



PRESS KIT

symbiose

LACROIX GROUP SMART ELECTRONICS FACTORY
A FRENCH ELECTRONICS FACTORY FOR THE FUTURE



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INTRODUCTION

What is the SYMBIOSE project?

LACROIX Group has begun the construction of an electronics factory of the future in France. This environmentally - friendly industrial site will incorporate Industry 4.0 standards and is designed to help its employees thrive.

Driven forward by the Group's LACROIX Electronics business, the SYMBIOSE project draws its strength from the 460 employees of the current factory and from its regional presence in Pays de la Loire. The planned factory also relies on the power of an ecosystem of recognised industry experts who are providing support for the project. The factory will be built in 2021 in Beaupréau-en-Mauges, Maine-et-Loire, just a few kilometres from the current factory, which will close.



LACROIX Group has committed to changing its production model in line with its Smart Industry strategy in order to deal with ongoing de-industrialisation across Europe. To increase the Group's competitiveness in the historic industrial electronics systems markets and to meet the challenges of promising new markets such as mobility and the industrial IoT, the company is rolling out the project across three key areas:

1) Technological and digital disruption so as to spearhead industrial renewal in France, and to set itself up as a European symbol of an open, collaborative electronics industry, connected to its local, regional and international environment.

2) Environmental responsibility, in which raising awareness is one of the keys to success for the industry of the future. The energy efficiency of SYMBIOSE depends on the rollout of technologies that are proven to work in industrial processes, internal training and architectural concepts that will be in use from the time the factory is built onwards. Fully connected to its regional Smart Grid (renewable energy), this 4.0 factory incorporates the latest smart and sustainable solutions (short supply chains, recycling of inputs in the factory, etc.).

3) Social innovation, of which the starting point was LACROIX Group's choice to build the new factory in Beaupréau-en-Mauges municipality, a rural location that guarantees good quality of life and which is very close to the previous factory. The SYMBIOSE project is built on the basis of teamwork, where all future site employees commit to defining their future work tools and the living spaces of tomorrow. The social focus of the project is also demonstrated by the support offered to employees (training, qualifications, change management) in an environment where digitization and automation are shaking up existing processes. Of course, this innovation can only be achieved with the help of the territory's entire ecosystem of start-ups, schools, research centres and manufacturers.

SYMBIOSE thus embodies the alliance of technological innovations, respect for people and environmental awareness.

Key project information



Choosing the SYMBIOSE site:

In June 2019, LACROIX Group took a decisive step by choosing the municipality of Beaupréau-en-Mauges to host the new industrial site. This site needed to meet the following criteria:

- Proximity to main roads, Nantes and Angers,
- A nearby industrial zone including nurseries, restaurants and hotels,
- Proximity to the old site in order to retain 460 current employees and relationships with regional partners.

"The Symbiose building is not just a physical construction: it is a testing ground and a showcase for the know-how of all stakeholders in the project," Eric Meynet, Operational Excellence Manager & SYMBIOSE Project Leader at LACROIX Electronics.

The 4 key stages of the new project:

January 2019 - **Sprint 1:** Project macro feasibility study

July 2019 - **Sprint 2:** Detailed project design

March 2020 - **Sprint 3:** **FINAL GO-AHEAD** and start of construction

July 2020: Start of work

Q4 2021: **OFFICIAL OPENING**

Montrevault-sur-Èvre Current factory



€68 million turnover*



12,000 m² surface area

*2019

Beaupréau Factory of the future – Symbiose



€100 million turnover*



19,000 m² surface area

*2027

Total investment

€32.5M

Including €15 million
Bpifrance contribution

THREEFOLD INNOVATION AND PARTNERSHIPS

Industrial innovation

Our ambition is a simple one: LACROIX Group intends to build the first electronics factory of the future from start to finish, which will guarantee excellence and industrial renewal in France.

The Group's LACROIX Electronics business has established a Smart Industry strategy, which describes what the electronics industry should look like in 2025. The SYMBIOSE project serves as a benchmark for this forecast, which is to reach the following customer pathway within 5 years:



Customers and partners will connect via a simple and intuitive interface to monitor all product developments, from design to delivery, with full transparency. They will be able to outline their needs and receive a price and lead time estimate.

Once the order has been approved, the project will be entrusted to the engineers in the design offices. With the help of complex algorithms, the technical advisor will select the best hardware, software and mechatronics combinations to create the most effective product.

