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Mémoire de Master

A methodology for the enhancement and reuse of company towns.  
The case of Hershey in Santa Cruz del Norte, Cuba

Une méthodologie pour la réutilisation et la valorisation des cités  
ouvrières. Le cas de Hershey, à Santa Cruz del Norte, Cuba

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*Ce mémoire ne comporte pas les corrections apportées par le jury*

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*To my mother and my father*

*À ma mère et à mon père*



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### **The Master Erasmus Mundus TPTI. Practical and theoretical training.**

This thesis is the final work of the Master Erasmus Mundus TPTI, The acronym stands for Techniques, Patrimoine et Territoire de l'Industrie. It is designed for students or professionals wishing to develop a comprehensive (methodological, theoretical and practical) approach to the investigation and enhancement of heritage. The program duration is two years, divided into four semesters in different universities.

The first semester was developed at the University Paris 1 Panthéon-Sorbonne (France), the master program begins with the introduction on history and anthropology of techniques, the process of patrimonialization, operative thought, technical systems, technology transfers, heritage and technical culture. This semester was very constructed for the realization of this work because it allowed to have a different approach on the processes of patrimonialization and enriched the personal research with this important dimension.

After the semester in Paris we moved to Italy and started the studies in the University of Padua. Here we acquired skills in industrial archeology and heritage, inventory, conservation, valorization, interpretation and management of industrial heritage and components related like archives, factories, social infrastructure, communication and know-how. This semester was the most productive according to the nature of the thesis. It contributed with the essential content of the research, although it included workshops and terrain visits. To different places of interest, including Crespi d'Adda and Schio, two company towns analyzed in this research.

The third semester was in the University of Evora (Portugal), there we were trained in the analysis of cultural landscapes, in terms of technical heritage, the musealization of tangible and intangible heritage and critical approach to the art-technical link. This semester contributed with the thesis by its deep content of landscape's analysis. The realization of papers relating the personal research with the topics of conferences was very useful. Also field activities, workshops, visits to museums, industrial places and sites

of cultural value was very feasible to understand the processes of management and conservation of these sites.

In the framework of the TPTI Master Degree Program, we spent a five weeks period of Specialty mobility or *Mobilité de spécialité* in the University of Prague. Such activity was intended to implement the research work to carry out for the final thesis. In this case it was very useful by visits to archives, industrial old buildings and museums. The access to local bibliography was also significant.

The thesis presented in this document corresponds to the personal project entitled “A methodology for the enhancement and reuse of company towns. The case of Hershey in Santa Cruz del Norte, Cuba”. Author’s interest in industrial heritage, its architectural and urban importance built up to the Industrial Heritage Research Group at the Architecture Department of the University of Havana in 2008. He has been assigned to perform a diagnosis of the implications of deactivation of industrial infrastructure, urbanism and landscape in 12 sugar settlements of Havana. Furthermore, in his architecture and urban planning degree at the University of Havana, he focused his thesis on the valorization of the Cultural Landscape of the Hershey Electric Railway.

Once in the TPTI Master program it was started to apply methodological acquired abilities for the developments of this research. It was very productive to adapt the study case to content of different course works during the program. This allowed the constant strengthen of the subject by professors’ opinions, bibliography and methodologies. Semesters in the University of Padua were very productive. Its academic content is more linked to the thesis topic and the workshops and terrain visits constituted examples to follow in the study case, allowing the creation of a strongest theoretical frame. During the Master it was possible to receive video conferences from diverse professionals belonging to the partner universities.

As part of the academic strategic of the master program TPTI students must collectively develop a project for the heritage of an object and / or a know-how in the historical-heritage field of production. Themes are imposed. They are chosen at the annual

debriefing workshop, so that students can mobilize the resources of the professional and scientific network in the three universities of curriculum mobility.

Our team was assigned the subject of the fish. After a previous investigation the team decided to select a specie of great significance for the three countries involved in the program. Cod was the selected fish. Taking into account the formation of the members of our team, we analyzed the cod from different perspectives. Fishing techniques, artistic representation, consumption, ports and patrimonialization. The second report presented in this document after the personal project belongs to the study of cod fishing technics.

This work focuses on the enhancement and reuse of company towns through the study of the Hershey Sugar Company Town in Santa Cruz del Norte, Cuba. The thesis responds to the current need to rescue and protect the abandoned and deteriorated heritage of the sugar industry in Cuba. After the economic restructuring of the sugar sector carried out in 2002, many sugar mills were abandoned or demolished and the cultural consequences were devastating. Each sugar mill is attached to a human settlement in a codependent and indissoluble unit. Following the abandonment and demolition of the sugar factories, the surrounding local population has faced the severe consequences of social, economic and urban dysfunctionality.

The productive, urban, and socio-economic configuration of these sugar settlements responds to archetypal models of company towns. In Cuba, this phenomenon is mainly linked to the American capital that invaded the country in the first half of the 20<sup>th</sup> century. In order to achieve a proposal that solves the problems of the Hershey Sugar Company Town, a research on the specific characteristics of such productive settlements was carried out. The study of three examples of Italian company towns allowed the identification of good practices for revalorization processes. The final result was the conception of a methodology for the possible enhancement and reuse of the Hershey Sugar Company Town.



Ce travail aborde la question de l'amélioration et de la réutilisation des cités ouvrières au travers du cas de la Cité Ouvrière Hershey à Santa Cruz del Norte, sur l'île de Cuba. Ce mémoire se préoccupe du besoin actuel de sauver et de protéger le patrimoine abandonné et détérioré de l'industrie du sucre à Cuba. Après une restructuration économique de l'industrie sucrière en 2002, de nombreux moulins à sucre ont été abandonnés ou démolis. Les conséquences culturelles ont été dévastatrices. À côté de chaque moulin à sucre se trouvait un établissement humain si dépendant du lieu de production qu'il en était devenu indissociable. Suite à l'abandon et à la démolition des usines de sucre, cette population locale a souffert des répercussions du dysfonctionnement social, économique et urbain.

La configuration productive, urbaine, économique et sociale de ces établissements industriels fait écho aux modèles des cités ouvrières. À Cuba, ce phénomène est principalement lié au capital américain qui a envahi le pays pendant la première moitié du XXème siècle. Afin d'apporter une solution aux problèmes présentés par le cas d'étude, une recherche a été réalisée sur les caractéristiques spécifiques de ce fonctionnement productif. L'étude de trois exemples de cités ouvrières italiennes a permis d'identifier les bonnes démarches à suivre lors des processus de requalification. Le résultat final se présente sous la forme d'une méthodologie pour améliorer et réutiliser la cité ouvrière Hershey.



## *Introduction*

### Issue and justification

Sugar production has been the support of Cuban economy for several centuries. It is precisely the *central*<sup>1</sup> that has represented its industrial development, even when it depended on the incredible operation of installations with almost hundred years of existence. The genesis of the central lies in the use of animal driven sugar mills as the only industrial element in rural areas. During centuries various forms of production were put into practice to obtain sugar and other derivatives. After the Haitian revolution, sugar production in Cuba began to have a considerably development, in 1792 there were 245 mills which had hundreds of slaves and production of 10,000 arrobas a year. By the year 1804 the mills increased to 350 with more than 300 slaves for an annual production of 50000 arrobas of sugar (Funes Monzote, 2005).

During the nineteenth century, the consolidation of this industry was achieved through the introduction of technological advances, such as the steam engine in 1819 and the construction in 1837 of the first Cuban railway (Charadán López, 1978, p. 32). Cuban sugar historians as Oscar Zanetti and Moreno Friginals stated that it was not the introduction of the steam machine to the sugar industry that gave impulse to this industry, but the introduction of the railway, introduced exclusively by need of sugar industry. The accelerated expansion of the industry all over the territory brought serious consequences to the landscape. Between 1815 and 1926 sugar production increased 120 times, the vegetal layer was reduced from 80% to 20% in this period. (Funes Monzote, 2005). Considering the previous we can establish the expansion of this industry also caused great modifications to the Cuban landscape.

With the constitution of the Republic in 1900 began a movement of creation of big factories. The First World War affected the global sugar production, countries like Cuba were favored. After 1914 foreign investors mainly from United States found the country as a potential destiny for investment. Older sugar mills paralyzed during the Cuban Independence War were modernized and new ones were constructed. The pattern of

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<sup>1</sup> *Central*: Sugar factory. In the Cuban case a central also include the housing areas for workers.

economic development was then traced by American interests. In 1958 Cuba was the first country in sugar cane exportation.

The appearance of the first mills as a productive complex created an entirely new impact on the landscape of Cuban savannas. It began to appear a gradual mechanization of a productive activity, wagons pulled by oxen, loaded of sugar cane and slaves working on the fields. The plantations and the typology of the constructions constituted in rural landscape real feudal lordships, built on the basis of slavery exploitation (Rodríguez, 2004).

Sugar production centers were always located in rural areas, where large areas of sugar cane were harvested. The need of a concentrated population for the continuous work in the factories and in plantations lead the administrative to consider and to incorporate workers' houses. At the beginning it was the simple guarantee of a temporary accommodation that with time it became a support for the stable permanence of families. Thus, human settlements were created in the factory environment, whose main existence reason was the link to industrial activity, where residential types were grouped according to social class, economic category and ethnic (Gutiérrez & Rodríguez, 2009, p. 22), as it happens in company towns around the world.

With the Cuban Revolution in 1959 all sugar enterprises were nationalized. In the 1970s, historical highest yields of sugar cane production were reached. During this period processes are initiated leading to the unification of agriculture with the sugar industry, arising agro-industrial complexes (CAI). Cuban political and economic factors of the 1990s due to the collapse of the communist field depressed significantly the entire productive system.

In 2002, the Ministry of Sugar launches a plan for the restructuring of the sugar industry in the country, known as Alvaro Reinoso Task. The plan searched to concentrate the productive effort in those plants that were really efficient and had the necessary raw material to guarantee the factory activity. To this end, it was decided that of a total of 155 plants in the country, 71 would produce sugar, 14 would make sugar and molasses destined to cattle food, while the remaining 70, would wait for better times or would be gradually deactivated. The weakest point in this restructuring was that no planning was

made to safeguard the industrial heritage, there was not register, catalogue neither redeveloping plan that considered this abandoned settlements and its industrial components and infrastructure during demolitions and deactivation processes.

This action has been devastating, industrial buildings have been demolished and productive infrastructure has been left to ruin or sold as scrap. The resulting socio-cultural impact and territorial dysfunction have been dramatic and portrayed in the future is the lack of iconic historical symbols of Cuba. It is believed that the solution adopted by the leaders was convenient but it was not considered their socio-cultural and economic implications. For this reason measures should be taken to reincorporate this sites to local and territorial dynamics through the reutilization of industrial heritage.

One of the sugar settlements that reunite various elements of industrial value is the Hershey Sugar Company Town. This is one of the most significant exponents of the development achieved in sugar production in Cuba. It was built in 1917 generating an enhancement in the economic and population's life of the territory of *Santa Cruz del Norte*, where it is located. The development strategy was marked by the construction of an electric railway to transport the sugar cane, its construction was completed in 1922. This railway also incorporated the passenger transfer service, from Havana Bay to Matanzas Bay.

The Hershey Sugar Mill did not escape the economic restructuring, and despite the great dismantling that has suffered since the productive activity stopped, the urban settlement retains its original urban structure, and the railway is still operative. But the abandonment process together with the dismantling of large part of the technical infrastructure of the sugar mill, which included the demolition of main productive buildings, don't allow the reuse of industrial structures in new economic objectives of productive nature.

In such circumstances, the urban settlement lost services that benefited the inhabitants and were managed by the industrial activity. The problems that had been presenting for several years, in terms of service infrastructure, lack of maintenance of buildings, green areas and the lack of public or social spaces, are increased. Nevertheless, the town retains its original urban and architectural characteristics which can be considered vanguard for its time. The former sugar mill constitute no longer the main source of employment for

the inhabitants, it has stopped producing more than a decade ago. Today the Hershey Sugar Mill is just part of the memory of the workers. The urban space with distinctive architectural and the remains of the productive infrastructure are a source of citizen pride and constitute a phenomenon worthy of enhancement.

Industrial values of the settlements invite us to take measures to solve the dysfunctionality and the population's needs, by promoting respect for their history and preservation of their identity. International industrial heritage organizations call on states and related organizations to develop campaigns to raise awareness among the public, authorities and institutions in the urgent need to save the industrial and technical heritage of the territories. Allowing to understand the economic and social development of countries, and Cuba should not ignore this issue.

The previously exposed happens in a moment where urbanism professionals of the country don't count with enough information about the management of industrial heritage and its potentialities in local redevelopment. Also the lack of entities dedicated to deal with the industrial heritage constitute a weakness at the time to interact with sectorial representations.

This work is motivated by the current dysfunctionality of Cuban sugar company towns. The economic situation caused by the embargo imposed by United States in addition to the rigidity of the Cuban government didn't allow the implementation of initiatives to redevelop the isolated industrial sites, there is not register of the values' system related to this settlements or studies that propose solutions and guidelines to reuse or reconvert this sites. However, today things are changing, international relationships are getting better and the government is more flexible. It is the time to begin thinking how to consider the potential of industrial heritage in local redevelopment. The Hershey Sugar Mill is a clear example of company town that shows singular characteristics that needs to be preserved and has potential for its reuse.

## **Aims**

A methodology for the enhancement and reuse of company towns is the aim of this work, being the study case The Hershey Sugar Company Town. Considering this as the main objective the following question is generated: What is required to enhance and reuse

company towns by the conservation and valorization of industrial heritage? The answer to this interrogation leads to a group of secondary or specific aims that are described below:

The first is to identify the particularities of a company town as industrial heritage sites, in order to understand the importance of this complexes during the processes of conservation and reconversion. The second specific aim is to identify the variables needed for the comparison and analysis of company towns. It is also important to analyze the experiences in the conservation and reconversion of company towns in order to identify good practices in the transmission and protection of industrial heritage. The fourth aim will be the recognition of sugar settlements in Cuba as company towns. The last specific aim will be the verification of the methodology by its application to the Hershey Sugar Company Town.

### **State of the art**

Two main thematic conform this work research's core: company towns and the sugar heritage in Cuba. Both of them count with precise and well founded literature for this work's realization. A part of the bibliography deals with the subject of Cuban sugar historiography, where prestigious works by recognized national historians have been selected. Cuban bibliography's main objective is to situate in time and space sugar industry, its genesis, importance, main characteristics and specially; what means sugar industrial heritage?

The main obstacle from the bibliographic point of view is the current situation in Cuban sugar industry and the reality of human settlements linked to sugar mills after the restructuration made by the sugar ministry. Nevertheless there are various articles published by academics and sugar sector specialist that talk about this thematic by analyzing random examples. The main consulted documental sources of Cuban literature are mentioned below:

*El Ingenio* by Manuel Moreno Fragnals, doctor in Social Sciences and Law, sub director of the National Library 1949-1950, history teacher in the University of Oriente 1950-1951. This work constitutes a classic of Cuban Historiography. Fragnals (1964) detailed Cuban sugar industry development just to 19<sup>th</sup> century, highlighting its technical



evolution, as much as socio-economic importance. Its participation in Cuban countryside transformation and in the process of construction of settlements and roads.

*Caminos para el azúcar* by the doctors in Historical Sciences Oscar Zanetti Lecuona and Alejandro García Alvares. It is a historical study guided by the history department of the University of Havana between 1974 and 1977. It clearly shows the importance and decisive participation of the railway in the sugar development of the country during the 19<sup>th</sup> century and the process of foundation of settlements and towns along its route.

*La Historia como condicionante del territorio, el caso de Cuba* is a work of Juan de Dios Fernández Figueroa. Lecturer at the Faculty of Architecture of Havana and specialist in regional planning and urban planning in the activity of physical planning. It is a book that shows an analysis of the whole country, population, economy, territorial distribution, concentrated population centers, technical infrastructure, land routes and docks and its development through the centuries.

*500 años de Arquitectura en Cuba* is a work published in 2001 by Juan de las Cuevas Toraya. Member of the Cuban Society of Science and Technology, the Academy of Sciences and the Cuban Architects and Engineer National Union. It offers a wide and detailed information on the constructions in Cuba. It is a work that can be classified as an encyclopedia. The author collects both architectural and engineering works, explains the sources that allowed them to be financed, and detailed the constructive details of the most relevant buildings.

To deal with the study case: Hershey Sugar Company Town. The following materials and sources has been mainly used:

In 2008 Amarilys Ribot Enriquez published, Hershey. She is researcher, Engineer in Chemical Processes, Assistant Professor of the Agricultural University of Havana. Ribot (2008) brings us the history of this settlement, its legends, traditions, intimate secrets and people. To achieve this, she addresses the research in three essential themes, the batey, the sugar mill and the railway.

There are also the result of the academic works of the Industrial Heritage Group of the ISPJAE Faculty of Architecture. This group led and coordinated by Dr. Architect Tania Gutiérrez and Architect Renán González worked since 2005 with student groups on different research projects on the sugar industrial heritage and the reality of the Cuban sugar settlements. The result of this work was reflected in several thesis and scientific publications.

The site web of Hershey community archives: On December 22, 1981 a group, composed of representatives from the Hershey entities, met to lay out a plan of action concerning the preservation and use of the various materials of Hershey's history. The mission of the archives is to preserve, organize, describe, make available and interpret documents which promote the study, vision and understanding of Milton S. Hershey. Over the years, the Archives has further developed its programs by increasing public research hours, conducting community outreach through public programs, exhibits, and articles in local publications and has acquired the records of community organizations and businesses.

The other part of the bibliography is composed of the international literature that analyzes the company towns, the industrial heritage and those works related to the examples to be studied in this work. The most important are the following:

*Company Towns in the World / Città e villaggi operai nel mondo*, edited by Giovanni Luigi Fontana in 2017. In this work an international tour of the company towns is made by the hand of different authors that show examples in different countries. In this book, company towns are approached from different angles like: the particularities of those inscribed in the Unesco World Heritage List, singular cases of workers' housing are studied, indispensable examples are mentioned, and international regulations applicable to the company towns are stated.

*The Company Town: Architecture and Society in the Early Industrial Age*. By John S. Garner. This is a very interesting collection of articles on "company towns" from an Oxford University Press publication. The various contributions, with the exception of Leland Roth, were the result of a session organized by Professor Garner on the subject at a meeting of the Society of Architectural Historians that took place in Boston in April 1990.

*Company Towns: Labor, Space, and Power Relations across Time and Continents.* This work edited by Marcelo J. Borges and Susana B. Torres shows a panoramic that shows historical and contemporary examples from Europe, the Americas, Africa, and Asia, this book explores company towns' global reach and adaptability to diverse geographical, political, and cultural contexts by the hand of other authors. In the theoretical part they encode company towns as sites of urban experimentation, paternalism, and welfare practices, and also as contested terrain of negotiations and confrontations between capital and labor.

*Les Villages Ouvrieres comme éléments du patrimoine de l'industrie.* This report written by Luis Bergeron and published on the UNESCO website is a reference when registering a site with specific characteristics in the World Heritage List. The author provides his definition of company town, in addition proposes criteria to consider when studying this type of settlements.

Other important literatures have been consulted to deal with the subject of the industrial heritage in the north of Italy, among them we can find: *Mercanti, Pionieri e Capitani d'Industria: Imprenditori e imprese nel Vicentino tra '700 e '900* by Giovanni Luigi Fontana. *Schio e Alessandro Rossi: Imprenditorialità, Política, Cultura e Paessaggi Social del Secondo Ottocento*, by Giovanni Luigi Fontana. *Archeología Industriale Nel Veneto*, by Franco Mancuso. Manuale per "Nuova Schio": Piano particolareggiato per la riqualificazione urbanistica ed ambientale del quartiere operaio "alessandro rossi"

### **Methodology and structure**

The methodological structure of this work began with the bibliographical review on the study of companies towns. Important works were consulted which are shown in the bibliographical list, in addition to other smaller articles that also support the realization of the investigation.

The research relies heavily on the criteria of several specialists through meetings and discussions which contributed to this work with their experience and guide and also acting as tutors and consultants. They are divided into Italian and Cuban professionals who have great experience in the topic of the company towns and in the conservation and protection of the industrial heritage.

The work methodology is also strengthened by participating in workshops and field visits to museums, industrial sites and various Italian towns including the examples to be analyzed. In Cuba visits were also made to study case site. The field works was always enriched by talks with the inhabitants, and people involved in the processes of protection and reuse of the sites.

Based on the established variables, an analytical procedure is designed and applied to three Italian company towns (*Nuova Schio, Crespi d'Adda and Torviscosa*), whose main objective is to identify the evolutionary process, strategies and plans adopted on the basis of conservation and the reuse of the industrial heritage that allowed its permanence in time. The implementation of this analytical procedure will make possible the identification of good practices for such cases.

Being the study case a former sugar mill and its Batey, it is essential the understanding and recognition of these productive sugar sites as company towns. It is also of great interest for this work to know the institutions and actions that rule the conservation of industrial heritage in Cuba.

The work is composed of four chapters, the first is dedicated to the company towns, and it discusses, their genesis, specific features, its evolution and also theoretical criteria derived from the bibliographic review where basic concepts are analyzed for a better understanding of what company towns means for industrial heritage, an important result will be the determination of variables to consider in the analysis of company towns.

In the second chapter an analytic procedure will be realized to three Italian company towns determining how they have been reinvented in order to survive, maintain and transmit the industrial culture. In this chapter is important also the study of guidelines that have been followed or methodologies that have been applied in these cases, and which principles have been considered. An important result of these chapter will be the identification of good practices in the reuse and conservation of company towns.

Chapter three deals with the issue of sugar in Cuba, its importance and contribution to Cuban culture, defining the sugar industrial heritage. In this same chapter the characteristics that define the sugar mill as company towns are mentioned. The study case

is presented and an overview of the actions for the reuse and conservation of industrial heritage in Cuba are studied.

Having the mastery and knowledge of the conservation of industrial heritage in Cuban context, the variables, the good practices established in the analytical procedure of the three examples and the actions in favor of the reuse and conservation of the company towns at international level; It is possible to arrive to a group of elements that allow to propose in the fourth chapter a methodology in favor of the reuse and the enhancement of company towns. It is applied to the study case, the Hershey Sugar Company Town. The correct application of this methodology starts after the analysis of the current situation of this settlement, to later outline the strategies to be followed and the plan of actions for the reuse and enhancement of this industrial settlement.

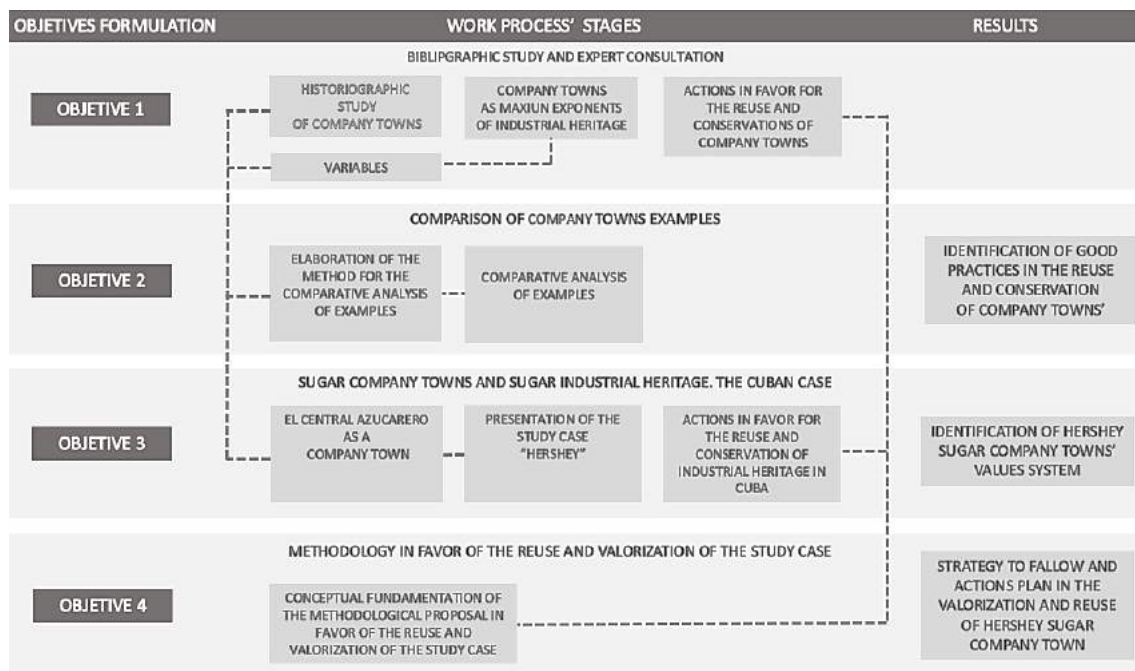


Figure 0.1 Framework for methodology

## ***Chapter 1***

### *Industrial heritage in company towns*

### Résumé

Pour traiter de l'amélioration et de la réutilisation des cités ouvrières, il est nécessaire de connaître les singularités de ce type d'établissement humain. Lorsqu'on est confronté au patrimoine industriel dans de tels complexes socio-productifs, il est indispensable de définir les caractéristiques particulières des cités ouvrières et de comprendre comment se manifestent les composantes du patrimoine industriel dans ce type d'établissement humain.

Après avoir clarifié ces deux éléments, il apparaît que la cité ouvrière d'Hershey est par sa valeur, un des exemples les plus significatifs et extraordinaire du patrimoine industriel. Ensuite, on procède à l'étude des actions et des outils utilisés pour protéger ce patrimoine exceptionnel.

Par la résonance des caractéristiques particulières du patrimoine industriel dans les cités ouvrières, ce chapitre a permis d'identifier un ensemble de variables uniques autour de ce type d'établissement industriel. Ces variables constituent la base d'une approche scientifique permettant d'analyser par la suite, les trois cités ouvrières italiennes et le cas d'étude.

## 1.1 Characteristics of company towns.

The debate on company towns has been addressed by various specialists. John S. Garner (1992, p. 3) depicts the idea that company towns are settlements characterized by industrial activity, which are constructed and operated by a single business enterprise, these type of settlements were generally directed by an unique owner and were constructed in short periods of time that required great investments of capital. Among the works carried out in these sites, we can find iron smelting, mining, lumber milling, the manufacture of textiles, foodstuffs and others kind of industrial activities. Most of the company towns appeared in capitalist countries of open market trading in the time lapse of 1830-1930.

Louis Bergeron (1995) in the article "*Les villages ouvriers comme éléments du patrimoine de l'industrie*" defined these sites as any set of housing created by the initiative of a patron in direct symbiosis with the work site. These settlements can be understood as a small group of quasi-rural houses that appear next to a large old-style forge, to a small villa that incorporates all the services presented in an urban project such as the case of *Carbonia* in *Sardinia* created during fascist Italy, on one of the last coal mines to be exploited in Europe. He emphasizes as a specific feature of these sites, the physical separation from neighbor communities because of the remoteness imposed by the dependence of an energy source or a deposit or by the deliberate will of isolation.

The subject to guarantee housing for workers goes far in History. Archeological excavations has revealed the existence of settlements with housing infrastructure linked to mines, quarries and activities related with mass production. Gracia Dorel-Ferre (2017, p. 16) characterized company towns as physiognomic and functional units characterized by its morphology, a housing group next to a factory and far from the urbanization, its population homogeneity and the diversity of services and equipment product of paternalistic initiatives, ruled by an unique patron.

