BULETINUL INSTITUTULUI POLITEHNIC DIN IAŞI
Tomul LII (LVI), Fasc. 3–4, 2006
CONSTRUCŢII. ARHITECTURĂ

RESEARCH AND RESEARCHERS IN THE FIELD OF WORKS OF ART AND HISTORICAL MONUMENTS

THE SCHOOL OF BRIDGES AND ROADS IN FRANCE – THE FIRST SCHOOL OF ENGINEERS IN THIS FIELD IN THE WORLD

BY

ANA-RALUCA CHIRIAC and PAULICĂ RĂILEANU

Romanian higher education began a long time ago, having its own national specificity but being also influenced by the education from other developed countries.

Between 1813 – 1840 Gh. Asachi created the School of Terminal Engineering, establishing the foundations of the Technical Engineering University.

In Moldavia, higher education in engineering, in the field of roads and bridges, coincides with the official opening of the Faculty of Construction of Jassy, in 1941, as part of the Polytechnic Institute, today the "Gh. Asachi" Technical University.

Over the years, this type of education has evolved and developed, under the influence of schools of engineering such as The School of Bridges and Roads in France.

The French School of Bridges and Roads was created by a decree of the king, on the 14th of February 1747. In two and a half centuries, it has trained about 15,000 engineers, who accomplished great works both in their native country and abroad.

The reputation of this school is based especially on the discoveries, the accomplishments and the activity of these engineers, who have a great impact on the development of this institution.

Most of these engineers did not go down in history (we seldom know the name of the person who built a bridge or a road). We remember some of them by a formula, a machine, a plate on a road, without actually knowing who is the person behind the name.

Shaping their portraits, we could bring them back to the memory of the public, emphasizing the common aspects of their professional training at the School of Bridges and Roads. A free professional background, of a high scientific level, comprising a lot of practical issues, based on public transport in the beginning, where reflection and action play an important part.

Except a lot of great scientists (among them, a Nobel prize laureate), inventors, entrepreneurs, engineers with prestigious accomplishments, there are also politicians (even a president), writers, a navigator. The selection of these personalities was difficult and can be contested. It was not intented to establish a hierarchy, but only to create a gallery of portraits, the only criterion taken into account being the exclusion of those engineers who are still alive. Unfortunately, there is no woman among these portraits, because their access was only permitted in 1959 for civil engineers and in 1975 for the others. We hope that this anomaly will be redressed in the paper celebrating 300 years of existence of this school.

After a quarter of a millennium, in the 21st century, the oldest civil school of engineers in the world, created during the reign of Louis XV, remains what it has always been: a way of modern training in the benefit of the nation and of society, having the ambition to instruct a quality personnel, able to adapt to the problems and needs of its epoch.

With a prestigious heritage, the School of Bridges and Roads has evolved and transformed during its 250 years of existence, always remaining proud of its past and at the same time open towards the future. Many authors have already mentioned the history, rich in events, of this institution. We shall try to describe it concisely in the present paper.

We shall present some portaits of well-known engineers: great constructors, inventors, scientists, making themselves known in other areas than their initial training, they illustrate a less known aspect of the life of the roads and bridges engineer, a rich, intense, varied life and activity.

The objective of this paper is to allow a better understanding of what has been, over the past 250 years, the french School of Roads and Bridges.

1. Introduction

Romanian higher education began a long time ago, having its own national specificity but being also influenced by the education from other developed countries.

Between 1813 – 1840 Gh. Asachi created the School of Terminal Engineering, establishing the foundations of the Technical Engineering University.

In Moldavia, higher education in engineering, in the field of roads and bridges, coincides with the official opening of the Faculty of Construction of Jassy, in 1941, as part of the Polytechnic Institute, today the "Gh. Asachi" Technical University.

Over the years, this type of education has evolved and developed, under the influence of schools of engineering such as The School of Bridges and Roads in France.

The French School of Bridges and Roads was created by a decree of the king, on the 14th of February 1747. In two and a half centuries, it has trained about 15,000 engineers, who accomplished great works both in their native country and abroad.

The reputation of this school is based especially on the discoveries, the accomplishments and the activity of these engineers, who have a great impact on the development of this institution.

