

Design of Next-generation Environmental Vehicle CLARITY FUEL CELL, realizing Harmony between Vehicles and Society

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ABSTRACT

The new model CLARITY FUEL CELL is the third generation of the FCX fuel cell vehicle, which was the world's first fuel cell vehicle made available for lease. In addition to the world's highest level of environmental performance (zero emissions), the development of the new vehicle sought to realize both the aesthetic form and practicality of a sedan, and a sense of luxury.

The concept for the new package design was "BOLD & AERO PACKAGE", balancing a low total height for aerodynamic performance with a roomy interior space. Based on this vision, the concept for the exterior of the vehicle was "BOLD & AERO." For the exterior, the development realized an imposing body through the use of low and wide proportions combined with an advanced and aesthetic streamlined design. The concept for the interior was "Advanced Modern Lounge". The interior design realized harmony between advanced technology and a satisfying interior space. "FUTURE LUXURY" was set as the concept for the color and materials employed in the vehicle, expressing a new vision of luxury that redefines the image of environmental vehicles. These elements have realized a new level of commercial appeal for the CLARITY FUEL CELL.

1. Introduction

The goal for the development of the FCX CLARITY, announced in 2008 (the previous CLARITY model; Fig. 1), was to create a fuel cell system with a view toward mass production, and to promote diffusion of fuel cell systems in the market in a passenger vehicle in order to address environmental issues including air pollution, global warming, and the depletion of fossil fuels. The previous FCX CLARITY used a sedan design that revolutionized the

image of fuel cell vehicles (FCV) by positioning the fuel cell (FC) in the center console making it possible for the FCX CLARITY to seat four passengers.

The new CLARITY FUEL CELL (the new CLARITY) uses revolutionary package technologies to position a smaller FC stack under the front hood. This technology realizes a spacious and comfortable cabin that seats five passengers representing a major evolution against the preceding CLARITY.

It was considered that merely realizing environmental



Fig. 1 2008 model year FCX CLARITY

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Fig. 2 Grand concept

performance would not win customers over. It was necessary for the vehicle to also be appealing as a car. This appeal would result from a combination of beauty, dynamic performance, user-friendliness, and a body with an upper-middle sedan feel. It was felt that sedan styling that incorporated these goals would realize this appeal in the new CLARITY.

The grand concept born from this thinking was “Red Carpet to a New Era” (Fig. 2). It was considered that the fusion of outstanding environmental performance and the appeal of an upper-middle sedan would create new value. The design theme was to make this value match customer desires through a unique design.

2. Package Design

2.1. Package Concept

Two types of product value were pursued in order to give form to the grand concept in the new CLARITY’s package design.

The first of these was a body that would promote a sense of satisfaction and pride in ownership of an FCV. In order to not simply offer environmental performance but to also realize a product that was appealing as a car, it was considered necessary to achieve levels of style and comfort that would be seen as outstanding even when compared to an upper-middle sedan like the ACCORD.

The second type of value was the realization of the top driving range for an FCV. Because, as of 2016, the number of hydrogen stations remains limited compared to the number of gasoline stations, it is important to offer FCV owners an extended driving range for one filling. Designers sought to realize this value by boosting aerodynamic performance through the vehicle’s framework. “BOLD & AERO PACKAGE” (Fig. 3) was set as the package

concept balancing these two types of value. The aim was to create a next-generation FCV in which both the exterior and the interior fittings gave the sense of a BOLD body, and to balance this with high-efficiency aerodynamic performance.

2.2. Comfort and Sedan-like Overall Height

In order to give the new CLARITY’s body the feel of an upper-middle sedan, the vehicle was provided with an interior space able to comfortably seat five adults. In addition, in order to offer users the sense of a clear difference from a standard compact-class passenger vehicle with an upright posture, the goal was to realize a sedan-like posture and overall height.

To realize a five-passenger vehicle, the FC stack that had been positioned in the center console in the previous CLARITY was reduced in size and positioned under the front hood together with the Voltage Control Unit (VCU), concentrating the FC powertrain into a size similar to a V6 engine. With this change, the rear of the center console and the floor tunnel no longer impinged on the rear seats, making it possible to increase the number of passengers from four in the previous CLARITY to five in the new model. In addition, in order to create a comfortable space for five adults, the vehicle was given the same distance between the front and rear seats as the 2013 model year ACCORD and rear seat shoulder room of more than 1450 mm.

Next, in order to realize a sedan-like posture and overall height, the drive batteries were positioned in the space under the floor, and the floor area where passengers place their heels and the hip points of the front seats were lowered.

Design of the shape of the battery pack and the surrounding body framework helped to control the floor from protruding in height. Additionally, the gap between

the front seat frames and the floor was reduced making it possible to efficiently position the drive batteries in the space under the front seats, and the realization of a height difference of less than 265 mm between the passenger heel area and the front seat hip points. This made it possible to realize a sedan-like posture and an overall height of 1475 mm (Fig. 4). If the gap between the front seat frames and the floor was too small, rear passengers would not be able to place their feet under the front seats, reducing passenger comfort. Given this, volume was controlled by first shifting the position of the battery pack towards the front within a range that would make it possible to offer front seat passengers sufficient room to draw their feet back, and secondly by taking the positions of the rear passengers' toes into consideration in the shapes of the battery pack and the lower sections of the front seats. Further, rear seat comfort was balanced with a low front-seat posture by shifting the rear heater duct, conventionally positioned

under the floor beneath the front seats, towards the center console.

2.3. High-deck Sedan Framework

In order to realize the top driving range for an FCV, designers aimed to boost aerodynamic performance from a basic framework. A distinctive high-deck sedan framework, in which the lid of the trunk is in a high position, was adopted in order to balance comfortable passenger space with a smooth, spindle-shaped silhouette effective in boosting aerodynamic performance. This high-deck sedan framework made it possible to realize sufficient head clearance despite the adoption of a spindle-shaped roof design with the rear windshield at a stronger slant than in a conventional sedan.

