

Thrilling by Design: The 2020 GR Supra Inherits Great Design Genes

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It *had* to be a “Wow!” car. If Toyota was going to build another Supra, the designers had to go all-in. That was the clear call of action from the CEO, Akio Toyoda: *generate more emotional designs and a feeling of heart-pumping excitement.*

This was not a marketing message but rather a design and development directive. When it came to the Supra specifically, there was also the matter of the fourth-generation model having become enshrined as a car-culture and pop-culture icon. So, no pressure.

Nearly 15 years had passed since the fourth-generation Supra left the U.S. market when, in 2012, Toyota began planning for a fifth-generation model. The 2020 GR Supra, while influenced by that pivotal model, emerged as its own expression of the brand’s performance, design and racing heritage.

When the camouflaged pre-production prototype of the GR Supra negotiated the famous hill climb at England’s Goodwood Festival of Speed in fall 2018, the spectators’ reaction affirmed that “Wow!” had indeed been achieved. The path to getting there was somewhat circuitous.

FT-1: Fun and Games

While it became an open secret that Toyota was developing a new Supra, one thing seemed to be missing from the process: a concept car. The first auto show car to be called Supra did not appear until spring 2018, when Toyota exhibited the GR Supra Racing Concept at the Geneva Auto Show.

In retrospect, the astonishing FT-1 Concept that Toyota first showed in 2014 had fueled speculation that it was a Supra concept, and indeed, the FT-1 would become the stimulus for the GR Supra’s design. But it didn’t start out that way.

The FT-1 (meaning “Future Toyota-Ultimate”) was a concept car in the truest sense, not created as a prototype for a particular car. In response to Mr. Toyoda’s call for more emotional designs, the FT-1 sprang from Toyota’s Caltty Design Research in Newport Beach, Calif. Caltty worked with Polyphony Digital, creators of the popular Gran Turismo driving simulator, to add a virtual FT-1 to the game.

Meanwhile, plans made with BMW in 2012 to jointly develop a shared sports car platform were getting underway. The FT-1 was not, however, designed around any parameters established for the new model. On the contrary, it was larger, and more of a road-going Le Mans prototype racecar than a production sports car.

Nevertheless, the FT-1 was a raw expression of Toyota sports car heritage, drawing inspiration from both the fourth-gen Supra and Toyota’s stunning 1967-1970 2000 GT. When Mr. Toyoda saw and “drove” the FT-1 in the Gran Turismo simulator, he called for building it as a concept car.

There was no explicit goal for the FT-1 other than to make a statement for Toyota design and to gauge public reaction. An overwhelmingly positive global response, coupled with knowledge of Toyota’s agreement with BMW, sparked widespread speculation that the FT-1 was a Supra concept. It became abundantly clear within Toyota that it should be the basis for the Supra’s design.

Making that happen was not a job for the timid.

Not Lost in Translation

Designed without constraints imposed by engineering and manufacturing boundaries, true concept cars rarely transition to production without a significant “toning down.” There were a few elements of the FT-1 that were simply impractical for a production car, such as its exaggerated width. Yet, that was the look Toyota wanted for the new Supra.

The challenge of translating the FT-1 as closely as possible for the production platform went to Project Chief Designer Nobuo Nakamura. His mission was to capture the concept's unconstrained persona within the constraints of the new Supra's packaging.

Certain FT-1 elements were essential, including the nose that combined influences from the fourth-gen Supra (fenders and upper fascia) with a Formula One racecar (lower fascia with prominent central grille section flanked by large air intakes). The FT-1's shell-like front fenders and dramatic upswept rocker panels that flowed into wide rear quarters were re-interpreted for the GR Supra – no easy feat on the smaller package.

Also paramount for the Supra design was pushing the cockpit far rearward within the wheelbase. This form not only helps achieve near 50:50 weight distribution for optimal handling performance, but also emphasizes the classic proportions associated with a rear-drive, inline-six-cylinder engine sports car.

As on the FT-1, the integrated rear spoiler, a functional part of the aerodynamic design, is an homage to the tall, hoop-like rear wing that was optional for the fourth-gen Supra Turbo. The FT-1's reverse-wedge cabin and "double bubble" roof inherited from the 2000 GT, would also carry forward to the Supra.

Combined, the elements suggest the look of a wraparound windshield or racing helmet visor.

The FT-1's unique exterior lighting designs, too, were refined for production using LED technology.

"Condensed Extreme"

Nakamura distilled the Supra's guiding design theme to a concept he called "Condensed Extreme," an allusion to the car's packaging. "Condensed" refers to the relationship between the large tire diameter and relatively short wheelbase and overall length. "Extreme" describes the relationship between the short cabin (position of the occupants) and the wide tread (position of the tires).

"This 'Condensed Extreme' concept is the only thing I mentioned to the design team, as I didn't want to restrict their imagination," Nakamura says. "I deliberately avoided using emotional words, and had the designers express their individual passion through the design."

The result, he explains, maximizes the extreme feel of the basic packaging and eliminates any unnecessary elements to achieve a condensed feel, accentuating both aspects. For a point of reference, the two-seat 2020 GR Supra is 172.5 inches long on a 97.2-inch wheelbase — 5.2 and 3.2 inches shorter, respectively, than those dimensions for the fourth-generation Supra, which was a 2+2.

Nakamura might not have used emotional terms to inspire his design team, but he had emotions in mind for the result he wanted to achieve.

"I also wanted to express the romance of a sports car," he says. "It is a romance that has the power to make someone want to touch the car when they see it."

In particular, Nakamura felt the FT-1's upswept rocker panels and wide rear fenders were indispensable to the GR Supra's design.