These industrial settlements were developed in Europe and North America with the industrial revolution, as a means for the manufacture of industrial products or the extraction of raw materials. As investments in industry and capital expanded, company towns appeared in other regions such as Latin America, Africa and Asia. Marcelo J.



Borges and Susana B. Torres (2012, p. 1) affirm that the denomination of industrial sites with these characteristics were influenced by this worldwide expansion, adopting names like: single enterprise communities, mill towns, factory villages, and enclaves. They were also known as *colonias industriales* in Spain, *cités ouvrières* in France, *arbeitersiedlungen* in Germany and *villas obreras y ciudades empresa* in South America. In Italia they have been named as *villaggio operaio* and *città fabbrica*.

The decision to build a company town was directly influenced by accessibility to raw materials, energy sources, transportation, and labor availability. For example, textile mills in the early stages of mechanization were highly dependent on water in order to power all the machinery which was connected to a hydraulic wheel. Being so far from urban centers, access to labor was crucial, this need conditioned the success of a company town to depend on specialized labor as well as workers with no skills to perform less complex tasks.

Because of these isolation conditions, the owner had to provide housing and other services to attract and keep a big population that increased meanwhile the company developed itself and augmented its productive capacity. In company towns everything was associated to the enterprise, including houses, businesses, schools, even the chapel was subordinated to the company. According to local and national authorities these were autonomous, owners were responsible of the security and social harmony, everything that happened in the dynamics of the settlement was managed by the company (Borges & Torres, 2012, p. 2).

Company towns have taken place in different economic contexts, their genesis as we mentioned are closely linked to single entrepreneurs, but states have also participated in its development and administration. State-run company towns were established in both capitalist and socialist economies. Central planning and resource rationalization were some of the reasons that motivated governments to create or manage company towns, as was the case in China and the Soviet Union. Other factors have also motivated states like the development of new industrial activities or the protection and management of strategic resources. (Borges & Torres, 2012, p. 3) Another case that links states to the management of company towns happens as a result of interventionist nationalization policy processes where the governments expropriate the company towns of their owners or founders, as

has happened in Iran in the 50s, in Peru in the 60s, and in Cuba after the Cuban revolution in 1959.

After analyzing the historical context of company town, it has been possible to understand that this phenomena had taken place in different regions of the world, in different periods of time and under diverse socio-economic and political situations. Considering this we can establish that it can be considered as company town, those complexes composed of an industrial manufacturing component, of private or public nature, attached to a housing area in a codependent and indissoluble unit.

## **1.2 Company towns, maximum exponents of industrial heritage.**

Company towns are complex industrial sites, they have a large number of facilities and goods dedicated to different functions acting under the same industrial activity. These settlements possess typical components that make them sites of high cultural value. Therefore their heritage will have a vast network of elements of great cultural richness. To understand the importance this sites represent to our historical culture, it is necessary to recapitulate on industrial heritage particularities.

As established in Moscow 2003 in the National Assembly of the TICCIH (The Nizhny Tagil Charter for the Industrial Heritage, 2003)

Industrial heritage consists of the remains of industrial culture which are of historical, technological, social, architectural or scientific value. These remains consist of buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education (p.1).

For a better understanding of the scope of industrial Heritage Eusebi Casanelles (2007) Clasified and organized its components in 5 groups according to their function in industrial processes.

1. Productive places: Workshops, mills and factories, and production site of any kind of productive and transformative process.

2. Warehouses and stores: where raw materials and finished or semi-finished products are stored.
3. Services: places where energy is generated, transmitted and used, and places that supply and purify water.
4. Communications: means of transportation of people and goods and all its infrastructure, which are composed of water routes, ports, railway and stations, roads and airports.
5. Social places: where activities related to a specific industrial activity are developed, such as housing, religious cult or education.

This organization allows us to understand the physical dimension of industrial heritage, it corresponds to the technical infrastructure and can be observed in cities and country side in daily life. Buildings are the first elements to consider since they are visible and are landscape's milestones for people linked or not to the industrial activity, to these tangible components are added machinery, ducts, appliances linked to energy and spare parts. (Dambron, 2004, p. 56)

But industrial heritage is much more complex because in its lack of singularity, non-exclusivity and repetitiveness, also lies its cultural value. Industry changed completely the social consumption, it was an unprecedented social phenomenon based on production, distribution and consumption. It was a change in the lifestyle of societies.

For this reason industrial heritage can't be seen as an element constituted only by the components mentioned above, there is a segmentation in its essence that also includes: the type of energy used by the company and how it changed the way and production results, raw materials ruled the location of industry beside to the source of energy, labor and everything related to its organization and way of life, sources of capital, finished product and all that implies its design like prototypes, sketches, logos, commercial patents, etc. It is also important to consider the internal or external communication of the company that includes administrative documents, technological process, files and documents that organized and describe the work and production.

This complex heritage is also the result of men and women's work, engineers, technicians and workers each one specialist in a specific process. This no longer visible industrial

component carries the everyday life and the knowhow transmitted between generations. Their memories constitute anecdotes of tension, satisfaction, disappointment and intense moment of and industrial life (Dambron, pp. 57-58).

To support the complexity of what industrial heritage means Fontana (2013, p. 7) evokes the thought that industrial heritage is not only the physical components, but also consists of the intangible components of the industrialization process. The industry is a complex and extensive phenomenon, which during its development combines factors of physical and environmental, technical and economic, cultural and institutional character. The components of the industrial heritage are consequently multiple and of diverse nature, material and immaterial. These include paper documentation, company archives, models and productive technical knowledge. It is then a heterogeneous and extensive heritage, usually private and unprotected or subjected to less rigorous restrictions than those of the public heritage.

When analyzing the components of industrial heritage and company towns we can see that these industrial settlements have a big quantity of these components. But the particularities of these settlements as maximum exponents of industrial heritage lies not only in the presence of components that conform industrial heritage, but also in a serial of exclusive phenomena that took place only in this kind of industrial settlements. Company towns are analyzed below according to features like paternalism, planning and urbanism, architecture and landscape to describe how many particular situations took place in these isolated sites under the principle of industrial activity.

### **1.2.1 Paternalism**

From the 18th century, the new industrial architecture opened space for a phenomenon that conditioned a radical change in life and working context. It is a process that included fixed and stable wages for workers, hygiene and educational standards, which has as a background industrial activity through actual royal manufactory. It is a very complex phenomenon that is formed and transformed with the development of industrialization, constituting a privileged observatory for the understanding of the philosophy that shows the owner - labor relationship (Fontana G. L., 2003, p. 17).

Company towns constitute one of the most complete expressions of the impact practiced by industry on social organization on the life of men. It is not possible to speak of company towns without taking into account that many of these sites in addition to adjusting to the needs of location and facilitating access to resources and labor, some of them resulted from the vision of entrepreneurs who wanted to create orderly, harmonious workers' communities. Infused by the ideas of social order and paternalism that left a lasting cultural legacy.

In paternalistic cases the adoption by the owners extended beyond the architectural requirements of the industrial infrastructure. The owners' concern for the welfare of their workers was greater. This was an unusual interest on the part of the proprietors. This was reflected in good quality houses, schools, bookstores, and meeting halls, all well designed within an attractive urban setting. But this interest was not only reflected in construction scale, there were social programs for workers and their families. In other cases, paternalism pursued a dual purpose, such as maintaining or recruiting a greater labor, as well as profit of financial interests in investments, buildings and grounds.

The capitalist logic was always present in company towns, including those strongly marked by paternalism. This logic searched to create optimal conditions of production. But these owners' interest in creating harmonious communities also had social mechanisms that shaped the differences generated by the industrialization and was generally expressed in the quality of the houses and the community. Model cities presented by some owners and town planners searched to motivate bidirectional communication between workers and industrial activity, rather than conflicts, and labor-capital confrontation. (Borges & Torres, 2012, p. 3)

In this way the employer acted beyond the actions directly related to the industrial activity such as: hiring, firing and organizing the production staff, its figure was also in charge of controlling the allocation of housing, providing education, medical and health services, supply business, supervised leisure activities of workers and social life in the areas of his domain.

According to Louis Bergeron (1995) it should be highlighted those company towns that where the result of a formulated original social thought. Creators' utopian thoughts must

be considered, because utopia was the indispensable reservoir in which creators influenced generations until reality. Exceptional projects of company towns were the direct precedent of Garden Cities and New Towns.

To state that paternalism was deeper than its physical expression in housing and service buildings, and that utopian thinking is transmitted between generations, we can cite the example of New Lanark, founded in 1785 by David Dale. The construction of new houses allowed Dale to convince people of the region to work in their new cotton mills. The community had three types of buildings: industrial, housing and community. Tenement housing was constructed with three, four and five stories to achieve the quantity of rooms required to accommodate workers and their families. This type of housing was typical only of urban centers, in a rural landscape it was a whole new image. (Davidson, 2015, p. 126)

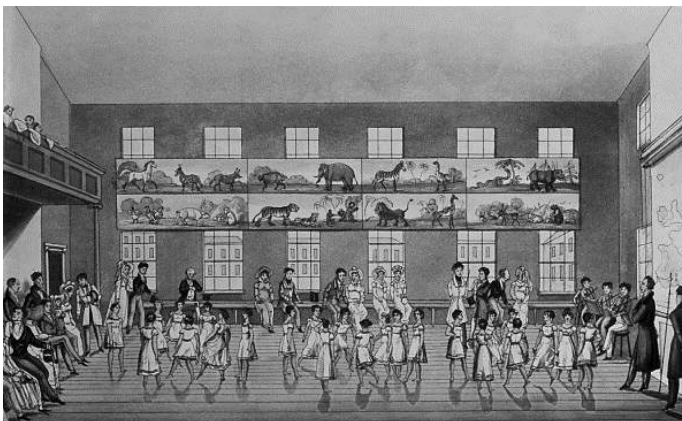
Dale was considered a great humanist, in New Lanark, orphans and pauper children were employed as apprentices, and clothing, food, and shelter were given to them. A system of structured education was also provided. Dale's concern for the entertainment and morale of the working class was the precedent of the later development of this community.

Robert Owen, Dale's son-in-law took over the company town in the period of 1800-1825, during this time Owen's paternalistic actions gave New Lanark a reputation as a model of industrial community. During this period, a series of practical measures were carried out to improve the standard of housing and the quality of life of workers and their families. "The housing stock was increased, so that larger families could have more living space. Owen's Rules & Regulations for the inhabitants of New Lanark were variously design to promote health and hygiene, and, more ambitiously, a harmonious community, in which people respected their neighbors' property, and their religions opinions". (Davidson, 2015, p. 127)

Owen advocated religious tolerance and freedom of thought. A village council was elected to assist the mill managers in overseeing community affairs and several large community buildings were constructed. Owen's expansions plans included educational and recreational facilities for the whole community, gardens and landscaped areas. He

believed that character was formed by environment and education, and working on this subjects peopled could become a happy and responsible citizen.

Robert Owen paid close attention to workers' access to services. A shop for the community was open, where the inhabitants obtained products at a very good price and the profit of the store was reinvested in the school, therefore the community was benefited in two senses, through the acquisition of products at good prices and a quality education. An insurance system was established and people were guided to deposit money in the community savings bank. The result of many of these initiatives was the basis of a fund which the company also cooperated to pay the injured or sick workers. A qualified doctor was employed, and the population received free and quality medical service. "The New Institution for the Formation of Character"<sup>2</sup> was a very innovative project of Owen. Two large new buildings were designed to provide generously provisioned educational and recreational facilities to the whole community. (Davidson, 2015, p. 130) The school was staffed by professional teaches and a wide-ranging curriculum was taught.



**Figure 1.1** Dance class at the New Institute for the Formation of Character

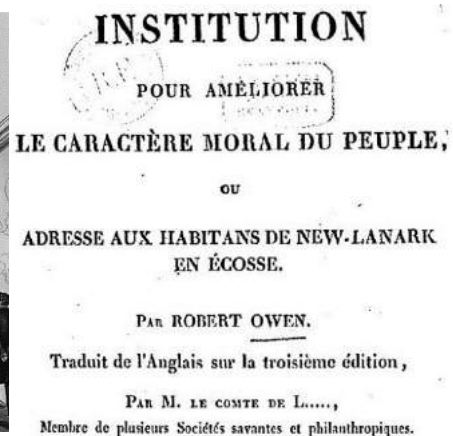
Source:

<http://www.historynotes.info/new-lanark-social-experiment-2475/>

**Figure 1.2** The Institute for the Formation of Character by Robert Owen.

Source:

<http://gallica.bnf.fr/ark:/12148/bpt6k5432475h/f4.image.r=new%20lanark>



In New Lanark, green spaces were also considered by Owen. They were extremely important for health and well-being. Owen was conscious that workers spent a lot of time

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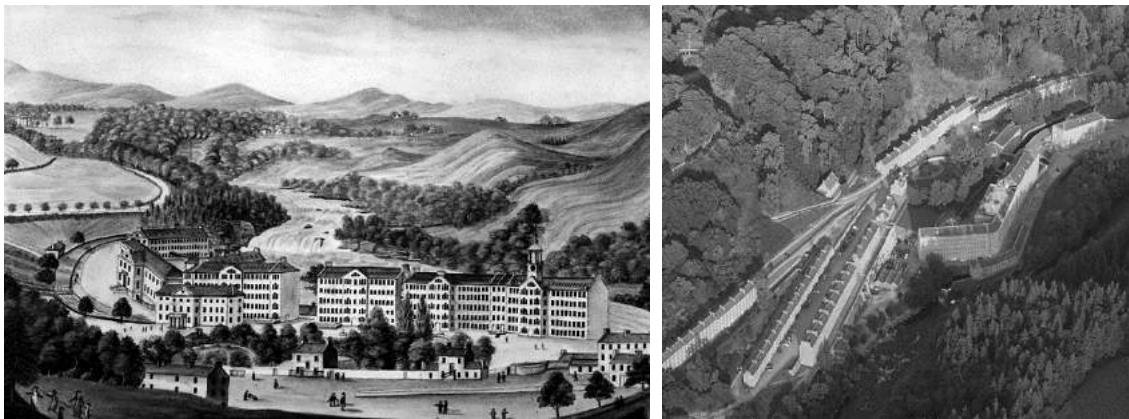
<sup>2</sup> Robert Owen created the New Institution for the Formation of Character dedicated to people who were not concerned with their private interest, who seek the truth in good faith in order to improve social state, and who have the courage to follow it without being shaken by prejudice wherever it comes from.

in the interior of the factories and he provided green spaces in which employees and populations could exercise in the fresh air, allotments gardens were created where villagers could grow their flowers and vegetables. Owen arranged for landscaped areas and paths, and planted trees on the hill side above the village.

The moral, social and environmental values started with Dale and continued by Owen at New Lanark provided the basis for seminal material and intangible development that had a lasting influence on following societies.

### 1.2.2 Planning and Urbanism

Company towns are settlements with unique morphological characteristics that make them exceptional. Most of these sites were isolated from urban centers either because of the need of energy sources or because of the presence of raw material. The implementation of the settlement in the field is one of the first features to consider. For example, if we analyze the case of New Lanark in the early 19th century in Scotland, we see that the buildings were generally located near the course of the Clyde River which constituted the source of energy to power the mills.



**Figure 1.3** New Lanark Company Town. The buildings are located close to the source of energy, the water.

Source: <http://newlanark.org/uploads/image/Tidy%20Edge%20Watercolour.jpg>

**Figure 1.4** New Lanark Current aerial view. It is possible to appreciate the irregular conformation of the settlement.

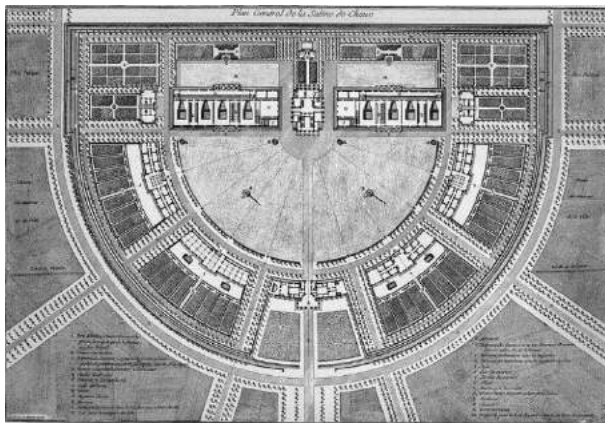
Source: [http://www.clydeandavonvalley.org/images/places/New\\_Lanark\\_World\\_Heritage\\_Site/NL2.jpg](http://www.clydeandavonvalley.org/images/places/New_Lanark_World_Heritage_Site/NL2.jpg)

Architecturally speaking this implementation was not easy. The technology of the textile industry of the time, the vertical production known as Factory System conditioned a specific architectural form that consisted in adapting the buildings of various levels to the complex topography of the terrain creating impressive adaptations and unprecedented urban layouts as shown in figure 1.4.



Along with the complex topographical adaptation, we must consider its spatial organization which followed the productive logic. These sites are composed of two fundamental elements or spaces with different functions and characteristics but interconnected between them through a fluid and functional relationship. One is the productive area, be it the production building, the mill or the mine, which constitutes the neuralgic center of the complex. The other important area is the settlement that includes the area of housing and services for workers where power relation, socio-occupational hierarchies, ethnic, racial, and gender composition of the labor population also structured the social area.

According to John S. Garner (1992, p. 10) “Planning was a part of any business venture, but the layout of company towns often appeared haphazard. Camps and villages occupied the leftover spaces adjacent to the work. When site planning did occur, it often progressed in stages and not all at once” as is logic because the most significant was the productive building. For these reason is important to consider and give special attention to those examples that were conceived as planned towns like Nuevo Baztán in Spain and Arc-et-Senans in France. These planned company towns were created under the principle of recognizing the place of workers in a new order.

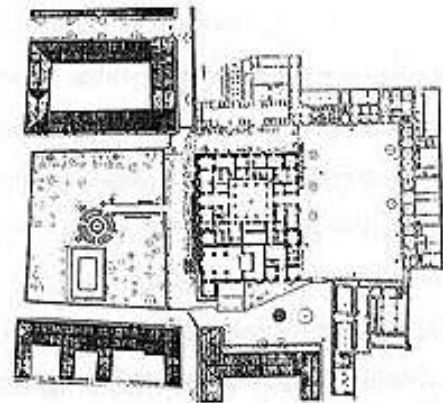


**Figure 1.5** Arc et Senans. France.

Sources: [https://commons.wikimedia.org/wiki/File:Arc-et-Senans\\_-\\_Plan\\_de\\_la\\_saline\\_royale.jpg](https://commons.wikimedia.org/wiki/File:Arc-et-Senans_-_Plan_de_la_saline_royale.jpg)

**Figure 1.6** Nuevo Baztán. Spain.

Source: [http://platea.pntic.mec.es/~cmarti3/ACTIV\\_3/resum.htm](http://platea.pntic.mec.es/~cmarti3/ACTIV_3/resum.htm)



In the case of Arc-et-Senans in France, the complex was created under a neoclassical architecture. The layout was based on a circle, on the diameter of the circle were the factory and the director's and clerk's houses. On the perimeter of the outer circle facing

center sat the multifamily houses of workers with little gardens behind. The other case, Nuevo Baztán, the project was conceived laid out on a grid, occupying the center of the town the *Plaza Mayor* a castle and a baroque church. Around this center were located the productive activity and later the housing.

Some owners planned model towns as a way of transcending labor-capital confrontation with spaces of cooperation instead of conflicts. A sure house constituted also a mechanism to enroll the workers and their families to the company. It was very common where company towns included aspects of planning without embracing the full program of building models communities for company workers. (Borges & Torres, 2012, p. 3) But other industrialists did assume more complexes layouts that considered the services necessities for the wellbeing of the workers. The result were well designed settlements with impressive attractive urban scenarios. Some of these company towns were the precedent of Garden Cities and New Towns as Letchworth and New Earswick in England by the architects Parker and Unwin.

### **1.2.3 Architecture. Housing and Industry**

In the document presented by Louis Bergeron *Les villages ouvriers comme éléments du patrimoine de l'industrie* (1995), he carries out an analysis of the criteria used by UNESCO to consider company towns as industrial heritage sites. It is highlighted that to define company towns, working habitats developed inside or in continuity of preexistent settlement are excluded, that is to say, that company towns were new creations, projects started from scratch, where architecture played an important role in the cultural value of these sites.

Architecture in company towns can be analyze from two perspectives, industrial architecture and housing architecture. Although the evolution of the industrial architecture has been relevant, housing architecture has been the center of attention in company towns because of its social implication.

Provide housing to workers is an old subject, during the Middle Ages, houses were already constructed for miners, weavers, crystal workers, farmers and others. Houses were made by the owners of the enterprises, and were sold, rented or given to workers. This situation had its particularities according to the relation of the settlement with urban

cores. At the end of the 16<sup>th</sup> century the manufacture's appearance characterized by the high concentration of labor within large buildings had a big development in the countryside due to the availability of hydraulics resources, raw material cheap labor and craft skills. Social and space component of the production began to change because of the relation between technical culture, enterprise and territory (Dorel-Ferre, 2017, p. 15).

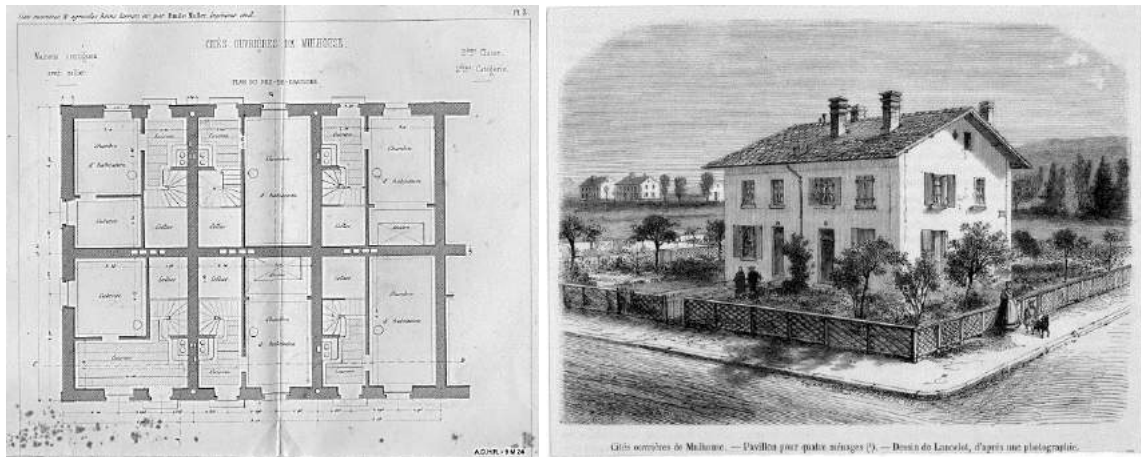
Meanwhile a slow evolution was happening in the housing frame motivated by paternalism and utopian climate that searched employees' wellbeing, company towns were spreading all over the world. There were too many experiences, including those that were not looking for human and social improvement where workers' life conditions were precarious.

In the search of cultural values it's important to mention those sites that because of paternalism they made available high quality houses. The housing's standard was based on the number of rooms and dimensions, also by comfort furniture presented in the rooms, outer spaces like garden, and also their urban and landscape position. These housing gave a quality of life that searched to respect the workers instead of a profitable resource and financial returns. It should be also pointed out that the quality of materials used in the construction, the use of decorative motifs, the assimilation of various architectural models and constructive style as benefit of housing individualization.

During the universal exposition of London in 1851, the thematic of popular housing acquires greater interest. Here appears a sector dedicated to operators' houses with typologies presented under the patriarchy of Prince Alberto. In the exhibition of Paris of 1867 the example is Mulhouse, with a prototype of housing realized by Emile Müller. (Dorel-Ferre, 2017, p. 19) This houses had square floor plans, with two levels, each one could accommodate two families. They had, kitchen, attic and basement even a small garden when family could raise vegetables as diet supplement.

Emile Müller was an engineer, after graduating he gained a place in a railway company, he was touched by the precarious life conditions of railway workers. He developed a sort of curiosity by life conditions' enhancement and housing accessibility for workers. Müller housing success doesn't lies just in architecture, he was able to see that in the French context the conditions were given for him to create *L'Associasion des Industrieles de*

France, which allowed the government to stimulate and support those industrialist that took initiatives to enhance workers' quality of life. (Garner, 1992, pp. 44-46)



**Figure 1.7** Floor plan of a second class house in Mulhouse.

[http://www.crdp-strasbourg.fr/data/albums/cite\\_ouvriere/img\\_hr/image16.jpg](http://www.crdp-strasbourg.fr/data/albums/cite_ouvriere/img_hr/image16.jpg)

**Figure 1.8** View of a workers' house with garden in Mulhouse.

Source: [https://commons.wikimedia.org/wiki/File:Carr%C3%A9\\_Mulhousien\\_vers\\_1855.jpg](https://commons.wikimedia.org/wiki/File:Carr%C3%A9_Mulhousien_vers_1855.jpg)

In 1917 was published a project for a company town by Tony Garnier. The project consisted in a modern industrial city with model houses and other buildings to improve the life dynamics in the settlement, Garnier influenced young generations of architects and was another example of the concerning and importance of worker's housing in that time. During the interwar period important architects were called to work in company towns projects like the case of the Finnish architect Alvar Aalto. He contributed in the later transformation of the Finnish lumber industry during the 1939.

At this time it was already a standard procedure to hire the services of engineers and architects for the creation of new industrial facilities or even entire communities. Alvar Aalto worked in communities like Sunila and Kauttua. According to Garner (1992, p. 91) the greater contribution of Alvar Aalto was the implementation of rationalist and socialistic ideas regarding housing during the 1930s. It was also the adoption of the contemporary aesthetic by designing row houses, terrace houses, and using materials as whitewashed brick and concrete, creating contrasting and beautiful landscapes.

When talking about company towns as most representative examples of industrial heritage, industrial architecture is probably the main element to consider as a representative component of this cultural phenomena. Industrial building are the core of

the settlements without them, and without productive activities there is no reason for creating company towns. Therefore to recognize the cultural value of architecture in company towns it is necessary to understand the specific characteristics that ruled the evolution of industrial buildings.



**Figure 1.9** Terrace House by Alvar Aalto in Kauttua.

Source: <http://navi.finnisharchitecture.fi/en/stepped-terrace-house/>

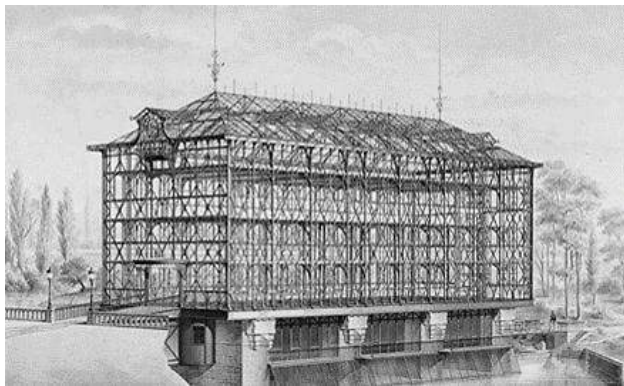
**Figure 1.10** Houses of the Sunila cellulose factory by Alvar Aalto

[http://wiki.ead.pucv.cl/index.php/Viviendas\\_de\\_la\\_f%C3%A1brica\\_de\\_celulosa\\_Sunila,\\_Finlandia/\\_Alvar\\_Aalto](http://wiki.ead.pucv.cl/index.php/Viviendas_de_la_f%C3%A1brica_de_celulosa_Sunila,_Finlandia/_Alvar_Aalto)

Industrial buildings in company towns like in industrial activity, have always been linked to the scientific and technological achievement of their creation period, the organization of the work, and the mechanization level. Generally speaking, in the evolving process of industrial buildings there are three main typologies that have prevailed from industrial revolution: vertical production known as Factory System, horizontal production, known as “Sheds” and the typology of refinery. All this typologies can be found in company towns, according to the productive activity and the period of appearance.

