



Toyota iQ: Six Degrees of Innovation

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Innovation No6: the Ultra-slim Seat Design

Toyota's guide to the interlinked engineering and design innovations in the remarkable new iQ city car concludes with details of its space-efficient slim seat design.

In its mission to build the world's first car to measure less than three metres long but with four seats inside, Toyota maximised every last millimetre of space.

Using a new differential design and a centre take-off gear allowed for a smaller engine bay and reduced the distance between the front of the bumper and the accelerator pedal, allowing for more room inside the cabin. And designing a flat, under-floor fuel tank gained valuable extra space behind the front seats. A smaller but no less efficient air conditioning unit freed up more legroom ahead of the front seat passenger and enabled a clever asymmetrical dashboard to be designed.

Completing this network of ingenious, connected packaging concepts, Toyota produced a new, ultra-slim design for the front seats. Their lean profile gives rear seat passengers an extra 40mm space at knee level, compared to conventional seats.

The seats are built on an all-new frame, with full adjustment of their separate parts to ensure that space is not gained at the cost of comfort. Their design also yields a weight-saving benefit of 1kg per seat.

In spite of its small dimensions, iQ is the fruit of some very big ideas in how to design and engineer small cars. Success in creating a vehicle that is less than three metres long, yet has space for four seats on board was made possible thanks to a series of six interlinked technical and packaging innovations, pioneering work that rewrites the rulebook on car design.

This is the final of six guides that have detailed iQ's interlinked technical and packaging innovations. The video below demonstrates these six innovations with a detailed animation.

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