Batignolles y Breda: la organización del espacio urbano alrededor de dos fábricas de construcción ferroviaria[*]

Batignolles and Breda: the organisation of urban space around two railway construction factories

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Resumen: La relación entre una fábrica y el espacio urbano que la rodea es un sistema complejo, producto de un equilibrio cambiante entre oportunidades y problemas. Estas estructuras imponen al vecindario contaminación, ruido y tráfico, pero al mismo tiempo son una fuente de beneficios. Esta contribución pretende comprender estas complejas relaciones a finales del siglo XIX observando los problemas espaciales y los cambios provocados por dos de estas industrias y su ciudad de acogida. Los dos estudios de caso serán la Société de construction de Batignolles y la Società italiana Ernesto Breda, situadas respectivamente en París y Milán.
Palabras clave: París, Milán, industria ferroviaria, cambio urbano, urbanización, siglos XIX-XX.
Abstract: The relation between a factory and the urban space around it is a complex system, the product of a changing balance between opportunities and issues. Such structures impose on the neighbourhood pollution, noise, traffics but at the same time are a source of profit. This contribution wishes to understand these complex relations in the late 19th century observing the spatial issues and changes brought forth by two such industries and their hosting city. The two case studies will be the *Société de construction de Batignolles* and the *Società italiana Ernesto Breda*, located respectively in Paris and Milan.
Keywords: Paris, Milan, railway industry, urban changes, urbanisation, 19th-20th century.

[*] Este trabajo se ha realizado en el marco del Proyecto de Investigación… [lo incluirá el editor tras la evaluación anónima].

INTRODUCTION

> Par au-dessus, passent les cabs, filent les roues,
> Roulent les trains, vole l'effort,
> Jusqu'aux gares, dressant, telles des proues
> Immobiles, de mille en mille, un fronton d'or.
> Les rails ramifiés rampent sous terre
> En des tunnels et des cratères
> Pour reparaître en réseaux clairs d'éclairs
> Dans le vacarme et la poussière.
> C'est la ville tentaculaire.[1]

This article wishes to outline part of the process so grimly described by Verhaeren. Two of the builders of those tentacles, which in two different contexts have shaped their environment and, constructed the means to connect and forge the cities of the 19th century.

The aim is to present how the railway industry played an important role at the crossroads between the phenomena of industrialisation and urbanisation that so marked the second half of the 19th century. In doing so, we will look for possible differences between the two cases in their relationship to their surroundings: in particular regarding the urban periphery and local administration. To do this, the two contexts will first be briefly presented following a chronological description, then the different authors of changes will be analysed. The years under study, mainly the period 1880-1910, constitute a period in which family business management was of paramount importance. Even more so in the case studies, so much so that in one of the companies studied the presence of a veritable dynasty at the helm of the company can be identified[2]. In the Italian case, while not as prominent as the other, for a long time the society was almost completely identified in the figure of its managing director[3].

For this reason, it will often also be necessary to observe the work of the two managers outside, but nevertheless closely linked to, that of the railway industry itself.

The methodology for dealing with the subject is still under construction; this is because the subject seeks to relate many different disciplines: from

[1] Verhaeren (1920), p.3.
[2] Brunel (1996), pp.75-88.
[3] Castronovo (1986), pp. 7-32.

urban history to environmental history, from business history to transport history. Precisely for this reason, the necessary approach will certainly be interdisciplinary, capable of mobilising and bringing into dialogue different sources such as the press of the time, urban analyses, hygiene treaties and minutes of the various company councils.

Even if Milan and Paris have several dissimilarities in term of sizes and national roles, the two cities shared a common innovative role. As described by the Italian poet Giacomo Leopardi: "Milano è uno *specimen* di Parigi, ed entrando qui si respira un'aria della quale non si può avere idea senza esservi stato." [4] A position that, among historians, is shared by one of the greatest experts of 19th century, Della Peruta (1987), who points out that from an industrial and social point of view Milan was, around the middle of the century, closer to being a small Paris than an industrial city such as Manchester, with an important diffusion of culture and endowed with cultural capital functions that other cities lacked. Similarly, it exercised during the century a role, certainly more regional than the French capital, but still very strong as a pole of immigration[5]. My research aims to investigate the similarities and dissimilarities between the two cities from a compared standpoint.

This initial analysis is part of ongoing research and the results presented are therefore to be considered temporary and vulnerable to the study of new documentation.

1. URBAN CONTEXT FOR RAILWAYS CONSTRUCTORS

Brunel (1995) argued that a company's activities are embedded in a social and economic context that partly determines its policies and results.[6] To this observation I would add that the geographical point of view is also not secondary, and in turn the company by its actions shapes and contributes to the changes in its environment.

The first iterations of these companies were both established just outside the urban boundaries of the neighbouring city, thus taking advantage of reduced land costs while not being in the open countryside so as to still have access to a fair pool of labour. Both were established in proximity of an engine of change, the first railway line departing from

[4] Leopardi (1892), p.366.
[5] Della Peruta (1987), pp.14-15.
[6] Brunel (1995), p. 13.

the two cities. In the space of a few decades, however, they found themselves to be true urban factories, embedded in an area of increasing building density and to which the surrounding environment, even considering its added services, was becoming increasingly cramped.

1. 1. Milan and the *Corpi Santi*

The first company under study, the *Società Italiana Ernesto Breda*, has its origins in a mechanical construction company based in a building, called Elvetica, located in the *Corpi Santi* of Porta Nuova in Milan.

That of Milan's *Corpi Santi* is perhaps a truly peculiar case in the history of town planning because of their changeability; these were, historically, the areas surrounding the cities of Piedmont and Lombardy. Although peripheral they were historically part of the municipality of Milan, during Austrian rule they were separated from the city in 1781, making them a semi-rural municipality surrounding the city, with its own finance separate from that of the city, and therefore subject to different taxation.

This reform was much criticised by the Milanese population, as it strained the municipal coffers to the advantage of the Milanese patriciate, which included the large landowners living there.[7] It was then suppressed during the Napoleonic Kingdom of Italy, and in 1806, it was dissolved and merged back into the municipality of Milan, once again making the large landowners share in the municipality's huge expenses. These expenses included the first, large-scale urban planning works in the city, based on French models of late 18th century, such as the *Foro Buonaparte*. A phenomenon linked precisely to the creation of a *Corpo di ingegneri di acque e strade*, again based on the model of the *Corps des Ponts et chaussées* with the aim of organising Milanese growth. [8]

However, this administrative reform was an ephemeral change and already in 1816, the Milanese high nobility managed to obtain from the Imperial Government the restoration of the situation prior to the Kingdom of Italy. Despite strong protests from the Milanese administration, which argued that certain services were clearly enjoyed by the inhabitants of the *Corpi Santi*.