By the middle of the 19<sup>th</sup> century the wood transmission systems of energy was replaced by iron, which made possible the increase of the machinery and consequently, the need of more robust and resistant buildings. The openings in outer walls could not be further extended to guarantee the illumination of these larger spaces, so the solution also came with the use of cast iron as a structural element. The industrial buildings abandoned the rigid elongated form and began to appear new layouts already ideal regarding the size and organization of the machines. ( Valdaliso & López, 2007, p. 71)

By being immersed in industrial activity, company towns were the place of innovations and experimentations. The dimension's restriction in altitude and width of industrial buildings depended on the constructive system based on load walls. This dependency was broken in *Noisiel-sur-Marne* towards 1871 thanks to Jules Saulnier, who built the building of turbines for the *Menier* factory of chocolates. This was the first industrial construction of complete metallic structure in wrought iron, the outer walls was transform into lattices that envelop the internal metallic structure<sup>3</sup>. This system had great repercussion in non-industrial buildings and the treatment of interior lighting in subsequent architecture. ( Valdaliso & López, 2007, p. 76) In this building is also remarkable the use of decorative motif in the facades.



**Figure 1.11.** Image of the revolutionary structural system of the building of turbines. Noisiel-sur-Marne.

Source: [http://passerelles.bnf.fr/batiments/images/pas\\_415.jpg](http://passerelles.bnf.fr/batiments/images/pas_415.jpg)

**Figure 1.12** Noisiel-sur-Marne. Building of turbines.

Source: <http://carolineld.blogspot.it/2016/11/meniers-magical-chocolate-mill.html>

Other important problems of industrial buildings were solved along the years, like the interior illumination. There were used several methods like: direct lighting from the deck through glass areas, skylights, dormer windows, etc. The final solution came with the appearance of zigzag roofs known as "Sheds", designed by Fairbairn in 1830 where the smaller glass-finished side faces north, practically in vertical position. This system has strongly marked the image of the industry and the shape of the buildings, in which

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<sup>3</sup> A project of Jules Saulnier, architect in charge of the new turbine building project. Considering the location of the building a design that allowed to span a portion of the river, tap the river's power and operate a complex of machinery was needed. The structure was a combination of metal and masonry, wrought-iron tees formed a lattice truss, the interstices of which were filled with bricks to stiffen the walls and to make the truss rigid. The structural system was known as "Pans de fer" (plates of Iron) that emulated medieval heavy timber construction inasmuch it provided a skeletal framework of posts, sills, plates, braces, and headers. The building was considered by Sigfried Giedion as vanguard of modern world structures, because of its iron skeleton frame (Garner, 1992, pp. 55-56).

homogeneous interior lighting is achieved, and it has been implemented in a lot of company towns.

Technological advances continued to happen, industrial activity was an area of experimentation and application. After wrought-iron structures began the use of steel which had more resistance and allowed buildings to reach ridiculous heights. By the other side the development of concrete that was a key element in the appearance of diaphanous factories which was the general model for factories in the period of 1880-1915. From the hand of E.L. Ransome that began to use concrete skeletal structures and Albert Kahn with his innovations known as “destructive creation” appeared the new industrial building, which searched the maximum rationalization of the productive process in a continuous flux.

When analyzing company towns is very important to understand the industrial building and its historical context. The type of building, period of construction, productive activity, constructive solution, materials and even the façade are undoubtedly elements that provide information about the cultural value that ratifies company town as places of a rich industrial heritage.

#### **1.2.4 Landscape**

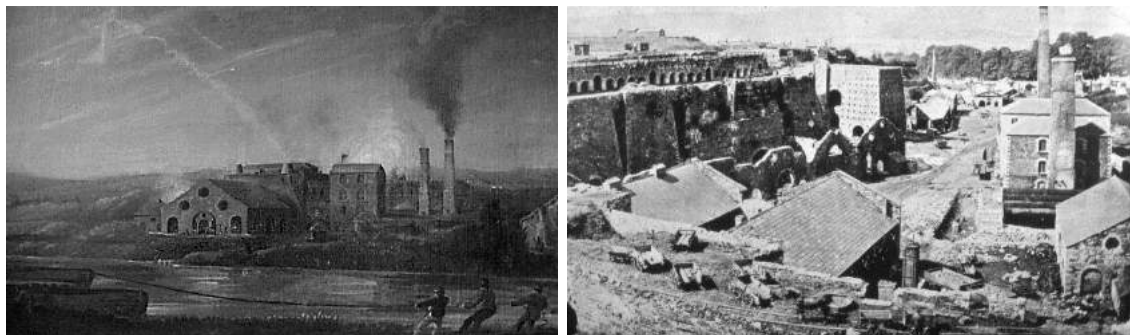
Company towns were generally installed far from the cities, they were located near the raw material or sources of energy. The simple implantation of a company town generated a directly transformations of the landscape. In these industrial settlements the landscape modifications happen from several perspectives, we can state that one of these points of views is the new urban image that bursts into a rural landscape and it is totally transformed by the construction of the settlement. The panorama is gradually changed meanwhile the industrial buildings and their technical infrastructure appear as new milestones. At the same time appear communication networks and housing for a great number of workers. A whole new habitat bursts into the scene, new sounds, colors, smells and movements characterize the new site.

Another perspective of how company towns modifies the landscape is the industrial activity. Industrial exploitation alters the landscape in a considerable way, mines, plantations, lumber milling, energy production and others create unique sceneries that

mark forever the territory. Some of these productive settlements according to their productive activity are the direct reason of problems like environmental decline, pollution, wrecking of the environment, etc. The overexploitation creates cultural landscapes that evidence human strong influence on the environment and its technological capacity.

The landscapes generated by the company towns materializes the reality of an exchange of human values in a specific cultural area as a testimony of a specific human settlement and the use of natural resources. They are landscapes that illustrate a significant stage of the way of life of some society and in many cases are part of the cultural heritage.

No industry transformed a landscape more than iron making in south wales. It is said that the once-isolated and peaceful valleys of Merthyr became a roaring inferno whose intense flames turned nighttime sky into a glowing orange sunrises, that can be seem form as far away as fifty miles. The incredible furnace and smelters produced an incredible squalor. “Ore, limestone, and coal, fuel for furnaces freed from the woods, were gouged from surrounding hills and meadows, leaving open wounds in the earth. Excreted waste from the manufacturing process—slag and cinders—covered any open ground, sometimes burying buildings, and often smoldering and glowing for decades”. (Garner, 1992, p. 18)



**Figure 1.13** Painting of Ynysfach Ironworks.

**Figure 1.14** Picture of Penydarren ironworks in 1875.

Source: <http://www.alangeorge.co.uk/YnysfachIronworks.htm>

Communication was crucial in these isolated sites, the need to import and export products was essential for the success of the company. For this reason many of these settlements had great influence in the territory by the creation of networks of communication. They often participated in the development of transport infrastructures such as railroad, and



water routes. In addition the image of the transport facilities strongly marked the urban landscape of these sites.

In Merthyr Tydfil's, the isolation conditions caused low indices of production and development. Roads through the hills were very complexes, the primitive transport systems could not respond to the demands of productive activity. The solution to this problem was the construction of the Glamorganshire Canal from Methyr to Cardiff. The construction of the canal was an agreement between the iron producers of the region, bankers, landowners and other people interested. The canal was completed in 1794, multiplying the productive capacity of the ironworks of the region. The Glamorganshire canal allowed Methyr's industrialization and urban development on a greater scale.

This canal was the first project to alter extensively and systematically the landscape of South Wales (Garner, 1992, p. 22). The rupture of the bottleneck that old transport systems caused, encouraged the development of the four settlements that conformed the region of Methyr, where communities to work in ironworks had already arisen. Companies provided work, shelter, and sometimes medical care and education. These settlements were composed by the ironwork, to workers' housing district and the imposing residence of the ironmaster. With the economic development increased the accessibility to greater labor, the population augmented considerably and the old precarious houses had to evolve to more complex urban centers, consequently the image of the urban-productive landscape was transformed.

### **1.3 Actions in favor of the reuse and conservations of company towns.**

The decline of company town happened during the twentieth century by the low cost of housing the Great Depression, the depletion of natural resources, and the increase of government regulations on working conditions and workers. The development of communications networks, power lines, and improvements in transportation also contributed to the decline of these isolated industrial sites.

By the late twentieth century, many traditional company towns were abandoned living only in the memories of former workers; others survived, but lost their characteristics as company towns; others reinvented themselves and adapted to new economic activities, like leisure and tourism. There were also cases of expansion in which early company

towns evolved into large urban centers or were absorbed by nearby cities growth. Company towns proved resilient in peripheral and remote areas of both the developing world and industrialized nations (Borges & Torres, 2012, pp. 3-4).

The cases of company towns that have been preserved, reinvented or reused to ensure their permanence has not been a random phenomenon. In order to arrive to positive results, there has been an evolutionary process in the recognition of these sites as industrial settlements with potential for their conservation, reconversion, reuse or transformation. This potential is linked to the exceptional values composed of a great range of components of industrial heritage that can be found in these sites as we have previously demonstrated in this chapter.

The concept of heritage has evolved along the centuries. First it was conceived as an object or aesthetically beautiful construction. Then at the beginning of the 19<sup>th</sup> century the concept of antiquity emerged, which became a characteristic that defined heritage objects. In the 20<sup>th</sup> century two characteristics were added to the concept of heritage; the object as a testimony of an era and the historical good as an object of study. The interest of understanding societies' past encouraged this development. From this moment on archeology not only looked for objects of value, but used the remains of the past to study and interpret them (Casanelles, 2004, pp. 58-59).

In the post-industrial era, from the end of the 20<sup>th</sup> century until the beginning of the 21<sup>st</sup>, industrial heritage begun to be considered as a testimony of a specific period, an ethnological and anthropological good that constitutes an archaeological study element to understand the industrial society.

In the study of heritage's evolutionary process exist international regulations applicable to the industrial heritage and consequently to company towns. The context of this evolutionary process is made up of several international institutions that have among their principles the protection and conservation of industrial heritage. Among them we can find UNESCO, ICOMOS and TICCIH. This last is The International Committee for the Conservation of the Industrial Heritage, and it is the world organization for industrial heritage. Its goals are to promote international cooperation in preserving, conserving,

investigating, documenting, researching, interpreting, and advancing education of the industrial heritage.

Company towns as maximum exponents of the industrial heritage are directly affected by the regulatory process of the heritage's conservation and protection. Since 1972 these institutions have made recommendations, regulations and have defined favorable criteria that led to a series of processes for the conservation and protection of industrial heritage like:

- 1972 UNESCO. Consider as cultural heritage, separated or connected groups of buildings that according to their architecture, homogeneity or place in the landscape have special value.
- 1976 UNESCO. The definition of Historical and Architectural Areas as any group of building, structures and open spaces that constitute human settlements in urban or rural environments.
- 1987 ICOMOS. Conservation of historic towns and urban areas.
- 2003 TICCHI. Definition of industrial heritage.
- 2005 Vienna Conference. Definition of historical urban landscapes as the urban area resulting from an historical stratification of cultural and natural values.
- 2011 ICOMOS-TICCHI. Principles for the conservation of industrial heritage sites, structures, areas and landscapes.

In the evolutionary process related to the conception of industrial heritage we can't avoid to mention the emergence and development of industrial archeology. This transdisciplinary practice has as main objective to investigate and to study the places where the industrial activity was developed, artificial testimonies and artifacts that remain there (Dambron, 2004, p. 47). This discipline identifies the buildings or old equipments; it determines the history related to them in order to know their uniqueness, based on different criteria, either historical, technical, or architectonic, with the objective of carrying out a subsequent protection or revalorization process. Therefore its transdisciplinary character allows the most complete knowledge of an industrial object considered remarkable.

#### **1.4 Variables to consider in the analysis of company towns**

As we have previously analyzed in this chapter, company towns are settlements that possess particular values of the industrial culture which during the years has exercised great influence on men and societies. In order to approach to the study of values in these settlements, their management and conservation is necessary to define a set of variables, which will allow precise procedures during the revalorization stage. The variables to be identified are based on the previously study achieved in this chapter about the particularities of these sites and their exceptionality as socio-productive complexes that make them the most important exponents of industrial heritage.

Following up are the proposed variables:

**Nature of the enterprise:** This variable refers to the nature of the company, the owner's identification, whether it was a sole proprietor, several owners, a private or public company, the type of production, and its creation antecedents.

**Territorial implantation:** This variable considers aspects of the geographic environment and its characteristics such as: topography, climate, position and vegetation. It considers the location of the site, if it is located in an urban or rural context. Depending on this context, urban characteristics are analyzed, it is important to know if there was some type of planning, whether it is orthogonal, linear or irregular and if it was designed by an architect, an engineer or if the company town was the result of a spontaneous growth. Furthermore territorial connections and transport system associated to the settlement are need to be studied to know if it belongs to the settlement or it is public and how is the influence of the company town in the territory.

**Industrial evidence:** This variable analyzes the stage in which the productive activity takes place: pre-industrial, proto-industrial, or during the first or second industrial revolution. It also considers the types of technical working culture to carry out the productive activity. It is important to define the components of industrial heritage that constitute the productive complex and its particularities.

**Architectural components:** It is about identifying the buildings that conform the complex, differentiating those that conform the productive area and those of the social

area. It is necessary to emphasize the architecture of the housing complex defining its typologies: house type, linear building, blocks, urban blocks etc. Architectural codes and building materials used need to be defined. It is recommended to identify the architect responsible for the design and whether the structural systems or the styles themselves have been a technological advance or caused some later impact.

**Landscape singularity:** It refers to the degree of modification that industrial activity has generated in the landscape. It is necessary to analyze how this landscape has evolved and whether the evolutionary process has come to an end or continues with another activity. It is also necessary to consider if the location of the company town in relation to the environment generates a specific landscape and how architectural elements or productive activities characterize the image of the landscape.

**Owner influence:** The objective is to identify how the relationship with the workers was. If the owner promoted specific programs for the benefit of their company towns? It is also necessary to know, if he influenced the design of the complex, the quality of public spaces or types of services?

**Current state and prospective:** This variable seeks to understand the evolution of the company town over time, analyzes the current situation of the company town, its integrity and authenticity, the situation of the productive activity, preserved and demolished buildings, protected elements, strategies followed for its conservation and future actions to develop.

The use of the proposed variables will allow a more coherent and precise study when analyzing company towns. They are the base of the next step in this research. By applying these variables in a methodical way to the three company towns selected will be possible to arrive to precise guidelines and conclusions to deal with the study case. The variables allow also the realization of a technic sheet, applicable in cataloging and archiving.



## ***Chapter 2***

*Enhancement and reuse of three Italian company towns*

## Chapter 2: Enhancement and reuse of three Italian company towns

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### Résumé

Les variables précédemment définis ont permis d'élaborer dans ce chapitre une approche scientifique permettant de comparer entre elles, trois cités ouvrières italiennes: Schio, Torviscosa et Crespi d'Adda. Celles-ci ont été choisies selon des critères spécifiques. L'objectif de cette démarche est de comprendre les caractéristiques particulières de ces trois cités ouvrières, et de connaître comment ces caractéristiques ont été traitées dans les processus d'amélioration et réappropriation du patrimoine industriel.

Résulte de ce chapitre l'identification d'un groupe de bonnes pratiques, qui ont permis de guider les politiques mises en place lors de la récupération et de la conservation des cités ouvrières des trois exemples étudiés. Ce nombre de bonnes pratiques est nécessaire pour accomplir les objectifs principaux de ce travail en permettant de concevoir une méthodologie pour l'amélioration et la réutilisation des cités ouvrières.



## **2.1 Method for comparative analysis of company towns.**

As it has been already described, that one of the main objectives of this work is to carry out an analysis based on different variables defined in chapter one, the variables are the following: nature of the enterprise, territorial implantation, industrial evidence, landscape singularity, architectural component, owner influence and current state and prospective.

The great quantity of components that conform company towns' industrial heritage can't be randomly analyzed. The variables are the basis to create a methodology applicable to company towns in order to identify common ways of doing in the enhancement and reuse of industrial heritage in this industrial settlements. To do that, variable's content will be arranged in a methodical sequence.

### **Guide to realize the comparative analysis of company towns.**

Variable: Nature and strategies of the enterprise.

Resources of analytic value according to the variable:

- Identification of the Company town: Denomination of the company town and date of creation.
- Industrial sector and productive process: mining, agriculture, textiles, etc. Origin of the raw material and its modification according to production technology.
- Owner: Name of the owner or company. Identify the composition of capital: private, state, shared or workers.
- Type of Company: Identify the scope of operation: local, regional, national or multinational company.
- Antecedents of the company: Reasons for the creation of the company.

Variable: Territorial implantation.

Resources of analytic value according to the variable:

- Geographical location: Identify the location of the company town, classification of the region: in urban or rural area Identification of the company town, identification of related productive areas like mines, plantations, etc.
- Geographic environment: Classification of the topography, existence of water, climate, vegetation.

- Planning: Define urban characteristics of the settlement: orthogonal, lineal, radial, irregular or spontaneous growth. Identify if the design of the settlement was design by an architect or engineer, or if the owner was influence by previous experiences of existent models.
- Transports means: Define the transportation mean used by the company town, classify if it is private, public, or if the company town influenced on its construction.

Variable: Architectural component:

Resources of analytic value according to the variable:

- Industrial architecture: Classify the constructed system used in the industrial buildings, consider: materials, styles, ornaments and buildings types and arrangement.
- Housing architecture: Identify housing typologies according to social, ethnic and hierarchical classification. Recognize difference according to: constructed system, materials, styles, ornaments and buildings arrangement like: linear building, blocks, urban blocks etc.

It is important to identify in the two last points if the architect responsible for the design and whether the structural systems or the architectural style was a technological advance, a contemporary solution, an unique example in the region or caused some later impact.

Variable: Landscape singularity:

Resources of analytic value according to the variable:

- Landscape modification: Classify how the industrial activity has modified the landscape, give this modification a range in a low-medium-high scale. Consider also the location of the company town in relation to the environment and how architectural elements impact the landscape. Define also the current state of the landscape and declare if modification process is still active, finished, or another function have been taken place.

Variable: Owner influence:

Resources of analytic value according to the variable:

- Owner's vision and paternalistic actions: Emphasize if the quality of public spaces and building are the result of the owner's vision, in the search of improving workers' quality of life. Declare if the owner promoted specific programs for the educational, cultural, health and entertainment of the workers and their families.

Variable: **Current state and prospective**:

Resources of analytic value according to the variable:

- Current state, protection and conservation: Current state of the productive activity, date and reasons of closure. Characterize the current situation of the company town, integrity and authenticity of industrial buildings, housing and infrastructure. Identify protected elements, the strategies followed for its conservation and future actions to develop.

Variable: Industrial evidence:

- All components of industrial heritage should be described during the application of the previous variables, but if it is necessary it is possible to classify different buildings and infrastructure of the company town in: productive places, warehouses and stores, services, communications and social places.

## **2.2 Selection and justification of study cases.**

Three examples of company town have been selected in order to test the resources of analytic value derived from the variables defined. Three examples were defined according different characteristics, they are: *Nuova Schio*, *Crespi d'Adda* and *Torviscosa*. These three company towns are located in the north of Italy in the regions of *Veneto*, *Lombardia* and *Friuli-Venezia Giulia*.

The foundation date of these company towns is remounted to the second half of 19<sup>th</sup> century with the construction of *Fabbrica Alta* in Schio to 1937 with the foundation of Torviscosa. These three company towns are examples of the force and important of textile industry in the north of Italy, and highlight the paternalistic movement of the époque with

outstanding examples of architecture that represent the owners' concern in social harmony and wellbeing of the population.

The selection of these examples was also motivated by the domain of the subject by the professors at the University of Padova, other experts in this subject and collaborators associated with the academic program. During the course there was the possibility of traveling to several Italian company towns, including *Nuova Schio* and *Crespi d'Adda*. These workshops and visits to the sites allowed a greater perspective of the reality of the company towns due to the direct interaction with inhabitants and managers of different functions in the processes of reuse and protection.

During the course we also had the possibility to see the documentary "*Italia viaggio nella bellezza. Abitare in età industriale*" produced by *Rai Storia* with the collaboration of the professor Giovanni Luigi Fontana. In this documentary some examples company towns are described showing their importance in the history of Italy. Among the cases presented are the three selected to be analyzed in this thesis.

*Nuova Schio* is an interesting example because unlike most of the company towns it is developed beside and urban context, the *Schio* city. With time the city's growth involved the company town. The outstanding characteristic is that the workers village has been preserved and still today conserves its identity thanks to an extraordinary project for its conservation and protection, the industrial building, *Fabbrica Alta*, is an extraordinary testimony of industrial archeology, it has also been preserved.

*Crespi d'Adda* was an autonomous and self-sufficient company town, it is an exceptional example of the phenomenon of the company towns, the most complete and best preserved of the south of Europe. With these conditions in 1995 UNESCO inscribes *Crespi d'Adda* in the world heritage list. Its characteristics make them a valuable example to be analyzed in this work.

*Torviscosa* is an outstanding example of functionalist and rationalist industrial architecture, it was created in the country side, and even it is a textile industry it is based on an agroindustrial process. Its study is very interesting and rich because its textile production was made through a chemical process. The raw material was the cane and

therefore its landscape implications are similar to sugar industry and the *Hershey* study case.

## **2.3 Nuova Schio, Crespi d'Adda, Torviscosa.**

A comparison of the three selected Italian company towns is given below. In order to comply with this objective, we have applied the method designed at the beginning of this chapter for the comparison of the company towns.

### **2.3.1 Nuova Schio**

#### **Identification of the Company town**

*Foundational name: Nuova Schio.*

*Foundation date: The Fabbrica Alta of Lanificio Rossi, was erected in 1862, the workers village began to be built in 1872 but the antecedent of Nuova Schio is the factory Francesco Rossi built in 1849.*

#### **Industrial sector**

Textile Industry. Wool sector. All the productive activities were made by the factory: Carding, spinning, twisting, weaving, and finishing.

#### **The Company, founder and Management**

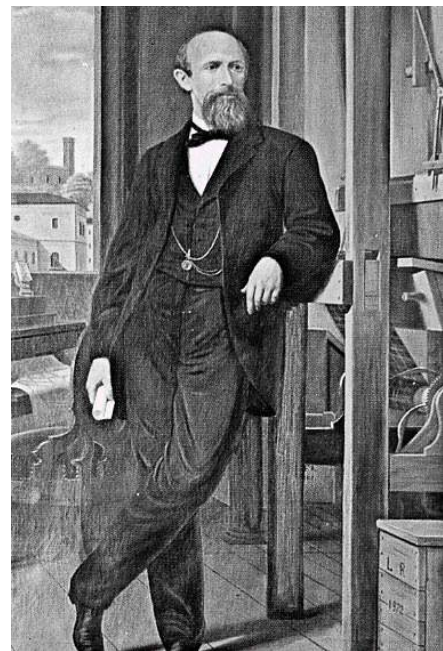
The entrepreneurial activity of the Rossi family began in the trade of the wool by the grandfather and the father of Francesco Rossi. Its mercantile-entrepreneurial origin is linked to the textile activity, being located in the interesting intersection between the shepherd and the factory. The family was not only well inserted in this complex mechanism but also they secured a close relation with the major manufacturers of the *Veneto's* wool pole.

With Francesco Rossi comes the transition from the trade of wool to industry. A series of competencies, family interests and family relationships induce him in the entrepreneurial activity. Teresa Beretta Francesco's wife belonged to one of the most solid wool dynasty and linked by parenthood to the Bologna family of great influence in the political and economic sphere. After 1809 the company *Bologna e Rossi* is constituted. Francesco is already an expert businessman and acquires the total management. In 1817 Rossi turns

decisively on the mechanization, which required a new organizational and financial aspect of the company. In 1818 Francesco acquires machines for the spinning and carding.

Technological upgrades, and adequate financial actions impelled the development of the now society *Rossi and Passini*. The production increase remarkably, the company grows gradually, but continuously. In 1839 Rossi acquires the part of Pasini. The most important effort for the transformation of Francesco Rossi into the largest Italian woolen complex of the second half of the 19th century, took place in the period between the years 1840 and 1860, after the accelerated phase of technological and organizational updating of the dissolution of this society.

Alessandro Rossi, son of Francesco assumes in 1839 after a strong training in the factory the co-direction of the office. Alessandro marries Maria Maddalena Maraschin. In the 70s part of the lands of Maddalena will be used for the realization of the *Nuova Schio*. The young Rossi grows in a context of solidarity between the agricultural and industrial sectors, in the relations between family and company, in a social sensitive environment to technological updating, capable of assimilating the new technological and entrepreneurial culture of the most advanced countries. In 1841 he travels through Europe visiting industrial cities of the most advanced countries (Fontana G. , 1990, pp. 44-53).



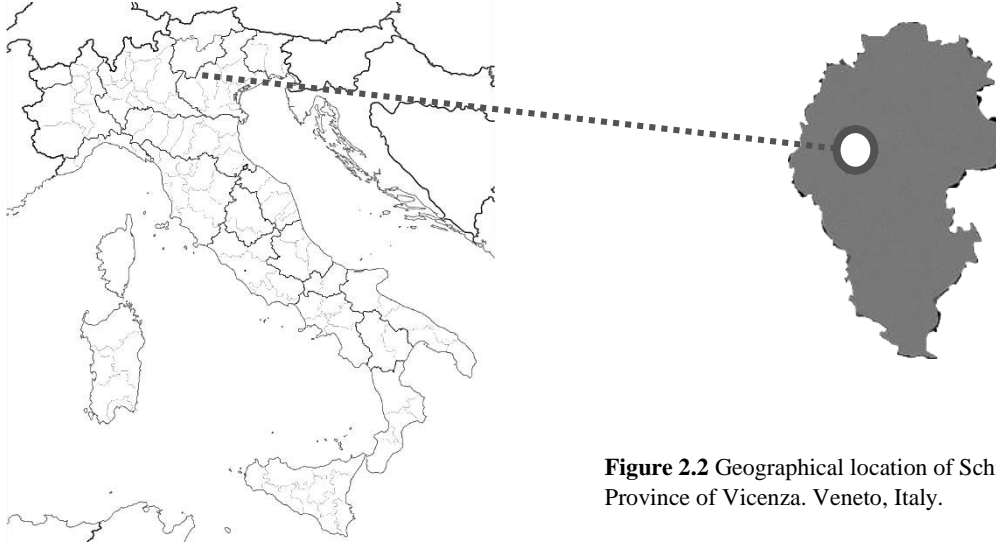
**Figure 2.1** Alessandro Rossi  
Source: Image extracted from “Schio et Alessandro Rossi” By Giovanni Luigi Fontana.

The fruit of this trip was translated into the assimilation and putting into practice of all the organizational productive elements of the industrial revolution. In addition to a solid humanist position, the conception of the *Fabbrica Alta*, the new working district and above all in the outstanding position of the company at national level.