"The rear fender shape is especially characteristic of this car," he says. "It wasn't easy, even with the experience and skills of the chief clay modeler. The result was a shape close to the engineering limits of manufacturing, however the car could be produced without any changes, thanks to the help of the engineers who fell in love with its shape."

The classic 2000 GT's design exerted a strong influence with its long nose, short cabin profile, without making the GR Supra "retro." The details are like a map pointing to that car, but in a modern way:

- Horizontal hood flowing dynamically rearward from the low nose position
- Low belt line, with the tip of the rear spoiler almost level with the rear edge of the hood
- Slightly forward-slanting underbody
- Strongly rearward-slanting cabin silhouette
- Minimized cabin volume while retaining space for occupants
- Blacked out front pillars
- Character lines on the roof sides

The Supra's wind-friendly shape is a key to both its high-speed stability and its exemplary fuel efficiency (32 mpg highway is projected). The "double-bubble" roof design reduces drag by shaving the roof center to reduce the frontal area without sacrificing occupant headroom.

While the drag coefficient is often spotlighted when it comes to discussing aerodynamics, Toyota also paid much attention to the lift coefficient value. To that end, the entire underfloor area is covered to reduce air resistance, and the covers and seamless fender liner shape are shaped to suppress lift, enhancing the car's handling and stability. The tail shape echoes the fourth-gen model and the FT-1, with the "hump" across the trunk lid an integrated rear spoiler that helps to suppress lift.

The trapezoidal rear bumper shape conveys a dynamic sense of movement toward the tires. The fourth-gen Supra made a statement with its taillights, each side's pod containing four distinct softball-sized round lamps. The 2020 GR Supra also makes a distinct lighting statement, but with its rear combination lamps in a striking blade-like shape and a simple arrangement of turn, tail, and stop functions. Inspired by the rear indicator LEDs on a Formula One racecar, the GR Supra's backup lamps are a series of 20 LEDs located in the center of the lower bumper.

The Colors of Excitement

Like the car itself, the 2020 GR Supra's paint palette is not for the cautious. Daring hues like Renaissance Red 2.0, Nitro Yellow and Downshift Blue heighten the emotional connection drivers feel with the car while drawing admiring eyes.

The available Phantom Matte Gray adds a sense of drama with a blue to create a metal-like texture. Tungsten Silver, Turbulence Gray, Absolute Zero White and Nocturnal Black are especially vivid, modern versions of those classic shades. The latter might have some wondering if Lord Vader himself is behind the wheel.

The Supra Launch Edition, limited to the first 1,500 production cars in the U.S., is offered in Renaissance Red 2.0, Absolute Zero White or Nocturnal Black. All three choices feature red mirror caps and matte-black 19-inch wheels. White and black Launch Edition models come with a red leather interior, while the red Launch Edition cars will have a black leather interior. A carbon-fiber plaque on the passenger side of the dash displays the car's sequential number and Mr. Toyoda's signature.

Room for Just Two ... and What a View!

The 2020 GR Supra is the first Supra two-seater, with a cabin that feels as enveloping as it looks. Many cars tout "driver-focused" cockpits. Here's what that means for the GR Supra, and why it's different than the fourth-gen Supra.

In the fourth-gen Supra, designing the cockpit around the driver yielded a large upper center console, prominently angled toward the driver and placing controls and displays within easy view and reach. It was definitely a '90s thing, and drivers loved it. The design, however, tended to isolate the passenger, who also had

an awkward reach to the audio and climate controls.

The GR Supra brings a different approach to “driver-focused.” A horizontal dashboard theme, not unlike that in the Lexus brand’s LFA supercar and current LC flagship coupe, conveys a sense of openness and width. The low, narrow-section dash gives the driver expansive forward visibility, ideal for precisely placing the car in corners.

The lower center console tightly groups the shifter and essential controls for performance driving. The upper console has an asymmetrical shape, with the driver’s side bordered by a padded pillar that serves as a right leg bolster. The design envelops the driver, an effect amplified by the available contrasting interior colors in the Launch Edition.

The console design is open on the passenger side, which helps the passenger feel like part of the excitement and allows easy access to the multimedia / navigation system and climate control panel. The latter protrudes from the center dash, making operation easy without averting eyes from the road.

The Supra’s Sport seats, featuring integrated head restraints and shoulder bolsters, were inspired by racing seats. The Supra 3.0 will come with Alcantara-trimmed power seats with memory, while the 3.0 Premium steps up to heated, leather-trimmed seats.

Tech That’s Worthy of the Design

Reflecting the GR Supra’s high-tech engineering and construction, its instrument panel is a high-definition TFT color display highlighted by a three-dimensional meter dial that seems to float over it. The single-meter design puts the vital performance information in one place, easily glanced through the small-diameter steering wheel.

The display’s easy-to-read layout puts multimedia information, including audio and available navigation, on the right side. A standard full-color head-up display in the Supra 3.0 Premium model projects vital driving and navigation information ahead of the driver. The Supra 3.0 Premium features a standard 8.8-in. multimedia display screen with navigation and Apple CarPlay, and a 12-speaker JBL Premium Audio system. The Supra 3.0 model has a 6.5-inch screen. Both systems are of course Bluetooth and USB-equipped.

Standard luxury tech for both grades includes dual-zone automatic climate control, keyless entry and push-button start and rain-sensing windshield wipers.

Fun fact: The first Supra in 1979 had its own special navigational aid, a “mobile map light” that was stored in the center console, connected via coiled power cord and featured a magnetic back. Four decades ago, some gas stations still gave away free road maps.

“Heart-Pumping Excitement”

The 2020 GR Supra is the “Wow!” sports car that many enthusiasts have been waiting for. Its design is one that just had to be, seemingly willed by the model’s ardent fans outside and inside Toyota. It is an ideal reflection of the performance capability and the sheer joy of driving that the fifth-gen Supra offers.