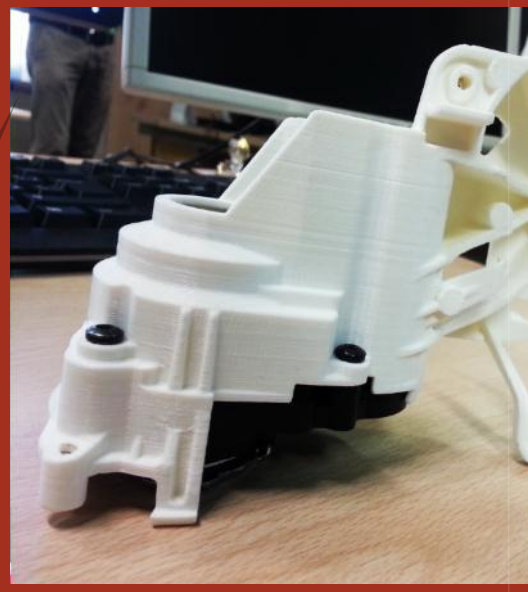
DECEMBER

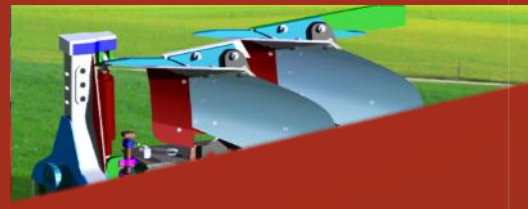
2017

DAuto Newsletter

DAuto Newsletter 100th Edition

Edition
2017





Design engineers turn designs into reality. Without them, a great idea but nothing more than,... well, a great idea.

December 2017 refresh

- ✓ *Honda Sports Vision Gran Turismo Concept*
- ✓ *Honda unveils Riding Assist-e self-balancing motorcycle concept*
- ✓ *Mitsubishi e-Volution Concept*
- ✓ *Lexus LS + Concept*
- ✓ *Lamborghini and MIT reveal Terzo Millennio Concept*
- ✓ *Tokyo 2017: Nissan IMx Concept*
- ✓ *Honda Sports EV Concept*
- ✓ *Mazda Vision Coupe Concept*
- ✓ *Students, corner*

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Chris Bangle's REDS brings a new visual language to car design

Developed by Chris Bangle Associates for CHTC (China Hi-Tech Group Corporation), REDS is a concept that introduces a new generation of EVs designed for megacities.

Unveiled at the 2017 Los Angeles Auto Show under the new brand REDSPACE, REDS is defined as the first step in a program with the aim to start manufacturing in the near future.

The sub-three meter concept car features a new design language and a new layout made possible by the electric powertrain.

As Chris Bangle explains "REDS breaks away from conventions. We are entering a fourth age of car design, but designers are hesitant because of the fear of doing things differently.

"This car is, for me, the demonstration that we can have something that is extremely emotional with immediate appeal, and at the same time highly functional and intellectually engaging."

The exterior design integrates radical elements such as the negative windshield and zero-tumblehome greenhouse – which create shadow and reduce heat load – into a familiar image.

The body uses a layered surface treatment, and features Cartesian sliding doors for minimal space requirements. The complete form of the car reveals a unique figure-8 silhouette and huge side windows.

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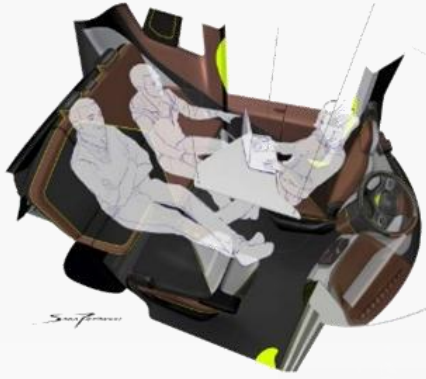
Chris Bangle's REDS brings a new visual language to car design

"We've created a new design language that is at once friendly and immediate, but at the same time subtle, ambiguous, and textually layered. This gives REDS character, the kind you will enjoy looking at for many years", says Chris Bangle.

