

FYI.05

capricorn

01 The immensely high development needed to achieve the CO₂ emissions limit **01** Site News: capricorn Düsseldorf – start of construction of capricorn MANUFAKTUR is scheduled for the summer of this year, capricorn St. Etienne – the “eco rectific” certificate; capricorn UK: the new location in Basingstoke **03** Events: forged oil cooling channel piston at the Engine Expo **03** Personnel-News **04** Portrait: Werner Rosport **04** Questioned here: Jean-Marie Berthel **05** capricorn sports – start into the season **06** capricorn Research and Development OEM markets **07** Imprint

Dear readers,

During the first quarter of 2009, dark clouds formed over the automotive skies – in the press, everything revolved around the topics of the crisis and recession. As a result, the immensely high development need of the OEMs in order to meet the new ambitious EU emissions limit of 120 g CO₂/km taking effect in 2012 seems almost contradictory. Parts of the market are therefore full of dynamics, even now. It is an opportunity ideally suited for capricorn: Having a presence even in difficult times is the thing to do. This also includes the Engine Expo in Stuttgart, Germany, where we will showcase ourselves as a competent technology partner with innovative approaches in order to advance the implementation of these ambitious goals. It is another good reason for capricorn to invest in even better infrastructure, both in Basingstoke/England and in Germany at the Nürburgring and in Düsseldorf. The people behind capricorn are also as excited as always: Don't miss the interview with Jean-Marie Berthel, the new Managing Director of capricorn in France.

We hope you find the Newsletter informative to read.

LOCATION NEWS capricorn

DÜSSELDORF

If you believe the media, today you can find a superstar at every corner. Well, as we all know, we are permitted to doubt this perception. However, in Renzo Piano capricorn DEVELOPMENT is quite certain to have indeed gained an internationally exceptional individual from the architectural scene for the collaboration on the Casa Stupenda project. As reported back in FYI04, the Düsseldorf Medienhafen will soon be enriched by another architectural highlight. But there is more, as the capricorn MANUFAKTUR project is also about to be launched.

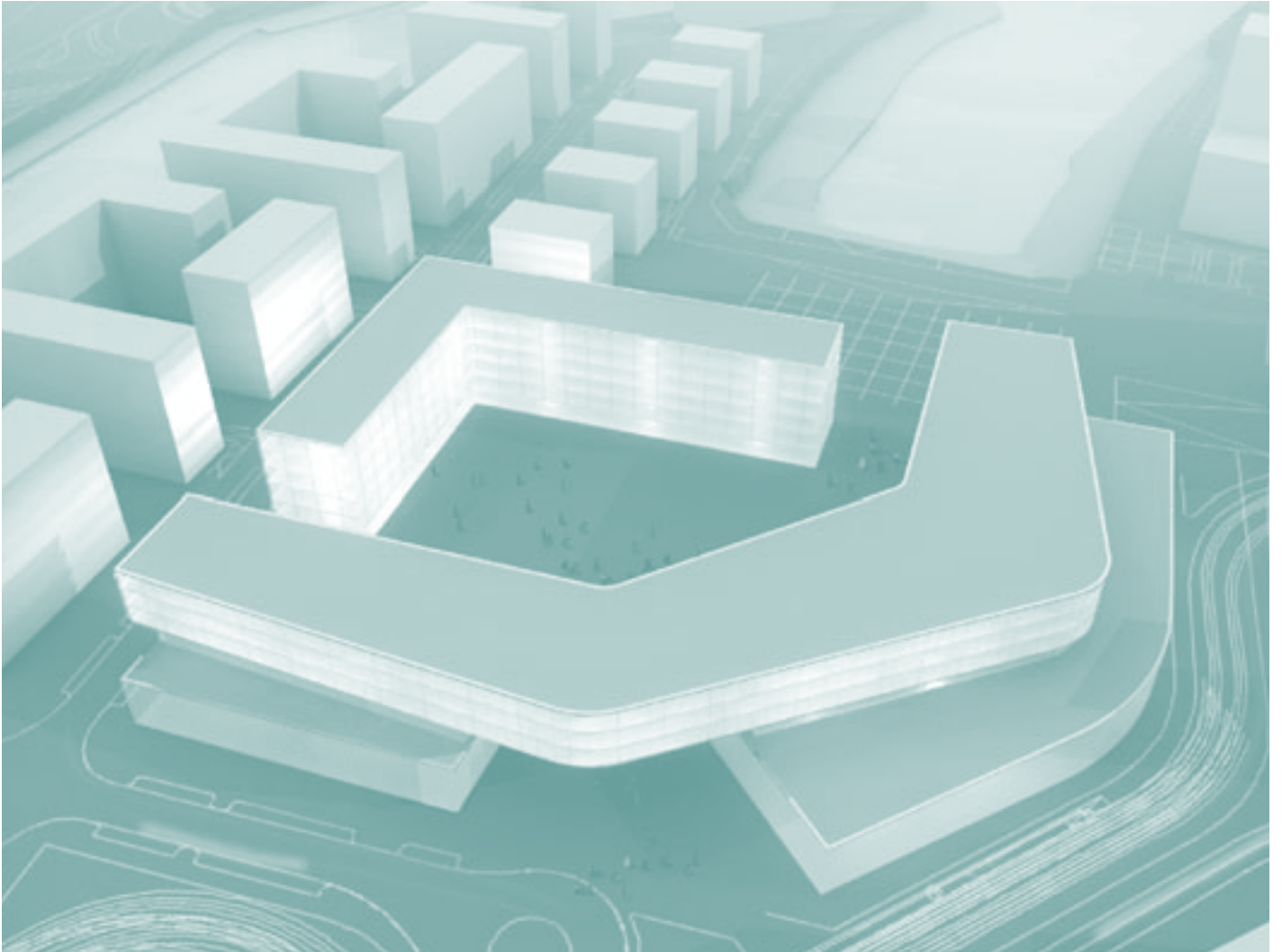
In the summer, the excavation work will commence in the direct vicinity of the capricorn building. Here, the MANUFAKTUR project will be constructed, which will be designed for three primary functions. In addition to the building for the new headquarters of the capricorn GROUP, additional offices and an underground garage will be constructed by 2011. A look at the numbers illustrates the special nature of this building project: The property will extend over