[7] Della Peruta (1987), pp.8-10.
[8] Bigatti (2000), pp. 28-29.

Amidst these administrative changes, the population density of the area grew continuously, progressively gaining more weight than that of the city, which was in any case growing within the circle of the Spanish walls. The population living in the *Corpi Santi* when they were first incorporated into the municipality in 1808 was about one seventh of the urban population in 1805, i.e. 13,572 inhabitants against 115,290. As the decades passed, the numerous Milanese factories exerted a strong attraction for immigration. First more gradually then accelerating in the second half of the century. The inhabitants of the peri-urban municipality came to be one-sixth of the Milanese inhabitants in 1836, then one-quarter at the unification of Italy, and when, finally, the *Corpi Santi* were definitively re-annexed to Milan in 1871, the city was joined by one-third of its population, 62,976 people.[9] Leaving the area of the municipality unchanged, the area of the *Corpi Santi* was about 66.35 km², almost seven times that of the city within the city walls, just under 10 km²; this shows a rapidly growing population density.

Milan's demographic and urban growth, like that of many other Italian cities took place, albeit with some similarities, in a substantially different manner to that of France. While in the French context, cities are modified through major changes to the existing fabric, Italian cities expand mainly through the concession of the building of new parts of the city to real estate groups. This happened following Haussmann's own advice when he spoke of urban planning for Rome, that is, to build the city not on top of the previous one but alongside it.[10] This position is not shared by Bigatti (2000) who, on the other hand, asses that the centre of Milan has indeed been renovated, emptying it of much of its original population by moving it outside the city walls, but this was done through progressive, small-scale changes aimed at rebuilding the city in parts, as defined by Bigatti *di piccolo cabotaggio*. [11]

In the end the two positions could be synthetised in one, where the city centre has been, slowly, renovated creating a new, vast, urban area around it. Meanwhile in those new, vast spaces the public created the network connections, and the private individuals carry out the urbanisation works on the new land on behalf of the public

[9] Statistical data from: Meriggi (1987); Regione Lombardia, comune dei Corpi Santi: 1798-1808; 1816-1859; 1859-1873.
[10] Gravagnuolo (1994), pp.26-30.
[11] Bigatti (2000), pp. 172-173.

administration. Doing so the investors collect the increase in land value induced by the works themselves.

In this context, between the urban and the suburban, a mechanical construction company, *Bouffier e Cie*,[12] was founded at a location called Elvetica in 1846 by Joseph Adolf Bouffier. The Elvetica, an even older textile plant was located just outside the gates of Milan, near Porta Nuova, bordered on one side by the *Naviglio della Martesana* canal.[13]

The same location was chosen for the shortly following Grondona factory, also specialised in the production of railway materials, in its case wagons. This choice was linked to the presence of the first Milanese station nearby, built in 1840 at the end of the Milan-Monza line, then moved just 10 years later to make rail transit more efficient.[14] At this epoch Milan was at the centre of multiple important railways constructions so this line was followed closely (1846) by the Porta Tosa station, located again on the Milan-Monza line, which was the first part of a long line connecting the two capitals of the Kingdom of Lombardy–Venetia, the *Linea Ferdinandea.*

Those first stations suffered from the limitations of early infrastructures such as difficulties managing an increasingly higher volume of traffic[15]. To solve those problems the construction of a new, imposing, station commenced in 1857. Begun by Imperial Decree and commissioned to the *Società delle Strade Ferrate Lombardo -Venete*, the construction of Milan's Central Station began, located between *Porta Venezia* and *Porta Nuova*. Just 400 meters away from the older station and curiously elevated, over an embankment that extended along both sides of the station itself, continuing for a long distance.

Those characteristics were not always appreciated as the Milanese Council of Architects and Engineers lamented in 1883:

> La condizione fatta a quella località da cotale importantissimo impianto di edifici e terrapieni non subordinato ad alcun preconcetto piano che razionalmente si collegasse col l'interno della città, riescì a questa gravosissima anche per le difficoltà che da essa derivarono, e tuttora

[12] *Eco della borsa*, vol. 10 (September 5. 1847), p.2.
[13] Licini (1994) , p.80.
[14] D'Amia (2004), p. 84.
[15] D'Amia (2004), pp.90-92.

> sussistono, a provvedere Milano di un conveniente piano regolatore generale. [16]

The fact is that despite these networking difficulties, several industries were being set up in the area, which thanks to new contacts and infrstructures "progredirono rapidamente e si moltiplicarono numerose"[17]

This phenomenon was strongly accentuated with the drafting of the Beruto land-use plan, which led to the distinction of two Milanese production rings, one inside the walls which, although increasingly destined for commerce, still housed a myriad of small and medium-sized, for the time, enterprises. A second outside, in which larger industries were arranged with main poles but in a more scattered manner. The master plan, creating the outer ring and accompanying it with an impressive regular road network, did not give these areas any binding indications as to their intended use: whether commercial, industrial or residential. This led to criticism of the engineer and his plan for being indifferent to ongoing phenomena and for at best re-proposing a new land subdivision. Bigatti (2000) defended him, at least in part, pointing out how the plan in this was a more direct expression of the aspirations of Milanese entrepreneurs, creating a 'neutral' ring road that with a better connection both to itself and to the ring road reduced the geographical dependence of Milanese industries towards the railway, which led to the creation of the first industrial areas around Porta Vittoria and Porta Nuova, allowing them to disperse more in this versatile area.[18]

Despite this, industrial clusters such as the one formed by Elvetica - Grondoni – Pirelli still exerted an enormous attraction due to the number of employees working there and led to an increasing density of housing in their surroundings. As can be seen from the pictures of the area, until 1895, it still exerted an attraction of its own.[19]

[16] Brotti (1885), pp. 122.
[17] Brotti (1885), pp. 121-122.
[18] Bigatti (2000), pp. 194-197.
[19] Images 2, 3, 4.

1. 2. Batignolles-Clichy, a complex identity

In contrast to the *Corpi Santi*, where one finds it difficult to isolate a local identity for the external area around *Porta Nuova*, one finds the opposite problem with Batignolles, the area where the *Société de construction des Batignolles* was established. Over the course of the years, two different, and diverging, identities developed.

