



GREENCARD DESIGN/REVIEW

ONLINE ECO-DESIGN CAR MAGAZINE / JAN - MARCH 2012

MIA ELECTRIC ROX



CHRIS BANGLE REVEALS HIS AVATAR

ANDY COWELL EXPANDS ON DS BRAND

HOW THE MERC SL 350 V6 LOST WEIGHT

AUTOLIB', DREAMLINER, AND T27 BATTLE IT OUT FOR A DESIGN OSCAR

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January - March 2012

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January - March 2012

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**EDITOR'S
PAGE**

05



Welcome to our first-ever digital magazine! Whilst our online magazine format is fantastic we felt that sometimes the layout of a digitalised magazine can show off our great photography and verbiage in a dynamic and appealing way. The site's content is mimicked in our quarterly review including high res images that may not have made it online before. It's a chance to look back at the best of the last few months and check out new events on the horizon.

Get personal with car designers in our Interviews section or indulge in our test drives and design reviews including Tesla's retiring Roadster, Porsche 911 S, and Volvo's soon to be electric C30 in our Design section. It's a new world for us so please send us comments and feedback to contact@greencardesign.com so we can improve and forge ahead with an even better edition next time. Until then I hope that you will feel motivated, as am I, to get to know better the products we buy and the companies that make them as sustainability should not only be on their agendas but on ours as well.

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Tesla Roadster Retires

Written by **Richard Lane**
Photography **Olgun Kordal**

"0-60 in 3.7 seconds, 245-mile range, zero exhaust emissions. These well-documented stats are the Tesla's headline figures and believe me, the first one isn't a lie."





It's 2012 and retirement beckons for Tesla's all-electric ground breaking Roadster. Under CEO Elon Musk's direction and determination, the Palo Alto-based company has delivered over 2,100 Roadsters and with the final Lotus gliders on the way from Hethel, production will soon come to an abrupt halt. Now production lines have to gear up for Model S production, a car with a far more compelling business case than the Roadster. Not that the Roadster was ever designed to make financial sense, its purpose was to begin an electric revolution. Mission accomplished then.

Time has passed all-together too quickly since Elon Musk took delivery of the first production Roadster, dubbed 'P1', early in 2008 and it's for this reason that we thought we'd remind you why we love the Roadster so much.

0-60 in 3.7 seconds, 245-mile range, zero exhaust emissions. These well-documented stats are the Tesla's headline figures and believe me, the first one isn't a lie. Since its launch in 2008 the Roadster, seen here in its final manifestation, has consistently and thoroughly stapled various driver's jaws to the next

**Above
Action**
*The Roadster
can give as
good as it
can take!*

**Right
Rear**
*The Roadster
both looks and
feels absolutely
planted*





available space - normally said driver's lap. Hauling just over 1,200kg to 60mph in 3.7 seconds with 288bhp on tap wouldn't be possible in a conventional petrol-powered performance car. However, a single speed fixed gear gearbox (so no gear changes) and 295lb ft of torque available from just 1 amp (read instantaneous) mean that acceleration of invariable savagery is at hand ad nauseam, literally.

Given the straight-line speed of the Roadster, you'd be forgiven for assuming that the rest of the car constantly plays catch up. Not so. These Teslas leave the factory with sticky Yokohama semi-slick tyres that, on some of Surrey's more twisty (and slightly damp) B-roads, offered up more than enough grip. Combined with a remorselessly stiff chassis and a manual steering rack, the Roadster allows its

driver to link apexes with more precision and fun than you heretofore would have credited an all-electric car with. Playful? Not really, but engaging? Certainly.

Ranking high amongst the defining features of a sports car is weight, particularly the distribution of it. The Roadster's battery pack weighs around 500kg, considerably more than the 1.8 litre Toyota-sourced unit that powers Lotus's handling benchmark, the Elise. Overall weight however is thankfully kept down by extensive use of carbon fibre, but this glut of localised weight may have had an adverse effect on the handling. Fortunately, the battery is in more-or-less the right place and, although it is very heavy, it doesn't diminish the Roadster's handling. The Tesla will never feel as alive underneath you as the aforementioned Lotus,

*Above
Tesla's internal
details
Whilst flashing
plenty of naked
carbon fibre,
the interior
is otherwise
unapologetically
spartan*

*Right
Tesla's wheel
detail
Exaggerated rear
haunches give
the Roadster
a real sense of
purpose*

but that's missing the point, they both bring different qualities to the table.

The result of the Roadster's legitimate supercar performance means it's easy to see it as a normal supercar, which of course it isn't. To state the obvious, the Tesla performs like a supercar without emitting any emissions. Sounds simple, but once you've sat down and thought about it, you'll be hit with the sudden realisation that what this car does is preposterous. With the Roadster, Tesla forged a weapons-grade eco-car capable of out-dragging a Porsche 997 GT2 but with more range than Nissan's Leaf. Preposterous.

The interior is much as you would expect although it's obvious, both figuratively and literally, where the £102,895 list price ends up. Full carbon fibre sills and vents adorn the cockpit but the fit and finish of some of the plastics and leather clad pieces seemed a little below par for a car in this price

range. What's more, and this won't apply to everyone, climbing over those sills to get in and out of the Roadster isn't just inconvenient, but painful and undignified. Once inside however, the cabin is intimate, refreshingly intuitive and the bucket seats offer plenty of support.

Conspicuous by its absence has been criticism of the Roadster's looks; the same also applies for the Model S. True, the Roadster didn't have boundless scope for design around the gliders Lotus have supplied, but the design has managed to move away from the Elise with sharper angles and a lovely, muscular shoulder line that runs the length of the car. From the driver's seat at least, the sight of air intakes on the rear haunches is particularly pleasing.

Tesla have set a precedent in terms of customer service and the challenge will be to keep that up when the Model S emerges in the summer. Quite a



The result of the Roadster's legitimate supercar performance means it's easy to see it as a normal supercar, which of course it isn't!



Left
Charge
Its simple and practical, charge at home, work, on the go

Right
Interior Light
The Roadster interior lighting feels a touch Sci-Fi



test when you consider that Tesla report that Model S sales have already reached around 8,000, roughly quadrupling the number of Roadsters sold. 8,000 is a big number in this industry, and bodes well for Tesla. The Model S really is the make-or-break car for the company, the difficult second album if you like, and if things go to plan Tesla will turn an annual profit for the first time in 2013. If, however, technological hiccups and service issues dog the Model S, Tesla equity won't rebound as it did earlier this month following the departure of Messrs Rawlinson and Sampson, Tesla's chief engineer and chassis engineering supervisor respectively. However, look over at Tesla's design department and you will find two of the industry's top designers

Franz von Holzhausen, former Director of Design at Mazda, and David Imai, former Advanced Car Designer at GM and Ferrari.

It's not been easy for Tesla; they have endured harsh criticism and no small amount of cynicism, particularly since their IPO in 2010 which, incidentally, was the first time an American car maker had gone public since Ford in 1956. The challenge now is to go mainstream with the Model S and eventually the Model X SUV, which is set to be unveiled early in February. Tesla would have us believe that a Roadster 3.0 is coming in 2013. If that materializes, then Tesla will have cracked the mainstream market and progress a little closer to Musk's goal of an electric 'Model T'. ✘



Porsche 911 Carrera S First Drive

Written by Guy Bird
Photography Olgun Kordal

"If even high-profile sports car brands can have a newly heightened eco conscience it's a step in the right direction."



“Every little bit helps” is super-market Tesco’s catchphrase but arguably it could now apply to Porsche. Previously so resolutely petrol-headed, the go-faster German brand finally seems to have turned the environmental corner – flatly and with almost imperceptible body roll of course.

The brand now offers more fuel-efficient diesels and hybrids in bigger vehicles where it deems sensible, and is reducing the fuel consumption and emissions of its petrol-engined models significantly by ruthlessly pursuing its actually long-held view that efficiency is a virtue in increasing motoring performance. Done right – as it has been in the new Porsche 911 Carrera S – means some environ-

mental benefits can also be gained and claimed.

Take the following evidence: firstly, the new 911 is lighter in all guises than before – 40kg less in the 1415kg 911 Carrera S PDK tested – due to a body which is now almost 50% aluminium (a material much lighter than steel). And as all students of physics know, less weight means less energy required to move it. Thus, the same model’s economy and emissions have improved by 15% apiece to 32.5mpg and 205g/km.