a length of 680 ft (210 m) and a height of 75 ft (23 m) and due to the hybrid structure suspended on a metal pedestal have a width of between 55 and 127 ft (17 and 39 m). The plans include a gross floor area measuring almost 260,000 sq ft (24,000 sq m) and large open areas without interfering structures. This construction method is only possible through drastically optimized statics. Above-ground, the complex will shine with five floors and a mezzanine located between the ground and first floors. The underground garage will cover four levels.

In a manner typical for capricorn, classic features, such as user friendliness, flexible use structures and economical aspects, such as the implementation of ecologically sustainable solutions, will also be focal points in the development of integrative building concepts. The property will remain significantly below the CO₂ emissions limit and will therefore be a low-energy building. The specifications with respect to the building insulation will be surpassed by 70% and the annual energy requirement by a

remarkable 50%. As a result, ecological aspects are also economical ones which will benefit the user later due to minimized operating costs. The capricorn MANUFAKTUR project can therefore be

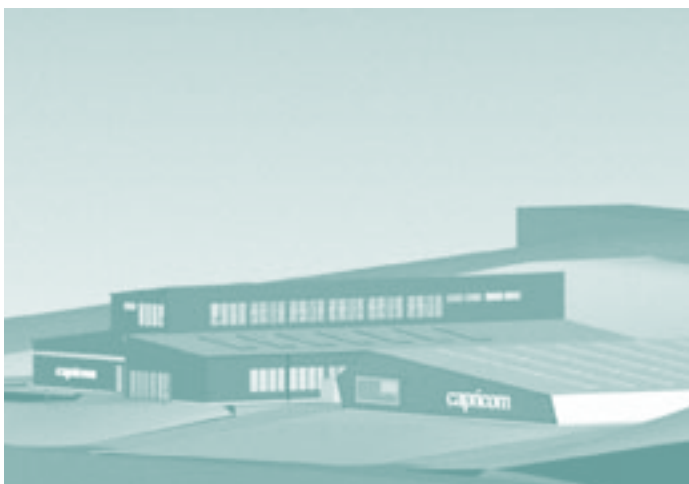
considered an economical and innovative building with a futuristic nature even now.



The capricorn MANUFAKTUR in the Düsseldorf Medienhafen

NÜRBURGRING

At capricorn DEVELOPMENT, planning is in progress now for the new production building on the property directly adjacent to the COMPOSITE production operation. The architect Pawel Krolkowski is excited: “While the building will only have one storey, the structure will be similar to the COMPOSITE production operation and has several unusual features.” We will take a closer look over Pawel’s shoulders in one of the next issues.



