#### PRESS INFORMATION

# Your Concept Car – by women for modern people

- Initiative in June 2002 by women at Volvo Cars
- · All decisions made by women
- Targeting the most demanding premium customer: the independent, professional woman

The idea of an all-woman team making all the decisions in the development of a new concept car arose at Volvo in the autumn of 2001. Visiting Volvo at the time for a series of workshops was Marti Barletta, an American expert on female consumer patterns. She claimed: "If you meet the expectations of women, you exceed the expectations of men".

"We're sure it's right," says Camilla Palmertz, one of the two project managers for the YCC. "That's why that thesis has been our guiding light in developing Your Concept Car."

In June 2002, Camilla Palmertz and a small group of colleagues were invited to present their idea to Hans-Olov Olsson, President and CEO of Volvo Car Corporation. He greeted it with enthusiasm.

Women form an increasingly important customer group for Volvo Cars. In the United States, 54 per cent of all Volvo buyers are women and the percentage of female customers in Europe is growing steadily too.

"This is a fantastic opportunity for us: we can concentrate on the fast-growing group of women customers – without losing the men. Because I'm certain that our male customers will love this concept car," says Hans-Olov Olsson.

#### All decisions taken by women

The project management team behind the YCC consists of five women at Volvo Cars, who brought to the project a broad spectrum of experience in various automotive fields. The three chief designers are also women.

"We wanted to keep the woman's perspective all the way through," says Hans-Olov Olsson.

After a series of preliminary studies, the project was given the go-ahead by Volvo Cars Management Team in December 2002. The team's brief was perfectly clear: a free hand to develop a concept car capable of winning the approval of that most demanding Volvo customer category of all – the independent female professional.

Volvo has a long-standing tradition of listening carefully to what women want. As early as the 1980s, a women's reference group was formed at Volvo. Here, female members of staff are called upon to test and assess new models at a very early stage of their development. Moreover, during the development of the XC90, a women's focus group was convened in California – all potential buyers of this vehicle type, whose views helped shape the Volvo SUV's distinctive features and functions.

"If you divide the car-buying world into three segments: budget, mid-market and premium, our customer research shows that the woman buyer in the premium segment is the most demanding of all customer categories," says Maria Widell Christiansen, Project Manager, Design.

Women customers in the premium segment want everything that men want in terms of performance, prestige and style. But they want more besides:

- Smart storage solutions
- A car that is easy to get in and out of
- Good visibility
- A car you can personalise
- Minimal maintenance
- A car that is easy to park

#### **Smart storage**

Smart storage goes far beyond where to put your handbag – It is a question of what to do with your mobile phone, your keys, your notebook computer, your briefcase, your sports bag for the gym and so many other things we carry in our cars.

The best place for keeping all the things you want on hand in the car is between the front seats. But that is where you normally find the gear lever and handbrake. "So we moved them. In the YCC, there are gear levers by the steering wheel and the parking brake is electronic and integrated. This freed up space for storage in the centre console," says Cindy Charwick, who designed the YCC interior.

In the centre console, you find a shallow compartment for keys, mobile phones, coins and other small items. This compartment slides back to reveal a deeper one, big enough for a handbag. Another compartment takes a notebook computer and there is a cool box within reach of the driver's seat too. A wastepaper basket completes the theme of sheer convenience.

"Most of our target group said they carry a bag in the rear seat far more often than passengers. So we decided to design that area primarily for storage but instantly convertible to seats for two passengers whenever needed," says Camilla Palmertz.

That is why the rear seats resemble cinema seats – normally folded up out of the way until someone needs them. This frees up large amounts of luggage space in the rear seat, easily accessed through the wide door. Passengers simply lower a seat each as they get in.

The YCC is a one-off concept car, a Volvo showcase for sharing bright ideas and solutions with the world. The most popular solutions will be those that stand the best chance of appearing in a future production model.

"We chose a gull-wing door with a modest wingspan to help us showcase the YCC's interior solutions," says Elna Holmberg, Technical Project Manager. "And it brought other advantages – it makes it easy to lift a bag in behind the driver's seat and it increases your visibility over your shoulder to the side because the B-pillar has been moved towards the rear. And when the door opens upwards, the drop-down door sill rotates simultaneously, so getting in and out is so much easier."