These figures don’t mean much if you spend your life hooning around – easily and very enjoyably done of course – but what’s clever about the new 911 is that

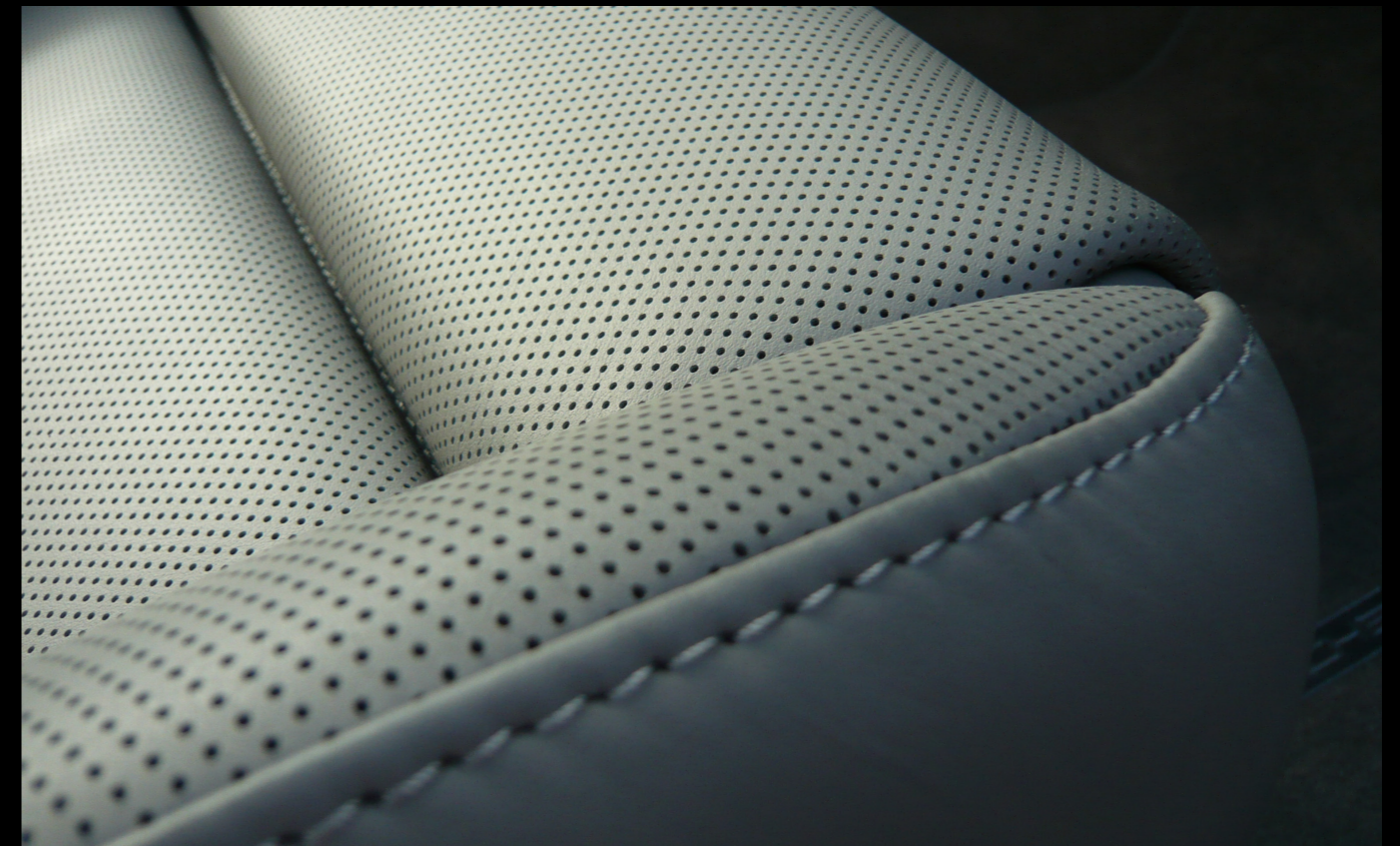
*Above
Porsche
As always its’
evolution rather
than revolution,
and the new
911 is
both longer
and wider than
predecessor*

when there are no appropriate fast-driving roads in sight (which in reality is a lot of the time), it conserves energy so well. Stop/start cuts the engine when idling in traffic and is now standard on both manual and automatic versions. Regenerative braking converts unused kinetic energy when braking or decelerating into electrical energy to boost the starter battery. And then there’s a new ‘coasting’ facility – when driving downhill with the foot off the accelerator for instance – where the engine automatically defaults to idling mode rather than revving hard (while still allowing auxiliary functions like the water pump and air-con compressor to function). Even the wheels and tyres have been optimised with efficiency in mind, with a new weight-saving flow-forming wheel manufacturing

process and new tyres that reduce rolling resistance by 7% compared to earlier versions. All details save fuel that would otherwise be wasted.

The efficiency ethos goes well beyond the car’s innards too. The exterior wing mirrors are now placed on the upper edge of the door rather than the triangle behind the A-pillar to benefit airflow and wind noise and aesthetically speaking, as head of design Michael Mauer, enthuses, “it also emphasises the car’s width and makes it look a little bit lower.” Bonus!

56mm longer overall with a 100mm increase in the wheelbase makes the car feel appreciably different than is usual between generations of this evolutionary design and also creates more room



inside. The 911 now has the high quality centre console architecture of the Carrera GT, Panamera and Cayenne mk2 and banishes the sort of plastic feel and scratchy metal effect paint finishes that shamed previous-generation 911 interiors. All plastic parts that look like metal are at least dipped in metal to be cold-touch, firm and are well fitted (besides solid metal controls would add needless weight).

Overall then, a great new 911, unbelievably great fun to drive – we were allowed to

drive a host of old versions back-to-back to cross-reference our rose-tinted nostalgia – and ultimately worthy not only of Porsche's performance heritage but also representative of a more sustainable thinking. At £71,449 for the Carrera and £81,242 for the Carrera S it's too exclusive to change the world of mobility for good or bad, but if even high-profile sports car brands can have a newly heightened eco conscience it's a step in the right direction. As I said at the start, 'every little helps'. ✘

*Above & Right
Interior Delight
The centre-console is clearly inspired by the Panamera – no bad thing. It's also a cabin the driver would be comfortable in over long distances*

"When you consider the C30's intended market – a younger, more urban-oriented buyer – it becomes clear that Volvo couldn't afford to make any mistakes with the facelifted car's up-styling, thus played it safe."

Volvo C30 DRIVe Driven

Written by Richard Lane
Photography Olgun Kordal

In June last year Volvo broke new ground as production of the C30 Electric commenced. Available on a three-year lease, the Swedish firm intends initial deliveries only to be to companies and governmental bodies. This is, partly at least, due to its price tag of €1500 per month over the three years, making the small family car more expensive to lease than a Tesla Roadster.

The C30 Electric is part of an ambitious strategy to roll out a number of electric and hybrid cars over

the next few years – notably 2012's highly anticipated V60 Plug-In Hybrid, which will share many of the C30's design features. Although the electric-specific internals will be installed at Volvo's home-city, Göteborg, the rest of the C30 Electric will be built on the regular assembly line in the Ghent factory. Aesthetically, it will be more-or-less identical to the present C30 DRIVe, which incidentally, we tested recently.

There's no doubt that the C30 is a distinctive looking

car, and as such it divides opinion. However, since it's launch in 2006 most have viewed the C30 favorably and this is evidenced by the fact that Volvo decided to make relatively minimal design changes for the 2010 facelift, simply bringing the car up to date. At its facelift launch in 2009 the C30's Product Manager, Daniel Backman, felt that "everything had fallen neatly into place and the car's entire personality has been boosted to an entirely new level" – and I agree, although with perhaps less boost than intended.

The real talking point for the exterior is the revised front end – it is poised rather than aggressive yet still evokes a sense of strength. Volvo achieved this with minimal fuss using sloping headlights, a larger air intake and angled lines on the front bumper. Volvo's trademark shoulder line, which has been featured on their more recent designs, is still present on the C30 and the rear of the car has been seen to as well. Most noticeably the large plastic rear bumper has subsided a little and been replaced by a body-coloured unit while there are deeper, more





prominent lines and detailing including a silver-metal 'diffuser'. Our car came with white wheels; a new option for the facelift that you'll either love or hate...we loved the sporting attitude. When you consider the C30's intended market – a younger, more urban-oriented buyer – it becomes clear that Volvo couldn't afford to make any mistakes with this car's up-styling, thus played it safe.

Comparisons will understandably be drawn with VW's highly acclaimed Golf 1.6 TDI Bluemotion, and the C30's green credentials certainly stand up to those of the Golf. Interestingly, both cars boast identical combined mpg and carbon dioxide ratings at 74.3 mpg and 99 g/km respectively, meaning neither pay road tax. From there though, the decision is whether you're willing to trade the VW's equipment levels and practicality for the Volvo's unique

looks and relative exclusivity. Either way, Volvo's clean diesel offers an excellent introduction for the zero-emissions C30 Electric.

The Swedish Energy Agency funded C30 Electric is powered by 24kwh lithium-ion batteries that give the car an electronically limited top speed of around 130kph and a range of 120-150 km on a single battery charge. Unlike many other all-electric vehicles touted as a 'breakthrough' by their various manufacturers, the C30 already meets Volvo's elevated standards concerning "safety, comfort, versatility and practicality". In fact, with second generation C30 Electric production beginning early in 2012, Volvo really are putting their money where their marketing is. According to Volvo, the C30 Electric is a milestone for the entire automotive industry... they may well be right! ✘



Previous Page
& This Page
Above & Right
**Volvo C30
DRIVE**
The C30 looks good both whilst stationary and on the move. Stunning scenery helps!

Left
**Volvo C30
DRIVE**
Floating centre-stack a quirky modern trait of Volvo design but the cabin as a whole is too spartan





The most conspicuous feature of the Microbus with pure electric drive, is a central driver's seat enabling the driver to get in and out of the car on both sides. This seat arrangement provides the driver with a perfect view of the city traffic and the passengers at the back with enormous legroom. Two sliding doors as well as cutouts in the roof and floor grant a particularly convenient access to the car.

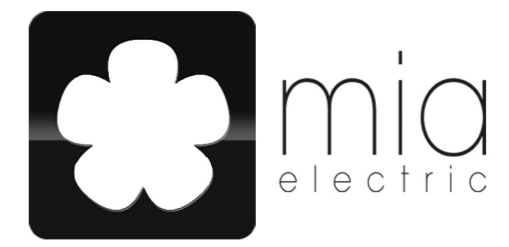
Moreover, mia provides an extremely spacious passenger compartment when compared to other vehicles of this length.