Most of these engineers did not go down in history (we seldom know the name of the person who built a bridge or a road). We remember some of them by a formula, a machine, a plate on a road, without actually knowing who is the person behind the name.

Shaping their portraits, we could bring them back to the memory of the public, emphasizing the common aspects of their professional training at the School of Bridges and Roads. A free professional background, of a high scientific level, comprizing a lot of practical issues, based on public transport in the beginning, where reflection and action play an important part.

Except a lot of great scientists (among them, a Nobel prize laureate), inventors, entrepreneurs, engineers with prestigious accomplishments, there are also politicians (even a president), writers, a navigator. The selection of these personalities was difficult and can be contested. It was not intented to establish a hierarchy, but only to create a gallery of portraits, the only criterion taken into account being the exclusion of those engineers who are still alive. Unfortunately, there is no woman among these portraits, because their access was only permitted in 1959 for civil engineers and in 1975 for the others. We hope that this anomaly will be redressed in the paper celebrating 300 years of existence of this school.

After a quarter of a millennium, in the 21st century, the oldest civil school of

engineers in the world, created during the reign of Louis XV, remains what it has always been: a way of modern training in the benefit of the nation and of society, having the ambition to instruct a quality personnel, able to adapt to the problems and needs of its epoch.

With a prestigious heritage, the School of Bridges and Roads has evolved and transformed during its 250 years of existence, always remaining proud of its past and at the same time open towards the future. Many authors have already mentioned the history, rich in events, of this institution. We shall try to describe it concisely in the present paper.

We shall present some portaits of well-known engineers: great constructors, inventors, scientists, making themselves known in other areas than their initial training, they illustrate a less known aspect of the life of the roads and bridges engineer, a rich, intense, varied life and activity.

The goal of this paper is to allow a better understanding of what has been, over the past 250 years, the french School of Roads and Bridges.

2. Some History

2.1. Perronet's School

By a decree of the King's Council from the 14th of February 1747, the engineer Jean-Rodolphe Perronet, director of the Service for Roads and Bridges of Alençon, was charged to "supervise and lead the architects and designers of roads and bridges, as well as to instruct them", by the order of the general controller of treasury, Machault, and of the intendent of treasury. Even if this text only emphasized the status of the "Designers' Office" set up in Paris in 1744 by Trudaine and even though the denomination of "School" was not approved until 1775, it will always be considered the constitution act of the school (Guy Coronio – the director of the team of historical research of the School of Roads and Bridges in France).

In 1716, after many hesitations, the section of engineers of roads and bridges is set up, led by an intendent of treasury. In the rest of the country, there are 20 engineers supervizing the activities, helped by other supervisors. One of the disadvantages of such an activity is the lack of qualification of many engineers, chosen only on the basis of recommandations; there is no contest, no preparation school and the quality of the works is lessened because of this lack of specialized training.

The administration starts to take measures to remediate the situation. Meanwhile, the general controller of treasury, Orry, initiates some plans for the great roads of the kingdom. The administration itself supervises the works, organized according to the compulsory and criticized tax "in nature", imposing to all citizens lacking financial resources for dispensation to take part in the works of constructing the roads.

In 1743, Orry designates Charles-Daniel Trudaine to take care of "the details of roads and bridges". A competent minister he creates in 1744, "The Designers' Office"

in order to centralize the transports from other towns. The works from Alençon can be distinguished by the care and rigour of their execution. The engineer in charge, Jean-Rodolphe Perronet, who had been leading the service of roads and bridges from Alençon for 10 years, put a lot of soul into this work, gathering a team of competent people. Trudaine, in his wish to consolidate his team of designers from Paris, calls Perronet in the capital.

As responsible engineer, he takes up the new mission in a professional manner. The most important aspects are setting up the map and training the designers and the personnel from other towns, who will be trained in Paris, just like the engineers specialized in roads and bridges. Perronet becomes a general inspector in 1750.

Starting with 1756, both names of "Office" and "School" are used, its scholar character imposing itself more and more.

