

A NEW CAMPUS FOR CENTRALESUPELEC

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Part I: History and Ambition

From ambition to implementation: the Ecole of the 21st century

For more than 15 years, CentraleSupélec has set itself the ambition of being, along with its partners, a global reference for leaders training in scientific and technical - managers, entrepreneurs, and experts - needed worldwide.

But in a rapidly changing world, the Ecole must continually adapt to new challenges, innovate, while remaining at the forefront of higher education and research. Its strong tradition of excellence combined with a resolutely avant-garde spirit has enabled the Ecole to consolidate its positioning and attractiveness and to accompany in a visionary way the evolutions of its time. Today, the Ecole still quickens the pace by offering its students an exceptional setting, a unique place for an entirely innovative approach to teaching and research.

From the project initiation of CentraleSupélec new campus, which will be inaugurated on September 11th, 2017, have passed six years of brainstorming, choices, and implementation. It was key to rethink the Ecole, both in its practices and in its framework: training and learning evolution, research interactions, development of collaborations, new environmental realities...

The new campus has an unprecedented offer, by its interactions, through its partnerships, by its curriculum, its learning processes, the incubator, by its technology platform...

On September 11th, the Parisian students of CentraleSupélec will discover two new buildings on the Saclay plateau, which, together with the two existing ones, will form the new campus of Gif.

For Hervé Biaußer, CEO of CentraleSupélec:

"This new academic year 2017 marks a milestone in the life of our Ecole, as it physically materializes the union of CentraleParis and Supélec. This structuring project, in which we have embodied all the values that characterize our Ecole, will enable us to be a strong and committed actor in the University Paris-Saclay".

A few figures:

- Nearly 30 months of work
- € 250 million of investments
- 73000 m² of construction: 48 000 for the Eiffel building and 25 000 for the Bouygues building)

Research and training figures:

- 4,200 students, including 3,500 engineering students
- 17 laboratories or research teams
- 4 associated international associated laboratories
- 400 teacher-researchers and researchers; more than 700 publications of rank A
- 600 doctoral students and 70 post-doctoral students
- 70 foreign partner universities
- 4 campuses in France: Gif-sur-Yvette, Metz, Rennes, and Pomacle
- 3 international locations: Beijing (China), Hyderabad (India) and Casablanca (Morocco)

Part II: Architecture as a support for an evolving education

Academic Year 2017: a unique and exceptional campus dedicated to excellence

As of 2011, two strong guidelines accompanied the design of the new campus, from the specifications to the construction: Identity and Openness.

The Ecole's identity is first and foremost embodied in its general engineering training project. As a result of the generalist training, since the establishment of the Ecole Centrale Paris in 1829 and the specialized training of the Ecole Supérieure d'Electricité since 1894, this project, today, aims to prepare high scientific level engineers, able to grasp in an exhaustive way all the aspects of a business problem: scientific and technical, but also economic, human, social, environmental. To be an actor in the 21st century, they will have to develop their capacities to innovate, launch, carry and succeed change, and deal with complex, highly multidisciplinary problems.

To do this, the Ecole give the possibility to its students to work in four fields essential to their training as engineers and structuring the pace (following the concept of "universe") within the two new buildings of the campus:

Firstly, the universe of **science and technology**: CentraleSupélec is a school of engineers and intends to remain so. The building must therefore actively express its anchoring to science and technology;

The 2nd field is related to **business**. Most of the students are indeed meant to be entrepreneurs, executives or leaders. It is in this area that they will mostly express their talent and their creativity.

The third field is **the world** itself! There is no major challenge that does not have an international if not global scale. Students must be able to decode this world. And it is not easy even if the Ecole counts already more than 30% of international students.

Finally, the last implemented field of the curriculum is the **human being**. The Ecole, follows its saint-simonian tradition, by placing the human being at the heart of its values.

Each Universe, therefore, carries part of the Ecole's project, but it is clear that the highest value will be created by the interaction of these Universes: for laboratories, through transversal and "integrative" research and for training through case studies, cross-cutting projects or associative activities.

Furthermore, this new campus reflects a legacy of excellence and is designed to fit 21st century specific requirements and evolutions: an innovative and resolutely digital pedagogy

positioning the student as an actor within their program and their professional project. This dynamic and evolutionary vision presupposes a very great flexibility of the Ecole's building.

In deciding to relocate its sites on the Saclay Plateau, the Ecole Centrale takes a new and essential step in the achievement of its great ambition established since 2003: be a world reference along with its partners, a global reference for leaders' training in scientific and technical fields.