### **Geographical location and environment**

*Schio* is located in the Northern Vicentine, at the beginning of the *Leogra* Valley. To the north the mountain to the south the plain, and close to the river *Pasubio* Schio has

progressively extended its urban and productive fabric on the lines of the former ancient settlements. The interdependency of agri-pastoral and artisan occupations, valleys and small streams of water gave birth to this important textile area.



**Figure 2.2** Geographical location of Schio in the Province of Vicenza, Veneto, Italy.

During the 18<sup>th</sup> and 19<sup>th</sup> centuries this was already a well developed productive region it had 45 waterwheels of which 23 were destined for use in textile, they were concentrated near the mill-stream. From the middle ages and until the second half of 19<sup>th</sup> century. The *Roggia Maestra* of *Schio* brought the water of the river *Leogra* to the city. During centuries this water channel irrigated the fields and encouraged the concentration, on its bank, of different types of industry, giving birth in the 19<sup>th</sup> century to modern wool industry.

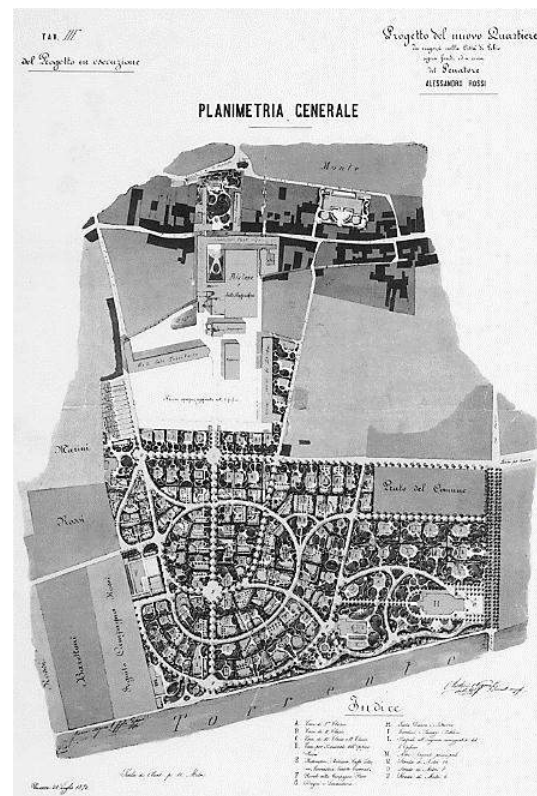
### **Planning**

The singularity of *Schio* as a company town is that, it was not born isolated as it is characteristic of the company towns. However, the industrial settlement of *Schio* was carefully integrated in the urban context. It is linked with the city in a very organic way. Since there is a functional relationships provided by the company. Under these circumstances, all the services built by Rossi will remain distributed in the old city providing services to working community of the wool mill and the population.

The company town of Rossi is not thought as a self-sufficient center, but the relationship between the factory and the working-class neighborhood gives it a great character of unity as an urban settlement. Following the demands of Francesco Rossi, the architect Antonio

Caregaro Negrin which was collaborator with the entrepreneur during 40 years, designed an urbanization based on the principles of the garden city. It was located between the *Fabbrica Alta* and the river *Leogra*.

In the general plan presented in 1872 it is shown a neighborhood with individual houses distributed hierarchically in a large green space. Organized by two orthogonal main axes and inner streets following a curving route. The original project was not entirely completed, only the villas of the chairmen maintained the original implantation. Economic demands forced the neighborhood to assume the current morphology.



**Figure 2.3** Nuova Schio. General planning presented in 1872

Source: Image extracted from “Schio et Alessandro Rossi” By Giovanni Luigi Fontana.

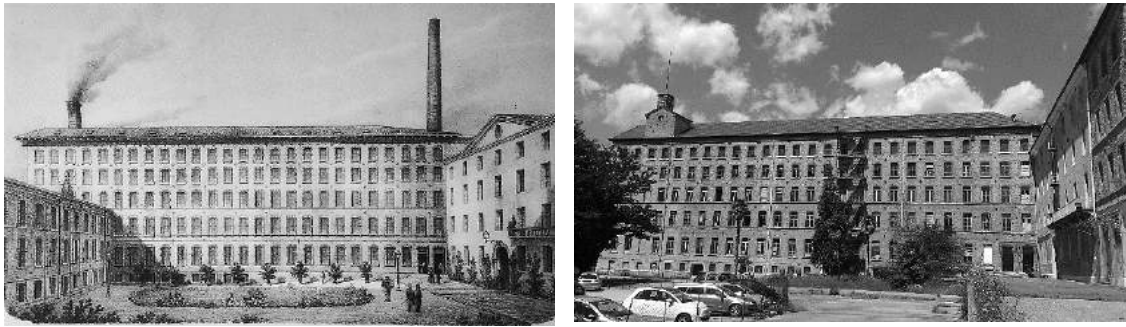
### Industrial architecture

The industrial architecture in the company town of Rossi is highlighted by the *Fabbrica Alta*, which is one of the greatest representative examples of Italian industrial archeology. It is an imposing building that stands out in the skyline of *Schio*, by its solid volume, and its quadrangular chimney; it is a classic industrial building (Factory System).

As affirmed by Fontana (2005) The *Fabbrica Alta* of *Lanificio Rossi*, erected in 1862, according to the project of the Belgian architect Auguste Vivroux, has seven levels and measures 80m long by 13.90 wide. The workshops were divided into three naves by rows of cast-iron columns, illuminated by 330 windows and 52 dormer windows. Each floor accommodated a different phase of wool work.

According to the project of the architect Vivroux, a second building had to stand opposite to the *Fabbrica Alta*, perpendicular to the first building, the factory *Francesco Rossi*. The latter, built on four floors in 1849, displays a neoclassical façade decorated with commercial and industrial motifs. The opposite building was never built, a more modern





**Figure 2.4** Image of the original project of the Rossi industrial complex. In the center *La Fabbrica Alta*.

Source: Image extracted from "Schio et Alessandro Rossi" By Giovanni Luigi Fontana.

**Figure 2.5** Current image of the complex.

Source: Image taken by the author June, 2016.

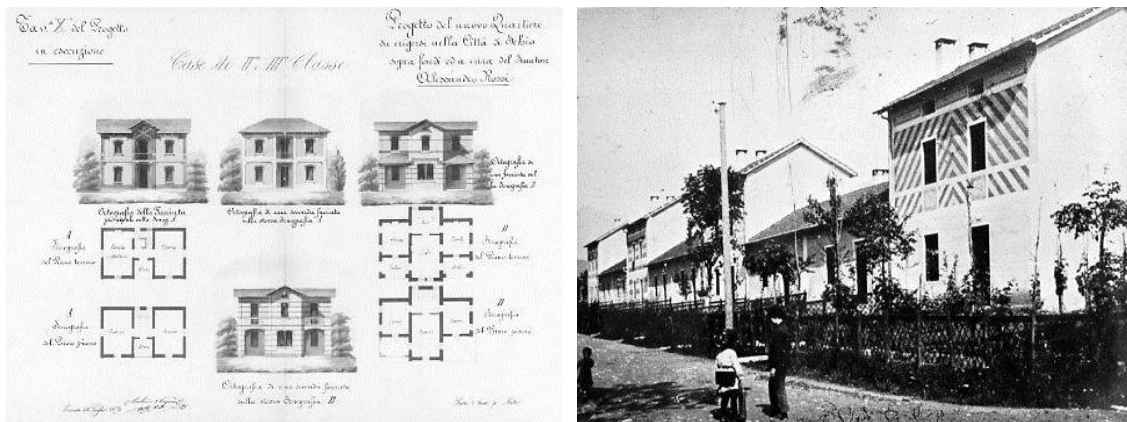
Spinning and weaving, covered in sheds, was erected from 1866 to 1868. On the southern side of the vast courtyard, a three-level building was built since 1864 for the preparation, crushing and washing of wool.

### **Housing Architecture**

In order to meet the growing demands for housing due to the development of the factories, and with the intention of making it a model working-class district, the new district "Alessandro Rossi", was constructed in a large area to the south of the industry between 1872 and 1888. The project designed by architect A. Caregaro Negrin was designed as a real extension of the city with accommodation for workers, technicians and executives, as well as public facilities and services, this new district is historically linked to the most innovative experiences conducted elsewhere in Europe during the nineteenth century concerning workers' housing. With a total of 272 housing units for about 1300 inhabitants in 1890, *Nuova Schio* accommodated 1,543 inhabitants, which was equivalent to 10% of the urban population of the time (Fontana G. L. 2005).

In contrast to the original project which was designed in individual houses located in the great green mass of the urbanization, only the houses of the chairmen were carried out following this principle. The houses for the workers are developed in several row buildings, with independent access for each house. These houses are made following Rossi's concern to avoid the uniformity of the dwellings so that the inhabitants can preserve their identity and feel them self in their own place outside the repetitive context

that implied the productive task. This was reflected in the design of facades, decks and gardens



**Figure 2.6** Workers' houses typologies in Nuova Schio original project.

**Figure 2.7** Ancient image of Nuova Schio definitive workers' houses.

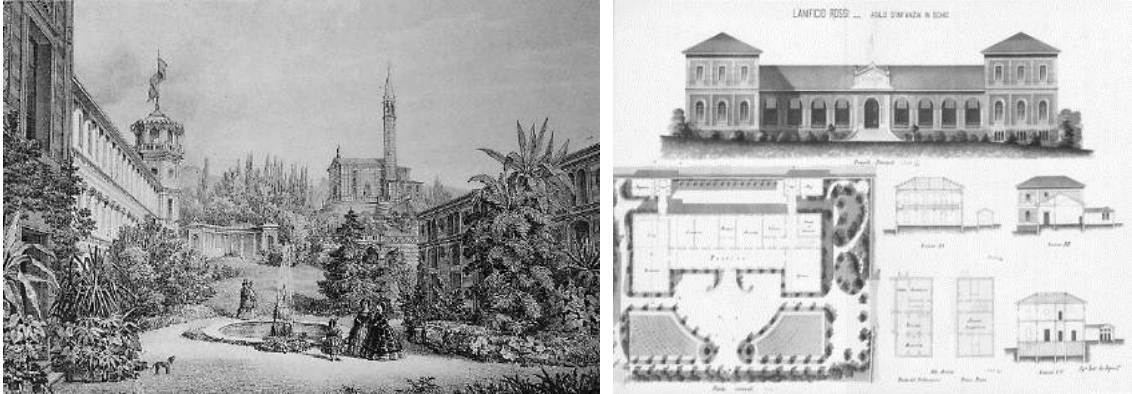
Source: Giovanni Luigi Fontana

### Owner's vision and paternalistic actions

In addition to the buildings for residential use, Alessandro Rossi commissioned the realization of several complementary structures, of social use. The entrepreneur sought harmony between capital and labor. One of the most significant actions was the construction of the Jacquard Garden. Which was born in 1859 as the expansion phase of the *Lanificio Francesco Rossi*, as a space to support the wool production.

Afterwards the architect Negrin created a romantic garden with a landscaped setting integrating functional aspects. To the right stands the Jacquard Theater, the seat of the workers' institutions, opposite a shelter also open to the workers for their meal. In the central part, the architect created a greenhouse with an octagonal roof, and a whole course of stairs, views, caves and hanging gardens. The design exploited the differences in level of the site and its geological features (Fontana G. L. 2005).

Along with the Jacquard garden were built several buildings of social use for *Nuova Schio* and the old urban center. Among these we can mention: the maternal center, the female community elementary school built in 1877 and donated to the city of *Schio*, a children center and a school of pomology and ortho-culture built for the learning of the rational realization of agriculture.



**Figure 2.8** Image of the Jacquard Garden.

**Figure 2.9** Image of the project for the *Asilo d'Infanzia* (Children center)

Source: Images extracted from “Schio et Alessandro Rossi” By Giovanni Luigi Fontana.

### **Landscape modification**

As *Nuova Schio* is located in an urban context and because it is a textile production, it didn't had great impact on the surrounded landscape. Its greater modification was that of the urban transformations generated by the housing settlement and the *Fabbrica Alta* with its characteristic silhouette. Furthermore the city of *Schio* continued growing and with time the complex was absorbed by the city. But it is important to consider the influence of Rossi in the urban landscape of *Schio* by the construction of several buildings for the benefit of the workers and the population of the old city.

In the case of *Nuova Schio* the transformations of the landscape happened as the urbanization evolved. The urban landscape is transformed with the urban implantation of the housing area. This area is developed as a voluminous appendices to the south of the *Fabbrica Alta*. A north-south axis connects both zones. The definitive project more discreet than the original leaves aside the curvilinear characteristics of the previously conceived romantic urbanization. The urban layout is was transformed and the curvilinear image is rejected according emerging demands. The opening of a great street connected the neighborhood's core with the city of *Schio* (Fontana G. L. 1985).

Fontana (2005) portraits that on the basis of this experience, the whole territory of the valleys of *Leogra* and *Astico* was marked by neighborhoods and working-class houses, cultural and social institutions, assistance and free time services, communication infrastructures like roads, railways and tramway with its numerous bridges and stations.

Along the *Astico* river there is a succession of sites and buildings dating back to the *Rossi* industrial initiatives.

### **Current state, protection and conservation**

The Fabbrica Alta was emptied between 1966 and 1967 and used for administrative purposes. After the *Lanerossi* area was no longer used for production and management purposes and the property was acquired by *Marzotto Group* in 1987, a reorganization and inventory of all the documents and archives kept within the area of the abandoned buildings, has become very urgent. Much of this industrial heritage has been the subject of studies, research, recovery and urban plans.

This process has been very complex and has approached the industrial heritage of *Schio* from different points of view with precise and well coordinating actions that allow to establish its originality and success among all cases of industrial heritage enhancement and protection. It is with no doubt an example to follow.

Givanni L. Fontana (2005) portrays the different moments of this process, and all the aspects considered. He depicts the idea that one of the most important activities realized, was to preserve the Rossi's historical memory of his company, but also to document of his indefatigable activism as entrepreneur, politician, intellectual and organizer.

A fundamental step was the generously donation in 1985 by the descendants to the municipal library of *Schio*, the documents relating to his personal activity and the life of his family. These archives, together with the *Lanerossi* Historical Archives, have come to one of the most important Italian corporate archives.

On July 2003 The *Marzotto Company* and the municipality of *Schio*, with the technical support of the *Soprintendenza Archivistica per il Veneto* and other institutions signed an agreement for the management of the *Lanerossi archives* that were entrusted to the Municipality of *Schio* for the next 25 years. This agreement is the fruit of the convergent efforts of the superintendency, the *Marzotto Spa Company*, the municipality of *Schio*, the University of Padova and a system of agreements between these organizations, Through the Master's Degree in Conservation, Promotion and Management of Industrial Heritage, activated by an agreement between the town hall and many other organizations, an

analytical census of the archives has already been completed, which is therefore an essential part of the program of actions including in the rehabilitation of the *Fabbrica Alta*.

In 1979-1980, the municipal administration launched a national competition of ideas, chaired by the architect Bruno Zevi, and was attended by more than 100 groups, including the most prominent architects and urban planners of the period. The aim of the national competition was to stimulate private initiatives, to reuse the abandoned industrial area, but it didn't succeed.

Between the end of the 1980s and the beginning of the 1990s, the urban and environmental redevelopment plan for the *Nuova Schio* was approved. It was a neighborhood now very integrated into the urban context of *Schio*, but which still retained an unaltered image. In 1986, the first actions under the urban and environmental requalification program were undertaken. The plan was based on maintaining the original integrity together with a diversity of conditions and requirements of the inhabitants.

The *Manuale per "Nuova Schio"* was created containing the indications of the plan, conceived as a representative instrument of a new way of thinking about the development of a territory marked by the imposing presence of buildings of the first industrial era. This is an urban planning instrument with national and international recognition, because it is based on the recording and mapping of all buildings, in the analysis of additions or alterations due to functional requirements, the examination of applications for building permits for modernization actions and a series of works and talks with the inhabitants.

At the same time, *Fabbrica Alta* and the *Francesco Rossi* have been preserved and valued. A preventive restoration and a public assignment are planned for this building. In 1994, a historical and artistic research was carried out in Jacquard Garden. It was identify an extraordinary architectural and botanical heritage, this research also highlighted emergencies in terms of restoration and maintenance. In 1995, the Garden was protected by the Ministry of Cultural Heritage and Environment. The company *Marzotto Spa*, mobilized many private and public partners for rehabilitation of the garden. Volunteers carried out cleaning operations to discover the trails, caves and constructions.

One of the proposed actions for the re-appropriation of the industrial heritage in *Schio* has been the project for the creation of a museum for the reuse of *Fabbrica Alta* and the historic building *Francesco Rossi*. The MIND, *Museo dell'Industria e dell'Innovazione*, proposed to make known the long history of the Veneto industry from its place of origin. The MIND would have the strategic role of conservation, interpretation and communication of the history, culture and heritage of industry (Fontana G. L. 2009).

For the development of the enormous industrial heritage of the region the *Consorzio per l'integrazione urbana e territoriale di Schio e di Valdagno*, was created in 1990. It has created itineraries, ecomuseum and a service and coordination center. *Nuova Schio* is part of the interest area.

### **2.3.2 Crespi d'Adda**

#### **Identification of the Company town**

*Foundational name:* Crespi d'Adda. The Village is named after Crespi, a family of Lombardy industrial cotton makers who at the end of the 19<sup>th</sup> century created a modern "Ideal Working Village" next to their textile factory, along the riverbank of Adda.

*Foundation date:* The company town was born between the late 1800s and the beginning of the 1900s, when modern industrialization was being born in Italy. In the year 1875 Cristoforo Benigno Crespi acquires the properties. On July 25, 1878, the factory was inaugurated.

#### **The Company, founder and Management**

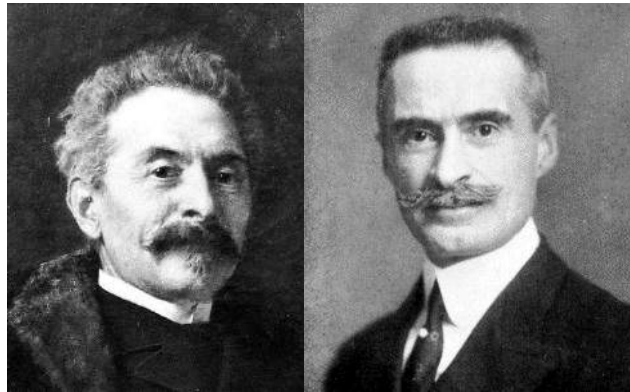
*Industrial sector:* Textile Industry. Cotton sector.

In the early 1800s, Benigno Crespi was one of many entrepreneurs that sought to gain a foothold in the industry, and in 1805, decided to open his own business. His specialty was dying moleskins and cottons and selling them throughout the territory of Milan. But his son Antonio, once he had learned the trade, proved himself more capable in the business. He was able to sell other artisans' fabrics as well. In 1845, Benigno Crespi's business was the 10th largest in terms of number of looms.

On October 1833 was born Cristoforo Benigno Crespi. After saving up a bit of money for himself, he was always aware of what his father was doing with the family business. His

dream was not just to sell, but also produce, an ambition that would become associated with a more urgent one, to industrialize. On 24 September 1868, Cristoforo became father for the first time. His son was named Silvio Benigno Crespi.

In 1875 Cristoforo Benigno Crespi, a textile manufacturer from Busto Arsizio, bought the 1 km squared valley between the rivers *Bembo* and *Adda*, to the south of *Capriate*, with the intention of installing a cotton mill on the banks of the *Adda*. The founder's son, Silvio Benigno Crespi, took over the management of the enterprise in 1889.



**Figure 2.10** Cristoforo Benigno Crespi and Silvio Benigno Crespi.

Source: Sitweb Archeologia Industriale  
[https://archeologiaindustriale.net/1610\\_il-villaggio-operaio-di-crespi-dadda-sito-unesco/](https://archeologiaindustriale.net/1610_il-villaggio-operaio-di-crespi-dadda-sito-unesco/)

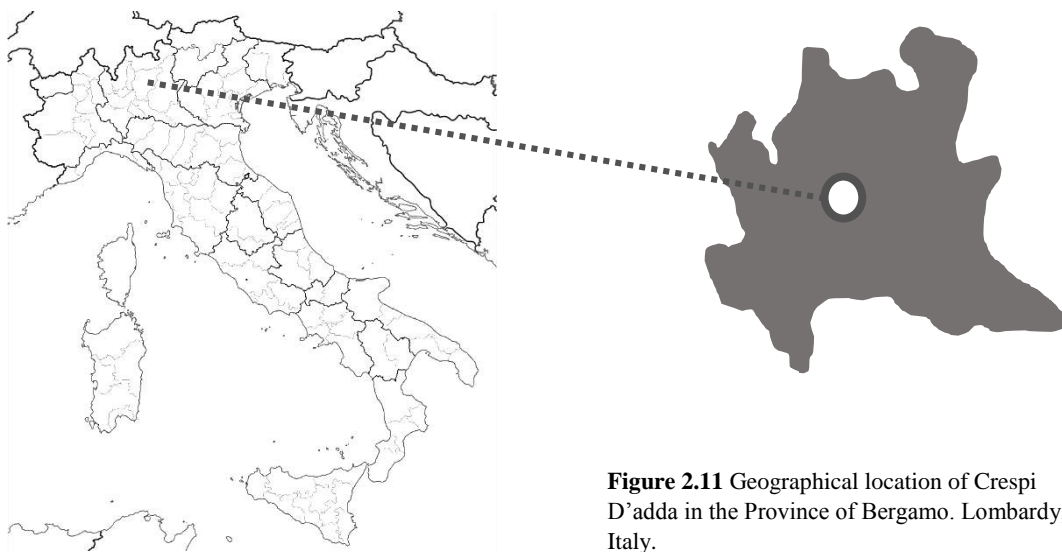
Cristoforo decided to build a factory that could hold at least 10,000 spindles, although in the beginning he would only be able to install 5,000. The equipment was all imported from England, and introduced the use of hemp ropes, the best available, for transmissions of the machinery. Cristoforo also wanted his business to be different from the many low quality Italian textile manufacturers. He aspired to be able to compete with British manufacturers, and began producing yarns from Egyptian cotton and worsted wool, considered the finest and virtually unknown in Italy (Comune di Capriate San Gervasio., n.d.).

Between 1880 and 1890 there was a particular economic fervor because of the decision to reschedule the establishment with the addition of the combing system in 1882 and 1890, the extension of the spinning and the realization of the locals for the twisting, bleaching and dyeing (Galli, 2017, p. 223).

### **Geographical location and environment**

*Crespi d'Adda* is located in *Lombardia*, at the western end of the province of *Bergamo*, in the community of Capriate San Gervasio.

The land bought by Crespi is mostly forested: a large 85 hectare triangle designed on the Bergamo shore at the convergence of *Brembo* and *Adda* rivers. The environment that surrounds *Crespi d'Adda* is unique: the village is situated in a cradle, a triangle shaped lowland, which is delimited by the intersection of the two rivers to the South and by a difference in level of the ground to the North, called *Fossato Bergamasco*. The two rivers, the *Adda* and the *Brembo*, form a peninsula, the village is located at the very end of the peninsula. The geographical isolation is also accentuated by the fact that the village is connected to the outside only from the North (Associazione Culturale Villaggio Crespi, 2017).



**Figure 2.11** Geographical location of Crespi D'adda in the Province of Bergamo, Lombardy, Italy.

## Planning

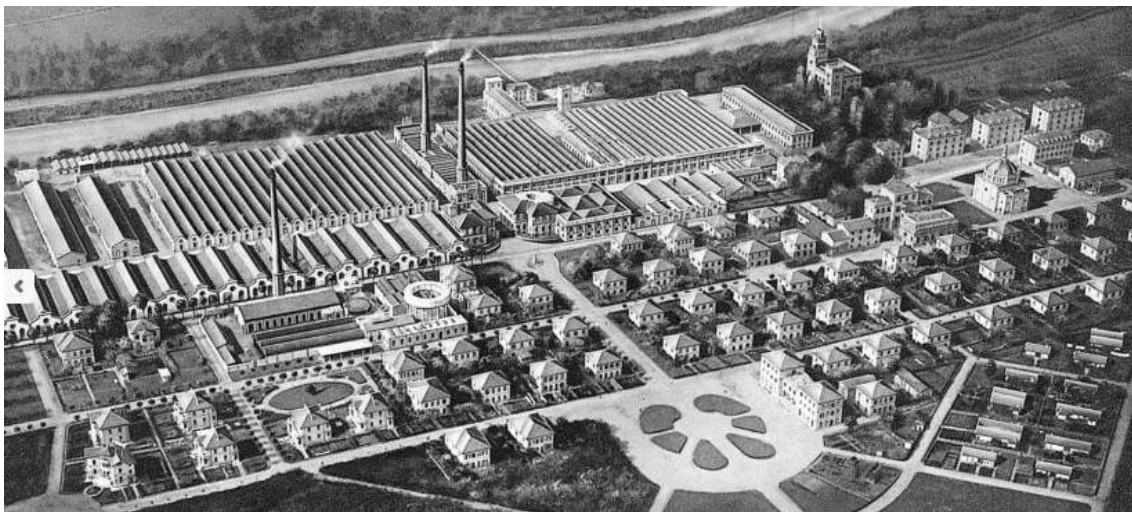
The layout of the company towns is extraordinary, it is well defined and very functional. The entire complex is arranged in a geometrically regular form. It is divided into two parts by the main road from *Capriate*. The factory is located along the river; Next to the castle of the Crespi family, as symbol of its power and warning for those coming from outside. The English-inspired workers' houses are aligned precisely to the east of the building along parallel roads; To the south there is a later group of villas for the employees and, enchanting big houses for the executives. The doctors and priest's houses are located on a hill with a spectacular view of the village, while the church and the school, side by side, face the factory. They point out the presence and importance of the building's tall



chimneys and its shed halls, which are repeated in a fascinating perspective along the main street, finally to the south is located the cemetery.

The industry is a great and solid mass with beautiful façades, which has been strategically located close to the river. An artificial channel was constructed to build a hydraulic power station in order to supply energy. The company town had a progressive growth starting in 1878, in 1900 it had already its current morphology.

Various architects acted in the company town hired by Cristoforo and Silvio Crespi, Pietro Brunati and Gaetano Moretti, were heavily involved in designing the production facility and town. In many cases, it is hard to distinguish where one person's work ended and someone else's began. However, it is likely that Pirovano was in charge of the land use plan and the architectural elements, while Brunati was in charge of the more structural and engineering elements. Moretti was chiefly involved in the cemetery and the *Taccani* power station in *Trezzo sull'Adda* (Comune di Capriate San Gervasio., n.d.).