In addition to the standard model with a length of 2.87 m, two models with 3.19 m in length are available: The four-seat mia L (with three back seats) and the mia box van featuring a cargo volume of 1,500 l.

TECHNICAL DATA

Maximum speed	100 km/h
Kerb weight (incl. battery)	750 kg
Charging time approx.	3 hours (230 v)
Length	2.87 m
Width / height	1.64 m / 1.55 m
Cargo volume approx.	200 l
Gross vehicle weight	1195 kg

www.mia-electric.com ■



Interview with Andy Cowell

Written by **Hannah Macmurray**
Photography **Olgun Kordal**



This month we caught up with Andy Cowell, Citroen's DS Design Manager, at the new premises of the Society of Motor Manufacturers and Traders (SMMT), in downtown London. The bespoke evening was put on by #autotweetup, a new getup that provides social meets driven by social media, truly exemplifying the DS range's innovative spirit. This niche brand, inspired by the original DS icon of the 50's, personifies a distinct and free-spirited direction by Citroen to explore the possibilities of 'something different'. The DS range's appeal has not only taken Citroen by surprise but also all the rest of us and whilst no-one knew exactly where it would take the company, best, myself included, believe that it will be one of Citroen's most best strategically placed decisions in recent history. We sat down with Cowell to get a feeling of how and why this came about and where the brand is heading, in his words.

Green Car Design : Where did you study?

Andy Cowell : I went to Coventry University a bit later but I started off working at Lotus when I was eighteen as a junior engineer, drawing technical plans. This was a great break but cars fascinated me anyway and I wanted to get into the car industry. I tried for an apprenticeship at British Leyland at the time, and also Jaguar when I was sixteen but they turned me down because I didn't live in Coventry. They thought it was too difficult to take a guy from Norfolk to the Midlands. Even so, I had a fantastic time at Lotus and actually learnt the car industry through Lotus. It was such a hotbed of engineers and creativity.



GCD : Citroen's a very family-oriented company isn't it?

AC : It is a family company, it has a very small company feel – everybody, to a certain extent, knows everybody.

GCD : How would you say the 'DS' sub-brand fits in at Citroen?

AC : The 'DS' line is a range within a range. It allows us to experiment with form-language and features but it also allows us to target a market that was inaccessible to us with our current range. We couldn't take our current range up at all; to the clients we wanted to take it to – we had to evolve. Jean-Pierre Ploué, and everyone at that time thought the best way to do this was to do something else – to side-step. Now we have the current range, and then the DS. It allows the two to live together and answer a fragmenting market. We needed that extra 'something'.

GCD : And that 'something' is very contemporary.

AC : Yes but we have history, and it was legitimate to take that history and distil it into these products. DS became an idea that was a gamble at one stage and it seemed crazy but it's actually paying off.

GCD : But does it leave the rest of the range behind?

AC : No. I think the next few years with the other launches you'll see that the rest of Citroen will flourish and grow as well, but it will be very different.

GCD : Does that make the DS l'enfant terrible?

AC : I don't know yet. They are free spirits and we've always said that the genes of DS will be exuberant and slightly avant-garde – trying to do something that the market doesn't necessarily expect, or that the client doesn't expect. They are, however, developing trademarks. The watch-strap seats on the DS5, for example, will now propagate across the en-



tire DS range. It's very much about building this luxury brand and a luxury French feel into the DS range.

GCD : You had a carte-blanc with the DS, were green credentials integrated into the car?

AC : The DS5 uses a lot of recycled material, which we have to do anyway, but we try and go a little bit further. Also, the car was designed to be a hybrid from day one, we wanted to showcase our hybrid technology but we wanted to showcase it in a different way. It's a very versatile system. We also use aluminium on the bonnet and a lot of the suspension as well as recycled materials for the door-panels and the sound-deadening. The DS range is aimed at the generations that are changing. It answers to a market which is evolving, even in China.

GCD : Far Eastern tastes are often difficult to gage, do they like that French character?

AC : Yes. It's very, very important for us in China but it is difficult. I was in Shanghai to launch the car and we were still asking. We have two partners in China and

as a result of this we actually have stand-alone DS showrooms. We like this as the DS represents 'French-ness', a new start, a new product, a new feeling and very different from what people would assume Citroen to be.

GCD : Can you tell us how the 'sabre' came about?

AC : That goes back to the show car, to the C-SportLounge (Frankfurt Motor Show 2005). We're known for taking our show cars and bringing them through to production with a little bit of inspiration. C-SportLounge was a fantastic show car we had, we just didn't know how to use it. Then all of a sudden we had DS and we realised – that's what we've got to do. We were very lucky that the man who designed the C-SportLounge, Fred Soubirou, was also the man who designed the DS5. It was great for Fred to have a second-take at what he'd done but in a production context.

GCD : What's your insight into the DS design?

AC : It's a play. The front wing's actually quite thick because of the technical platform we're using. The chrome cuts that up and also gives it symmetry. All DS's have their specific symmetry. The symmetry on DS4 is based around the construction of its rear door, on the DS3 its the shark-fin and on this one (DS5) it's its sabre, so every DS will have its own little signature.

GCD : So what's your view in terms of green design?

AC : It depends where we are in time. At the moment the life cycle of a car is four years to design it and six years for it to 'live'. It's an expensive product to make and rash decisions can kill a company straightaway. The EU rules and regulations will push everyone down that route anyway – CO2 has to come down, weight has to come down, we have to meet governmental requirements each year, so the car will evolve, there's just different ways of achieving that. We still have to find the market. We still have to find the clients. The generations of people coming up probably want different cars – we just don't know. We know the rules, but we don't know the clients.

GCD : And what do you feel?

AC : We're in a moment of recession where people are probably not going to take a leap with something they don't know. It's a shame because technology is just getting to the stage where we can use it but the clients aren't in the right frame of mind to take it yet. Look at the Leaf, it's struggling. Technology has moved a long way, but it's expensive. I think we're probably go to see a long period of hybrid use, at least for the next few years. Then it will depend on government schemes and tax-breaks. It's a bigger subject than just 'a car'.



GCD : For us it's a philosophy – do you start to think of the car in a different context and fit the technology to the design or vice versa?

AC : I think the market will tell us. It's a fantastic challenge. The car in 2015 will not look like a car today – it cannot. Regulations will not allow it to be in that morphology. What it will be, we just don't know yet.

GCD : Any tips for young aspiring designers?

AC : Tough industry. Just be themselves. Be talented, enjoy – it will show through. ✕

Interview with Andreas Nilsson

Written by **Frank Schwartz**
Photography **Olgun Kordal**



Those at last year's Shanghai Motor Show and will remember Volvo's arresting Concept Universe. Andreas Nilsson, Volvo's young and enterprising Design Director - Strategic and Interaction, was the man behind it. Nilsson is a rare specimen in this industry – in thirteen years since leaving Coventry with a degree in Transportation Design, he has applied his expertise to only two companies, Volvo and, albeit briefly, Ford. Nilsson's loyalty to Volvo stems from his youth; his father sold Volvos for a living and by the age of ten the young Andreas had set his sights on becoming a designer for Volvo. We caught up with him at the North American International Auto Show earlier this year.

Green Car Design : Volvo seems to have a unique hybrid strategy that is different from other car companies. Can you explain the differences?

Andreas Nilsson : We design from the point-of-view of consistency, which all started back in 1991 with the ECC. Family resemblance is important to us; the V60 Hybrid Concept downstairs is very similar to the other V60 models. Aside from the drive-train, the concept only differs from the production car by the special use of contrasting colours, aero wheels and other aero devices. When a new vehicle is designed the hybrid strategy is already in place - the goal is to minimize the impact of the system in the design. We also don't want to push our hybrids as technology vehicles; our goal is to offer them to people who chose to be environmentally conscious.

GCD : Tell us about the XC60 Plug-in Hybrid on the stand.

AN : This is our latest concept demonstrating a new drive-train and showcasing our new engine architecture. The drive-train has a 2.0 litre, 280 horsepower four cylinder coupled to a 70 horsepower electric motor. The end result is a system with power like a V6 but fuel economy like a 4. We estimate 50 miles per gallon but of course the ratings systems are different all around the world.

GCD : It's also a really interesting colour.

AN : All of our hybrid concept cars are white - that is a constant to reinforce the message. But this one is different, a semi-matte white. Colouring and materials are very important. [For example] We have taken the blue accent from the outside and brought it into the inside. The instrument panel is also leather wrapped.

GCD : The wheels are striking as well.

AN: We have a special design group that does nothing but wheels: they're on the ball and constantly pushing the envelope. Because of our architecture we are limited on depth, so they have to be dramatic and push to get new designs and appearances. On the Concept the wheels are highly polished and have are inserts between the spokes.

GCD : Most hybrid systems try hard to be transparent but Volvo's system offers the driver a choice between which mode they use. Why was this decision taken?

AN : Volvo's are designed around you, the driver. Having the choice between all the modes available allows you to plan your travels and helps get rid of range anxiety. You can save your electricity for later if you want by the push to conserve button. This allows you to have zero emission when you want. You can leave your home in the country, have the extra power for the twisty bits, then go to full electric when you reach the city to be more environmentally friendly.

GCD : You have had an interesting career, starting at Volvo, then Ford bought Volvo, then a stint in the United States with Ford and then back to Volvo. What were the biggest changes you had to go through to adapt?

