BMW 7 Series Days Miramas.
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1. The BMW Autodrome de Miramas Test Centre: Perfect Conditions for Optimum Driving Dynamics.

Dynamic driving performance is created not only in Development Centres through BMW's engine and suspension specialists, but also on all kinds of test tracks and in various trial areas. This is where all innovations are put through their paces in a long series of tests and under the toughest conditions, where all features are carefully coordinated and refined.

The BMW Group has its own test area in the south of France for particularly intense and thorough testing – Autodrome de Miramas. This former race track located between Marseille and Avignon offers ideal conditions to test and optimise the driving dynamics of a new model so typical of BMW under all kinds of conditions.

The Miramas Test Centre also played a key role in the process of developing the new BMW 7 Series, with a wide range of tests conducted on the new car, applying all kinds of requirements and the toughest standards. In the process the suspension technology of BMW's new luxury performance saloon was put through diverse tests and examinations, the knowledge gained
in the process then being implemented in practice in the course of series development.

The result is a standard of driving behaviour able to comply in full with the most stringent demands and requirements made by the development engineers, exceeding the expectations of even the most demanding customer and, there-fore, fulfilling all challenges in creating a new BMW in every respect.

BMW has been testing new models and innovative suspension technology in the Miramas Test Centre for more than 20 years. BMW France bought the area covering a total of 473 hectares or 1,168 acres in 1986, the test tracks and facilities being consistently updated and enlarged in the years to come.

Today Miramas offers test tracks measuring more than 52 kilometres or 32 miles in length as well as office workstations for 328 associates. To ensure fast, reliable and secure transmission of data, the development engineers are able to use high-performance permanent landlines connecting the Autodrome de Miramas with the BMW Group's Research and Innovation

Centre (FIZ)
in Munich.

One of the biggest advantages of the site in the south of France is the stable climate allowing year-round use of the facilities for testing purposes. On average, testing operations have to be interrupted only two days a year on account of snowfall, with impairments due to rainfall generally limited to a maximum of 20 days a year.

Thanks to its size, wide range of use and good climatic conditions, the BMW test area in Miramas is an ideal supplement for the testing operations conducted at BMW's Aschheim Test Centre north of Munich, at the Arjeplog Test Centre in the north of Sweden, and in the test processes conducted as a must for all BMW cars on the famous Nordschleife, the Northern Circuit of Nürburgring.

With the Aschheim Test Centre reaching the limits to its capacity in the late '80s, with test schedules becoming increasingly intense and demanding, and with BMW's model range being consistently enlarged, it was simply essential to have an additional Test Centre, this time in Miramas.

Today both BMW cars and motorcycles are tested round-the-year at the Miramas Test Centre, with up to 250 vehicles being put through intense and thorough test schedules every day, covering millions of test kilometres in the course of time.

Accounting for approximately 50,000 man-days a year, the workload at the Miramas Test Centre impressively confirms the significance the BMW Group gives to the development and ongoing optimisation of drivetrain and suspension technology. At the same time the high-speed track as well as the handling circuits in Miramas offer ideal conditions for testing both BMW Sauber F1 Formula 1 racing cars and other BMW motorsport vehicles.

Consistent development into the most advanced testing facility.
The heart of the Miramas Test Centre is the former racing circuit, a five-kilometre-long asphalt ovale. The two straights on the Ovale de Miramas each measuring a kilometre in length and 16 metres in width are connected to one another by two bends, each with a radius of 500 metres or 1,640 feet.

In 1990 und 1991 BMW extended the original race track by adding an Autobahn ring more than 6 kilometres in length. This three-lane circuit comprises a steeply embanked bend with the top lane elevated by 37 per cent to allow speeds of up to 264 km/h or 164 mph, with lateral acceleration of
0.3 g. Clearly, this provides ideal conditions for analysing and optimising the

driving characteristics of prototypes and production-based models throughout the process of development.

Vehicle components may be tested and harmonised in detail under all kinds of conditions on the dynamic test pad opened in 1997. Individual sections of this area measuring approximately 180,000 square metres or almost 45 acres may be sprayed by irrigation units in order to simulate driving conditions in
the wet such as aquaplaning.

Special surfaces with particularly low frictional coefficients are also available for analysing steering behaviour and driving stability. This allows the simulation of driving conditions at relatively low speeds otherwise only encountered on conventional road surfaces when the vehicle is travelling much faster.

A piece of the “Nordschleife” in the south of France:
reproduction of the Nürburgring “Karusell”.
One of the more recent test areas at the BMW’s Miramas Test Centre is a copy of the famous “Karusell” on Nürburgring. This part of the Nürburgring Nordschleife also known as the Caracciola Bend was built true to the original
in the process of renewing the 1,365-metre (4,477-feet) long Petit Ovale in the middle of the Miramas Test Centre.

Given its special geometry, the “Karusell” offers unique possibilities to set up the components of a car under the most demanding conditions. This particular section of the track comprises an asphalt lane higher up and at a lower angle and a steep bend further to the inside, with a gradient of 30 per cent. In testing this allows a lane change between the low outer edge of the bend and the inner, steeper embankment, provoking a roll motion of the vehicle around its longitudinal axis – a testing scenario which demands the utmost of both
the mechanical suspension components and the vehicle’s electronic control systems.

With a total of four handling tracks either built anew or comprehensively modernised, Miramas offers further areas and facilities for optimising steering and bend behaviour, driving stability and damping comfort. These specific facilities are used for both suspension and tyre tests, while the most demanding and, at the same time, practical road conditions are simulated inter alia on
a particular section of the track either very dirty or covered by dust.

The various bends, route profiles and surface conditions on the individual handling tracks again offer ideal conditions for testing and setting-up a racing car. One example is the analysis of wet handling for which purpose a complete section of the track measuring approximately 1.5 kilometres or 0.9 miles in length may be permanently inundated by the irrigation system.

Gradient hill and rough surface route for complex endurance tests.
When put through their paces at the Miramas Test Centre, both BMW cars and motorcycles are optimised not only in terms of driving dynamics and stability, but also under extreme conditions going far beyond the usual standards in everyday motoring. As a result, the vehicles are subjected within just a short time to a level of strain and fatigue normally encountered only after many years of driving in everyday traffic. A large number of poor road and off-road sections serve to test the reliability of vehicles under the toughest conditions and, respectively, to optimise the particular qualities of all-wheel-drive cars and enduro motorcycles.

The gradient hill completed in 2002 offers an unusually wide range of test conditions with no less than six different gradient sections, four of them with an asphalt surface, the other two finished in concrete. The gradients are 5, 8, 12, 20, 32 and, at the steepest point, 58 per cent. A further feature is the serpentine section with a gradient of 10 per cent.

The gradient sections serve to test the set-off behaviour of cars and motorcycles when driving both up- and downhill. Low-friction surfaces made of glass stone are integrated half the way up the four asphalt stretches and may be covered with water for even more demanding tests creating a surface coefficient equal
to that of polished ice.

Special test tracks are available in Miramas particularly for testing enduro motorcycles, allowing the simulation of virtually all surface conditions encountered beyond the beaten track. These include riverbed fords and water crossings as well as jump sections, stretches of cobblestone and special sections simulating railway lines, mud, gravel and slabs of rock. Again, both individual and long-term endurance tests are conducted under these conditions.

Workshops and offices with the most advanced technology.
Just like the offices of the development engineers, the workshops at BMW’s Miramas Test Centre are equipped with the most advanced and sophisticated technology allowing modification and, if necessary, repair of test vehicles quickly and efficiently on the spot whenever necessary.

A Control Centre complete with a Control Tower serves to supervise and coordinate test operations. A rolling road has also been in use in Miramas ever since 1999, allowing measurement and testing processes at speeds of up
to 300 km/h or 186 mph.

A special workshop for hydrogen vehicles together with a hydrogen filling station entered operation in 2004. Indeed, this new facility was inaugurated in a special record event, the BMW H2R prototype setting up no less than nine world speed records for hydrogen-powered cars in Miramas in September 2004.

Before building the site in Miramas, the BMW Group commissioned experienced experts and specialists in many areas to conduct comprehensive surveys and topographic tests serving, among other things, to ensure optimum ecological compatibility. Hence, the building plans take all the findings of experienced biologists into account, naturally providing an appropriate habitat for animals and plants in the area.

Independent, non-partisan experts regularly confirm that the BMW Group shows particular responsibility in preserving the natural resources at the site which, despite its industrial use, is still acknowledged as ecologically significant.

Contrary to other automobile and motorcycle test areas, the Autodrome de Miramas Test Centre is available exclusively to the BMW Group and its suppliers. Access to the area is carefully supervised by way of barriers and entry scanners in the interest of top security.

The ongoing development of the Test Centre and its various test tracks shows clearly how the BMW Group consistently enhances its internal testing processes to reflect both the high quality standards of the Company and the constant change in conditions to be fulfilled by modern vehicles in today’s world. Testing and confirming innovations in the area of suspension technology time and again, therefore, the BMW Miramas Test Centre is becoming
an increasingly significant highlight in the overall process of development.

2. Design: Natural Presence, Superior Sportiness, Precise Elegance.

Stylish design and supreme engineering give the new BMW 7 Series its unique character. Here inspiring luxury comes together with thrilling driving dynamics and visual presence simply bound to evoke the greatest acknowledgment and recognition.

The new BMW 7 Series comes with all the fortes and features a luxury performance saloon is able to offer these days thanks to the most sophisticated and refined art of engineering. Both the design of the body and the interior contribute to the truly fascinating driving experience the car is able to provide.

From outside, the exterior of this supreme saloon boasts a harmonious blend of elegance and sportiness, clearly reflecting the supreme comfort and dynamic driving behaviour of the new BMW 7 Series. The interior, in turn, is character-rised by the most inviting modern style clearly expressing the superior function
of the controls and instruments and bearing testimony to the sophisticated materials and perfect quality of finish.

Superior interplay of know-how in technology and the very best design gives the new BMW 7 Series perfect flair and balance from every angle. And the innovations featured in the new BMW 7 Series, to focus on another essential point, give the driver maximum supremacy at all times.

Through its design alone, BMW’s new luxury performance saloon boasts natural presence. Perfect harmony of product substance and convincing looks, of the driving experience and the particular style and design of the car, makes the new BMW 7 Series a particularly good and credible representative of its segment – and, at the same time, a convincing ambassador of the BMW brand.

Harmony of elegance and sportiness is indeed the crucial issue in the body design of the new BMW 7 Series. Apart from the long wheelbase, the sleek and stretched engine compartment lid, and the short front overhang, the passenger compartment moved relatively far to the back as well as the low and muscular roofline characterise the dynamic proportions of the new BMW 7 Series.

This smooth interaction of elegance and sportiness comes out particularly clearly in the side-line of the car, the dynamic proportions clearly expressing the sporting character of the saloon, with the stretched and precise flow of lines conveying a superior feeling of elegance.

In its interior design, the new BMW 7 Series emanates luxury in particularly modern style. Indeed, the innovative interior concept is characterised by the clearly structured arrangement of functions relevant to the driver, on the one hand, and the superior all-round comfort, on the other, the ambience of the car bearing out a supreme standard of exclusivity, sophisticated style and, in particular, a tempting desire to get inside and enter a new dimension.

With the centre console angled slightly towards the driver's side, the cockpit comes once again with the driver orientation so typical of a BMW. The new multifunction steering wheel with an even wider range of controls, the instrument cluster with its display in revolutionary black panel technology as well as the BMW iDrive Controller and the Dynamic Driving Control unit all positioned on the centre console near the electronic gear selector lever for the automatic transmission featured as standard likewise serve to keep the driver in superior control at all times.

The clear structure of the cockpit in combination with horizontal lines and gently sweeping shapes again emphasises the sheer generosity of BMW's new luxury performance saloon, with superior style and flair also borne out by enhanced comfort and spaciousness.

The highly attractive, modern but very sophisticated style of the interior is ensured by stylish combinations of colour, the use of top-class materials, and exclusive quality of finish characterised by the highest standard of craftsmanship and production skill.

This authenticity of design to be admired throughout the car as a whole and in each individual detail is the result of a truly exceptional process of creation conceived specifically for the development of new cars by the BMW Group. In addition, the unique look of the new BMW 7 Series clearly expresses both the exceptional passion and the creative finesse of BMW's designers in their quest to find the best possible solutions.

Design as an expression of character on the new BMW 7 Series.
The design process is made up of three phases: From the start, the process of design means close cooperation with all other deparments and specialists involved in the development and production of a new BMW. The starting point

is to define the fundamental features of the new product, which leads to the character of the new model and sets the basis for the complete range of technical and interdisciplinary development.

Apart from the key values of the brand, particularly natural presence, superior sportiness, and precise elegance throughout the exterior as well as an
inviting, modern style and charming function were identified from the start as crucial to the character of this outstanding new model. So from the beginning, this definition sets the decisive benchmarks for both the design and the technological highlights of the car.

Considering the large number of contributing factors, the first phase of the design process requires a high level of integration. After all, all technical innovations available are to be implemented here in an appropriate manner subsequently perceived as perfect in their function and thrilling in their design by the user of the car. At the same time other demands and requirements made by Marketing, Sales and Production also have to be taken into account.