During the 19th century, the area of today 17th arrondissement, Batignolles, was an administratively disputed area with many features that made it attractive, such as its elevated location and proximity to Paris. While at the beginning of the 19th century it was a simple hamlet of a few houses associated with the larger commune of Clichy, there was interest from the neighbouring commune of Montmartre in annexing it, making an official request in 1807 to Clichy for its cession. However, it was quickly refused due to the lack of historical reasons and its minor economic weight compared to the one it was in at the time.

As the years went by, this hamlet grew in size and in services, and by the 1920s it had a police office, a post office, a stationery store and two tobacconists. This increased entity, bringing together the inhabitants of the westernmost area, Monceau, the village of Ternes, and the easternmost area, le Batignolles, succeeded in 1827 in initiating the paperwork to obtain recognition as an autonomous commune from Clichy, although still part of its canton. After three years of administrative processes, the municipality of Batignolles-Monceau was born with a population of about 4,000 (the next census will register 6,286 inhabitants in 1831).[20]

In the following decades, the first factories began to appear in the area, giving new impetus to the population growth.

In the year the new town hall was built, 1847, its population had increased almost sixfold to 25,000.[21] This development of the Batignolles is closely linked to the railway development of France and Paris. In fact, the first Parisian line, the Paris-Saint-Germain-en-Laye, passed through the commune, dividing it in two, and its station, France's first, the Gare Saint-Lazare, was barely a kilometre from Batignolles. To meet the needs of this line, the first Parisian railway depot, the *Dépôts des Batignolles*, had meanwhile been established in the municipality. As we shall see

[20] Cassini, EHESS (2002).
[21] Babize (1930), p. 56.

later, this had brought engineers and specialists,an important influx of human capital, to settle in the area.

In the meantime, despite the various industries that were beginning to set up, especially in the north-eastern portion of the commune, the image of the Batignolles area was still deeply associated with the holiday resort and upper-middle class society that had recently taken up residence there in the area around Monceau. [22]

From 1854, local stations began to be set up along two new lines, which proceeded in opposite directions and with, at least initially, opposite purposes. These two lines were, in chronological order, the *Ceinture de Paris* and the *Ligne d'Auteuil*

The first of the two was a project that had been under discussion for several years, and was the brainchild of an office manager at the Seine prefecture, Jean Christophe Armand Husson, who proposed a circular line in 1836.[23]

After much wrangling over how this line should be developed, the first work began in 1852. After some preliminary agreements between the various parties, a first, temporary section was opened between *Pont du Nord* and Batignolles station. The following year, the definitive section was opened, and the line was gradually lengthened until it reached Bercy. This line was built by cutting costs wherever possible, which led to a slow activation of the second track and the frequent presence of level crossings.[24]

Initially, the traffic on this line, despite the content of agreements between the state and railway companies indicating otherwise, was almost exclusively freight. In fact, it served to connect the various head stations of the companies that were part of it. With much less frequency, it also ran some special transport for military personnel, special trains for emigrants or in exceptional cases for the emperor himself who passed through the belt on his way to the castle of Saint-Cloud.[25]

In the opposite direction and with opposite services was the *Ligne d'Auteuil*, connecting Paris (and Batignolles) to the wealthy town of Auteuil. Already in its decree of recognition as a public utility it was implied that it was a direct extension of the Ceinture that was being built

[22] Charle (2021), p. 160.
[23] Carrière (2017), p. 16.
[24] Carrière (2017), p. 18.
[25] *Le Constitutionnel*, vol.42, n.230 (August 18, 1857), p.1.

in the opposite direction.[26] Nevertheless, its management and construction methods were very different. In fact, it was built for passenger traffic only, a more than formal purpose, as several works were needed to open it to the movement of goods when it was connected to the rest of the Ceinture in 1866.[27] Its own infrastructure was done at much greater expense, building along its route massive infrastructural works such as tunnels and trenches to avoid level crossings. Another special feature of the line, compared to the other line, was its single management by the Compagnie de l'Ouest.

While these massive construction sites and the associated new infrastructure were being built, the municipality witnessed a veritable population explosion. So much so that the population of Batignolles-Monceaux in 1860, the year after the municipality was dissolved and annexed to the metropolis, it reached 75,228, this following a pattern of continuous increase. The closer census statistics indicates 44,094 inhabitants in 1856, nearly 80% more than the 28,760 inhabitants of 1851.[28]

Regarding this process of integration in the case of Batignolles, it is interesting to note that it occurred with less difficulty than elsewhere, despite the loss of a discrete portion of the commune, the one on the other side of the Thiers enclosure, ceded in this territorial modification to Clichy. Exceptionally, for example, the commune of Batignolles-Monceaux when called upon to express its opinion, along with the other communes involved in the law of 16 June 1859, unlike the others declared itself in favour of integration into Paris.

In this regard, I find the image used by the Chiarivari in 1860 to represent the annexation of the communes of the *proche banlieue* to Paris explanatory (image 1). In this image, one finds the personifications of the four communes annexed entirely to the city, represented as children, with Paris at the centre taking care of them. It is interesting to note that in the representation, analysed by Montel, the personification of the Batignolles, although still represented as a child and therefore in a state of minority in relation to Paris, compared to the other three child-communes: Bercy, Belleville and La Villette, has a composure that they do not have. She is in fact a well-dressed and composed little girl, even

[26] Menant (2017), p. 18.
[27] Carrière (2017), pp. 43-44.
[28] Bazibe (1930), p. 90.

equipped with a bag, a representation that distinguishes her from the other working-class centres and brings her closer to Paris-mother.[29]

Figure 1: Charles Vernier, ***« La bonne ville de Paris et ses nouveaux enfants »***, Le Charivari, actualités, 31 janvier 1860, p. 143. C.f.r. Nathalie Montel.

Taking up the English model he observed during his exile in the United Kingdom, the president of the republic and later emperor Louis Napoleon was a promoter of social constructions, his first work, without much success, was the *Cité Napoleon* of 1852, located in Rue Rochechouart. [30]

He re-proposed constructions dedicated to workers in the following decade but on a smaller scale. In Batignolles in particular, Napoleon III had a building constructed in 1856-57 with 311 dwellings.[31]

[29] Montel (2012), p. 108.
[30] Carbonnier, ESH (2008), pp. 30-32.
[31] Benevolo (2008), pp. 165-166.

