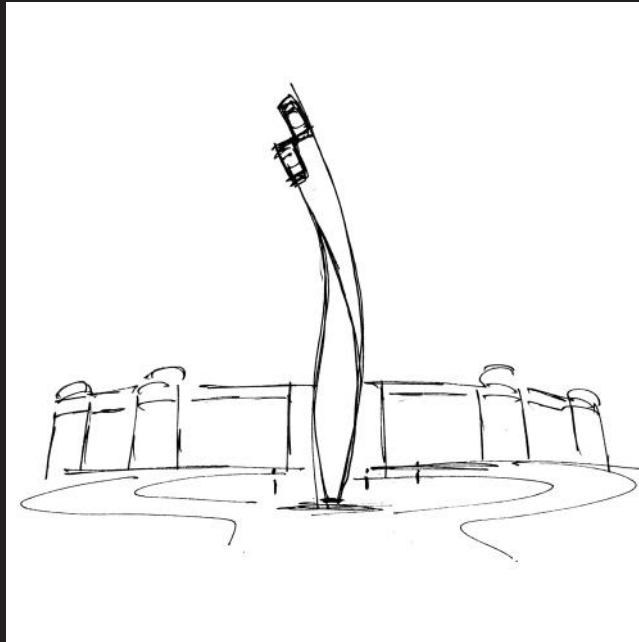


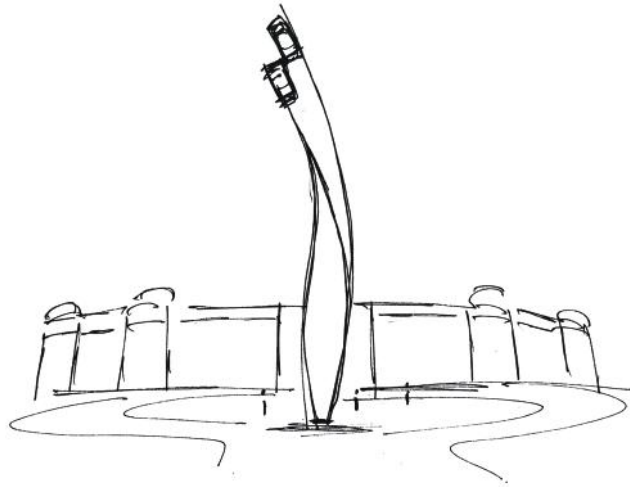


25 - 28 JUNE 2015



mazda

**MAZDA**  
at the  
2015 Goodwood Festival of Speed



*When we first started talking about the central feature at Goodwood, we wanted it to represent our brand through our design philosophy of Kodo. It had to reflect the strength, beauty and tension found in the instantaneous movement of living things and the simplicity that reflects Japanese aesthetics. Our aim with Kodo is to express movement with forceful vitality and speed through simple and beautiful forms.*

*Gerry Judah has cleverly interpreted Kodo for the central feature, and the result is a beautiful and simple form that expresses a tension, lightness and movement which belies the complexity of the structure; a sculpture we are very proud to have representing Mazda.*

**Ikuo Maeda, Executive Officer, Design Chief, Mazda Motor Corporation**



*Inspiration is hard to come by. You have to take it where you can find it.*

**Bob Dylan**

Mazda Head of Design, Ikuo Maeda, found *his* inspiration in a present his father gave him as he embarked on his student career; Danese Milano's Ameland paper knife, designed by Enzo Mari. The knife took pride of place on Maeda-san's desk, and for years he remained mesmerised by the clean, untarnished purity of Mari's design, by the pent-up energy harnessed within its elegant curvature.

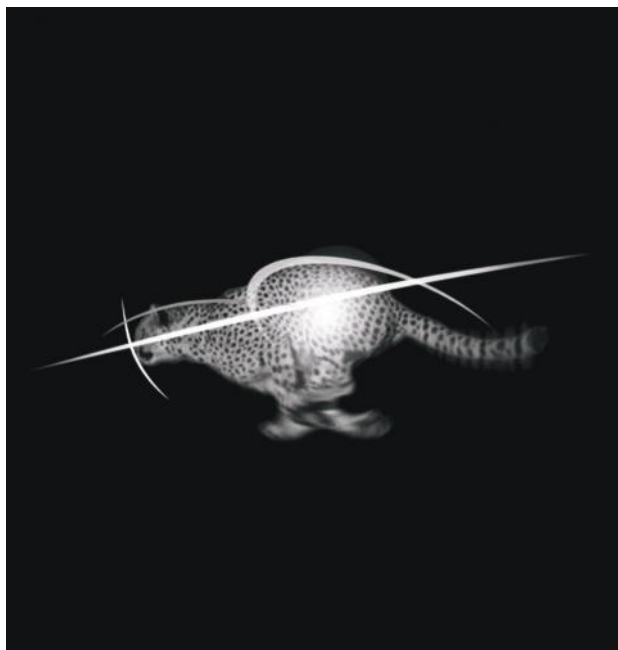
The Japanese word '*shinari*' describes the powerful yet supple appearance of great resilient force when objects of high tensile strength, such as steel or bamboo, are twisted or bent. It also refers to the appearance of a person or animal as it flexes its body in preparation for a fast movement; a wild cat about to pounce, or an athlete about to leave the starting blocks...