The criteria crucial to every new design concept include the demands and knowledge gained in materials research, production technology, safety, ergonomics, and aerodynamics. And while these factors may impose limits on the design of a new car, they may also open up new freedom and further options for both the designer and developer.

Yet a further point is the clear orientation to the customer with his specific wishes and needs. The ongoing process of coordination conducted as a result ensures an efficient mutual exchange of ideas and concepts, the Design Engineering Department acting as the link between the designer, on the one hand, and the engineer, on the other. Indeed, the specialists in this Department make a decisive contribution in establishing a common view of all functions involved in the development process, focusing on the many demands and requirements made of the new car.

The first phase of the design process also serves in particular to establish and define the right proportions. Particularly the graceful look of the car from the side reflects its fundamental character, the new BMW 7 Series interpreting the classical look and design of a saloon in a truly sporting manner typical of the brand.

The perfectly balanced interplay of elegance and sportiness is therefore clear right from the beginning, firm and taut surfaces around the wheel

arches
and the doors as well as the slender shoulder area above the character line

extending from the headlights at the front all the way to the rear light clusters at the back emphasising the elegant character of BMW's new luxury performance saloon.

The greenhouse with its particularly light and agile look sets clear signals for sportiness above all through the slender window frames and pillars, the contours of the greenhouse giving the new BMW 7 Series a coupé-like look of particular elegance. This special style extends from the low-slung transition of the engine compartment lid into the steeply raked A-pillar along the
low roofline all the way to the gentle, sweeping rear section flowing down to the bootlid.

The design of the new BMW 7 Series:
the result of keen competition among the best creative designers.
The BMW Group's process of designing a new vehicle and finding the ideal shape is based on a concept of keen competition. In the development of each new model, several design teams compete with one another in their design
of the exterior and interior in a truly creative contest. Made up of designers and modellers, the teams then, in the second phase of the design process, complete models in original, 1:1 size clearly showing the aesthetic harmony of the car's proportions and surfaces. To do this they use a simple but very important material in the design process – clay.

It is indeed fair to say that only a few car makers attach such great significance to 1:1 models and refine them in such a unique, highly detailed manner.

To conclude this phase in the design process where intuitive and creative design interacts with a straightforward, methodical approach, the clay models are covered with a special film similar to the subsequent paintwork of the final car. This allows the beholder to realistically consider and judge not only the car's proportions and dividing lines, but also and in particular the surface of
the modelled sculpture under all kinds of different light conditions, ultimately choosing the model which fulfils all requirements and complies with the target vision in every respect.

Following the verification of technical requirements already completed by this time, the decision-makers are able to focus in full on aesthetic and emotional aspects in judging and appraising the design models.

On the successful design of the new BMW 7 Series, the model which ultimately won the contest, the concepts of natural presence, superior sportiness and precise elegance, as defined in advance, were all implemented in ideal

harmony. The most significant and striking expression of the car's presence is the extra-large, upright and particularly low-slung kidney grille dominating the front end of the car and seemingly standing upright within the body.

The elegant character of the saloon is accentuated above all by the shoulder-line at the side stretching from the headlights via the door openers all the
way to the rear light clusters. The rear view, in turn, emanates a combination of power, sportiness and supremacy, the rooflines flowing down dynamically along the flanks of the car to the bumpers and horizontal light edges emphasising
the sheer width of the car.

The interior design likewise follows the philosophy of inviting, modern style and charming function, the structure of the cockpit, the choice of materials, the lines themselves and the colour scheme all interacting to give the new BMW 7 Series its characteristic overall look. The result of this consistently applied design concept is an ambience focusing on generosity, superior command of the car, and modern luxury all in one.

The final design phase: optimisation at the highest level.
Enhancing the design chosen into a series production car is an equally demanding and challenging task. After all, a sculpture refined by human skill and style is converted in the third and final phase of the design process into a product reproducible by machines in the production process.

The first step in this case is to convert the clay model in a CAD design process by laser scanning into a three-dimensional feasibility model serving from now on as the technical reference point for ongoing development.

From now on the final phase of the design process means optimisation at the highest conceivable level. Each and every detail is fine-tuned to the last millimetre in a constant exchange among designers, engineers, modellers and production specialists in order to ensure perfect implementation
of the premium standard on the final product in each and every detail.

At this point the designers and modellers show all their creative passion on both the exterior and interior, searching for perfection and proving their finesse in the refinement of all surfaces and lines.

Such refinement of the original design not only enhances individual details to the highest standard following the concepts of specialised design teams,

but also serves to perfect the overall impression of the new vehicle so crucial to the car's design and its emotional impact.

Like every other BMW, the new BMW 7 Series owes its unmistakable character clearly recognisable at very first sight from every perspective to this process
of ongoing enhancement and refinement.

The front end:
clear structures and generous surfaces ensuring natural presence.
Seen from the front, the new BMW 7 Series offers a clear, calm and collected appearance through its large and smoothly designed engine compartment lid. The contour lines on the engine compartment merge into one another at the front, pointing towards the BMW kidney grille just like the headlight units peaked towards the inside.

The kidney grille itself sticks out far to the front, ensures a precise and clear-cut look, and is integrated in the front air dam without any seams or openings in between. At the same time the kidney grille, through its upright bars, accentuates the vertical stance of the front end as an essential element giving this new luxury performance saloon particular presence and calibre.

The wide air scoop at the bottom extends across the entire front air dam all the way to the sides. Foglamps in clear glass look positioned far to the outside at the edge of the air intakes serve to additionally emphasise the wide track
of the car. This special look is further accentuated by a chrome band bordering on the air intake at the top. Generously designed dual round headlights, as
yet a further feature, ensure that concentrated look again so typical of BMW. Indeed, this particular look is outstandingly striking on the new BMW 7 Series, resulting, first, from the corona rings for the daytime driving lights and,
second, from an additional lights bar positioned on top of the dual round headlights like an eyelid to provide a particular optical effect at the top.

Yet another new design feature is the direction indicators formed by eight LEDs on each side and arranged in two upright rows at the outside next to the cylindrical light units.

Sculptural surfaces and precise lines at the side.
Modern design of the various surfaces giving this luxury performance saloon truly unmistakable character is yet another feature characteristic of BMW

in general and the new BMW 7 Series in particular. The combination of skilled craftsmanship, precise technology and a perfect feeling for the unique flair
of a BMW creates a truly unique sculptural effect.

The interplay of concave and convex surfaces so typical of BMW generates highly effective light and shade lines accentuating both the powerful and dynamic expression and the refined elegance of the car in every respect and from every angle. A good example is the side area appearing to grow out smoothly and gently towards the rear wheel of the car, without a typical wheel arch in the conventional sense of the word.

The subtle enlargement of the side area created in this way is a particular result of the work done on the clay model and therefore a product of the close and highly effective cooperation of designers and modellers practised within the BMW Group.

Design features and refinement of this calibre call for decades of experience and supreme competence in finding the right design and in the subsequent production of the car’s body.

The long shoulder line adds further elegance to the side view of the car. Directly beneath this precisely chiselled line the side surface is carefully modelled in a highly attractive convex look, while further down on the doors the side surfaces take on a concave curvature. Again even further down, this surface borders on the high-rising doorsill line.

Interacting with one another, the shoulder and doorsill lines give the car a particularly sleek and stretched look from the side. And at the same time the high-rising doorsill line adds the impression of a particularly slender and athletic body.

A chrome-plated gill insert complete with fully integrated side direction indicators between the front side panel and the driver’s and, respectively, front passenger’s door adds a further visual effect and touch of style. The character line of the wheel arch merging gently and smoothly into the doorsill line
starts at the front edge of the side gill which, as a particular proportional feature on sporting cars, accentuates the long distance between the front axle and
the instrument panel.

Many other details confirm the clear focus of BMW's designers on precision and individual variability, thus highlighting selected design features in particularly subtle style. The headlight units and rear light clusters of the new BMW 7 Series, for example, just like the side window graphics, are surrounded by frames
literally chiselled into the surface of the body.

This again confirms the high standard of craftsmanship and the perfect command of even the most complex production processes BMW has achieved over the years. In particular, this effect emphasises the reverse line at the bottom of the C-pillar well-known as the BMW "Hofmeisterknick".

The window graphics are exceptionally elaborate and, at the same time smooth and sleek thanks to the particular design and look of the chrome bar surrounding the glass surfaces and made in one piece.

The side view of the BMW 750Li and the BMW 740Li again boasts all these particular design features. With their wheelbase extended by 240 millimetres or almost 9.5", these long-wheelbase models give even greater emphasis to the superior comfort and, indeed, sheer luxury offered on the rear seats. The extra body length is provided entirely along the rear doors, thus ensuring particularly comfortable and convenient access to the car.

Both long-wheelbase models furthermore feature a uniquely designed roofline and C-pillar contours giving the car a side view clearly related to that of the standard-wheelbase saloon and combined with extra headroom on the rear seats.

Horizontal lines at the rear for a particular touch of power and supremacy.
The sculptural design of the car's surfaces also ensures smooth transition of the side panels into the rear end of the new BMW 7 Series. The striking character line, for example, continues into the lights cover on the rear-light clusters where this particular design is taken up by the graphic design structure.

The rooflines flow across the flanks of the car right down to the bumper, encompassing the rear end by dynamic lines again providing a particularly sporting touch.

Horizontal lines and light edges, in turn, help to give the rear end a particularly powerful and superior overall look. The chrome band positioned above the numberplate support and connecting the entire width of the bootlid

from one light cluster to the other is a particularly striking feature. The light edges on
the luggage compartment lid and the rear bumper then run parallel to the chrome band, which also surrounds the rear light clusters. The sheer width of the rear end is highlighted and accentuated both by this additional structural design of the rear bumper and by the two reflectors positioned far to the outside.

The two-piece rear light clusters on the new BMW 7 Series again boast the L-shaped contours so typical of the BMW brand. Inside, the rear lights are dominated by wide, horizontally arranged light bars in a three-dimensional look rising up from the inside to the outside and thus following the contours of
the light units.

Fed by LEDs, the light bars generate a warm and homogeneous lighting effect. The direction indicators also feature LED technology, just as the third brake light positioned on the upper edge of the rear window and the numberplate illumination use light-emitting diodes.

Modern, luxurious, inviting: the interior.
The interior design and configuration of the new BMW 7 Series combines all features and characteristics destined to make both active motoring and the shortest or longest ride in this outstanding saloon a truly impressive and highly enjoyable experience. Gently flowing contours, high-class materials and
stylish colour combinations create an aura of generosity and seductive, modern style in a truly unique ambience. The clear, driver-oriented structure of the cockpit offers ideal conditions for a truly superior experience in the car. Intuitive arrangement of the controls and instruments, in turn, makes it even easier for the driver to mastermind all functions easily, smoothly, and without the slightest confusion.

The new BMW 7 Series expresses its individual character also through its modern interpretation of luxury, appropriate use of high-class materials in conjunction with excellent quality of finish enhancing both the exclusive flair of the car and the charming function of the interior.

Apart from the car’s unique space and grace with more than generous kneeroom, headroom and elbow room meeting the highest standards at both front and rear, the particular design of the interior in the new BMW 7 Series conveys the impression of luxury in truly convincing and modern style. The

entire ambience is exclusive and sophisticated – and, in particular, very inviting.

Clear horizontal and vertical arrangement of all controls and instruments again serves to optimise the orientation towards the driver, successfully integrating highly complex technology and a wide range of functions within the car.
The controls and instruments required directly for motoring are clear and well-known to the driver right from the start, with intuitive control also of elementary comfort functions such as the ventilation, air conditioning and audio system.

The very positive initial impression conveyed by the car's interior is immediately enhanced by the high-quality, sophisticated materials used throughout the passenger compartment as well as the distinctly exclusive quality of finish. The result is a calm, convincing and, indeed, overwhelming ambience making it easier for the driver and the passengers alike to find their orientation and feel pleasantly at home.

Right from the start, the driver encountering the new BMW 7 Series will be thrilled by the feeling of controlling the most sophisticated high-performance technology in a truly exclusive ambience. The instrument panel is split up into several levels one above the other, separated by horizontal lines running parallel across the entire width of the interior.

Both the instrument cluster and the Control Display come on one level, just below the decorative trim likewise extending across the entire width of the instrument panel and comprising the controls and buttons for all major functions.

The controls border at the bottom on a chrome bar, again providing a touch of class emphasising the horizontal orientation of the cockpit.

Thanks to the use of innovative display and surface technology, the Control Display does not require the usual binnacle protecting the instrument from sunglare – yet another touch promoting the clear tranquillity and smooth structure of the cockpit.

Cockpit design for more superior motoring.
The horizontal subdivision of the instrument panel makes a significant contribution to the ease of control and safety at the wheel the driver will enjoy so much. This effect is then further enhanced by the sensible and therefore easy-to-remember vertical arrangement of the instruments and control

units. All information and controls relevant to the process of driving the car are on the side facing the driver, while all displays, controls and switches serving to provide comfort functions are positioned more to the middle of the car.

The arrangement of control units on the multifunction steering wheel follows the same logic, again giving the driver supreme security and ease of control at the wheel. In order to take up information or activate a function, the driver is required – if at all – to only briefly take his eyes off the road. On the other hand there is no need to spend a long time looking for buttons and switches used only rarely, since all controls are positioned clearly where they should be in logical arrangement.