The internal division in Batignolles-Monceaux first and then in the 17th arrondissement was strengthened after the annexation to Paris and, as in other cases, a strong east-west duality was created where there is a wealthy and upper-class Monceau and Ternes area on one side opposed, separated by the railway line and the large locomotive depot, by an eastern part, Batignolles and the Epinettes. These neighbourhoods were not yet a purely popular area, as the Villette might have been, but decidedly more mixed. Here one finds very heterogeneous housing patterns.[32]

[32] Charle (2021), p. 572-575.

2. THE FACTORIES AND THEIR ACTIVITY IN THEIR ENVIRONMENT

This second part of the contribution intends to observe the direct and indirect interactions between the two companies and their surroundings. Trying, where possible, to highlight recurring phenomena or whether there is a consistent attitude on the part of the factory management towards its environment. To do this in both cases, it will be necessary to start from the first half of the 19th century, where both companies have their roots.

In the Parisian case, corporate continuity is evident, since the founder of the previous company, Ernest Goüin, coincides with the founder of the *Societé de Construction des Batignolles* and after him the company will be led by his son Jules first and his grandson Gaston later. Not to mention that the main change the society underwent was simply the form of the company, which went from being a limited partnership to a joint stock company.

In the Milanese case, on the other hand, as seven company names followed one another over a period of forty years, the matter is far less obvious. This research merely takes up the position expressed by Licini in her research on this period. She argues that there is a *fil rouge* linking the different mechanical manufacturing companies that succeeded one another, beyond the building in which they were based. There was, for example, a nucleus of investors who accompanied the company during these years, the Lagorios and the Mylus, exponents of the *Veille Banque*.[33] Together with these, the personnel of the building also maintained its continuity, although considering its important numerical variations. When the company changed, the personnel of the previous company, often precious thanks to its know-how, was normally hired.

2. 1. The rapidly expanding Breda

Due to the gaps in the industrial documentation for the period between 1846 and 1883, it will be more difficult to analyse the changes to the building and the surrounding area in this period. However, this does not mean that this research is unarmed; maps of the period can be a useful tool for reconstructing the changes to the area and marking them out chronologically.

[33] Licini (1997), pp. 99-101

The first stages of those changes can be already seen in the firsts two maps (Figures 2 and 3) which show an increase in building density between 1865 and 1878, still the area is not yet packed with buildings.

Making a comparison with the following map, from 1883, one element that immediately jumps to the eye when comparing the map is the change to the road infrastructure (Figure 4). Regarding this event in particular, several documents from the municipal administration assist following this development. This shows how the part of the road where the building was located was opened by the municipality in 1877 following the free cession of the necessary land by the owners on both sides, at the time, only Bamat e C. (the company present at the Elvetica in the period 1877 - 1879) and Filippo Pennati, the owner of the nearby *Giardino d'Italia* hotel and one of the wealthy landowners with large plots of land in the former *Corpi Santi*. The only condition attached to the cession was continuous road maintenance and the inclusion of the new blocks of flats in the *Elenco delle strade comunali* when needed.[34] Although the 1878 document is dated as after the land cession it can be seen that there was still no prosecution to Via Bordoni, probably it was not yet constructed.

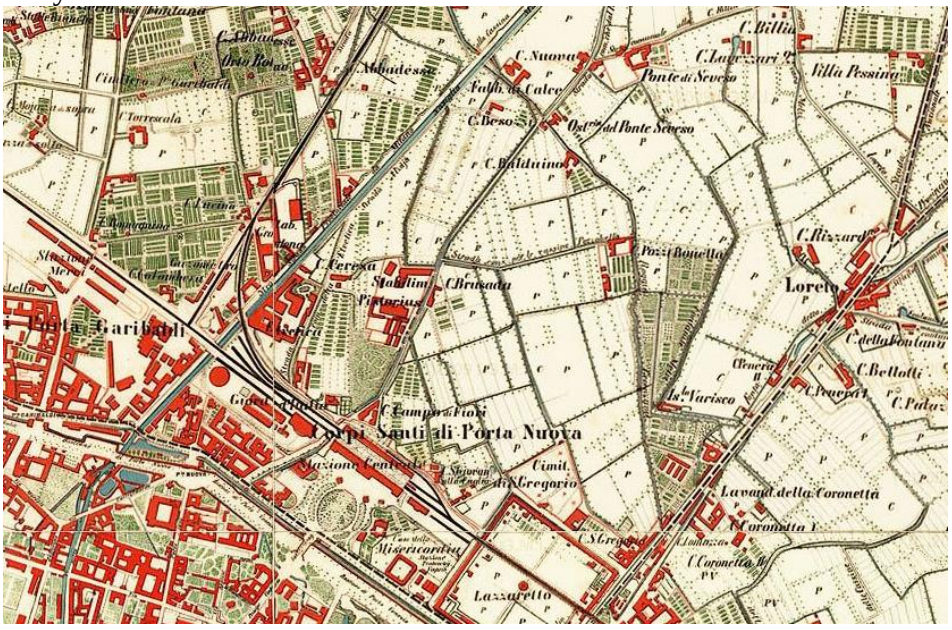

Figure 2: ***Milano, 1878: dettaglio Elvetica.*** Collezione Giorgio Stagni - www.stagniweb.it

[34] Biblioteca Trivulziana e archivio civico storico (Milano) Fondo Strade, C. 50, 1v.