It will be shown on the order production phase thanks to the digital copy of the selected plant. By planning ahead for the product's mass production, everyone will save time and money.

The production machinery will all be connected to the cloud, which will make it possible to see how the order is progressing. The machines will be interconnected, and will automatically adjust in real time. Artificial intelligence will enable them to carry out predictive analyses, which will contribute to improving quality and delivery time reliability.

The assembly stations will be built to suit the product's needs, and the operator will be assisted by several machines. Through the use of augmented reality, the operator will know exactly where to position the mechanical parts. A collaborative robot will also help with repetitive tasks.

Once the order has been completed, the customer will find the date on which the products will be delivered on the LACROIX Electronics portal.

By breaking with traditional industry, this factory will become a model of French reindustrialisation, through electronics!

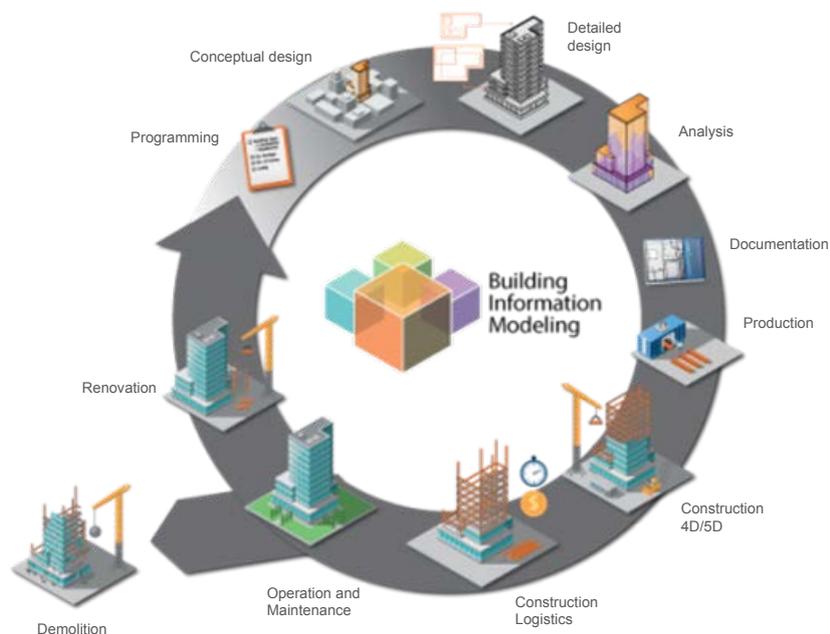
Sustainable and responsible innovation

Given that it is now so important to reconcile the economic and sustainable aspect of the project, SYMBIOSE wants to highlight the innovative and responsible nature of its future factory. Indeed, the factory's intelligent design is built with environmental realities in mind.

Thus, in addition to the objectives of digitisation and process automation, another key goal was to create a green factory with a design that takes into account employee well-being, energy management, inflow and outflow management and optimisation, data security, site flexibility and scalability, etc. In other words, SYMBIOSE is intended to be a comprehensive and sustainable project.

SYMBIOSE will be a green factory featuring highly innovative technologies (augmented reality, building connectivity, energy efficiency, etc.) and managed using the rigorous methods of Building Information Modelling (BIM, see below) that influence the building's design, construction and use.

Responsibility also involves ensuring, alongside Mauges Communauté, that the Synergie project will be able to turn the former Montrevault site into a meaningful, value-creating space, bringing together four target features: innovation, discovering professions and expertise, training and business tourism.



Social innovation

The sustainable component of the project must include a human aspect, which is why SYMBIOSE puts people at the heart of its project. Innovation responds to both economic requirements and the quality of life of LACROIX Group operators in equal measure.

This human priority is the first factor considered when outlining the design of a factory intended to be an open, connected building. Thanks to efficient connectivity, the factory will be able to record the information required to best manage environmental factors such as brightness, air quality, acoustic comfort, airflow and more, while ensuring the premises' digital security.

While the surface area of the factory will almost double, it is necessary to streamline movement and connectivity, and to make working methods flexible to best support all the teams in the factory. Ultimately, this working quality will be one of the key criteria. To this end, LACROIX Group has adopted the new R2S-Ready-2Services Label reference document recommended by professionals wishing to adopt the "connected, supportive and human building" (bâtiment connecté, solidaire et humain) government charter's approach.