As an important example in this context, the driver assistance controls suppor-ting the driver in his perception of traffic conditions and his awareness at the wheel are positioned appropriately on a control panel in the immediate vicinity of the lights switch centre.

This clear structural arrangement of the cockpit gives the driver superior routine within a very short time also in the use of additional functions not required under all conditions. Hence, the wide range of technical features and options offered by the new BMW 7 Series is experienced as an enrichment of the driving experience, immediately giving the driver supremacy at the wheel of the BMW 7 Series without the slightest effort or learning process.

Ideal combination of ergonomics and aesthetic design.
The driver-oriented design and configuration of the centre console is yet another feature typical of BMW. Slightly inclined towards the driver, the centre console houses the control units for, among other features, the air condi-tioning, the audio system volume control, and the iDrive favourite buttons.

In their design and configuration, the Controller and its direct selection buttons were influenced by both aesthetic and ergonomic considerations. When using the Controller, the driver’s arm is in a similar position as when operating the selector lever on the automatic transmission, the comfortable position on the armrest enhancing the standard of motoring comfort and facilitating precise operation of the Controller.

Being smaller in diameter than on the first generation of iDrive, the Controller, together with the direct selection buttons arranged in the immediate

vicinity, enables the driver of the new BMW 7 Series to set and mastermind the functions desired with minimum movements of his arm or hand.

Black panel technology: well-known feeling, new options.
The innovative – if not to say, revolutionary – design of the instrument cluster offers new and extremely versatile options in presenting information important to the driver: For the first time the entire instrument cluster incorporates
black panel technology as a high-resolution colour display presenting status and function data, navigation data, information from the Check/Control, feedback from the various control switches and Service Interval information in four circular dials arranged in the traditional style of a sports car.

When not in use, the display forms a smooth, homogeneous, black and stylishly glowing surface where only the chrome-coloured surrounds open to the bottom, the needles and scales on the circular instruments as well as the red warning zone in the instrument panel are constantly in place and there-fore permanently in sight. The needles on the circular dials, in turn, together with the integrated displays for current fuel consumption and the car's range, are presented electronically and therefore only become visible, like all other symbols on the display, when activated.

In developing this solution absolutely unique in the world of motoring, BMW's designers were inspired by high-tech products in entertainment electronics.

The result is an ideal combination of mechanical and electronic data feedback. The circular dials providing information on road and engine speed as well
as the fuel supply and engine oil temperature all come in the style and look of
a classic cockpit and, as styling elements, form an analogy to the corona rings on the headlights now so typical of BMW.

Through their well-known structure and arrangement, the scales facilitate the uptake of information, while the indicator needles moving in the rev counter and speedometer provide direct feedback on the driver's actions. And with their surrounds and indicator needles being positioned as three-dimensional elements on the otherwise flat display surface, their significance to the design of the overall concept receives particular emphasis.

Black panel technology also featured in the air conditioning display on the centre console serves to present a wide range of information in clearly

legible and visually attractive form. The superior function of the instrument panel is furthermore enhanced by the variable use of the individual zones in the display, with the driver thus being able to focus consistently on information and data particularly relevant in each specific situation, concentrating even more than usual on road and traffic conditions.

Colours and trim:
harmonious, puristic, finished in perfect craftsmanship.
The configuration of the cockpit is further enhanced by the design of the individual elements, the colour scheme, and the choice of materials.
The horizontally arranged colour and trim scheme on the dashboard continues into the doors and from there on throughout the interior. The door panels
are also finished in decorative trim bordering on a chrome bar at the bottom.

The upper door panel forms a sweeping line along the bottom edge reaching its lowest point at the B-pillar and then rising again gently towards the rear. In combination with the armrests hinting exactly the opposite orientation, the complete door section forms an elegant combination of exciting surfaces and features.

The interior of the new BMW 7 Series combines the most sophisticated materials and excellent quality of finish in supreme craftsmanship and ultimate precision. Visible seams along the instrument panel and the doorsills, as
well as the central air vents in dual surrounds, again bear testimony to the great attention given to each and every detail. The instrument panel comes as standard in a newly developed soft skin material featuring an extra-soft surface reminiscent of the grain otherwise to be found only on the very best leather.

This exclusive touch is further accentuated by the black colour scheme and the double seam finish.

Special nappa leather on the instrument panel is available as an option. The perfect blend of design and function is also borne out, by way of example, by the integration of the door openers in the chrome trim on the door panels. And forming part of the decorative trim, the door closing handle on the door panel combines superior elegance with practical function.

Unique: controls and switches made of high-tech ceramics.
The wide range of interior colours, trim surfaces and seat upholstery available offers the customer absolute freedom of choice in living out his – or

her – personal style in customising the car. Through an appropriate combination of colours and trim, the customer is able, for example, to accentuate the classic, sporting, elegant or prestigious character of BMW's new luxury performance saloon. And regardless of the material chosen, the chrome bar serving
as a particular highlight on the lower edge of the trim surfaces adds a further touch of sophisticated style.

BMW is the first car maker in the world to use high-tech ceramics as a particu-larly sophisticated material for selected control units. Replacing the galvanised metal otherwise used on such components, this special ceramics material
is available as an option on the iDrive Controller, the electronic gear selection lever, as well as the rotary knob on the automatic air conditioning and audio system.

This special material so far used only on particularly exclusive mobile phones or other high-tech appliances, is not only particularly strong and massive, but also conspicuously cool and, at the same time, pleasant to feel and touch.

The paintwork on the new BMW 7 Series is available in no less than twelve colours, four of which were developed especially for BMW's new luxury performance saloon. New colours in the range are Mineral White Metallic and Milano Beige Metallic as well as Sophisto Grey and Imperial Blue in brilliant effect finish generating a constantly changing play of colours under direct light.

BMW 750Li and BMW 740Li:
setting a new standard in rear-seat motoring comfort.

The interior of the BMW 750Li and BMW 740Li offers ideal conditions for an even higher standard of long-distance touring comfort. The extra space provided by the longer wheelbase benefits the rear-seat passengers in full, while the uniquely styled roofline provides additional headroom at the rear. Clearly, this enhances the Sheer Driving Pleasure so typical of BMW by the further special luxury of being chauffeured whenever the customer wishes
or, alternatively, still enjoying the actual driving experience itself.

The pleasure of being driven in a chauffeured saloon is enhanced to an even higher standard by the option to choose the rear passenger area with two single seats and a console in between. These single seats adjust up to 79 millimetres or 3.1" in length and provide individual seat bottom and backrest angle adjustment as well as individual adjustment of the headrests. And
to provide the final touch, the roof lining on the long-wheelbase version of the new BMW 7 Series comes with two vanity mirrors featured as standard.

Further optional features are automatic air conditioning at the rear with separate control, additional air vents in the roof lining with their own control elements, seat ventilation and massage seats as well as two different versions of
BMW’s high-end entertainment system for the rear complete with a DVD player and two monitors integrated in the front seat backrests. The entertainment functions are masterminded either by remote control or by an additional iDrive Controller in the centre console at the rear, enabling the rear-seat passengers to actively contribute to their personal enjoyment and motoring experience.

3. Driving Experience: The Comfortable Way to Even Greater Dynamics.

The new BMW 7 Series offers a fascinating driving experience and at the same time meets a wide range of different demands. Supreme comfort is just as natural in this unparalleled saloon as maximum performance combined with optimum driving safety in the luxury class. And just like the engines combine outstanding refinement with dynamic power and muscle, the chassis and suspension meets virtually all requirements.

Newly developed suspension technology guarantees absolutely superior body and roll comfort combined with a standard of agility in the new BMW 7 Series quite unique in the luxury segment. Ultimately the driver can decide at any time which of these features to choose, varying the set-up of his car as he wishes
by means of Dynamic Driving Control.

The unique driving qualities of the new BMW 7 Series result from a combination of modern construction features and innovative suspension control systems.
The interplay of the double-arm front axle and the Integral-V rear axle offers not only a wide range of additional benefits in terms of both comfort and dynamic performance, but also exceptionally harmonious roll and transition behaviour in bends.

A further important point is that the new BMW 7 Series comes with electronic Dynamic Damping Control masterminded by the driver via the Dynamic Driving Control function.

As an enhanced version of Active Steering, Integral Active Steering is now making its world debut in the new BMW 7 Series. For the first time this option also controls the steering angle of the rear wheels as a function of the car’s speed. The result in the new BMW 7 Series is impressive agility in city traffic and thrilling supremacy in dynamic driving manoeuvres at high speeds.

The various suspension control systems owe their perfect balance of functions to ICM Integrated Chassis Management networking the various units with
one another. This high-performance electronic control responds to even the slightest change in driving conditions by precise management of the actua-tors on DSC Dynamic Stability Control, Dynamic Damping Control and, when

fitted as an option, Integral Active Steering as well as the likewise optional Dynamic Drive anti-roll stability system.

The fast and precise response of ICM is ensured in practice by FlexRay high-speed data transmission introduced for the first time by BMW in a series production car.

Extra comfort, superior steering precision and enhanced driving dynamics ensured by the double-arm front axle.
Right from the start in the basic structure of its chassis and suspension, the new BMW 7 Series takes a new approach and follows a new philosophy. This is the first BMW saloon to feature a double-arm front axle, an extra-light aluminium structure separating the wheel guidance and damping functions in the interest of superior comfort. Almost completely relieved of lateral forces in this way, the dampers are able to respond with particular smoothness and perfect balance to any bumps or unevenness on the road, at the same time minimising the possible influence of adverse forces on the steering.

The kinematic configuration of the double-arm rear axle offers the further advantage of perfectly adjusting wheel camber to the road beneath. This optimises tyre/road contact in the interest of higher lateral acceleration. And since the transverse arm bearings connected to the front axle subframe are made softer as a result, the steering transmission is more direct, optimising the car’s directional stability both at medium and high speeds. Last but not least, this particular configuration also promotes extra driving stability when applying the brakes in a bend.

The patented Integral-V rear axle likewise developed for the new BMW 7 Series is also made of aluminium. Dynamic and drive forces acting on the suspension are taken up by the wheel bearing, the rear axle subframe, the swinging arm and three control arms. The innovative elastokinematic mounts for the swinging arm provide superior qualities previously not compatible with one another, enhancing both driving dynamics and motoring comfort at the same time. Lengthwise bumps, for example, are set off by the swinging arm giving way in
a straight line both forwards and backwards. This clearly separates both radial and axial forces acting on the rubber bearing of the swinging arm, serving
to promote, first, motoring comfort and, second, the margin available in setting up the car’s dynamic driving qualities.

Effectively disconnecting the road surface and the drivetrain, the Integral-V axle serves furthermore to optimise acoustic and vibration control to an unprece-dented level.

BMW 750Li and BMW 740Li featuring air suspension at the rear as standard.

Air suspension at the rear standard on the BMW 750Li and the BMW 740Li maintains consistent ride height under all driving and load conditions. Any change in the load the car is carrying is immediately taken into consideration and set off individually on each wheel, the degree of control and adjustment required on the springs due to bumps on the road and inclination of the surface in bends being restricted to a minimum.

The new BMW 730d comes as standard with 17-inch light-alloy wheels. The BMW 750i and the BMW 740i, in turn, feature 18-inch light-alloy wheels, while run-flat tyres measuring 245/55 R17 and, respectively 245/50 R18 likewise featured at standard on all models enable the driver to continue on his journey even after a complete loss of tyre pressure: Depending on the load
the car is carrying, the driver can go on under such circumstances for up to 250 kilometres or 155 miles. And last but certainly not least, the Tyre Defect Indicator permanently monitors tyre pressure and warns the driver whenever the pressure level drops by more than 20 per cent below the appropriate limit.

Integral Active Steering controlling the steering angle both front and rear.

The consistent use of aluminium on the chassis and suspension components is just as unique as the interaction of the suspension with the car’s innovative control and steering systems. Just one example is that the new BMW 7 Series may be fitted as an option with Integral Active Steering influencing the car’s steering forces as a function of road speed by way of Servotronic, acting on the steering angle through the add-on transmission on the Active Steering at the front and, for the first time, on the steering angle of the rear wheels through the concentrically arranged drive motor with spindle drive on the
rear axle.

Integral Active Steering varies the steering angle of the wheels both front and rear by means of an electric motor applying control data from the sensors on the speed of wheel rotation, movement of the steering wheel, the yaw rate, and lateral acceleration of the body in order to provide optimum steering behaviour at all times and in every situation.

The maximum steering angle on the rear wheels is 3°. At low road speeds the rear wheels are turned against the steering angle on the front wheels to significantly enhance the agile and nimble handling of the BMW 7 Series, reducing the car's turning circle, depending on speed, by up to 70 centimetres or 2.76".

The significant enhancement of agility and handling ensured in this way comes together with an even higher standard of motoring comfort thanks to the reduced steering effort.

At higher speeds Integral Active Steering gives the car an extremely comfortable and superior response when changing lanes and in bends. In this case the steering angle on the rear wheels consistently follows the movement of the front wheels in the same direction, ensuring that the BMW 7 Series follows the course set by the driver precisely and in superior style even in an abrupt steering manoeuvre.

Intervening at the same time, Active Steering optimises the response of the steering transmission and reduces the degree of movement required on the steering wheel.