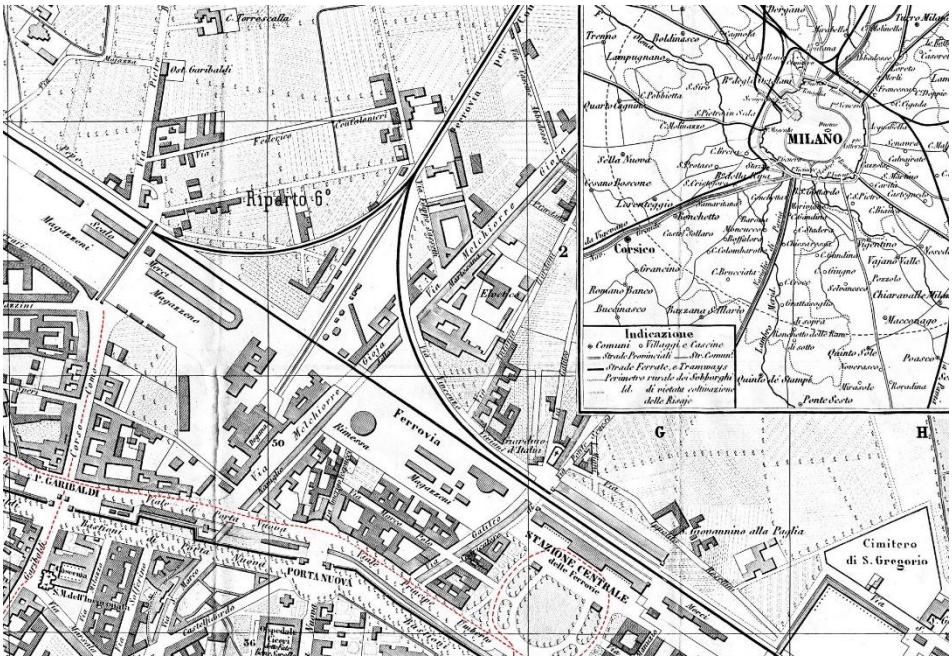

Figure 3: ***Milano, 1883: detail Elvetica***. Collezione Giorgio Stagni - www.stagniweb.it

Another evident change between the first two maps is the structure of the Elvetica factory. At the moment we do not have detailed description of the early plant, but Licini (1997) citing Colombo presents how it was one of the major industrial plants in Italy at the Exposition of Florence in 1861[35]. The main change is the increased density inside the Elvetica plant, we can highlight many new and bigger buildings, such as all the new structures bordering Via Bordoni. For a later period we have a detailed description of the state of the factory in 1883. This description, present in *Milano Tecnica*, a publication edited by the *Collegio degli Architetti ed Ingegneri* in 1885 is also accompanied by a plan. It gives us a very positive picture of the company, which was still among the first in Italy in the field of railway construction.[36]

[35] Licini (1997), p.85.
[36] Borghi, Guzzi, Ponzio (1885), p. 433

Figure 4: ***Milano, 1894: detail Elvetica****.* Collezione Giorgio Stagni - www.stagniweb.it

Taking these two descriptions and integrating them with the detailed maps of Milan and its new neighbourhoods of the time, one can see how the area rapidly accelerated its urbanisation process between 1878 and 1883. In just five years, one can observe how the buildings in the southern part of Via Bordoni increased significantly and how the road network intensified at the same time.

As already briefly described, an industrial area was developing in the Porta Nuova suburb and two new factories were founded, Grondona and Pirelli. The first specialised in the manufacture of railway carriages and wagons and saw a fluctuating growth until it was absorbed by the competing company *Miani e Silvestri* in 1890.[37] The second was a plastics manufacturer. Pirelli's growth was surprisingly rapid, at its foundation in 1871 it employed only 20 workers and within twenty years it had created a *piccola città industriale* employing 1350 workers.[38]

Within these changes came the Società Ernesto Breda e C., founded in 1886 by taking over Cerimedo's 35,670 m2 plant, which was then in crisis due to the economic downturn that led to a drop in orders and prompted the company to reduce its workforce to just 400 workers. His investors included the historic Mylus and Lagorio, the Società Costruzioni Venete, a company chaired by Ernesto's cousin, Senator

[37] Della Peruta (1986) p. 82.
[38] Della Peruta (1986), p. 70.

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Vincenzo Stefano Breda, and engineer Cerimedo, the manager of the previous company.[39]

Following this chronological sequence in the period between 1883 and 1895 (Figures 4, 5) we can again observe important differences; if the overall area remained unchanged, it is possible to observe how, passing from Cerimedo e C. to Breda e C., a new, profound, reorganisation of space took place. These changes can be readily seen comparing the 1883 plant with the one present in the cadastral documentation of 1889.[40]

Right from the start, Breda began an extensive project to reorganise the plant, taking up the lessons learned in America from the engineer Breda.[41] It can be seen how in the changes made to the plant the open spaces were progressively reduced, with the creation of offices (1888) and roofs (1887). [42]

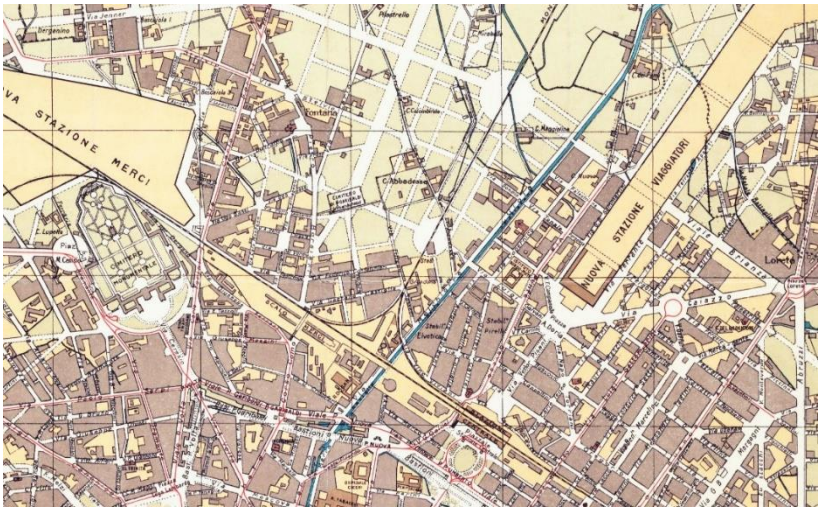

Figure 5: ***Milano, 1910: detail Elvetica****.* Collezione Giorgio Stagni - www.stagniweb.it

We have no record of all the changes in the documents, but we do see a useful collection of documents from 1891 that shows us, in a series of plans compiled two years earlier, all the changes made by the new company to the building it obtained in 1886, and they are a truly

[39] *L'Italia finanziaria*, vol. 4, n. 1049 (December 2, 1886), p.2.
[40] Borghi, Guzzi, Ponzio (1885), pp. 456-457
[41] Lungonelli (1986), pp. 57-58.
[42] Biblioteca Trivulziana e archivio civico storico (Milano) Fondo Strade, Registro catastale B, pp. 96-97.

impressive number. Amongst these, several demolitions can be seen, including that of the roofing to the railway sidings. The construction of several new buildings, which became increasingly dense on the company's land. Finally, also the raising of new floors in existing buildings. Associated with this series of plans is a recapitulation of previous requests, accompanied by a prior request for a general amnesty in the event of bureaucratic errors.