#### An easy car to get in and out of

Easy access to the car interior was high on the list of what the target group wanted.

The YCC designers were happy to oblige. When the gull-wing door opens, the drop-down sill below it opens down out of the way, so you do not need to climb in over it. The ride height is automatically returned to Hi mode for door opening, a comfortable height for those getting in. For added space, the driver's seat moves back automatically and the steering wheel moves upwards. And the side bolsters on the driver's seat base are lowered out of the way so you can get in more easily, too.

If you have a lot to carry, you can make the YCC open the door automatically when you reach it. You simply activate Auto-Open using the key before you pick up your bags, then, when you stand by the rear wheel, the relevant side door will be opened for you. If you go to the back of the car, the tailgate opens instead.

#### Good visibility

Your actual driving position and line of vision is very important for both safety and comfort in reaching all the controls.

"In the YCC, we have combined ergonomics and line of vision adjustment in our Ergovision system, which we are in the process of patenting," says Elna Holmberg. This is how it works. Your whole body is scanned at the dealership, then the data on your relative proportions (height, leg length, arm length) is used to define a driving position just for you. This is stored in digital form on your personal key unit. Once you get into the driver's seat and dock your key on the centre console, the seat, steering wheel, pedals, head restraint and seat belt will all be adjusted automatically to suit your build. The result is a recommended fully personalised driving position with the best line of vision for you.

If you want to alter the stored position, you can change the settings of the various car components in the system, then store that set of data on your key unit. The system will warn you if your line of vision is wrong by means of the lenticular hologram, which looks like a stylised eye displayed on the A-pillar, between wind-screen and door.

The exterior design of the car has also been developed specifically to help the driver see better.

"The bonnet section has been lowered and the fenders have been deliberately brought into sight. Add to this the fact that the rear window extends right to the extremities of the car and the driver will know exactly where the four corners of the car are," says Anna Rosén, the designer of the YCC exterior.

#### More choice and flexibility

The YCC gives you all-round flexibility. You can choose the ride height – either Hi, if you like a commanding view of the road, or Lo, for a sportier feel.

And you can radically change the look of the car interior whenever you feel like it. There are eight exchangeable seat pad options to choose from, everything from dark brown leather, linen and wool bouclé, to a shimmering yellow-green embroidered seat pad.

Each of these has a matching carpet – also easy to swap over – for a whole range of styles inspired by home interior design.

"No need to trade in your car just because you have grown tired of its colour scheme!" says Maria Uggla, the Colour and Trim designer for the YCC.

#### Minimal maintenance

"We want cars to make life easier for their owners, not complicate things for them," says project manager Eva-Lisa Andersson.

So the YCC has made user car care about as easy as it can get.

"The only time I ever open my bonnet is when I need to fill up with windscreen washer fluid," says Tatiana Butovitsch Temm, YCC Communications Manager. "So we asked ourselves whether you should have to open the bonnet just to do that. We realised that it could just as easily be done from the side of the car."

That is why the YCC has two capless ball-valve filling points like those used for racing cars beside the door on the driver's side. One for petrol, the other for washer fluid. No fumbling with filler caps or bonnet latches!

With the windscreen washer fluid filler outside the car, no bonnet was needed, at least of the conventional type. Volvo service staff are the only ones who ever need to access the engine, when the time comes for routine service. When service is due, the car automatically notifies a service centre of your choice. The service centre then suggests an appointment time for you, that you can confirm or reject.. The YCC also carries out its own diagnostic checks at regular intervals and notifies your service centre if anything needs attention. This also ensures that any spare parts or materials will be there when they are needed.

"To us, service is more than just mechanical maintenance. By pressing the Car Care button on the control panel, you can also book your car in for valeting, inside and out," says Eva-Lisa Andersson.

The car is finished in Easy-Clean paint. This behaves rather like the coating on a non-stick pan – dirt finds it very hard to cling on in the first place and, if it does, it washes off very easily. The interchangeable seat covers and carpets are also washable.

The YCC's tyres are of the run-flat type. Even after a puncture, the car can be driven to a service centre or a suitable place to stop.

#### Easy to park

Parallel parking assistance is a function both males and females requested.