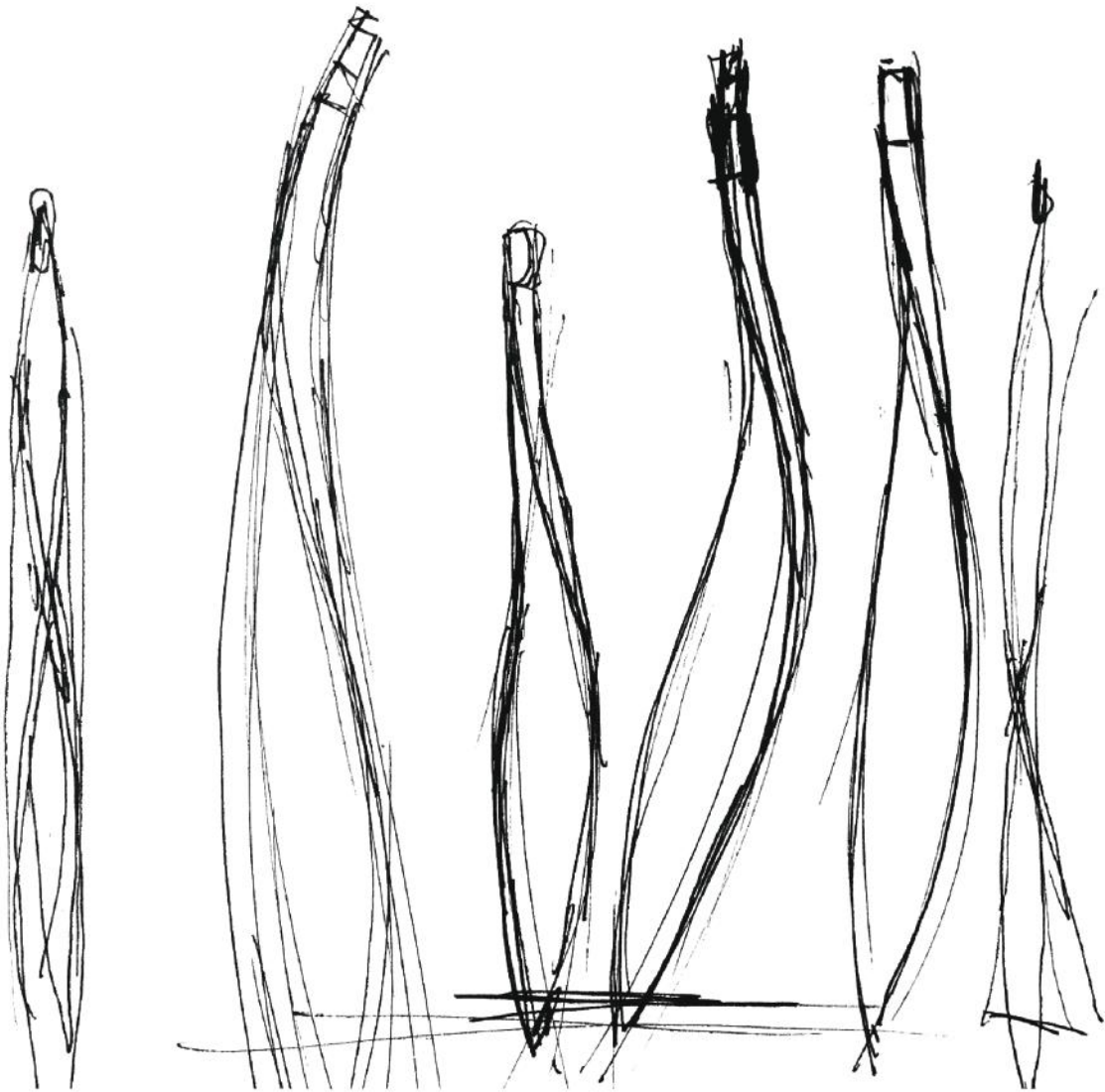
And so, perfectly encapsulating the essence of *shinari* and first made metal as the eponymous concept vehicle revealed at the 2010 Mazda Design Workshop in Milan, a new design philosophy was born.

'We have named it *Kodo - Soul of Motion*,' explains Maeda-san. 'And - focusing on the strength, beauty and tension found in the instantaneous movement of living things and the simplicity that reflects Japanese aesthetics - our aim is to express movement with forceful vitality and speed by simple and beautiful form for Mazda's upcoming models.'

'It was Kodo that inspired the original idea behind the sculpture,' says Mazda European Design Director Kevin Rice. 'Breathing life and motion into an object is what Kodo is all about, particularly by building up a dynamic visual tension and then releasing it.'

'This is how the whole body of the new Mazda MX-5 was created. Obviously, creating a 40-metre version of an MX-5 body side would be technically impossible and heavy beyond belief. So Gerry's idea of splitting the surfaces into strips gives birth to the ingenious "Kodo Lightweight", with direct relevance to the quest Mazda set itself to dramatically reduce the MX-5's weight and a clear connection to traditional Japanese construction methods.'





'I've been producing a sculpture for the Celebrated Marque at Goodwood for the last 18 years,' says sculptor Gerry Judah. 'Every year I like to think of something that is very different to anything we've done before. Indeed, the hardest thing about designing these sculptures is trying to avoid any similarity, any conceptual connection, with anything I've done before.'

'It's getting tougher, 18 years in, because everything I do somehow has a connection. So you have to break that connection, yet still retain an overall spirit to the work that gives some sort of continuity year by year - quite a hard thing to do.'

'On that basis, I found it quite stimulating to meet up with Mazda designer Kevin Rice. He's a good designer; I respect and admire his passion, and some of the ideas he showed me were extremely interesting ... Although,' smiles Judah, 'they would need a far bigger budget than I have available.'

'For me, this work is a far more intuitive process,' continues Judah. 'You have an idea about what you want to say and how it relates to the space ... But I did feel that I wanted to respond to their brief, and the story of Kodo design through the meaning of *shinari*.'