Openness, the second asserted value of the project, is reflected in a desire for diversity of the Ecole's publics, by their status (students, staff, etc.) or by their activities, whose exchanges are encouraged. To fully benefit from the complementarities offered by the University Paris-Saclay and contribute to its construction, the Ecole must be open to others and develop numerous cooperation and exchanges with its partners.

In the end, a campus is a place of life as well as a place of work, a place of interaction and exchanges, equipped with the best tools and equipment (classrooms, advanced scientific equipment, sports facilities, etc.).

Two new buildings, different and complementary.

According to the State's wishes, the two new buildings were designed and implemented in different ways:

- A public contract won by the Dutch firm Office for Metropolitan Architecture (OMA), led by Rem Koolhaas, following the invitation to tender for the mixed architecture and urban planning competition held in mid-2012. OMA designed the Gustave Eiffel building, a program totaling 48,000 m²
- A Public Private Partnership, for the second building. In February 2015, following a call for tender, the Kluster's project, a company regrouping Bouygues Buildings Ile de France, Bouygues Energies, and Services, HICL Infrastructure, was selected for the construction of the building Francis Bouygues and designed by Gigon Guyer firm.

The two buildings will house both training and research activities and support functions. Eiffel building will house "heavy" research laboratories such as EM2C, SPMS, MSSMat, LGPM, LPQM (energetic responsibility, physics, mechanics, photonics) while Francis Bouygues building will bring together the MICS, CVN and LGI laboratories (mathematics, info, and industrial engineering), business-related activities, such as incubators, vocational training, and sports facilities.

In these two buildings, some spaces (gymnasiums and sports halls, language training rooms, university restaurant.) will be shared with Moulon's university district.

The CentraleSupélec Gif-sur-Yvette campus also include:

- Breguet Building, the current building of CentraleSupélec Gif-sur-Yvette campus, inaugurated in 1974, which will also include training and research activities;

- The building that hosts the laboratory Geeps (Laboratory of Electrical Engineering of Paris).

An architecture conceived around education's principles and values...

CentraleSupélec wanted strong values to support the new campus project such as:

"Hybridization": the Ecole's project is global, and reaches all its targets: students, teachers, researchers as well as technical and administrative staff. There was thus a clear desire to create proximity between students and the different staff categories.

"Density": on the one hand, dense buildings are energy-efficient. But more importantly, density is a way of promoting socialization.

"Serendipity": the art of encouraging cross-fertilization and connections, exchanges and the flourishing of innovative ideas.

"Diversity": the Ecole welcomes a wide variety of people (students of all origins, initial or continuous training, teachers and researchers, academic partners, companies, alumni). The building reflects the diversity of their activities and their pace of work.

"Adaptability" or "flexibility": the demands of society, businesses, and students are constantly evolving. The digital revolution will necessitate a dynamic and evolving vision of training and research activities.

The new campus is the architectural expression of its values. It will promote cross-fertilization and exchanges, reciprocal knowledge, and respect of different populations. It will reflect a strong will to hybridize the various functions of the Ecole and its multi-functionality. It will also promote junctions and links with neighboring institutions and everyday living spaces (learning centers, restaurants, sports venues, university residences).

Gustave Eiffel Building ID: LabCity

- A large hall of 155x122 meters and 12 meters high
- Surface area: 48,000 m²;
- The building hosts research and training activities (5 labs with heavy equipment), student associations (more than 150 clubs and associations), a 970-seat auditorium (Michelin auditorium), 2 amphitheatres with 120 seats, one of 80 and the other of 50 places), collaborative workspaces, a shared center with Paris Sud and ENS Paris-Saclay, the documentation center and the main restoration. It is organized around a "wide diagonal" which allowed the public space to interact with the building (a link between the Square of Sciences and the Silver Square).
- Number of car spaces: 420

Francis Bouygues Building ID

- Surface area: 24000 m²

The building contains laboratories connected with the business world or simulation (LGI, CVN and MICS), the Fabrique CentraleSupélec, center of resources and expertise of 1200 m² in the fields of electronics, mechanics and IT, an incubator of 30 places, associative premises (theater, music halls, cafeteria), sports facilities (2 gymnasiums, a Dojo, a weight room) and a hotel with 110 rooms.

- Parking capacity: 300

With this new campus, CentraleSupélec aims to be recognized as one of the best scientific institutions in the world and a major player at the University Paris-Saclay.