AN : When Ford first bought Volvo right about the time I started things changed. Ford was known for implementing a lot of rules, they were known for their control systems. Many people said "it must be awful" but those systems are there to protect the company. When I got to Ford I realized that they were used to working with [rules] and had figured ways to work around them. The problem at Volvo was that those rules killed creativity because the culture dictated that you follow the rules.



Just for You
The impressive Concept You, unveiled at the Shanghai Motor Show last year, was overseen by Nilsson

GCD : That had to be difficult, was it hard going from a small company like Volvo to a large one like Ford?

AN : Ford is a big company but it is like an iceberg, the top of iceberg is same size regardless of what sits under the water. As a designer you are privileged to work and interact with the top of the organization so going from Volvo to Ford at first did not make much of a difference. However, Ford is very big and the frequency of new model launches is so often, they struggle to find a clear space to launch a new car. Volvo is different - there you have to struggle to find something to introduce. Another thing is that Volvo has one brand message but Lincoln, Mercury, Ford was not really one brand.

GCD : Speaking of changes, what's happening now Peter Horbury (former Design Director) has left and Thomas Ingenlath has replaced him?

AN : There is nothing to say as no one has replaced Peter's position yet. If he is the

guy, then usually he will probably want to make a statement or shake the system to see if its rigid. There is an exciting time ahead of us - we have recently launched a new brand strategy at Volvo, "Designed Around You" with the three pillars of Scandinavian Luxury, Created Around People and Strength In Every Sense.

GCD : What other things are you looking forward to on the environmentally friendly side of car design?

AN : Well I think we will see a paradigm shift in body design, stamped steel bodies limits the shapes you can manufacture. Carbon fibre brings new possibilities but today at a cost consumers are not yet ready for. We do see some smaller companies trying it and we will have to look into it. One exciting area of research are new battery technologies that also use carbon fibre. With these you can put the carbon fibre battery structure directly into the car's body structure giving a very lightweight system. ✕

clean week

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3 E-BIKE MANUFACTURERS MORE THAN **3000** TEST DRIVES

11 E-SCOOTER MANUFACTURERS **700** E-BICYCLE MANUFACTURERS

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120 TEST VEHICLES

30 CARS IN EXHIBITION

60 TEST CARS **120** ATTENDEES

SEMINARS AND SYMPOSIUM



NAIAS 2012 Design Review

Written by Frank Schwartz

2012 marks the 24th year that the NAIAS in Detroit has been listed as an International Auto Show. Even with the recent increase in importance of the other shows, Detroit still accounts for a larger number of introductions than Los Angeles or Chicago and this year is no different as more than 50 models made their world or national debut. The recent problems faced by the domestic auto industry seem to be in the rearview mirror and you could feel the collective sigh of relief on the show floor. Even the weather smiled on the opening day of the press conferences as temperatures were in the positive for the first time since 2008. The manufacturers are back in the business of introducing new vehicles and competing head to head for every last sale.

One thing you can never accuse the show in Detroit of is being overly-oriented towards the green car

spectrum. That is not to say that green isn't a clearly defined goal of every manufacturer at the show. It is just that the typical US market, and especially the Midwest market, favors the more subtle ecological products like the mild hybrid. When your morning commute is more than 60km like mine was for many years, a full electric is not a feasible solution. Adding to the long commute is the fact that morning temperatures can be below -20 degrees C in the winter and afternoon temperatures over 25 degrees C in the summer (several electric car manufacturers cautioned me about recharging in below freezing weather). The Detroit show did however, continue their unique Green Car test track in the basement however the trees and shrubs that made it so nice just two years ago are now gone. They have been replaced by sand, a obvious nod to the fact that green cars have not yet taken a hold in this country.



CONCEPT : ACURA NSX

Not many details were revealed as the production version is still three years away but what we can tell you is that it will generate its performance by an efficient use of technology. Like the Tata eMO (right), it is not any larger than it absolutely needs to be. "Like the first NSX, we will again express high performance through engineering efficiency" added Ito.

CONCEPT : NISSAN e-NV200

The eNV200 Concept from Nissan takes the small vanette that won the New York City Taxi contest and mates it with the Leaf's drivetrain. To ensure this electric vehicle bears some corporate resemblance to its cousin, Nissan has grafted a new nose on the van. Complete with a centre changing port door (I would just call it a flap) and a new lower fascia, it does indeed look similar to the Leaf. The rear sports clear lens "Altezza-style" tail lamps and the wheels are finished in the light blue hue that is becoming de rigueur for electric and hybrid vehicles. The exterior body is painted in a customized version of Aqua Blue which is intended to "express a sense of environmental friendliness". Inside the concept includes the aforementioned blue accents,



and a center cluster that functions like a tablet computer. The NV200 has been in production in Europe since 2009 but the NY City taxi version will be built at Nissan's plant in Cuernavaca, Mexico. There is no word on where the eNV200 would be built but this concept looks like a no-brainer.



CONCEPT : LEXUS LF-LC

Unlike the Acura NSX, the Lexus LF-LC is not intended to be a production vehicle, but a design study to advance the redefinition of Lexus with emotive, avant-garde beauty and advanced technology, yet remain within reach for premium buyers. Chosen as the EyesOn Design Concept of the show, the design has more little details than I could list in a space twice this long. The key design cues that may show up on future product Lexus include the mesh spindle grille and the lighting details. More and more manufacturers like Lexus are taking advantage of LEDs and other new lighting technologies that not only performs better, but also draws less power.

CONCEPT : TOYOTA NS4 *Advanced Plug-in Hybrid*

The NS4 is not just an environmentally friendly concept, it was also designed to push the envelope in human and machine interaction. The concept's Human-Machine Interface (HMI) provides a user interface built around a multi-touch screen with the look and feel of a smartphone. The HMI system is even capable of "learning" driver preferences and habits to anticipate driver responses in specific environments and situations. This concept represents a truly connected vehicle, offering the latest technology in a responsible and convenient package. It includes the latest safety technology like the next generation Pre-Collision System (PCS) with lane departure, rear-end and pedestrian collision avoidance technologies designed to predict collisions.



CONCEPT : SMART FOR-US & eBIKE



The For-Us pickup concept was something we did not expect in Detroit. Smart CEO Dr. Annette Winkler said, "We at Smart love pickups – if they are small on the outside, large on the inside, very safe and extremely comfortable". The For-Us is about three feet (0.6m) longer than the Fortwo which makes it about the size of a Mini. The eco-friendly pickup was shown with range-extending eBikes in the bed that charge while they are parked. This could be just the thing for those people with range-envy, sort of like a lifeboat on a yacht. The Smart eBike is actually a hybrid – as soon as the rider begins to pedal, a Bionx rear-wheel hub motor begins to help out. Pedal power is transmitted to the rear wheel by a quiet, durable belt drive, while a three-speed gear hub provides simple gear changes. The motor has a range of 60 miles bringing the total range to about 160 miles. In truth, the eBikes are not intended so much as range extenders, but to take the occupants to those places the For-Us cannot, like parks and trails.

PRE-PRODUCTION : TESLA MODEL S

The Model S shown at the NAIAS Show was a "Beta" build - the phase of development before final production. Deliveries of production vehicles are finally slated to begin this summer. We have been following the design and the development of the Model S for the past couple of years as the Tesla Roadster was the first electric car that ever got out juices flowing. One of the great benefits to the Model S's architecture and floor-mounted electric powertrain is class-leading passenger and cargo space. Like the Porsche 914, the Model S features a 28.7 cubic foot trunk at the rear and another 8.1 cubic feet at the front. The unique design of the vehicle structure also makes it easy to introduce future models. The upcoming SUV will use identical mechanicals and only require a new body - which Tesla produces in-house in their aluminum-intensive factory in Fremont, California.



CONCEPT : VOLKSWAGEN E-BUGSTER

The name E-Bugster comes from a combination of 'E' for electric, 'Bug' for the American nickname of the Beetle, and 'speedster' for an open-top two-seater. Volkswagen decided to put this concept together to demonstrate that sportiness is still possible with an environmentally friendly drivetrain. With a body height that is 90mm lower than the production Beetle, the E-Bugster is also about 30mm wider due to the larger 20" wheels. The concept includes a new fascia that incorporates the C-shaped LED Daytime Running Lights that have become the signet of Volkswagen electric vehicle studies since the e-up! in Frankfurt. The innovative drivetrain incorporated in the E-Bugster includes regenerative braking and will be placed in production in the 2013 Golf. The concept also includes the application of a new Combined Charging Systems which was developed in cooperation with German carmakers Audi,

BMW, Daimler, Porsche as well as American partners Ford and General Motors/Opel. This system allows the E-Bugster to be 'filled up' via a different charging methods like single-phase AC (typical household electricity) or dedicated ultra-fast DC charging stations.



PRODUCTION : VOLVO XC60

Plug-in Hybrid

The XC60 Plug-in Hybrid was presented to the press as three cars in one as the driver can choose one of three different driving modes via the buttons on the instrument panel. In Pure mode the car drives in full electric mode with a range of about 35 miles. In Power mode the gasoline engine and electric motor are combined to provide maximum performance. And finally, in Hybrid mode the gasoline engine and electric motor "cooperate to provide maximum driving pleasure with minimum environmental impact". The three modes give a driver the possibility of using Hybrid mode when leaving their home in the country, switching to Power mode for the twisty bits and finally switching to Pure mode when entering the city to minimize the environmental impact.