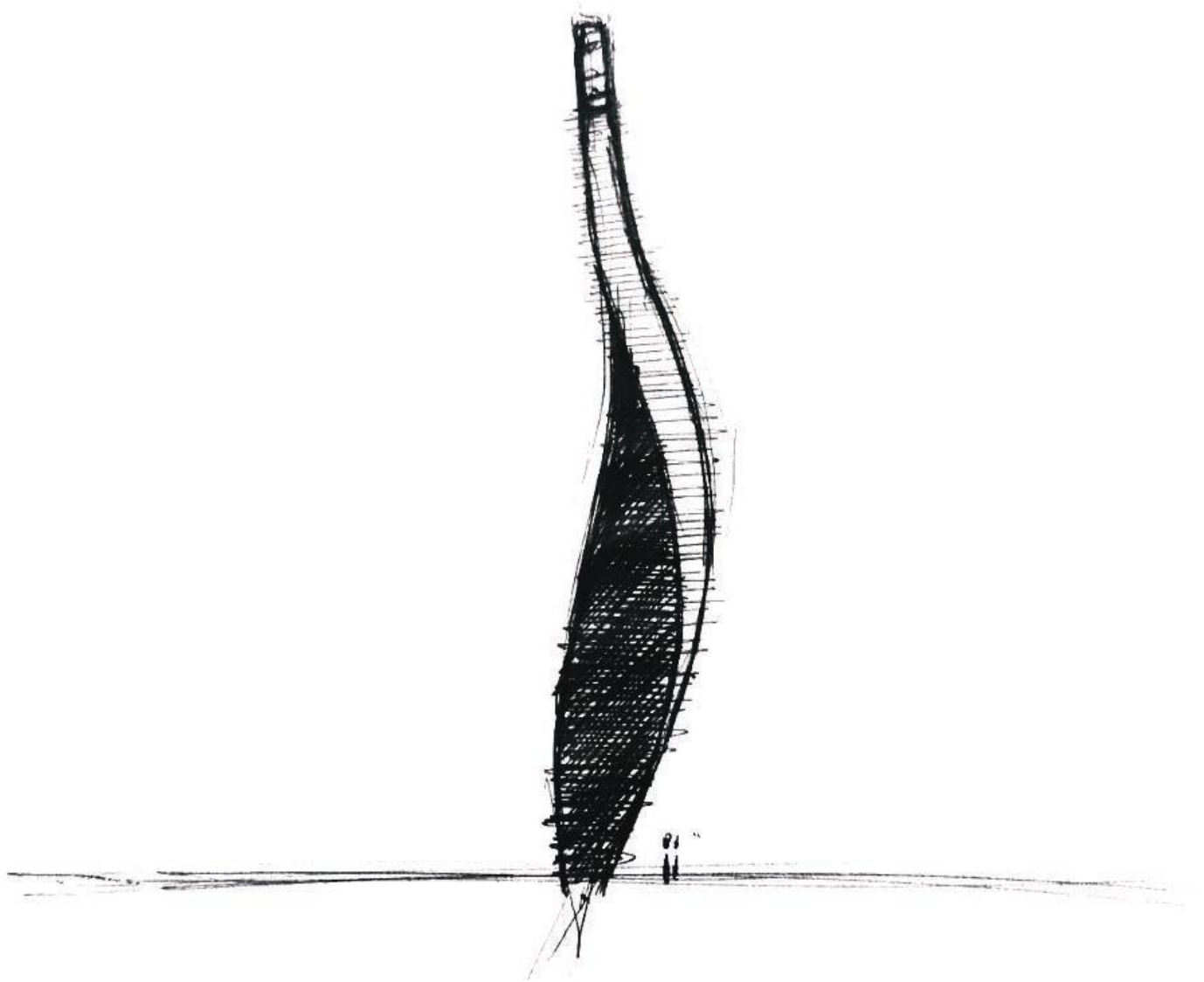


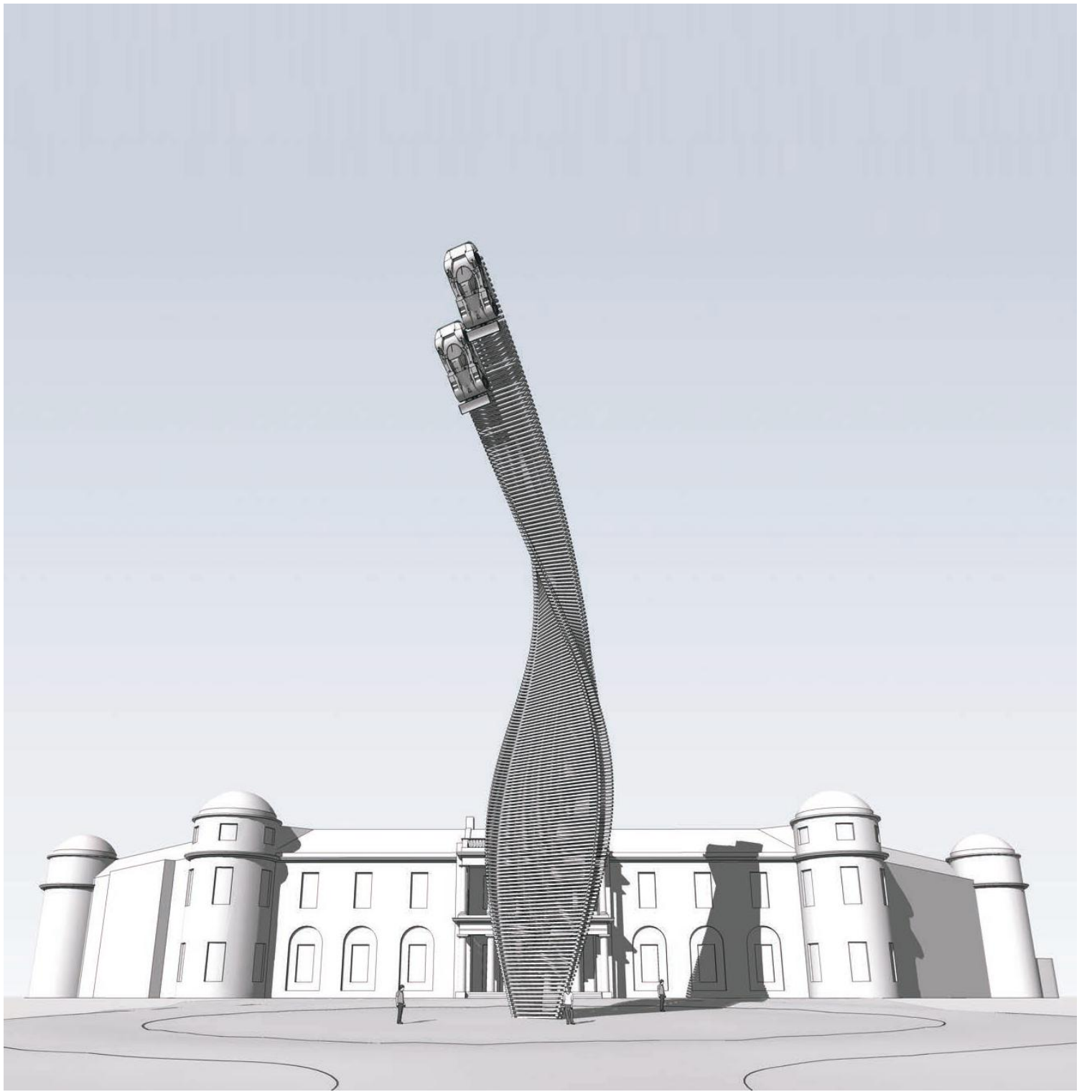
'So I started to play with hundreds of ideas based on our discussions to do with twisted metal forms, trying out version after version until I came up with just a very simple twist inspired by the Kodo philosophy.'

'That initial idea met with the approval of both Mazda and Lord March, promptly leaving me with the age-old problem of how to make it work' Judah frowns. 'I'm always faced with having to build in steel at Goodwood. I can't do glass, I can't do aluminium, I can't do paper.'

'The Mercedes, Lotus and Porsche sculptures were monocoques in which the skin itself was the structure: flat sheets of steel welded together to create a shape. But to do this piece in the same way, we'd have to twist each individual steel plate, which would be impossibly complex, time consuming and expensive.'

'Then I had the idea of making the whole structure out of strips of wood. It would have been fantastic to have huge beams of wood stacking on top of each other, and it would have created a pleasing synergy with the Mazda brand, because the Japanese are very much into the craftsmanship inherent in wooden beam construction.'





'Sadly, using timber would have been phenomenally expensive and hugely heavy,' Judah continues. 'So we were faced with having to take the material properties and values of steel, and make it look like something else. And that's how this idea developed.'

'We settled on square-section hollow-steel tube, because when you cut the ends off, fill them with a capping plate and paint them, they look like beautiful pieces of white wood with a slightly rounded edge - really quite lovely.'

