



10th Cairo International Motorshow

Friday, 10 November 2000

At the 10th Cairo International Motor Show PININFARINA is honoured to exhibit two concept cars-show case, the MYTHOS and the METROCUBO, which highlight the Pininfarina creativity, innovative peculiarity and engineering and manufacturing quality. Pininfarina was set up in 1930 as a bodyshop with the ability to handcraft single cars or limited editions.

Today that little bodyshop has developed into an industrial Group, quoted on the Italian Stock Exchange since 1986, whose core business remains in the automotive sector in the form of different possible kind of cooperation with the manufacturers. The Pininfarina Group employs some 2500 people in its 9 companies located in Italy and Germany and its six factories that cover a total area of over 630,000 sq.m. In 1999 its consolidated value of production came to 1,200 billion lire with 44,500 cars manufactured. Those figures confirm Pininfarina's INDUSTRIAL status as a company perceived by the market as a FULL SERVICE PROVIDER to its manufacturing partners. In fact, Pininfarina can offer those partners a comprehensive support package that covers every step of the realisation of a new product, from the first rendering to the finished car.

Alternatively, it offers all those services - design, engineering, development, industrialisation and production - individually or flexibly packaged, according to the individual client's needs. Pininfarina developed into the industrial operation it is today, while retaining and indeed building on its independent creative capacities. In fact the Company continues to develop its own research concepts in parallel with the collaboration with the car manufacturers, an ability that has allowed and still allows Pininfarina to exploit its creativeness, to update its know-how in the design and engineering sectors, to experiment with new trends and new ways of expression, to stay ahead of the game by rethinking the present in order to offer a unique vision of possible futures. With all that in mind, Pininfarina has consistently invested huge intellectual and financial resources in independent research since the Sixties.

In the process it has developed over 60 concept cars that have explored the innovative possibilities in the fields of formal innovation, aerodynamic research, new technologies and materials, safety and environmental protection. In fact, Pininfarina has made a substantial contribution to automotive progress at both aesthetic and technical level over the years. In particular, the two research prototypes exhibited in Cairo, the 1989 MYTHOS and the 1999 METROCUBO, offer a clear demonstration of Pininfarina's ability to identify and develop new ideas that cover every aspect of the car in the form of two vehicles with two very different missions.

The MYTHOS represents a pure formal research, a creative interpretation and development of some of the key themes that have characterised Pininfarina's long partnership with Ferrari: research that becomes emotion when combined with the prestigious mechanicals of the Ferrari Testarossa. For its part, the METROCUBO takes just 2.58 metres to propose a new kind of urban mobility, a hybrid powered vehicle. Metrocubo: a revolution in Citycar architecture. The research for an innovative approach to mobility is not new for Pininfarina: METROCUBO is a different and more actual response to this theme if compared to the most recent studies about a family of environmentally friendly cars that can make a real contribution to the problems posed by urban areas that are both congested and heavily polluted.

The challenge, when making an innovative proposal on this theme, consisted in further increasing the "density" and the intelligence of the design, by reducing the used volume (motors, transmission, batteries, reducing gears, etc.), while increasing the usable internal volume. The idea of this new step forward stemmed from a technology recently developed by MICHELIN, PAX SYSTEM: a breakthrough in the tyre sector with such potential that it allows the very architecture of the vehicle to be completely redesigned. Beyond the currently most well known features of PAX SYSTEM - no bead unseating and the ability to drive



with zero pressure for a certain distance - we were attracted to other possibilities offered by this technology that led us to imagine a new car concept optimising, in an unprecedented manner, the outer volume / habitability / performance ratio.

The elimination of the spare wheel enabled us to make use of the whole floor space which could be lowered in order to house technical components. No more spare wheel also meant that specialised axles could be designed with different front and rear solutions: wheels with different diameters, tyres with different specifications. At the front, PAX SYSTEM technology enabled us to reduce the outer diameter of the tyre / wheel units in order to gain space on the outside of the vehicle. This space gain was achieved without compromising the system's braking power or load capacity. Still at the front, the "small" outer diameter of PAX SYSTEM assembly enabled us to reduce the turning circle. A precious advantage in today's cluttered streets. At the rear, the aim was to fit as many elements as possible under the chassis in order to free up as much inner space as possible. To achieve this, we minimised the lateral width of the wheel assembly and, by making use of a reducing gear in the wheel, we lowered the transmission shaft as much as possible. We were also able to integrate part of the suspension system into the wheel. These technical choices allowed us to obtain a completely flat floor, free from any mechanical components and therefore fully available for optimum space usage.