This Plug-in Hybrid provides stunning performance, 0-60 mph in 5.8 seconds, 50 mpg estimated on the US EPA loop and a total range of 600 miles. Volvo has made a conscious decision not to design a specific appearance for their hybrid vehicles. The technol-



ogy has been designed to be used in all their vehicles and the inclusion of the system should not alter the design. Volvo has made small design changes to improve aerodynamics such as developing the special 21 inch wheels on this model to lessen drag. Changes to the colour and materials are used to invoke the feeling that this car is different. In this case the XC60 was painted in a stunning semi-matte white paint. The interior

also features unique detailing and colours, such as sober dark-blue leather upholstery and inlays of blue-grey wood.



CONCEPT : TATA EMO

The eMO is an unusual concept in that it wasn't developed to prove out any specific technology, but to prove out the engineering and design capability of the Vehicle Programs and Development group (VPD) of Tata, a complete engineering and product development services company. eMO is not some sort of counter-culture reference, rather it stands for electric MObility after the team responsible decided to focus on a city or "New Urban" electric vehicle with an emphasis on the design following the functionality and use of the vehicle. The project was a collaboration between the various VPR offices in Detroit, Pune, Coventry and Stuttgart. Aside from perhaps picking a better name, it looks like the team hit their target fairly well.



The goal they developed was to build a vehicle that balances :

- Vehicle Cost of Ownership and Usage
- Innovation and Technology
- Consumer Features and Usable Interior Space.

The concept features some interesting thinking. For example, there is no trunk - you can either carry passengers or cargo in the back but not both. "We believe that most vehicles on the market are actually oversized and over-specified for the majority of consumers' daily use," says Fisher. "Our objective was to find the right size for this type of electric vehicle with the appropriate range and speed, without reducing safety and daily usability." With a projected MSRP of \$20,000 (US) it could be the most affordable electric car on the market (if they decide to build it).



CONCEPT : VIA VTRUX



The 24 kWh liquid cooled Li-ion battery pack gives a 40 mile range, after which the dual mode generator kicks in and powers both the drive motor and recharges the battery.

The packaging of a body-on-frame vehicle like a pick-up truck offers numerous advantages for battery placement such as safety (between the bed rails) and improved handling (under the body structure). The strong electric drive motor also allows a substantial 1500 pound towing capacity. But perhaps the most interesting and novel feature on the VTRUX is that VIA has designed the onboard generator to also provide exportable power so when a service truck has to go on-site to work it no longer has to bring along a separate generator.

We had a chance to talk to both Board Member Bob

Lutz and Chief Engineer Nick Zielinski about this unique offering. Lutz indicated he joined the board because he believed in the technology and the people behind the startup (Side note: Many brains behind the eREV powertrain came from the Chevrolet Volt program) and the technology makes much more sense in a large vehicle like a pick-up or SUV than in a smaller one like the Volt. Lutz commented "The Volt is about the same size as a Cruze which already gets 40mph so the improvement is minimal. But the fuel savings on something that only gets 15mpg is much larger". After talking with Zielinski I realized that this truck offers a benefit to consumers as well as commercial customers. I live in an area of Michigan that is prone to power outages due to inclement weather, storms and heavy snow or ice fall, having a vehicle like this would allow me to run my whole house off my personal vehicle...powerful! ✕

The Race is on.



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In the fourth of our snapshots at carmakers pushing green car design and those who need to work harder, we take our hats off to the new Mercedes SL for shedding the pounds and looking healthier for it and the forthcoming Ford Fusion Energi plug-in hybrid for trumping Toyota's new plug-in hybrid Prius not only in the MPG stakes but very definitely in the looks department too. Meanwhile we wonder what's going on with the wonky Chrysler 700C minivan concept and question the presentation of the long-awaited new Acura NSX.



HOT!

The first month of the year is traditionally a time to start diets to offset previous excess so it was highly appropriate that Mercedes chose Detroit in January to launch its new lighter-weight SL. Given 'SL' stands for 'Super lightweight' it's very on-brand to have shed 140kg – or two fit grown men – in the case of the SL350 V6 (now 1685kg). An almost all-aluminium (89%) body is at the heart of the change and it also uses even lighter magnesium around the rear bulkhead. Less mass to lug around benefits fuel economy – up almost 30% – as Dr Zetsche, chairman of Merc's parent group Daimler, points out, "the new V8 version offers the same performance as the previous V12 – while delivering even more miles per gallon than the previous V6."

Meanwhile, the Ford Fusion Energi puts some design life into the plug-in hybrid segment, with its Aston-like grille making the new plug-in Prius hybrid look even fuller and promising over 100mpg (13mpg more than Toyota).

Hot! Not! NAIAS 2012

Written by Guy Bird
Photography Olgun Kordal

NOT!

'Wonkiest-looking mainstream concept of 2012 so far' award goes to the Chrysler 700C. Not mentioned at all in the run-up to the Detroit show, because either A) it genuinely managed to stay top secret or B) it was a rush job and touch-and-go whether it would be finished in time. The latter seems more likely given the highly peculiar side window graphics and super-odd area below the B-pillar and above the feature line. And why put a SEMA-style black bonnet on an MPV? Did anyone say 'unresolved'?

To a far lesser degree, but perhaps of more concern given its previous model's great history and halo status for the brand, the Acura NSX concept disappointed more than it excited. Compact proportions and hybrid power was a good starting point but its Audi R8 meets old Mazda front-end design, zero interior concept plus a frankly dusty exterior on a dark show stand robbed the supercar of some serious 'WOW' factor. Underwhelming. ✘



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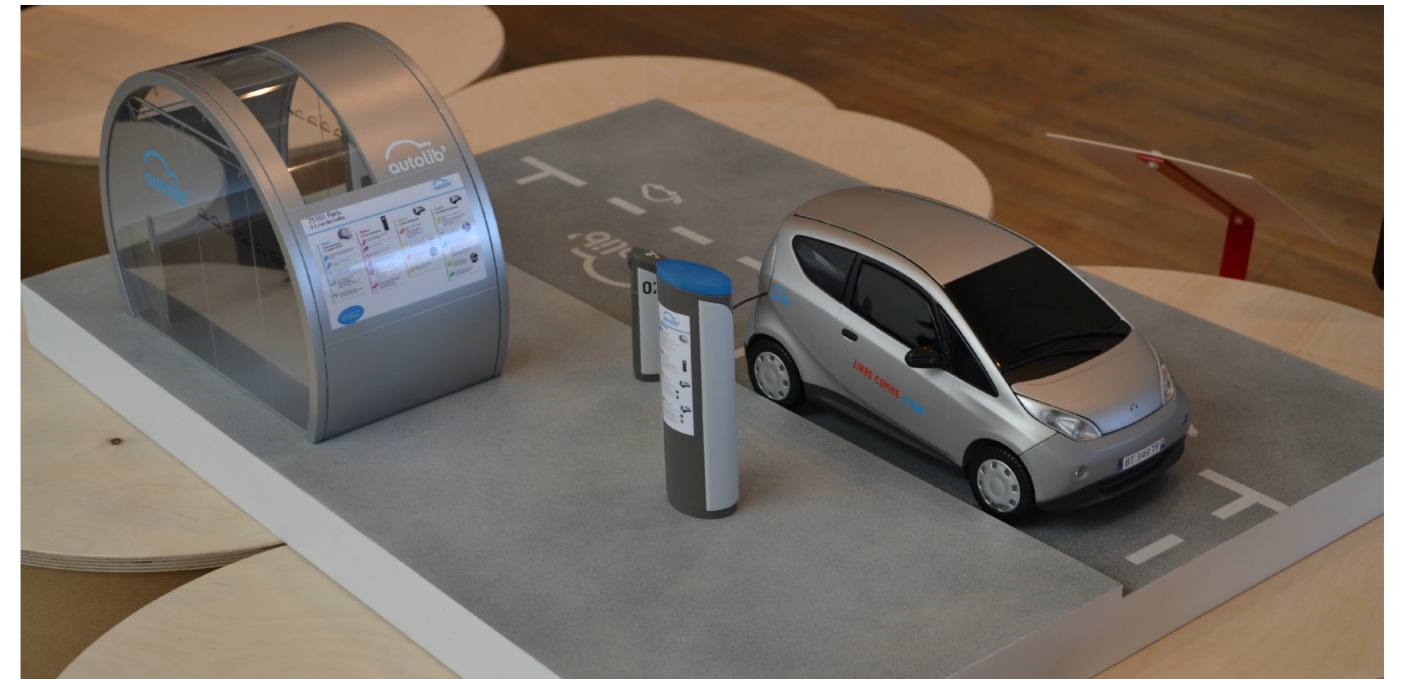
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Now in its fifth year, the Designs of the Year Awards at the seminal and somewhat eco-conscious Design Museum continues to highlight the most innovative, useful and beautiful designs of the last year. Located on the cuff of the now suave Butler's Wharf, the Designs of the Year exhibition showcases nominations from an eclectic body of design disciplines including, as you might expect, Transport. Previous winners of the Transport category award range from the Barclays Cycle Hire system - designed by TFL and Serco and now ubiquitous in Central London, to the Mex-x Wheelchair for Children, which was designed by Meyra-Ortopedia in Germany. From Massoud Hassani's wind-powered landmine clearance device to Sarah Burton's wedding dress for the Duchess of Cambridge, this year's panel of judges will have their work cut out. Below is the story in the Transport category.