Yet a further effect of rear axle steering comes out particularly in the rear passenger compartment, any change in direction under dynamic driving conditions generating lateral acceleration without the usual increase in the yaw rate of the car. In practice this means extra comfort with the car remaining stable despite such an increase in lateral acceleration, since the two factors – lateral forces and yaw – are distinctly separated from one another.

This combination of Active Steering on the front axle and rear axle steering unique the world over benefits both the motoring comfort and driving agility of the car. In addition to the increase in driving stability under rapid directional changes, Active Steering in the new BMW 7 Series ensures even greater supremacy and ease of control in braking manoeuvres.

Consistent interplay of Active Steering with the sensors on DSC Dynamic Stability Control prevents the car from swerving out of control when applying the brakes on different surfaces (modal split) by intervening in the steering as required.

Driving dynamics tailored to actual requirements:
Dynamic Damping Control and Dynamic Driving Control.

The new BMW 7 Series comes as standard with electronic Dynamic Damping Control. Featuring this innovative technology, the newly developed dampers adjust adaptively both to road conditions and the driver's style of motoring, thus preventing any undesired movement of the car caused by bumps on the
road or a high level of lateral acceleration.

The driver is able to vary the Dynamic Damping Control function and control map via the car's Dynamic Driving Control, choosing from a more comfortable, the normal or a more sporting set-up.

BMW is the world's first car maker to introduce a damping system able to adjust and vary the inbound and rebound stroke both continuously and independently on each damper. The result is a unique combination of a firm suspension set-up and superior comfort on bumpy road surfaces, the vertical movement of each wheel being detected by sensors and transmitted to a central control unit determining the body movement of the car in accordance with this information as well as the ride height signals.

Taking also the road speed of the car and the Dynamic Damping Control function chosen by the drive into account, the system applies the damping force required to set off body movements on each wheel. This data is fed back to the damper units almost instantaneously within just 2.5 milliseconds. The adjustment of actual measurements to the target data is individualised on each wheel by controlling the respective inbound and rebound valves in the dampers.

Dynamic Driving Control button on the centre console.
The Dynamic Driving Control function unit is positioned directly next to the gear selector lever on the side of the cockpit facing towards the driver. Benefiting from Dynamic Driving Control, the driver is able to vary the set-up of the car in the four stages COMFORT, NORMAL, SPORT and SPORT + at the touch of a button. This adjusts not only the set-up of Dynamic Damping Control and the response thresholds of DSC Dynamic Stability Control,
but also the dynamic shift function of the automatic transmission as well as the control maps of the gas pedal and the level of steering assistance.

Another button placed immediately in front serves to select the various DSC settings. Pressing this button whenever required, the driver is able to activate a special traction mode serving to facilitate the process of setting off, for example, on snow. This is done by activating DTC Dynamic Traction Control as a special mode of DSC Dynamic Stability Control, raising the response

thresholds of the driving stability system in the process. And by pressing this button somewhat longer, the driver is able to completely deactivate DSC Dynamic Stability Control whenever he wishes.

The appropriate drivetrain and suspension settings ensure a well-balanced overall configuration in each mode of Dynamic Driving Control. Each change from one mode to another offers the driver a clearly perceptible change in the set-up of the car.

Dynamic Driving Control furthermore allows individual configuration in the SPORT mode providing a sporting configuration of both the powertrain and suspension functions. Via the iDrive control system, the driver is able to influence either of the two functions as he wishes, giving each function the usual configuration in the NORMAL mode. So as a result the driver is able, for example, to enjoy the sports set-up of the powertrain components even if, due to poor road conditions, the harder set-up of the dampers is not recommendable.

As an option the suspension on the new BMW 7 Series may be upgraded by Dynamic Drive anti-roll stability control. This high-tech feature reduces body roll in fast bends and in a sudden change of direction. Depending on current driving conditions, sensors determine the side forces currently acting on the body, swivel motors in the anti-roll bars subsequently counteracting such side forces quickly and precisely. The result is a significant improvement of the
car’s steering and load change behaviour, enabling the driver to take even fast and sharp bends with even greater precision and agility.

Superior handling thanks to high-performance brakes and DSC.
The compound brakes in the new BMW 7 Series ensure excellent deceleration in all situations, bringing the car securely to a standstill quickly and with minimum stopping distances even from a high speed. Inner-vented swing-calliper brake discs ensuring optimum brake power on the front and rear axle guarantee outstanding resistance from fading and maximum brake comfort.

The brake discs are extra-light and come with a friction ring riveted directly on to the aluminium brake cover. Together with the aluminium callipers in frame design on the front axle, this principle patented by BMW and now also used by other car makers, serves to significantly reduce unsprung masses and prevents deformation of the brake discs on account of high temperatures even under extremely high loads.

The brake system is supported and reinforced by a wide range of functions offered by DSC Dynamic Stability Control. Apart from intervening in the suspension for extra stability, DSC also comprises further functions in the new BMW 7 Series in the interest of safe and dynamic motoring. These include ABS anti-lock brakes, ASC Automatic Stability Control, Trailer Stability Control, CBC Cornering Brake Control as well as DBC Dynamic Brake Control auto-matically maximising brake pressure on the two axles whenever the system realises that the driver wishes to apply the brakes with full power.

At extremely high brake temperatures appropriate increase in brake pressure eliminates any loss of brake power commonly referred to as fading, giving the driver virtually the same, unchanged braking behaviour at all times.

Regular Dry Braking optimises brake performance in the wet, while the Brake Standby function builds up moderate brake pressure whenever the driver takes his foot off the gas pedal very quickly and abruptly, thus ensuring spontaneous brake response at all times.

The Start-Off Assistant facilitates the process of setting off on a gradient by preventing the car from rolling back for a defined, predetermined period. And last but certainly not least, Cruise Control with Brake Function uses the option to automatically build up brake pressure through DSC in the interest of highly comfortable cruise control whenever required.

Driving stability tailored to the driver's requirements by DTC and electronic locking function on the rear axle differential.
Pressing the DSC Off button on the new BMW 7 Series, the driver is able to activate DTC Dynamic Traction Control as a special mode of DSC Dynamic Stability Control. This raises the DSC response thresholds, making it easier to set off on snow or loose sand in the TRACTION mode. Via DTC, the driver is also able to activate Dynamic Driving Control as a special function of the SPORT + mode for a particularly sporting and active style of motoring.

Pressing the DSC Off button somewhat longer, the driver is also able to fully deactivate the Dynamic Stability control function. In the DSC Off mode an electronic locking function for the differential on the rear axle is activated, helping the driver in a particularly sporting and ambitious style of motoring, for example when accelerating out of a bend or hairpin. To optimise traction under such circumstances, a drive wheel spinning when accelerating in a tight bend is slowed down appropriately by the brakes to maintain ample traction
as before on the opposite drive wheel.

Parking brake and Auto-Hold function.
The new BMW 7 Series comes with a parking brake operated either electro-mechanically or hydraulically, depending on current conditions, in the interest of optimum safety and comfort. With the engine running, the brake effect is generated by actively building up pressure in the hydraulic system masterminded by DSC. As soon as the engine is witched off, the brake power required is generated electromechanically.

To activate the parking brake, all the driver has to do is pull the appropriate button on the centre console. To release the parking brake, he merely presses the brake pedal and pushes the same button at the same time.

Given this configuration, there is no risk of inadvertently releasing the parking brake while the ignition is switched off. While driving, in turn, the driver is able to apply the parking brake as an automatic emergency brake function by pulling the parking brake button several times in a row.

The brake effect is generated by actively building up hydraulic pressure on all four wheels, the intensity of stopping power being masterminded by the DSC control unit, taking the ABS function into account for additional stopping power. This also serves to activate the brake lights.

The parking brake on the new BMW 7 Series comes with an Auto-Hold function. This combination quite unique in the market enhances motoring comfort above all in stop-and-go traffic. Then, as soon as the car comes to a standstill, the vehicle is automatically held in position by consistent brake pressure also on a gradient, until the driver presses the gas pedal again. He is therefore not required to keep the brake pedal pressed down as long as the car is at a standstill.

The Auto-Hold function is activated and deactivated by a separate switch on the centre console.

Intelligent management of driving dynamics:
Integrated Chassis Management and FlexRay Technology.
The suspension systems are perfectly masterminded by ICM Integrated Chassis Management networking the various systems and functions with one another. This high-performance electronic management analysing the car’s driving behaviour by evaluating numerous sensor signals is able to coordinate and harmonise various drivetrain and chassis functions within fractions of a second, ensuring maximum stability at all times and under all conditions. Even when driving conditions suddenly change, for example on changing surfaces, when suddenly moving round the steering wheel, or

when abruptly accelerating or applying the brakes, ICM responds appropriately by precisely intervening in the DSC, Dynamic Damping Control and, where fitted as an option, in the integral Active Steering and Dynamic Drive actuators.

Yet another feature absolutely unique worldwide is the networking of chassis control systems and the drivetrain in the new BMW 7 Series. The high-speed FlexRay data transmission system serves to coordinate the various function units with one another in an ultra-fast and reliable process. Developed to production standard by a consortium of specialist companies under the leadership of BMW, this high-tech system offers a level of data transfer never seen before, with a transmission rate 20 times higher than that of a conventional transmission system.

On the new BMW 7 Series up to 16 control units are able to communicate with one another via FlexRay, offering extremely fast, precise and perfectly coordinated interaction of the control units for the drivetrain, suspension, damping, steering, and brake systems in the new BMW 7 Series.

The result is highly precise control of longitudinal, transverse and vertical movements unparalleled by any other car in the market. Indeed, BMW is the first car maker in the world to introduce FlexRay technology in its production models.

4. Control Concept and Driver Assistance Systems: For Absolute Superiority in Every Situation.

Both the development and the design of all controls, switches and driver assistance systems for the new BMW 7 Series were oriented from the start as a clear objective: to ensure absolute supremacy at all times and in every situation. Proven principles, trendsetting concepts and innovative technologies were carefully coordinated from the start in an elaborate development process in order to set new standards for active safety, superior motoring comfort, and sheer driving pleasure in every respect.

In its structure and configuration, the cockpit perfects the driver orientation so typical of a BMW. The consistent arrangement of all functions relevant to the process of driving, on the one hand, and oriented to motoring comfort, on the other, immediately gives the driver a wonderful feeling of being in command in his new BMW 7 Series right from the start – in superior and routined style.

Proceeding from this starting point, it is easy for the driver to use also the new features and functions in part exclusive to BMW, over and above the primary functions of the car. Particularly the many, highly versatile driver assis-tance systems ensure a spontaneous thrill of motoring through the outstanding functionality and benefits. The user-friendly arrangement and configuration
of all displays and control units, including the BMW iDrive control concept now enhanced to an even higher standard, makes the use of these innovative functions in the new BMW 7 Series a genuine enrichment of the driving experience also in the long run.

All this is one of the reasons for the trendsetting progress the new BMW 7 Series offers also through its control concept. Innovations offering the highest potential in terms of safety, comfort and the driving experience, through their thrilling function and intuitive control, make a consistently powerful contribution to maximum supremacy on the road at all times.

Like the former model featuring the trendsetting BMW iDrive control concept for the first time, the new BMW 7 Series again sets the standard in terms of ergonomics, efficiency and functional logic in terms of straightforward and easy control.

Now the new generation of iDrive raises this benchmark to an even higher level. High-resolution graphic presentation on the large Control Display, the newly structured menu guidance and optimised use of the Controller and its direct selection and favourite buttons make the entertainment, information, telephone and navigation functions even more convenient and easy to use. A further important point is that the Controller and the Control Display interacting with iDrive offer ideal conditions for unrestricted use of the internet in the car offered by BMW as the first car maker the world over.

Yet another outstanding innovation is black panel technology on the instrument cluster giving the cockpit an extremely smooth and calm look when not in use and presenting various functions on a black homogeneous panel only when
the ignition is switched on. As a result, classical mechanical elements such as the four circular dials in the tradition style of a sports car are combined most attractively with modern electronic display functions. Through this combination alone, the new BMW 7 Series clearly demonstrates its commitment to proven traditions and the values of the brand while at the same time showing clear orientation towards the future.

Apart from motoring comfort, active safety also reaches a new standard of perfection in the new BMW 7 Series thanks to the car's innovative driver assistance systems. As the first model in its segment, BMW's luxury performance saloon may be equipped with a Head-Up Display projecting information important to the driver on to the windscreen.

Another new feature BMW is proudly presenting for the first time is Lane Change Warning constantly monitoring traffic conditions on the adjacent lanes of the road. Another innovation is the speed limit indicator interacting with the Lane Departure Warning function, using an intelligent combination of camera-controlled traffic sign recognition and information in the navigation software to provide ongoing information on the speed limits allowed on the road the driver is currently taking. And yet another worldwide innovation in the BMW 7 Series is the second generation of BMW Night Vision enhanced to recognise even individual persons and objects ahead of the car.

The control concept: clear structures for even greater driving pleasure and motoring comfort.
The arrangement of all controls, switches and storage boxes and compartments in the new BMW 7 Series follows the principle of elegant and, at the same time, modern function. Apart from the extra-large glove compartment, storage spaces in the door panels and around the centre

console, pockets

on the back of the front-seat backrests and an additional compartment between the driver's door and the steering wheel offer ample space for all odds and
ends the driver and his passengers wish to take along.