Perronet, having a rich career of constructor, organizes the School and his dispositions are gathered in the form of a "Regulation" containing 78 articles, signed by Turgot in 1775. Surrounded by dedicated people (Chézy, Lesage, Prony), Perronet will be in charge of this project until his death, in 1794. For 47 years, he had taken care of the instruction and improvement of every engineer in the kingdom.

Charles-Daniel Trudaine (1703-1769), also called "the Great Trudaine", is the founder of the School of Roads and Bridges. Councillor in the Parliament in 1721, the administrator of the region of Auvergne for five years, he establishes the ways of communication between Limagne, Clermont-Ferrand and the mountains, inaccessible until then. Intendent of treasury in Paris, he is named to supervise the development of the works of roads and bridges. He will have this position until 1744. He initiates the royal decree that will transform, in 1747, this "Office" into "School". Trudaine supervises important projects: the bridges of Orléans, Moulins, Tours, Joigny, Montereau, as well as 10 000 km of paved roads. He creates the Assembly of Roads and Bridges, where debates concerning the projects take place every day. He leads the technical and financial debates. He proves exceptional qualities of administrator, economist and scientist. A multifaceted person, he is interested in the works of Daubenton and sets up the veterinary schools of Lyon and Alfort. Five years before his death, he is replaced by his son, Charles Philibert, called Trudaine de Montigny.

2.2. A Landmark. Lamblardie

The French Revolution will not affect Perronet's school too much. Nevertheless, an administration and a subsidiary are contested in 1790, as well as the engineers' training, and the pupils are also touched by the revolutionary fever. The school is threatened with the decentralization of public works.

However, it will still in function, to this contributing to a high extent Chaumont de la Millière, director of the administration of roads and bridges, the author af a remarkable *Memory on the Department of Roads and Bridges*, in which he draws up a balance sheet of the engineers' works in the 18th century. The Revolution also respects Perronet's personality, who had just finished building the Concorde bridge.

The law of 19th January 1791 regarding the organization of roads and bridges, also changes the school's status, as it becomes national, allowing the access of can-

didates from the 83 newly-established departments. It also becomes democratic, a part of the pupils entering only after a contest and having the right to free courses.

This is a tormented period, many pupils going in the army. In order to improve this situation, Jacques-Elie Lamblardie, who had been named by Perronet vice-director of the school, suggests the creation of a preparatory school of roads and bridges, and even in other fields. This idea, supported by other scientists (Monge, Carnot, Prieur-Duvernois), was extremely successful.

Perronet dies in 1794 and Lamblardie becomes director. A Commission of public works prepares the establishment of the new "Central School of Public Works", which is opened in the same year, with Lamblardie as a director. An admission exam takes place, granting permission to 22 pupils of the School of Roads and Bridges. Classes begin immediately and Monge draws up the curricula.

Lamblardie believes that the new school is enough to train people from all over the country. The law of the 22nd October 1795 sets up the connections between the new school, which receives the name of Polytechnic School, and the old technical schools.

The School of Roads and Bridges remains a school of improvement, its 36 pupils having to follow first the courses of the Polytechnic School. Lamblardie, faithful to the initial project, quits the function of director of the Polytechnic School in order to retake the function of director of the School of Roads and Bridges.

The latter, being still in function, had no director and no pupils for a year; it had to be completely reorganized. Lamblardie could only draft some projects, because he died 1797. In four years, he succeeded in implementing the most important directions of the school, assuring it a future quality development.

2.3. Prony and the Training School

After a short period in which Antoine de Chézy is the director (he is 79 and dies after a year), in 1798 Gaspard Riche de Prony becomes the director, who, like Perronet, will have this function for over 40 years.

In 1799, he initiates a "Plan of Instructing the Pupils of the School of Roads and Bridges in the 7th Year", trying to improve the old syllabi according to the background of each pupil in the Polytechnic School, in order to ensure a logical sequence. He puts into practice a flexible education, different from the one in the ancient rule, which was only compatible with technical subjects.

The imperial decree of the 25th of August 1804 defines the new organization of the school, which will have 60 pupils divided in three classes of 20, a board and three departments for teachers. The necessary funds for maintenance come from the tax for the maintenance of roads.