In the YCC, this is a two-stage system. When you need to park between two other cars, but first want to make sure there will be enough space, you press the parking assistance button once for the space-check function. If the system says yes, you can then select the Autopark function by pressing the same button again. The car helps you with the steering to manoeuvre you into the parking space, but you control the accelerator, brakes and gearshift. Autopark streamlines your parallel parking with flair.

#### **Engine and transmission**

The YCC is prepared for a low-emission 215 bhp, five-cylinder PZEV engine with an Integrated Starter-Generator (ISG). This, like other Volvo PZEV engines, complies with the toughest emission standards in certain American "green" states such as California.

ISG has several advantages. It prevents unnecessary idling because the engine can be shut off automatically when waiting at places like traffic lights. It comes to life again as soon as the driver presses the accelerator. It also provides extra torque at low revs, which means maximum power right from the start. And the ISG provides a 60 V power supply, giving scope for even greater user convenience.

The YCC has a six-speed Powershift gearbox. You can either choose the fully automatic mode, or use the controls on the steering column to change gear.

Powershift means that the car in effect has dual wet-clutch transmission technology, ensuring that your gear changes are always at the right revs. This makes for smooth driving and lower fuel consumption.

#### PRESS INFORMATION

# Your Concept Car - bold but elegant exterior

The YCC is a car of many contrasts. It is functional and user friendly, yet sporty and emotional. Its exterior styling strikes a balance between all these qualities. That is why the YCC has:

- a low front end and a long rear window, for an excellent view all round
- bumpers and lower side sections covered with a tough, durable material, in contrast to its suave upper bodywork
- muscular shoulders and catwalk
- gull-wing doors
- headlights with an ethereal, liquid quality

An excellent view from the driver's seat was high on YCC wish-lists. In many cars, it can be difficult to see to all four corners. This can make a car hard to park or to pilot through tight spots. But in the YCC it is easy to see where the car starts and where it ends, because the front end is low, the fenders have been brought into sight and the traditional Volvo V on the bonnet section has been inverted. The effect is reminiscent of the Volvo P1800, giving the car a sporty look and the driver full command of the situation ahead. The equivalent has been achieved at the rear end, where the rear window extends almost all the way to where the car ends.

The lines of the YCC's 'catwalk' give it a look which is muscular and elegant at the same time.

"It was important to combine beautiful, flowing lines with a muscular look. The strong front end gives a sense of speed, the line flows over the front wheel, then drops towards the rear," says Anna Rosén, who designed the exterior.

#### Chameleon with variable ride height

The YCC is as big as the Volvo S60. Its variable ride height function enables it to be raised or lowered either when driving or when parked. It is a car which combines sportiness and robustness and the exterior design strives for a balance between these characteristics. Its skidplates emphasize the functionality.

Its bumpers and lower side sections are made of a tough, durable material, for an enhanced functional feel. This effect is balanced by the streamlined beauty of the body panels. They have been finished in Chameleon, a 'flip' (colour-change) paint for an iridescent, silky look. Depending on the light, the exterior flip colour Chameleon changes from green to gold or blue to yellow.

"We chose a paint which would bring out the lines of the car to best advantage," says Maria Uggla, the Colour and Trim designer.

#### Ice effect

The head- and tail-lights are important elements of the YCC's styling. The head-lights are lenses of transparent thermoplastic which project the light from banks of LEDs. The effect is that of light emanating from a block of ice. No bulbs or LEDs visible, just light.

The rear light clusters enhance the characteristic look of this Volvo. Here the red section flows seamlessly into the yellow.

The high-level brake light is at the top edge of the rear window. If the driver brakes hard, the red area grows bigger. If the driver has to brake extra hard, the brake light pulsates.

#### Gull-wing doors of short wing span

The YCC was designed with wide side door openings.

- for better display of the car interior
- for easier back seat loading and unloading
- to make it an easier car to get in and out of.

Eye-catching gull-wing doors of short wing span were the perfect answer for the YCC.

When closed, the gull-wing door extends only as far as the bottom of the painted body sections, which means that it extends only 60 cm out from the car when opened. Less space than many conventional car doors need to open fully.

As the gull-wing door opens upwards, the sill section below it opens out and down. The advantages are that there is no high sill to climb over and that the surface presented is always a clean one.