Above all, LACROIX Group wishes to take care of the 460 current employees who will be supported and trained in future changes from this point onwards. Structural training programmes have already been launched, and the testing of new machines on the current site is preparing the teams to make their new tools and their new factory of the future their own. All SYMBIOSE project employees are also involved in discussions to collaboratively define their work tools as well as their common living spaces.

Lastly, the well-being of the LACROIX Group teams cannot be limited solely to the boundaries of the new Beaupréau factory. The Group will join the local ecosystem of start-ups, research centres, schools and companies, to plan for future needs. The new site was also chosen for its proximity to a commercial area including nurseries, hotels and restaurants, as well as to the major surrounding cities such as Angers and Nantes. Lastly, the proximity to the former site makes it possible to maintain relations with partners and suppliers based in the Pays de la Loire region.

A threefold innovation built on several partnerships

To meet the industrial, organisational and cultural challenges presented by the SYMBIOSE project, LACROIX Group is pursuing a strategic partnership approach in order to surround itself with major manufacturers with recognised experience.



LACROIX Group, via its subsidiary LACROIX Electronics, and the Sociétés de Projets Industriels (SPI) fund administered by Bpifrance and financed by the Future Investments Programme (PIA) and the European Investment Bank, are jointly investing in the establishment of LACROIX Electronics BEAUPREAU, an industrial joint venture. With the creation of this venture, LACROIX Group and Bpifrance aim to accelerate the transition from the current industrial site of LACROIX Electronics to the industry of the future.

“Much more than a simple funding operation, this is a real industrial partnership which has been created between our two organisations,” says Vincent Bedouin, CEO of LACROIX Group.

“We are very pleased to support the deployment of a 4.0 production site in Maine-et-Loire, with LACROIX Group. This investment will make it possible to meet the strong growth in activity, and to maintain our skills and know-how in complex electronic equipment with a strong technological component. It is only by transforming our industries towards this model that we can make them more competitive and allow them to regain their central place in our economy”, explains Eric Lecomte, Senior Investment Director at Bpifrance.



Schneider Electric is supporting the organisational, technological and cultural transformation of the current factory. The aim is to prepare for the operational transfer of the teams upstream, so that they reach the optimisation objectives set by LACROIX Electronics (competitiveness and attractiveness) as soon as the transfer is completed. Schneider Electric is therefore working to apply Lean Management principles that have proven their worth within its own organisation.



ASM, a LACROIX Electronics supplier based in Singapore, is committed to the SYMBIOSE project by implementing its ASM Line Monitor software solution. This solution is aimed directly at optimising the machines, and just like the partnership with Schneider Electric, support takes place in Montrevaux, with the aim of facilitating the transition and installation in the Beaupréau site, where other specific solutions can be developed.

Other cutting-edge partners offer their expertise in various fields:

- Microsoft, via its solutions and partners, provides monitoring and innovation insights for industry 4.0.
- PTC supports SYMBIOSE with its FLEXTHINGS integrator to implement the Thingworx solution for Real Time Monitoring.
- Inventy supports the project when benchmarking in the purchasing, financial and supply-chain processes.



Orange gives LACROIX Group a more in-depth view of the transfer and use of data thanks to a communication protocol which is tailored to the needs of the companies of tomorrow, in order to create the electronics industry of the future.

In preparation of the SYMBIOSE project, the LACROIX Electronics section of the Group has launched an experimental phase of 5G in co-innovation with Orange to determine the industrial applications of this new technology and there are countless possibilities. In innovative mobile technology, 5G supports the development of intelligent data mining by transporting ever-increasing volumes of data, significantly reducing latency times and making data transfers secure.



SAP provides the SYMBIOSE project with its management solutions, such as the optimisation of supply chain processes through the SAP IBP solution.

GROUNDING IN THE LOCAL AREA

A factory for the region



The SYMBIOSE project is key to the development of the Pays de la Loire region, as a result of its aim to maintain and reinforce its presence in the area with a view to being a beneficial player for its local and regional environment.

To this end, while we are moving the current factory away from Montrevault-sur-Evre (Maine-et-Loire), the aim is not to establish it too far from the first site, near one or several main roads, to maintain the current 460 employees while providing them with the best possible services (nurseries, hotels, restaurants, shops, proximity to Angers and Nantes). The choice of Beaupréau-en-Mauges as the new factory’s location meets all these priorities.

Having forged strong links with the region, LACROIX Group is keen to work with Mauges Communauté to support the Synergie project in developing a meaningful shared space for value creation on its former site.