A special decree called "The Interior Regulation of the Application School of Roads and Bridges" is signed by Napoleon. It also stipulates the enrollment of pupils, but this provision will never be applied. A lot of previous dispositions are maintained, such as the grouping of pupils in classes according the degree of previous preparation.

The organization of the education often lacks funds. However, the pupils work thoroughly and passionately. The greatest discontent comes from the lack of concordance between entering and leaving the school. Every year, a lot of students from the Polytechnic come to this school, but the engineer positions are few. In 1817, it is signalled that, even if most of the pupils have 5 or 6 years of studies, there aren't any available jobs for them.

Moreover, Prony, a scientific spirit, is often absent, having different missions in France or abroad.

2.4. 1851: Changing the Structure of the School

Between 1830 and 1839, a new interior regulation is set up and in 1851 all the changes are approved by a decree. Representing a new stage in the evolution of the school, the decree mentions the organization of classes, the timetable for pupils and teachers, the quality of teachers, the control of the pupils' activity, the discipline, the new oral exams. The hierarchy system of pupils also changes, allowing the continuous assessment of their progress.

There are two important innovations: the first one is creating a Council of Improvement, meeting once a year to examine the hierarchy of pupils and to take measures for improving learning. The second concerns the access of French and foreign pupils; French pupils pass an admission exam and the foreign ones, if they are officials or recommended by the government of their country, can be exempted of such an exam.

Prony dies in 1839. Together with Perronet and Lamblardie he contributed to the shaping of the modern physionomy of the School of Roads and Bridges.

From this moment, the directors of the school have less influence than their predecessors. In 1845, after having had nine different headquarters in Paris, the school is settled in a hotel built in the 18th century, Fleury, remaining here for 150 years. In general, the level of foreign pupils is inferior to that of French pupils having attended the Polytechnic School.

In 1875, a one-year preparatory education for foreign pupils is established, an efficient measure leading to the increase of foreign pupils.

Later, in 1890, the decree of organization of the school, signed by the president of the Republic, Sadi Carnot, an ancient pupil of the school, will allow the access to road supervisors having worked for at least 6 years. The most important present characteristics of the school date back from 1890.

2.5. The School in the 20th Century

In the first half of the century, there is no significant change. The school adapts to the progess of technology and new departments are created: applied electricity, social economy, urbanism, aerian bases. The development of science modifies the content of some subjects; new disciplines appear: analysis, mechanics, resistance of materials, mechanics of the soil, concrete steel, metallic bridges and the architecture course is reorganized. We are very far from the three departments of the imperial school!

However, the content is difficult and unsimplified and there are plenty of subjects. The classes of artistic drawing, Italian and... equitation are suspended. From 1913, "special courses" are reduced from three years to two years, but "preparatory courses" remain of one year. The significant decrease in course hours (from 692 to 445 in 1902) is not accompanied by a decrease in syllabi.

The wars, the economic crisis of 1929 and the period of political instability are not favourable to a dynamic evolution of the school. Terminology changes, as the "pupils-engineers" from 1804 become "engineers-pupils" in 1939. From 1922, the pupils having attended the Polytechnic have to study for two years. "External pupils" become "titulary pupils" in 1922 and "pupils-engineers" in 1958; they attend the school for three years. For the first time in the school's history, a girl is admitted to the exam of 1959. A new era begins.

2.6. A New Dynamism

The last period in the school's history is marked by a rapid evolution, according to economic demands. The number of pupils increases, to respond to the demands of engineers in the administration and of civil engineers for foreign companies. The progress in science and the construction technology, in urbanism and the protection of the environment, imposes a change in the education: more pupils, more courses, more teachers. In the 80's, numerous reforms are drawn up, concerning the selection of pupils, the structure of syllabi, research, relations with companies, international opening, and new departments are created.

In 1949, the labs of the school become a service of technical research of the Ministry of Equipments and the central lab of roads and bridges becomes a scientific point with several sections. Pupils are offered the opportunity of a one-year traineeship in a company. A wide offer of specialized trainings and master's degrees for French and foreign graduates is set up.

A section of continuous training is developed for professionals. A scientific and technical publishing house is created, in order to transmit French technologies and abilities.

