre of the squared-off steering wheel, which, among other features, can configure the driving modes between comfort, sport and sport+.

The Vision EQ Silver Arrow is the latest in a line of all-electric concepts from Mercedes and its EQ sub-brand, such as the original Concept EQ in 2016 and compact EQA from last year’s Frankfurt motor show. **MM**

Zed's not dead

Australian-born BMW designer births new-generation Z4 convertible



By TUNG NGUYEN

BMW has formally uncovered the production version of its new drop-top Z4 sportscar at the Pebble Beach Concours d'Elegance, penned by Australian-born BMW designer Calvin Luk who also designed the concept car shown at

the same event last year.

Mr Luk, who himself owns a Z4, is also responsible for the design of the facelifted 1 and 2 Series range launched late last year, as well as the Bavarian brand's X1 small crossover and X3 mid-size SUV.

Revealed in presumably top-spec guise, the

Frozen Orange metallic-painted M40i First Edition-badged Z4 is a dramatic departure from BMW's current homogenised styling, thanks to its sleek and aggressive overall aesthetic.

Up front, vertically stacked adaptive LED matrix headlights flank a blacked-out kidney

grille, while the lower bumper sports gaping air intakes and chiselled features.

A long sculpted bonnet, front fender air extractors and steeply-raked dark-coloured windscreen characterise the side profile, which draws the eye along prominent feature lines towards the rear.

The bootlid-integrated rear lip spoiler, slim wraparound tail-lights and blackened rear diffuser also combine to give the latest Z4 a squat and purposeful stance from the rear.

Large 19-inch alloy wheels fill the wheelarches, while the side mirrors are also finished in gloss black.

Although yet to be detailed, the Z4 interior appears to lift elements from the new-generation X5 and 8 Series flagship, with all-digital instrumentation, a chunky steering wheel and a high-definition iDrive infotainment display outputting to a Harman Kardon sound system.

Climate control information is now nestled between the middle air vents, with controls situated below, while the centre storage cubby looks to support wireless smartphone charging, a USB input and 12V socket.

Sitting between the driver and passenger is a new-look shifter and infotainment control knob also seemingly taken from the aforementioned X5.

For the first time in a BMW roadster, a head-up display is also fitted.

The third-generation Z4 line-up – that also shares its underpinnings with Toyota’s upcoming Supra – is expected to land in Australian showrooms in the first half of 2019 with a range of engines kicking off with



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a 2.0-litre turbocharged petrol four cylinder.

However, the M40i version is confirmed to be powered by a 250kW inline six-cylinder engine returning a fuel economy figure between 7.1-7.4 litres per 100km and emitting 162-168 grams of CO2 per kilometre.

Although no other powertrain details have been confirmed, the straight six is likely closely related to the same 3.0-litre turbocharged unit found in the M140i hatchback, M240i coupe, and X3 and X4 M40i SUVs.

As such, torque figures should peak at 500Nm, while the automatic transmission could be a similar eight-speed torque-converter.

Sending power to the rear wheels, the Z4 M40i can accelerate from a standstill to 100km/h in just 4.6 seconds – the same sprint time for the M140i and M240i, and just 0.2s quicker than the heavier X3 and X4 flagships.

Other mechanical goodies include sports suspension with electronically controlled dampers and perfect 50:50 weight distribution, as well as M Sport brakes and a rear differential.

BMW promises to reveal more engine specifications and technical details on September 19, while the Z4 will also feature at the brand's Paris motor show stand in early October. **BMW**

BMW Design