





Design



World premiere of Toyota's new urban car: the iQ

Toyota is world-premiering the production design of the new iQ at the Geneva Motor Show. First shown as the Concept Car iQ at last year's Frankfurt Motor Show, the iQ will go into production during late 2008.

The new iQ is a sophisticated car, representing the ultimate refined urban mode of transportation. Thanks to its ingenious and revolutionary packaging it measures less than three metres in length, yet has a flexible interior space that allows up to three adults, plus a child or luggage to travel comfortably.

The name iQ is the best representation of what the car embodies. "i" stands for individuality, whilst at the same time also expressing "innovation" and "intelligence". "Q" stands for "quality" and also suggesting that its "cubic" stature gives a "cue" to new value and lifestyle.

The iQ delivers dynamism and stability despite its small size. It challenges conventional thinking through a design that is forward-looking, intelligent and energetic, while retaining clarity of purpose and function.

The marvel of the iQ's ingenuity is in its revolutionary packaging, which is the result of six space-saving but inter-linked engineering innovations that represent a break-through in Toyota's automotive vehicle development.

"The iQ story started a few years ago when we at Toyota began thinking of the environmental impact of automobiles. We came to the conclusion that, in order to ensure a sustainable future, there was a need for a radical change in vehicle packaging. We needed to create a break-through, away from the traditional belief that small is basic. Our answer to this is Toyota iQ," says Kazuo Okamoto, Executive Vice President, in charge of Research and Development at Toyota Motor Corporation.

The iQ is designed to cater for the needs of buyers who seek more than just urban mobility but demand space and refinement in an environmentally-friendly vehicle.



J-Factor design

The design of the new iQ has its origin in Japan with J-Factor influences at its core. Toyota explains J-Factor as that aspect of Japanese originality and quality that creates modern, attractive, and globally appealing products from the apparent disharmony and contradictory nature of its original components. Expressions such as 'small yet spacious', 'high-tech yet human' and 'emotional yet functional' are all examples of what Toyota calls J-Factor.

Although iQ is less than three metres in length, measuring 2,985mm precisely, it has a spacious interior. And while the ingenious packaging requires hi-tech solutions, the human appeal is in the requirement to meet intelligent urban transportation needs.

Drawing inspiration from J-Factor, Toyota has developed a unique design language called Vibrant Clarity. Vibrant Clarity is the key to answering the long-standing paradox of designing vehicles that are both energised and dynamic, but at the same time rational and ingenious. The word Vibrant represents a more forward-looking, vital nature that expresses the feeling of energy.





Clarity symbolises all that is fresh, clean and simple, stressing the rational aspect in the design equation - keeping the design crisp, the functionality intact and ensuring that the concept is easily understandable. This Vibrant Clarity design philosophy infuses cars with an emotional intensity that is uniquely identifiable as a Toyota.

The iQ contains three key elements of Vibrant Clarity design

Perfect imbalance of proportions: a simple and daring exterior with a strong contrast between the stable and robust stance provided by the iQ's width and the shortness of its overall length.

Integrated component architecture where each unit contributes to the overall design: the structure around the tyres forms part of the minimal front and rear overhangs, a synergy that conveys both strength and agility.

Freeform geometrics: the exterior surfaces are almost mathematical in their cleanliness and precision, but also possess movement and emotion to make the design fresh and contemporary.

Robust yet refined styling for the iQ's urban environment



The four wheels - placed at the extremities of each corner - give the iQ a self-assured 'super stance'. At just 2,985mm in length, but with a proportionally larger wheelbase of 2,000mm, the iQ is small in size, but unlike a small car possesses a confident on-road appearance.

The iQ's robustness is further enhanced by the tough-looking bumpers. Strong vertical lines define the rear view of the iQ, while the bold rear lamp lenses are divided into three segments by horizontal lines, which help underpin the iQ's strong presence. The iQ is fitted with 5-spoke 16-inch alloy wheels that confidently fill the bold wheel arches.

The exterior styling blends dynamism and stability: prominent crease lines define the high belt line while the V-line of the A-pillar creates tension across the wheel arches.

Smooth lines flow from the front bumpers, curve gracefully up through the front pillars to meet the roof and sweep back down towards the rear hatch where they are replaced by edgier, well-defined lines.

From a rear three-quarter perspective the creative tension continues. A seamless line runs from the edge of the roofline towards the B-pillar and curves around the deep rear glass area, before returning towards the rear hatch and then tailing off at the bold, geometrically-shaped wheel arches.

At the front of the car, smoked headlamp units are set deep into the bonnet and wings. Door mirrors with integrated turn indicators further reflect the iQ's refined urban appeal.



Techno-organic theme for interior styling

The 'on-the-edge' exterior styling is replicated in the iQ's refined interior architecture. By mathematically analysing and recreating the structural beauty of natural objects, Toyota has achieved a 'techno-organic' design which fuses geometric precision with inner beauty.