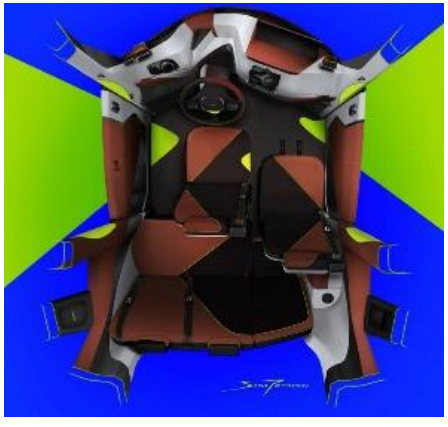


Built in Turin (Italy) as a fully functional running prototype, REDS is slightly longer than a Smart For two but with a smaller turning radius, it can seat four adults when moving and five when stopped; it has space for one or two suitcases depending on configuration.

Among the technical features are the largest solar panel roof in its category, an aluminum space frame surrounding the batteries that allows excellent crash test results, and e drivetrain that enables best-in-class 0-50 km/h acceleration.

When stopped REDS becomes a multi-functional, interconnected working space (helped by a drop down table in development); the quiet venue for a meeting or a presentation; or a place to truly relax while enjoying a film with friends on its 17'' screen.

The interior features several space optimization and practical solutions, including folding seats, steering wheel and armrest and a rotatable driver's seat that enables a lounge-like layout when the car is not moving.



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Rinspeed reveals Snap Concept ahead of CES 2018

Snap by Rinspeed is a modular concept car designed for a futuristic mobility ecosystem and based on the separation between a durable passenger cell and a high-wear chassis.

The concept is conceived not only for urban transportatio ns system but also as a private vehicle available for sale or lease.

The main idea is to maximize the product lifecycle of each component based on its use. The “skateboard” chassis integrates the mechanical elements and the fast-aging IT components, that are recycled after a few years of intensive use once they have reached the end of their design life, while the much less stressed pod is able to remain in service for much longer before it is also sent to recycling.

The Snap has six projectors to visually communicate with the outside world, while the cell interior provides each of the occupants with three different displays.

Among the technical features are an electric powertrain and a two axles steering system that allows to have a minimal turning radius.

As in the company’s tradition, the concept integrates many innovative solutions and technologies provided by the various technical partners.

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The inflatable bridge

A wildlife crossing over the upcoming Koralm railway is being built using a new construction technique developed by TU Wien. Traditional support structures are replaced by an air cushion.

Visualization of the finished event canopy.

The shell construction methods which are usually used to build bridges and domes generally rely on expensive support structures. However, a team of engineers from TU Wien have now developed a new technique that is not only cheaper, but also makes more much efficient use of resources. Instead of using a support structure, an air cushion is inserted underneath the concrete and gradually inflated during the construction process.

The first major tests were carried out three years ago at a TU Wien test site, but now the new method has been used in a real-life project for the very first time by the Austrian Federal Railways (ÖBB-Infrastruktur AG). With the help of TU Wien, the Austrian railway network operator has successfully used the technique to build a wildlife crossing over a new section of track on the Koralm railway.

From panel to dome to bridge

The basic idea is simple: If you make regular incisions in a piece of orange peel, you can spread it flat on a table.

The 'Pneumatic Forming of Hardened Concrete' technique developed by TU Wien applies precisely this principle but in reverse, starting with a flat sheet of concrete with wedge-shaped incisions and transforming it into a curved dome.

An enormous plastic air cushion is placed underneath the concrete panel and then slowly inflated once the concrete has hardened. Hydraulic-tensioned steel cables ensure that the concrete retains the correct shape during this process.