Another advantage of the door solution is that the B-pillar has been moved further back, further enhancing the driver's view of the road.

#### PRESS INFORMATION

# Your Concept Car – a personal living room with everything you want within reach

The YCC was designed to suit the individual. You choose the information and settings you want. You choose how you like the interior to look and how high you like to ride. Some of the interior benefits in the YCC are:

- Ergovision ergonomics plus optimum line of vision in a patented concept
- easy to get in and out of
- · airy interior characterised by an extreme sense of space
- everything within reach
- multi-purpose storage
- · light interior with honest materials
- more a living room than a lounge or a cockpit, with modern furnishing fabrics
- choice of eight upholstery and carpet styles, easily switched to match mood, season or trends

When the gull-wing door opens up, the door sill rotates down, making it easier for driver and passengers to get in and out of the car. The drop-down sill has a dual function (besides allowing a smaller wing span for the gull-wing door): it makes for easier entry and exit and it also presents a clean interior surface. No risk of brushing against grimy car exterior surfaces and soiling your clothes.

Inside the car too, interior designer Cindy Charwick wanted to improve access and comfort for the driver. When you get into the car, the side support in the seat will have been lowered for you. The whole seat will also be in its lowest and furthest-back position and both steering wheel and car body will be raised. All these settings add up to maximum freedom of movement before you close the door. Then the side supports in the seat will return to their comfortable, cocooning driving position.

#### Personalised driving position

A key ambition in developing the YCC was to ensure that the driver, regardless of height, would be able to sit correctly when driving and have the right line of vision too. The result was Ergovision (patent pending) – ergonomics and optimum line of vision in one system.

Your whole body is scanned at the dealership, then this data is used to define a driving position just for you. This is stored in digital form on your key unit. Once you get into the driver's seat and dock your key on the centre console, the seat, steering wheel, pedals, head restraint and seat belt will all be adjusted automatically to suit your personal build. The result is a sound driving position with the best line of vision for you.

If you want to alter the stored position, you can change the settings of the various car components in the system, then store that set of data on your key unit. The system will warn you if your line of vision is wrong by means of the lenticular hologram, an eye symbol displayed on the A-pillar, between windscreen and door.

The YCC has other features designed to make your driving posture as comfortable as possible, for trouble-free driving. The design philosophy was that, wherever the car can be made to adapt itself to suit the driver, this provision should be made. Because the height of the driver's shoe heels may differ from one day to the next, the driver heel rest was made fully adjustable. And the head restraint has been adapted to cater for hair styles like pony-tails.

#### Space and convenience

The interior design of the YCC is a balance between the driver's need for as much space as possible and the need to have all the most important things within easy reach.

"It was all part of the aim of making life easier. The cabin environment has been designed so that everything you need is at your fingertips. And your surroundings need to make you feel good too," says interior designer Cindy Charwick.

Inside the car, she has echoed the flowing lines of the exterior styling. The instrument panel is S-shaped, adding to the sense of space and air in the cabin.

And to reinforce the floating, hovering impression the exterior gives, with its colour-change paint and the lift of its gull-wing doors, the front seat mountings have been moved inwards, out of sight. The seats look as though they are hovering above the floor.

Elegance is built into other interior features too. The ambient lighting follows the lines of the car at the side, the ventilation is concealed and the roof lining between the glazed moon roof is a shimmering star ceiling produced through a unique material made by fibre optics.

#### Controls and instruments

The YCC is packed with smart technology, but the technology has not been allowed to complicate matters for the driver. So the instrument panel is clean cut, simple and restrained. There are few instruments, but those there are are close to your line of sight. The gear levers are by the steering wheel.

All non-essentials have been removed – what you see is your speed, how far you can drive before you need to refuel and how to find your way. In other words, a speedometer, a distance indicator and a navigation system. All other information can be accessed using the control panel alongside the steering wheel. Everything is easy to reach, easy to understand and easy to operate.

#### **Storage**

The YCC has storage options in new places. Moving the gear levers up by the steering wheel and making the electronic parking brake automatic has freed up all the space between the front seats. An ideal place for keeping things you might want on the journey. Drivers should not have to worry about things like mobiles ringing or where to find some small change in a hurry. Here there are both shallow compartments and deep ones, with room for things like your notebook computer, handbag, parking money, drinks, keys, CDs and mobile phone.