The development of this factory was not linear but proceeds alternating between rapid growth and standstills. In fact, in the early nineties we see a pause in the changes, which can be reconstructed through the description of the plant given to us by Ernesto Breda in 1895 produced in correspondence with the company's participation in the *Concorso a premi al merito industriali del 4 agosto 1895*.[43] From this moment on, growth, and interaction with the area, intensified strongly. During the three years following the memorial we see the creation of new premises for use as warehouses (1897), two new buildings for use as offices and workshops. A small one annexed to the previous one and the second one more imposing and three storeys high (1898). Finally, the following year a room for laboratory use was remodelled (1899).

By this time, the land occupied by the building was becoming increasingly tight for the company. In fact, we can see how within a few years the company purchased three new parcels of land on the west side of Via Bordoni, completing the transfer on 20 April 1899[44]. This was done in order to create one larger plant, closing off part of the street to unite the two portions of land. Towards the end of 1899, the company then proposed to the municipality the purchase of 1450 square metres of road, the section between Via Adda and Via Cardano, in correspondence with the part of Via Bordoni in which it owned both sides. It will bear all the necessary costs, reimbursing the municipality for the expense and any subsequent litigation.

This request is initially well accepted by the council, which takes the matter forward. Once the proposal was presented to the public, the inhabitants of the street rose up to prevent this expansion, citing various reasons from legal ones to complaints about the amount of dust and noise a larger factory would produce. From this documentation, we also see

[43] Istituto per la storia dell'età contemporanea (Milano), Fondo Breda, SERIE S.I.E.B., FO 6, Fasc. 13, 1v.

[44] Biblioteca Trivulziana e archivio civico storico (Milano) Fondo Strade, C. 50, 2v.

how the amount of land owners along both sides of via Bordoni increased significantly. In fact, we see 14 different names in the 1899 list of owners, including three members of the Pennati family, heirs of Filippo, and Ernesto Breda, while only twenty years before they were only two.[45] The interesting fact is that here, too, the city government kept in line with Breda and Mayor Mussi personally spoke in favour of this change to the road system, citing his report:

> Non l'interesse di una società privata, ma bensì più alte ragioni reclamano l'attuazione del progetto; quali il decoro della industria cittadina e il conseguente benessere della classe operaia. […]
> se un pronostico è lecito, e s'impone, questo dovrebbe farsi nel senso di ritenere come lo sviluppo di una forte industria e di un grande stabilimento possa anzi riuscire di non poco vantaggio ai proprietari dei fabbricati che gli sono più vicini; così direttamente, per maggiore richiesta di affitti, come indirettamente per l'incremento che una aumentata colonia operaia ne verrà agli esercizi vicini.[46]

It therefore refutes all the complaints the city hall has received from the inhabitants. Despite the mayor's support, however, the proposal had to go through the city council, which will meet in an extraordinary session on 13 July 1901 precisely to discuss about Breda's request. On this issue, several municipal councillors criticised the proposal, mainly Vigoni and Siebanech. Arguing that by doing so, the municipality would be failing in its duties towards the public for the benefit of private interests. Finding itself divided on the subject, it rejected completely the request and forced the society to look elsewhere for places to expand.[47]
This was not the first time Breda was in conflict with others, in 1891 there was a huge strike, due to a series of redundancies, which started at the Breda and spread to neighbouring factories. Over the course of this event, Ernesto Breda refused to cooperate with the strikers on several occasions. At the same time, as many other industrials he also didn't collaborate with the public authority, who called for meetings between the parts in order to reach a compromise. The strike ended only after 18 days having lost his impetus.[48]

[45] Biblioteca Trivulziana e archivio civico storico (Milano), Fondo Strade, C.50, 4v.
[46] Biblioteca Trivulziana e archivio civico storico (Milano) Fondo Strade, C 50, 12v.
[47] Biblioteca Trivulziana e archivio civico storico (Milano) Fondo Strade, C 50, 12v.
[48] Azzarelli (2016), p. 432.

Always in 1900-1901 Breda also collaborated with Pirelli in financing the creation of a railway subway in Via Galilei.[49] Allowing a direct crossing of the railway line from the Central Station, it would be built within a few years and would bring with it a new tramway line which, leaving the old customs circle, began to touch the new neighbourhoods, passing a short distance from Elvetica along Via Ponte Seveso, the street built by tombing the Seveso canal, one of the many waterways that flowed in Milan, part of a massive reorganisation of Milan's waterways that was underway in those years to meet new industrial and private needs.[50]

In any case, the changes of those years do not concern only the volume of business or the geography of the territory. In fact, while it undertook these practices, the Breda company had changed its statute from being a limited partnership to a joint stock company, founding on 1st January 1900 the *Società Italiana Ernesto Breda per costruzioni mecchaniche*.

Remaining to be resolved was the problem of new premises, the company would first look in the immediate neighbourhood and then turn a few kilometres away, to Sesto San Giovanni, where it will purchase large plots of land, creating a veritable pole of attraction of Milanese industrialisation with a workforce of around 3000.[51] This construction was part of a wider project to create an industrial to the north of Milan. To this end Breda himself was part of the *Società Anonima Quartiere Industriale Nord Milano*. It is worth to notice that among its founders we can also trace Giovan Battista Pirelli and the *Banca Commerciale*, there is a new collaboration with Piralli in the change of urban spaces.[52]

However, the society did not abandon the original site. We can follow its continuous flux of investments in Via Bordoni, which continued to expand by building new warehouses (1908) and garages (1911) on the various plots.[53] The main construction on site of this period, however, was in 1912, where we can see a new major building in the factory, a single large five-bay room for use as a workshop.

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[49] Biblioteca Trivulziana e archivio civico storico (Milano) Fondo Strade, C 51, P.G. 27203.

[50] Serneri (2005), pp.148-150.

[51] Della Peruta (1987), p. 79.

[52] Petrillo (1986), p.142.

[53] Biblioteca Trivulziana e archivio civico storico (Milano) Fondo Strade, Registro catastale B, p. 97.