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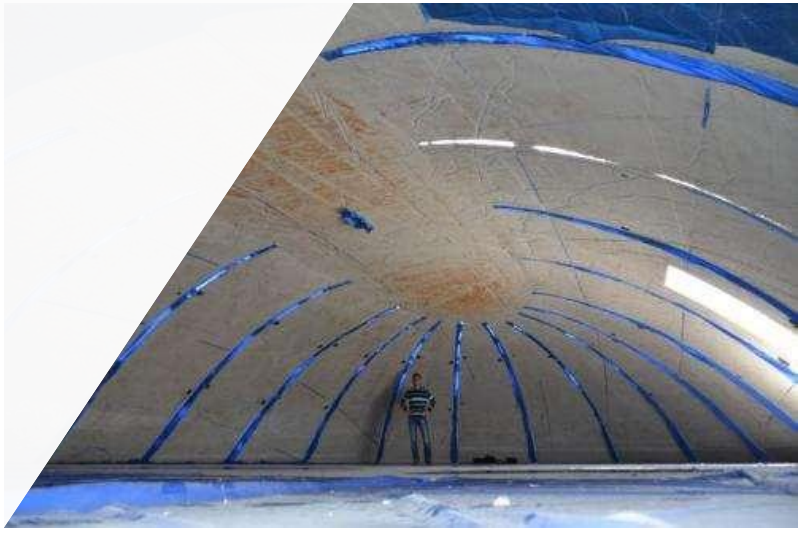
The inflatable bridge

"It took around five hours to inflate the cushion and create an elongated concrete dome with an internal height of 7.60 m," says Benjamin Kromoser from the Institute of Structural Engineering at TU Wien, who developed the technique as part of his dissertation with Prof. Johann Kollegger and worked closely with ÖBB on the project. Each end of the concrete dome was then removed and archways installed to create a bridge. The new Koralm railway will run under the bridge and the outside of the concrete structure will be backfilled with earth so that animals can use the bridge to cross the railway safely.

Visualization of the finished event canopy with view from outside.



The method offers some major advantages over traditional bridge building techniques. According to Benjamin Kromoser: "The process requires a little more concrete but 40% less steel." The TU Wien method is also more energy-efficient, reduces equivalent CO2 emissions by 40% and is significantly cheaper. "The costs are expected to fall even further once construction firms have gained more experience of using the new technique. We estimate that it could ultimately reduce costs by 15–30%," Kromoser explains.

It is many years since Prof. Johann Kollegger first developed the idea of constructing a concrete structure using continuous forming rather than support structures. Since then he and his team have worked hard to overcome each of the technical hurdles encountered on the road to developing a practical solution.

The innovative wildlife crossing is located on the Carinthia section of the new Koralm railway, one of ÖBB-Infrastruktur AG's major infrastructure projects in southern Austria. Following the completion of the construction and terrain modelling work, the earthwork is now continuing before the infrastructure for the high-speed electrified railway can be installed.

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Fisker previews futuristic electric shuttle for smart cities

About Hakim Unique Group

Hakim Unique Group consists of more than 160 wholly owned or partly controlled companies, and has an intense interest and expertise in developing smart city infrastructure – with a comprehensive range of experts across government, universities, operators and enterprises.

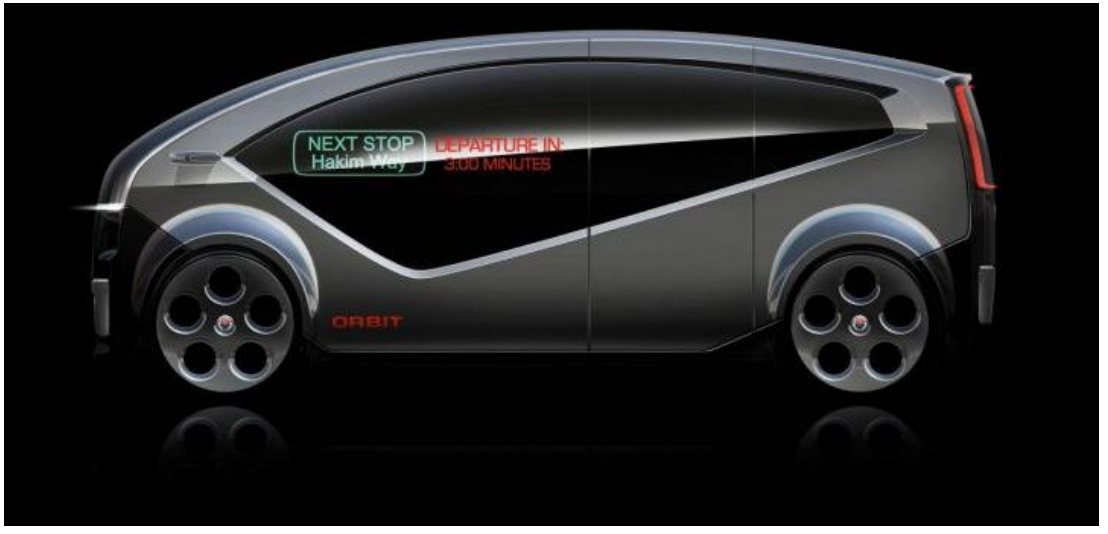
Fisker has partnered with Chinese Hakim Unique Group to develop Orbit, an autonomous shuttle vehicle specifically designed to operate within smart cities.