And the main function of the rear seat is not that of carrying passengers – it is for carrying things, because that is what the target group mostly use it for. Here there is all the room you want for briefcases, carrier bags and bags full of sports gear. The rear seat is actually two separate fold-down seats. They are rather like cinema seats, so they spring back up when not in use – to make even more space for storage. And the compartment on the back of the front seat is actually a removable compact briefcase. The boot is big enough for a set of golf clubs.

#### Honest materials and light

Spaciousness and light are the key impressions conveyed by the interior. Sitting in the YCC, you get a strong sense of being in a living room. The colour and trim is strongly influenced by home interior design.

"Let's bring the living room into the car. Let's use materials we have in the home – honest materials, not obscured by coats of shiny enamel," was the way Maria Uggla, the designer responsible for Colour and Trim, felt about it.

The YCC is exceptionally light in the inside, rather like a modern living room with big windows and skylights. Scandinavian light was the real inspiration. Here the interior surface materials set the tone and the light spectrum. Specially selected to avoid weighing down the interior in any way, they reinforce and amplify the space within the car. All the horizontal surfaces are of laminated bleached oak, augmented by all functional surfaces in brushed aluminium.

Another innovation is the use of pale plastic sheeting behind a transparent layer in places like the centre of the instrument panel – plastic used to real advantage. The speaker grilles combine white and silver in a random pattern. The side panels, doors and rear seats have been tied together through a light eggshell colour.

#### Décor to match your taste

Just as light-coloured walls in a living room focus attention on the furniture, all the pale surfaces in the YCC mean your eye is caught at once by the seats and carpets. This is where the real scope for individuality comes into play – the chance to alter your car interior according to trends, personal taste or style. A range of eight seat pad options with matching carpets means that you can decorate your car to match your personal taste.

Swapping them over is quick and easy and they are easy to care for. Some are machine washable, others dry clean only. A range so wide that everyone can find a personal favourite. The options are:

- dark brown leather. A traditional upholstery option in soft leather, complemented by a short-pile carpet of tufted linen.
- black-brown woven leather. A bold, sporty option. Complemented by a multicoloured carpet of tufted linen with orange, grey-green, beige, wine and yellowgreen elements.
- beige linen accented with lime-green highlights. A more subdued style, complemented by a bouclé-based wool and linen carpet, with lime green stripes of tufted linen.
- checked woollen bouclé. A retro fabric in black and lime-yellow which flirts with the 1950s and modern interior design trends. Complemented by a carpet of black woollen felt.
- red wool. A thick, warm covering. The carpet is made of the same type of material.
- cream felted wool. A more restrained choice. Complemented by a carpet of woven bouclé with green and grey accents.
- grey nubuck. An elegant option complemented by a tufted deep-pile carpet.
- shimmering pale yellow with embroidered flowers. The least conventional option. Complemented by a bouclé-based dark brown carpet with strands of pale yellow linen.

All the materials would work equally well in a living room. Many of them have never before been used in cars. Each seat top option has its own label, reinforcing the link with home interiors.

#### PRESS INFORMATION

# Your Concept Car – a project with women in the driver's seat

The female perspective was at the core of the YCC project from the outset and that was exactly the way Volvo Car Corporation wanted it to be. A concept car project started, inspired and managed by women. One in which women always had the final say.

#### Camilla Palmertz, Project Manager

"Our aim is that you should feel great in this car."

Camilla Palmertz (born 1967) has been with the YCC project from the time when the idea arose. She joined Volvo in 1995 and her positions with the company have included responsibility for the biomechanical aspects of crash-test analysis. Her past projects have included the Inflatable Curtain safety system and the development of the pregnant crash-test dummy.

Storage solutions were a key aspect of the YCC project for Camilla Palmertz. She thinks it is important to be able to carry a lot in the back seat of a car and that it should be easy to load and unload. The YCC's gull-wing doors and fold-down back seats have been instrumental in meeting this requirement.

#### **Eva-Lisa Andersson, Project Manager**

"A car is a very technical product. Still, your buy is based on emotions."