Common courses with other foreign institutions are organized (*Escuela de Caminos* of Madrid, *Imperial College* of London, *Technical Universities* of Munich, Berlin, Turin, Rome), as well as international sessions of continuous training, increasing the international mobility of pupils and teachers.

Becoming a public institution with a scientific, cultural and professional character in 1994, the school is marked by a significant dynamism today. In 1997 it changes its headquarters, moving in Cité Descartes, near Paris, in order to celebrate its 250 years. The headquarters of Fleury hotel is not abandoned, some of its services remaining here, as well as the mark of 152 years of history!

2.7. Pupils

During the first years, the number of pupils was rather low: 38 pupils in 1750, 45 in 1759, only 15 in 1763, 80 in 1768, 90 in 1772. The Regulation of 1775 settles the number of pupils: 60. In Perronet's time (47 years), 350 engineers were instructed

and trained. Between 1804 and 1850, the number of pupils is fixed at 20 and there are few jobs until 1824.

Starting with 1851, there is a significant increase in the number of pupils, especially in the number of "external engineers" (after 1875). At the end of the century, 2,000 engineers will have received diplomas from the school.

Between 1900 and 1950, the forms, of about 50...60 pupils, will remain constant, with some changes according to the demands of companies and the economic fluctuations of the country. In this period 2,500 engineers are trained in the school.

In the 50's the number of students increases again: 80 pupils in 1960, 150 in 1970, 180 in 1990. Today there are more ancient pupils alive than the school trained in its first two centuries of existence! There are 25% foreign pupils. The tradition of the international opening, initiated by Perronet, was continued by Prony and its followers: between 1825 and 1850 the School received 150 foreign pupils.

After 1851 and the creation of a Civil Engineers profile, many foreigners came to this school because of its reputation; between 1851 and 1921, 460 foreign pupils were trained, 40% of the civil engineers from that period. In the 19th and 20th centuries, the school received many Polish, Romanian, Greek, Russian, Turkish students and today the English, the Italians, the Germans and the Spanish are predominant among the 55 nationalities represented.

2.8. Training the Pupils

From the beginning, learning in this school has been very original. The teaching system is based on mutual learning. In the 18th century there was no teacher! The best pupils in a field share their knowledge with their colleagues (geometry, mechanics, algebra). The pupils also attend private courses, at their own expense. Some of them are optional (physics, chemistry, natural history), while others, under the general name of "architecture", are compulsory. They are held by architects like Blondel, Dumont or Daubenton. Except drawing and civil architecture, they contain everything related to roads and bridges, as well as "hydraulic architecture": dams, bays, ducts, ports, drying up, water distribution.

The regulation stipulates 11 hours of daily presence at school, but in fact it is not that strict. Theory is supplemented by practice, for 6 months, on sites together with engineers. The pupils are paid and the most experienced remain with the engineers for 1...2 years. Sometimes, students can be trained abroad: 8 months in Italy and then in Holland, this opportunity being given to one pupil every year.

Another form of practical learning consists in drawing courses. Students draw up maps, bridges, for which they are paid.

The school's originality also lies in the students' hierarchy according to a scale of "points", obtained by work, previous studies, free classes, annual campaigns on sites. There are 15 contests every year, for a certain number of points. Then the pupils are divided into the three classes, according to the obtained results. This system allows for a serious selection. The period of studies varies: from 4 to 12 years between 1774 and 1784, for example.

After becoming a school of application of the Polytechnic in 1795, it gives up the

system of "autoinstruction", promoting the teacher's authority. Practical learning is maintained, by visits in workshops, study trips and, from 1831, testing materials in labs. From 1851, conferences are held, to complete the courses, such as the one about photography in 1858.

2.9. Continuous Training and Transmitting the Knowledge

The school encourages professional improvement. It addresses the designers and the engineers having a position in the administration, mutual learning being thus justified. Initial training before taking a job will also be provided for in the second half of the 18th century.