From the pure emotional design of the E-motion to the purely rational design of the Orbit: with this latest project Fisker is demonstrating its versatility and focus on innovation and technology.

The Orbit will feature technology based on the research of Fisker's team, who have been filing patents on solid-state battery technology and announcing several electric vehicle technology breakthroughs.

From a design perspective, the shuttle has a boxy design, large glazed areas integrating a large display for communications and a high-tech interior that maximizes ergonomics and space.

Fisker will begin delivering the first Orbit electric autonomous shuttles by the end of 2018.



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Rail-specification ball valves and safer seats developed

IMI Precision Engineering has developed a range of robust ball valves specially designed to meet rolling stock standards and to offer consistency across a temperature range between -40°C and +85°C.

The range includes lever, latching or locking handles for on-board applications including door and step systems and wagon controls.

'Ball valves perform a vital function, enabling a compressed air supply to be isolated', explains Kelvin Austin, Business Development Director, Rail. 'This might be during the normal operation of a vehicle or perhaps to allow maintenance of pneumatic equipment to take place. Whether this is scheduled maintenance or the result of damaged or leaking pipework, our ball valve range ensures the air line can be shut off safely.'

Tested to EN 45545 standards for fire and smoke behaviour of materials used on board rail vehicles and EN 61373 for vibration resistance, the ball valves also comply with NF F11-806:1996 technical, dimensional and functional parameters.

Lighter and safer seats

Commuters at opposite sides of the USA are now sitting on BASF's Basotect open cell melamine foam, which Rogers Corp is using in BART and Long Island Rail Road seat cushions.

Basotect is made from thermoset melamine resin which is intrinsically fire resistant without adding additional flame retardants. Its high elasticity offers comfort, and it can be cut to specific contours and detailing.

According to BASF, the foam's density of less than 9 kg/m3 helps reduce the overall weight of seats, with cushions up to 90% lighter than traditional foams. 'By being able to take mass out of the railcars via the seating, it helps transit authorities provide public transit that is more fuel efficient with improved overall performance and longevity', explains Holli Woodard, Market Development Manager for Basotect in North America.

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The new Aston Martin Vantage

Replacing a model first introduced in 2005, the new Aston Martin Vantage features an aggressive, bold design mixing the brand's traditional DNA with a renewed styling language.

The outgoing Vantage model was first presented in 2005 as a V8 model and was followed in 2009 by the V12-powered variant.

The new model is characterized by a modern design, with a low, athletic stance, and sporty proportions with minimal overhangs.

Among the most distinctive new elements are the renewed light signatures, with clean, minimal headlights and full-width LED tail lights.

The aggressive character of the Vantage is underlined by the muscular flanks and shoulders and by the many aerodynamics-focused elements.

These include the imposing front splitter and rear diffuser, the pronounced upswept rear deck lid as well as new side gills, integrated into the body surfaces.

The interior echoes the aggressiveness of the exterior with sharp, focused lines, while the high waist layout and the low driving position create an immersive driving experience.

