



September 2007

Exterior design

Efficiency Can Look So Good

- Dynamic, sporty monocab concept
- Aerodynamic details and lightweight materials emphasize E-Flex philosophy
- FlexDoors® and FlexLoad®: Innovative solutions for doors and tailgate

Form follows function. Opel has consistently implemented this maxim with the Flextreame using the new design language that debuted with the GTC Concept at the Geneva Motor Show. Key characteristics are the signature design cues, such as narrow, boomerang-shaped lights, the blade feature on the side, as well as much more sculpted surfaces.

“Our job was to combine the E-Flex chassis with a body style that’s dynamic, yet makes the best use of space,” explains Anthony Lo, Head of Advanced Design. “We also wanted to give the current Opel design language a special accent and to update the history of earlier concept cars with a few surprising innovations.” The 4796 millimeter-long Flextreame was also designed following the technological motto of efficiency: whether it was weight or aerodynamics, ideas were always found to achieve the best benefits.

The result is a wide range of innovative solutions. For example, a close look at the front of the car reveals just how small the air intakes are in comparison to current trends. The cooling-air requirements of the small, economical turbo-diesel engine and electric motor are considerably lower than those of conventionally powered cars. The only air intakes are two openings beneath the bumper. The original idea to completely forego the conventional radiator grille was quickly rejected, however. Anthony Lo: “The polished aluminum bar with the Opel logo is so brand-typical that there was no way we could leave it out in a groundbreaking concept car.”



The brand recognition elements are covered with transparent trim, which contributes to better aerodynamics. A closer look shows that the Opel logo trim is three dimensional. The unusual-size 195/45 R 21 wheels boast a similar feature, and the special alloy rims also have transparent trim. Their look remains unchanged, yet disruptive air turbulence is avoided. Developed by Dunlop especially for this project, the tires have a very special friction-optimized tread design.

Building on the initial collaboration with the Chevrolet Volt, GM Europe Design worked closely with SABIC Innovative Plastics, formerly GE Plastics, to develop the Flextreme, which showcases unique polycarbonate window glazing, lightweight body panels and energy absorbers for increased pedestrian protection. These high-performance thermoplastics allowed designers to reduce glazing and body panel weight by up to 40 percent, resulting in increased fuel reduction.

Lights: Create an optical illusion

Like the wheel design, the large boomerang-like curved front light units are visually deceptive. The designers continue a theme which began in the GTC Concept that debuted at the Geneva Motor Show, and take it to a new level. The vertically oriented front lights slice up the front end in an unusual manner. The boomerang-shaped, high-tech LED headlamp unit houses the lightweight crossbeam, fog lamps and air intake for brake cooling. The optical illusion continues with the tail lights: at first glance, the concept car appears to have none. The curved rear lights are completely integrated into the tailgate doors and hidden beneath glass. If one of the tailgate doors is opened, an additional parking light switches on so that the Flextreme can be easily seen in the dark.

Distinctive characteristic: Power socket on hood

As the bottom edge of the windshield has been pulled far forward, the hood with its characteristic center crease is very short. The prominent feature here is a power socket that allows the electric car's battery to be charged by an external electricity source. Just like all the other windows and a large part of the roof, the windshield is made of polycarbonate.



Not just for young parents: Unconventional doors

The replacement of the exterior mirrors with small cameras helps the driver maneuver the Flextreme easily, despite its width of 1814 millimeters (see Interior chapter). And it is not only the slightly higher seat position (vehicle height 1760 mm) that makes getting in and out of the Flextreme easier. The concept car also has a special door design – the innovative FlexDoors®. While the front doors operate in the conventional manner, the back doors are rear-hinged. And as there is no center roof pillar (B-pillar), opening both doors on one side creates a large opening for easy entry. This design will be especially appreciated by customers with a taste for practical ideas. The French door style opening makes it much easier for parents to secure children in the rear seats than through conventional, front-hinged doors.

The Flextreme's transparent roof stretches over the interior in a large U-shape that is open at the rear, giving the sporty monocab a light and spacious ambience. The roof is reinforced by a spine-like composite structure that extends all the way to the rear floor. This center beam is connected to the hidden C-pillars to form a highly rigid structure, giving the body the necessary stability to compensate for the missing B-pillar.

FlexLoad®: Gull wings side-opening double tailgate doors

The unique roof construction also allowed for the tailgate's unusual design: there are actually two, gull wing tailgate doors that swing open individually to allow access to the trunk from either the right or left side of the vehicle. The advantage is that the Flextreme's trunk is fully accessible from the side when parked tightly against a wall or another vehicle, or when a bicycle rack is fitted on the rear.

Fully integrated: FlexLoad® offers second luggage compartment behind bumper

The additional underfloor luggage compartment is the Flextreme's most ingenious feature. The practical-flexible innovation is the result of research into a stowage option for heavy luggage that eliminates the need to lift it up, over and into the trunk. The underfloor storage system extends and retracts electrically. The FlexLoad® system was inspired by the integrated FlexFix® bicycle carrier, which made its premiere in the TRIXX concept car. Opel now offers FlexFix® ex works in the Corsa and Antara models.