In addition, the layout for the new CLARITY positions a small high-pressure hydrogen tank under the rear seats and a large high-pressure hydrogen tank under the floor

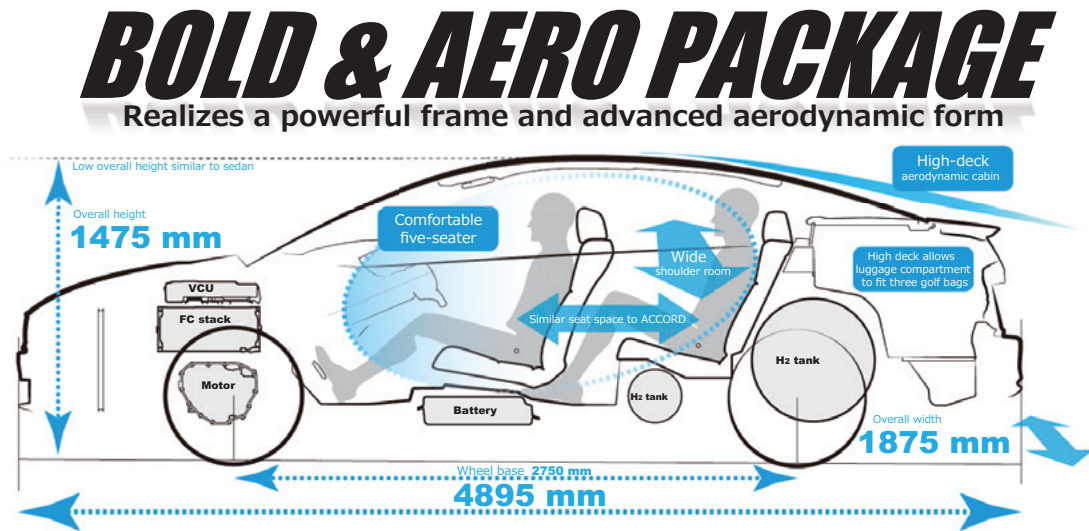


Fig. 3 Image of package concept (North American model)

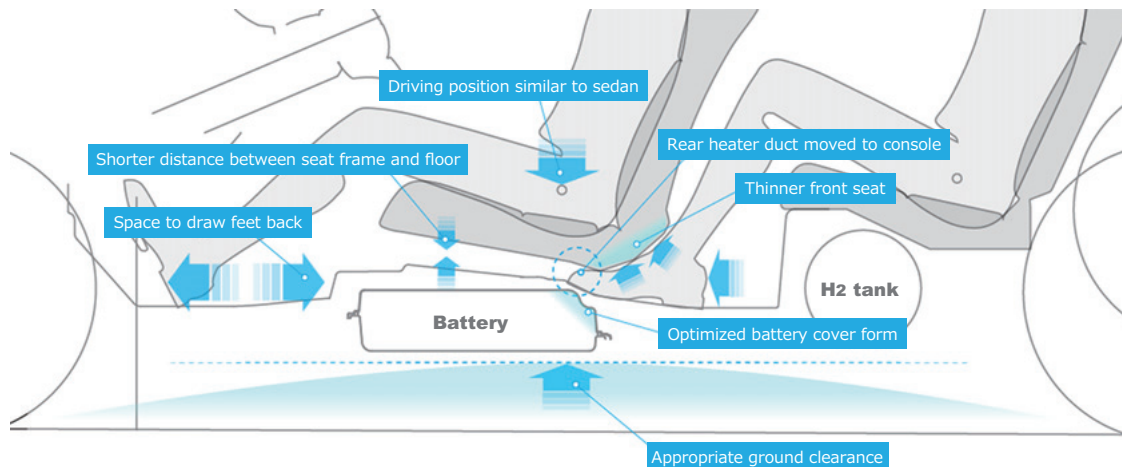


Fig. 4 Details of battery and floor layout

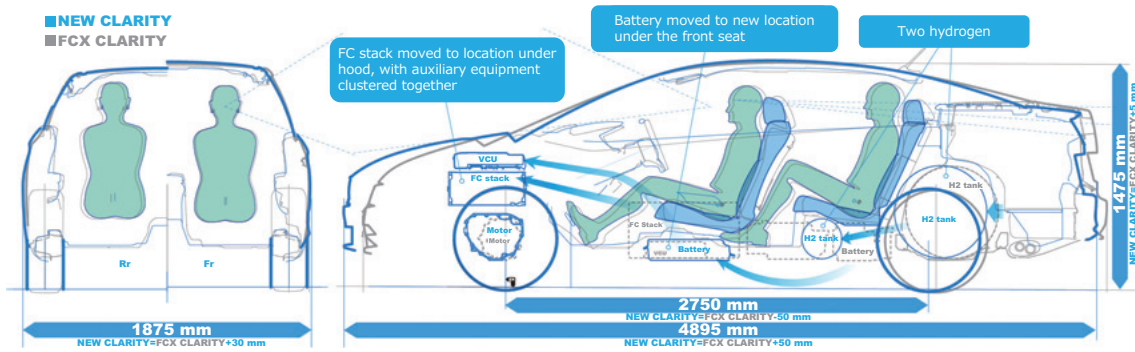


Fig. 5 Comparison of CLARITY package layout

of the trunk. The hydrogen pressure of the tanks has been increased to 70 MPa, increasing hydrogen storage volume by 33% against the previous CLARITY. In a conventional sedan framework, trunk space is dramatically reduced, but the adoption of a high-deck sedan framework has increased the volume of the trunk space vertically making it possible to realize a trunk opening with large vertical dimensions.

These innovations have made it possible to increase hydrogen storage volume against the previous CLARITY while realizing a trunk space able to hold three 9.5-inch (diameter) golf bags or two 29-inch suitcases (Fig. 5).

