



PRESS RELEASE

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THE RENAULT TECHNOCENTRE IS 10 YEARS OLD

2008 marks the tenth anniversary of the Renault Technocentre. This large-scale technological and architectural project was developed to provide Renault with benchmark status in automotive design and development. It offers its 11,500 resident employees cutting-edge resources for effectively carrying out their projects in an ultra-modern, environmentally-friendly atmosphere. In all, more than 20 vehicles have been developed there since its creation.

At the Technocentre, vehicle development is undertaken in a comprehensive manner and production methods are designed along with the vehicles themselves. Digital technology makes it possible to conduct ten or so projects simultaneously. The Technocentre is a key contributor to the growth and international development of the Renault Group, a goal whose importance has intensified with the implementation of Renault Commitment 2009.

An average saving of approximately €150 million on each new vehicle developed

After undergoing a period of reorganisation in both its structure and work methods (creation of programmes), Renault decided to bring all of its geographically dispersed Research and Development units (engineers, management and technical staff) together on a single site - the Technocentre.

Its 11,500 resident staff members work on every phase of a project, from preliminary studies through to the latest prototype ready for assembly on the production line. Their goals include placing innovation at the heart of design and development, making constant strides in quality, cutting costs and lead times and promoting the globalisation of Renault Group models.

Today, carmakers are renewing and updating their model ranges to anticipate the increasingly demanding requirements of customers. Renault released eight passenger cars between 1945 and 1965, 17 from 1965 to 1985, 14 in the 1985-1997 period and 14

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between 1997 and 2005. In the context of Renault Commitment 2009, 26 new vehicles will be launched in the 2006-2009 period.

This ever-accelerating tempo of range renewal means that development lead times must be even shorter, and the proximity of the various Technocentre units to each other contributes significantly to making this possible. Cross-functional project management also enables rapid decision-making.

Production ramp-up lead times have also been cut, here again in order to capitalise on market expectations. Since the founding of the Technocentre, lead times have been reduced by two-thirds. This achievement, and its continued improvement, are largely dependent on the quality of the work performed in the design and development phase and the close contact of the various units assigned to product and process engineering. Similarly, in the domain of powertrains (engines and gearboxes) – an equally important area with the same concerns regarding coherence – the development resources available have all undergone reorganisation on their long-established sites (Rueil in particular). Their goals are the same as for the Technocentre, especially as regards development costs and lead times, with a 30% reduction as their set objective.

Thanks to the Technocentre, Renault has benefited from an average saving of €150 million in development costs for each new vehicle.

More than 20 projects in 10 years

Laguna II, better known at Renault under the code name X74, was the first project entirely developed at the Technocentre. Then came Espace IV, Mégane II and its seven body types, Logan, New Twingo, Laguna III and Sandero. In all, 22 projects have been developed at the Technocentre in 10 years, including the latest addition, Laguna Coupe, unveiled by Carlos Ghosn at the Monaco Formula One Grand Prix on May 25, 2008.

A community of men and women

Currently, 11,500 people work daily at the Technocentre site, including some 2,000 contractual service providers.

Key figures

Since 2005, over 1,400 people have been hired to work at the Technocentre. The number of women has continued to rise; they now represent 19.3% of the site's workforce. The proportion of management staff is also on the rise (+8.2%). The average age of employees was 41.5 years at end 2007, which is stable compared with preceding years. Close to 23% of the Technocentre population have been working for Renault for less than five years, and over 20 different nationalities are represented.

The Technocentre is also a unique place for insertion and training: more 1,000 people (temporary staff, interns, apprentices, etc.) work at the site each year. It is an important centre for internal training in design and production methods and standards for the Renault Group.

The management of the Guyancourt and Rueil Lardy Sites, created in April 2007, is in charge of improving both general and work conditions on the site.

Product/process development

With the creation of the Technocentre, vehicles can now be developed in a comprehensive way, starting with preliminary studies and going through all the way to the final prototype. In fact, from the very outset, when the many elements that make up a car have just begun to be created, their production mode is also established in cooperation with the plants. Today, this 'product/process' way of working is coupled with another imperative: planning, from the earliest moments of a vehicle's creation, of after-sales and logistics concerns (in particular the ability of its parts to be stored and transported) as well as early preparation of elements of problem diagnosis and repair.

In addition, the Technocentre has an on-site 'mini-plant', the Centre de Réalisation des Prototypes Véhicules (CRPV, Prototype Vehicle Production Centre). This entity fulfils a dual mission: it manufactures the prototypes necessary for the development of future vehicles and it ensures geometric quality while simultaneously validating the production

process for new models. The technical solutions chosen for car production and assembly are also tested there. Experts from the various other buildings also support projects from the 'upstream' phases to the 'downstream' ones: material studies, quality appraisals, anticipation of manufacturing conditions and factory supply logistics.

'Rational' architecture

In its buildings, the Technocentre reproduces the different phases of a vehicle's design and development. In the first building, the Advance Precinct, the initial drafts of future models are drawn up. Client studies, an analysis of general social trends, and choices regarding innovations and design lead to the establishment of the general technical and styling features of the future vehicle.

