

Audi R25

Volkswagen/Audi Design Center California

Audi introduces the R25, the latest prototype in its legendary racecar lineup. The inaugural Los Angeles round of the ALMS 2025 incorporates innovative features never previously seen in any form of motor sports, such as high-velocity banks and tunnels, which allow cars to race “inverted” and the opportunity to pass anywhere with aerodynamic racecars. All top sections of the tunnels and banks are also *WiTricity* wireless electrical charging zones, which encourage the drivers to utilize these free energy zones instead of fuel stops.

The R25 is designed to utilize and excel in this new racing environment, with features such as:

- 1) The new Dynamic Space Frame, allowing much greater degree of flexibility, integration of circuits and rigidity
- 2) Algae bio fuel for endurance and electric motor capability through Wireless power transfer technology
- 3) Audi Design: Staying true to the “Form *is* Function” philosophy, there is not an ounce of needless element in the R25, which incorporates advanced technique and efficient form management into one. The car also uses: active micro-control surfaces which optimize airflow during the race; Man Machine Interface, which inputs all vehicle data output into the driver’s helmet visor; all-around vehicle dynamic sensors and integrated on-board HD cameras with real-time data links to allow for spectator interaction, allowing fans to virtually “sit” and experience the race in any racecar through monitors and virtual reality booths.

Produced by:

Audi Design Center California

Claus Potthoff, Executive Design Director

Hendrik Veltmann, General Manager

Jae Min, Chief Designer

Concept & Art:

Craig Durfey, Senior Design Advisor

Raul Cenan, Designer

Taeho Kim, Designer

Concept contribution & editing:

Tomi Lin, Audi Advanced Product Planning

Nancy Holman, Designer

Alex Marzo, Design Intern

BMW Hydrogen Powered Salt Flat Racer
BMW Group DesignworksUSA

“Do not wait for extraordinary circumstances to do good action; try to use ordinary situations.” - Jean Paul Richter

BMW has designed a hydrogen powered salt flat racer based on the premise of **Reuse** (instead of recycle). This concept utilizes existing, ordinary, and mundane materials, such as old oil barrels and barbeque lids, as main components for the body and wheel discs. Friendly, whimsical and sustainable, the concept employs goldfish as “co-pilots” or “canaries-in-a-coal mine” to ensure that the vehicle is running clean emissions (if your fish get sick, you must be running “rich”). The wheels are gel-nylon for necessary flex, allowing tires to be airless and re-vulcanized or re-treaded.

Design Team:

President: Verena Kloos

Director: Chris Chapman

Creative Director: Erik Goplen

Designer: Richard Kim

Digital Modelers: Jason Rowlands and Blair Taylor

GM Chaparral Volt **General Motors Advanced Design, California**

Designed for the 2025 revival of the LA Times Grand Prix, the Chaparral Volt uses advanced EREV propulsion, energy collection, generation and management system to create an entirely new category of racing - the eco-triathlon.

The Chaparral Volt collects and generates its own energy from three different clean, renewable and abundant California resources: Earth, Wind and Fire.

Earth (*Geologic*) Gravity and momentum-capture regeneration and aero-thermal resistance provide astounding levels of braking efficiency in addition to active energy regeneration.

Wind (*Aero-Thermal*) Building on the legendary Chaparral 2J, the Volt utilizes rear turbine extractors for power cell cooling, down force and (in reversed direction) a combination of aero-assist braking and energy regeneration.

Fire (*Radiant Sunlight*) Integrated thin-film PV panels for the racer’s body and team support unit takes advantage of Southern California’s most abundant resource, the sun, and converts it for use as the Chaparral Volt’s primary energy source.

Design Team:

Frank Saucedo, Steve Anderson, Thamer Hannon, Jussi Timonen, Loren Kulesus, Alessandro Zezza, Sean Moghadam, Tony Liu and Phil Tanioka
**"Chaparral" and the Chaparral logo are used under the permission of Jim Hall, Chaparral Cars*

Honda's The Great Race 2025

Honda Research and Development

In 1908, 17 men dared to take on the "toughest race ever devised." Spanning six months, the Great Race brought these men over 22,000 miles, through three continents and around the world. 117 years later, the Great Race of 2025 is tougher than ever.

Competitors must circumnavigate the globe in 24 hours on land through the United States, by sea through Asia and by air over Europe.

The vehicle's sonar/echolocation sensors are able to detect changes in speed, terrain, and altitude, allowing it to switch to any configuration. With expertise in automotive, marine, robotics, and jet technologies already in place, Honda possesses a distinct, competitive advantage over its rivals, allowing it to lead in the evolution of motorsports in the 21st century.