2.4. Balancing Aerodynamic Performance and Rear Field of Vision

Designers considered means of helping to prevent the trunk lid, which was elevated as a result of the adoption of the high-deck sedan framework, from impeding the rear field of vision. In the new CLARITY, two small extra windows have been positioned behind the rear seat back and in the trunk lid to aid visibility in the rear downward

direction. The position and shape of the rear spoiler were optimized in order to reduce the blind spot between the rear windshield and the extra windows against the previous CLARITY, which used the same extra window configuration. In order to also increase diagonal rear visibility, a six-light configuration was employed featuring a rear quarter-window that is a new addition against the previous CLARITY. These measures not only increased the rear field of vision, but also contributed to allowing more light into the cabin creating a bright and open cabin that feels more spacious and comfortable than its dimensions would suggest.

3. Exterior Design

3.1. Concept

The concept for the exterior of the new CLARITY was “BOLD & AERO.” The design sought to realize an imposing sedan form and advanced and aesthetic aerodynamic styling (Fig. 6).



Fig. 6 Exterior design concept

3.2. Elegant Cabin and Powerful Body

In order to achieve an advanced and aesthetic design while realizing the space that would make the vehicle the first FC sedan to seat five people and maintaining an adequate field of vision, the design of the cabin featured a sleek, coupe-like silhouette. In addition, a spacious and advanced design with the feel of a glass canopy was realized by enlarging the rear quarter-window and blacking out the pillars and the roof. Emphasizing the curvature of the windows close to the B pillar in the plan view from above and extending the curvature outwards made it possible to realize an aesthetic and well-shaped cabin form (Fig. 7).

To actualize an imposing sedan form at the sides of the vehicle, forms with extensive modulations were adopted, and the 18-inch wheels present a sporty feel for an environmentally conscious vehicle. At the rear, the bracing of the package's high deck with a large spoiler has created a sharp and powerful body.

The combination of an elegant cabin and a powerful body realized in this way formed the basis for the design of a new era FC sedan (Fig. 8).

3.3. Framework and Detailing for Increased Aerodynamic Performance

Because driving range is an important issue for FCV vehicles, boosting aerodynamic performance through exterior design is an important factor in their design. Sedans normally display good aerodynamics, but designers sought to boost aerodynamic performance to an even greater extent in the new CLARITY, therefore the framework was

designed to optimize aerodynamics from the initial stage of the development.

In normal sedans, turbulence is generated at points where vertical eddies produced by the A pillars strike eddies at the C pillars at the rear, and the resulting induced drag causes aerodynamic performance to decline. In the new CLARITY, the position and the inclination of the A pillars, the curvature of the surfaces of the pillars, and the difference in level between the pillars and the windows were taken into consideration in order to reduce the occurrence of eddies at the A pillars. Eddies at the C pillars have also been reduced by setting the rear windows close to the C pillars further in and narrowing them to a greater extent than they would be in a standard sedan, while also shifting the lower ends of the C pillars towards the rear. In addition, induced aerodynamic drag was greatly reduced through the styling from the sides of the vehicle to the rear spoiler. This helped ensure that eddies at the C pillars flow to the rear without wrapping around the upper section of the vehicle. The application of these measures produced a framework possessing a high level of aerodynamic potential (Fig. 9).

The design of the details sought to further draw out the aerodynamic potential of the basic framework.

Air curtains fitted to the lower part of the front bumper and the rear of the rear doors were effective in controlling turbulence produced by the tires. The rear door air curtains in particular represented an experiment that had never