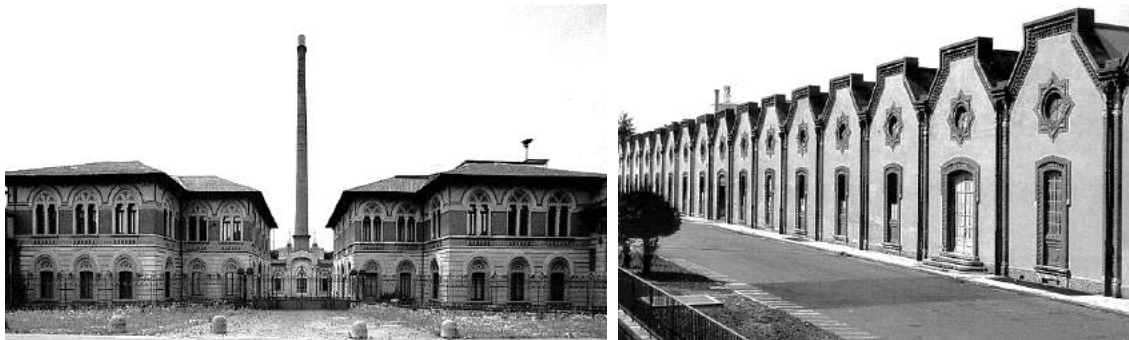
**Figure 2.12** Aerial view of Crespi d'Adda  
Source: Sitweb Archeologia Industriale  
[https://archeologiaindustriale.net/1610\\_il-villaggio-operaio-di-crespi-dadda-sito-unesco/](https://archeologiaindustriale.net/1610_il-villaggio-operaio-di-crespi-dadda-sito-unesco/)

### **Industrial architecture**

The factory itself is neo-medieval, the highest celebration of the industry is expressed by the main entrance, with its magnificent office and direction buildings designed by Ernesto Pirovano, the factory is a single compact block with ornamentation on its façades like the

emblematic eight-pointed star, symbol of *Crespi d'Adda* found on the facades of productive buildings made of brick relief. It is composed of 4 productive areas that correspond to each process of manufacture of cotton. The most innovative aspect of the productive complex is its horizontal development and not vertical as in other factories. The buildings had roofs type sheds, to take advantage of natural light.

The elegant chromatic performance between the light color of the walls and the red brick that border the volumes and corners, and highlight functional element as round windows and neogothic doors with this same material, create in the factory a rhythm that unifies the great volume with high symbolism and expressiveness.



**Figure 2.13** Crespi d,Adda. Main entrance to the factory

**Figure 2.14** Crespi d,Adda. Image of productive buildings

Source: Sitweb Archeologia Industriale

[https://archeologiaindustriale.net/1610\\_il-villaggio-operaio-di-crespi-dadda-sito-unesco/](https://archeologiaindustriale.net/1610_il-villaggio-operaio-di-crespi-dadda-sito-unesco/)

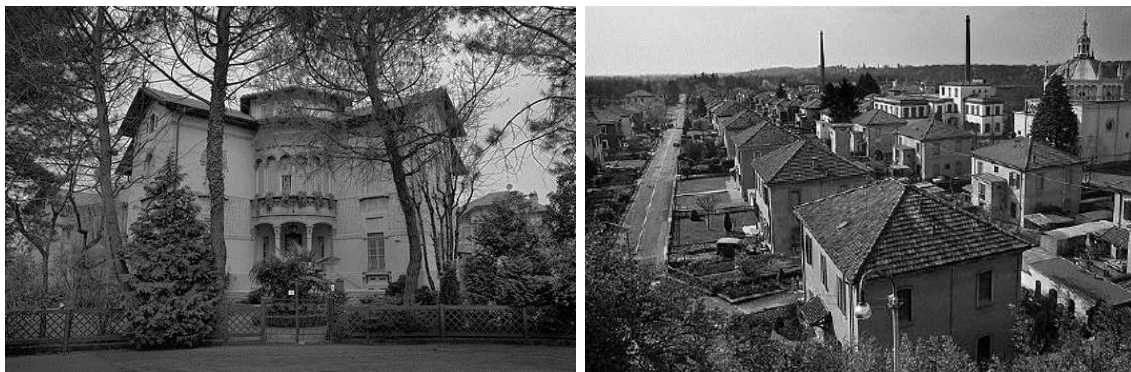
## Housing architecture

The neighborhood for the workers has gradually developed, the first constructions to house the workers are three large buildings, which are at the beginning of the settlement. They are large buildings capable of hosting up to 20 families. These buildings are inspired by the architecture of the first half of the 1800's. The son of Cristoforo Crespi, Silvio Crespi will abandon this style of housing considering it counterproductive for the environment that was sought in the company town.

Different from the typological point of view are the houses. Their design is characterized by the oscillation from simple geometrical layouts in the case of common workers to asymmetrical spatial articulations in manager's villas. The common house has usually two levels, large windows, and high ceilings. In the case of asymmetric layout they are designed larger and multi-level more isolated with respect to the workers' area and the

factory, they have a rich decorative elements and chromatic contrasts, they are surrounded by a garden and orchards. In the managers 'chalets the use of material is richer, in some cases they are cover in stone or wood is used to highlight volumes or functional elements, the use of balusters is common. Interesting is the replacement of the orchard with for garden that strengthen the ideological message: the position of the managers (Galli, 2017, p. 233).

The patronal village known as *El Castello*, is a work of Ernesto Piromano. It resemble medieval castle with two towers, while the church is the exact copy of the church of S. Maria, of renaissance style, in *Busto Arsizio*, where the *Crespi* family was born. The cemetery, of exotic taste and eclectic style, is a national monument and it is characterized by the Crespi chapel, a tower-pyramid that resembles a Ziggurat, which rises to embrace the workers' graves: small crosses disposed orderly in the meadow.



**Figure 2.15** Crespi d,Adda. One of the manager's villas

**Figure 2.16** Crespi d,Adda. Workers' houses

Source: Crespi Cultura. Associazione Culturale Villaggio Crespi  
<http://www.villaggiocrespi.it/gallery/>

### **Owner's vision and paternalistic actions**

Cristoforo Crespi was very interested in the wellbeing of the community and he also transmitted this ideology to his son Silvio. This was manifested in the concern about the beauty and quality of the houses, and the services and facilities built for the welfare and education of his workers and their families. For this reason in 1892 he ordered to build one of the first community building, the school. Students not only learned to read and write, but they also developed the capacity to be an assistant or manager of the factory.

Workers benefited from other amenities in addition to housing including public lavatories and wash-houses, a clinic, a consumer cooperative, a school, a small theatre, a sports center, a house for the local priest and one for the doctor, a hydroelectric power station which supplied free electricity and other common services. There were also buildings with a more symbolic value such as the church, the castle, a new office complex, and houses for the factory managers located south of the workers' residences.



**Figure 2.17** Crespi d'Adda. Current picture of the school



**Figure 2.18** Crespi d'Adda. Current picture of the church

Source: Image taken by the author. May 2016

### **Landscape modification**

As it is possible to appreciate in the image 2.19, Crespi D'adda was built in an isolated region between the river *Adda* and the river *Brembo*. The landscape transformation wasn't more that the modification related with the construction of the company town, since it was a textile industry that don't demand use of land. The relevant change was the transformation from a rural scenario to and industrial productive one, the landscape of the industrial revolution, the landscape of production, of community, of smoking chimneys and technical culture.

One notable modification made was that demanded by energy needs for production, as in almost all industry proximity to water was essential for industry success. Formerly, mills and workshops used the river's power, mainly through a complex system of canals and irrigation ditches. As the first factories were built, the energy of the *Adda* river was used more systematically and profitably, and was enhanced with the introduction of hydroelectric stations. This is also the case of *Crespi d'Adda*, when the factory was built, the enormous power station area, known as the *canapone*, contained a turbine which drove the repetitive movements of the machinery. In 1904, Cristoforo

decided to modernize it. The hydraulic plant transformed into a hydroelectric plant became operational in 1909 (Comune di Capriate San Gervasio., n.d.). 1 km long artificial channel was constructed.



**Figure 2.19** Crespi d'Adda and the surrounded landscape. It is possible to appreciate the hydroelectric and the channel

Source: Sitweb Archeologia Industriale

[https://archeologiaindustriale.net/1610\\_il-villaggio-operaio-di-crespi-dadda-sito-unesco/](https://archeologiaindustriale.net/1610_il-villaggio-operaio-di-crespi-dadda-sito-unesco/)

### **Current state, protection and conservation**

The crisis of the 29 marked a turn over for the company town. In the first months of 1930, not finding solution to the crisis affecting the factory, a joint stock company that merged the cotton mills Benigno Crespi, Venetian and Tuscan Manufactures, that would later become STI (Italian Textile Factories), was established. The fascism affected the company town, the castle became the local headquarters of the Fascist party and workers' houses were painted in green, white and red alternatively.

In the 1970s after some years of economic boom because of some improvements in working conditions, the company was again facing difficult times then was acquired by *Manifattura Rossari e Varzi*. Five years later, the factory and village were divided and the houses were sold to private individuals. In 1976, *Legler* purchased the factory for denim production. In 1989, *Polli Group* took over ownership. On 5 December 1995, *Crespi d'Adda* was named a World Heritage Site. On 20 December 2003, the factory closed its doors. In October 2013, the company *Odissea* purchased the factory and began refurbishing a portion of the complex (Comune di Capriate San Gervasio., n.d.).

The entire property had remained in company ownership until it was sold in the 1970s. Today, the ownership of the various properties is divided among public (municipality), religious (Roman Catholic Church - Curia of Bergamo) and individual or private. The private owner has indicated his intention to reallocate work in the factory, probably related to the services sector and, at the same time, to improve cultural and touristic activities in the village.

*Crespi d'Adda* has conserved much of its integrity as all aspects of the industrial town remain well preserved including factories, housing and services. This is due primarily to the fact that factory production continued until 2004. As a result, public, private, and industrial buildings have remained intact, and have not been demolished or substantially modified. Moreover, this situation has permitted the retention of the relationships between these constituent elements. These characteristics have made possible its inscription in 1995 to The World Heritage List as an UNESCO site.

Although the village remains intact, changing economic and social conditions, particularly a declining population, pose a potential threat to its continued survival. This threat might be contained and mitigated by recent positive changes with a demographic and socio-economic plan.

According to (ICOMOS, 1995) The property is administered by the Municipality of *Capriate San Gervasio* with some responsibility falling to the *Consorzio Parco Regionale Adda Nord* benefiting from various levels of protection: national, regional and local. At the national level, the town is under the protection of Legislative Decree 42/2004, Code of cultural heritage and landscape which designated it as an *urban center of historical character and environmental importance*. This legislation imposes a number of restrictions on owners. In both the historic center and the surrounding landscape, authorization for each intervention is granted or denied by the relevant authority, in order to ensure the compatibility of the project with the conservation criteria. At the municipal level, protection is provided through prohibitions to inappropriate urban development or modifications.

Under the provisions of Law No 1497 of 26 June 1939 on "Protection of natural beauties *Crespi d'Adda* is designated as an urban center of historical character and environmental

importance which imposes a number of restrictions on owners. Law No 431 of 8 August 1985 brought the entire area surrounding the river Adda and the woodlands round the urban center within the terms of tins designation. Only the Crespi family mausoleum is protected as an individual monument. Under the provisions of Law No 1089 of 1 June 1939.

Additional measures apply to the complex's most important buildings such as the Crespi family mausoleum, all the public properties, and the Roman Catholic Church's property. Crespi d'Adda is also subjected to an instrument of urban planning *Urban Master Plan*. This plan regulates decisions concerning methods of intervention relating to environmental and architectural heritage, on the basis of historical studies and analysis. The relevant administrative body is the Municipality of Capriate san Gervasio. Its Municipal Urban Plan for Crespi d'Adda, prepared according to Law No 1150 of 17 August 1942 and adopted by the Town council on 23 June 1994, contains regulations controlling interventions on private and public buildings for which official authorization is obligatory.

The Consorzio per il Parco Regionale dell'Adda Nord and the Consorzio della Comunnita dell'Isola Bergamasca also have roles in connection with the overall management of the area. The Territorial Coordination Plan, prepared in conformity with national and regional legislation, has been in force since 6 December 1993. It has a wider field of application than the Municipal Urban Plan. So far as Crespi d'Adda is concerned, there are three levels of regulation, affecting areas of natural interest, historical sites and areas with morphological and structural characteristics which must be preserved, and areas which need to be inserted into a specific context (ICOMOS, 1995).

There has been no program of conservation specifically based on the cultural and historical significance of Crespi d'Adda. A consistent approach covering the entire complex of industrial, public, and private buildings was maintained so long as it was in the ownership of a single entity (the company). Since that time, the private buildings, being in individual ownership, have been well maintained, but there has been some deterioration in the state of the public buildings. These are now the subject of restoration projects, in particular the school, where there is a plan in active preparation for its reuse as a center incorporating a museum, library, and meeting center. More serious is the

condition of the small hydroelectric power station, which is an excellent example of early 20th century Art Nouveau architecture. Its technical equipment is still in situ and plans are being prepared for its rehabilitation as an industrial heritage museum.

Also other initiatives has been developed to transmit and protect the technical, and cultural values of the company town. Visit guides to the company town and surroundings are coordinated. There are regional Itineraries like: *Itinerari Lungo Fiume*, where Crespi d'Adda is an important anchor point. The association *Crespi Cultura* was created with siege in the settlement, this association is responsible of performing cultural and sensitizing seminars and researches. This association also develop a sustainable touristic model, based on a high cultural, technical and local content.

### **2.3.3 Torviscosa**

#### **Identification of the Company town**

*Foundational name: Torviscosa.* The name is the fusion of the old village's name and the new production function.

*Foundation date:* On 28 October 1937, commenced the works on the construction of the so-called cellulose town. The 21 September 1938 the functional company town was already finished, but some enlargement works continued taking place.

#### **The company, founder and management**

Industrial sector: Agroindustry. Production of artificial fiber obtained from cane (rayon known in Europe as *viscosa*).

The company town was built by private funding from *SNIA Viscosa, Società Nazionale Industria Applicazioni Viscosa*, this enterprise was located in Milan. A shared capital company. Founded in 1917 by Riccardo Gualino and Giovanni Agnelli as *the Italo-American Shipping Company (Società di Navigazione Italo Americana – SNIA)*. Several years later the company was opened to other investors.

After 10 years of the creation of the company, Agnelli left the firm, Gualino opened it up to foreign investors, gaining a controlling stake, above all, to prevent expansion into foreign markets. In 1929 a cause of the economic crisis Gualino resigned, and Italian investors bought large stakes; after a thorough restructuring, the company was



relaunched, with Senatore Borletti as chairman and Franco Marinotti as director (Rustico, 2015, p. 256).

The cellulose town was an initiative of Franco Marinotti, managing director and after the president of the company. According to Fontana (2003, p. 54) the state, just created the new commune, immediately gave it to the total control of the enterprise, almost as in a feudal contract. It is a typical manifestation of the agreement of interests of the fascist period, where it is not easy to distinguish territorial transformation and separate the public from the private.



**Figure 2.20** Franco Marinotti  
Source: <https://it.wikipedia.org>

Driven by autarky as the definitive project that involved the productive effort of the nation, the cellulose production became feasible, and it was SNIA *Viscosa* which was to carry out the grandiose project: to this end, in 1937, it set up SAICI, the Industrial Agricultural Company for the Production of Italian Cellulose (*Società Anonima Agricola Industriale per la produzione della Cellulosa Italiana*) with Franco Marinotti as its chairman, being responsible of purchasing around 6,000 hectares of land, the realization of the agricultural and industrial sites, and their management.

### **Geographical location and environment**

*Torviscosa* is located in the province of Udine in the region Friuli-Venezia Giulia. Between the woods and the swamps lay *Zuino*: a few thatched cottages scattered around an ancient watchtower. The company factory was built to the east of the town.

As Rustico (2015, p. 258) portrays, it is possible to have an idea of the landscape before the industrial implantation, The *Stabilimento Fototecnico Crimella* was responsible for the documentation of the birth of the industry. The author describes that in this pictures is possible to see that the landscape was dominated by swamps, woods and uncultivated land, and the only activity seems to be the fishing. The images also allow how it was centuries before when the only income came from the dense oak forests, to supply Venice's Arsenal.



**Figure 2.21** Geographical location of Torviscosa in the Province of Udine. Friuli-Venezia Giulia, Italy

It is known that in this area around 1600 the Marquises of Savorgnan, began a massive process of bringing land under cultivation, along with the construction of an entire village known as *Torre di Zuino*. After 1800 after a period of various owners 40 farmhouses were erected in the area, and a brickworks, A little while later the new owners, the counts of Corinaldi, set about a general renovation of the system of waterways, restored the old farmhouses and built new ones, and made *Torre di Zuino* a model agricultural enterprise.

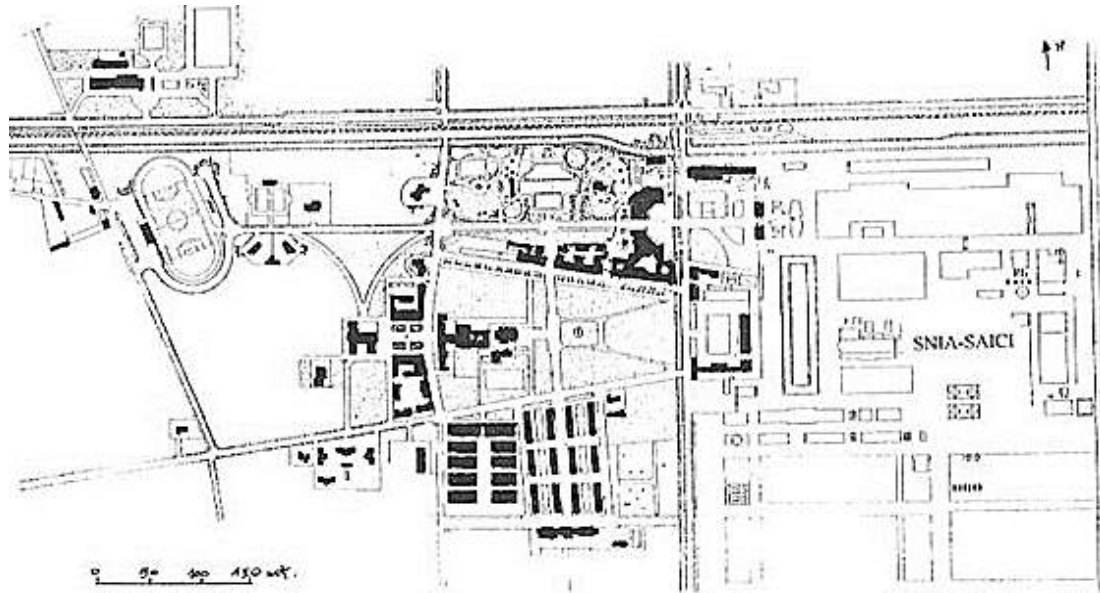
### **Planning**

Giuseppe De Min an architect from Milan was in charge of the project of the new company town. De Min has collaborated with the company since 1920. He choose to include the pre-existing urban and road framework in the town plan.

The architect following the paternalistic-controlling ideology of Marinotti, planned a garden city divided into areas according to their function and organized hierarchically. Rustico (2015, pp. 261-263) describes the project: to the north, the social and sport facilities, at the center, the public buildings, one next to the other; and to the south, the workers' living housings. The factory and all the industrial buildings were built to the east of the town. At the same time, opposite the factory entrance, overlooking *Piazza dell'Autarchia* (Autarky Square), the Recreational infrastructures and a hotel. To the side

of *Piazza Impero* (Empire Square), the heart of the new civic center were located educational buildings.

The project envisioned by Marinotti and achieved by the architect Giuseppe De Min which used the existing road network in the project design. The urban settlement can be resumed in two areas of similar dimensions located one besides the other, the town and the industry. The arrangement of the industrial area responded to the industrial and



**Figure 2.22** Torviscosa general planning in 1937 by Giuseppe De Min  
Source: [http://www.artefascista.it/torviscosa\\_fascismo\\_architet.htm](http://www.artefascista.it/torviscosa_fascismo_architet.htm)

technological process. The town has a reticular organization inscribed into trapezoidal shape, the connections between the different housing areas, the social places and the productive zone are articulated by different squares.

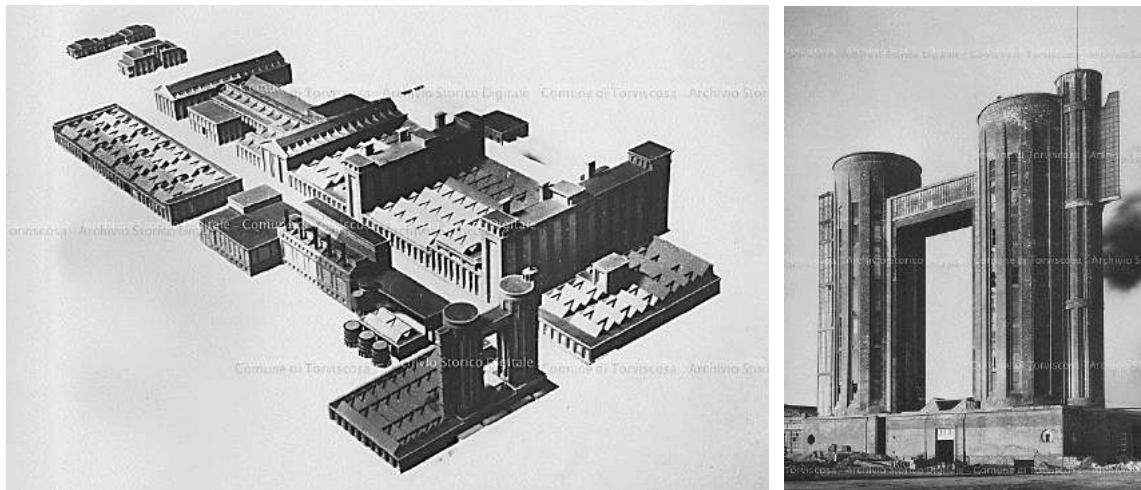
The company took advantage of the existent transport network. Historically, Venetians, Paduans, and Lombards, just like SNIA *Viscosa* invested in the area because it was vast and well-connected, well-served by roads and waterways. At the end of the 1800 an important railway that connected Trieste with Venice was constructed.

From the point of view of transport and connections the area presented all the characteristics for the industrial implantation. The presence of the national highway, the railway and the proximity to the sea with the possibility of creating a third communication channel, was and advantage (Fontana G. L., 2003, p. 54).

## Industrial architecture

The industrial buildings were constructed on the presets of rationalism and functionalism. These characteristics are represented in the façades and volumetric shape of the buildings. At the same time, various architectural codes are used, depending on the building's purpose, the factory entirely in clad recalls similar German constructions dating from the beginning of the 20th century (Rustico, 2015, p. 268) and the relation of this buildings with the site of production.

The oldest part of the industrial structure was design by architect Giuseppe De Min and constructed between 1937 and 1940. It includes various buildings with different functions and also different forms and volumes, according to the functions they were designed for, but always using prismatic volume covered by red bricks and large glass windows adapted to the shape of the façades.



**Figure 2.23** Torviscosa industrial complex. A big complex unified by the modulation of façades, volumes and materials

**Figure 2.24** The two Jensen towers destined for the production of calcium bisulphite in 1940

Source: CID Torviscosa Documentary Information Center

[http://www.cid-torviscosa.it/catalogo/?pp=108&ipp=25&fond\\_id=2&page=catalog&sort=reference\\_number](http://www.cid-torviscosa.it/catalogo/?pp=108&ipp=25&fond_id=2&page=catalog&sort=reference_number)

Immediately behind the porter's lodge, the office building was made up of a central portion with three floors and two symmetrical wings leading to the second and first floor. A 1 km long avenue led from the office building, lined by various buildings that made up the cellulose production plant. A little further away are two Jensen towers destined for the production of calcium bisulphite. The first, further to the north, was built in 1938 while the second was built in 1940 during work to double the size of the plant. The towers

are 54 meters high, with a circular plan, and rest on a rectangular base. The two towers are linked at the top by a horizontal path (CID Documentary Information Center, n.d.)

### **Housing architecture**

The workers' village was divided in two groups of houses styles: The first group belonged to the homes known as *colombaie*, on which building began in 1943 but which were only completed in the '70s. This group was made up of ten blocks of terraced houses on an east-west axis. Each block had five homes. The main facades had arches that marked the entrance to each home, while the southern-facing facades had large dual height arches, a kind of sun break for the side that was most exposed to the sun.

The second group, known as *case gialle* was built between 1941 and 1944. This was made up of 12 blocks of buildings in a line, ordered into four parallel rows along a north-south axis. The facades were marked by the modularity of the windows and on the whole seemed more modest than the *colombaie* (CID Documentary Information Center, n.d.).



**Figure 2.25** Image of the Colombaie houses in 1950

**Figure 2.26** Image of the Gialle houses in 1950

Source: CID Torviscosa Documentary Information Center

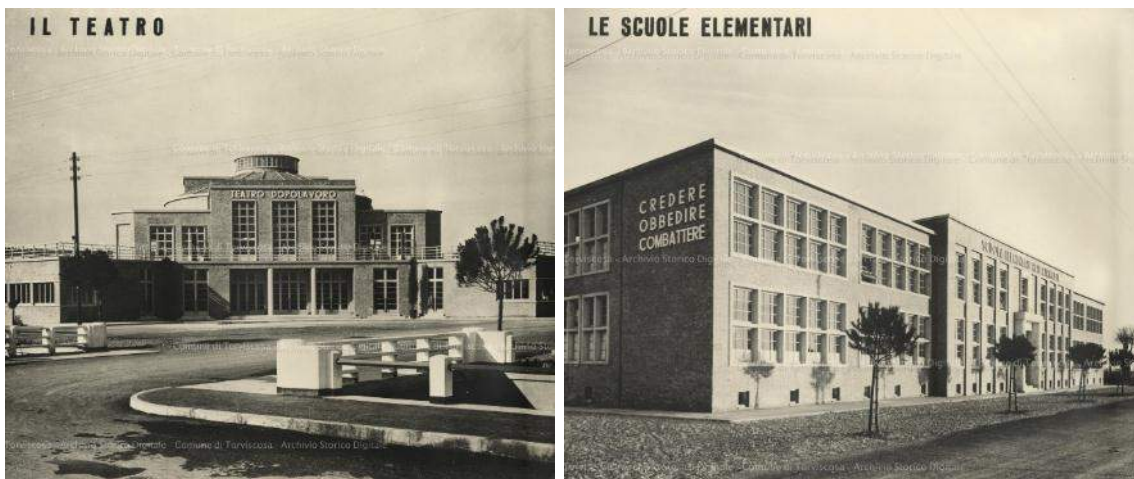
[http://www.cid-torviscosa.it/catalogo/?pp=2&ipp=25&title=case+per+gli+operari&from=&to=&fond\\_id=0](http://www.cid-torviscosa.it/catalogo/?pp=2&ipp=25&title=case+per+gli+operari&from=&to=&fond_id=0)

From 1948 to the end of the 1950s, various types of buildings constructed were placed more freely, but always respecting the areas assigned to various professional levels: the technicians' houses in the center, next to the office-workers, the semi-detached houses for middle management and the villas for the managers were set apart and surrounded by greenery.

## Owner's vision and paternalistic actions

Franco Marinotti envisaged this town as a happy, orderly comfortable place, made up of comfortable homes and pleasant amusements. He strongly believed that a contented factory-worker would be loyal and more productive. For that reason a premise in the conception of the company town was carefully regulated time spent at work and the free time afterwards. This could guarantee that social harmony considered essential to the firm's economic strategy as well as to the policies of the Regime.

His actions to guaranty the well-functioning of the company town and social well-being were displayed in the facilities available to the company town's population. The settlement counted with sports facilities like: swimming-pool, tennis courts, and a football terrain. Between public there was a church, the schools complex with kindergarten and gym, the town hall and the market square, a working-men's club, a company hotel and a recreational theatre with its library.