This result has been achieved also with the traction system that had been developed in order to optimise the interior volume. In this work Pininfarina has co-operated with technical partners who all contributed their specialist know-how and applications specifically worked out for this new car. The auxiliary power unit by Lombardini is placed at the front integrally with the brushless rare earth magnets generator created by Vickers. The power generated is stored in a pack of batteries supplied by Exide Europe which is also responsible for the battery packaging and technical support. The electric drive system mounted longitudinally at the centre of the car was developed and realised by Siemens AG. The commitment and teamwork of all the partners have been vital to optimise the packaging of the various mechanical components, simultaneously with the development of the chassis.

It was an approach that enabled to increase the interior space obtaining an unimaginable roominess for the cabin, not to mention the further advantage of using the combustion engine to recharge the batteries thereby achieving a range of 400 km. From a structural point of view the chassis is made of aluminium, a material that is both lightweight and recyclable. Underlying the vehicle's technological soul is the essential external design characterised by unusual proportions with their own disciplined and refined harmony. In designing METROCUBO, Pininfarina intended to get over the concept of traditional car. Rather than aim for a scaled down version of the traditional concept with its clearly differentiated front and rear, an air intake grille, lighting clusters in the usual place and so on, the design team sought a neutral geometrically simple shape, almost mobile urban decoration, but one that could epitomise both the dynamism of a motor vehicle, and a reassuring solidity in spite of its small dimensions.

The outcome is certainly unusual: a genuine cube placed on light alloy wheels by BBS at each corner. Above the wheels, forcefully underlining their importance in the project, are four corner pyramids whose upper parts take the technologically innovative lighting clusters developed by Valeo Eclairage. Apart from being a distinctive design feature with a fundamental role, the differently sized wheels help to show which way the vehicle is heading and like the different rakes of the windscreen and rear window give it a dynamic appearance whatever angle you view it from. In fact the design is fundamentally identical on all four sides, differently proportioned but powerfully dominating. This represents the abandonment of the classic semiology in which the design of the front, sides and tail each possessed its own stereotyped genetic coding. METROCUBO is a homogeneous monolith that presents itself identically from every angle. In the past we've often gone for a surprise that has depended on meticulously crafted complex shapes. This time we've kept it all very simple, as easy and restful as the concept it expresses. The cabin is almost entirely glazed - the polycarbonate for the glazing is supplied by Isoclima Aerospace - and most of the steel lamella sunroof created by Webasto (who also supplied the system for heating the interior) is transparent too. Various parts of the bodywork, inside and out, are made of a "fresh" material that is rather unusual for a car: a translucent



plastic that we also used, albeit rather less extensively, on the Eta Beta which came out in 1996. Bearing in mind that METROCUBO is about as long as a city vehicle at barely 2.58 meters and as wide as a comfortable saloon at 1.78 m, it is certainly fair to say that every inch of this car is exploitable to create a "living space" as flexible as possible.

As we can see, there's a row of 3 seats at the front: the driver's seat and 2 passenger seats set slightly back from it. A fourth and fifth seat can be transversally positioned to obtain a completely modular cabin. In fact the only fixed point is the driving area: all the rest has been designed to form a neutral background against which the various elements can be moved around at will to meet the needs of the particular journey in terms of use and space. The rearrangement process has been simplified by the use of tracks along which the seats slide into their desired positions. Apart from the driver's seat, all the others can be folded up and packed away with the greatest of ease. They are padded with a special gel supplied by TechnoGel which makes them comfortable to sit in despite the deliberately minimalist look that matches the style of the interior. In spite of its generous width, METROCUBO is extremely easy to get in even in cramped spaces. In fact, thanks to a sliding door no more space is taken up by entry facilities than on an ordinary utility vehicle. We achieved that after studying various access solutions and opting for an asymmetrical car: a sliding door for the driver that takes up no lateral space, a big, traditional door on the passenger side and a rear door with a limited radius opening that, combined with the flat floorpan, provides access for passengers as well as for any loading operations required. In line with the philosophy of the car, we kept the interior design as simple as we could, devoting a particular attention to the facia and the seats.