There's a few well-known projects in the Transport category, notably the Parisian car hire scheme Autolib'. Bertrand Delanoë's concept, now operational, has the potential to lessen Paris's congestion to the tune of 22,000 cars and despite some teething problems the scheme has set a precedent in car sharing.

"From Massoud Hassani's wind-powered landmine clearance device to Sarah Burton's wedding dress for the Duchess of Cambridge, this year's panel of judges will have their work cut out."



If you're not familiar with Bike Hangar, prepare for imminent acquaintance. Answering the problem posed by increased cycling yet inadequate bicycle storage facilities, this novel and Ferris wheel-esque contraption can store up to 36 bikes without compromising space in already cluttered city-centres. Designed by New York based Manifesto Architecture, the first full-size prototype was installed at the 2011 Gwanju Design Biennale in Seoul. Don't be surprised to stumble upon one soon.

Whilst you could plead ignorance in regard to Bike Hanger, you really should be familiar with the Mia Electric by now. This three-seater, zero-emissions, pocket-sized EV is the brain-child of former VW design boss Murat Günak and ex-Bertone design chief David Wilkie - a fairly formidable combination I'm sure you'll agree. With a surprisingly spacious interior the Mia is a packaging marvel and doesn't try to disguise itself as something else. An 80-mile range and top speed of 68mph mark the Mia's natural habitat out as the city and it certainly plays to its strengths. Charming.

Conspicuous by its absence was Gordon Murray's T27. Wrought in roughly the same mould as the Mia, this pure EV shares the three seat layout as well as comparable performance and economy figures. The real party-piece, however, lies in the T27's nose-hinged door. Other party-pieces include comfortable seating for three adults despite dimensions smaller than those of a Smart ForTwo and an (equivalent) economy of 350mpg on the recent Brighton to London Future Car Challenge. Three party pieces is probably enough for such a small car.

Arguably the most curious, if not outright relevant, entry in the Transport category comes from the Helen Hamlyn Centre for Design and Vehicle Design Department at the Royal College of Art. This redesign for the emergency ambulance focused on 360-degree access to the patient and interior efficiently. Those responsible for the design spent long hours on ambulance shifts getting an insight from crews and patients. Furthermore, this took course over a period of six years - that's commitment.

Above
Autolib'
concept by
Bertrand
Delanoë to
lessen Paris's
congestion

Left
**Design
Museum**
The exhibition is
on the top floor
of the Design
Museum and
will run until
early in
July 2012



The remaining pair of Transport nominees fall slightly outside our remit in that they're both from the aeronautic sphere. They are, however, both worthy of mention. Firstly, the Taurus Electro G4, hailing from Slovenia, is the first electric four-seat aeroplane in the world. The concept of this entry blew me away - near-silent flight and no direct emissions with a cost of £5 for every two hours of flight surely leads the way for the future of low-emission

air travel. Boeing's 787 Dreamliner completes the line-up and with extensive use of carbon fibre-reinforced plastic as opposed to aluminium, fuel consumption and CO2 emissions have been cut by 20%, quite a feat when considering the colossal dimensions involved. ✕

Above
Mia Electric
at Design
Museum

"Once you get over its heavy, frigid, unpainted aluminium body and the garish 'un-designed' stickers plastered all over the car the interior smacks you in the face with commonplace."

Paris Autolib' Bluecar Deployed



Written by Hannah Macmurray
Photography Olgun Kordal

Late last year Paris deployed a trial of its new electric car sharing scheme called Autolib', the vehicular version of the now established and popular Velib' bike sharing system that inspired London's Boris Bikes. It was, however, only on the 5th of January this year that the fleet came out in force with 250 cars on the streets of Paris. With more than 6,000 people having signed up within the first few weeks the group aims to get 3,000 cars in service by the end of the year. The practicality of this kind of undertaking in a city as crowded and spatially challenged as Paris was probably not very 'logical' to say the least. The introduction scheme is also rumoured to essentially be a decision and commitment made by 3 men, Bertrand Delanoë, mayor of Paris, Nicolas Sarkozy, president of France, and Vincent Bolloré, owner of Bolloré; Delanoë sparked the idea with his visionary bike sharing system Velib', Sarkozy approved the idea, and Bolloré financed the dream. Put them together and you have the first scheme of its kind in the world, and guess what? It works!



Hiring a bike for the day, which involves a lot of impersonal interaction with an information tower that simply takes your credit card details, is a simple process compared to a first encounter with Autolib'. The Autolib' experience entails searching for a registration 'bubble', not available at all hiring stations, but clearly marked on their website www.autolib.eu, not to be confused with www.autolib.fr that is a car sharing scheme in Lyons...confusing. Then if you are lucky you will spend the next half hour hoping you can get in touch with an operator, and when you do watch out because they are trained to be friendly, too friendly! After overcoming some suggestive banter we got down to the business of registering our ID, license, and credit card by scanning it on a screen (anyone from any country can use the service). More unsolicited banter and a magical card is printed right there and then that will gain you access to your electric aluminium chariot. If you are not into this kind of personal contact then best to register for a year and get a permanent pass, not a 24-hour trial pass

Above
Autolib' Ready
Paris finally welcomes a full fleet of electric cars which have already suffered bouts of vandalism



like we did for 10 euros.

The car's roots go back to a bubble design of the Bluecar in 2006 at the Geneva Motor Show, however today's incarnation is a direct derivative of the Pininfarina designed B0 production car that debuted at the Paris Auto Show 2008. Penned by Lowie Vermeersch, designer of some of the first and finest green car designs, the Sintesi and Nido, the Bluecar was due to go into production in 2009. Economies failed, business plans fumbled, and the project got delayed and the design got morphed into, what must be to the elegant Parisians, an eyesore. Sadly the original lightness of lines and materials that made the original Bolloré B0 so inspirational have been clumsily translated into the current Autolib' Bluecar, thus making this 'first of its kind' radical integration of an electric car sharing scheme into a city like Paris visually anti-climatic.

Once you get over its heavy, frigid, unpainted aluminium body and the garish 'un-designed' stickers plastered all over the car the interior smacks you in the face with commonplace. Plain is not a word I would associate with French or Italian design but disappointingly the interior of the car goes beyond that, it is spartan. This is understandable considering the rife vandalism that plagued the initiation of Velib' and our current frugal economic times, yet it seems like a missed opportunity to design

something more provocative to address these very issues. Had they considered the environmental impact as well that would have added to the scheme's 'no emissions' credibility but the car seems to have been made on the cheap with no eco-materials in sight.

After getting over the design faux pas, driving the Bluecar around Paris without a sound was the most rewarding experience. The lack of internal combustion noises heightens your sense of the city and quickly intimates the driver with pedestrians. Many a time we had to wait for pedestrians crossing the street without looking to move because they couldn't hear the car; Paris being Paris this can go one of two ways, very rudely (most often) or very excitedly. The environmental impact is immediately obvious, reduced noise pollution, reduced emissions, and reduced congestion. Most people living in a city don't need a car on a regular basis, and with the Auolib' you can have the benefit of a car without the hassle of owning one. Best of all you can always find a parking space! So, whilst it came to us as a great surprise from a design standpoint that Autolib' has been nominated for the Design Museum's Design Awards 2012, "the Oscars of the design world", we agree that Bertrand Delanöe, and his team, have truly achieved something quite spectacular...it works. ✕

Left
Autolib'
First time users must brave a registration 'bubble' before using any Bluecars

Right
Promotional
As most electric cars stickers help pass the message



Fisker Karma at Harrods

Written by **Richard Lane**
Photography **Olgun Kordal**



It's not hard to see why California-based Fisker approached Harrods when it came to some good old-fashioned publicity as a newbie to London. The world famous department store's windows have certainly seen their fair share of luxury metal over the years and the svelte (yet somehow belligerent) Karma seems right at home.

As a result of the Karma's somewhat limited publicity outside of motoring circles, despite out-staging Ashton Kutcher in the popular American show *Two and a Half Men*, punters will be further stunned by Karma's green credentials. Credentials, it must be stressed, that are extremely impressive given the Karma's performance; an extended range of 300 miles, electric range of 50 miles, a 0-60 time of 6.3 and a 'reasonable' price tag £87,000 make the Karma a serious contender.

Although the luxury four-door is undoubtedly an engineering triumph, the surrounding uber luxu-

rious handbags and jewelry departments had me thinking about the Karma's target market. The Karma provides an elegant and luxurious solution to a multitude of problems faced by the modern motorist but the truth is that it will be bought by most purely as a lifestyle accessory. Fisker must be aware of this as Karma's stylish brochure is littered with trendy jargon such as 'Glacier Tri-Tone' interior colour and Ecochic 'White Sand' exterior finish.

Not that the reason why the car was bought in the first place will particularly matter when one passes you on the street - if the Karma looks this good on a stand you can guarantee it will look fantastic as it silently passes on the move.

Other extremely admirable yet fashionable eco-features include an interior trim where the wood used is entirely reclaimed (either fallen, sunken or rescued) and a water-based paint job that uses 35-55% recycled glass flake mixture - the first time

Above & Right
Karma Harrods
Bathed in blue light, the Karma seemed right at home

something like this has appeared on a production model. The Karma's single pane solar glass roof is worthy of a mention too, and Fisker believe that it will provide up to 200 miles of 'completely emission and cost-free driving' a year. A game-changing feature it is not, but I like the idea and it looks flash.