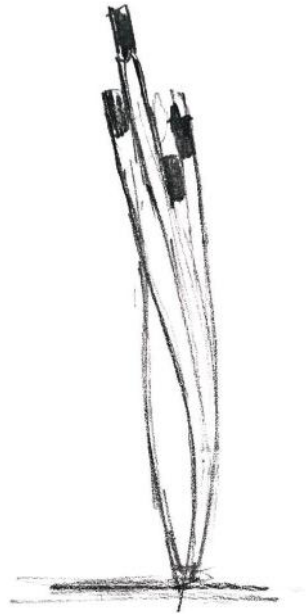
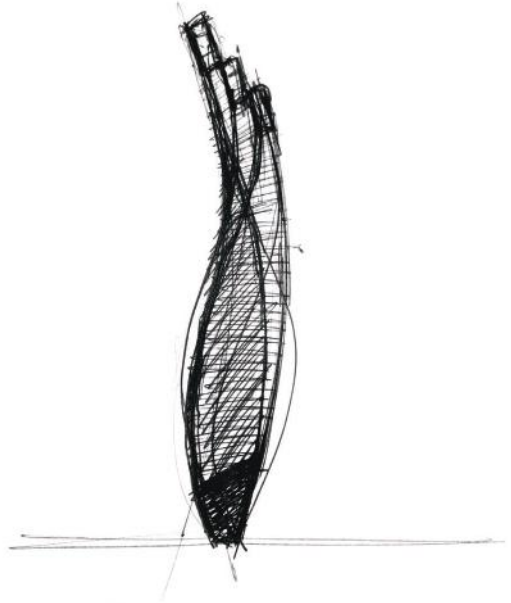
'Originally, I was using spacers between the steels because I wanted the sculpture to be less visually dense, more transparent,' Judah explains. 'But, because the piece was bending and changing angles, we had to create splines in the corners to seat the tubes, and I didn't want to do that - it made the structure look too forced.'

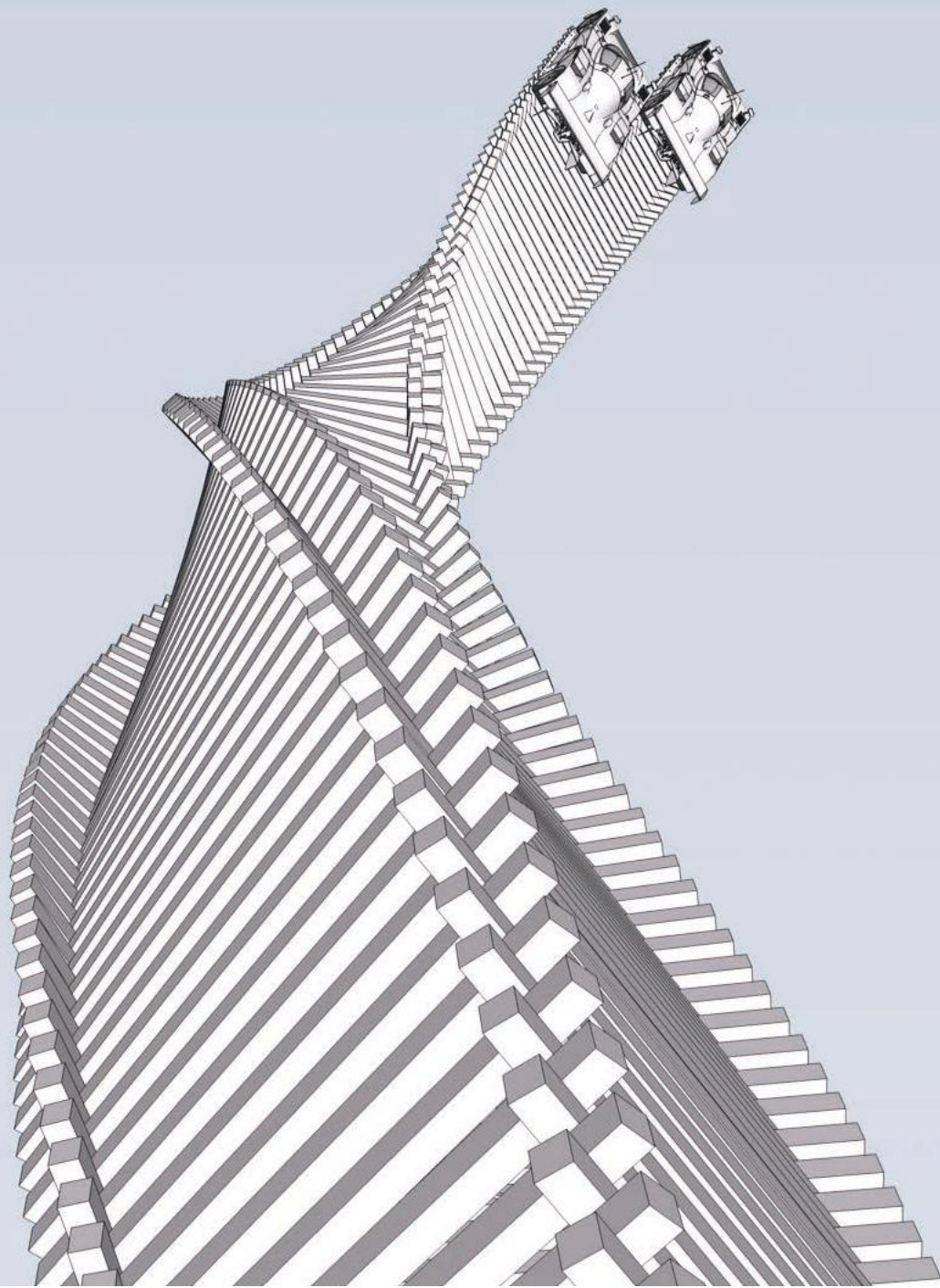
'So I came to the decision that we should just try stacking the steel tubes flat onto each other. I think it works really well now; there's enough steelwork in the design for the main form to be clearly visible, yet it maintains that degree of transparency I wanted. You get this sort of moiré pattern when you move around it, the overlapping lines of steel creating an almost psychedelic effect.'

'Simultaneously,' adds Judah, 'we had to reconcile the client's wishes concerning which, and how many, cars should be featured. That had major structural implications and gave us serious problems over the distribution of weight.'

'Mazda is the Celebrated Marque at Goodwood this year because it's the MX-5's 25th birthday party. But Lord March likes to promote motorsport, and the history of motorsport,' says Judah. 'So we had quite extensive discussions about which cars to put up there. Mazda suggested the RX-7 Spa 24 Hours-winning car and the RX-7 Daytona 24 Hours winner, and, of course, the winning 787B Le Mans prototype.'

'I produced innumerable designs based on three cars, the form of which I was very happy with. But those three particular vehicles next to each other don't quite make sense in terms of the sculpture, because they're different breeds of machine' considers Judah. 'Mazda has had one great Le Mans car - the 787B. So that begged the obvious question: "Are we confident enough just to show that on its own?"'





'Then Mazda decided to show a design study, the LM55, to sit alongside the 787B. So we were back to two cars, which was something of a problem for me,' confesses Judah. 'I think either one or three works better, because if you're not very careful the two cars can have a very odd relationship.'