The facia design echoes the look of the body including the colour. All information is organised around a central multifunctional display, visible not just to the driver but to all the car's occupants, and it is operated by a remote control system so that the passengers have access to entertainment facilities like the stereo, as well as the satellite navigator, telephone and climate control. All the main controls are within easy reach of the driver, to his left or on the steering column. A series of glove boxes have been carved out on the facia for the storage of small items. The seats consist of a simple tubular frame in aluminium covered in fabric with gel padding on all those areas that come into contact with the occupant's body.

The result is a light, see-through look and also means that the seats take up very little space when unoccupied. Furthermore the passenger seats are all mounted on rails set in the floor so that they can be slid along the entire length of the cabin or indeed be taken out completely. So the most interesting aspect of this interior is that it is entirely modular and can be rearranged to suit the needs of the moment, the number of passengers being transported and the nature of the journey.

Metrocubo, which received its world preview at the 1999 Frankfurt Motor Show, won three prestigious Concept Car of the Year Awards. The ceremony took place in Tokyo's Axis Building during the Automotive Designer's Night. Promoted by Automotive News International, cars are judged under four separate Concept Car of the Year headings: Interior Concept, Safety Concept, Environmental Concept and Concept of the Year. In each case points are awarded for technological character, feasibility, potential manufacturing cost, real consumer benefit and level of innovation. Metrocubo came first in the Interior Concept class which rewards the year's best interior design. It came second in the Environmental Concept class on the basis of its contribution to environmental research. Finally, Metrocubo won third prize in the Safety Concept category for its success in reconciling safety with cutting-edge mini-car design. The Jury comprised Chuck Jordan, former Vice President of General Motors Design, Carl Olsen, Director of Transport Design at the Centre for Creative Studies in Detroit, Ken Greenley, Director of Automotive Design at the Royal College of Art, and Gordon Murray, Chief Engineer at McLaren Cars Ltd. Their scrutiny winnowed down the 55 original research prototypes to 19 finalists, among them Metrocubo.

The Pininfarina model was the only Italian entry and did significantly well in three of the four award categories it had entered.

Mythos: the formal and the technica

The exterior design



With the Mythos of 1989, Pininfarina has tried to break away from the traditional car – designed in linked panels – developing the theme of the relationship between volumes.

The use of Ferrari mechanicals does not just offer top technical refinement but also represents a particularly stimulating theme in the search for new aesthetic and formal ideas: in the case in point, starting from Testarossa mechanicals, this prototype was to develop and radicalise the design problems which arise when engine and radiators are mounted at the rear as it calls for a rear track which is much wider than the front track.

As far as the dimensions are concerned, the Mythos retains the 2550 mm wheel-base of the Testarossa although it is slightly more compact; 4305 mm long (180 mm less than the Testarossa), mainly because the rear overhang was shortened to 637 mm. The plan view is radically different. The considerable difference (140 mm) between the two tracks gave the Testarossa a delta-shaped form. The Mythos further increases this difference to 210 mm, giving the car a generous maximum width of 2100 mm, 135 mm more than the Testarossa.

The contrast between the front and rear masses thus became the design guideline. The main body of the car, which contains the engine and radiators, generates an extension from within, containing the passenger compartment and hose unit. The designers deeply worked in order to control and dominate the optical contrast and the proportions of two volumes that are so different. The transit from one body to the other had to be extremely fluid and not forced, so that the car would appear as a homogeneous form with its accentuated muscularity, in spite of being made up of two quite distinct elements.

The Mythos was intended as a return to the fascination of the two-seater “barchetta”. It is therefore very compact, decidedly sporty and extremely spartan.

The side view is dominated by the layered construction, made necessary by the rear radiator. The lower lip of the front bumper (slid 30 mm forward for better aerodynamics) was echoed on the sides, on a level with the sill, by a slight bulge along the whole length of the car, to outline the overall dimensions. From the front wheelarch, the level created by the union of the bumper and the door is recessed towards the tail, forming a large air intake which is framed on the outside, near the rear wheelarch, by the rear bumper which opens up, connecting with the maximum section of the car.