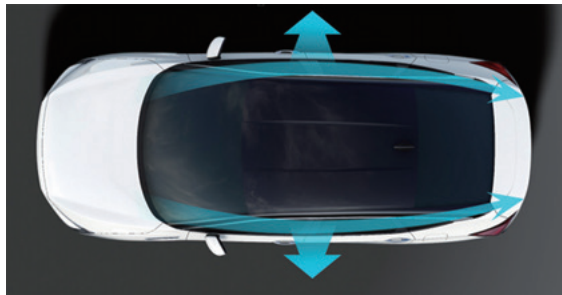


Fig. 7 Top view of exterior design

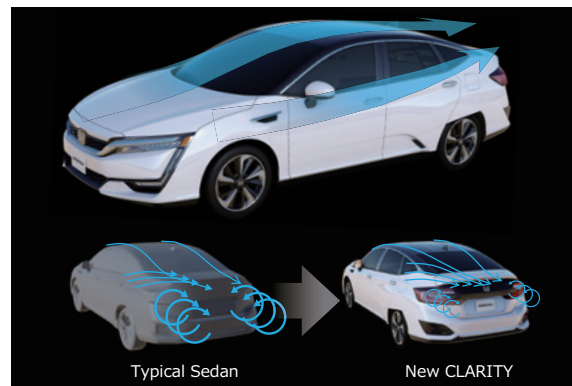


Fig. 9 Image of aerodynamic styling performance

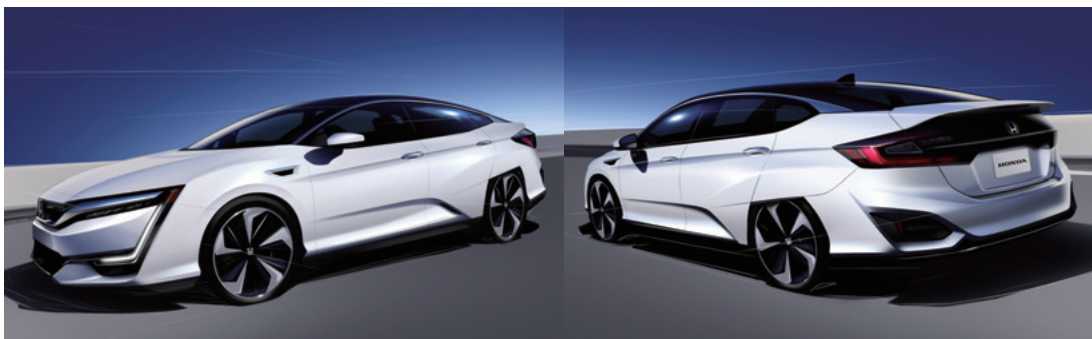


Fig. 8 Exterior design sketch

before been applied to a sedan. A normal sedan features an outer panel on the body between the rear edges of the rear doors and the tire housing, but this structure does not serve an aerodynamic function. In the new CLARITY, the rear doors extend to the front section of the rear wheel housing, and tunnel-shaped plastic parts (Fig. 10) have been attached in this area. Air introduced through these rear door tunnels passes over the outer sides of the rear tires thus controlling turbulence produced by the tires (Fig. 11).

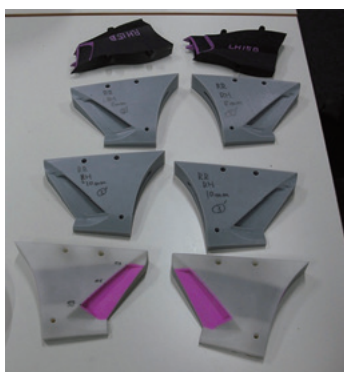


Fig. 10 Study of air curtains

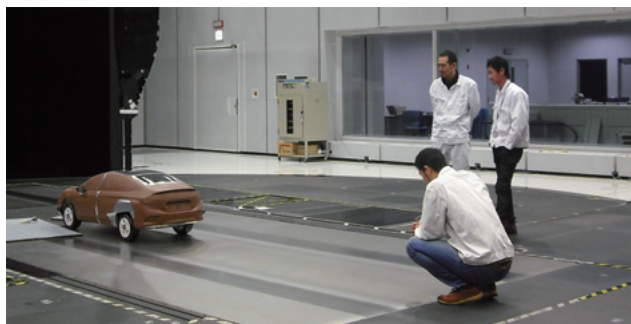


Fig. 11 Wind tunnel experiment

Tire covers on the upper sections of the rear tires represent a distinctive design feature on the sides of the new CLARITY. It would have been possible to achieve a major increase in aerodynamic performance by completely covering the rear tires. However, this would have reduced the track width, making the vehicle appear less robust from the rear. This and other considerations resulted in the adoption of a method not employed in normal sedans. The new CLARITY's use of the side outer panels to cover only the upper sections and fronts of the tires is a most effective means of controlling turbulence from the rear tires without the use of a rear cover while maintaining a wide tread (Fig. 12).

For the new CLARITY, from the design of the overall shape of the body to the detail parts, designers would first create the basic shape. Aerodynamics engineers followed by running simulations (using computational fluid dynamics: CFD) in order to study directions for increasing aerodynamic performance. The results of these simulations were reflected in clay models which were tested in model wind tunnels. The repetition of this process enabled a design displaying a high level of aerodynamic performance with a driving range of approximately 750 km per filling (reference value) (Fig. 13).



Fig. 13 Mass production model

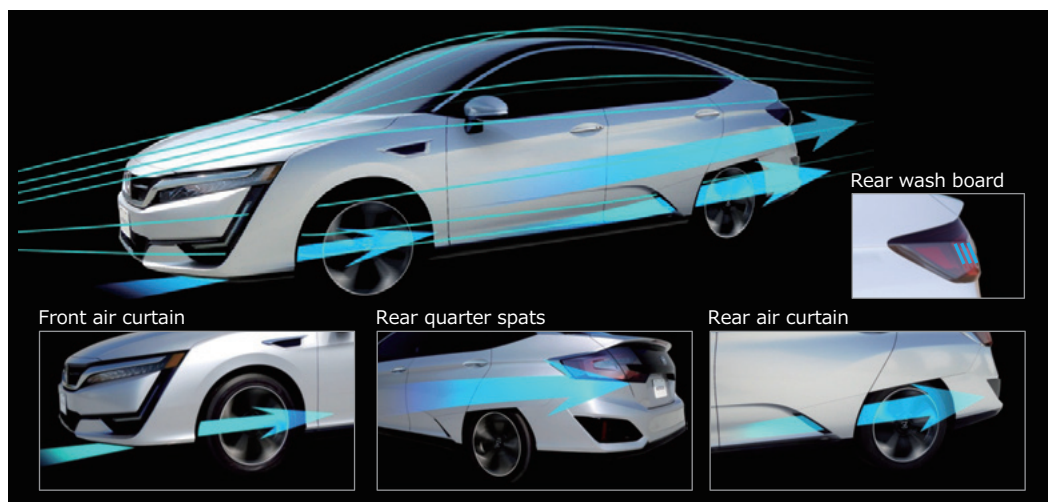


Fig. 12 Aerodynamic features

3.4. Advanced Front Face and Rear Combination Lamps that Prioritize Aesthetics

The front face of the new CLARITY is an expression of Honda's SOLID WING FACE (Fig. 14), the company's characteristic front design using the latest technologies.

The end of the front hood wraps around the front grille at an acute angle, and a low, sharp nose is realized by pushing down the central section of the chrome garnish molding. In addition, the grille and the chrome garnish molding of the inner section of the headlights are continuously connected, and thin full-LED turn signals and in-line high and low beam lamps have been positioned above and below, producing a wide front expression and giving the vehicle a sense of advancement (Fig. 15). Daytime Running Lights (DRL) extending from the headlights to the lower section of the bumper in a large L-shaped configuration not only produce a distinctive appearance, but also represent a design proceeding from considerations of safety helping to ensure vehicle awareness from a distance even during the day.