SerendiCity, a new vision of student housing

The student housing was designed in 2 lots, the first with 1,100 rooms, ready to receive students for this 2017 academic year, and a 2nd building which will be completed in September 2018 offering 154 housing and 224 accommodation places.

1100 rooms starting from September 1st!

The role of the Ecole Centrale Paris Foundation was essential, for the land acquisition where now is built 'SerendiCity,' the student residence that accompanies the regrouping of higher education institutions on the Plateau de Saclay. All of 25,000 m² will be ready for the academic year 2017 and will accommodate new students of the Ecole on the Plateau de Saclay.

LinkCity, Bouygues Building IDF specialized subsidiary, conducted the student housing works on behalf of 4 social landlords (France Habitation, Vilogia, SOGEMAC Habitat and Maison des Elèves de l'Ecole Centrale des Arts et des Manufactures).

This achievement, considered as the most important in France currently underway, represents 1082 beds divided into eight buildings: 3 surrounding buildings and five cylindrical buildings in the middle. This area offers large common space and house-sharing.

The architectural concept, implemented by Lan Architecture, Clément Vergely architects, and Topotek, is innovative and adapted to the diversity and evolution of students' lifestyles.

And completed by a second building on September 2018

Kaufman & Broad is in charge of the realization of the building with 154 dwellings, such as studio flats or apartment-sharing for 4 persons and offering a total of 224 places. This building is also financed by the Foundation. The accommodation offer will be a residence like services such as breakfast, regular cleaning, linen supply...

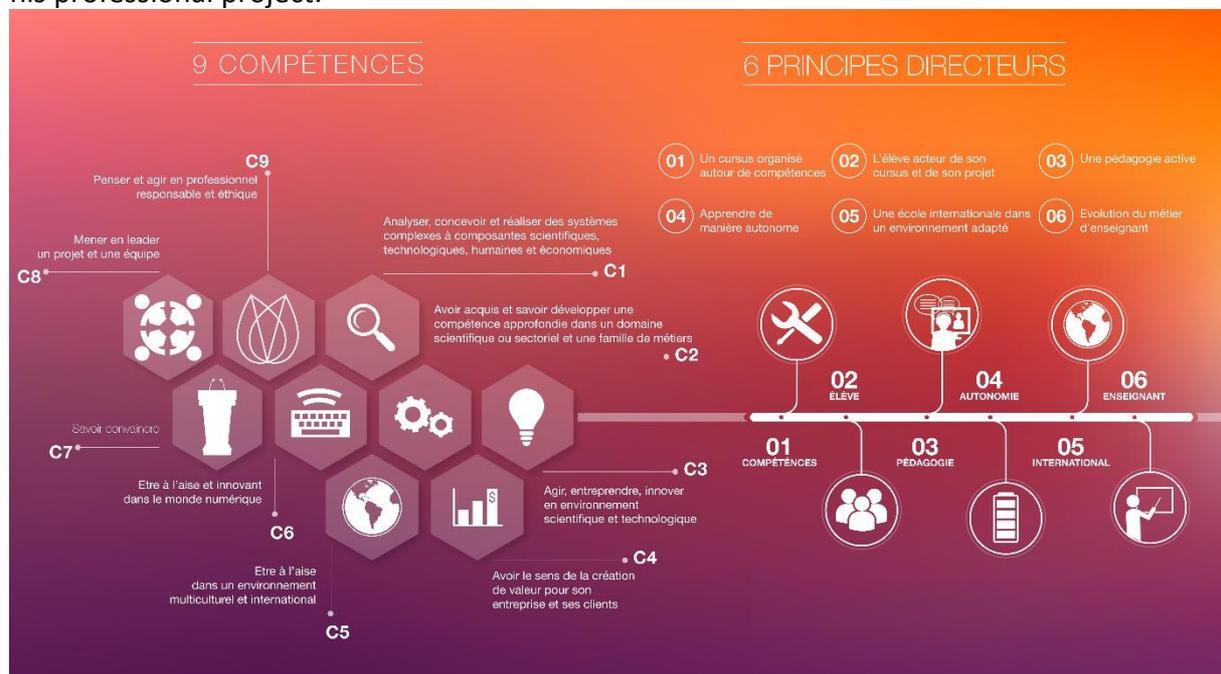
CentraleSupélec's future generalist curriculum: an emblematic project of the Ecole for year 2018

From September 2018, CentraleSupélec will completely re-elaborate its engineering training offer, to better meet the needs of businesses, society and the wishes of its students.