**Figure 2.28** The afterwork theater 1941. Il teatro dopo il lavoro.

**Figure 2.29** The elementary school 1941.

Source: CID Torviscosa Documentary Information Center

[http://www.cid-torviscosa.it/catalogo/?pp=108&ipp=25&fond\\_id=2&page=catalog&sort=reference\\_number](http://www.cid-torviscosa.it/catalogo/?pp=108&ipp=25&fond_id=2&page=catalog&sort=reference_number)

## Landscape modification

As an agro-industrial activity that requires big land extensions to cultivate the raw material this kind of industries are big landscape modifiers. From autumn 1937, the surrounding countryside changed dramatically, in the case of Torviscosa the landscape transformation came along with cane plantations. The agricultural activity was developed along rational lines. The large parcels of land began to take shape, they were bordered by

roads and irrigation channels, and seven model farms were built, known as agencies, they were equally structure. Each agency was capable of farming the land attached to it independently.

Soon there was a new landscape, replacing the previous agricultural activity like rice and tobacco by giant cane; no longer tenant farmers, but workers of the land and factory workers; no longer farmhouses for big extended families, but small one-family homes (Rustico, 2015, p. 265).



**Figure 2.30** Cane plantation and cutting center, defoliator.

**Figure 2.31** Transportation and stacks of cane are part of the everyday landscape

Source: CID Torviscosa Documentary Information Center

[http://www.cid-torviscosa.it/catalogo/?title=canna&from=&to=&fond\\_id=0](http://www.cid-torviscosa.it/catalogo/?title=canna&from=&to=&fond_id=0)

### **Current state, protection and conservation**

The great extensions of cane production was not enough for production demands. After the war, without autarky there was no real economic reason for keeping the big plantations. At the end of the 1940s there was an attempt to keep the sugar cane and it became a raw material in the production of ethyl alcohol. From the 1950s onwards, cellulose was extracted only from timber trees, mostly imported from Northern Europe (Rustico, 2015, p. 269). Under this circumstances the cane terrains were reconverted to the production of fruit, animal feeds and cereals, cattle-rearing was expanded together with the popular plantations, and the new agricultural and food branch surged with the Torviscosa brand-name.

The instability in the production on cellulose forced the enterprise to look for new productions alternatives, in the 1960s it began to produce caprolactam from toluene. *Torviscosa* thus supplied raw material needed for the production of synthetic fibers and

plastic materials. After the death of Franco Marinotti in 1966 and years of heavy losses, it was decided in 1978 to restructure the company and sell the agricultural and food branches, together with the real estate assets. The town and the almost 6,000 hectares of farmland were thus put up for sale.

Rustico (2015, p. 270) portrays that this was a great change to the inhabitants, because it was the end of the housing division based on the hierarchical scale of the productive sector. Now, everybody could choose where to live. In the 1990s, SNIA ceased textile fiber production and started reconverting *Torviscosa* from a basic chemical plant to a specialized one. Since 2010, the enterprise no longer exists, and the historical buildings have been sold off. The industrial site is still the location of plants that use part of the structures. One of these was purchased by the *Bracco Group* and restored between 1999 and 2002. Recently has been inaugurated a new chlorine soda plant.

The original town plan is still substantially unchanged, because later development luckily only involved the area to the west of the original center. The various functional areas that made up the planned community are therefore still recognizable.

The memory of the town is preserved thanks to the existence of different foundations like: *I Primi di Torviscosa* that works every year in order to transmit the memory doing activities like: publications, General Assembly of Members and cultural tourism tours. The foundation also have a vast archive with a considerable number of documents, pictures, films, thesis, audios, videos, etc.

Another institution is The CID, Centro Informazione Documentazione (Documentary Information Centre) is where most of Torviscosa's documentary heritage is stored. The Centre's aim is to control and organize its use. Part of the material preserved, including archive documents, photos, patents, designs, building plans, maps and models, has been used to create a multimedia exhibition with themed areas that can also be the basis for educational workshops.

#### **2.4 Identification of good practices in the study cases.**

As we have seen in the comparative analysis of the three Italian examples of company towns: *Nuova Schio*, *Crespi d'Adda* and *Torviscosa*. They are three industrial settlement



with different characteristics that have in common a lasting and preserved industrial heritage. In this point of the research it is intended to define which are the most significant actions carried out in these company towns in order to use them as a basic elements for the creation of the methodology for the enhancement and reuse of company towns.

The most outstanding actions carried out in the study cases can be consider as good practices in the reuse and enhancement of company towns, they are described below:

1. The first activity be performed after the stopping of industrial activity, or when we are in presence of a company town with outstanding value should be establishing a contact network with all institutions concerned about the company town, the realization of agreement between cultural institutions, academics, government, community, and others will set the bases to proceed with indispensable activities like cataloguing and registration of all components of industrial heritage, and to record every transformation.
2. The continuation of production is crucial, either by continuing the productive activity itself or by adopting other productive alternatives. Industrial activity is always the neuralgic core of these settlement, it guarantees jobs, urban dynamism and assume responsibilities, with the community as a key actor.
3. Generally the company towns have operated for various years, many events and changes happen in the long operational period, in the worst case the end of productive activity arrives. A crucial task is the recovery of the files of the company even those that are in the hands of inhabitants, who want to donate them voluntarily. Their classification, cataloging and publication is important, enterprise archives need to be available for researchers and study.
4. It is necessary to organize all the elements that conform the industrial heritage of the company town as promoter's components of local development plans that acts in a local and regional scale. This allow to gain interest in industrial culture, and the reuse and conservation of industrial heritage in a systematic and organic way.

5. The creation of public competitions are good strategies to find accurate solutions, create interesting projects and to look for capital, partners and investor in order to achieve the previously planned developments plans.
6. The adjudication of the houses' properties to inhabitants has been very common in the analyzed cases. Once the settlements loses the sense of unity that entrepreneur and industrial complex creates, it is very important to act on the conscience of houses' owners.
7. To count with accurate choices when a restoration, modification or transformation need to be done. Manuals and guides should be carefully realize on the basis on the scientific research. For this is necessary to do continuous job with the community, talk about their needs and demands. It is necessary to catalogue the buildings and how much they are susceptible to transformation. Owners should have domain of the manuals and guides, they need to have choices to select before ask for a transformation permission.
8. An important problem is the abandon of buildings and company towns' infrastructure. To avoid the irreversible loss of industrial heritage components and their integrity it is necessary to accomplish preventive restorations meanwhile reuse solutions are not achieved. Public spaces or service buildings can be recover and readapt to the needs of the society.
9. Community needs to have an active participation in the process of reuse and enhancement. Local initiatives can be linked to local and regional development plans. It is necessary to promote local development through planned visits, itineraries, cultural tourism and temporal and permanent activities. Local association that connect and articulate the relation between local population and local and regional governments can be created.
10. It is needed to establish protection levels taking into account local and regional regulations, regarding industrial heritage. In this case is important to classify interest component as historical sites, sites of natural interest, morphological features areas and all possible applicable parameters.

### ***Chapter 3***

*Sugar company towns in Cuba. The case of Hershey*

### Chapter 3: Sugar company towns in Cuba. The case of Hershey

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#### Résumé

Le chapitre est divisé en quatre analyses. Les deux premières sont directement liées au patrimoine industriel. La première partie consiste à analyser le contenu du patrimoine industriel du sucre en identifiant dans les cités ouvrières le comportement des composants du patrimoine industriel définis dans le premier chapitre. La deuxième partie répond à l'un des objectifs de la recherche en démontrant que les centres de production de sucre sont des cités ouvrières. Cette affirmation est également justifiée par les critères utilisés dans le premier chapitre pour comprendre les cités ouvrières et leurs caractéristiques.

Puis, en utilisant la même approche analytique conçue dans le deuxième chapitre, on expose les caractéristiques de la Cité Ouvrière Hershey en tant que ceux d'une cité ouvrière *lambda*. Cela permet de faire ressortir les composants de valeur de l'établissement productif de sucre. Enfin, on analyse la situation actuelle concernant la conservation et la réutilisation du patrimoine industriel à Cuba, ainsi que les principales organisations et les mécanismes juridiques qui participent à ce processus.

### 3.1 Sugar industrial heritage.

Like any kind of industrial activity, the sugar industrial heritage is composed of the components' combination that make up the industrial heritage previously defined in this work: productive places, warehouses and stores, services, communications, social places and intangible components. Taking into account the context in which this industry is developed and its economic, police and technological characteristics, these components will be manifested in a particular way that will be described below.

Productive places: To understand how this complex component of the industrial heritage manifests itself in the sugar industry, it is necessary to analyze the evolutionary process suffered by the technology of sugar production and their characteristic elements.

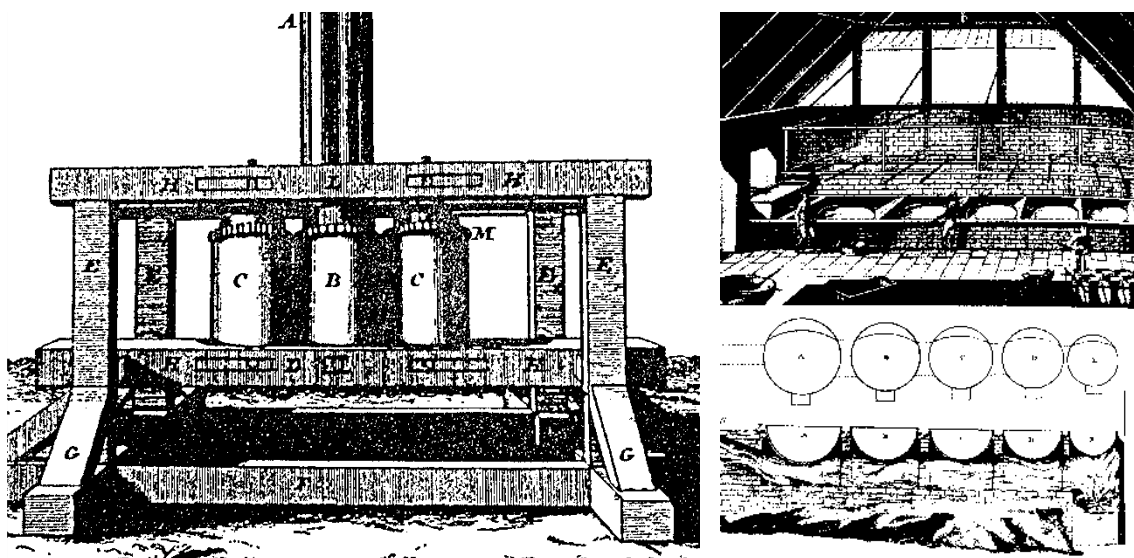
Typical sugar mill also known in Cuba as *Ingenio*, mainly developed during the 18<sup>th</sup> century had rural-domestic characteristics. The agricultural tasks were manually carried or by rudimentary techniques, sugar cane's transportation from plantation areas was carried out by oxen pulled carts. The mills also known as *trapiche* were made of wood, with three vertical masses through which the cane was compressed, the driving force was animal.

Moreno Fragnals (1978, pp. 77-78) describes sugar production's technology in Cuban Ingenios as following: The juice extracted from the cane is known as *guarapo*, it was poured in large copper pots where it was cooked until evaporation achieved the concentration optimum degree. The wood was the fuel and each pot had its individual fire. The cooked product was emptied into a chiller. The last factory operation consisted in sugar's separation and was known as purging. The partially crystallized mass was emptied into clay cones, these were stored inverted so that by gravity the honeys were deposited to the bottom and the glass of sugar remained on the surface.

In 1800, sugar industry maintains the same productive flow and works with the same means as those mentioned above, but substantial changes are made. The Otahití cane was introduced, more robust and high with juices rich in sucrose. There is an expansion in the cane fields to Matanzas, east of Havana, beginning the territorial expansion of sugar. When the yield of a land descended, producers didn't seek alternatives for its improvement, it was simply abandoned. The *trapiche* remained for a long time the same

as the old one, but it was improved significantly with the adaptation of metallic pieces replacing other similar ones of wood. Also were added the *volvedoras* that are pieces of woods that took the pressed cane and mechanically reintroduced it into the masses.

Towards 1790 a foreign technician offered a promising solution for sugar producers. A mill to press sugar cane without the use of animals, slaves, water or wind. He was Esteban La Fayé, a French engineer. He proposed a machine of horizontal masses whose movement was maintained by the impulse of a great pendulum. The experiment failed, but it was the background of the horizontal mill. Afterwards, in 1796, the driving force of the great industry came to Cuba: the steam. It was a machine bought in London. Its installation was an unique event. On January 11, 1797 it began to operate at the *Seybabo Mill* and I worked for several weeks, the experiment failed not because of the steam machine but a cause of the incompatibility with the rigid machinery of the mill and the transmission system. (Fraginals, 1978, p. 84)



**Figure 3.1** Typical vertical sugar mill of 18<sup>th</sup> century. Mostly used between 17<sup>th</sup> and 19<sup>th</sup> centuries. First constructed of wood, later metallic pieces were introduced.

**Figure 3.2** Typical French Train.

Source: Extracted from “El Ingenio: complejo económico social del azúcar”. By Moreno Friginals.

Meanwhile the mills remained technically the same as before, but bigger, better made and with more resistant materials. In the boiler house two substantial changes are noticed: one referring to the arrangement of the pots and another referring to the used fuel. In the mentioned systems the cooking of sugar was carried out in individual pots, this

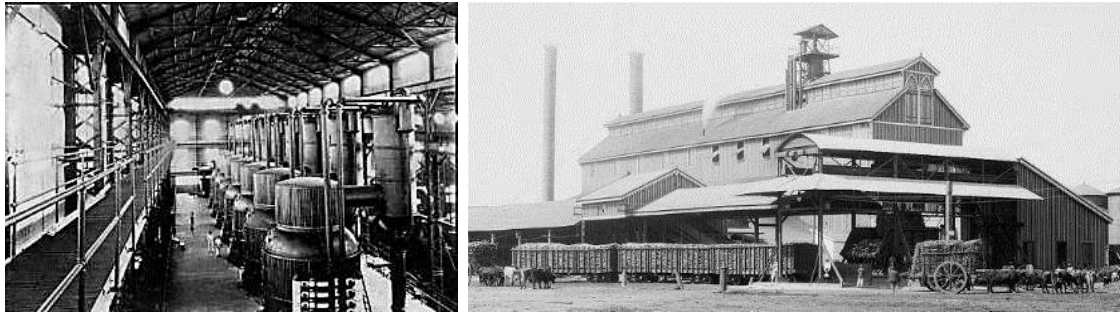
accelerated the process but generated an excessive expenditure of fuel. *The French train* began to be used, which consisted of placing all the boilers on a single fire cannon in a straight line. The fuel is placed under the first pot that receives direct contact of the flames and the diffused heat warms the rest of the pots. This system was inferior in cooking time but more economic, it could also work with bagasse. *The French train* was introduced in Cuba around 1780. It was also known as *Jamaican Train*.

The evolutionary process of the mill as a sugar productive center has several stages. The first stage is the animal driving force *ingenio*. Then the semi-mechanized *ingenio*, which is characterized by the replacement of the animal driving force by the steam engine, it is characteristic of this process, the deforestation, to provide firewood and new areas for cultivation. The semi-mechanized *ingenio* generalizes the *Jamaican train* looking for fire use efficiency. Mechanized *ingenio*, it is a new *ingenio* that doubled the performance and quality. This type of *Ingenio* separates the agricultural sector from the factory sector and constituted the bases of the great *Central*.

From 1898 onwards, Cuba faces great political changes, the government of the United States interferes in the Spain-Cuban War and occupies the Island by 4 years. This action laid the foundations for an intensive transformation of the Cuban sugar industrial landscape. As a result of this action a massive flow of capital arrived to the country, taking control of the sugar business. The growth of the sugar industry was uninterrupted for a quarter of a century, due to the heavy investment of American capital and the start of the First World War, which caused a diminution in European sugar beet production. Consequently Cuban sugar exportations in the international market increased.

The *central* is the technological evolution of the mechanized sugar mill. Already in the 19<sup>th</sup> century, it was known as *central* to the largest and modern facilities in front of the oldest, called sugar mills. Once the industry was mechanized central and sugar mills are synonyms. (Santamaría, 2002) Between 1915 and 1926, 50 sugar mills were inaugurated, twice those built between 1900 and 1915. These large mills and latifundia were concentrated in the eastern provinces, Camaguey and Santa Clara. In 1925 each of these provinces produced more sugar than the whole island in the previous century with 400 sugar mills (Funes, 2005).

This productive jump was due in great measure to the appearance of sugar mills capable of producing enormous quantities of sugar called *colosos*. In 1940 there were 27 of this sugar mills and 15 in Camaguey and 12 in the East. These efficient plants managed to triple the yields in sugar processing and significantly reduced production costs. These giant sugar factories dominated thousands big extensions of land with a network of railways of their own that guaranteed the continuous flow of cane.



**Figure 3.3** Interior Image of the Sugar Mill Jaronú.

Source: <https://maitediaz.wordpress.com/category/arquitectura-y-urbanismo/>.

**Figure 3.4** Sugar Mill in Aguacate, Cuba. 1904.

Source: Library of Congress <https://www.loc.gov/resource/det.4a11924/>

Warehouses and stores: When analyzing sugar production in Cuba stands out the way of storing and transporting it. Large sugar productions needed to be supported by a warehouse system that allowed this product's storage before sending it to its final destination. In the 20<sup>th</sup> century with an efficient system of warehouses and ports, connected by a network of stable railways, it is not difficult to imagine how this complex sugar storage operations was carried out.

However during the colonial period when technological development was insignificant and communications had not reached a high degree of development, the reality was different. What began in the sugar mills, used to continue in the city. Havana is a typical example of this phenomenon because of its city-port characteristics, and also because most of the mills were located around it, during colonial age.

The commercial character of the city provoked typological transformations in Havana houses, which had to assume new functions, like the storage and packing of sugar. This house became the prolongation of the sugar mill in the city, being the articulation point between the place of production and the port. Therefore the development of the sugar

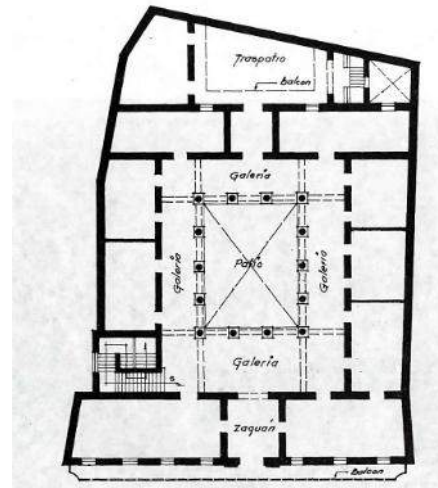


industry that started in the countryside decisively influenced the transformations that occurred in the city (Rodríguez, 2004, p. 1506).

According to Friginals (1978, p. 185). The traffic of sugar cane arrived in carts to the gates of the city wall from the sugar mills, there, the merchandise was transported to owners' houses, whose lower floor served as a warehouse, this space was the extension of the sugar mill in the city. Later the sugar was transferred from the house to the docks. With sugar production growth, the lower floor of the houses became insufficient for these spaces. By the middle of the 19th century with the development of the great industry, all these problems were solved, since the railroads ended at the docks, and big warehouses located in Havana's docks replaced the ground floor of the Havana house as part of the sugar production system.



**Figure 3.5** Don Mateo Pedroso's house in 1938



**Figure 3.6** Ground floor of Don Mateo Pedroso's house

Source: Extracted from "La Arquitectura Colonial Cubana" by Joaquín E. Weiss.

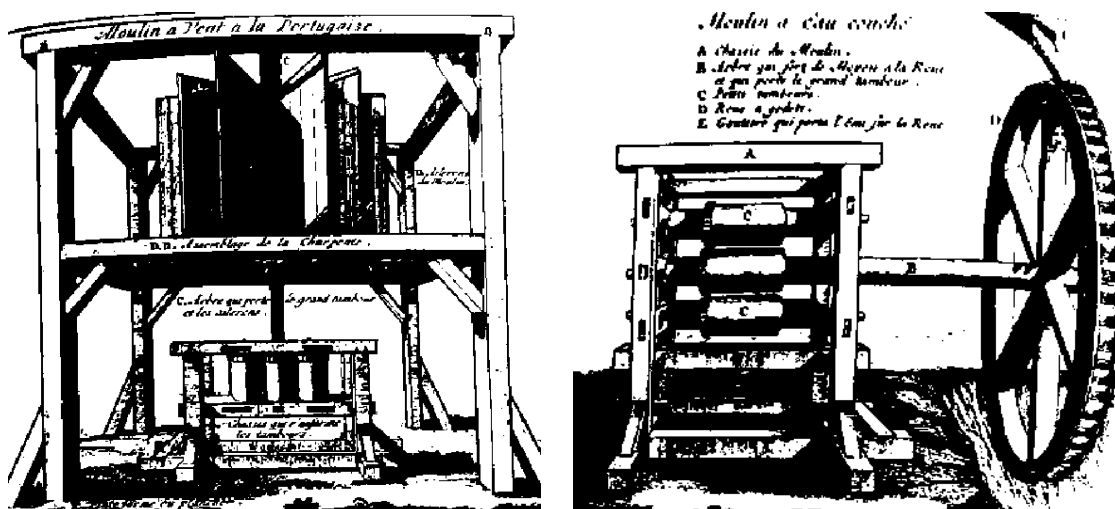
As Rodriguez Betancourt (2004, p. 1507) highlighted, this habitat developed in Havana must be understood as the practical and aesthetic result that pursues the basic objective of responding to the needs of the producer-owner. It is a self-sufficient structure that seeks to adequate itself as an economic-social component.

Services: Relating this component of the industrial heritage to sugar industry we must go back to the first mills, the animal driving force sugar mill, which as its name indicates the driving force was generated by animals. As Moreno Friginals (1978, p. 77) portraits it is known that in the first vertical mills the movement was applied through levers actioned

by oxen. In the animal driving force sugar mill, the other type of energy used was fire to cook the sugar juice in large pots, the fuel used to feed the fire was the wood of the Cuban forests. The introduction of the Jamaican train allowed to start using bagasse as fuel in the production process.

The optimization of energy and the search for new sources is always a constant in industrial processes. Cuba in the middle of the sugar industrial development process was not left behind. First it was tried to replace the oxen by mules but these were more scarce and expensive.

According to Moreno Friginals (1978, pp. 82-83) The creative fever of the late 18<sup>th</sup> century tried to exploit air and water as driving forces. Pedro Diago, one of the greatest industrial inventors that lived in Cuba, built his mill, powered by the force of the wind. This was similar to the already existing sugar mill, the only difference was the curious system of sails for the transmission of energy. This project failed. Water as a driving force was a solution for producers in the region of Güines, this area counted with the waters of the *Mayabeque* river. Some producers milled with these types of mills, but the Habana-Matanzas sugar expansion did not have abundant exploitable river currents, so these water mills were only isolated solutions. It is also known the existence of some wind powered sugar mills, on the *Almendares* river riviera, in Havana.



**Figure 3.7** Wind powered vertical sugar mill. Employed in small factories of the English Antilles. In Cuba the only known example is the one used by Pedro Diago.

**Figure 3.8** 18th century water powered horizontal sugar mill. Its utilization in Cuba was very limited. Source: Extracted from: “El Ingenio: complejo económico social del azúcar”. By Moreno Friginals.

The jump to the use of steam in the sugar industry would take time, specialists have stated that the first steam machines applied to the sugar industry did not generate a greater increase in production in comparison to the animal driven sugar mills. But the jump to the semi-machined mill using the force of steam was inevitable. The main reason for the boom of these sugar mills was the extraordinary saving in animal oxen and labor in the production facilities. After several experiments with the steam, it was possible to construct machines of more capacity and more resistant that quickly raised the curve of production accelerating the rhythm since it allowed to establish conductive mats to feed the mills with sugar cane.

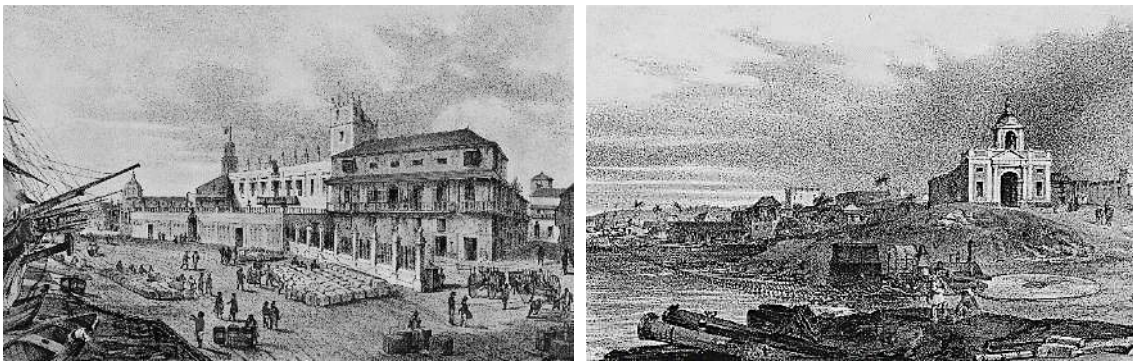
Communication: The transportation of products generated by the sugar industry to the port, constituted an important phase in the development of this industrial sector. The lack of roads was a strong obstacle that large manufacturing found. For this reason, the first sugar mills are born near navigable rivers to extract the sugars towards the sea and dispose of the existing coastal traffic around Cuba.

Communication linked to the phenomenon of sugar in Cuba travels four stages, path, mule path, cart path and railway. (Fraginals, 1978, p. 179) The first was the one made by the men who opened the clearings to the sugar mills. Then came the mule path with its long row of mules, carrying with them sugars and honeys until the end of the 18<sup>th</sup> century. But this type of communication was not very useful for the great manufacture that demands a heavy traffic of heavy boxes. The manufacture of the 19<sup>th</sup> century goes from the concept of loading to pulling, and establishes the transit of carts.

The serious inconvenience of the roads persisted for a long time, a huge number of efforts, ideas and suggestions were directed towards the solution of the road problem. One of the measures considered was to create a navigation channel from *Güines* to Havana. This project had its antecedents since 1765 to assure the transport of wood from the forests of the south to the harbor, located in Havana Bay (Zanetti & García, Caminos para el azúcar, 1987, p. 20). But the lack of water supplies caused modifications to the project which needed a locks system to store rainwater. These factors, in addition to the great necessary financial effort, attempted against the proposal.

Land transportation problems, mainly of merchandise, posed an embarrassing situation to creole producers. The long distances of bad paths shadow the possibility of any solution. Only in the last years of the eighteenth century the routes that brought sugar to Havana were repaired. However, the market situation and its future evolution demanded an urgent solution, the sugar world and its speed of production, proportions and the intricate interrelations demanded a radical transformation. Fortunately for sugar producers, their concerns coincide with the first successful tests of a means of transport destined to transform terrestrial communications.

The railroad in Cuba was born thanks to the transportation requirements of the sugar industry, due to this the first section is projected from Havana to *San Julián de los Güines* was constructed where a large number of mills were concentrated. This section was opened on November 19, 1837 just to *Bejucal*, and exactly one year later, the railway arrived in *Güines*.



**Figure 3.9** Carts in Havana docks. Oxen pulled were the basic transport to move sugar from the sugar mills to the dock.

**Figure 3.10** Little railway that connected the Havana docks with Regla warehouses.

Source: Grabado de F. Mialhe. *Isla de Cuba Pintoresca*, 1840-1841. Miami Libraries Digital Collections.