Two cupholders are arranged conveniently on the centre console in front of the electronic gear selector lever. The buttons for adjusting the seats, in turn, are arranged in optimum ergonomic position on the outside of the seats, while the buttons serving to activate the optional seta memory function are housed
in the door panels for easy and convenient use before even getting into the car.

The fundamental concept of arranging all controls and instruments is based on the need for a clear, function-oriented structure within the passenger compartment. All driving functions, for example, are on the driver's side, while the comfort functions face towards the middle. This applies both to the position and configuration of the controls in the cockpit and to the multifunction steering wheel where the function buttons for speed control, on the one hand, and the control elements for the audio system and telephone, on the other hand, are separated from one another, again reflecting the arrangement of the displays and instruments in the instrument cluster.

Apart from this horizontal arrangement of the control units for driving and comfort functions, the arrangement of all displays and regular instrument ensure rapid and intuitive orientation in the BMW 7 Series. All primary displays, for example, are located in the upper half of the cockpit, on exactly the same level as the driver's eyes.

The control units, on the other hand, are positioned lower down within perfect ergonomic reach and, thanks to their different surface touch in terms of size, shape and surface qualities, easy to control without even looking.

A further important point is that the arrangement of the switches and control buttons follows the respective context, a group of switches in the direct vicinity of the light switch centre serving to concentrate the functions for activating the various driver assistance systems supporting the driver in the perception of his surroundings.

The power unit of the new BMW 7 Series starts at the touch of the Start/Stop button as soon as the wireless key straight-edged on both sides is inside the car, meaning that the key does not even have to be inserted into the usual opening.

Conventional steering column levers on both sides of the steering wheel serve to operate the direction indicators and the windscreen wipers.

Everything at a glance:
classic circular dials, display in black panel technology.
The instrument cluster on the new BMW 7 Series combines classic elements and new solutions to provide a harmonious unit with features never seen before. One highlight unprecedented in the world of motoring, for example, is black panel technology serving throughout the instrument cluster to ensure perfect harmony of different display technologies incorporating a high-resolution colour display, control and warning lights and four circular dials arranged in the traditional style of a sports car.

The displays serve to provide status and function messages relevant to current driving conditions, navigation data, Check/Control reports, feedback from the control units, and Service Interval information. The circular instruments, in turn, give the driver information on primary driving functions of particular significance. The two large dials present road speed and engine revs, two smaller displays at the right and left outside give the driver information on the level of fuel and engine oil temperature.

As long as the car is at a standstill the displays forms a smooth, homogeneous black surface where only the chrome-coloured surrounds open to the out-
side, the indicator needles and the scale marking on the circular instruments, as well as the red warning field on the rev counter, are permanently presented as primary features. The figures in the circular dials, on the other hand, are presented only when required as an electronic function, just like the integrated displays showing current fuel consumption and the range still remaining.
So like all symbols on the display, they only become visible when activated, that is with the ignition switched on and while driving.

This provides an ideal combination of mechanical and electronic data feedback with all the well-known benefits – and at the same time ensures attractive
visual and technical effects. As long as the car is parked neither the figures nor any other data are visible. But as soon as the driver opens the door, the car quite literally comes to life and the display takes up its service. The chrome rings on the circular instruments open to the bottom before starting the engine are now closed by bright lines, and once the ignition has been activated both the figures as well as the on-board information and telltales come on.

Then, when starting the engine, the individual functions activated personally by the driver are also presented in the interest of greater convenience.

In its innovative design and configuration, the instrument cluster corresponds with the iDrive Control Display and the Head-Up Display available as an option. Depending on the function chosen, the Display may also be used to present telephone numbers or a radio station once activated via the control elements on the multifunction steering wheel.

To choose telephone numbers and radio stations quickly and precisely from a list of numbers and stations provided in advance, the driver may use not only conventional selector buttons, but also a knurled wheel.

Yet a further option is to present navigation functions and the status of Dynamic Driving Control in the Display – and if the car is equipped with a navigation system, the instrument cluster will also support the High Guiding function, clear and realistic arrow symbols giving the driver information for changing his lane or helping him when turning at an unclear road junction.

Using the Head-Up Display, finally, the driver receives all relevant information primarily right in front of his eyes on the windscreen, with the relevant data not re-appearing in the instrument cluster until the Head-Up Display has been switched off.

Automatic air conditioning controlled in full via buttons on the centre console.
A second display in black panel technology in the centre console presents the current settings on the automatic air conditioning featured as standard, thus showing the interior temperature and the ventilation mode with particular precision and, at the same time, in particular style.

All settings on the automatic air conditioning may be activated in the new BMW 7 Series by a group of buttons on the centre console, enabling the driver and front passenger to set the temperature, air volume and distribution via a control unit on the air conditioning panel individually for the right- and left-hand side of the car for their personal preferences.

The particular characteristics of such fully automatic control can be adjusted directly on the climate control panel in five levels of intensity according to the driver’s and passengers’ individual wishes. And by simply pressing a button, the desired setting activated for the driver may be transferred to all the seats in the car.

Optionally available four-zone automatic air conditioning serves additionally to regulate temperature, air volume and distribution on the left- and right-hand side at the rear and comprises a separate control unit on the rear

centre console. The long-wheelbase version of the BMW 7 Series, in turn, is available not only with four-zone automatic air conditioning, but also with separately controlled roof vents supplied with cool air from an additional climate control unit fitted in the luggage compartment.

Electronic gear selector level and Driving Dynamic Control button on the centre console.
The arrangement of control units on the centre console simply begs the driver to pursue an active style of motoring, at the same time allowing convenient
and intuitive use of all comfort functions.

The new BMW 7 Series comes with an electronic gear selector lever on the centre console directly next to the control unit for Dynamic Driving Control facing the driver and, on the other side, the iDrive Controller.

Dynamic Drive Control allows the driver at the touch of a button to vary the car's set-up in the various COMFORT, NORMAL, SPORT and SPORT + stages, while another button directly ion front serves to choose the various settings on DSC Dynamic Stability Control.

Instead of a conventional handbrake, the new BMW 7 Series features an electrohydraulic parking brake operated at the touch of a button without requiring the slightest effort on the part of the driver. The Auto-Hold function likewise operated by a simple button automatically holds the car at a stand-still, ensuring extra comfort in stop-and-go situations.

Consistently enhanced for intuitive use: BMW iDrive.
The new BMW 7 Series naturally features BMW's trendsetting iDrive control system serving to activate and control all entertainment, information, navigation and telecommunication functions featured either as standard or as an option. Introduced for the first time in the former model, BMW iDrive has revolutio-nised the modern philosophy of ergonomics, function and control logic in the automobile, playing a leading role particularly in the premium segment.

Now the new generation of BMW iDrive gives BMW an even greater lead over other manufacturers with comparable systems in terms of presentation quality and intuitive control.

On the new BMW iDrive the control and display functions again remain consistently separated from one another, the former being set by the

Controller on the centre console, the latter presented in the Control Display in the middle.

This places the control element in a perfect ergonomic position and enables the driver to take up the information presented most conveniently, hardly taking his eyes off the road and traffic conditions around him.

Measuring 10.2 inches, the extremely large display sets a new standard in the market through its ultra-clear presentation and easy-to-understand, optically attractive graphics. Positioned on the same level as the instrument cluster,
the display is within clear sight both for the driver and front passenger at exactly the right distance from their eyes.

Likewise in exactly the right ergonomic position, the newly developed Controller allows convenient and intuitive selection and activation of functions by means of standardised tipping, turning and pushing motions. Again, this ensures smooth and convenient operation with virtually no distraction from traffic conditions, enabling the drive to concentrate in full on the actual process of driving his car.

Inviting function and long-term use:
Controller with direct selection buttons.
The new iDrive Controller is now even easier and better to control than before. In its design and configuration its follows the most advanced biomechanical findings clearly reflected through the surface touch of the Controller itself and its clearly structured mechanical features. Apart from the clear control principles, the new design of the Controller panel makes the entire process
of controlling and operating the system even more ergonomical.

The benefits of the control elements, the menu structure and the graphic presentation in the Control Display are obvious right from the start and become even greater in the course of time with the driver consistently using the system. An image of the Controller presented in the Control Display ensures even easier and more convenient orientation in choosing the next operating function.

The various operating steps activated by tipping, turning or pressing the Controller are largely similar to the control functions we are all accustomed to when clicking the mouse or turning a wheel on a computer. Turning the Controller, for example, the driver automatically browses through a list of menu items, subsequently confirming the function of his choice simply by pressing the Controller when appropriate. Tipping the Controller to the left or right,

in turn, enables the driver to conveniently navigate through the various levels of the menu.

Through clear graphic presentation of functions on superimposed levels and the presentation of Controller positions currently possible, the driver receives optimum clarity and orientation at all times. The control options on the Controller and graphic presentation in the Display therefore come together in perfect harmony as an ideal match. All menus follow the same uniform scheme, again enabling the driver to make himself acquainted with operating conditions quickly and without the slightest trouble. The menu trees are extra-wide to allow a maximum number of options without having to change to another menu level. At the same time the functions are perfectly arranged for rapid access to the most important options in regular use of the Controller and its programs.

As in the past, the Controller allows the driver to operate and control all functions in the system. And now, as a further innovation, the Controller comprises four direct selection buttons for the menu options used most frequently. Pressing these buttons, the user is able to switch over spontaneously to the CD, Radio, Telephone and Navigation functions without the slightest delay.
A particular advantage is that these buttons are all within easy reach of the user’s fingertips, while the driver keeps his hand resting comfortably on the Controller.

The range of direct selector buttons is supplemented and rounded off by the three command buttons MENU, BACK and OPTION serving to call up the start menu, to return to the menu activated last, and to present additional options in the current context. This either shortens the usual search processes or makes them completely superfluous. In addition, the BACK button supports the driver in getting used to the system in an almost playful manner, without
the slightest hassle: Pressing the BACK button, the driver quite simply reverses the operating function activated before, as is the case with the reverse button on an internet browser.

Proven assets now even more convenient for the user:
the favourite buttons.
Through its versatility, BMW iDrive also offers the driver personal convenience and individual choice as yet a further enhancement of motoring comfort and individual style. Precisely this is also the purpose of the favourite buttons in the centre console already proven in other BMW models. Apart from radios stations, telephone numbers and navigation destinations, these eight buttons now serve for the first time to save and directly retrieve menu items via
BMW iDrive.

At the touch of a button, therefore, the driver is able not only to directly access his favourite station or home address, but also to present the navigation map
he prefers in his favourite scale, to check out traffic reports, to control the balance of the loudspeakers in the audio system, or to choose a specific chapter in the Owner's Manual integrated in the car.

The approach sensors on the touch-sensitive favourite buttons briefly present the function saved by the driver or user on the Control Display as soon as they touch the respective favourite button, thus serving to avoid faulty operation. And last but not least, the individual favourite button functions may be saved specifically for various users on the keys to the car.

Extra-large displays with variable layout, preview maps and full-screen presentation.

BMW iDrive in the new 7 Series features an extra-large 10.2-inch Control Display exceeding all other graphic surfaces and presentation displays ever seen before in an automobile not only in its size. Resolution of 1,280 x 480 pixels likewise offers far better options to present the most detailed graphics.

The high-class and sophisticated flair provided in this way is the result of an elaborate combination of the most advanced hardware and software technolo-gies, menu lists presented in bright letters on a black background, very
clear symbols and modern graphics with clear colour codes contributing to the superior images and presentation ensured in this way.

The structure of the control menus likewise facilitates the process of finding the functions required, the flat menu trees and systematic use of the iDrive control functions carried over from well-known computer technology providing rapid access to the options desired. All function areas controllable by iDrive
are listed from the beginning in the starter menu, the driver selecting the item required through a new menu board or level in each case.

The choice of menus and items available is again presented in clear lists, such consistency in guiding the user facilitating the process of orientation and the arrangement of menu boards on several levels within the display. Visual operating aids serve to provide additional clarity. And if really necessary, all the driver has to do is press the BACK button on the Controller to reverse
a false decision.

Use of the optional navigation system is also even easier than before thanks to the optimised technical features now offered by BMW iDrive. Full-screen presentation of maps, for example, ensures an unprecedented overview of the region the driver is currently travelling through with all details of interest. Both maps and individual symbols can be presented as three-dimensional graphics – and now, supplementing the perspective style of presentation already offered in the past, the driver can also use an elevation map. Even specific sights along the route are presented in graphic form as realistic photos.

The impressive technical qualities of the system come out clearly from the start when entering the destination. Choosing his destination from a list of places or locations, the driver also receives a map preview leading to each possible proposal during the initial selection process, thus easily distinguishing between various places of the same name simply through the geographical information provided.

The process of spelling the names of places and streets as well as the entry of telephone numbers is facilitated by a circular Speller, the circular arrangement of letters and numbers speeding up the entry process significantly.

A new standard of navigation in the automobile.
The fundamentally optimised navigation system with its outstanding display resolution, the most advanced style of 3D map presentation and numerous other useful innovations is one of the highlights of the new BMW 7 Series. The system offers not only a new standard of imagery and graphic presentation,
but also highly efficient control for maximum convenience.

Graphic presentation on the Controller, for example, significantly facilitates the choice of functions and settings, the route criteria being selected on the left, with a preview screen on the right serving to provide even faster orientation. Apart from towns and streets, this preview screen also offers relevant traffic information for the route chosen.