The glass walled enclosure it occupies was more-or-less permanently manned by a Fisker representative at all times adding to its 'precious; demeanour. Flustered by economic stress and bad press Fisker need all the positive exposure they can get, Harrods, and the fact that Justin Bieber just got one for his birthday seals the deal. ✕



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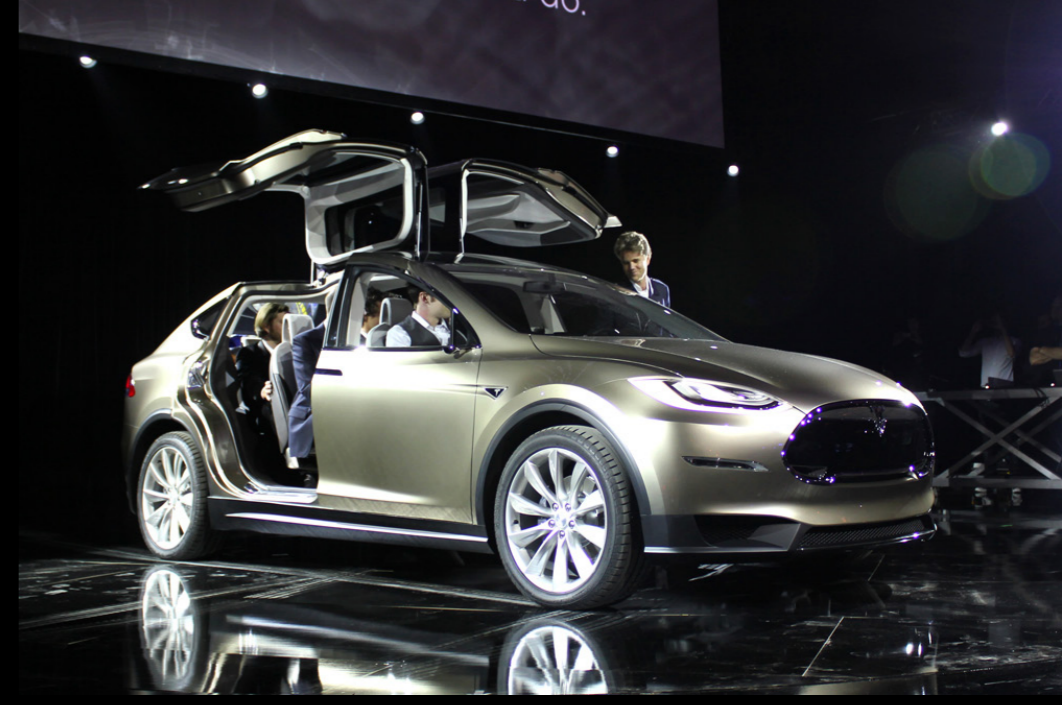
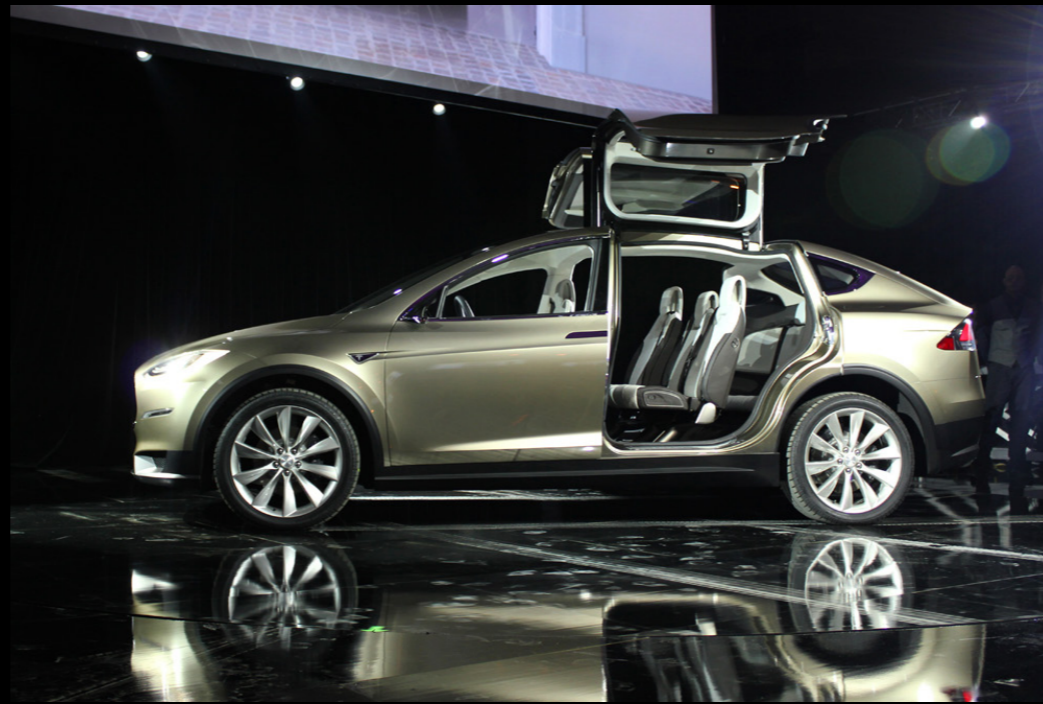
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Tesla Model X Gallery

Written by Hannah Macmurray
Photography Kyuhyuk Kwon



February 9th saw the unveiling of Tesla's Model X at their California studio and to a viral crowd as the event was streamed live. Everything about Tesla is different and this new design breaks the mold once again. Think of America's obsession with SUVs, add to that the convenience of a Minivan and the purchasing power of women in the US then add green power and you are starting to get the picture. As Tesla finds its design identity through the talented hands of Franz von Holzhausen and David Imai we will cover this segment-busting crossover when we have the chance to but for now take a look at our first gallery of the unveiling courtesy of our onsite automotive photographer Kyuhyuk Kwon!



Mia Electric Rox

Written by **Richard Lane**

"Essentially, mia is offering to save you some hassle and act as manufacturer and coachbuilder. At the same time as this, they're aiming to reduce the retail price of electric cars. What more could you want?"



In the world of alternative transport you rarely have to look far to find an electric-car startup. EVs are both cheaper and quicker to develop than hydrogen or solar-powered cars and as a result these startups come and, more often than not, go with regularity. The trick is making them stick, and that's what Cerizay-based Mia Electric is aiming for. Mia, however, is not a true startup.

Mia's origins can be traced back to the Heuliez Friendly concept car in 2007, which ultimately resulted in the production version of the Mia. Following the bankruptcy of Heuliez, Mia, backed by pharmaceutical entrepreneur Edwin Kohl, took over the car production arm of the company in 2010 and electrified the Heuliez's base at Ceri-

zay for Mia production. The importance of Mia's acquisition of the Heuliez cannot be understated and is largely down to the passion and dedication of one man.

That man is Murat Günak, former Head of Design at Peugeot and Mercedes Passenger Cars before moving to VW in 2004. Now Head of Corporate Strategy, Günak's actions ensured that Mia hit the ground running and the proof is very much in the pudding – 1,000 electric's were have rolled of the line in France last year and UK sale are due imminently. This represents an admirably short gestation period for the electric. Mia's further key personnel include David Wilkie, ex-Bertone Design Director and Patrick Largeau, who has developed the concept.

*Left
She Rox
Rox structure
may come from
original Mia
but it has a
personality
all of its own!*

*Above
Rox Box
The utility box
styling lends
itself to flexible
use*

Mia makes on bones about the electric's philosophy; a laconic, compact urban EV with minimal thrills. A top speed of around 60mph and a range of just 100km evidences the electric's preferred habitat and this is aided by a brisk charging time of around three hours. The electric also belies its diminutive dimensions with a spacious interior that will seat three adults relatively comfortably – remember that long journeys will be rare in the Mia. Furthermore, Mia estimate the cost of driving to around €1 per 100km.

It's always hard to predict the fortunes of non-mainstream car manufacturers but it seems that Mia are on a steady course and are already expanding their model range. As well as the current three variants in the electric range, Mia will be premiering the new 'rox' at the 82nd Geneva Motor Show this year.

Mia likens the rox to a tailored suit, and customisation is certainly the order of the day. The rox sets itself apart immediately as a fully convertible structure whilst keeping the original car's chassis and tube structure. It's this tube structure that allows owners to customise their Mia. Interior panels made from a number of materials – be it fabrics, leather or plastics – clip onto this tube structure and the roof piece is simply "unrolled, clipped and zipped". Neat.

The rox has more tricks up its sleeve though. Interior materials are hi-tech – fibre fabricated seats are covered with Havana leather, a breathable material that moulds itself to the occupant's body and provides natural ventilation.

Below
Roll Up
Sides can be rolled up for an al fresco driving

Right
Graphic
Add your own style by customising graphics for work or play



David Wilkie has taken inspiration for the rox from cars from the 1920's and 1930's. "Back then, you bought a chassis from a manufacturer, then chose a coachbuilder to rig out the car", he says. Essentially, Mia is offering to save you some hassle and act as manufacturer and coachbuilder. At the same time as this, they're aiming to reduce the retail price of electric cars. What more could you want?

Three cars in one, the rox can go from fully convertible to fully covered, with a middle option where the side windows cleverly pivot onto the roof. Mia claim that the rox is all but ready for production but are now waiting for the public's reception to it at Geneva. It would certainly be some sight on the road, and with a range of 125k and quick charging time like its siblings it would be a shame if the rox didn't make production. ✘



“Perhaps the most prestigious of all motor shows, the salon has charted the automobile's progress since the inaugural show in 1905 to today and will undoubtedly remain a stalwart of the industry for many years to come.”