This is demonstrated in the floating 'V' centre console, which dominates the asymmetric dashboard. At the base of the V is a single dial that controls the functions of the air conditioning.

Situated within the arms of the V are cabin temperature controls with an LCD that displays airflow, twin face-level air vents and at the top a 5.8-inch colour touch screen satellite navigation display.

The V-design both separates and joins the two halves of the asymmetric dashboard design, while providing a visually appealing focus on the interior.



The steering wheel is flat-bottomed to provide the driver with greater legroom. Controls for audio are placed on the wheel to save space on the centre console and to offer a high-level of convenience for the driver.

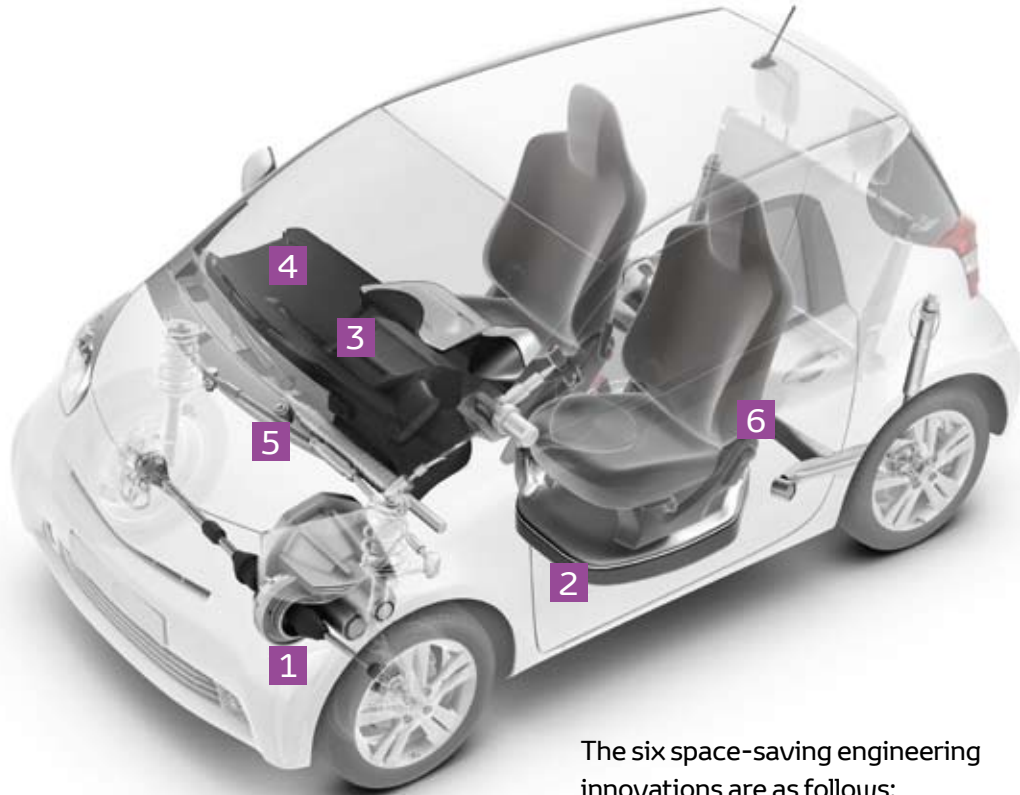
Other techno-organic features include matt silver door handles with flowing manta-ray styling. While the ultra slim seatbacks are formed in a stylish one-piece moulding that enhances the edgy feel of the iQ and assist in freeing up additional passenger space.

A secret tray is neatly concealed below the rear seat, again providing more storage for passengers without sacrificing the cabin space. For more luggage capacity the 50/50 split rear seats can be separately folded flat to increase the available load area.

The interior is finished in rich chocolate-plum colour, which contrasts with the matt silver of the techno-organic architecture to provide an environment of urban sophistication.



Technology



The six space-saving engineering innovations are as follows:

- 1 Differential
- 2 Flat under-floor fuel tank
- 3 Smaller heater/air conditioning unit
- 4 Asymmetric dashboard
- 5 Centre take-off steering gear
- 6 Slim seat design

Revolutionary engineering innovations create ingenious packaging solution

Creating more passenger space in such a compact vehicle was a key aim for Toyota's design team. The iQ's interior is surprisingly spacious. Six inter-linking engineering innovations are responsible for making this possible. Viewed together, these innovations represent a major milestone in Toyota's vehicle development.

To achieve such a milestone required a drastically changed mindset. The engineers had to reconsider the very locations of various vehicle components rather than simply re-designing parts to a smaller size.

The result is a true break-through in 'small yet spacious' packaging, which at the same time has been designed to meet the top 5-star safety rating of EURO NCAP.