The number of workers employed at Breda was extremely variable and followed the intensity of the orders received by the company, which created, outside the core of specialised technicians, a condition of continuous precariousness for the more general workers.[54]

With the war years, Breda reduced the pace of new construction, at least internally in Milan. But after the First World War it would resume local investment again, creating an office on the west side of Via Bordoni in 1918 and a refectory for its employees in 1927.[55]

2. 2. The Société de construction constructing its enviroment

The founder of SCB was Ernest Goüin (1815-1885), heir to a dynasty of bankers from Touraine.[56] He crowned his technical training at the Paris Polytechnic with several experiences in England to study locomotive manufacture, particularly in Manchester. Before founding his own company, he worked as an agent for the *Compagnie du chemin de fer de Paris à Orleans*, supervising the production of their locomotives in the United Kingdom, then for the *Compagnie du chemin de fer de Paris à Saint-Germain*.[57] He worked for the period 1839-1845 precisely in Batignolles.

Here he founded his company, buying a 13,676 square metre plot of land and building a plant on it equipped with forges, boilers, assembly plants, warehouses, offices and even a house[58]. Thus the *Société Ernest Goüin et Cie* was born on 18 February 1846, a limited partnership (*société en accomandite sample*), among the general partners we see several of the most important members of finance of the time. Rothschilde, Talabot, Delesser, Fould and Hottinguer.[59]

In its early years, it received very large orders, produced high-end locomotives very quickly. This, along with the continuity of orders brought job security to the company and with it large investments that

[54] Della Peruta (1986), p. 136.
[55] Biblioteca Trivulziana e archivio civico storico (Milano) Fondo Strade, Registro catastale, B, P.97.
[56] Lemoine, Plont (2014), pp.26-27.
[57] Park-Barjot (2005), p.63
[58] Park-Barjot (2005), p.85
[59] Burnel (1995), p.38.

enlarged it; in just 10 years its number of employees at the Avenue de Clichy plant rose from around 150 to 1000 in 1856.[60] This rapid growth led to a very strong demand for housing; indeed, as early as the following year, the *Cité des Fleurs* was born, founded in 1847 by Jean-Edmé Lhenry and Adolphe Bacqueville de La Vasserie. A collection of houses and cottages with gardens set along a street interrupted by small circular squares, a true micro-community. Located a short distance from the Goüin workshops, its creation is directly linked to the company's presence; in fact, many Goüin workers and engineers lived here.[61]

Later, with the great decline in domestic demand for locomotives, the company was able to reorient itself towards new productions such as iron bridges. One of its first experiments in this field was the construction of the nearby *Pont d'Asnières*, a colossal work for the time. Built between 1852 and 1853, it was 160 metres long.[62]. In connection with this event, which actively changed the context in which it was located, it is interesting to note that the company activated its first, temporary, railway connection, which allowed it to bring construction materials to the site more easily. To do this, it turned directly to the Ministry of Public Works.[63]

This junction was made permanent the following year, in conjunction with the opening of the Ceinture, thus becoming part of its network. This was to be the first particular connection of the line, which thus included the Goüin plant in its network. Again, the request was not from the *Syndicat de Ceinture* (the society managing the railway belt in construction around Paris) but it was Ernest Goüin who, again involving the Minister of Public Works, obtained this infrastructure, also setting a precedent for future industrial plants that would agree to an annual fee to be paid to the *Syndicat* to be connected to its network [64]. The Syndicat's report to its shareholders indicates how they received several applications for connection and, for the time being, concluded a positive agreement with Goüin's 'important établissement de construction'.[65] Over the following decades, the factory was progressively expanded, reaching an area of approximately 24,000 square metres, occupying the entire block

[60] Park-Barjot (2005), p.99; S.C.B. (1852), p.29.
[61] Troilleux (1995), p. 43.
[62] Park-Barjot (2005), p.102.
[63] Archives Nationales du Monde du travail (Roubaix), 75 AQ 106, 2v.
[64] Carrière (2017), pp.20-21.
[65] Archives de Paris, 15 Eb 12 – 1, 1v.

bounded by: *Avenue de Clichy*, *rue Boulay*, *rue de la Jonquiere* and *Passage Dhier* (now rue *Emile Level*)[66]

The Goüin et Cie company first, and the Société de Construction des Batignolles when it became a joint-stock company in 1870, did not develop their urban facilities in a similar way to those of Breda, but interacted in a different way with their surroundings.

Ernest together with his wife Anne-Mathilde Rodrigues-Henriques, daughter of a prominent Bordeaux banking family, were very close to the Sansimonian movement and its ideas of paternalistic assistance.[67] This led them to be extremely active in social dress. They used their capital to build several charitable institutions, such as a girls' school and an orphanage in Batignolles.[68] Those activities, along with some practices of industral welfares, led to the creation of an effective bond between the workers of Batingolles and their company. On this subject it is interesting to note that the factory was never the subject of strikes.[69]

Ernest, on his death, left in the hands of his son a very different company from the one he had founded in 1846, the Societé de construction de Batignolles was by then a major multi-sector joint-stock company with several subsidiaries and actively engaged in the construction of infrastructure in various parts of the world. Jules Goüin, an engineer from the *Corps des ponts et chaussées*, had been in the management of the company for several years by this time and therefore had a fairly rapid transition. These international activities were reinforced by Jules in the course of his leadership but without neglecting the neighbourhood and the factory; using the words used by the company to describe it:

> Il est ingénieur de Travaux Publics beaucoup plus que constructeur de machines. Certes, il maintiendra à l'atelier de l'avenue de Clichy sa réputation, certes, il en améliorera l'équipement, en accroitra la production et l'appellera à des fabrications nouvelles, mais il gardera toujours au fond de lui-même la passion d'ouvrir de grands chantiers dans des pays nouveaux, même les plus lointains.[70]

[66] Brunel (1995), p. 84.
[67] Lemoine, Plont (2014), pp.55-57.
[68] Brunel (1995), p. 78.
[69] Brunel (1995), p. 76.
[70] Société de construction des Batignolles (1952), p. 57.