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The new Aston Martin Vantage

The new Vantage is equipped with a 4-liter twin-turbo V8 engine delivering 510PS at 6000rpm and 685Nm from 2000-5000rpm.

The unit is coupled with a rear-mounted ZF eight-speed automatic transmission. The dry weight is 1530kg.

The main performance figures are a 0 to 60mph time of 3.5 seconds and a top speed of 195mph.

The new Vantage has a retail price from £120,900 in the UK, €154,000 in Germany and $149,995 in the USA. Deliveries are scheduled to begin during the second quarter of 2018.

The Vantage features a high level of standard equipment, including keyless start/stop, tyre pressure monitoring system, parking distance display, park assist and front and rear parking sensors.

The In-Car Entertainment system – controlled and viewed via a centrally mounted 8” LCD screen – comprises of the Aston Martin Audio System, Bluetooth® audio and phone streaming, iPod®, iPhone® and USB playback and an integrated satellite navigation system.

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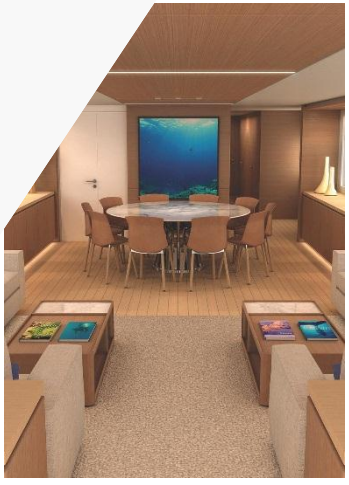
Inace reveals more details of FHI 115 yacht concept



Brazilian yard Inace has released more details and the first interior renderings of its FHI 115 yacht concept, which was developed in collaboration with designer Fernando De Almeida.

This 35 meter design features an almost vertical prow, ensuring a notably high interior volume for its length. The new renderings include light grey topsides, which contrast with the dark blue finish originally proposed back in November 2017, although the red waterline stripe has been retained.

Accommodation is for up to ten guests split across five en-suite staterooms including a full-beam master suite that is situated on the main deck and boasts a walk-in wardrobe.

Below decks, two double cabins and two twin cabins complete the guest accommodation, while the crew area in the bow allows for a staff of up to five people (the captain's quarters are on the bridge deck, bringing the total to six crew). Key features include the hydraulic transom platform, which allows easy access to the water for taking a swim and launching superyacht water toys.

Moving forward and the sheltered cockpit offers an ideal spot for enjoying a light meal al fresco with a C-shaped wrap of bench seating and three armchairs. The saloon on the Inace FHI 115 is open-plan with two L-shaped sofas back aft and a circular dining table that can seat up to eight guests amidships.

The upper deck aft is left bare for storing a 6.2 meter RIB tender, while a sliding door leads through into the sky lounge with its large television — ideal for hosting movie nights on board. A foredeck seating area allows guests to relax away from prying eyes when moored stern-to and the bow has been designated as water toy storage space with room for a pair of Jet Skis. The superyacht sundeck completes the layout with sun pads, armchairs, sun loungers and an upper helm position.

The engine installation is still undisclosed, but the Inace FHI 115 has been designed around a transatlantic range of 4,000 nautical miles.