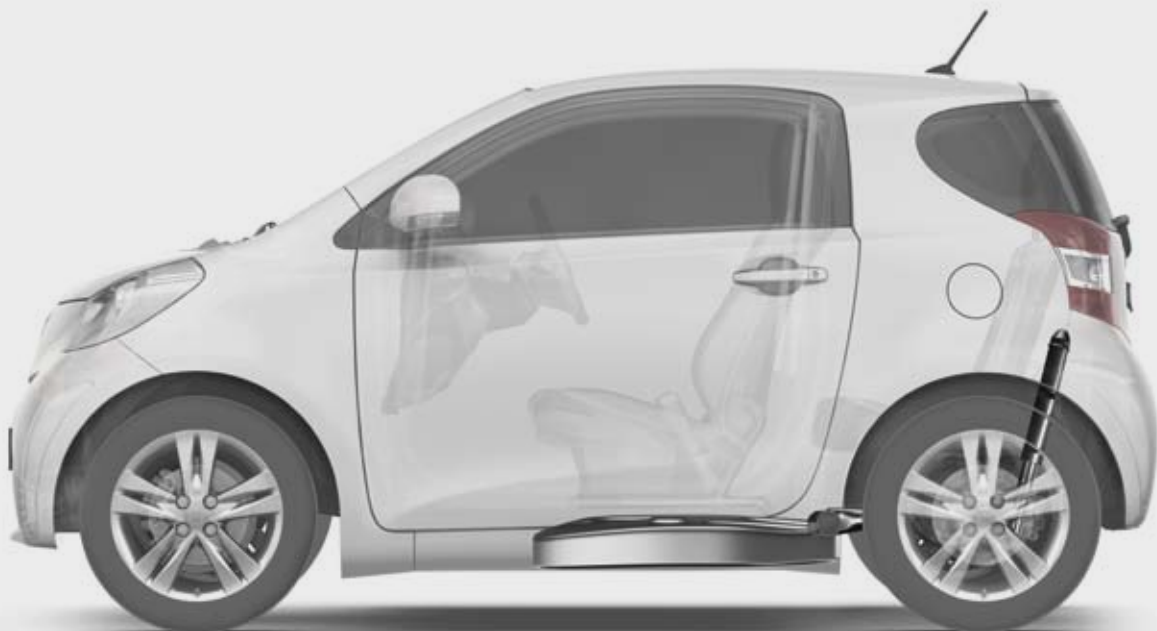
The new Toyota iQ measures 2,985mm in length and 1,500mm in height, but the car's compact ingenuity lies in its comparatively lengthy wheelbase of 2,000mm.



Newly developed differential saves engine compartment space

A newly developed differential allows the iQ to be built with short front overhangs, which result in a gain of over 100mm of additional length inside the passenger cabin area when compared to the B-segment Yaris.

Toyota's ingenious solution to the differential is 3-fold: the under-bonnet area is made more compact; the front wheels can be placed at the very corners of the car, which drastically shortens the front overhang; and the passenger compartment can be increased.



Flat under-floor fuel tank with rear-angled shock absorbers

The design of the flat under-floor fuel tank has allowed the development of shorter rear overhangs, which contribute to the reduction of the car's overall length.

Historically, a flat tank was considered difficult to engineer successfully because of the variance in fuel surface levels depending on the angle of the car.

However, persistent engineering efforts to downsize and find the optimal placement of functional parts have resulted in a flat fuel tank that creates significant space savings.



Smaller heater/ air conditioning unit saves space

Toyota engineers have managed to significantly reduce the size of the heater/air conditioning unit without sacrificing performance output.

As a result of the size reduction the passenger-side area of the asymmetric dashboard can be moved forward and towards the windscreen base freeing up additional cabin space.