Directly adjacent to the COMPOSITE production operation – the new production building at the Nürburgring

ST. ETIENNE

capricorn AUTOMOTIVE is facing the responsibility for green thinking. Today, an environmentally compatible production operation and the conscientious use of scarce resources are factors for economical acting, but tomorrow they will be indispensable basic requirements for industrial acting. The capricorn crankshaft production in France was recently awarded the “eco rectif” environmental certificate. The “eco rectif” award honors efforts by those companies that apply especially sustainable efforts in the production of mechanical high-performance components. Due to the stringent standards, very few manufacturers receive this certificate.



The certificate – the production operation of capricorn in St. Etienne is especially environmentally friendly

ANDOVER/BASINGSTOKE

As we reported last year, capricorn AUTOMOTIVE in England is bursting at the seams. Now, the plans to give up the location in Andover in order to meet the requirements and move into a suitable and larger building have become more specific. After a year-long search, the company has located a perfectly suited building in the larger infrastructure of the city of Basingstoke, located west of London. The Managing Director Martin Keswick said: "The Horizon building in Basingstoke is an excellent fit for the planned future growth of our UK operations, the location is close enough to the current Andover facility to retain our skilled workforce and puts us in a strong precision engineering based region for future employment. The Horizon premises are located close to junction 6 of the M3 motorway and with London Heathrow being only 30 miles to the East, makes easy access for all."

With a gross floor area measuring approximately 38,000 sq ft (3,531 sq m), the business unit will have sufficient space for the planned medium and long-term growth plans. All of the existing plant,

processes and structure will move to the new location along with significant additional investment to expand our capacity and capabilities. The high specification fit-out process for this building is starting now with a planned move of plant and people in September/October 2009.



The new location of capricorn AUTOMOTIVE Ltd. in Basingstoke

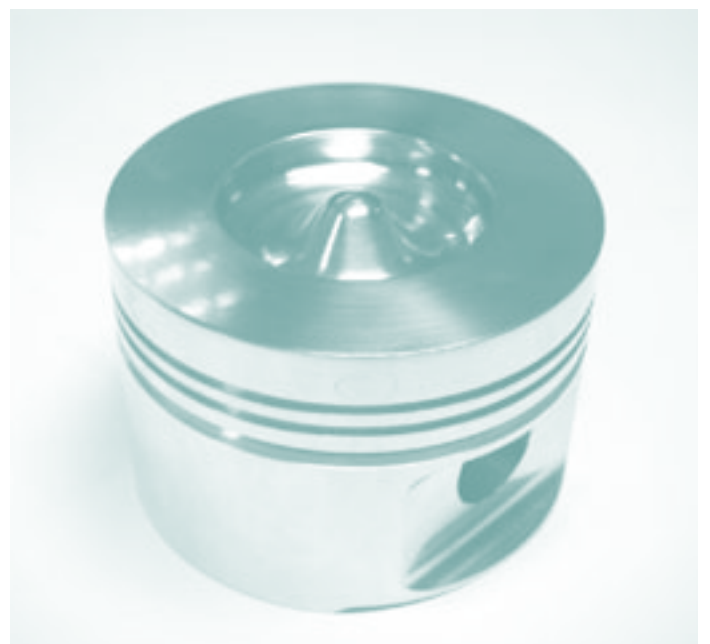
EXHIBITIONS

ENGINE EXPO 2009 – INNOVATION IN PISTON DESIGN

The automotive industry must save money, and many companies cut costs first in their marketing budgets. We find, however, that our booth at the 2009 Engine Expo will be money well invested. You can find us in Stuttgart from 06/16 to 06/18/2009 at Neue Messe, Hall 3, Booth 3100 opposite the main entrance.

capricorn England will unveil an innovation in piston design. What previously was only available in cast form, capricorn now exclusively offers forged: an oil cooling channel piston for the high-performance OEM and racing markets. We look forward to your visit.

The innovation in piston design – the forged oil cooling channel piston



PERSONNEL-NEWS

MATHIEU GIRAUDET

Mathieu has worked as a member of the sales team of capricorn AUTOMOTIVE in St. Etienne since the beginning of March. Due to his proficiency in business English and especially German, he will primarily be the contact person for international customers.

ROBERT HUGHES

is strengthening the Quality Control team as an inspector of capricorn AUTOMOTIVE Ltd. in England.