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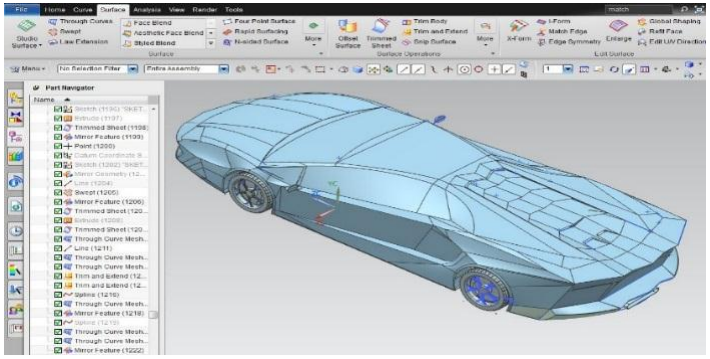
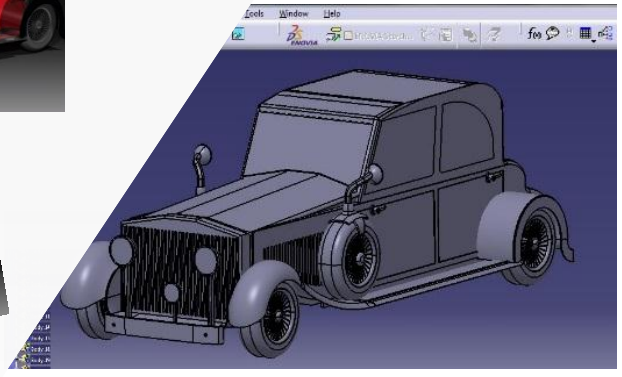
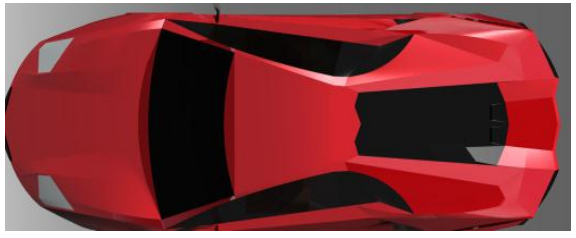
Student's Corner

DAuto Training Yield







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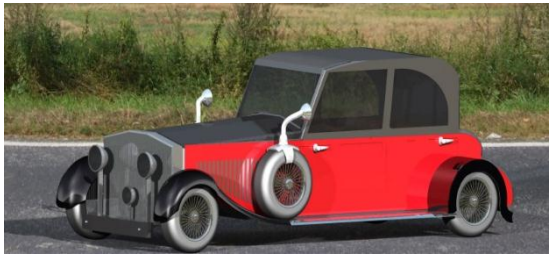

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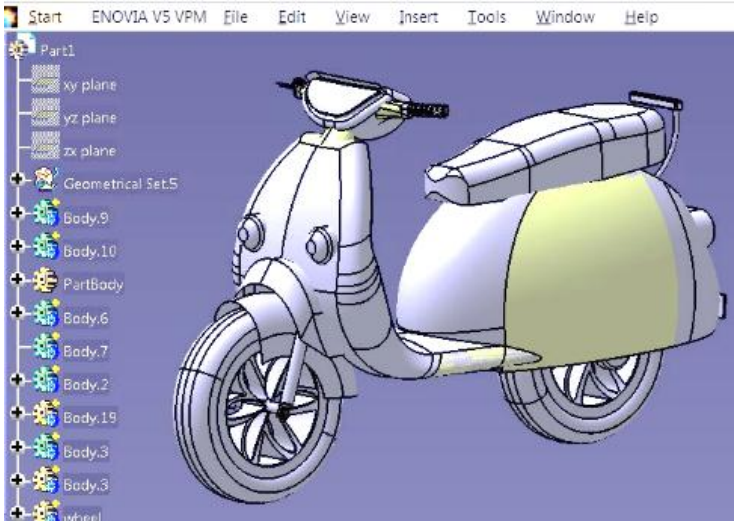