Geneva Design Preview

It's no secret that the show is the preferred location for the supercar fraternity – Ferrari, Lamborghini, Maserati and even Koenigsegg all choose Geneva for their showcase reveals, and this year will no different. However, that's not to say that the show is being left behind in the green stakes by its siblings in Detroit and Tokyo amongst others. Far from it.

For the past three years the show has hosted The Green Pavilion, an exhibition specifically for “new technologies of alternative and ecological propulsion and renewable energy sources for vehicles”, there is also an opportunity to test drive cars adjacent to the Pavilion. The Pavilion was originally for small, specialised start-ups but unsurprisingly many major manufacturers now choose to exhibit there as well. Not such a bad thing, but with more cars on display the competition for space is fierce and consequently more often than not it's the small makers who lose out. Money talks after all. Here's a snapshot of what to expect this year.

INFINITI EMERG-E CONCEPT

Following last week's leaked patent drawing, here is the finished artice. Sculpted and muscular, the Emerg-e is a bit of a show-stopper - note the glass roof. Internally, the Emerg-e will be a mid-engined range-extender hybrid that will allow zero-emission running for significant periods. Hopefully this concept will dictate the direction fo Infiniti's design language.



NISSAN INVITATION CONCEPT

This concept will provide the inspiration for Nissan's next contender in the compact segment (due 2013) and we think it's a looker. The distinctive 'Squash Line' on the side of car lends the INVITATION an athletic stance that, combined with a striking front-end, certainly make the car stand out. The concept's derivatives will wear Nissan's Pure Drive badge and the most frugal model will target under 100g/km CO2 emissions.



FIAT 500L

The 500L endured quite a painful birth before Fiat recently confirmed the details, and although the 500L's business case will undoubtedly evidence itself, the styling really is underwhelming – a Panda/500 crossbreed was never going to set the world alight. However, buyers will be able to specify Fiat's award-winning TwinAir engine.



TOYOTA FT-BH CONCEPT

Toyota describes the FT-Bh as an “ultra-lightweight, full hybrid city car study”, meaning that it will never actually make production. It's still a well-grounded project though, consciously avoiding expensive material, complicated manufacturing processes and focusing on existing methods. The Ft-Bh certainly looks to have considerable potential.

In the past, Swiss company Rinspeed has brought us cars that can 'fly' underwater and change their configuration depending on the number of passengers, so it's no surprise that their latest offering is somewhat innovative. Frank Rinderknecht's "Dock+Go" mobility system allows owners of ultra-urban EVs more luggage space for longer journeys as well as the option of attaching a bigger battery.



RINSPEED SMART FOR TWO "DOCK+GO"

PININFARINA CAMBIANO

Elegance. Purity. Innovation. All words Pininfarina use to describe the Cambiano concept. Expect it to house a hybrid powertrain, although with Pininfarina you can assume the internals with play second fiddle to the aesthetics. Furthermore, the concept will showcase low environmental impact materials.



Hats off to Volvo's designers because we think the new V40 looks the business. It seems that this car could easily compete in more than one segment too, making it a potential rival to Audi's A3 or even cars such as Mercedes's C-Class. Furthermore, the entire range comes with stop-start technology and regenerative braking, whether it be the frugal diesel model which emits just 94 g/km Co2 or the 250+bhp T5.

VOLVO V40



HYUNDAI I-ONIQ CONCEPT

The I-oniq Concept is an "electric sports hatchback with a range-extending petrol engine". It's a striking design that intends to convey the design attitude from inside Hyundai at the moment and features a 'penthouse roof' and LED headlights. The powertrain is a petrol-electric hybrid making the I-oniq capable of 120km as a pure EV and 700km with assistance from the petrol engine. Emissions are just 45 g/km CO2. ✕





Left
Chris Bangle
portrait

Right
BMW Gina
Concept
by Chris Bangle

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Cover
Peter Teufel:
A Tale of Car
Design in three
Parts By Chris
Bangle

Chris Bangle

In writing a fictional eBook about my 28 years in this business —Peter Teufel, a tale of Car Design in 3 Parts— I have of course given much thought to what it means to be a „Car Designer“. When I was a kid no one had even heard of the term—designers usually did hair styles or fashions—and the idea that someone would actually pay you money to sit around and draw cars all day was a fantasy beyond hope. The world was smaller back then in the early eighties, with less surgical-attention being focused on every facet of life that held meaning for some special interest group. Even after I graduated from ACCD and went to Opel, I had to explain to people what my job entailed (to be fair, Opel in those days was such a fun and free wheeling place that I was still figuring it out myself, right up until when I left for Fiat years later!).

Today many young persons from all over the world write to me for advice on how to become a Car De-

signer; it has become a well-known career goal for the passionate of the automobile to aspire too.

Or has it? I think that these kids still see it as I did then, not so much as a „job“ or a career path but as an outlet for their fanaticism—with a paycheck to justify it all to mom or wife back home (the famous „Homo-Economicus“ that Ermanno Cressoni once told me is somewhere in the background of every „Homo-CarDesignicus“; goading them to ask for that promotion...when all they want to do is draw cars).

It is a hard learning-curve, a young designer is simultaneously being asked to imitate the canons and accepted practices of professional Car Designers just to demonstrate that they can play the game, but at the same time they must push to the limits their creativity and imagination to bring new ideas

into the mix. Car Design depends on ‘DNA’—the visual codes of previous cars—to give meaning to new ideas, and everyone involved is responsible to ensure that the ‘gene-pool’ does not become stale.

One difficult obsession that all these young designers share, is that the only meaningful place to wind up is in the hallowed halls of the big OEMs—the design teams of the big car brands. This is a totally foreign environment for them, where the culture of passionate ‘car draw-ers’ is thrown up against the larger context of the corporate values. My protagonist, Design Director Peter Teufel, is just the cynical sort of guy the system corrupts, and in the early parts of the book he explains his approach to car design:

“‘Conformity’ my friend, this is the secret to car design. Our profession is here to align the Brands energies with the flow of mass opinion. ‘What’s Not To Like?’ is the best sales pitch you can have in this

Age of Mass Popularity. We create to match the expectations of the customers, not to confuse them with the unknown and untried. The time when you could bring a new car home in your driveway and surprise your neighbour with something he’d never seen before is over, Rover. Instead of saying, ‘What is THAT in your driveway?’ with eager anticipation, he is more likely to dis’ you saying ‘What the hell is THAT in your driveway?’ When that happens, you are toast. Get used to doing design by numbers... Innovation is fine for suspensions but not for aesthetics. It’s a risk no company can run, and that is the new dogma.”

I fear that this attitude is not all fiction, and that today many companies have dismantled the respect for their creatives—car designers are after all the ‘chickens laying golden eggs’ - in the face of tremendous Brand/Marketing-inertia that strives only to ‘do nothing controversial, do nothing that might inspire critique’.



With Peter Teufel I wanted to make the distinction between those who refer to 'car design' with the disdain of one manipulating a commodity service, and those who speak of 'True Car Design': an application of the passions and skills of a sculptor-artist by those who commit all their will, imagination, and creativity into a statement of culture, dynamic, and—most importantly—the reinterpretation of human character into an 'avatar' shape that represents you and I as we imagine to be...not just the person behind the wheel.

I use the term 'Endeavor' to indicate the one essential aspect that elevates a designer into the realm of True Car Design, and as such it does not limit the field to just automobiles. In the story Design Director Peter Teufel is sent back in time to learn this, and I imagined that an explanation he would hear in a styling studio in the early 1950's would be something like this:

"Endeavor! This is the secret of True Car Design—the physical manifestation of what we need to be fully alive, and that is desire, passion! Those 'Form Follows Function' chanting hermits wandering around in the lost desert of Modernism don't have a clue of the energy contained in this magical word, its every syllable a formula of sex, power, and speed!...

"...These gifted men [the architects of the cathedrals] were Car Designers sculpting in stone, not cement box makers of today who call themselves heirs to Brunelleschi. Cathedrals are emotional triumphs, just like our Cars. Have you never been to

the Cattedrale di Westminster? It will make you piss your pants, I tell you, if you have half a soul. So tall and imposing that it cannot stand, and yet so delicate in its every lyrical arch and flying buttress; a woman in silk dancing before her lover!"

"...Forms and line, shapes and graphics, they all work together in one big visual vocabulary of Meaning. That is what Design is, you know? Meaning. God reveals the beauty of life in moments of His Meaning, within acts of His Great Stagecraft of Life. You and I are but minor players in this theatre compared to the actors in hammered metal that we create!

The story their shapes tell is read in the tension of the surfaces, the delicacy of the curve, or, as you have just done, in the beautiful resolution of conflicting voices into a single harmonious music of flowing line. Together, their intrigues draw the eye to ever-new discoveries in the form, and this is the greatest and most complex 'Story' that humble aluminum can ever be asked to tell."

"Peter Teufel" has a happy ending. I, like the Peter, have learned that it is something bigger than just drawing cars. I may not like everything that is being sold on wheels these days, have grave doubts about the attitudes in the board rooms of the car companies, and hope that vehicles evolve rapidly into a new Personal Mobility Dimension, but with so many young persons around the world sharing that initial passion to create on paper—combined with the spirit to Endeavor—I am sure True Car Design will flourish long past our need to park tons of metal in front of our houses. ✕



A TALE OF CAR DESIGN

PETER TEUFEL

CHRIS BANGLE

EBOOKAMAZON®