A unique feature is the full-screen view on the extra-large Control Display offering the user a complete overview even of fine details at a glance. On request an assistance window provides further views independently of the main map, with the contents in the assistance window being determined by the customer in advance from a preselected list. As an example, the user is able

to opt for the on-board computer display or details on the entertainment programme.

The menu item “Highlight Traffic Conditions” offers up-to-date convenience not only in city traffic, since this item also presents current traffic congestion reports visually in the form of road sections marked in red. So the driver using

this system also receives important information and complete orientation on the motorway showing him the possible need to change his route on account of traffic congestion.

The new High Guiding function with integrated lane recommendation enhances the operating efficiency of the new navigation system in the new BMW 7 Series to an even higher standard. High Guiding presents specific, detailed views such as the turning/no-turning options at an unclear road junction from the screen directly to the instrument cluster or, when fitted as an option, to the Head-Up Display.

Presentations of maps in 3D and with a high level of display resolution make the use and operation of the new navigation system in the BMW 7 Series a truly unique experience. Realistic presentation on elevation maps when driving through mountain scenery, for example, offers clear recommendations as to the best and most scenic route.

On smaller map scales down to 25 metres, integrated three-dimensional presentation of surrounding buildings provides very helpful additional orientation particularly in large cities, while on country roads the presentation of major buildings or rural sites and areas helps to provide further clarity. And last but
not least, the 3D presentation of sites – so-called Points of Interest – in the new navigation system shows the user more clearly whether he is about to reach
a planned stopover point.

The Travel Planner with its Guided Tours function ensures optimum travel comfort at all times, compiling various destinations on the way to provide one personal, individualised traffic route and giving the driver the option to call up these destinations automatically one after the other. Supported by the virtual Travel Planner, the navigation system is even able, as a special function, to select the most attractive routes the driver and his passengers wish to enjoy. And should the driver decide to choose another favourite route, he
obviously has the option to enter destinations on the way as he chooses.

The individualist wishing to plan his route ahead at home or on his PC, is able to do so via the BMW ConnectedDrive Internet Service this time with the help of the Route Planner, putting together personal routes with any desired number of stops on the way and downloading these routes via a USB stick or by mobile communication into the car’s navigation system.

Convenient combination of voice control and the BMW Controller.
Yet a further innovation now offered by BMW iDrive is multi-modal operation by voice entry and the Controller. Now, therefore, the customer is able to switch
at ease from one function to the other while making an entry, if he wishes even leaving voice recognition active while making an entry by way of the Controller and using voice entry at the same time.

All the user has to do is press the appropriate button on the multifunction steering wheel to activate voice control and then press the button again to terminate the function when finished. To simplify voice entry, the commands available are presented in the Display.

In addition to these amenities, iDrive also responds to numerous synonyms used when entered, the option to enter names of towns and streets in full words speeding up the process of voice control in choosing your destination and operating the navigation system.

Numerous studies with a representative selection of test persons from various regions the world over were conducted in developing BMW's new concept of iDrive. The criteria examined in these studies were, first, the user's immediate response to the system and, second, the experience gained in long-term tests. Knowledge gained from the customer's use of other electronic appliances
was also evaluated in the process.

As a result of these painstaking and precise studies, the new iDrive control concept boasts some functions quite comparable to the use of a PC when surfing in the internet. Consequently, optionally available unrestricted use of the internet is masterminded via the Controller and the Control Display in the iDrive system.

BMW's optimised iDrive once again confirms the significant progress made in automotive control systems, combining greater efficiency, enhanced control logic, and appealing, clear display graphics. The new iDrive thus makes travelling in the new BMW 7 Series a truly incomparable experience, under-lining the outstanding position of this exceptional premium car in the automobile market.

Unparalleled precision:
BMW Night Vision with detection of individual persons.
BMW is the first car maker in the world to introduce Night Vision able to detect even individual persons on or near the road and give the driver an

appropriate warning in the new BMW Series. This new generation of BMW Night Vision therefore sets new standards in avoiding accidents at night.

The central unit within the system is a thermal imagining camera providing a moving video image which enables the driver to recognise people, animals and other objects also outside of the headlight beam in high-resolution presentation in the central Control Display. For the first time, therefore, the system is supplemented by the detection of individual persons.

This is made possible by a control unit analysing video data and using intelligent algorithms to search specifically for pedestrians then highlighted by a yellow colour in the video image. And should the system determine that a person ahead of the vehicle is at risk, the driver will receive an additional warning in the interest of extra safety.

To minimise the number of warnings and to focus on pedestrians really endangered, the Night Vision control unit conducts a complex analysis of each situation, restricting its warnings to pedestrians in a warning corridor determined as a function of speed, the steering angle, and the yaw rate of the car. Should the system, for example, recognise a person at the side of the road, moving towards the road or already standing on the road surface, the driver is warned in good time by means of a symbol in the Control Display. And if the car is equipped with a Head-Up Display, the same information is also presented on the windscreen right in front of the driver’s eyes.

A number of other driver assistance systems likewise serves to enhance both motoring comfort and active safety in the new BMW 7 Series. These systems offer the driver helpful support in inconvenient situations such as traffic congestion or unclear routing, help him assess current traffic conditions, and promote his awareness in demanding driving manoeuvres. As a result, therefore, he is able to concentrate even more on Sheer Driving Pleasure in the new BMW 7 Series, without in any way being deprived of his responsibility
at the wheel.

Always precisely on course: Lane Change Warning.
Lane Change Warning available for the first time in a BMW helps the driver overtake in superior style and with superior safety. Radar sensors at the rear of the car monitor traffic conditions on adjacent lanes, covering a range extending from the so-called dead angle on the next lane all the way to a distance of
60 metres or almost 200 feet behind the car.

A triangular symbol lighting up permanently at the bottom of the exterior mirror housing shows the driver whether there is a vehicle in this critical range.
Then, should the driver activate the direction indicator all the same, showing that he is about to change lanes, he will receive a further warning by way

of an LED signal. And if even this is not enough, he will be warned by discreet but clearly perceptible vibration on the steering wheel in the same sequence
as the Lane Change Warning signal.

This high-tech system available as an option on the new BMW 7 Series also determines any unwanted changes in lane.

The Lane Change Warning system is made up of a camera fitted on the inner mirror on the windscreen, a control unit for the comparison of data, and a signal actuator generating the vibration effect on the steering wheel.

World debut in the new BMW 7 Series: recognition of traffic signs.
In combination with a navigation system and Lane Change Warning, the new BMW 7 Series offers yet another exclusive function: the Speed Limit Indicator gives the driver reliable information at all times on the current speed limit allowed on the route he is taking.

This function enhances motoring comfort particularly on long distances, informing the driver at all times of current speed limits without requiring him to check out the signs by the road. Instead, a camera fitted next to the interior rear-view mirror permanently monitors speed signs at the side of the road as well as variable speed limits displayed on overhead signs on the motorway.

The data thus obtained from such signs is compared immediately with the relevant data saved in the navigation system, any deviation in speed limits due to a short-term change in conditions – for example in the event of building construction – thus being given priority over the data registered in advance.

The system even considers further traffic restrictions imposed by signs along the road, again presenting the current speed limit in both the instrument cluster and, where fitted, in the Head-Up Display. The result, clearly, is that the driver’s risk of breaking the speed limit is reduced most significantly.

Everything in sight right from the start thanks to Side View.
BMW ’s innovative Side View system is now available as yet another option. Side View uses two cameras integrated in the front wheel arches to observe and detect traffic approaching from the side in good time. The pictures recorded in this way are presented on the Control Display, offering additional comfort not only when manoeuvring, but also when driving out of narrow

gateways with poor vision or when leaving a car park again with obstructed visibility, since the driver is quickly able to see what is happening to his left and right.

In the interest of rapid availability whenever required, Side View is activated by
a direct selector button in the centre console.

5. The Powertrain: Concentrated Power in Thrilling Diversity.

The choice of power units available right from the start upon the market launch of the new BMW 7 Series is full of superlatives. The world's first eight-cylinder gasoline engine with Twin Turbo technology develops maximum output of
300 kW/407 hp in the new BMW 750i, together with spectacular peak torque of 600 Newton-metres/442 lb-ft. The most powerful straight-six in BMW's engine range featured in the BMW 740i and again boasting BMW 's exclusive Twin Turbo technology, in turn, offers maximum output of
240 kW/326 hp,
with peak torque of 450 Newton-metres/332 lb-ft.

The first representative of a brand-new generation of straight-six diesel engines with an all-aluminium crankcase and common-rail direct fuel injection featur-
ing piezo-injectors in the new BMW 730d, finally, offers impressive power of 180 kW/245 hp and maximum torque of 540 Newton-metres/398 lb-ft, combined with the highest standard of fuel economy in its segment.

All three engines excel through their dynamic development of power, supreme motoring culture and exemplary efficiency, offering these qualities with various characteristics but nevertheless sharing one all-important feature in common: In their respective performance range they provide an unparalleled balance
of power, on the one hand, and economy, on the other. And at the same time both the diesel engine as well as the two gasoline power units fulfil all the prerequisites for the future EU 5 emission standard.

The new eight-cylinder in the BMW 750i is the most efficient power unit in its class. The two six-cylinders, in turn, enter a range of power and performance previously reserved to eight-cylinders, combining this potential with exemplary efficiency and much lower weight. The reduction of load on the front axle
gives both the BMW 740i and the BMW 730d harmonious balance of weight, significantly improving the agility of both models.

All three engines offer ideal conditions for enhanced driving pleasure and exemplary all-round economy in the segment of the new BMW 7 Series. In other words, they are perfect representatives of the BMW

EfficientDynamics development strategy coming with a number of other innovations in the new BMW 7 Series: Apart from the modern engines, features such as Brake Energy Regeneration, on-demand activation and control of ancillary units, consistent

lightweight technology, and optimised aerodynamics including electronically controlled air flap management on the BMW 740i and the BMW 730d once again significantly reduce both fuel consumption and emissions.

This higher standard of efficiency comes out particularly on the new BMW 730d: Offering average fuel consumption of 7.2 litres/100 kilometres (equal to 39.2 mpg imp) in the EU test cycle, this is the most economical car in its class. And at the same time this 180 kW/245 hp diesel outperforms the consumption and emission ratings of even far less powerful competitors.

Cutting-edge diesel power: new straight-six with third-generation common-rail fuel injection in the BMW 730d.
The first representative of a new generation of six-cylinder diesels is now making its world premiere in the new BMW 730d. Introducing this revolutionary power unit, BMW is indeed increasing its worldwide leadership in the
development of diesel engines. The new six-cylinder diesel comes with an all-aluminium crankcase, the substantially upgraded turbocharger system with variable intake geometry ensures dynamic and smooth development of power geared harmoniously to current driving conditions. Fuel is supplied by the latest generation of common-rail direct fuel injection using piezo-injectors and operating at a maximum pressure of 1,800 bar.

In its design principle and with a large number of shared components, the new six-cylinder has a number of features in common with the latest-generation BMW four-cylinder diesel successfully introduced in 2007 and already lauded for its outstanding efficiency. Such shared features are, for example, the
design of the combustion chambers, the extra-low cylinder head, the central positioning of the injectors, as well as the vertical arrangement of the valves ensuring a particularly clean combustion process with raw emissions reduced to a minimum.

Consistently implementing the BMW EfficientDynamics development strategy, this brand-new power unit combines an increase in engine power and torque with a corresponding reduction of fuel consumption and emissions. Displacing 3.0 litres, the engine develops 180 kW/245 hp at a speed of 4,000 rpm. Maximum torque of 540 Newton-metres/398 lb-ft, in turn, comes at just
1,750 rpm.

Compared with its predecessor, the new BMW 730d therefore offers 10 kW/14 hp more power on 10 per cent less fuel, thus ranking right at the top in the luxury segment in terms of all-round economy.

Highly efficient management of exhaust emissions is ensured by a diesel particulates filter and an oxidation catalyst both fitted close to the engine in one common housing.

Optimised combustion for reduced raw emissions.
Both in its configuration and through a number of components as well as the arrangement of various ancillary units, the new six-cylinder diesel differs fundamentally from its predecessor. One significant feature that remains unchanged, however, is the engine displacement of 2,993 cc.

The newly developed crankcase is made of a high-strength aluminium/silicon alloy, the compression height of the pistons has been raised to a higher level, and the cooling duct is newly designed. The increase in power and torque, together with the reduction of friction, is also a result of the re-designed main and connecting rod bearings. The crankshaft made of high-strength steel, in turn, is now even stiffer and more resistant than before in its new design and material quality.

The injectors positioned right in the middle and the valves in vertical arrangement ensure a smooth and consistent combustion process, again serving to reduce raw emissions. The supply of air into the cylinders is through two intake ducts positioned next to one another, with air coming from a compact collector fitted at the side. To reduce emissions to a minimum, the intake duct responsible for charging the cylinder comes with infinite electronic control. The two outlet ducts, finally, merge further downstream to form one common connection pipe.

The lightweight camshafts have been carried over from the former engine but now run in a camshaft bearing made of pressure-cast aluminium.

Ceramic glow plugs featured for the first time on a six-cylinder diesel engine optimise the engine’s starting characteristics in several respects. They also serve to reduce fuel consumption and emissions and, at the same time, ensure even better motoring comfort when warming up by a significant improvement of both acoustics and vibrations.