Despite this international trend, it soon had to face some local problems related to the original *Avenue de Clichy* plant. In 1888, in connection with changes to the route of the Petite Ceinture requested by the Parisian administration from the *Syndicat*, namely the abolition of the numerous level crossings in the 17th and 18th arrondissements. This event caused friction between the two companies. The railway company gave the *Syndicat* only two weeks' notice of the closure of its junction for 10 to 12 months, and then added the cost of some reinforcement work needed to remove the level crossing further along. This led to a rather tense exchange of letters, also because several deliveries of material were already planned for the weeks following the supposed closure of the junction.[71]

After a few days a compromise was reached: S.C.B. would pay a forfeit of nearly the 30% of what was estimated, and closure would be postponed to 25 March. This was a cost for the company because it had to adapt to transporting its goods via wagons from the nearest station. The works were protracted, and the opening delayed 6 more months. This fact led the S.C.B to refuse to pay. At the same time the *Syndicat de Ceinture*, refused to reopen the junction until it received the forfait. The situation was only resolved after the S.C.B. relented.[72]

Jules Goüin's management, like his father's, was very closely linked to the neighbourhood: he built social housing for factory workers in Batignolles in 1893, in Clichy in 1903[73] and again in the 17th arrondissement, more precisely in Rue Pouchet where in 1907, based on a design by the architect Cintrat with whom he collaborated on several other occasions, he had a large workers' housing unit built at 75 Rue Pouchet.[74] Also in Clichy, where many of the company's workers now lived, he collaborated with the *Société Philanthropique*, a philanthropic society active since the late 18th century, and founded a hospital that still bears his family name today. Its construction lasted from 1893 to 1897, and the deed of donation includes conditions of priority access for the workers of Batignolles.[75]

[71] Archives Nationales du Monde du travail (Roubaix), 75 AQ 106, 4v.
[72] Archives Nationales du Monde du travail (Roubaix), 75 AQ 106, 4v.
[73] Brunel (1995), p.82-83.
[74] Maillard (2006), pp. 2-3.
[75] Trouche (1997), p. 30-32.

During the First World War, a new locomotive production plant was created in Nantes, where, years earlier, the Goüin company had unsuccessfully set up a shipbuilding branch. This new branch was created in cooperation with the *Compagnie des forges de Châtillon-Commentry*. In order to relocate and expand locomotive production, leaving war production to the Paris plant.

After the war, under the management of Gaston Goüin, the plant resumed railway production and was upgraded again, seeking to restore its dynamism. So much so that the construction of the company's 2,000th locomotive was celebrated here.[76]

His premature death in 1926 brought these plans to an end after the death of the new director, his brother Edouard, just a year later.
In 1927, management therefore passed to people outside the Goüin family for the first time.

After Gaston Goüin's death, interest in this venue waned significantly, and investments to modernise the facility proved insufficient, leading to the company's decision to decommission the facility, which was carried out progressively Clichy Closure between 1926 and 1928.[77] At this point the facility consisted of the 24,000 m^2 complex, complemented by another parcel of approximately 1335 m^2 on the other side of *rue de la Jonquiere*, here were the warehouses and a canteen for the workers[78]. His other properties in the neighbourhood consisted of his social housing, a total of four other parcels with an area of 5114 m^2, located along *rue Berzélius* and *rue Pouchet*. When the plant was closed, the main plot was sold to the city of Paris for 15 million francs, where a park was to be built.[79] The others were sold to the *Office public des Habitations à bon marché de la ville de Paris* for 70 francs per square metre. The last active element of the factory, the Goüin junction, was finally decommissioned in 1930 as recorded in the *Syndicat de Ceinture* documentation.[80]

[76] Brunel (1995), p.83
[77] Brunel (1995), p. 86.
[78] Brunel (1995), p. 87.
[79] Babize (1930), p. 146.
[80] Archives Nationales du Monde du travail (Roubaix), 75 AQ 106, 7v.

CONCLUSIONS

The research is still ongoing, and the results may change in the course of subsequent investigations. At the same time, several sources, although already identified, have not yet been analysed. In spite of this, it is still possible to state that some different mechanics in the relationship between the environment and the railway construction company can be observed at the moment.

The breda is more confrontational towards its neighbourhood, as evidenced by the suppression of strikes and the not always relaxed relationship with the inhabitants of the neighbourhood. This can be observed in the case of the strike of 1891 and the complaints from its neighbourhood. On the other hand, it can be observed how the SCB avoided conflicts, both with the workers and the locals. Indeed, we can see cooperation both in its social policies and in its interactions with communities such as the *Cité des Fleurs*.

Looking at how the two establishments evolve; we know that the results will be substantially different. Whereas in Paris, when the Batignolles plant became cramped in the early post-war period compared to the company's needs, and perhaps even more so to the interests of its management now outside the Goüin family, it was gradually closed. In this process the company relocated its main machinery and most of its employees to the new railway construction plant in Nantes, the *Compagnie Générale de construction de locomotives Batignolles-Châtillon*.

Its closure saw Batingolles and the company sever ties, its vast space being sold to the city of Paris, the many houses built to house its workers being sold to the Office public des *Habitations à bon marché de la ville de Paris* for 7 francs per square metre.

However, finding itself in an urban environment that was increasingly unsuitable for the factory's needs, Breda continued its search for new spaces a short distance from the original one, the company remained deeply rooted in the territory. And to the need for new facilities it first sought an answer "nelle immediate vicinanze di Milano"[81] and

[81] Istituto per la storia dell'età contemporanea (Milano), Fondo Breda, SERIE S.I.E.B., Reg.1/a, 6v.

then found an answer a little further on, in Sesto San Giovanni and Niguarda, within a radius of 6 kilometres from the via Bordoni factory, on these new lands it would later build workers' housing, such as that of *Villa Torretta*. This process of taking root did not stop with the end of the conflict, but rather expanded by creating new services such as its refectory in Milan.

A parallel that can be drawn at the moment is that once the initial space is exhausted, both societies will expand, in a now urban space, by parcels of land that will then be dedicated to the society's needs.

Another element that seems to emerge at the moment is the different relationship with the local administration, from the data studied now it seems that S.I.E.B. has an extremely direct relationship with the Milanese municipality, both in situations of conflict and cooperation. Indeed, we see it both involved in a denied request for road modification and active in spending on improving the local road network. Such as the railway subway in Via Galilei.

At the moment, similar elements have not emerged in the case of the S.C.B., the company has strong political power and uses it frequently. Indeed, appeals directly to the Ministry of Public Works are frequent. Appeals present themselves both during the administration of Ernest and Jules Goüin, the latter succeeding his father both as president of the S.C.B. and later also as regent of the Banque de France.

On the other hand, he did not hold positions in the administration that his father did; Ernest Goüin held numerous departmental and municipal offices during his career: he was a member of the *Conseil général de la Seine*, the *Conseil municipale de Paris* and previously also a municipal councillor of the municipality of Batignolles-Monceau (1855-1860).

It is therefore highly probable that a certain degree of direct collaboration between the local administration and the S.C.B. emerged in the course of further investigations, at least for the first generation of his leadership.

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