'So we've really been round the houses on this one. I spent a huge amount of time working on the very top of the sculpture. Sketch after sketch, and a raft of CGI work to ensure that, as far as possible, the two-car version maintains the elegant simplicity of the one-car design.'



'Now, working with the engineer Bruno Postle at Capita and the fabricators, Littlehampton Welding, we really had to make some sense of the structure and how to build it.'

'At this stage, we were really starting to play with the piece: creating different shapes and permutations, adding more belly, less belly, more hip, tightening the waist ... Hundreds of sketches and CGI images, but still retaining that lovely twist, the drama of which I didn't want to lose.'

'Thankfully, I have an outstanding relationship with Bruno at Capita,' says Judah. 'he and I spent every day, about 50 times a day, with me snapping sketches on my phone and sending them to him, and him drawing them up on the computer and sending them back, until we got it right.'

'Sometimes I'd have an idea on the motorway, park up on the hard shoulder, do a sketch, snap it and email it to Bruno, then I'm on the phone a minute later talking it through ... It's a real partnership,' adds Judah. 'I can't do what he can on the computer, and would have to make hundreds of models, which still wouldn't work well. Capita's response to my ideas is amazing; they never balk at a change in direction, a new idea. They absolutely get the spirit of what I'm trying to do.'





'There's a massive amount of work that goes into one of these pieces of which most people remain totally unaware,' Judah points out. 'Everything from the reconfiguration and extension of the existing concrete and steel foundations in front of the house, and the structural integrity and construction methods of the piece itself, to endless wind deflection analysis.'

'It's quite remarkable just how much a 36-metre high steel-frame construction will move about in a strong breeze. There are horizontal ties within the body, with which I'm fine. But I did put my foot down at any structural engineering necessities more visible than that.'

'We simply couldn't use 100mm sections throughout because it would require stiffeners all the way up at the corners, and fabrication alone was phenomenally expensive and time-consuming.'

'And I couldn't convince myself that it would still look OK with 200mm tubes throughout. "No way," I said. "I'll lose the grain of the piece and it'll look awful." I wanted that lovely smooth entity, and the smaller the tubes are, the more of that quality comes across. Besides, we didn't want the cars to look as if they were on railway sleepers at the top.'

'Anyway, it transpired that, by the time we had settled on a hierarchy of tube sizes diminishing in 20mm increments from 200mm at the bottom to just 120mm at the top, and with the whole thing re-engineered once again, the piece actually looked somehow *more* Japanese as a result.'

'Finally, for maximum impact, I wanted the footprint as small as possible,' says Judah. 'We even did some CGI work playing with a concrete base to make the structure even thinner at ground level. Ultimately, we rejected that on the grounds of visual purity. The end result really pushes the engineering: what you see could not be two inches smaller.'







'Now there is both a structural and visual hierarchy to the final design which I think works pretty well,' considers Judah.

'In fact, because of the size we had to split fabrication between Littlehampton and on site at Goodwood. At the widest point of the belly, the steel sections are seven or eight metres long, which means the sculpture is some ten to twelve metres across; simply too large to be transported by road.'

'The elements are stacked together, using a pin system to locate each section to the nearest millimetre, before they're welded in place. The two cars were strapped to the top section of the piece before it was craned into place. And even that process is far more complicated than you might imagine, because the machines have to sit correctly on their wheels, despite being suspended, nose-up, from an overhang.'

'In all, what you see before you is a little more than a year's work, culminating in a frenetic two months during which we can, and usually do, have the most inclement weather. You can't lift a 20-ton section of sculpture into place if it's windy or raining hard, you simply have to wait.'

The completed sculpture is 40 metres long, rising to 36 metres above the ground. It weighs 120 tons: equivalent to more than 120 Mazda MX-5s. Laid end to end, the 418 steel tubes of which it is constructed would stretch 1,200 metres: the length of the Goodwood Festival of Speed hill climb.



## **Gerry Judah**

Gerry Judah's maternal and paternal grandparents came from Baghdad to settle in the already established Baghdadi Jewish community in India and Burma. His mother was born in Calcutta and his father in Rangoon. Gerry Judah was born in 1951 in Calcutta and grew up in West Bengal before his family moved to London when he was ten years old.

The dramatic landscapes, ornate architecture and theatrical religious rituals of India had a profound effect on Judah's developing psyche. Austere London, still in its post-war drab, was a shock to the young boy, and he spent as much time as possible in his bedroom with pencils and paper conjuring up imaginary landscapes, architectural fantasies and futuristic cars.

Judah left Whitefield Secondary Modern School, London in 1969 and worked in a number of jobs before going on to study Foundation Art and Design at Barnet College of Art (1970-1972), obtaining a degree in Fine Art at Goldsmiths College, University of London (1972-1975) and studying sculpture as a postgraduate at the Slade School of Fine Art, University College London (1975-1977).

After college, Judah set up his studio in Shaftesbury Avenue, London, where he began to work on large sculptures. Simultaneously, he worked in numerous theatres as a stage hand and scenic artist. Taken with the public nature of this work, Judah decided to find settings for his own art in more public arenas than the rarefied spaces of conventional galleries.

He began to build a reputation for innovative design, working in film, television, theatre, museums and public spaces. He has created settings for the BBC, and Robert Plant, Jimmy Page, The Who and many other performers, as well as numerous commissions from public museums and institutions. He has also created sculptures for bridges in London and Cambridge, and successive Celebrated Marques at the annual Goodwood Festival of Speed.

'The critical thing for these pieces is that they have to be iconic,' says Judah of his work at Goodwood. 'Coco Chanel said "I don't do anything innovative; I want to make something that's classic." Everything I do I try and make it so that it's classic: different, unique, but classic.'







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## **Mazda LM55 Vision Gran Turismo**

Created for Playstation's Gran Turismo Sport racing simulation game, the stunning Mazda LM55 Vision Gran Turismo makes the leap from virtual concept car to physical concept with its towering position on the 2015 Goodwood Festival of Speed Mazda Central Feature.

Named after the number 55 Mazda 787B that took victory in the 1991 Le Mans 24 Hours, the LM55 is both a homage to the dramatic proportions of the 787B and a vision of a futuristic sports prototype drawn with inspiration from Mazda's *Kodo - Soul of Motion* design philosophy.

Sharing the dramatic proportions of a Le Mans racer, the LM55's sleek nose, sculpted wings and low rear-end deliver a uniquely dynamic shape that stays true to the Kodo ethos of *Beautiful Form Full of Life*. A stunning addition to the West Sussex skyline, the pairing of 787B and LM55 on the Mazda Central Feature perfectly encapsulates the celebration of Mazda's Challenger Spirit in the racing legends of our illustrious sporting past, and the stylish and spirited cars of Mazda's future.

## **All-new Mazda MX-5**

Ever since the launch of the original MX-5, Mazda has been obsessed with creating a vehicle that represents everything a lightweight sports car should be. The very essence of the company's *Jinba Ittai* - Car and Driver as One - doctrine, the all-new Mazda MX-5 makes its UK debut at the 2015 Goodwood Festival of Speed.