Weight down, agility up, pedestrian safety optimised.
Weighing just 185 kg or 408 lb, the new six-cylinder diesel is another 5 kg lighter than its predecessor. This optimisation of weight not only makes the

new BMW 730d even more efficient, but also guarantees even greater agility. Acceleration to 100 km/h comes in just 7.2 seconds and the car's top speed is 245 km/h or 152 mph.

With its compact dimensions, reduced weight, lower height, and the chain drive moved to the rear of the engine, the new diesel also helps to fulfil future standards and requirements in pedestrian safety. The risk of injury is then further reduced by the intake noise silencer giving way when necessary in height and therefore appropriately deformable housed beneath the like-wise new cylinder cover also made of a special plastic material.

The alternator, steering assistance pump and climate compressor all come on the left-hand side of the engine, keeping the right-hand side free for the diesel particulates filter, the oxidation catalyst, and the turbocharger system. And since all ancillaries are driven by one and the same belt, there is no need for a second belt drive. Again, this enhances the efficiency of the drive unit
to an even higher level, avoiding the otherwise inevitable friction losses.

Common-rail direct fuel injection with new piezo-injectors and higher operating pressure.
The injection system developed specifically for the new six-cylinder ensures an exactly controlled and precisely metered supply of fuel. Based on the third-generation of common-rail direct fuel injection already proven on BMW's six- and four-cylinder diesels, the new fuel supply system comes with upgraded piezo-injectors and now operates at a peak pressure of 1,800 bar. Compared with the former version of the injection system, the high-pressure pump, the supply and injection lines, the rail pressure sensor, and the pressure control valve are all new.

The new engine management offers an even higher level of computer power and greater memory capacity. The control unit may be integrated both in a conventional on-board network and in the extremely efficient FlexRay data transmission system, receiving its input data from a wide range of sensors located, inter alia, in the engine block, the cylinder head, the cooling and injection system, in the oil circuit, the exhaust manifold, the air supply, the exhaust gas recirculation system, and on the exhaust pipes.

Turbocharger with adjustable turbine geometry and optimised management.
Likewise enhanced over the former engine, the exhaust gas turbocharger on the new six-cylinder diesel again offers optimised efficiency and quality in every respect. Adjustment of turbine geometry as a function of load

conditions and the power required is now controlled even more precisely than before, modified compressor and turbine rotors giving the turbocharging process even better thermodynamic qualities.

The turbine blades are adjusted by an electric motor with supreme accuracy and minimum delay to the respective running requirements, ensuring immediate response at low engine speeds and a high level of output under full load.

The newly developed exhaust gas recirculation system comprises ducts fully integrated in the cylinder head, newly arranged feed pipes leading into the intake system, and particularly effective cooling. On its way to the combustion chambers, the gas supplied is diverted by 180o first on the mixing line, ensuring an even better balance of exhaust gas and fresh air in the cylinders.

The stainless-steel exhaust gas cooler optimised for maximum performance and efficiency is positioned on the front side of the engine and comes complete with a bypass flap limiting the emission of harmful substances while warming up. The amount and temperature of the exhaust gas flowing through the system maybe determined precisely as a function of the respective operating point and engine temperature, thus serving to minimise hydrocarbon, carbon monoxide and nitric oxide emissions right from the start within the engine itself. Another advantage is greater engine smoothness and enhanced refinement at all times.

Operating temperatures are further reduced by the ducts flowing directly through the cylinder head, the cooling effect obtained in this way serving to reduce combustion temperature in the combustion chambers through the smaller share of nitric oxide.

Diesel particulates filter and catalyst in one common housing.
Offering average fuel consumption of 7.2 litres/100 kilometres (equal to 39.2 mpg imp) in the EU test cycle, the new BMW 730d is the most economical car in its segment. The maximum cruising range of more than 1,100 kilometres or 680 miles provided in this way also sets a new standard. The CO_2 emission rating of the new BMW 730d, finally, is 192 grams per kilometre.

Reflecting BMW’s usual commitment, the new BMW 730d comes as standard with both a diesel particulates filter and an oxidation catalyst. These exhaust gas cleaning and management units are all housed in one common emission control centre positioned directly downstream from the engine.

Thanks to the new technologies featured on the new six-cylinder, the drivetrain significantly outperforms the EU 5 emission standard. Apart from diesel particles, the exhaust gas cleaning system is also very effective in reducing

both hydrocarbons and carbon monoxide. The catalytic reaction required for this purpose is achieved by a layer of platinum and, respectively, palladium inside the exhaust gas cleaning system.

The diesel particulates filter operates free of maintenance and does not require any additives. The regeneration phases required at regular intervals are activa-ted by a follow-up injection process controlled by the engine management unit, the filter thus reliably remaining free of residues and maintaining its full effect regardless of the engine's running conditions and without any intervention by the driver. With its sophisticated control technology, therefore, the exhaust
gas cleaning system always remains self-sufficient in maintaining optimum emission management and running conditions.

The efficient way to maximum performance: Twin Turbo technology exclusive to BMW on the six- and eight-cylinder gasoline engines.
The most important technical feature shared by the two gasoline engines in the new BMW 7 Series is BMW's exclusive Twin Turbo technology in conjunction with High Precision Injection (direct gasoline injection). Applying this principle featured for the first time on a straight-six power unit and now also available on the V8, BMW's engine development specialists are taking the most efficient approach in increasing both power and torque by an impressive margin, both engines achieving a level of output and torque otherwise only conceivable
with a far larger – and heavier – normal-aspiration power unit.

By contrast, BMW's Twin Turbo power units stand out through particularly compact and low-weight construction in their respective performance class, relatively low weight on the front axle benefiting the car's weight distribution and all-round agility.

The turbocharger technology applied by BMW also points into the future through the use of two turbochargers and the combination with High Precision Injection. This puts an end to the usual disadvantages of a conventional turbocharged engine, that is the delay or "gap" in building up power and the increase in fuel consumption.

The relatively small turbochargers on the Twin Turbo engines develop their extra power very spontaneously from just over idle speed. With its piezo-injectors arranged in the middle between the valves in the cylinder head,
High Precision Injection ensures precise management and dosage of the fuel supplied, significantly reducing fuel consumption also in everyday motoring

throughout a wide range of engine load. In combination with Twin Turbo technology, this ensures a fascinating, truly dynamic driving experience combined with supreme efficiency in the respective performance class.

Unique: eight-cylinder gasoline engine with innovative Twin Turbo technology and High Precision Injection in the new BMW 750i.
The new BMW 7 Series offers an optimum synthesis of elegance and sportiness. Its engines combine superior motoring refinement with dynamic power, making them ideal for a luxury performance saloon of this calibre.

Clearly, these features are borne out most convincingly at the highest level of power and performance by the new eight-cylinder in the BMW engine range. Displacing 4.4 litres, the new V8 with Twin Turbo technology and High Precision Injection develops maximum output of 300 kW/407 hp in the speed range between 5,500 and 6,400 rpm. Peak torque, in turn, is 600 Newton-metres/442 lb-ft maintained consistently between 1,750 and 4,500 rpm.

The arrangement of the turbochargers and the catalytic converters in the V-section between the two rows of cylinders is a new feature in technology now introduced for the first time on an eight-cylinder gasoline engine. The result of this unique solution is compact dimensions with optimised cross-sections on the components involved in the charge cycle process, thus reducing pressure losses on the intake and exhaust side to a minimum. The driver benefits in particular from the spontaneous response of the engine to the gas pedal, ensured in this case through the extremely short and dynamic flow of the fuel/air mixture to the turbochargers.

The all-aluminium power unit of the new BMW 750i offers an incomparably sporting and, at the same time, comfortable rendition of the qualities typical of an eight-cylinder. The engine combines superior power and pulling force at low speeds with truly impressive, drawn-out torque all the way to high revs, accelerating the BMW 750i from a standstill to 100 km/h in just 5.2 seconds.

Ample power reserves are available at all times for fast and dynamic acceleration also at high speeds, with the car’s maximum speed being limited electronically to 250 km/h or 155 mph.

Innovative Twin Turbo technology for a long and smooth surge of power.
The supreme power and performance characteristics of the new V8 power unit result primarily from the car’s innovative Twin Turbo technology. This

unique construction principle with two turbochargers fitted not outside the engine, but rather directly within the V-section and each supplying compressed air to
four cylinders, ensures unparalleled spontaneity in responding to the gas pedal.

The turbo “gap” so typical of a conventional turbocharged engine – that is the time lag until the turbocharger starts developing its extra power – is quite simply a thing of the past.

The engine revs up smoothly and powerfully, maintaining its high torque throughout an unusually wide range of engine speed. In its power and performance characteristics it is reminiscent of a much larger normal-aspiration engine, while with its all-aluminium crankcase it is much lighter in the interest of enhanced efficiency and greater agility.

Not only the weight, but also the fuel consumption of this new V8 power unit has been reduced to a level quite unusual for an engine of this class and calibre. An important factor contributing to such greater fuel economy is infinite double-VANOS camshaft control characteristic of BMW’s power units, helping to generate exceptional torque from the V8 all the way from low engine speeds.

High Precision Injection is a key function in the efficient use of fuel. The second generation of direct gasoline injection uses piezo-injectors positioned in the cylinder head directly next to the spark plugs and delivering fuel into the combustion chambers at a pressure of 200 bar. This ensures extremely precise dosage of fuel, helps to reduce fuel consumption, minimises emissions,
and also reduces engine noise.

Average fuel consumption of the BMW 750i in the EU test cycle already complying with the EU 5 standard is 11.4 litres/100 kilometres (equal to 24.8 mpg imp), while CO_2 emissions are limited to 266 grams/kilometre.

Compared with the former model homologated to the less demanding EU 4 standard, this is an improvement of fuel economy by about 3 per cent together with an increase in engine output by 30 kW/41 hp. In other words, the new V8 power unit offers the same output and performance as the latest twelve-cylinder engines and, at the same time, ensures the highest standard of efficiency worldwide in the eight-cylinder segment, fulfilling both the US ULEV II emission standard and the EU 5 requirements in Europe.

Even more powerful: straight-six with Twin Turbo and High Precision Injection in the BMW 740i.
The second gasoline version of the new BMW 7 Series is powered by the most dynamic and powerful straight-six within the BMW engine range. Like the
new V8, the power unit of the BMW 740i offers an exclusive combination of

Twin Turbo technology and High Precision Injection unique to BMW for unmistakable power and performance characteristics and truly outstanding fuel efficiency, particularly in relation to the car's dynamic driving potential.

The latest version of BMW's 3.0-litre straight-six offers maximum output of 240 kW/326 hp ensured by appropriate modifications to the turbocharger system. This peak power comes at an engine speed of 5,800 rpm, with maximum torque of 450 Newton-metres/332 lb-ft at just 1,500 rpm.

On the Twin Turbo straight-six power unit, two exhaust gas turbochargers each supply three cylinders with compressed air. Being relatively small and compact, the turbochargers with their low inertia again help to optimise the response of the engine, building up turbocharger pressure without the slightest delay from low engine speeds. The result is rapid development of maximum engine power and torque further enhanced by infinite double-VANOS camshaft control. On the road, these unique characteristics of BMW's Twin Turbo gasoline engines ensure a particularly superior and elegant rendition of elasticity and flexibility.

The extremely dynamic development of power is also promoted by the engine's high compression ratio ensured by High Precision Injection. With the fuel/air mixture being cooled through the direct injection of fuel, the compres-sion ratio is higher than on a turbocharged engine with conventional manifold injection, improving engine efficiency accordingly, with more power on less fuel.

A further important feature of the straight-six power unit with High Precision Injection is the central position of the piezo-injectors between the valves and in the immediate vicinity of the spark plugs, ensuring particularly precise dosage of the fuel injected.

The development of power and performance by the straight-six with Twin Turbo and High Precision Injection reaches a level previously only possible on a
much larger eight-cylinder power unit. But in comparison with an eight-cylinder, BMW's most powerful six-cylinder offers far better fuel economy and is also – among other things thanks to its all-aluminium crankcase – much lighter,
again in the interest of enhanced driving agility.

The new BMW 740i accelerates to 100 km/h in 5.9 seconds and reaches a top speed limited electronically of 250 km/h or 155 mph. Average fuel consumption in the EU test cycle is 9.9 litres/100 kilometres (equal to

28.5 mpg imp), the CO_2 emission rating is 232 grams/kilometre. Compared with its predecessor, therefore, the new BMW 740i offers 15 kW/20 hp more power and, at the same time, a reduction in fuel consumption by 12 per cent. And at the same time the new BMW 740i fulfils the EU 5 emission standard in full.

Featured as standard:
automatic transmission with electronic gear selector lever.
Power is transmitted on the new BMW 7 Series by a further enhanced, upgraded six-speed automatic transmission with individual gearshift character-ristics ranging from particularly comfortable to very sporting and dynamic.
The latest version of BMW's six-speed automatic transmission already featured in several model series and widely lauded for its particular gearshift dynamics and superior gearshift comfort has been specifically modified to match the engines in the new BMW 7 Series. A newly developed control unit offering an even higher standard of performance, modified converter technology, and upgraded hydraulic control ensures even more precise selection of gears, the automatic transmission shifting from one gear to the other with incomparable spontaneity and efficiency in the interest not only of motoring comfort, but
also dynamic performance at all times.