Design Team: Franco Corral

MAZDA KAAN

Mazda Research and Development

The MAZDA KAAN is an electric race car designed to compete in the E1 races, the pinnacle of international motorsports in terms of technology and popularity. In 2025, California freeways have been resurfaced with a sub-level electro-conductive polymer that powers the electric cars of the modern world. MAZDA's patented electronic tire system uses this technology to power the KAAN to reach 250 mph with no harmful emissions!

The vehicles are piloted by individual drivers but teams are made up of thirty cars, all on the track together. Using strategies similar to those in cycling pelotons, the tighter the group sticks together, the more aerodynamic and powerful it becomes.

Inspiration for the KAAN comes from electric fields and textures seen in nature, particularly those in a lightning bolt. The car is uniquely designed around its

powerful electric wheels while the cockpit acts as a capsule to safely house the driver, allowing for tighter peloton formations and a team victory.

Design Team:
Jacques Flynn
Carlos Salaff
Minyong Lee
Greg Lee
Tim Brown
Jordan Meadows

Mitsubishi Motors MMR25 **Mitsubishi Research & Design of North America**

Mitsubishi breaks from convention and introduces the MMR25.

While the look is shocking, the multi-terrain, omnidirectional wheels consist of eight independently-controlled motors, allowing for “8 x 4” wheel drive so that the car can be driven forward while pointing in any direction. The MMR25 drives sideways into a corner and points the nose of the car outwards before even reaching the apex of the curve while driving sideways or backwards.

The MMR25 also uses special Oblique Aerodynamics to give the vehicle aero advantages. The center wing acts as a spoiler, actuated by pneumatic and fabricated from Memory Metal Alloy while the front and rear spoilers double as suspension blades which are able to control stiffness and ride height.

Design Team:
Jon Hull (design, surfacing, rendering and animation)

Mercedes-Benz Formula Zero **Mercedes-Benz Advanced Design of North America**

Luxury racing arrives in the Formula Zero Racer by incorporating the thrill of Formula One, the track dynamics of the bobsled or luge, and the grace and efficiency of yacht racing.

Reminiscent of the Mercedes Benz racing heritage of the 1930's, the Formula Zero Racer is loaded with technology designed to extract the maximum thrust from the electric hub motors, aero-efficient solar skin and high-tech rigid sail.

Each team is allocated the same amount of stored energy and it is left to the teams and drivers to manage the variables to win the race. The winner is determined by total elapsed time combined with the energy efficiency factor.

Spectators at the Mercedes Benz Formula Zero racing Series are treated to a new dimension of racing as the transparent track is visible from all perspectives - even from below!

Design Team:
Alan Barrington
George Yoo
Kevin Verduyn

Toyota Lemans Racer
Calty Design Research, Inc.

Technological superiority and endurance creates the ultimate race car that never needs to stop. Not only is the racer powered by highly efficient hydrogen fuel cell electric motors, each of its body panels is embedded with photovoltaic panels that supply electricity when extra energy is needed.

The vehicle features two basic modes: High Speed Mode and Cornering Mode. In High Speed Mode, the body and wheels narrow, creating less drag and resistance to reach its highest speed of 350 mph. The Cornering Mode transforms the body to create a wide and stable stance with expanded wheels, establishing maximum contact and grip through tight turns.

To aid the driver in darkness or unreliable weather, the cockpit is a completely digital environment with a display enhanced by virtual reality, computer trajectory plotting, collision avoidance assistance and a robot co-pilot, which manages the on-board systems and repairs so that it can maintain full speed all the way to the finish.

Design Team:
President: Kevin Hunter
Studio Design Manager: Erwin Lui
Senior Creative Designer: Craig Kember

Volkswagen Bio Runner
Volkswagen/Audi Design Center California

The Baja 1000 now introduces the “One Tank Unlimited Solo Class.” The only stipulations are one driver and one 10-gallon tank of fuel, forcing competitors to use every bit of technology, strategy, and wit to finish.

In the Bio Runner, the rider is positioned inside a protective cage on a motorcycle-like saddle with controls attached to the hands and feet. These controls manipulate all wheels via synthetic muscle-based suspension which offers unparalleled control and traction.

The vehicle is powered by dual-turbine engines that run at an ultra-efficient 500,000 rpm and operate on a patented bio-synthetic jet fuel.

The vehicle also boasts an Arial Reconnaissance Drone (AR-D) which feeds video to the driver when visibility is limited.

The Support Team Chopper transports, follows and in the event of a crash, swoops down to perform repairs. It also contains telemetry analysis software, which in the case of emergency, takes over piloting to avoid danger unseen by the driver.

A noticeable design feature is the lack of windows. The driver sits inside a central pod with a seamless 360-degree panoramic screen projecting real-time images from the exterior. This not only allows for a lighter vehicle but also ensures visibility through all weather conditions.

Design Team:
Derek Jenkins
Patrick Faulwetter
Ian Hilton