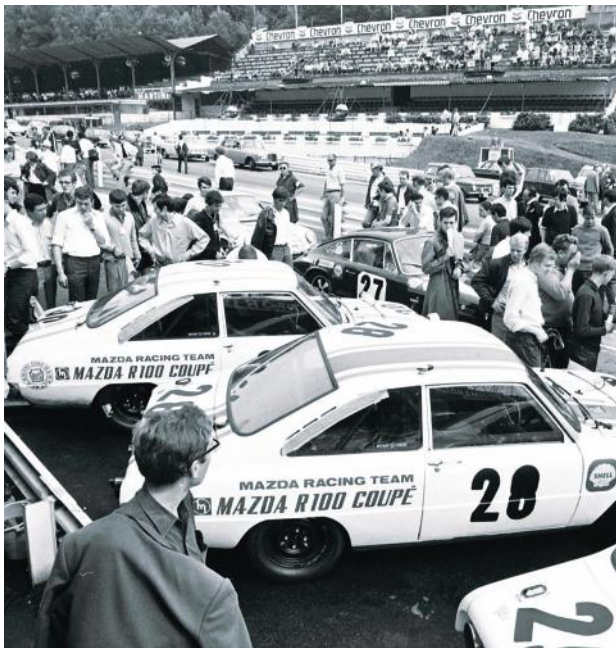
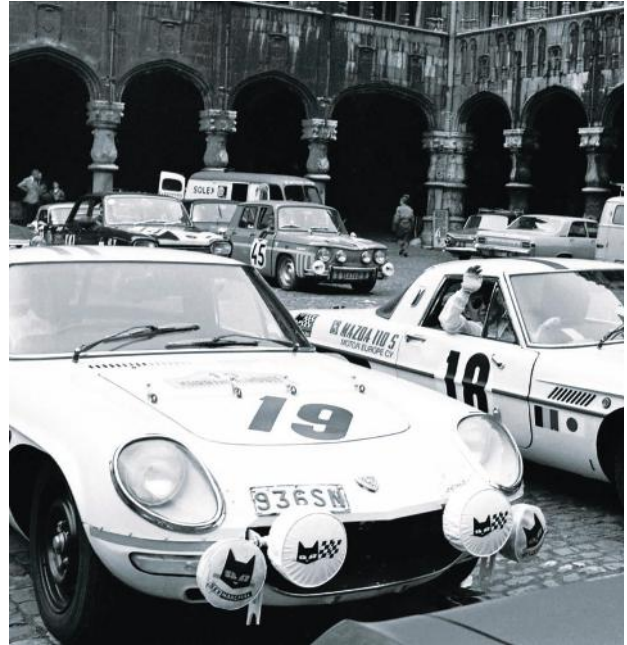
'The MX-5 is Mazda's brand icon and it embodies all that is great about our products,' says Jeremy Thomson, Mazda Motors UK Managing Director. 'Its fun-to-drive character has strengthened the bond between Mazda and its customers for 25 years, so there's no better place to showcase the all-new Mazda MX-5 than in front of the enthusiastic crowd at the Goodwood Festival of Speed.'

Working with the ethos of Innovate in Order to Preserve, Mazda's engineers have created an all-new sports car that combines Mazda's award-winning SKYACTIV technology with its unique, *Kodo - Soul of Motion* design philosophy, whilst retaining the driver-focused enjoyment for which the MX-5 is loved across the globe.









Born from the desire to develop, prove and showcase the rotary engine in the testing world of competition, Mazda's involvement in motorsport has always stayed true to the spirit of the tenet *Never Stop Challenging*.

The first foray into Europe saw a Cosmo 110S sports car finish fourth in the gruelling Marathon de la Route - a mind-boggling 84-hour endurance test around the fearsome 28km Nurburgring. Only beaten by a pair of Porsche 911s and a Lancia Fulvia - considered at the time to be two of the finest sports cars in Europe - Mazda and the rotary engine had made their mark.

This achievement was reinforced the following year by the diminutive R100 Coupe's fifth place in the 1969 Spa 24 Hours. However, launched in 1978, it was the RX-7 that really took on legendary status in the world of motorsport.

Raced in a myriad of different championships and specifications, the RX-7 took GTU class honours in the 1979 Daytona 24 Hours, overall victory in the 1981 Spa 24 Hours, two British Saloon Car titles and 100 wins in 12 years of IMSA competition in the United States.

With three victories for the Mazda 323 in the World Rally Championship, it wasn't just rotary engines that brought success in competition. Yet the story of Mazda's most famous achievement began on 13th June 1970, when a Chevron with a Mazda rotary engine took part in the Le Mans 24 Hours.

This low-key arrival marked the beginning of Mazda's two-decade journey to success in the Le Mans 24 Hour race. With five class victories on the way to becoming the first Japanese manufacturer to take overall victory at Le Mans, Mazda's success in the world's most famous race defines the *Never Stop Challenging* spirit.

Today, more people road race a Mazda in the United States than any other brand and the MX-5 remains the grass-roots racing car of choice for thousands of drivers across the globe. At the 2015 Goodwood Festival of Speed we celebrate our Challenger Spirit as Central Feature Marque.



### **1981 Mazda RX-7**

Mazda's history at the Spa 24 Hours dates back to the R100 Coupe in 1969, but thanks to overall victory in 1981, it is the RX-7 that will be forever associated with the famous Belgian race which, at the time, was Europe's most prestigious endurance event for production-based sports and saloon cars.

Run by British team TWR, who also took two British Touring Car titles with the RX-7, Mazda's first attempt at the gruelling Spa 24 Hours in 1980 did not produce a strong result, but in 1981 the 225hp twin-rotor RX-7s returned to take on a huge 55-car field dominated by BMW 530i and Ford Capri entries.

With the 1,146cc rotary engine rated at 2.5 litres by equalization regulations, the nimble, high-revving RX-7s faced competition from far more powerful cars. But the leading RX-7 driven by Pierre Dieudonne and Tom Walkinshaw qualified on the front-row and, after 24 hours of flat-out racing in changeable weather, the number 40, Motul-backed Mazda RX-7 became the first Japanese car to win the Spa 24 Hours.

Now owned by British enthusiast Kevin Doyle, the Spa 24 Hours-winning RX-7 joins the Le Mans winning 787B at the Goodwood Festival of Speed as we celebrate Mazda's major 24 Hour race victories.





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## **1989 Mazda 767B**

An evolution of the previous season's Mazda 767, the Mazda767B took a solid fifth place on its debut in the 1989 Daytona 24 Hours. For Le Mans, two 767Bs were entered alongside a 767, one in the garish colours of sponsor Charge and one in the more traditional Mazda blue and white livery.