SAMANTHA PASK

also works at capricorn in Great Britain and is in charge of coordinating Production and Logistics.

TOBIAS MIMM

as the architect holds partial responsibility for the various construction projects of capricorn DEVELOPMENT.

WERNER SCHMITT

reinforces since the beginning of the year the team COMPOSITE in the production department at the Nürburgring.

A sincere welcome to all of you!

STEFAN SCHRÖTER

has successfully completed his CNC cutting machine operator apprenticeship at Mönchengladbach.

CHRISTIAN BLUG

has successfully completed his Automotive Mechatronics Technician apprenticeship at Mönchengladbach.

Congratulations to the journeyman!

PORTRAIT

WHAT DOES WERNER ROSPORT DO?

Today, as a Developer and Key Account Manager at capricorn COMPOSITE at the Nürburgring, Werner Rosport has significant responsibility for the area of Industry and Automotive OEM. He has worked for capricorn for a year now, but what did his professional career look like up to then? Born in the German state of Saarland, he began his technically focused career with a toolmaker apprenticeship, which was directly followed by engineering studies majoring in prime movers and engines.

Due to his own activities in motorcycle sports, composites were a fascinating topic for Werner even during his first years in the job world. As a scientific employee for Composite Research and Development at the Institute for Composite Materials in Kaiserslautern, he worked in the field of high volume production methods for composite components, such as filament winding (precision winding process), infusion technology, resin transfer molding and fiber-reinforced thermoplastics processing. This provided him with extremely convincing qualifications that benefited him in the years after when he was a Sales Manager for these areas domestically and abroad. His experience covers the market areas of medical technology, mechanical engineering, aerospace

technology, automotive technology, racing and research projects. The passionate athlete finds recreation in extensive racing bike tours – best, of course, through the mountains.



*Werner Rosport,
Developer and Key Account Manager*

QUESTIONED HERE:

JEAN-MARIE BERTHEL

Jean-Marie Berthel has been the Managing Director of capricorn AUTOMOTIVE SAS in St. Etienne, France, since the beginning of 2009.

Jean-Marie, the famous first 100 days are almost over. How does capricorn feel to you?

The first 100 days were very exciting and 100% in line with my expectations and thoughts before I joined. I met people from the sister companies in England and Germany and have attended the Birmingham Autosport Show in January; this gave me a good overview of the capricorn group. I must say that at this stage, and looking at the challenging economical environment around us, it's very important to be part of a group with a strong know-how, a clear vision and a long-term strategy. I also must say that I have already met a lot of people with different cultural and technical backgrounds, but all working very closely together – and that's a real asset.

The automotive branch has had a huge influence on your CV so far – therefore you have a lot of experience. If you consider some self-chosen criteria, how does capricorn perform in comparison?

I have spent already a good dozen years in the automotive branch, and almost all related to crankshaft production. If I had to compare capricorn to what I've experienced so far, I would say that there are really two differentiators which make the capricorn product unique in the world of crankshaft production: our capabilities in crankshaft design and our production tool using all of the recent machining technology in crankshaft series production. These

are two key factors for our racing and OEM customers. We are not only a company which can produce crankshafts; we know how to make them and how to design them. We can offer a wide range of services going from designing crankshafts, producing prototypes for OEMs or billet crankshafts for competition, servicing try-out programs to set-up new machining lines for series production and producing for niche series as well. I also would add that capricorn France is one of the rare companies having such a wide and intensive experience in servicing competition – more than 50 years of experience with the Chambon crankshafts and many championship titles in our hands.

As the new Managing Director, which targets did you fix for capricorn France in a medium-term? Are there essential things you would need to change for reaching your goals?

We will increase our efforts to better serve our two main markets in crankshafts with competition and OEMs. For the competition domain, we want to offer products with a high tech content, matching series-specific requirements and cost effectiveness. We will extend our design service offer with design enhancements: lightening, balancing, stroke increase, oil holes optimizations, FEA capabilities etc. For our OEM customers, we will enhance our global service in order to become like a "lab-facility" where we can best support customers by integrating the process constraints at the earliest stage of the crankshaft development and deliver prototypes made like in series production. Time-to-market ►

and costs are two major key success factors for our customers; our industrial tool set like with series production machinery, our design capabilities and our logistics skills really help our customers to develop best-of-class crankshafts both design- and production-wise.