Therefore, while also retaining existing jobs, SYMBIOSE commits to its promise to move away from an obsolete framework and towards the establishment of innovative and contemporary industrial processes in a new geographic setting that is more attractive for the new talent that the factory intends to attract.

Consequently, SYMBIOSE is retaining the current positions and embarking on a policy to foster growth and future dynamism in the Pays de la Loire region.

A standard-bearer for industrial renewal

As Group CEO Vincent Bedouin explains: *“Thanks to the connections and expertise of the current Montrevault-sur-Evre factory, France has been given priority for this project, which has become a paragon of French industry!”*

Symbiose reflects the desire of many industrial players, including LACROIX Group, to (re)locate in order to reduce France’s dependence on other countries for certain key technologies and thus to foster the emergence of new competitive structures in the field of electronic subcontracting. This involves creating champions of a significant size in France and Europe, while at the same time working in ecosystems and consortia – through the Electronics & IoT Technocampus in Angers, for example. The open ecosystem of LACROIX Group is one of its major strengths, thanks in particular to the inter-sector work carried out by the CSFs (Comités Stratégiques de Filière [Sector Strategy Committees]) in recent years.

Distinctive architecture

After several months of assessment, LACROIX Group finally chose the architectural firm PVA to build its new factory, scheduled for 2021. Underpinned by three major strands of innovation, the new factory will meet the Group's key social, environmental and economic criteria. This is an exciting challenge for the architectural firm PVA and for the prime contractor supporting them, Essor Engineering.

"The Symbiose building is not just a physical construction: it is a testing ground and a showcase for the know-how of all stakeholders in the project," Eric Meynet, Operational Excellence Manager & SYMBIOSE Project Leader at LACROIX Electronics.

A vision shared by PVA and Essor Ingénierie [Essor Engineering]: *"Working on the SYMBIOSE project represents a wonderful opportunity. First of all, we are delighted to contribute to the expansion of a regional business which is now a highly regarded mid-cap company. Furthermore, innovation is not just one criteria among many: it underpins the entire project, pushing us to reassess our thinking and go a step further in terms of our solutions and our way of working,"* outlines Thomas Martial, SYMBIOSE project supervisor at Essor Engineering.



LACROIX Group

About us

LACROIX Group is a listed family-owned SME (70% family-owned capital, 30% capital listed on compartment C [SMEs] of the Euronext exchange). On the one hand, this identity gives the Group the agility that is essential for innovation, and on the other hand, it encourages the Group to establish itself in its region, to pass down its knowledge and resources and to develop a long-term view of the world. LACROIX Group aims to be agile and focused on the long term.

The Group's experience has enabled its launch onto the international market (Belgium, Spain, Germany, Poland, Italy, Tunisia, Singapore, USA, Mexico), from its headquarters in Saint Herblain, France, as well as to be recognised as a technological equipment manufacturer providing technical and industrial excellence to an increasingly connected world.

The Group's LACROIX Electronics business specialises in the design and production of electronic assemblies and sub-assemblies for the automotive, home automation, aeronautics, industry and healthcare sectors. LACROIX Electronics has been bringing its customers' projects to life for over 40 years. With its engineering office and additional production sites, the company operates in an innovative ecosystem to develop a smarter and more responsible industry.

LACROIX Group's expertise also extends to its other two activities: LACROIX City offers connected and secure equipment for managing infrastructure and smart road systems (traffic signs, street lighting, traffic management, etc.); LACROIX Environnement supplies equipment and software for the remote management and control of water and energy infrastructure. In the 2018-2019 financial year, LACROIX Group's revenue rose to €481.6 million, an increase of 2.8% (+0.4% when compared like for like).

Vincent Bedouin, CEO of LACROIX Group



Vincent Bedouin is the current CEO of LACROIX Group and Vice-Chairman of the Sector Strategy Committee for the electronics industry.

After graduating from Emlyon Business School, he began his career in the telecoms and multimedia sector by joining Vivendi Universal Net in 2001. He held the positions of Product Manager and then Key Account Manager before joining LACROIX Group in 2004 as Strategic Marketing Manager at LACROIX Electronics, where he became General Manager in 2006.

In September 2013, he became Managing Director of LACROIX Group, and in October 2015 he was appointed Chairman of the Management Board. He has been President and Chief Executive Officer since July 2018. In April 2017, he was appointed Chairman of WE Network electronics network for North-western France. Finally, in May 2018, he became Vice-Chairman of the Sector Strategy Committee focusing on the electronics industry.



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