To spectators at the track, the 767B was distinguished from the 767 by having its mirrors mounted on top of the front body work rather than on the doors. But the four-rotor, 630hp 767B had an extra 50bhp, plus an increase in maximum torque to 510Nm. With the upper part of the monocoque made of carbon composite it was also - at only 830kg - 35kg lighter than its predecessor and achieved a top speed of over 350kph on the Mulsanne straight.

Our Goodwood-starring Mazda 767B chassis number 001, then painted blue and white, took GTP class honours and finished seventh in the 1989 Le Mans 24 Hours in the hands of Pierre Dieudonne, David Kennedy and Chris Hodgetts, two places ahead of the Charge-liveried sister car of Takashi Yorino, Herve Regout and Elliot Forbes-Robinson.

Racing alongside a pair of newer Mazda 787s, a single 767B returned to Le Mans in 1990, taking the flag in 20th place with an all-Japanese driver line-up of Takashi Yorino, Yoshimi Katayama, and Yojiro Terada. However, chassis 001 raced on in private hands in Japan during 1991 and 1992 before, under the ownership of Mr Senji Hoshino, it was repainted in the famous Charge colours of its sister car.



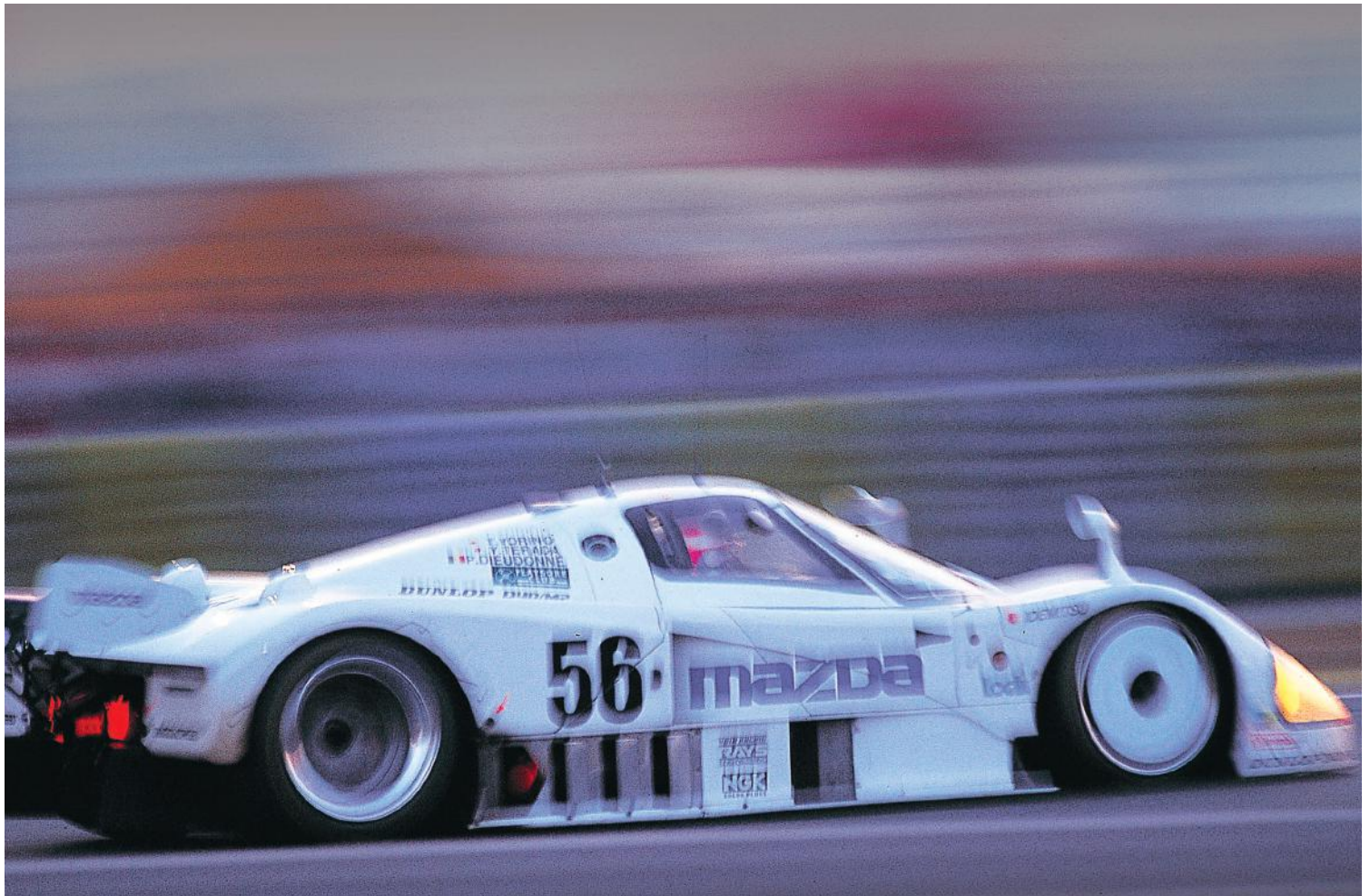
## **1990 Mazda 787**

Built for the start of the 1990 season, the Mazda 787 represented a substantial step forward in development. It featured a full carbon-composite monocoque chassis designed by Englishman Nigel Stroud, while the revised 700hp, 569Nm R26B four-rotor engine was lighter, shorter and more fuel efficient than before.

For the 1990 Le Mans 24 Hours, two 787s were entered alongside an older 767B, but making their debut in such a gruelling race so early in their development meant neither 787 finished. Car 202 driven by Stefan Johansson, David Kennedy and Pierre Dieudonne retired due to an electrical issue, but in the 1991 Le Mans this chassis would have another chance to shine.

Entered alongside a pair of new 787Bs, the now trusty 787 finished in eighth place behind the 787Bs which crossed the line in sixth and first. After racing in the World Sportscar Championship rounds at the Nurburgring, Magny-Cours and Mexico City, Mazda 787 chassis 002 retired from front-line competition.

Now owned and maintained by Mazda USA, the 2015 Goodwood Festival of Speed sees Mazda 787 chassis 002 once again run alongside the winning Charge-liveried 787B, as two of Mazda's 1991 Le Mans team cars take to the famous Goodwood hill climb together.





### **1991 Mazda 787B**

The most famous racing Mazda of all time, the 787B was the car that delivered Mazda's dream of overall victory at Le Mans. Not only did Mazda become the first Japanese manufacturer to win Le Mans, they achieved this milestone with the rotary engine that had been at the heart of Mazda's Defy Convention approach to motorsport since 1969.

With the knowledge that Le Mans regulations would outlaw the rotary engine from 1992, Mazda's determination to succeed was highlighted by the way the 787B pushed technology boundaries.

It was the first car to win Le Mans with carbon brakes and a carbon clutch, plus it was the first Mazda racer to feature telemetry. Power was unchanged from the 700hp 787, but with extra mid-range torque for better drivability, maximum torque increased to 608Nm, larger 18-inch wheels, revised suspension geometry, reworked aerodynamics and more downforce, it was considerably quicker than the 787.