The rear combination lamps are integrated with the extra windows carried over from the previous CLARITY, creating a distinctive design with a sense of width and unity. The design prioritized good visibility, and the beauty of the lights when lit which have an external appearance suggesting lumps of glass. This is realized through the use of inner lenses of greater-than-normal thickness to reflect indirect light (Fig. 16).

3.5. Hybrid Wheels fusing Function and Design

In order for the new CLARITY to achieve an imposing sedan body it has been fitted with 18-inch wheels, two inches larger than the wheels used for the previous CLARITY.

It is standard practice for environmental vehicles to reduce the area of the wheel opening, increasing

aerodynamic performance, and to use low-diameter dish-type wheels in order to reduce weight and contribute to an increased driving range. However, because electric vehicles do not use engine brake mechanisms, cooling of the brakes becomes an issue when descending a continuous slope, making it necessary to increase the size of the wheel opening. The task in the case of the new CLARITY was to balance weight reduction, cooling performance, and aerodynamic performance while using large-diameter wheels. The use of aluminium wheels and large wheel openings reduced weight and increased cooling performance, while the use of plastic covers boosted aerodynamic performance. The result was a hybrid wheel with an advanced design (Fig. 17).

The shapes of the base aluminium wheel needed to ensure sufficient strength for the weight of the vehicle with a low wheel weight. Design efforts were restricted to the area that would not be hidden by the plastic cover thus reducing the amount of aluminium demanded by the design.

CFD was applied to the plastic covers (Fig. 18) enabling a design that blocked the flow of air into the wheels and helping to ensure an opening for the discharge of heat in the direction of rotation, while also balancing aerodynamic performance and cooling performance.



Fig. 14 Honda Solid wing face image

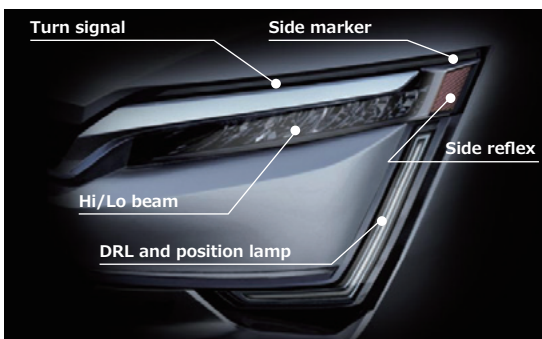


Fig. 15 Full LED head light

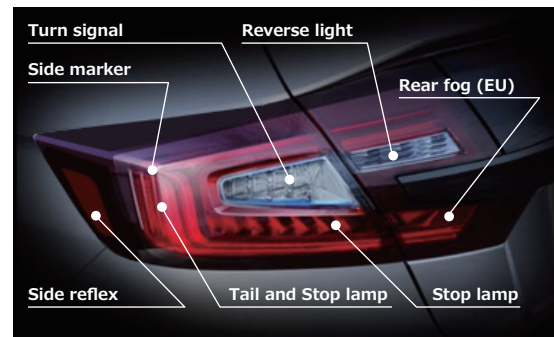


Fig. 16 Rear combination lamp

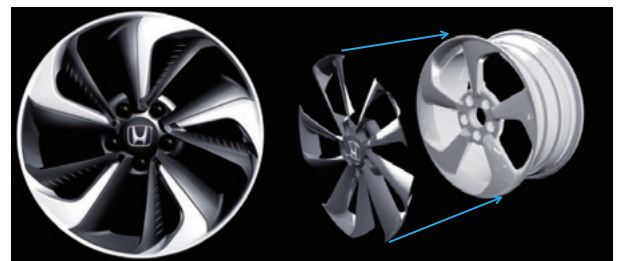


Fig. 17 Hybrid wheel

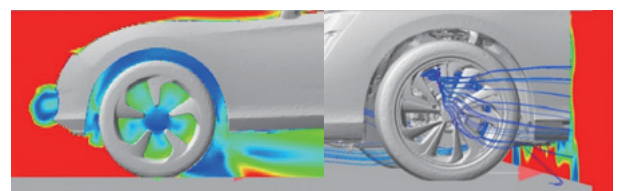


Fig. 18 CFD air flow simulation

4. Interior Design

4.1. Concept

The interior design concept for the new CLARITY was “Advanced Modern Lounge” (Fig. 19). This concept brought advanced interfaces based on Honda’s design concept of instantaneous recognition and intuitive operation into harmony with a space featuring materials that appeal to the senses to create a satisfying interior space.

4.2. Creation of a Relaxing Space

In order to create a satisfying and relaxing space, a horizontal from the center of the instrument panel to the doors was formed with a focus on realizing a free and unconstrained left to right sweep. In addition, the use of a difference in level from front to rear creates a sense of depth producing a cabin that feels more spacious than its dimensions would suggest.

Soft padding is used on the instrument panel and the upper door trims to create a pleasing texture. The use of warm materials and high-quality, carefully sewn, soft and pleasantly textured materials in areas that passengers

constantly touch and see has created a comfortable space that resonates with the feelings (Fig. 20).