<http://merrick.library.miami.edu/cdm/compoundobject/collection/chc9999/id/63>

The railway entry in *Güines* meant, in the first year, a 70% reduction in the high transport costs (Fraginals, 1978, p. 182). In 1838 the revenues were close to 100,000 pesos for the following year with the railway fully operated, revenues were tripled (Zanetti & García, *Caminos para el azúcar*, 1987, p. 39). Barely a decade after the inauguration of the first railway, the territory of Havana was crossed by railways in different directions, and the service covered others parties of Havana like: *Güines*, *Bejucal*, *Santiago de Las Vegas*, *San Antonio* and *Guanajay*.

In 1846 in the area occupied by the railways of Havana, there were 169 sugar mills with a total production of more than 40,000 tons of sugar. (Zanetti & García, 1987, p. 62). Between 1855 and 1860 the railways grew, at a rate of 80 kilometers per year, quadrupling the average of the previous five-year period. Sugar was undoubtedly the only appropriate engine to boost Cuban railway projects.

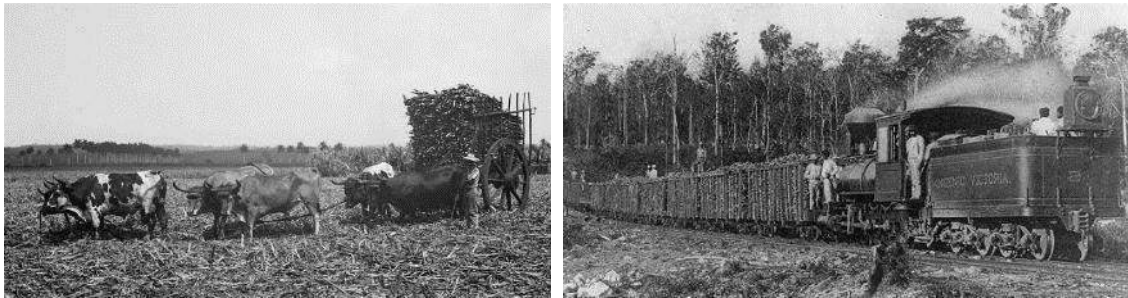
The railway played an important role in the jump from manufacturing to the great industrial sugar production in Cuba. "The railroad, and not the steam engine applied to the mill, is the first element of the industrial revolution that completely transforms the Cuban conditions of production." (Fraginals, 1978, p. 182)

Thanks to the railway, many sugar mills increased their production, becoming factories of greater capacity, more efficient and profitable. Many small producers whose deteriorated equipment and productive machinery did not allow affordable costs and quality productions began to supply sugar cane to more efficient factories in a process of concentration or centralization, They became a colony that supplied cane, without necessarily changing land owner.

Railway development during the beginning of the 20th century helped to consolidate the mono-producing character of the Cuban economy. American investments succeeded in creating a monopoly which operated along the railroads of the eastern provinces and most important sugar exporting ports on the Island. The introduction of the railway led to an appreciable reduction in the costs of sugar transportation, leading to the consolidation of the competitive position of Cuba in the world sugar market.

Due to the transportation conditions in Cuba and its particular problems, the railway solution involved a considerable saving of resources for the economy of the Island. Resources that went to the hands of the sugar sector, because this was the main beneficiary of the advantages of the railway. Thus the railroad contributed to the

acceleration of the enlargement of the sugar sector and to the consequent accentuation of the nonproductive diversification of Cuban economy.



**Figure 3.11** A cargo of sugar in a Cuban plantation. 1904

Source: Library of Congress <https://www.loc.gov/resource/det.4a11926/>

**Figure 3.12** Railway of the sugar mill Yaguajay, Cuba. 1901

Source: Library of Congress <https://www.loc.gov/item/2012648387/>

Social places: Sugar production centers were always located in rural areas, where large fields were harvested. The employment of numerous Cubans with job possibilities depended directly of this economic sector. The continuous work of large factories demanded a concentrated population, this situation brought the attention of the administrative sector on the conditions of their workers' habitat.

Sugar industry's territories are those that present greater capacity for the assimilation of population. What initially began with the simple guarantee of a temporary accommodation, became a stable support for families' life. Consequently human settlements were created around sugar mills, whose existence is linked to the industrial process (Gutiérrez & Rodríguez, *Del Patrimonio Industrial Azucarero: El Central Hershey*, 2009, p. 22).

These settlements were commonly known as *batey*, as the precolonial settlements of the Island used to be called. The residential arrangement in the *batey* is organized stratified according to social classes, economic categories and ethnic groups. Large sugar mills could include all the services of a small town.

Until the end of the 19<sup>th</sup> century, the sugar settlements did not present a specific order of planning. As Tania Gutierrez (2015, pp. 3-4) depicts, the industrial component is what rules the growth of urbanization since it is the most important and pragmatic building of the settlement. The domestic buildings responded to three typologies, the bourgeoisie, the salaried employee and the slaves. The owner's house in the middle of the countryside can

be classified as a palace for a luxurious life. The lower class composed by the machinist, the male nurse, the foreman, the person in charge of the cattle, carpenters, masters of sugar and blacksmith were concentrated in a group of houses of certain comforts. The black population was enclosed in the barracks, a single building built of stone and brick in a quadrangular shape surrounding a courtyard.

With the republic and the great insertion of North American capital in Cuban market the morphology of the *batey* changed. In 1880 slavery was abolished, hence the labor and the population in sugar mills were made up of salaried employees and their families. Urbanism was marked by the subdivision of social classes, administrative areas, where the administrators' house was located, was the most grandiose house. They will follow in terms of quality the houses of the engineers, chiefs of workshops, settlers and heads of offices.

In this zone are also located buildings of socio-administrative character and services. The singular building of social character is represented by the buildings that provide a social service and by its singular character, given among other reasons for being an important part of the urban symbolism of the *batey*, as architectural milestones. Such are the cases of cinemas, playrooms or clubs, schools, shops, hospitals, etc.



**Figure 3.13** Manager's house of the central Jaronú.

**Figura 3.14** Cinema of the central Jaronú.

Source: Extracted from "El Patrimonio Edificado de los Centrales Azucareros de Camaguey" by Herson Herrera.

The workers' zone is where the lower hierarchy workers coexist. This well-planned urban area is where workers permanently live, the house was a basic means of the sugar mill. These houses are generally built with prefabricated balloon-frame systems and they adopted the architectural image of North American chalets (Herrera, 2009, p. 31). It is

also necessary to mention that in many centers there were barracks for single or temporary workers, these barracks had basic services to accommodate a large number of people.

Intangible component: To talk about sugar in Cuba is to talk about people identity and their culture, because it is a basic element in the design of such fundamental components as national consciousness, architecture, geography, dance, music, even ethnic composition. In addition, sugar culture is very important in light of the current changes of Cuban society. (Lozano, 2009)

The new panorama that generated the sugar, allowed to unify cultural currents whose final psychological, sociological and political result was the emergence of Cuba as a nation. That is why Cuban culture history is indissolubly linked to the sugar industry. It was a Cuban triumph and a nation's response to the archaic concepts of Spanish domain. It should be remembered that while Europe lived the consolidation of industrial capitalism, Spain clung to the vestiges of feudalism, especially in the few remaining colonies, including Cuba. (Lozano, 2009) It was in a sugar mill where in 1868 began the War for Cuban independence, when Carlos Manuel de Céspedes gave freedom to his slaves and convinced them to join the struggle for Cuban liberation.

The Cuban runaway slave or *cimarrón*, was a sociocultural phenomenon that also has its genesis in sugar. It was the natural rebellion reaction of the *negro* submitted to the regime of a cruel, perverse and deformed exploitation system in sugar plantation, where they forced him to work without rest. However, faced with this brutal system, the *cimarrón* managed to extract the sense of freedom, the need for emancipation and unity around common interests, even brotherhood, solidarity and resistance to the system, all these characteristics are consolidated in the values that led him to join the Ten Years War.

Sugar cane plantation and sugar itself, were elements that catalyzed and definitively channeled the birth of the Cuban nation. This fact generally goes unnoticed but it conformed a cultural being and it produced a *sui generis* personality. So much so, that the way of thinking and most of the cultural expressions of the Cuban are marked by the sugar. It is necessary to emphasize that manifestations such as dances, music, food, tools, mythology, oral literature, among others, allude directly or indirectly to sugar mill, and



the life in this settlements, to the master, the foreman, the slave, the settler, the creole, in few words, the Cuban.

Sugar in Cuba propitiated and accelerated process of miscegenation. First by the introduction of African slaves and later as a result of the need of salaried labor. Various ethnic groups, including Chinese, Irish, Canary, Galician, Catalan, Indian, Haitian, Jamaican, Barbadian and others. This heterogeneous set interacted with the already varied Cuban cultural universe.

The entrance of the railway to the country provided an important dose of vitality to the island union. Cuba was constituted mainly by social cores with relative autonomous life until the end of the eighteenth century. The expansion of sugar through the railroad led to the gradual disappearance of differentiating elements in pursuit of unity. In every place where a mill was built, the same social structure was created with equal interests.

The eailway was a structuring element of the Cuban landscape because the lines linked dispersed sugar mills, urban centers of the western zone, Cienfuegos, Trinidad, Puerto Principe and Oriente were interconnected. Along with the railroad and the industrial impetus of the mid-nineteenth century arrived also the telegraph.

### **3.2 El central as a company town.**

Sugar mills are productive settlements that are always found in rural areas separated from urban centers. The technological process begins with the raw material and finish with its subsequent processing. It is of great interest for this work to understand these sites as company towns. To achieve this objective the same characteristics previously studied in company towns will be applied to sugar mills, since they are exclusive phenomena that share similar criteria.

#### **3.2.1 Paternalism.**

Talking about industrial paternalism in sugar industry may be contrasting. Since the colonial period, sugar production in Cuba was born and developed on the basis of slavery. There is no doubt that after the Haitian revolution, sugar production in Cuba began to develop considerably, in 1792 there were 245 mills which used to produce sugar with a hundred slaves and had production of 10,000 arrobas a year. By the year 1804 the mills

had increased to 350 and had under their control 300 slaves for an annual production of 50000 arrobas of sugar (Funes, 2005).

According to Moreno (1978, p. 359), slavery had been the salvation of Cuban manufacture, raising it to first sugar producer in world-wide rank in the period of 1829 to 1870. Since the 1820s and a progressive gap between creoles and peninsular residents, producers and merchants, the idea of salaried worker emerged as the only definitive solution to the great difficulties of manufacturing. From a purely theoretical point of view, the salaried worker is cheaper than the slave. But the basic question was that there was no free worker market to meet the needs of sugar manufacture. The producer needed to solve the problem of labor. They had slaves because they needed it, because the market had not offered her another option.

After the end of slavery in 1880, the salaried worker appears in the sugar industry. At the beginning of the 20th century motivated by the great investments of American capital arose the new sugar mills and with them a new urban structure that had greater consideration with the worker. The houses, generally wooden chalets will improve the quality of life of workers, some of the sugar mills will have schools, social spaces, infirmary, and baseball stadiums for the development of competitions against other sugar mills' teams. There was also the presence of public parks and gardens for the well-being and enjoyment of the population. While this great development of sugar mills took place in Cuba, there were already many examples of company towns and model towns worldwide, so owners and designers could be influenced by previous experiences in the international context, and they were conscience of what paternalistic initiatives could bring to their business.

### **3.2.2 Planning and urbanism.**

In the case of the first mills, the components of the *batey* are grouped around a square without a prearranged order, following the dictates that the traditional city had imposed. A public space around which, different buildings are distributed. (Rodríguez, 2004, p. 1503)

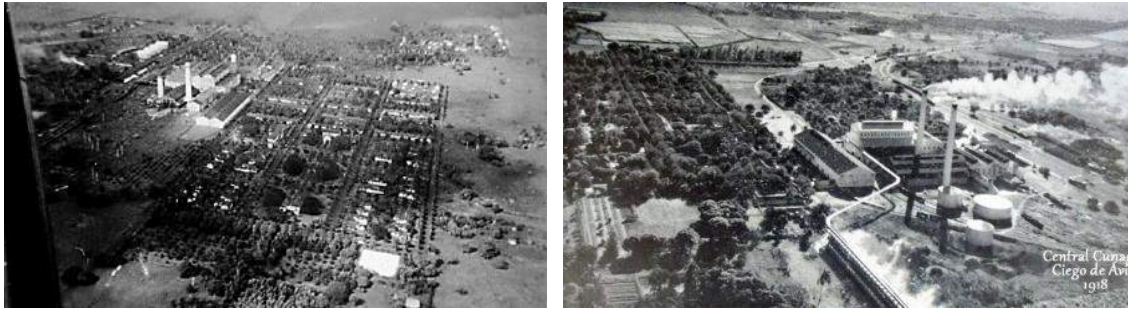
Urban growth was always marked by productive activity. In sugar settlement, industrial architecture always stands out: the enormous machinery house constituted the

fundamental axis, around which the rest of the buildings are located such as the purge house, the dryers, house of the carts, horse stables, and warehouses. The manor house was located at the highest point and the slaves' barrack with its characteristic square shape is the other construction that conforms the settlement. A series of workshops support the production process, such as carpentry and blacksmithing. The mills also had a pasture or corral for cattle used in transport. Other buildings that compose the settlement are the chapel, the infirmary, nursery and the houses of employees.

During the period of the republic with the injection of American capital, the development of large central and the presence of salaried worker the urban paradigm is another. The great sugar expansion towards the east of the country creates an interconnected panorama of many sugar mills that are built isolated from urban centers in the middle of great savannahs. All of them will share the same basic compositional principles at the planning level. It will be an urban scheme marked by three zones. The industrial zone that houses the basic element of the settlement, and does not have an organization with specific urban criteria, because it responds to the productive processes of the industry.

In the remaining two zones urbanism is marked by the subdivision of social classes or racial differences. The urban image will express the social subdivision in the urban landscape. This criterion of subdivision was generalized when creating the towns (Herrera, 2009, p. 30). In these areas is where the urban and architectural elements that represent sugar settlements developed throughout the country in the first half of the twentieth century are more similar. These areas are designed to lodge the workers, with a part for the administrative employees and another one for workers. These areas may be differentiated by the parcel's dimension and types of housing.

According to Herrera (2009, p. 32) for almost all settlements, there are similarities in architectural and urban morphological characteristics. Extensive walks and parks shaped like extended gardens, first-order roads, secondary roads with good finishing, underground networks, housing and socio-administrative buildings with similar external characteristics.



**Figure 3.15** Aerial view of the Central Jaronú

Source: Personal Blog Fragmentos-Diarios. <https://maitediaz.wordpress.com/2009/06/02/el-central-jaronu-un-monumento-de-la-industria-y-el-urbanismo-en-cuba/>

**Figure 3.16** Aerial view of Central Cunagua.

Source: Site web Norfipc. <https://norfipc.com/cuba/fotos-viejos-centrales-azucareros-cubanos.php>

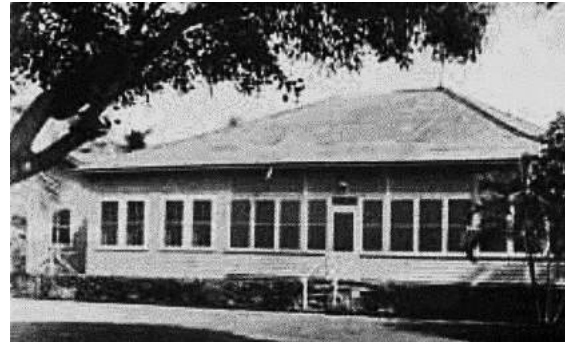
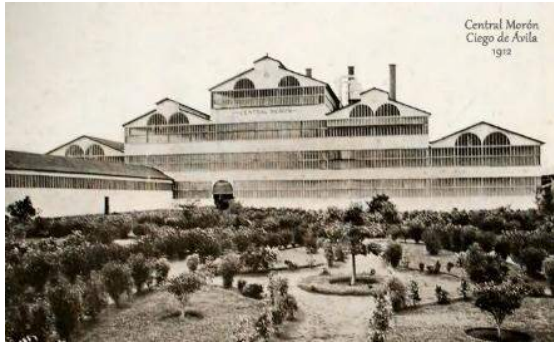
In both images is possible to see the industrial area composed by bigger building and the housing area characterized by spaces orthogonally parceled and full of vegetation.

### 3.2.3 Architecture.

As we saw when studying company towns, architectural characteristics are divided in two groups, industrial architecture and housing architecture, this does not refer only to form but also to construction systems. In the sugar settlements the same phenomenon is manifested.

Industrial architecture can be found in most significant buildings of the settlement and it is generally based on the standards of construction corresponding to the time of its foundation. Most of Cuban sugar mills and a great part of those demolished during the task of restructuring the national sugar industry, were built with steel structures, roofs and walls of metal sheets, and used concrete in floors and mezzanines. Architectural expression gained its maximum identity by the combination of the giant metallic nave and the large planes of their facades. The naves overlapping with each other responded to the technological process. Various projects had decorative elements on their façades, by the combination of the metal sheet and glass windows. In some facades or smaller buildings were used the brick walls with metallic covers.

With the penetration of American capital also penetrated American influence in architecture. Propaganda about construction systems began to expand throughout the country. The country began to import materials for the construction of American brick or wood chalets with wooden or iron frames, which allowed the realization of several models of housings; from the most modest to the most luxurious (De las Cuevas, 2001, p. 179).



**Figure 3.17** Moron Sugar Mill in 1912. Façade design by the combination of volumes, arcs and crystal.

Source: Site web Norfipc. <https://norfipc.com/fotos/cuba/centrales-azucareros/central-moron.jpeg>

**Figure 3.18** American chalet at Central Preston. It is possible to appreciate the front portal covered with mosquito net.

Source: Image taken from the book 500 años de construcciones en Cuba by Juan de las Cuevas.

Many small towns associated to American companies began to have an identical physiognomy: wood chalets, with cement floor, corrugated zinc roofs, and mosquito net protected windows. On housing architecture in sugar mills de las Cuevas (2001, p. 180) suggests that sugar mills Boston and Preston can be taken as examples to describe the characteristics of the housing architecture. Residential areas were well defined, created on three hierarchy levels, Americans, Cuban chiefs and workers. The American houses were two-stories houses built with wooden floors and walls and roofs with clay or galvanized zinc tiles, always with wooden false ceiling: they had wide portals all around, with mosquito net, they were built on piles which rose one meter above the ground to avoid moisture. The neighborhood for the Cuban chiefs also had wooden houses, with portal only to the front and lacked large gardens.

### **3.2.4 Landscape.**

Landscape characteristics in Cuban sugar mills will have extremely important implications that will mark Cuban identity and cultural landscape. These implications are displayed from different points of view: The construction of the settlement itself, the raw material, huge extensions of cultivated land and the lines of communication that constitute a component and an extension of this landscape.

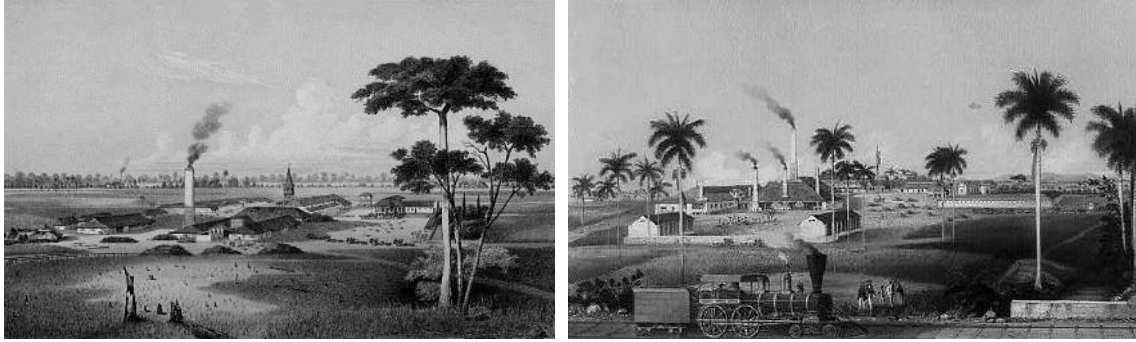
Sugar industry for its development depended on the felling of forested areas, these virgin lands were very fertile and the wood was used in the construction of industrial facilities and as fuel for the furnaces where the honeys were cooked. But this intrinsic need of the forests would constitute a brake in sugar production until the end of 18th century. Havana

was one of the most important shipyards of the Spanish Empire being the wood of Cuban forests the raw material for ships construction, therefore the forests were reserved for this purpose. Sugar production were just developed in areas that had been previously cleared by the shipyard, the irruption of sugar in these areas meant the elimination of the forest, the plantations dimension and the need of firewood eliminated any possibility of forest's regeneration (Funes, 2005).

This situation lasted until the last third of the 18 century, Sugar producer's strength linked to external factors such as the Haitian Revolution, the advance of economic liberalism in the island and the decay of naval constructions allowed that sugar producers could access to the exclusive wooded areas of the crown.

By royal decree in 1815, private landowners were granted the right to cut down the forests within their properties. Let's remember that before this stage the forests were control by the real shipyard. If we take into account the distribution of land at that time: there was almost an absolute predominance of private property, so the transcendence of this decision would be much greater. A process of unstoppable felling began, sugar production raised and producers refused any initiative in order to control the felling, because they knew that the success of their companies depended on this activity (Funes, 2005). From that moment on Cuban ancient forest turned into an endless extensions of cane plantations that mark the skyline of the Cuban fields.

Another transformation of the landscape came along with the appearance of the first mills as a productive complex that created an entirely new impact on the landscape of Cuban savannas. It began to be observe the gradual mechanization of a productive activity, and the appearance of oxen pulled carts loaded of sugar cane. At the sound of a bell the slaves moved in and out of the green cane mantle, constantly guarded by the terrifying sound of the foreman's whip. The plantations and the profile of their constructions constituted in rural landscapes real feudal lordships, built on the slavery exploitation (Rodríguez, 2016, p. 1501). There will always be from this moment on, tangible and intangible components of the landscape, such as the skyline of the fields covered by steaming chimneys and the constant smell of cane *melao*.



**Figure 3.19** Sugar Mill Union. Image of the transformation of the landscape, deforestation and productive activity.  
Source: Magazine « Perfiles de la Cultura Cubana » [http://www.perfiles.cult.cu/article.php?article\\_id=324](http://www.perfiles.cult.cu/article.php?article_id=324)

**Figure 3.20** Sugar Mill Acana Cuba 1857. Railway, industrial building and plantations. A sugar cultural landscape  
Source: Library of Congress <https://www.loc.gov/item/89711235/>

On November 19, 1838, after several years of paperwork, studies and controversies, the first section of the railroad was inaugurated, linking Havana with *Guines*, the great plain where most of the mills and regions were concentrated and potentially rich in sugar production. The railway broke the natural border that did not allow the expansion of Cuban agricultural production, especially in the field of sugarcane. Bringing to the landscape the dynamic image of the industrial revolution and modernity, it constituted an structuring element of the territory, allowing the emergence of new settlements and especially from the point of view of the agro-industry allowed to separate the agricultural sector from the factory, all this can be resumed into greater sugarcane crops and greater landscape transformations.

### **3.3 Hershey Sugar Company Town.**

As previously mentioned the study case to be analyzed in this research is the Hershey Sugar Company Town. This settlement presents exclusive features such as those of company towns. The following analysis is been realized with the same methodology designed in the second chapter of this work. The accomplishment of this analysis is essential to understand this sugar productive settlement and to have all the necessary information to proceed with the efficiency verification of the methodology for the enhancement and reuse of company towns.

#### **Identification of the Company town**

*Foundational name:* Known since its foundation as *Central Hershey*.

*Current name:* After the triumph of the Cuban Revolution in 1959 changed the names of many industries, adopting the name of historical events or martyrs of the revolution, today the *Central Hershey* is known as *Central Camilo Cienfuegos* just like the urbanization.

*Foundation date:* On May 30, 1916, the land was purchased, and in the same year the first construction works began. In 1917 began the construction of the railways. On March 20, 1919, The Hershey Sugar Mill, milled for the first time, about 1000 men made their debut in the sugar industry. In 1924 the works of expansion and construction of the refinery began (Ribot, 2008, pp. 28-30).

### **Industrial sector and productive process**

*Industrial sector:* Agroindustry, sugar cane production.

*Productive process:* Begins with the planting of the fields, after the harvest the cane is transported to the sugar mill. The mill is fed and the juice is extracted, then the process continues to purify the juice, then, the evaporation clarification and crystallization are achieved. Finally, the product is centrifuged.

### **Founder and management**

**Founder:** Milton Snavely Hershey. American industrialist born in Pennsylvania United States. Owner of the Hershey Chocolate Corporation. Known by the quality of his chocolate products. (Ribot, 2008, p. 21)

**Owner:** For the management of his businesses in Cuba Milton S. Hershey created two companies The Hershey Sugar Corporation, and the Hershey Cuban Railroad Co.

### **Type of Company**

The Hershey Sugar Corporation was a multinational company that had the responsibility to produce and export sugar to Pennsylvania, and the Hershey Cuban Railroad



**Figure 3.21** Image of Milton Snavely Hershey in 1910

Source: Site web Hershey Community Archives. <http://www.hersheyarchives.org/exhibits/default.aspx?ExhibitId=22>



Co had a local scope of operation, its function was to support the production process and the transport of passenger. The capital used to start the operation of these companies came from the Hershey Chocolate Corporation. This company was considered in the American finances as an independent capital enterprise (Ribot, 2008, p. 21) .

### **Antecedents of the company**

When Milton Hershey obtains its first million dollars by the sale of the Lancaster Caramel Company, He decides to dedicate itself to develop the chocolate business. In Derry Township, in the Lebanon Valley, Pennsylvania. He begins then to build far from the city a factory and town, a city for workers, Hershey City globally recognized as Chocolate town (Ribot, 2008, p. 21).

Milton Hershey first visited Cuba in January 1916. It is said that he fell in love with the country. Hershey was excited by the immense sugar plantations in Cuba. In 1916 the world was involved in the first great war and sugar, essential to milk chocolate production, was in short supply. During his first visit to Cuba, Milton Hershey decided to purchase sugar plantations and mills so that he could mill and refine his own sugar for use in his Hershey chocolate factory.

Hershey business in Cuba began with the purchasing of a small sugar mill, Central San Juan Bautista. Selected the site on which to build a larger mill, and started to build a railroad to service it. When he returned to Pennsylvania in early April, the Cuban enterprise was already well under way. The flagship of Hershey's Cuban properties would be a new mill and town, Central Hershey, located near Santa Cruz. Much like his decision to build his chocolate factory and the town of Hershey, Pennsylvania. The site chosen for Central Hershey was not close to transportation or a ready supply of workers (Hershey Community Arhives).