It will provide an innovative generalist engineer training, built on the best of the two current curricula (Centralien curriculum and Supélec curriculum) by integrating the complementary skills of the two courses. This curriculum will cover all the engineering sciences and systems. The first year will take place on the campus located in Gif-sur-Yvette. Students will have the opportunity to follow, from the 2nd year of their studies, sequences of 8 weeks of high added value training on the campuses of Metz and Rennes.

The engineer CentraleSupélec curriculum will be as usual, very demanding on students' level, the provided training quality and of course strongly linked to the internalization and business world. It may be followed by alternate learning.

The CentraleSupélec's engineer will be an engineer-entrepreneur of high scientific level. The future training will have as a guiding principle a curriculum organized around skills, with an active pedagogy. It will allow each student engineer to build his training course with regard to his professional project.



The new curriculum is based on a major and innovative basis: developing skills that will allow students to approach the newest and complex situations in their entirety, with relevance, efficiency, creativity, and sense of responsibility. It will also be oriented towards a personalized course, allowing each student to train according to his level of knowledge and his professional project.

Multidisciplinarity at the heart of the curriculum

The model was built around eight-week sequences, which can be of two kinds:

- On the one hand, thematic courses, coherent training programs dedicated to an engineering issues, combining theoretical knowledge, methodological contributions and integration training (solving a real problem proposed by a partner) on a given subject;
- On the other hand, periods of traditional training, known as general sequences, in alternate learning with thematic sequences, regrouping a set of courses, often elective. They allow students to follow a certain number of lessons essential for their training, and discover or deepen particular disciplines.
- Each student will also benefit from cross-curricular, language and sports courses, and will have to carry out several projects.

The CentralSupélec's eight scientific/sectoral guidelines of the New Engineer curriculum:

A sectoral analysis involving the positioning of the two traditional courses and the graduates' employment scenarios in France and abroad was conducted at the beginning of the project (survey of 800 alumni, personal interviews, analysis of reports). It enabled the identification of "exit segmentation" sectors to which our graduates are mainly oriented and to which the new curriculum must prepare them.

The eight major sectoral dominants are:



CentraleSupélec: a global vision

A strong commitment to the success of the Université Paris-Saclay

Following its will for openness and exchanges and aiming to be with its partners, a global institution of higher education and research, CentraleSupélec is more than ever a committed actor of the construction of the University Paris-Saclay.

Higher education has entered a phase of firm internationalization, shuffling the patterns of schools and universities, increasing the students and researchers mobility, increasing competition among the best institutions.

This is why CentraleSupélec has been supporting the Paris-Saclay project since the beginning: the merger between Centrale and Supélec in 2015 and the regrouping of the Ile-de-France campuses in Gif have been conducted in the perspective of what will be the first scientific cluster in Europe. These two major movements are meaningful if they are placed within the ambition of building a global visibility. The Ecole, therefore, is very committed to the success of such a project which is essential to its future and has a significant added value for France.

Thanks to its important contribution to the definition of the Université Paris-Saclay and its labeling as an "Initiative of Excellence," CentraleSupélec continues to impose itself, by its research dynamism and its involvement in the flagship projects of the University, as one of the main pillars of this first European scientific cluster.

Research, as a booster for the CentraleSupélec engagement in Paris-Saclay

It is first by its Research that CentraleSupélec has established itself, together with its partners, as a pillar of the Paris-Saclay cluster, notably by creating in 2009 the College of Engineering and Systems Sciences (CSIS), then by winning 13 tenders within the framework of the Investments of Future program, designed to equip the University Paris-Saclay with laboratories and shared equipment of excellence.

Today, it participates in 6 state-of-the-art laboratories (LABEX), 2 excellence equipment (EQUIPEX), 3 research institutes (IRT), an Institute of Energy Transition (ITE) and a Convergence Institute (I2-Drive) ([Http://bit.ly/2gLyfg6](http://bit.ly/2gLyfg6)) and continues to play a leading role in the construction and development of the Université Paris-Saclay (<http://bit.ly/2u92L6H>).

A unified training offer

In 2015, when the University Paris-Saclay brought together the all the doctoral schools of its member institutions in a single Doctoral College, CentraleSupélec was actively involved in the creation of the four doctoral schools:

- Interfaces (dedicated to multidisciplinary approaches)
- Mechanical and Energy Sciences, Materials and Geosciences,
- Information Technologies and Communication Sciences (STIC)

- and Electrical, Optical, Biophysics, and Engineering (EOBE).