The school is permanently adapting and updating, Perronet's role being very important. The School's Council meets weekly to discuss objectives and changes. In the 19th century, the school becomes an initial training institution, but the continuous training of engineers remains an important preoccupation. The library draws up its catalogues, new models are accummulated. From 1852, many types of analyses can be made in the lab, as an experimental lab. The photography workshop and the designers' office offer publications and drawings serving as models. In 1831, Prony initiates the *Annals of the School of Roads and Bridges*, an instrument of disseminating theoretical and practical knowledge. After a difficult period in the 1960's, when the number of competitive publications increased, the magazine reappears in 1993.

Today, continuous training is very important, representing a dynamic sector comprizing 5,000 engineers from the administration, from territorial divisions or from the private sector. They take part in improvement sessions or qualification actions.

2.10. Research

Research has always been represented in the school. In 1831, a chemistry lab is created, under the supervision of geology professor M. Dufrenoy. Other labs are opened in 1852, facilitating the analysis of construction materials, such as Hervé Mangon's lab. In the first year, over 300 samples are analysed. In 1887, a lab for testing metals is created.

In 1937, the labs are moved on Lefebvre street, where new and well equipped buildings are created. In 1949, the Central Laboratory of the School of Roads and Bridges is established, a research and experiment centre belonging to the Ministry of Public Works. This event deprives the school of its labs until 1980.

Today, the school has about 10 specialized centres for learning and research, with over 300 researchers, allowing a good training of pupils in this respect.

2.11. International Opening

The School of Roads and Bridges has a good reputation all over the world, which is proven by the great number of foreign students who train as engineers: master's degree, further studies, doctorate.

The international opening also lies in the interest in the accomplishments abroad: study trips of pupils in Italy, England or Holland, trips of directors in European coun-

tries or in Russia, pupils and engineers who accompanied Napoleon in his campaigns in Egypt.

This international aspect is especially developed in the 19th and 20th centuries, when the engineers take part in important equipping works: roads, bridges, railways, barrages, watering, carried out in extraterritorial areas governed by France. It also lies in the works of many civil engineers in great sites all over the world, granting the recognition of French companies' theoretical and practical abilities.

Nowadays, the school has partnerships with 40 foreign universities and about 50% of its researchers are foreigners.

3. Conclusions

Despite all the changes over the centuries in order to adapt to the technical and economic progress, it is surprising that the basic structure of the school remained the same. A combination of theoretical and practical learning, professional improvement, European opening, original teaching methods, the characteristics of the modern school can be traced since Perronet's time. After Lamblardie, Prony adds to these traits the democratic elitism of a quality selection and a high level scientific training. His followers will focus on research, on updating the engineers' knowledge and on the international opening.

In the contemporary period, a modulary learning will be set up, as well as the personalization of the pupils' track according to a professional project.

By its capacity to adapt, the School keeps up with the requirements of a society in a perpetual transformation.

Received, February 26, 2007

"Gh. Asachi" Technical University, Jassy,
Jassy, Department of
Roads and Foundations

REFERENCES

1. * * * *250 ans de l'Ecole des Ponts en cent portraits* (Ed. de Guy C o r o n i o et l'équipe du Centre de Documentation Contemporaine et Histoire de l'Ecole Nationale des Ponts et Chaussées), Paris, 1997.

2. * * * *Monography of the Faculty of Constructions and Architecture* (in Romanian). Edit. „Gh. Asachi" Univ. Techn., Iaşi, 2001.

3. S a i n t H a r d u i n, *Notices bibliographique sur les ingéneurs des Ponts et Chaussées depuis la créations du corps, en 1716. jusqu'a nos jours.* Paris.

4. P i c o n A., *L'invention de l'ingénieur moderne-l'Ecole National de Ponts et Chaussées.*

5. * * * *Învăţământul tehnic la distanţă – condiţii de organizare, norme şi instrucţiuni.* Rev. C.N.E.A.A.

CERCETĂRI ŞI CERCETĂTORI ÎN DOMENIUL LUCRĂRILOR DE ARTĂ ŞI MONUMENTE ISTORICE
Şcoala de Poduri şi Şosele din Franţa – prima şcoală de ingineri în acest domeniu din lume

(Rezumat)

Învăţamântul superior românesc a inceput din timpuri indepărtate, fiind caracterizat prin specificul naţional, dar fiind influenţat şi de învăţământul din alte ţări dezvoltate.