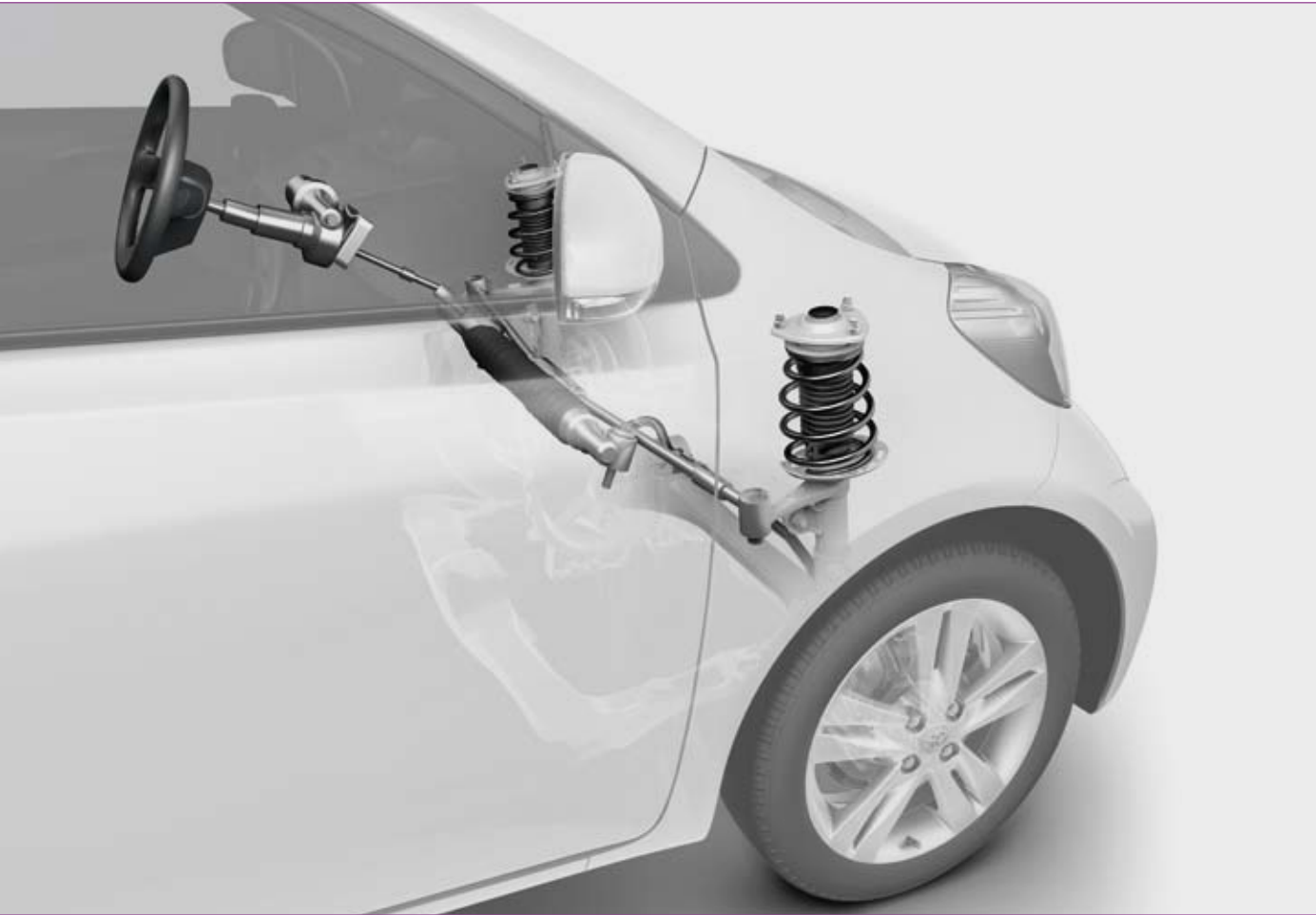


Asymmetric dashboard design and sliding seat configuration create more space

The iQ's innovative asymmetric dashboard was designed to open up the passenger area.

The pushed-forward and step-like structure of the dashboard provides sufficient space for the front passenger when the seat is set at its most forward position while comfortably accommodating an adult in the rear seat.

Combined with shoulder-to-shoulder distance between driver and passenger of a similar volume to a C-segment vehicle, the unique 3+1 seating configuration creates enough room for three adults and, in addition, either a child or luggage behind the driver.



Centre take-off steering gear for compactness

Toyota has employed a centre take-off steering gear and positioned it higher in the engine bay. The gear, engine and differential could then be repositioned creating the iQ's size-reduced front overhang.



Slim seat design for greater leg room

The slimness of the iQ seat backs release a further 40mm of rear passenger room at knee height so that rear passengers can sit more comfortably.

With an all-new frame structure and optimal adjustment of ancillary parts, the slimmer seat designs save space without sacrificing comfort.



New iQ drives Toyota's green aims with low emission engines

Toyota has been pioneering in the continual search to reduce the car's impact on the environment. Using technology as its cornerstone, Toyota has persistently sought new ideas and new inventions to make the car friendlier to the environment.

In addition to Toyota's ongoing Hybrid Synergy Drive® technology innovations, the expansion of its small car range is integral to reducing environmental impact.

The new iQ, together with the Urban Cruiser also premiered at Geneva, plays a key role in Toyota's drive to reduce emissions. Both cars are also an essential part of Toyota's challenge to support the Japanese Automobile Manufacturers Association's (JAMA) voluntary commitment of 140 grams per kilometre by 2009.

The iQ will have the choice of one of two petrol or one diesel engine. These engines - along with the compact design, low weight, and aerodynamic shape of the iQ - will contribute to outstanding fuel economy and exceptionally low CO₂ emissions, which are anticipated to start at around 100g/km.

Production commences in late 2008

Production of the iQ will commence during late 2008. In the first full year of production, Toyota expects to reach 100,000 units globally.