Eva-Lisa Andersson (born 1958) undertook the joint leadership of the project with Camilla Palmertz. She has been with Volvo since 1985. Immediately before the YCC project, she was Project Director, Concept, for a Volvo model still in development.

As she sees it, a car should make life easier, not more complicated. For her, storage and ergonomics have been particularly important aspects of the YCC's development. She is also proud of the fact that the YCC has successfully combined sportiness with elegance.

#### Elna Holmberg, Technical Project Manager

"A car is your choice. Therefore it is very important that you can put your demands and wishes into it."

Dr Elna Holmberg (born 1960) was responsible for the technical development of the YCC. Her previous work at Volvo has included aerodynamics and chassis development for new models.

For her, the most important aspect in the development of the YCC was giving high priority to functions which are important to the customer and finding simple, smart solutions. She is particularly pleased with the entry solutions and the Ergovision system, both of which she sees as being central to the YCC's individuality and strong customer focus.

#### Maria Widell Christiansen, Design Manager

"We are convinced that this car also, definitely, appeals to men."

Maria Widell Christiansen (born 1959) joined Volvo in 1986. In this project, she has held overall administrative responsibility for the design team of 25 staff. Throughout the project, she went to great lengths to draw on all the concept car expertise at Volvo to ensure the success of the YCC. She sees the idea of offering a range of interchangeable seat tops and carpets as the most extraordinary thing about the YCC – a whole new dimension for the car industry and an idea which extends our conception of what a car is.

#### Tatiana Butovitsch Temm, Communications Manager

"The hallmark of a good idea is that people ask why this hasn't been done before."

Besides having responsibility for PR and project information, Tatiana Butovitsch Temm (born 1961) has co-ordinated communication within the project itself and looked at the features from a communicative aspect. Another task is to make sure the YCC gets shown to the world and the reactions collected and brought back to Volvo Car Corporation. She is particularly pleased with the Autopark system that makes your life easier and makes you look good at the same time. She has worked at Volvo since 1989, prior to the YCC in Safety Communication and as a managing editor.

#### Lena Ekelund, Deputy Technical Project Manager

"In the YCC, we have retained our focus on customer needs, not compromised it in favour of flashy technical solutions."

Lena Ekelund (born 1962) shared responsibility for the technical side of the project and for co-ordinating the design engineering team with Elna Holmberg. She has been with Volvo since 1986, working as a design engineer and in project management. She considers the real strength of the YCC project has been that it remained focused on customer needs. Frequently, the solutions needed were relatively simple, such as adapting the head restraint to accommodate a pony-tail and the eye symbol to indicate optimum line of vision. A driving force in Lena's work is the idea that ingenuity and simplicity go hand in hand.

#### Anna Rosén, Exterior Designer

"We wanted to create a beautiful car. Not brutal, but tough."

Anna Rosén (born 1976) was responsible for the YCC's exterior design. She aimed throughout to make it just as appealing as possible. The pragmatic elements were there from the outset, so Anna's task was to combine them with a look that would make the YCC irresistible. In her view, design must arouse emotions, because buying a car always involves an emotional response.

Anna Rosén joined Volvo in 2002. Before the YCC project she worked with Volvo design strategy.

#### Cynthia Charwick, Interior Designer

"The first impression you get of the car is a feeling of grace and space."

Cynthia Charwick (born 1957) has previously worked on the interior design of both concept cars and production models. She first started work at Volvo in 1981. Key objectives in her work on the YCC were to free up more space in the car for storage and to make it as convenient and uncomplicated as possible. The fact that this was such a strongly customer-oriented project, based on what women said they wanted, added a whole new dimension for her.

#### Maria Uggla, Colour and Trim Designer

"One way of being in control is that you have the opportunity to influence your environment."

Maria Uggla (born 1962) has worked at Volvo since 2001. Her past projects include Colour and Trim for the new S40 and V50 and work at the concept stage for other models in development. Her responsibilities in the YCC project included that of ensuring harmony between the exterior styling and the car interior, through a judicious choice of colours, materials and lighting.

"I wanted to achieve a light interior in the Scandinavian tradition, using honest materials and unexpected solutions."

One very important aspect of the project was to make the YCC more personal and individual. Here the customer has the choice of eight switchable upholstery options, each with its own carpet to match, including materials more normally associated with home interiors – like wool and linen.