Primele baze ale învăţământului superior tehnic de inginerie au fost puse de Gh. Asachi încă din perioada anilor 1813 – 1840 cu ocazia înfiinţării şcolii de inginerie hotarnică.

Învăţamântul superior ingineresc din Moldova, în domeniul drumurilor şi podurilor, coincide cu înfiinţarea oficială a Facultăţii de Construcţii la Iaşi, în 1941, în cadrul Institutului Politehnic, azi Universitatea Tehnică „Gh. Asachi".

Desigur, de-a lungul anilor acest învăţământ a evoluat şi s-a dezvoltat fiind influenţat de şcolile superioare de ingineri cum a fost şi cel al Şcolii de Poduri şi Şosele din Franţa.

Şcoala de Poduri şi Şosele din Franţa a fost constituită printr-o hotărâre a regelui din 14 februarie 1747. De-a lungul a două secole şi jumătate a format aproximativ 15 000 de ingineri care au avut realizări deosebite atât în ţara lor de origine cât şi în străinătate.

Reputaţia acestei şcoli se bazează mai ales pe descoperirile, realizările şi activitatea acestor mii de ingineri care au influenţat şi influenţează încă într-o mare măsură desfăşurarea acestei instituţii.

Majoritatea numelor lor nu au fost reţinute de istorie (rareori ştim numele celui care a realizat un pod sau o stradă). De unii ne amintim însă printr-o formulă, un aparat, o placă pe o stradă, fără a şti de fapt cine se ascunde în spatele unui nume.

Realizându-le portretele i-am putea readuce în memoria publicului, subliniind în acelaşi timp aspectele comune ale formării lor profesionale la Şcoala de Poduri şi Şosele. O pregătire profesională liberă, de un înalt nivel ştiinţific, cuprinzând numeroase aplicaţii practice, la început axată pe transportul public, în care reflecţia şi acţiunea au un rol important.

În afară de numeroşi mari savanţi (printre care un deţinător al premiului Nobel), inventatori, antreprenori, ingineri cu realizări prestigioase, regăsim şi oameni politici (printre care şi un preşedinte), scriitori, un navigator. Selecţia acestor personalităţi a fost dificilă şi poate fi contestabilă. Nu s-a dorit stabilirea unui palmares, ci doar crearea unei galerii de portrete, singurul criteriu avut în vedere fiind excluderea inginerilor care sunt încă în viaţă. Din păcate, nu există nici o femeie printre aceste portrete deoarece accesul lor nu a fost permis decât în 1959, pentru inginerii civili şi în 1975 pentru restul. Să sperăm că această anomalie va fi redresată în lucrarea ce va apărea cu ocazia aniversării a 300 de ani de la înfiinţarea şcolii.

După un sfert de mileniu, în secolul XXI, cea mai veche şcoală civilă de ingineri din lume, înfiinţată în timpul lui Ludovic al XV-lea, rămâne ceea ce a fost dintotdeauna: un mijloc de formare modernă în serviciul naţiunii şi societăţii, având ambiţia de a pregăti un personal de calitate, capabil de a se adapta nevoilor şi problemelor epocii lor.

Având o moştenire prestigioasă, Şcoala de Drumuri şi Poduri a evoluat şi s-a transformat în cei 250 de ani de la înfiinţare, fiind mereu mândră de trecutul său şi în acelaşi timp deschisă spre viitor. Istoria bogată în evenimente a acestei instituţii a fost deja evocată de diferiţi autori. Lucrarea de faţă urmăreşte un obiectiv similar.

Se prezintă câteva portrete ale unor ingineri iluştri. Mari constructori, inventatori, savanţi, remarcându-se în domenii diferite faţă de pregatirea iniţială, ei ilustrează un aspect mai puţin cunoscut al vieţii inginerului de drumuri şi poduri: o viaţă şi o activitate bogată, intensă, diversificată.

Obiectivul acestei lucrări este de a permite o mai bună înţelegere a ceea ce a fost timp de 250 de ani Şcoala de Poduri şi Şosele din Franţa.