Shifting down more than one gear is just as fast as a direct gearshift thanks to direct access to the respective gear position. Whenever the driver presses down the gas pedal abruptly in search of maximum performance, therefore, the transmission will shift back immediately by up to four gears. And being directly connected to the engine with minimum converter slip and an exact choice
of gears, the six-speed automatic transmission again raises the standard of economic motoring to a new pinnacle.

The driver shifts gears on the automatic transmission via the electronic gear selector lever on the centre console, gears being shifted not mechanically, but rather by electrical signals.

The parking position is activated either by pressing the P-button on the top of the selector lever or automatically when switching off the engine.

To activate manual gear selection, all the driver has to do is push the gear selector lever to the left, then shifting gears sequentially by hand. A display in the selector lever and a further display in the instrument cluster inform the driver in that case of the gear currently in mesh.

6. BMW EfficientDynamics in the new BMW 7 Series: The Role Model Leads the Way.

The new BMW 7 Series sets the standard for up-to-date Sheer Driving Pleasure in many respects, offering a combination of features and qualities previously regarded as quite inconceivable even in a luxury performance saloon.

This symbiosis of qualities makes the new BMW 7 Series quite unique in its design, in its driving experience and control concept – and not least also in its efficiency. A unique balance of driving dynamics and fuel economy, combined with exemplary emission management, gives BMW a top position now also
in terms of environmental cleanliness, the new BMW 7 Series benefiting to a large degree from the latest results and findings in the BMW EfficientDynamic development strategy.

New, combustion-optimised drivetrains, sophisticated lightweight technology and a wide range of features for extra efficiency give all model variants not only enhanced performance even better than on the former models, but also a further reduction of fuel consumption and emissions for superior leadership over the competition in their respective performance class also in terms of efficiency.

As a result the new BMW 7 Series overcomes yet another apparent contradiction in terms, clearly proving that luxury and efficiency need not exclude each other.

Introducing the new BMW 7 Series, BMW EfficientDynamics is once and for all becoming the benchmark in trendsetting automotive technology throughout all vehicle segments. Already lauded by many prizes and awards, this out-standing development strategy makes BMW the true leader in today's world of motoring and automotive technology. Working more consistently and to-the-point than any other car maker, BMW has indeed made the enhancement of efficiency an integral factor in the development of new cars. Comparing
various models in one and the same segment with roughly the same power and performance, a BMW these days is often not just the most sporting and dynamic model, but also the most fuel-efficient. And now BMW is moving into this top position also in the luxury performance segment through the new BMW 7 Series.

Average fuel consumption of 7.2 litres/100 kilometres in the EU test cycle (equal to 39.2 mpg imp) makes the new BMW 730d the most fuel-efficient car in its class. And at the same time the three-litre diesel offers the dynamic performance so typical of BMW, with the BMW 730d accelerating to 100 km/h in 7.2 seconds and leaving numerous competitors, in some cases with far higher fuel consumption, far behind.

The two petrol-engine versions of the new BMW 7 Series also stand out from the competition with the same superiority in their respective segments in terms of driving dynamics and economy: The new BMW 750i accelerates to 100 km/h in just 5.2 seconds and makes do with an average of 11.4 litres/100 kilometres (equal to 24.8 mpg imp) in the EU test cycle. The new BMW 740i, in turn, likewise sets new standards by combining acceleration to 100 km/h in just 5.9 seconds with average fuel consumption of 9.9 litres/100 kilometres (28.5 mpg imp).

All versions of the new BMW 7 Series combine such superior fuel economy with equally outstanding emission management, both the BMW 730d as well as the BMW 750i and the BMW 740i already complying today with the EU 5 emission standard only coming into force in future.

Greater dynamics, less CO_2 –
further enhancements also on the BMW 7 Series.
With the BMW EfficientDynamics development strategy being implemented consistently in all segments, the latest technologies are now also featured in the new BMW 7 Series. As a result, BMW is becoming a role model also at the top end of the market, successive introduction of new efficiency-promoting technologies in all model series enabling BMW to offer appropriate techno-logies for minimum fuel consumption and emissions virtually everywhere in
the global market. Unlike some competitors, fuel economy and CO_2 emissions
are therefore not just optimised on specific models or special editions, but rather as standard on all new models from BMW.

Luxury saloon with the fuel economy and emission management of a midrange model.
BMW EfficientDynamics offers the most advanced power units with combustion processes optimised for supreme efficiency, highly efficient transmission technologies, intelligent energy management by means of Brake Energy Regeneration and on-demand control of ancillaries, consistent lightweight technology, active aerodynamics and the use of tyres with minimum roll resistance also on the new BMW 7 Series.

The quest to enhance driving dynamics on less fuel comprises all areas in vehicle development, the use of electrically driven ancillaries being precisely geared to current driving conditions in order to ensure efficient use of energy
at all times. As an example, consumption of electrical energy is reduced, among other things, by the coolant pump operating on demand and by a detachable a/c compressor.

Cooling air flaps also operating on demand serve to enhance the car's aerodynamics, being opened only when the engine really needs cooling air.

A further feature is optimised thermal management enabling the final drive, for example, to warm up more quickly and thus reducing power losses in the process. The use of on-demand pump technology on the car's chassis and suspension control systems likewise contributes to intelligent energy management on the new BMW 7 Series, with the high-performance FlexRay data transmission system ensuring a particularly good effect and superior efficiency at all times.

Comprehensive, consistent use of innovative technologies serves quite generally to once again enhance motoring comfort and driving dynamics as well as the all-round efficiency of the BMW 7 Series versus its predecessor. Clearly, this gives the customer the unique opportunity to combine the driving experience of an outstanding luxury performance saloon with the fuel economy and emission management of a midrange automobile.

Efficient use of energy ensured by the most advanced drivetrain technology.
The gasoline and diesel engines featured in the new BMW 7 Series offer the latest standard of BMW engine development. As the first representative of a new generation of six-cylinder diesels, the power unit in the new BMW 730d comes with an all-aluminium crankcase, an optimised turbocharger system with variable intake geometry, and the latest generation of common-rail direct fuel injection with piezo-injectors operating at a pressure of up to 1,800 bar.

A wide range of innovations on this unique power unit ensures an extremely efficient and clean combustion process, while further reduction of weight compared with the former engine promotes not only the efficiency, but also the agility of the new BMW 730d.

The two petrol engines featured in the BMW 750i and the BMW 740i come with second-generation direct fuel injection. Referred to as High Precision

Injection, this system incorporates piezo-injectors fitted in the middle between

the valves and in the immediate vicinity of the spark plug for absolutely precise fuel injection. The result is a measurable reduction of fuel consumption also
in everyday traffic.

Like the straight-six in the BMW 740i, the V8 power unit in the BMW 750i comes with Twin Turbo technology, the arrangement of the two turbochargers in the V-space between the two rows of cylinders representing a brand-new concept in engine design. The low inertia of the relatively small turbochargers optimises engine response to an outstanding degree, building up charge pressure from low engine speeds without the slightest delay. As a result, the engine very quickly develops maximum power and high torque, also with
the help of BMW's infinitely controlled double-VANOS camshaft management.

The driver will experience these unique characteristics of BMW's Twin Turbo gasoline engines as a particularly superior rendition of elasticity, smoothness and flexibility on the road. The development of power by the straight-six with Twin Turbo technology and High Precision Injection reaches a level previously only achieved by much larger eight-cylinder power units. But in comparison with such an eight-cylinder, BMW's most powerful six-cylinder offers significantly improved fuel economy.

The new V8, in turn, reaches the power and performance level of a modern twelve-cylinder and, at the same time, offers the highest level of efficiency worldwide in the eight-cylinder segment.

In both cases the unusually low weight of the engine for a power unit in this class attributable, among other things, to the all-aluminium crankcase, ensures additional benefits in terms of efficiency and enhances the agility of the respective model.

The agility of the new BMW 7 Series is likewise enhanced by the upgraded six-speed automatic transmission combining an even faster gearshift thanks to optimised converter technology with enhanced all-round efficiency. And yet a further contribution to greater efficiency is made by the likewise upgraded final drive with reduced friction and optimised thermal management.

Efficiency also optimised by Brake Energy Regeneration.
All versions of the new BMW 7 Series likewise come with a wider range of efficiency-promoting engine modifications serving as standard equipment to provide a particularly good balance of performance and economy.

Varying of course from model to model, the latest technologies provided by BMW EfficientDynamics offer the very best in fuel economy. Brake Energy Regeneration on all models, for example, serves to ensure an intelligent flow of energy concentrating the generation of electric power for the on-board network on overrun and application of the brakes. This serves to charge the car's battery without withdrawing any energy from the engine and, therefore, from the
fuel used to drive the car.

As long as the engine is pulling the car, on the other hand, the generator normally remains disconnected.

Apart from particularly efficient generation of electricity, this also provides more drive power for accelerating in order to make the car even more responsive
and dynamic on the road.

To maximise battery life and set off the greater throughput of energy, intelligent energy management in conjunction with new AGM battery technology allows appropriate regeneration cycles, the battery being charged with a pulsed voltage to provide appropriate regeneration periods after a certain charge
and discharge cycle.

Intelligent and efficient:
on-demand management of ancillaries and active aerodynamics.
On-demand management and control of the car's ancillary systems also serves to optimise the efficiency of the BMW 7 Series. The uptake of power by the fuel supply and steering assistance pumps may, for example, be significantly cut back as a function of driving conditions, again in the interest of greater efficiency.

The Varioserv steering assistance pump on the new BMW 7 Series uses pressure- and volume-flow-controlled adjustment of the curved ring to avoid any increase in power loss resulting from higher engine speeds. Similarly, the loss of power encountered with a conventional a/c compressor may also be reduced by intelligent control, the new BMW 7 Series featuring a magnetic clutch to separate the compressor from the belt drive as soon as the air conditioning is switched off, thus reducing the drag forces generated by the compressor to a minimum.

These improvements all come together to minimise the consumption of electrical energy, thus reducing the conversion of primary energy into electricity by the alternator.

Special light-running transmission fluid serves to reduce friction losses, while optimised thermal management on the final drive likewise reduces rolling resistance after starting the car.

Special tyres with reduced roll resistance on the BMW 730d also serve to optimise aerodynamics and, accordingly, motoring efficiency.

The cooling air flaps on the BMW 740i and BMW 730d are actively controlled, reducing air drag on the car when closed and being opened only to provide
an increased flow of cooling air when required.

Maximum agility, efficiency and sturdiness ensured by intelligent lightweight technology.
With its optimised weight and sturdiness, the BMW 7 Series quite literally offers the best of both worlds. This is ensured by intelligent lightweight technology, appropriate use of high-strength and ultra-high-strength steel making the body structure extremely stable. Aluminium used for many further components, in turn, serves to enhance passive safety on lower overall weight of the vehicle: compared with the previous model, the bodyshell of the new BMW 7 Series offers some 20 per cent higher torsional stiffness and thus provides a perfect foundation for outstanding driving dynamics. And last but not least, the balance of torsional stiffness, on the one hand, versus the footprint and weight of the car, on the other, has also been significantly improved.

A feature quite unique in the BMW 7 Series' segment is the combination of an aluminium roof and a steel body, a solution reducing the weight of the car versus a conventional steel roof by approximately 7 kilos. The result, obviously, is an even lower centre of gravity making a significant contribution to the
car's agility on the road.

The engine compartment lid, the doors, the front side panels and the front spring supports on the body are likewise all made of aluminium. The use of aluminium doors for the first time on a large-scale production vehicle is able by itself to reduce the weight of the car by another 22 kg or almost 49 lb.

The development of a new door structure allows the use of aluminium on the doors combined with the proven shell configuration. The single-piece inner door plate comprising both the actual body of the door and the window frame guarantees supreme stiffness and stability, while large load-bearing metal shells on the door body again serve to make the doors very sturdy.

The strikingly slender-looking window frames – above all with the doors closed – ensure enhanced visibility to the outside and improve the flow of light to the inside of the car. And last but not least, the window frame profile made up of two metal plates again helps to provide maximum stiffness.

BMW EfficientDynamics: the trendsetter in all segments.
Innovative power and consistent development are the prerequisites for trendsetting vehicle concepts. Proceeding from this starting point, BMW creates thrilling new models combining innovative technologies with up-to-date qualities, both perfectly combined with one another in the new BMW 7 Series.

Introducing this new luxury performance saloon, BMW clearly proves that driving dynamics, motoring comfort and driving safety may be enhanced to an even higher level, just as efficiency may be improved to a standard never seen before. Hence, the new BMW 7 Series offers ideal conditions for the modern and future-oriented motorist in enjoying an up-to-date and conscious experience of driving pleasure.

Introducing BMW EfficientDynamics throughout all model series, BMW offers a particularly significant all-round effect in reducing both fuel consumption and emissions. In Europe alone, BMW expects to sell some 700,000 vehicles with BMW EfficientDynamics in 2008, saving approximately 150 million litres or 33 million imp gals of fuel versus 2006, which is equal to approximately 373 million tonnes of CO_2.

Consistently continuing the BMW EfficientDynamics development strategy, BMW will make an important contribution also in future, through new models and in all segments, to further enhance and expand this potential in today’s world.