**Rolls-Royce**

## Media Information

**ROLLS-ROYCE ARCHITECTURE**

When developing the latest generation of pinnacle luxury products, Rolls-Royce’s Bespoke Collective of designers, engineers and craftspeople demanded the freedom to create products on their own terms: to continue defining true luxury without expecting a single component to deliver an experience it was not intended to.

Rolls-Royce’s proprietary spaceframe chassis architecture met these demands. Its flexibility and, most importantly, scalability, freed designers to serve the aesthetic demands required to create pinnacle luxury motor cars, allowing them to proportion key areas such as the dashboard-to-axle ratio and front and rear overhangs on their own terms. They were set free from the confines of existing production platforms. Additionally, its aluminium construction delivered engineers and craftspeople an acoustically superior, rigid canvas onto which they would create new benchmarks in the experience of luxury mobility.

These quantum leaps were made with one purpose: to better service the most demanding consumer group in the world; the Rolls-Royce client.

**Developed for luxury**

Sir Henry Royce began his automotive career by building an improved version of a 10hp two-cylinder Decauville – the first car he bought when his eponymous electrical company found success. When Charles Rolls first encountered, and ultimately drove Royce’s machine, he knew immediately that he had found a British car that could outshine any Continental competition. He agreed to sell all of the cars that Royce could build.

In the first two years of the marque’s existence, Rolls-Royce produced ten cars. In 2019, the company delivered 5,152, the highest annual total in its history, to customers in over 50 countries. Rolls-Royce has innovated for almost a century to set the benchmark and satisfy the most discerning patrons of luxury. At the heart of its latest innovations is the Rolls-Royce Architecture.  
  
Rolls-Royce announced the development of the new aluminium spaceframe in 2015. Eschewing the received wisdom of the mainstream automotive industry, this decision represented a departure from the notion of mass brands sharing a platform with one basic set of underpinnings from which they would create numerous models. Furthermore, it revolutionised the super-luxury motor car as we know it, allowing an unerring focus on the creation of the most luxurious and silent means of travel in the world.

Rolls-Royce Architecture, also known as the Architecture of Luxury, defines the next generation of Rolls-Royce motor cars, enabling them to deliver incomparable ride quality, acoustic characteristics, passenger comfort, exterior presence, and interior space. The platform comprises an aluminium spaceframe that can be scaled and adapted for a diverse range of luxury products.

**Visionary Engineering**Rolls-Royce Architecture has been designed and engineered from the ground up to be scalable for a range of different Rolls-Royce models. Additionally, its innate flexibility means it can be adapted from one model to the next to accommodate a range of different power and drivetrain layouts.

It is simplest to understand Rolls-Royce Architecture as four fixed points at each corner of the motor car. The distance between these points is defined at the discretion of the marque’s designers and engineers: bulkhead, floor, crossmember and sill panels are all able to be stretched and shrunk to accommodate the product, be it a Phantom, Cullinan or highly Bespoke Coachbuilt commission.

Aluminium was selected for Rolls-Royce Architecture due to its lightweight qualities and higher acoustic impedance compared with steel, reducing external noise entering the cabin. Its construction further optimises the material’s acoustic properties, with engineers eschewing traditional methods; instead introducing extrusions and complex internal structures to both improve the rigidity of the motor car and eliminate flat, resonant surfaces.

The largest ever cast aluminium joints in a body-in-white, combined with double-skinned bulkhead and floor sections, better insulates sound. This delivers two key benefits: the isolation of external noise and the optimisation of sound characteristics inside the cabin.

Engineers are also able to ‘tune’ the acoustic performance of Rolls-Royce’s famed proprietary Bespoke Audio system at the architectural stage. Exceptional low frequency performance is engineered into the very fabric of modern Rolls-Royces as the architecture incorporates a resonance chamber built into the body’s sill section; the frequency response of the Bespoke Audio speaker component, which varies from model to model, defines the chamber’s size and shape. In essence, the motor car itself is a mighty subwoofer.

**Uncompromising, unrivalled luxury**

While a global testing programme of motor cars underpinned by the marque’s architecture began in 2014, Rolls-Royce’s proprietary spaceframe did not feature in a production model until 2017 with the launch of the eighth-generation Rolls-Royce Phantom. This motor car was met with critical acclaim and continues to be defined by the marque’s clients, as well as experts in the media, as ‘the best car in the world’.

Demonstrating the flexibility of Rolls-Royce Architecture, it was adapted for heavy all-terrain use and applied to Rolls-Royce’s transformative SUV, Cullinan. The component parts of the base architecture were reconfigured into a spaceframe that was higher and shorter with minimal overhangs to aid with steep departure and approach angles. Additionally, engineers would benefit from its exceptional body stiffness to improve traction and handling on rough terrain while offering the remarkable on- and off-road ride comfort expected by the marque’s clients.

Rolls-Royce Architecture allowed the design team to imbue Cullinan with proportions that are faithful to the marque’s aesthetic pedigree. They were also able to deploy the architecture’s flexibility in a more subtle fashion. By slightly increasing the inner sill height so the door closed below it, the sill is protected from dirt and provides a ‘clean’ egress from the motor car. Those exiting a Cullinan that had recently been used to its full off-road potential could do so without fear that they would mark their trousers, skirts or dresses.

**The future of Rolls-Royce Architecture**

The marque’s proprietary aluminium spaceframe will underpin all future Rolls-Royce motor cars. Its flexibility, scalability and unique construction will safeguard the marque’s unique position as the ultimate arbiter of super-luxury transportation and the world’s leading luxury house.

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