The step between the front and rear of the instrument panel (Fig. 21) also plays an important role in the composition of the cabin space. If the dimensions of the lower level in the depth direction were too small, it would create a narrow impression. If they were too large, it would create a sense of space, but it would not be possible to reach the knobs of the air conditioner outlets, impeding

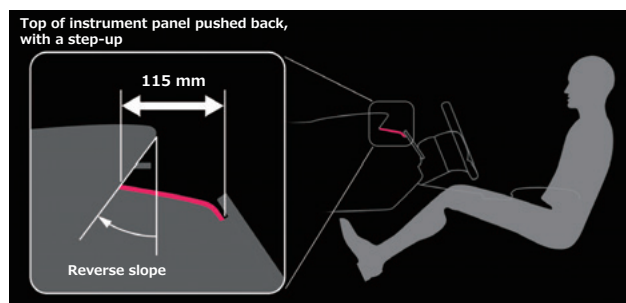


Fig. 21 Instrument panel design

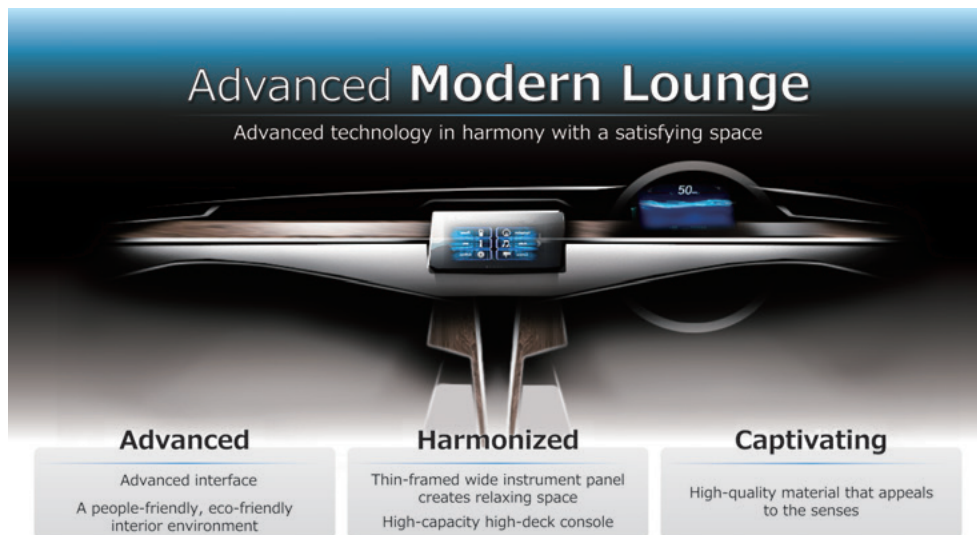


Fig. 19 Interior design concept

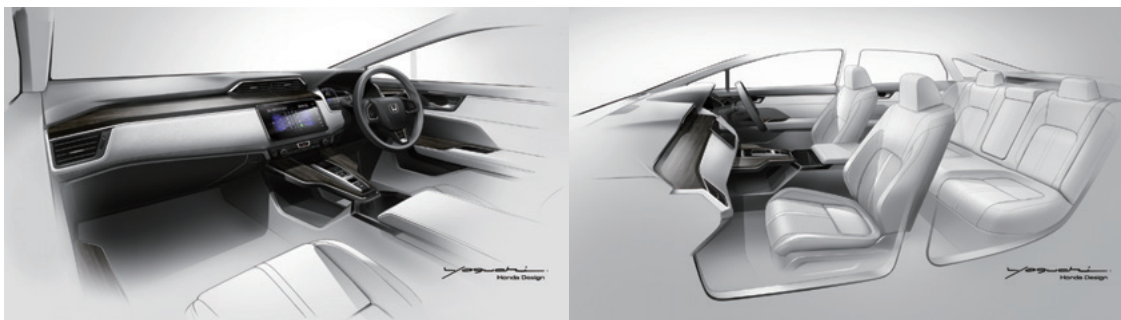


Fig. 20 Interior design sketch

functionality. It was decided that the use of a reverse slope based on these considerations would maintain the knobs within reach, while also extending the lower section forwards. Tests using clay models and package models led to the conclusion that a depth of 115 mm would be the optimal dimension to create a sense of spaciousness while allowing users to reach the knobs of the air conditioning outlets.

High-backed seats that passengers could relax their bodies into, but that would also firmly hold them, were adopted for the new CLARITY. This design helps to ensure that the seat back supports the passenger from shoulders to back, offering a sense of security and making it possible to sit for long periods with a stable posture. The design also used a shape that narrows at the top thus giving consideration to rear seat passengers by helping to prevent them from feeling crowded, and attempt to ensure that the shoulder section of the seat back did not obstruct their view of the center panel from a sitting position (Fig. 22).

4.3. Functional Sedan Console

The layout of the previous CLARITY positioned the FC stack in the center console. In the new CLARITY, revolutionary package technologies have made it possible to reposition the FC stack under the front hood. The use of a high-deck console was proposed in order to effectively utilize the space in which the FC stack was previously positioned (Fig. 23).

Positioning the miniaturized switch-type shift-by-wire (SBW) and electric parking brake (EPB) at a height that made them easy to operate freed up the lower section as a utility space. The design allows vehicle users a convenient

space to place smartphones or tablets for charging, and the tray in the lower section can be accessed from a sitting position. This area also doubles as a wrist-rest to aid in smooth operation of the air conditioning while driving, offering a new level of ease of use that responds to user needs.

4.4. Advanced Interfaces

The new CLARITY features Honda's latest interface devices, based on the design concept of instantaneous recognition and intuitive operation, creating an environment that allows the driver to concentrate on driving (Fig. 24).

The meter design positions a large liquid crystal display capable of presenting an array of information in the center of the instrument panel. This interface organizes and displays information using simple graphics and colors.