The side view shows an extremely complex form, with a formal harmony that distinguishes the Mythos, whose aggressive character is underlined by details such as the outer edge of the air intake, more steeply inclined than the one on the Testarossa, and the front wheelarch, perfectly in line on the plan view, but clearly slightly raised on the cross-section, a typical feature of many Pininfarina-designed Ferraris. The various planes making up the side combine so well that the large rear wing passes almost unseen, perfectly integrated in the tail which becomes higher and heavier the more it extends.

The first thing that strikes one about the nose of the Mythos is its aggressiveness: the small windscreen stands out in a much broader body, the two large rear air vents emerge strongly even in the front view, because of the much wider rear track. The windscreen wiper is hidden by an extension of the windscreen glass which is lifted up when operative.

At the rear, above the continuous rear bumper section, there is a slit for engine ventilation, from which emerge a pair of double exhaust pipes. Higher up, the section of the light cluster band goes from side to side, and above that the wing-spoiler which is the continuation of the side surfaces. It rests on a central telescopic support which can raise it 300 mm, according to the speed, to accentuate the down lift effect, positioning it in an area where the air flow is not disturbed.

The three-quarters front view underlines the connection between the planes and different movements which give a sensation of elaborate continuity.

From the three-quarters rear view the lack of continuity is very marked, while the spectator is immediately aware of the fact that the passenger compartment is created within the more bulky tail.

The design of the Mythos bodyshell includes a large bonnet hinged at the front like a racing car, a smaller engine hood which rises towards the front, and two doors opening conventionally.



To conclude the formal analysis of the Mythos, we should underline that even in the presence of a strong urge in the research world for a return to ornamentation, and decorative but pointless detail, Pininfarina has preferred to maintain its own aesthetic tradition of a search for the essential and for innovation.

There is always a provocative, experimental element in a prototype; Pininfarina chose to break away, with painstaking effort in the underlining of the individual and the overall volumes, instead of breaking with present trends by the addition of decorative gimmicks.

Functional elements such as bumpers, headlamps and spoilers were deliberately integrated in the overall form, without any possible decorative role. The Mythos has no space for surface graphics because the shape of the volumes themselves creates a strong, distinctive sign.

The interior design

The interior design of the Mythos recaptures the spirit of the racing "Barchettas" of the 1960s; two small wraparound seats, a simplified dashboard and down-to-earth door panels.

The shell of the car body was studied carefully so that it would blend naturally with the external surfaces, not only with the volumes but also with the chromatic continuity: in fact it is covered with leather that is the same red as the bodywork.

The formal lay-out of the interior is dominated by symmetries: the flow of the dash is repeated in parallel on the base of the seats; the only lack of symmetry is due to the instrument panel-steering wheel-pedals unit which is structured in a single block, and can be adjusted in depth.

The large circular speedometer and rev counter stand out amid the analog instruments. The design of these double circumferences is repeated in the steering wheel, whose three spokes are shaped in such a way to provide a perfect view of the instruments, and to repeat the double circular movement in the lower part. All controls are positioned on two perfectly symmetrical stalks at the sides of the instrument panel; only the horn button is activated from the steering wheel, by two buttons inside the wheel.

The door panels, which are kept to bare essentials, have a door handle which is perfectly integrated in the form, and the absence of window winding mechanisms makes room for a deep shell which acts as an armrest.

Mechanicals and structure

The Mythos was built on Ferrari Testarossa mechanicals. The twelve cylinder 4942 cc boxer engine with four valves per cylinder and double overhead cams, producing 390 bhp DIN at 6300 rpm, is centrally mounted and was exactly the same as on standard production Testarossas. The only difference regards the exhaust, which is completely new since the rear overhang of the Mythos is so short that the original exhaust would not fit.

The tubular steel frame is derived directly from the Testarossa, and has been reinforced to safeguard the active and passive safety features even though the roof and connected structures have been removed.

The bonnets, doors and all the panels of the bodywork are built entirely in carbon fibre. The instrument panel, fascia, door panel and seats are shells covered in leather.