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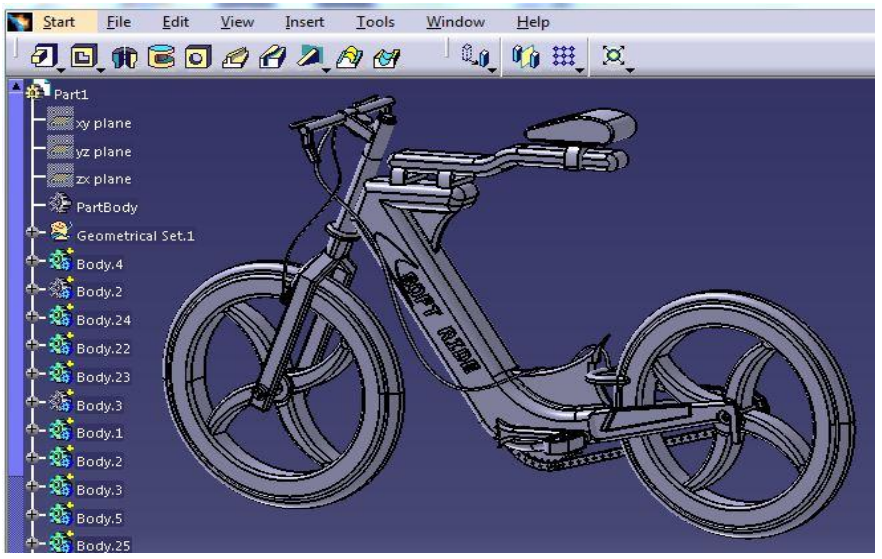

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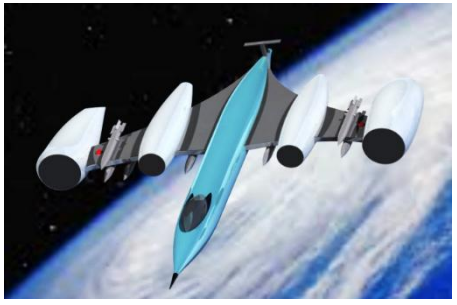

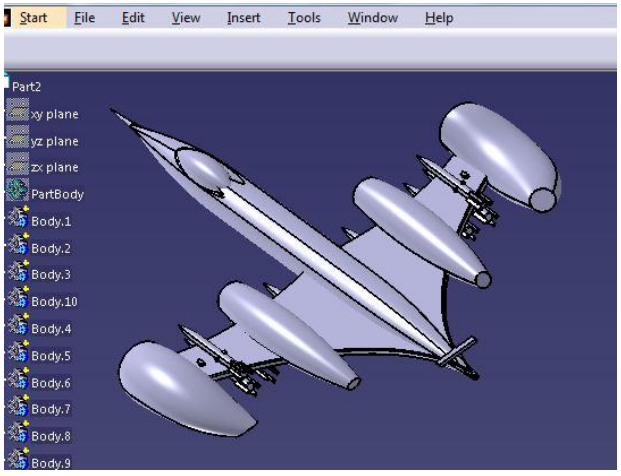

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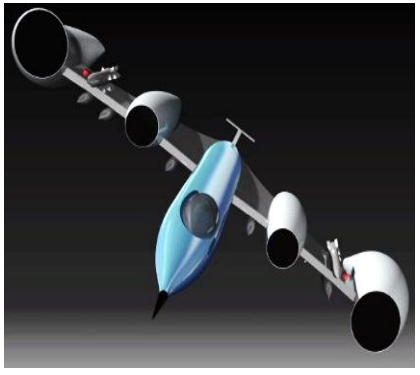

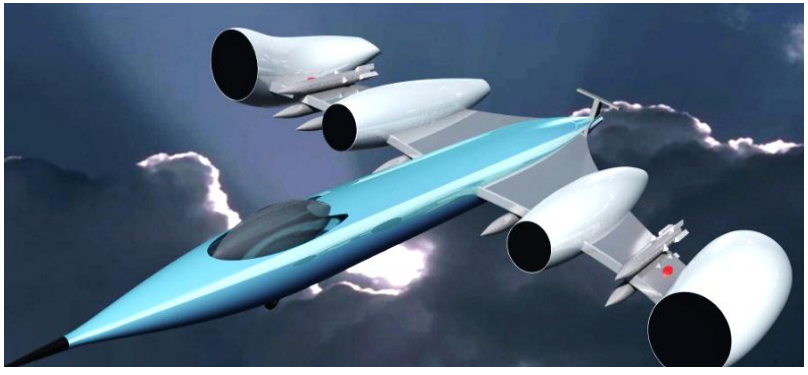

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“Never be satisfied with inaction. Question and redefine your purpose to attain progress”

Jeffrey K. Liker, The Toyota Way

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