The fuel cell power monitor (Fig. 25) provides an intuitive visual representation of the amount of hydrogen consumption through the expansion and contraction of a



Fig. 24 Interface design

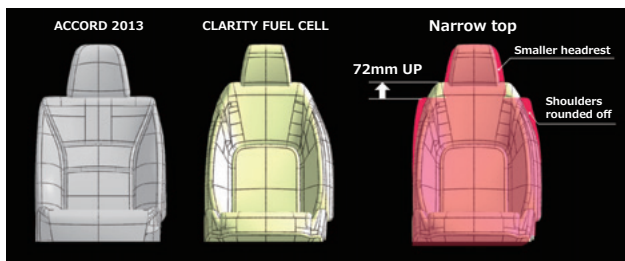


Fig. 22 Front seat design

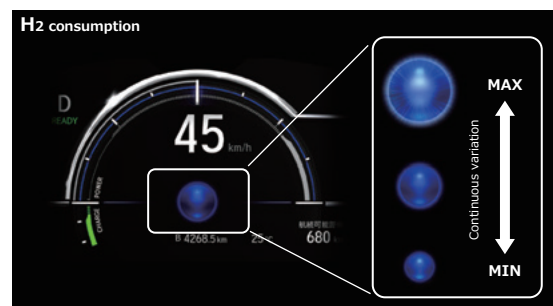


Fig. 25 Fuel cell power monitor



Fig. 23 Console design (Mock-up model)

blue ball. The power/charge indicator (Fig. 26), presented in the form of an arc, displays total power output and regeneration at the same time as indicating the power source being used for vehicle operation. The graphic display has been designed to make it possible to instantly read off the constantly changing system status via the movement of a needle.

Surrounding the displays with a silver frame isolates and organizes their information and increases their visibility. The frame design emphasizes the margin between the remaining hydrogen indicator and the frame (Fig. 27) providing instant awareness of the remaining amount of hydrogen.

4.5. Forms that Use Materials to Their Fullest Extent

Conventional vehicle interior design has tended to involve the decoration of forms. Today, with the evolution of element technologies, it is possible to realize design

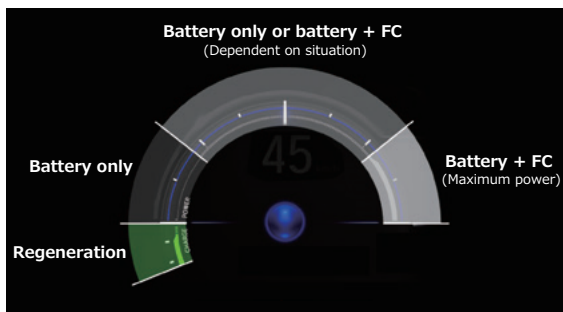


Fig. 26 Power/charge indicator

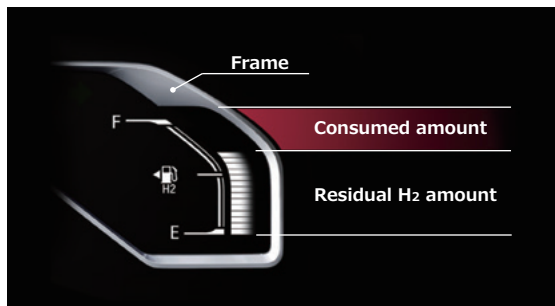


Fig. 27 Display integrated with frame and indicator

expressions that would not have been possible using existing materials. However, decorating forms in unnatural ways creates the risk of negatively affecting the feel of the interior.

The design for the new CLARITY placed the priority on forms emerging naturally from the materials themselves. For example, parts coated in silver were given hard forms to suggest that they had been cut from metal. The forms of wood grain panels were created with consideration of techniques similar to those employed for wood veneers in which thin strips of wood are cut and applied to a base. Close attention to the characteristics and methods of creation of the materials has heightened the feel of the interior enabling realization of the interior concept: A satisfying interior space (Fig. 28).

5. Color Design

5.1. Concept

The goal of color design for the new CLARITY was to balance environmental consciousness with a sense of high quality as a sedan that promoted pride of ownership. Departing from the conventional concept of environmental vehicles and sedans, which each embodied just one of these qualities, it was felt that a vehicle possessing both qualities would create luxurious value for a new era. The design concept was therefore set as "FUTURE LUXURY."

5.2. Exterior Colors

The new CLARITY is offered in a three-color lineup (Fig. 29).

The new color PREMIUM BRILLIANT GARNET



Fig. 29 Color lineup



Fig. 28 Mass production model

M., a highly appealing color that attracts attention, creates feelings of exhilaration and pride of ownership.

WHITE ORCHID P. is a clean and progressive color that highlights the sense of the new CLARITY as a vehicle of the future.

CRYSTAL BLACK P. suits the vehicle to formal occasions and is a color that combines a sense of high quality with a feeling of calm.

Each of these body colors has its individual place, and each powerfully emphasizes the image of the new CLARITY.

5.2.1. New PREMIUM BRILLIANT GARNET M.

The color STAR GARNET M., used on the previous CLARITY, changed the image of environmentally conscious vehicles by creating a feeling of luxury. This concept was carried over to the new CLARITY, but designers sought to more strongly emphasize the beauty of the vehicle's shapes by increasing the feeling of shading. For its top coat, the newly developed color PREMIUM BRILLIANT GARNET M. employs a high-dispersion, red-pigmented semi-transparent coat, producing a vivid color and strong shading (Fig. 30). The realization of a color that appears more vivid in the highlighted areas struck by the light and produces a feeling of depth and calm in the shaded areas gives the vehicle a sense of solidity and three-dimensionality. As the name BRILLIANT GARNET suggests, this is an evolution to a color that shines from the inside like a raw gemstone polished into a jewel.

5.3. Interior Colors

The goal for the interior color design was to create a comfortable and harmonious space. The coordination between colors and materials was defined from the initial stage of design resulting in highly refined interior fittings.

The new CLARITY offers two choices of interior color: A chic and luxurious black, and a progressive and glamorous platinum grey (Fig. 31). In each case, monotones are coordinated in order to make the simple forms stand out to greater effect.

5.4. Materials that Consider the Environment

Environmentally conscious materials were actively

employed in the new CLARITY. Materials were developed for the vehicle that would offer a rich texture and a sense of quality despite being recycled or derived from plants.

The roof lining and the floor mat employ plant-derived polyester thread made from the residue produced by crushing sugarcane. This thread is used as the lining of the synthetic leather employed for the seats and armrests (Fig. 32).