The winning chassis, 787B 002, entered the Japanese Sports Prototype Championship Race at Fuji in May before, in the hands of Volker Weidler, Johnny Herbert and Bertrand Gachot, it took a famous victory at Le Mans in 1991. Immediately retired from competition and placed in the Mazda Museum, 787B 002 is today a fully working reminder of how Mazda's *Challenger Spirit* led to victory at the world's most famous race.



## **1990 Mazda RX-7 GTO**

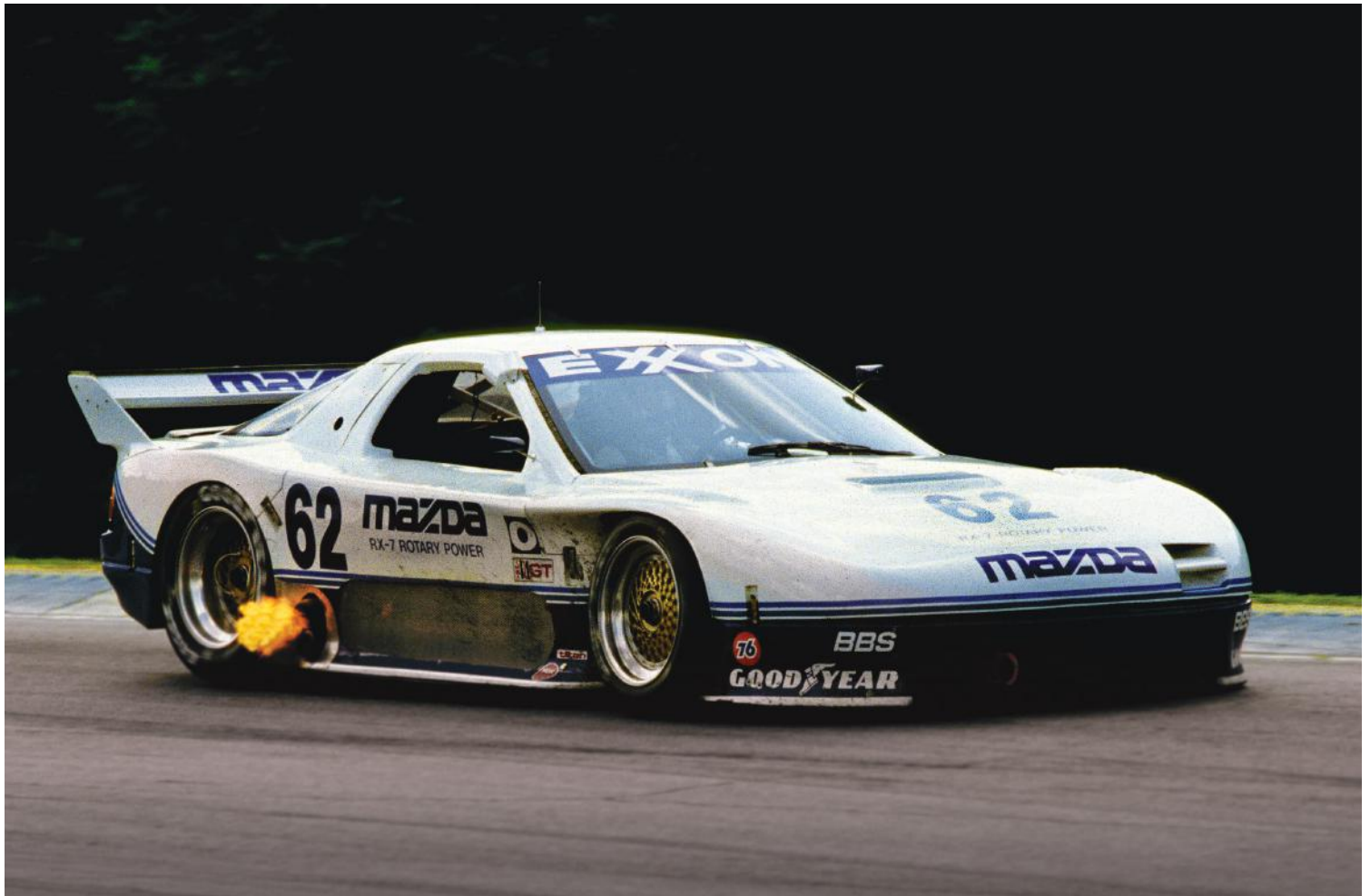
While the Mazda factory team focused on winning Le Mans, on the other side of the Atlantic Mazda North America and the RX-7 recorded an unsurpassed 100 class victories in just 12 years of IMSA competition.

Built for the 1990 season, our Goodwood-starring RX-7 GTO represents the ultimate evolution of RX-7 development. With a steel spaceframe chassis clad in composite panels and full double-wishbone suspension, it was a pure competition car powered by the same 13J four-rotor, 600hp, 528Nm engine as that of the 767B Group C prototype.

Raced in the 1990 and 1991 IMSA GTO championship, it took four victories in 1991 en route to the driver's and manufacturer's championships. Alongside the 787B's Le Mans victory, 1991 was the outstanding year for Mazda competition success.

With its IMSA career over, this GTO RX-7 was dusted off and entered in the 1994 Le Mans 24 Hours where, run by private Japanese entrant Team Arnature, it finished 15th in the hands of Yojiro Terada, Frank Freon and Pierre de Thoisy.

Now restored to full IMSA specification and making its first UK appearance at the 2015 Goodwood Festival of Speed, the 1991 RX-7 GTO is proudly owned, raced and demonstrated today by Mazda North America.





## **1992 Mazda RX-792P**

The 1992 season saw a sea change in the world of sportscar racing. With top-level endurance racing switching to regulations adopting 3.5-litre Formula One-based engines, Mazda's winning R26B four-rotor engine was consigned to the history books at Le Mans.

However, with rotary engines still allowed in America, Mazda took on a new challenge by stepping up to the Prototype class of IMSA racing. The RX-7-based GTO cars had bought championship and race success, but in 1992 Mazda North America would be competing with Nissan, Toyota, Jaguar and Porsche for overall victories.

Created specifically for IMSA competition, the RX-792P featured an all-carbon chassis created by US specialist Crawford Composites, while the four-rotor engine produced some 740hp. With its flowing bodywork and huge rear wing, the RX-792P was an eye-catching addition to the super-competitive ranks of IMSA Prototype racing.

Our Goodwood-starring car scored a second place finish at Lime Rock Park in its debut season; however the true potential of the RX-792P was never fulfilled. With IMSA announcing the end of the GTP class, Mazda was left with little time to develop the car and the programme was cancelled. Today, however, the stunning RX-792P goes down in history as the last factory-supported Mazda prototype to use the famous R26B engine.

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