To reach these two goals, we will continue to invest in new technologies, as we did recently with CNC orbital grinding and super-finishing, we will enhance our capabilities in crankshaft design with further recruitments, and we will do some organizational and technical enhancements in our production department to improve our service performance; this is my route for the next nine months.

Most people know that the capricorn AUTOMOTIVE SAS is quite active in the international racing and OEM high-performance segments; are there other fields you are involved in?

We have also a historical activity with industrial crankshafts for compressors and pumps, and we are involved in several aeronautic projects; this is a very promising area, and technical-wise they are also a couple of good ideas that we could apply to automotive applications. But our focus today remains on car engines, this is our core business, and there is still plenty to do.

Jean-Marie Berthel, Managing Director at capricorn AUTOMOTIVE SAS in St. Etienne



capricorn SPORTS START INTO THE SEASON

capricorn is at home on many race tracks around the world and works with a variety of teams in relationships based on partnership. We congratulate the following teams and winners and are pleased to have contributed a small part to their successes.

FORMULA 1

Season opening: Melbourne, Sepang and Bahrain – Brawn Mercedes-Benz turns the Grand Prix upside down. Shanghai – Red Bull Renault booked their first Grand Prix triumph.

MOTOGP

Casey Stoner manages the best start into the season and wins the GP in Losail/Qatar.

RALLY WORLD CHAMPIONSHIP

There can be only one: a season debut like no other for Sebastien Loeb during the rallies in Ireland, Norway, Cyprus, Argentina and Portugal.

JAPANESE GT RACING

Nismo Nissan GT-R wins the first race of the season at the Okayama International Circuit.

NASCAR: UPDATE AFTER RACE 7 IN TEXAS

Jeff Gordon and Clint Bowyer in the lead. As the only Chevrolet drivers so far, Jeff Gordon and Jimmie Johnson were able to win a race each.

LMS KICK-OFF 1,000 KM BARCELONA

Victory for the new Aston Martin in the LMP1 Class and Pescarolo Lola Mazda in the LMP2 Class.

FORD FIESTA SPORTING TROPHY INTERNATIONAL

Kick-off to the stable trophy in the program of the rally world championship. The 19-year old Irishman Craig Breen dominates the kick-off during the WRC Rally in Portugal.

GP2 ASIA SERIES

Champion of the 2008/2009 season is Kamui Kobayashi.

capricorn thanks all its partners for the confidence that they have shown in us and wishes them even more success for the 2009 season.



Sebastian Loeb at Rally World Championship

RESEARCH AND DEVELOPMENT capricorn OEM MARKETS

A far-reaching set of stipulations for the automobile manufacturers requires a new generation of vehicle components of all kinds. The reason: Just before the end of 2008, the EU Parliament agreed on an emissions limit of 120 g CO₂/km for passenger cars. This emissions target refers to the average of the entire EU new car fleet. From the manufacturers' view, however, it must not be regarded as a rigid target value under any circumstances, but rather is based on the fleet average weight. Starting in 2012, the regulation will incrementally take effect, so that across the sector extensive development programs for reducing the CO₂ emissions are already in full swing. Optimization efforts through lightweight construction and the more

efficient design of existing engine specifications will probably be key to achieving this target. In the process, capricorn AUTOMOTIVE is showcasing itself as a qualified partner to the OEMs for the research, development and production of innovative engine and lightweight components made of fiber composites. In addition, our know-how as a worldwide supplier of high-performance services comes into play: the series production of automobiles can effectively directly participate in the racing development work. capricorn COMPOSITE is supplying groundbreaking structural and functional components made of composite materials, which significantly outperform conventional components in terms of strength and weight. ▶

Ad

How to show off without showing?

As a technology partner for mechanical engine components, nickel ceramic and plasma coatings of high-performance engines, capricorn has been active for quite some time. Sound experience in the handling and processing of exotic materials, such as metal matrix composites, powder-based materials, super alloys and titanium, set the standard.

The continued empirical analyses conducted by capricorn in the field of friction losses inside the cylinder have raised the state of knowledge of the scientific community in this field to a new level. This knowledge directly contributes to expediting the process of achieving fuel savings and increasing durability at the same time.

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capricorn's PORSCHE Performance Package

Benefit from increased stability, better durability and increased power. **capricorn's PORSCHE PERFORMANCE PACKAGE** does the trick, offering a range of high-performance forged pistons, forged nickel ceramic coated barrels and cylinder liners in standard bore size or various big bore options. Can't beat that.

www.capricornauto.co.uk