Design

The Design department is involved from the original brief through to the start-up of production. For each project, designers from the Technocentre and from the 'Renault Design Network' put forward proposals for both the interior and exterior designs. The network of design centres currently comprises six studios, in Barcelona (Spain), Paris (France), Kiheung (South Korea), Bombay (India), Sao Paulo (Brazil) and Bucharest (Romania). Following the two-dimensional drawing phase, the selected projects are converted into three-dimensional form by digital modellers. They can then be viewed dynamically in situations that are close to reality. As the final decision milestones approach, full-scale models are produced in order to evaluate the vehicle's aesthetics and how they are perceived. Careful attention is also paid at this stage to perceived quality and robustness. At the same time as this work on the car's actual forms, the colours and materials are also developed and the range of equipment levels defined.

In the Technocentre's second building, the Hive, engineers and technical staff from Renault's engineering departments form a "project team" that designs and develops the vehicle section by section. Each "project team" is in charge of the development of a single vehicle. Intrinsically multidisciplinary, project teams are comprised of engineers from a variety of specialty areas as well as purchasing, quality and industrial process planning managers.

In 2003, a new building, known as "The Gradient", was built to house 2,000 people from the Production and Logistics Department. Thanks to their new-found proximity to the product-process engineers and the purchasing and quality departments, its production experts are now better able to boost the performance and competitiveness of Renault's production sites throughout the world (38 production sites and 7 logistical centres in 17 countries in 2008), and to do so in a consistent manner.

Digital simulation, a development tool

Today, 90% of all design and development operations are performed using digital simulation. The Technocentre is equipped with 5,000 computer-aided engineering (CAE) workstations and three full-scale computer image displays. Several test benches and simulators also make it possible to verify lighting, roadholding, ergonomics and to perform virtual driving tests well before a vehicle has actually been built. The Technocentre also possesses twelve supercomputers able to perform complex digital simulations in just a few hours and a unique simulator known as Ultimate. This highly dynamic performance driving simulator is the very first of its kind in the industrial sector. Thanks to its mobile platform mounted on six cylinders, it is capable of making both longitudinal and lateral movements over an area of seven metres. It accurately reproduces phenomena such as acceleration, braking and roll, making it possible to speed up adjustments to vehicle ride and handling.

Key figures

The Technocentre is equipped with 11,500 workstations, 1,500 in the laboratories and a further 5,000 CAE stations in the different technical departments. This translates into 750 kilometres of pre-wiring and 50 kilometres of optical fibre for telephone and computer connections, all installed during construction of the site.

The overall computing power of the site amounts to 4,000 gigaFLOPS.

Environmental concerns are essential

The Technocentre was built on a 150-hectare site in Guyancourt, approximately 20km west of Paris). The site is located in a semi-urban zone, and the closest residential

housing can be found just outside the Technocentre's boundaries. The site is fully integrated into the surrounding landscape, and great care is taken in the management of its natural heritage and the conservation of the neighbouring forests and environment. The site was awarded ISO 14001 certification in 2000. Thanks to the Technocentre's environmental team and its network of over 100 individuals present throughout the site's various departments, resident staff are kept up-to-date on environmental issues.

The Technocentre recycles rainwater, which is collected on waterproof surfaces and used to water the site's vegetation and to replenish its bodies of water. This operation represented a saving of 19,400m³ of potable water 2007. Between 2005 and 2007, the consumption of potable water was significantly reduced (10%) and the consumption of sanitary potable water proportionate to the number of resident staff fell 37% over a six-year period.

The Technocentre has set a waste recycling objective. The goal is to achieve a material recovery rate of 65% by the end of 2008. To do this, over 70 different types of waste are collected separately. At end 2007, 64% of the total waste volume generated on the site was recycled, and 97% of it was recovered (material + energy).

10 years of Technocentre events

Renault regularly takes advantage of the Technocentre's reception capacities to organise internal and external communications operations on the site. These have included: Renault's centenary celebrations in 1998, the Formula One launch event in 2002 to mark Renault's return to F1 racing and the Logan press launch that was held on June 2, 2004.

To celebrate the Technocentre's tenth anniversary, Renault is organising a number of festive events throughout the year for Technocentre employees as well as their colleagues from nearby sites including Rueil-Lardy, Boulogne-Billancourt headquarters, the Equinove site in Plessis-Robinson (Hauts-de-Seine) and the Flins plant (Yvelines). An open day is planned for autumn 2008.

Timeline:

1989: decision to equip Renault with a major technology centre

1990: purchase of the site where the Technocentre would be built and selection of the master plan presented by architects Valode et Pistre

1991: excavation work begins

1995: delivery of the Prototype Build Centre (the "Proto")

1996: delivery of the logistics building and the Advance Precinct

1997: Renault begins moving into the Hive

1998: project completion, creation of the Guyancourt site and inauguration of the Technocentre in September

2003: addition of a new building, the Gradient, to the complex

Key figures

Initial construction work took five years. At the height of the construction period, 2,000 people worked on the 150-hectare site on a daily basis. The Technocentre sits on 1,000 hectares of landscaped grounds, and over 100,000 trees were planted. One million hours of drawing and design work and 25 million hours of labour were needed to carry out the project. A dozen buildings were erected, and linked to each other by a 20km-long internal road network.

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