CentraleSupélec will also be associated with the doctoral school Matisse and its future merger in the ComUE "Université Bretagne Loire," and the doctoral schools IAEM and EMMA of the University of Lorraine.

CentraleSupélec has also redesigned its Master's offer with its partners at the University Paris-Saclay. The new 2015-2019 program is restructured around 14 mentions and 40 second-year courses, and reflects the major axes of research development in line with the new requirements of its academic and industrial partners.

In 2015, CentraleSupélec established the unique signature for all its laboratories publications.

An active involvement in the research departments structuring process of the University Paris-Saclay

In 2015, the University Paris-Saclay structured its research into ten departments whose main missions were to contribute to the development of a strategic vision of the site and the coordination of its implementation by each member of the University.

CentraleSupélec's laboratories have been heavily involved in the structuring of five of these departments:

- Mechanics, Energetics and Processes (MEP)
- Physics of Waves and Matter (PHOM)
- Information Technology and Communication Science (ICST)
- Mathematics
- Electrical, optical and electronic engineering (EOE)

Part IV: Ecole Centrale Paris Fondation

The Ecole's graduates played a historical role in financing its development

The Ecole Centrale Paris Foundation, whose philanthropic missions began in 1909, is intended to support excellence in teaching process and for students' level and help the Ecole in its major development projects, including its location in the heart of the Paris-Saclay Cluster. It collects almost € 10 million each year from businesses and individuals.

The fund-raising campaign "Saclay 2017", an exceptional mobilization of the graduates for the construction of the new Campus

The sponsorship campaign for the construction of the new campus was a great success. The Foundation collected more than 25 million €, mostly from former students, for the construction of the campus and the follow-up of the Ecole's strategic projects as part of its arrival in Saclay (digital transformation, pedagogical innovation ...).

The alumni mobilization was strong within the framework of the "naming" project. We thus count among the donors:

- With 5,200 donors, the Ecole's graduates are one of the communities of former students who mobilized most in France
- 91 major donors (donations and promises above € 50K)
- 9 patrons (donations and promises above 500K €)

For the first time, several major patrons have committed themselves to amounts above one million euros. We can thus cite the gift of the Bouygues group, the Michelin family, and Michelin Foundation, thereby demonstrating their historical attachment to the Ecole, as well as the gift of the NGE group (CEO Joël Rousseau, graduated in 1975).

The alumni and companies support: a major lever for the Ecole's future

The success of the Saclay 2017 campaign marks a milestone in the definition, together with the graduates, of the CentraleSupélec development strategy.

By the end of 2017, the Ecole Centrale Paris Foundation and the Supélec Foundation were merged to create the Centrale Supélec Foundation.

In the coming years, to increase the Ecole influence and tackle a harsh international competition, it will be needed more than ever the generosity of its graduates and the support of partner companies: scholarships, global deployment, support for entrepreneurship, the excellence of research...

Part V: Key dates of the project:

07.2012: OMA, an agency led by Rem Koolhaas, is the winner of the mixed competition of architecture and urban planning for the establishment of the Ecole Centrale Paris on the Paris-Saclay campus;

10.2014: The Michelin Foundation and the Michelin family donate 1,000,000 Euros for the construction of a large 1000-seat amphitheater bearing its name;

2014: Obtaining the building construction permit for the LabCity building;

01.2015: Merger of the Ecole Centrale and Supélec in CentralSupélec;

02.2015: The Kluster project, a consortium comprising Bouygues Bâtiments Ile de France, Bouygues Energies et Services, HICL Infrastructure and the agency Gigon Guyer, selected for the construction of Francis Bouygues building, designed by Gigon Guyer;

05.2015: Laying of the foundation stone of the Gustave Eiffel building;

09.2015: Construction permit for the Francis Bouygues building;

April 2017: Gift from the Bouygues group;

11.09.2017: Beginning of the academic year;

www.centralesupelec.fr

Campus de Gif-sur-Yvette
Plateau de Moulon
3 rue Joliot-Curie – 91 192 Gif-sur-Yvette cedex

Contacts:

CentraleSupélec:
Alexandrine Urbain - Director of communications

Press contact:
My RP by BPFConseil - Béatrice Parrinello-Froment and Justine Germond
06 63 72 16 06
beatriceparrinello@bpfconseil.com - justine@bpfconseil.com