The material employed on the instrument panel and the mid-sections of the door pads, distinctive features of the interior, is an artificial suede leather produced using recycled polyester (Fig. 33). Soft and pleasant to the touch

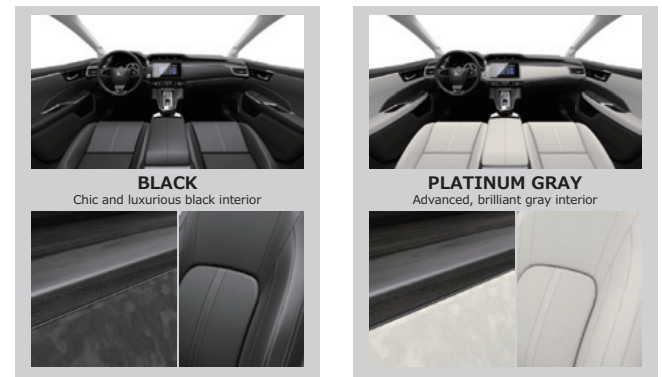


Fig. 31 Interior color and material coordination

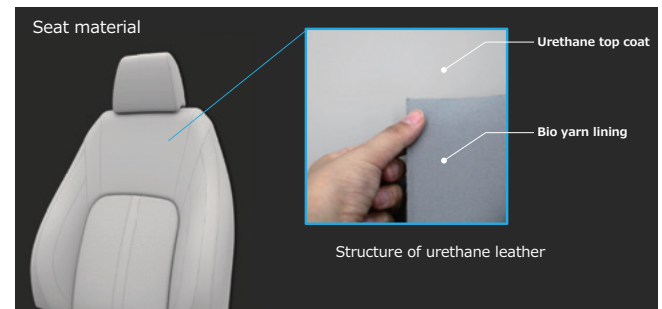


Fig. 32 Seat materials

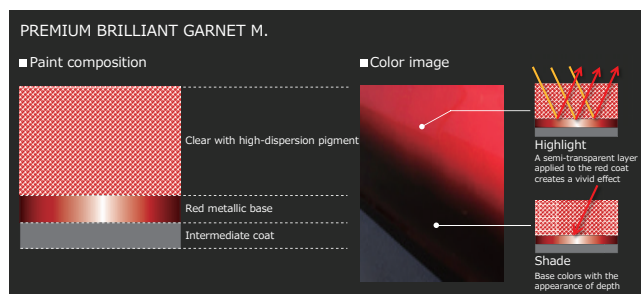


Fig. 30 Paint composition



Fig. 33 Artificial suede leather

while suggesting warmth and high quality, the use of this material on broad areas of the interior contributes to the sense of enveloping comfort.

5.5. Realization of High-quality Sedan Interior

The interior design of the new CLARITY sought to realize the high-quality finish and detailing of a sedan while using environmentally conscious materials. Decorative wood grain patterns were produced by gravure printing rosewood grain (a wood known for its use in furniture and musical instruments) on a base. The calm and fluctuating rosewood grain pattern creates a high-quality and luxurious impression. The reproduction of the feel of wood grain (creating an impression of convexities and concavities) offers a sense of the warmth of wood to the touch despite the fact that the material is a film. Decorative silver pin striping at the ends of these parts coordinate with the wood grain to make it stand out all the more effectively (Fig. 34).

A single color is used for the seats in order to make them appear spacious and inviting like a roomy sofa. Looking closely, passengers will be aware of intricate patterning and stitching down to the finest details, in addition to the use of center accents, for a finish suggesting high-quality tailoring.

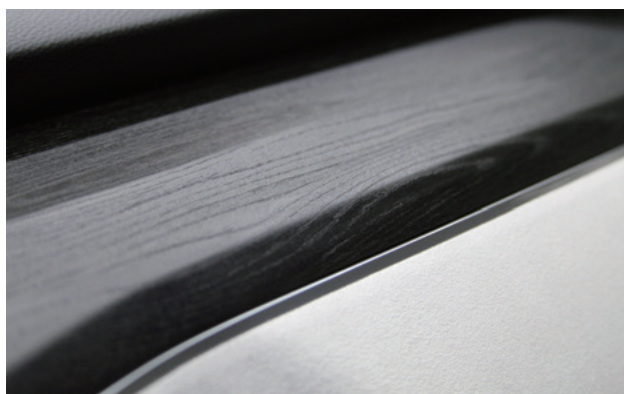


Fig. 34 Wood film panel

6. Conclusion

The design of the next-generation environmental vehicle CLARITY not only realized aerodynamic performance from the foundational level of the framework in addition to environmental performance, but also achieved a presence, practicality, and sense of quality that will make the vehicle an FCV that delights customers.

With a focus on achieving the comfort and practicality demanded from an upper-middle sedan, the design succeeded in realizing space for five passengers and a level of user-friendliness comparable to that of the Accord, despite the employment of different mechanisms to an internal combustion engine vehicle. In order to realize an imposing framework, vehicle height was kept low despite

the positioning of the batteries under the floor, producing an aesthetic low and wide form. In addition, the increased aerodynamic performance ensured by the streamlining of the cabin, the use of a high deck, and the fitting of air curtains to the front and rear wheels has further emphasized the individuality of the new CLARITY.

The interior achieves the quietness and smoothness that characterize FCV while also offering a roomy and relaxing space. Carefully chosen high-quality interior materials are pleasant to the touch and appeal to the senses while being derived from plants, thus reducing environmental impact. The warm and relaxed interior space will make users wish to continue driving forever.

The promotion of more widespread use of an FC vehicle like the new CLARITY necessitated a level of driving pleasure and enjoyment that appealed to the senses and the feelings in a way that could not be expressed in numbers. In order to make Honda's company goal of a sustainable society a reality, it will be necessary to increase the appeal of products to customers through design. Honda is confident that the new CLARITY will contribute to society and respond to the demands of customers through its fusion of environmental technologies and design.

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