### **Geographical location**

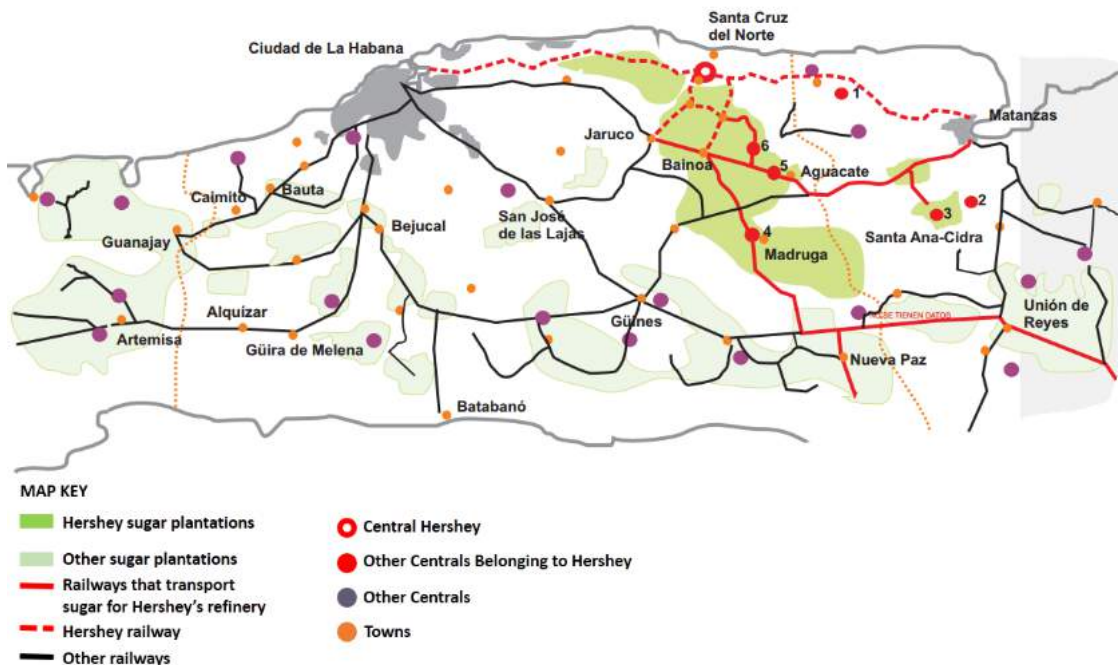
The Central Hershey is located approximately 45 km east of Havana Bay and 4 km south of Santa Cruz del Norte. Its location is almost the middle point between La Habana and Matanzas.



**Figure 3.22** Micro-localization of Central Hershey

Source: The scheme was made with data from the map of the provinces of Havana, Atlas of Cuba. Ed. Cuban Institute of Geodesy and Cartography, Havana 1978.

Once Central Hershey was well established, with the purpose of develop his business in Cuba, Milton Hershey purchased other centrals, some for the mill and others for the sugar plantations attached to them. In 1920, he bought Central Rosario. In 1925, he bought Central Carmen and Central San Antonio and in 1927, Central Jesus Maria (Hershey Community Arhives).



**Figure 3.23** Central Hershey and its relationship with other railways, sugar mills and plantations

Source: The scheme was made with data from the map of the provinces of Havana, Atlas of Cuba. Ed. Cuban Institute of Geodesy and Cartography, Havana 1978.

### **Geographic environment**

Amarilys Ribot (2008, p. 19) depicts the idea that before the construction of the central, the zone was a lost landscape marked by the stones, a geographic elevation near the north coast. A site without external communication, without accessible roads. The predominant vegetation was the marabú. There was only one peasant house and the peasants of the region used to make coal furnaces.



**Figure 3.24** A small hydroelectric power station inside the natural park Hershey Gardens.

**Figure 3.25** A family swimming in natural park Hershey Gardens.

Source: Image taken by the author. July 2017.

The Santa Cruz river runs through the properties, where there are some springs discovered in the year of the foundation of the central. Its waters have been used in the industry, but the site was preserved and converted into a natural park.

### **Planning**

The construction of the sugar settlement is born from the previous experience of Hershey City in Pennsylvania. Central Hershey is an urbanized batey of American architecture. It was structured around a strictly geometric design, characterized by a perfect layout and an exact parceling, which constitutes a very expressive and functional urbanization. This project also contained a differentiated constructive and functional conception. Two areas of housing near the industry were defined: the North Batey, where the residences of the most privileged social classes were located, in addition to the main public services, and the South Batey, for the houses of the minor workers.

The urbanization was planned linking the houses in a very successful way, they were separated by yards and gardens that isolated the houses of the streets and sidewalks. A set of aspects was taken into account for the ecological care of the environment of the community. The industrial area divided the two housing zones. This productive area was

integrated to the urban scheme, by the integration of some infrastructural elements to the urban network. This project even included details to reduce the logical contamination generated by the Industry.

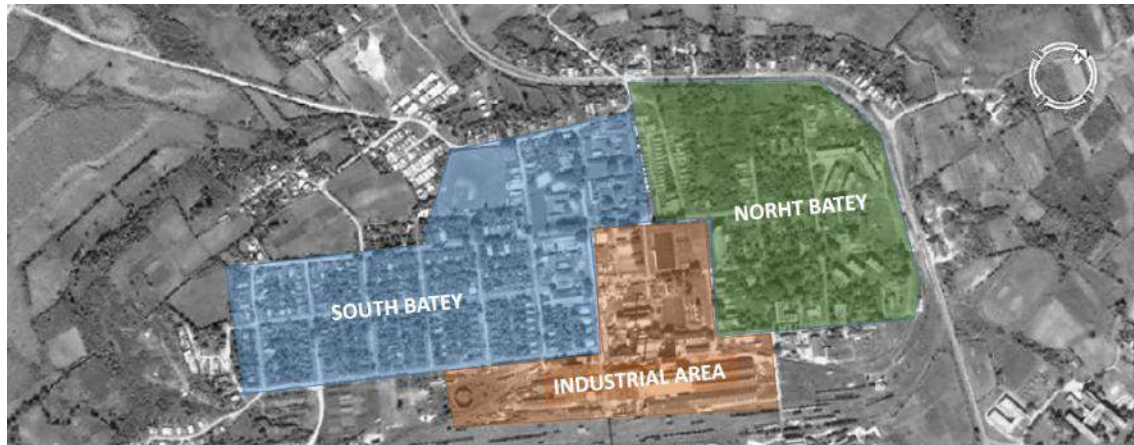


Figure 3.26 Satellite view of Central Hershey

### **Transports means**

To transport canes and sugar from the industrial facilities, the Hershey Corporation established on May 29, 1916, a railway enterprise: the Hershey Cuban Railway, (Zanetti & García, 1987, p. 256) which would be responsible for the building and operation of a railway that communicated first, the central with *Santa Cruz del Norte*, and then with Havana and Matanzas docks. This guaranteed the output of sugar production in hermetic cars of the company to the ferries with destination to the chocolate facilities of the corporation.

The first railway line was *Santa Cruz-Jibacoa* with a length of 6.9 km, and was completed in 1917. These parallel continued south, until connecting with the United Railways of Havana lines in *Bainoa*, being open to the public in 1918 (Ribot, 2008, p. 96). This first railway was steam powered. In 1921 the electric system was inaugurated, for this reason a power plant was constructed in the Central Hershey, which was capable of supplying electricity to the sugar mill, the whole railway, the new town of Hershey and the tram system of Matanzas (Ribot, 2008, p. 96). In 1919 the railway yard was electrified, which was built together with the civil works of the Central.

The Hershey railway also gave public services to the population. Today after 15 years of the stopping of the industrial activity and 100 years after the construction of the first lines it is still operational.



**Figure 3.27** Railways workshop of Central Herhey.

Source: Image provided by Caridad Linares. Communication Specialist of the sugar mill administration.

**Figure 3.28** Current Image of the Hershey Power Plant.

Source: Image taken by the author. July 2017.

### **Components of industrial heritage**

*Productive places:* Although all productive buildings have now been demolished, it is important to mention some of them. The sugar mill had a large number of industrial facilities and support infrastructure, including: The main building in which all processes of transformation of the raw material to the finished product were made. Another important Building was the refinery.

*Warehouses and stores:* It had two warehouses for sugar: one of 23 x 214 meters, with capacity 28 000 tons and another of 46 x 122 of 60 000 tons. To store the honey there were three Tanks, one of 8,100 m<sup>3</sup> and two smaller ones of 430 and 1,170 m<sup>3</sup> and for the fuels they had two other Tanks that stored 688 thousand gallons of oil. The Company exported through the ports of Matanzas and Havana, had its own warehouse in Havana Bay.

*Services:* The sugar mill had a power plant, today does not work but has not been demolished. This plant fed the mill and the refinery, except for a tandem that used steam. It consisted of 5 turbo generators, 4 of 1,500 kW and one of 2,000 kW. In addition it had a boiler room and other generating facilities for the railway and provided electrical service to several towns in a radius of 40 km. The Central had a radiotelephony service with its

central office in Havana and the other sugar mills of the company. In the batey existed post office, with telegraph and telephone (De las Cuevas, 2001, p. 227).

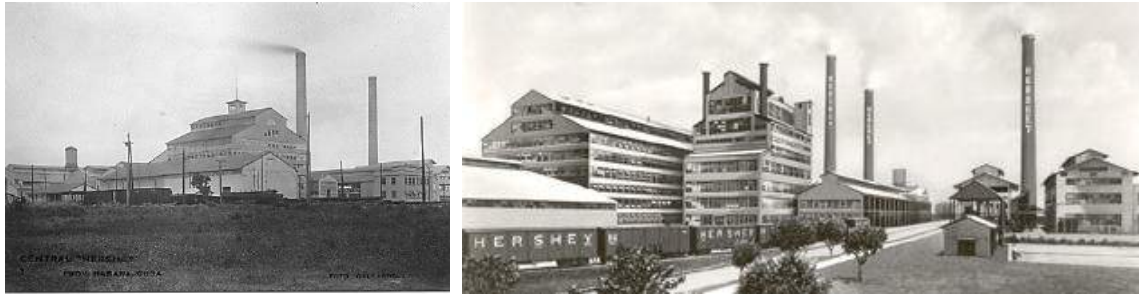
*Communications:* The company had a wide-track, electric railway, unique in Cuba, which linked it through the United Railways with two other mills of the same company that refined their sugars at the Central Hershey and with its own sugarcane areas. The railway worked with trolley at 1200 volts C.C. and had a main station in Hershey and two automatic substations in Elisa and Margot, near Havana and Matanzas, respectively. In total it had 190 km of public service and 130 km for its sugar operations.

*Social places:* The batey had two housing areas, the north batey and south batey, with comfortable houses, a hotel, cinema-theater, shopping mall, ice factory, a party saloon and Hershey's gardens, carefully designed for partying and relaxation. There was also good health care, a free public school, recreational facilities including a baseball diamond, golf course and sport club, and a general store.

### **Industrial architecture**

Although today the most outstanding examples of industrial architecture of the Central Hershey have been demolished it is necessary to describe its characteristics. As it was common at that time in Cuba, industrial constructions of this type required strong structures capable of involve robust and complex machineries.

Central Hershey had 8 stories conceived with a metallic structure that combined with concrete, supported and housed the whole productive process. The roofs and façades were lights metallic tiles, the building combined metal with glass windows. The shape was marked by a great silhouette, which consisted basically of a large volume that narrowed in the upper levels topped by sloping roofs. Another significant building was the coal house, which would allow the refining of sugar, this building was unique in Cuba, it was a large building with two chimneys. The roofs and facades were similar to the main building.



**Figure 3.29** Image of Central Hershey.

Source: Source: Site web Hershey Community Archives.

<http://www.hersheyarchives.org/exhibits/default.aspx?ExhibitId=22>

**Figure 3.30** Image of the Hershey industrial complex, from left to right: boilers house, coal house, power plant.

Source: <http://www.thecubanhistory.com/wp-content/uploads/2015/04/Central-Hershey.jpg>

### Housing architecture

The *batey* constitutes one of the most interesting urban centers of Havana, being one of the best preserved examples of the structure imposed by the American cultural constructive irruption. This urbanization is based on the horizontal expansion of individual units. Conceived between the years 1916 and 1919 is a set of predetermined architecture following a hierarchy programmed by the founder and the advisers. Houses were built in stone and French roof tiles, single-family wooden houses for permanent workers, and other duplex for less qualified and black families of the *batey*. It is necessary to highlight that in the *batey sur* where workers' houses were located, each block had a different constructive style, an architecture that characterized it.

The houses built of masonry and covered with stone, as well as the main buildings with the same style are located in the *batey norte*, where the high officials, superintendents and heads of department resided. In this sector there are also wooden houses with typical styles of the founder's country (Ribot, 2008, pp. 35-36).



**Figure 3.31** Image of a manager house in Batey North.



**Figure 3.32** Image of a worker house in Batey South.

Source: Image taken by the author. July 2017.

### **Landscape modification**

The production of sugar is linked to a direct modification of the landscape. The construction of an industrial building of large dimensions and a human settlement generates a new urban and technological image contrasting with the rural context, like is the case of Hershey. But the main modification of the landscape by the sugar industry is related to the great extensions of the plantations and consequently deforestation. In the figure 3.34 it is possible to see the large extensions of land used as sugar cane plantation corresponding to the *Central Hershey*.

The landscape related to the industry is affected by large degraded areas invaded by the presence of species like *marabú* in form of shrubs. This has been the result of the stopping of industrial activity in the region, the lack of maintenance, exploitation and abandonment of these lands. In the figure 3.35 it is shown areas affected by degradation and erosion. At present day some portions of these lands are used for grazing and varied cultivations.



**Figure 3.33** Rio Blanco Valley, ancient cultivation areas. The Sugar Mill in the background.

**Figure 3.34** Abandoned cultivated lands. Erosion and deforestation presented in the landscape.

Source: Image taken by the author. April 2009.

### **Owner's vision and paternalistic actions**

Mr. Hershey constructed a town for his workers, the houses as described before were comfortable homes for rent. From its earliest days, the *batey* had a hotel, cinema-theater, shopping mall, ice factory, a party saloon and Hershey's gardens, carefully designed for partying and relaxation (Ribot, 2008, p. 38). There was also good health care, a free public school, recreational facilities including a baseball diamond, golf course and sport club, and a general store. As in Hershey, Pennsylvania, the railroad permitted employees to choose where they would live.



Once *Central Hershey* was well established, Hershey purchased other sugar mills, some just to milling and others for the sugar plantations attached to them. In 1920, he bought Central Rosario. In 1925, he bought *Central Carmen* and *Central San Antonio* and in 1927, *Central Jesus Maria*.

At *Central Rosario* Mr. Hershey also founded an orphan school, the *Hershey Agricultural School*. He operated it for 10 years before transferring its operation to a local orphanage. The first students were boys whose parents had been killed in a 1923 train accident on the Hershey Cuban Railroad. The primary object of this school was to train boys for jobs on the farm or in industry. Milton Hershey had great plans for it, including building a model sugar mill and teaching modern agricultural methods to prepare the boys for careers in Cuba's principal industries (Hershey Community Archives).



**Figure 3.35** Current state of the general store.  
Source: Image taken by the author. July 2017.



**Figure 3.36** The boys of the orphan school.  
Source: Source: Site web Hershey Community Archives.  
<http://www.hersheyarchives.org/exhibits/default.aspx?ExhibitId=22>

### **3.4 Conservation and valorization of Industrial Heritage in Cuba.**

The protection of the nation's cultural and natural historical heritage has been a constant concern in Cuban state policy. An important step in the reorganization of society was the Republic's Constitution approval in 1976. To deal with the preservation, and protection of the cultural heritage, two laws were established: Law No. 1 Protection of Cultural Heritage and No. 2 Law of National and Local Monuments.

The law No. 1 establishes that the Ministry of Culture is the institution responsible for specifying and declaring the properties that must belong to the cultural heritage of the country and defines that the cultural heritage of the nation is integrated by the goods and the buildings which are the testimony and the expression of human creation or the evolution of nature in relation to archeology, prehistory, history, literature, education, art, science and culture in general, this law establishes appropriate means for their protection, management, and conservation. Among the great quantity of goods that are considered in the law we can find:

- Documents and other goods related to history, science and technology.
- Different types of archives, photographic, phonographic and cinematographic archives.
- Rare manuscripts, books, documents and special interest publications.
- Maps and cartographic materials.
- Historic urban centers, buildings or sites that deserve to be preserved according to their historical, cultural and social significance.
- All goods that the Ministry of Culture declares as part of the Cultural Heritage of the Nation.

The National Registry was created as the tool to organize and manage all goods by their classification according to location, natural or legal owner, and the cultural motivation of interests. This institution belongs to the Ministry of Culture. In order to set up its functions and establish the necessary coordination, the National Register has a group of delegates and advisers that belong to different organizations and institutions. The National Register guides and carries out the registration of the goods which have been declared as Cultural Heritage of the Nation, organizes and controls a general inventory of the goods, establishes the procedure for the registration of a property, updates the control about the information relating to property, and other functions.

The Law No. 2 Law of National and Local Monuments. Defines the concepts of national monument, urban historic center, buildings, sites and objects. It establishes the criteria for declaring different types of monuments according to their type of value, historical, artistic, environmental, natural or social. In the article 3 of this law it is mentioned the creation of the National Monuments Commission and establishes its integral functions and responsibilities.

At the end of the nineties of the 20<sup>th</sup> century began the orientation of the national inventory of industrial heritage. Up to that time, protection had been exercised in isolation, directed only towards settlements and goods of exceptional architectural or historical value. The work was a challenge for the specialists who faced to evaluate technology and properties. The information confirmed that the most valuable exponents were directly related to the development of traditional productions. Other contemporary industries such as food, beverage, liquor, electric power generation, perfumery, textile, paper, pharmaceutical, railway, mining and port facilities, as well as certain industrial products like cars, locomotives, among others. With regard to the active industrial heritage, the realization of the inventory contributed to the awareness of its value. (National Council of Cultural Heritage, 2016)

The National Council of Cultural Heritage works for the recovery, protection, restoration, research and dissemination of the Cultural and Natural Heritage as well as training professionals. It operates at national level through a network of provincial centers that include museums, technical teams, and Cultural Property of Provincial Registers.

The National Council of Cultural Heritage (2016) describes that in 2002, when a plan for the conversion of the sugar mills was implemented, it was proposed to convert some of the sugar mills into museums, although these museums did not have the expected success this was an important step in the conservation of this heritage. In that year, the National Railway Museum was created, which owns and develops the research, study and conservation of machines linked to the history of rail transport in Cuba. Meanwhile, Resolution 02 of 2004, of the National Council of Cultural Heritage, declared steam locomotives as cultural heritage of the nation, thus began a process for their rescue, relocation, conservation and protection. It is worth to mention the 2007 declaration of the *National Aqueducts of Havana* and the *Inclined Plans of Mayarí in Holguín*, as paradigms of Cuban engineering and industrial architecture that remains functioning to the present day.

The Master Plan for the Integral Revitalization of Old Havana, was created in 1994 within the structure of the Havana City Historian's Office, as an entity in charge of planning and urban management in the conservation priority zone. Although its action transcends the limits of the historical center and it acts in other elements of interest for the nation.

The Master Plan is the responsible of the actions accomplished on several port infrastructures in Havana that are currently in process of reuse. In the last few years, some of them show urban and social interest solutions that make the importance of industrial heritage very visible. This is the case of the transformation San José warehouses in the dock of Havana as site to gather handicrafts market, warehouses of wood and tobacco have been reconverted in new mini-brewery as well as the technical renovation of the sewage system known as the Bahia Siphon, built in 1912 and considered a marvel of Cuban civil engineering. Similar experiences are being taking into account in industrial buildings, port and railway facilities in other cities such as Cienfuegos, Camagüey and Santiago de Cuba.



**Figure 3.37** San Jose Warehouses in Habana Bay. In the exterior a recover old locomotive.

Source: Personal Blog: La Ciudad Crítica

<http://ciudad-critica.blogspot.pt/2016/03/patrimonio-industrial-en-la-habana-cuba.html>

**Figure 3.38** Interior image of the National Railway Museum.

Source: [https://www.ecured.cu/Archivo:Dsc\\_6446.jpg](https://www.ecured.cu/Archivo:Dsc_6446.jpg)

A work of great acceptance has been the recovery of the old oil factory *El Cocinero* formerly the Havana Electricity Company, symbol of the rich industrial heritage of Havana, as part of the cultural project *Fábrica de Arte Cubano FAC*, a cosmopolitan space Considered an artistic laboratory for entertainment and contemporary Cuban creation. This case is a very important example because it has been one of the few cases where the initiative and the management has been carried out by an entrepreneur and not by a state institution.

Industrial buildings, especially sugar mills, tobacco factories, and their settlements have formed significant spaces in the nation. The experience and prestige of Cuba in the patrimonial management must continue being a force for the recovery of the industrial patrimony, the promotion of its cultural values and its recuperation with new uses. A

successful solution in the rehabilitation of these old buildings and technologies would allow to conserve spaces and facilities recognized by the community, as well as allowing new investments and using those resources to strengthen social and cultural identity and values.



## ***Chapter 4***

*Methodology for the reuse and enhancement of Hershey Sugar Company Town*

## Chapter 4: Methodology for the reuse and enhancement of Hershey Sugar Company Town

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### Résumé

Ce chapitre répond à l'objectif principal de ce travail en réalisant une méthodologie pour la réutilisation et la valorisation des cités ouvrières. Ce projet a été motivé par le besoin urgent de trouver comment protéger le cas d'étude. Il est nécessaire d'avoir un outil capable d'agir face à la détérioration rapide d'un bâtiment à cause de l'abandon et des mauvaises décisions prises par le ministère du sucre pendant la phase de restructuration de l'industrie sucrière. C'est ainsi que le chapitre analyse l'état actuel de la ville Cité Ouvrière Hershey afin de comprendre la situation de sa communauté et des composants qui forment son patrimoine industriel.

La méthodologie a été créée sur la base des éléments précédemment analysés et des résultats des premiers chapitres, dont les actions en faveur de la réutilisation et de la conservation des cités ouvrières, ainsi que, l'identification des bonnes pratiques à suivre dans les exemples italiens tels que le préconise de nombreux ouvrages sur la protection du patrimoine industriel. L'application de la méthodologie a permis de définir les étapes déjà réalisées et les ressources disponibles. Des idées sur la façon de mener à bien les prochaines étapes ont également été présentées.



#### **4.1 Methodology for the enhancement and reuse of company towns.**

The methodology for the enhancement and reuse of company towns consists of three stages. The first stage deals with the collection of data and declaration of cultural value goods, here are carried out scientific researches to organize and classify all the information. In the second stage, actions for the protection of the company town are performed. At this stage, current regulations in favor of the protection of the industrial settlement and cultural sites are applied. Preventive measures can be accomplished on the most affected elements, if it is necessary. The last stage corresponds to the management and continuity, where the necessary steps and actions are established for the redevelopment of the site and the fulfillment of the off all steps.

##### **4.1.1 First stage: Data recovery and value declaration.**

- 1 Identification of Involved and interested actors and creation of agreements.
- 2 Realization of a scientific-historical research. Understanding the company town and all elements linked to it.
- 3 Recovery, restoration, conservation and publication of the historical sources. This action may include, enterprise archives, descriptions, drawings, photographs and video films of movable objects, accompanied by supporting documentation. Memories of people are an unique and irreplaceable resource that should be registered whenever is possible.
- 4 Definition of the working area, and property limits. Consider areas, buildings and infrastructure that can be related to the company town even if they are not inside the declared working area.
- 5 Definition, registration and cataloguing of cultural interest goods belonging to the company town. It is convenient to create inventories for all sites that have been identified. These inventories should be designed to be easily consulted and freely accessible for the public. It must declare the integrity and state of the cultural interest good or site.

- 6 Industrial archeology research must be carried out on buildings, landscape and technical components in order to define essential characteristics for its consideration in the future processes of intervention.

#### **4.1.2 Second stage: Protection actions.**

- 7 Assignment of responsible people or institutions in charge of industrial heritage goods in the company town. Buildings, machines and landscapes should not remain without owner or responsible.
- 8 Work with the community, perform a process of awareness with the community and local entities related to the cultural interest goods. Identify inhabitants' needs and concerns.
- 9 Sites and structures that are classified as goods of interest and cultural value should be protected by existing legal regulations. In the absence of these regulations, local and regional governments should be required to adopt and approve regulations of this order.
- 10 Adoption of appropriate measures for the preventive protection and risk reduction of endangered structures.
- 11 Design of local and regional plans that integrate the industrial heritage as a promoter for development, or integrate this heritage to the existing policies for the regional and national economic development planning.
- 12 Realization of guides and manuals about the modification and intervention on the components of industrial heritage. It establishes also legal, administrative or financial measures to adopt.

#### **4.1.3 Third Stage: Management and continuity.**

- 13 Begin the implementation of the actions established in the local and regional plans. Elaboration of the projects for the transition towards new ways of using the goods of cultural value of the company town.

- 14 Begin the search for capital to carry out the necessary actions. Involvement of partners.
- 15 Development of local initiatives, according to the principles of the regional plan. The community must have an active participation in the process of reappropriation of the industrial heritage.
- 16 To create programs for the continuous divulgation of the company town's industrial heritage.

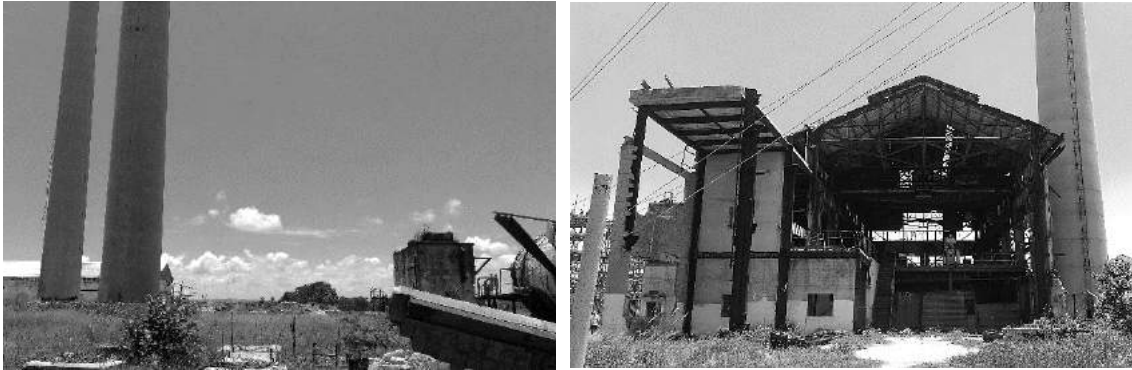
#### **4.2 Current situation in the conservation and valorization of Hershey Sugar Company Town.**

As part of the restructuring of the sugar sector carried out in the country in 2002, it was decided to close many sugar mills, including Central Hershey. Since the date of its closure actions to demolish productive buildings has been accomplished. The economic and social deterioration of the company town, is affected by the lack of responses to reuse industrial heritage and alternatives for the reuse, conservation and protection of this industrial heritage.

During many years structures remained abandoned. After 2015, buildings related with sugar production that were already standing were demolished. At present day remain the old electrical plant, the chimneys, and some buildings that have been reused in other productive activities. Also it is still standing the cooling infrastructure of the plant with a ruinous aspect of abandonment.

The image of deterioration and vulnerability has embraced the *Batey* especially in the areas where large buildings stood. It is imperative to look for solutions for these empty and abandoned spaces. From the industrial complex also remain the sugar warehouses that has been reused as a ceramic factory, and other smaller buildings without great significance. The railway infrastructure like workshops and the railway station are still operative.

Hershey Gardens are currently active under the administration of the *Flora and Fauna* enterprise. They provide, restaurants; services for swimmers, renting spaces for activities.



**Figure 4.1** Current image of the productive area. In this place were located the main industrial buildings.

**Figure 4.2** Current image of the electric power plant. It is the only industrial building of valuable interest that remains

Source: Pictures taken by the author on July 2017

The single workers barracks, the hotel, the golf club house are in ruinous condition, the golf courses disappeared years ago.

From the housing point of view the *batey* is conserved in regular condition. Although the industrial productive activity was the driving force that assured the maintenance and conditioning of outdoor areas and houses, it should be said that people make great efforts to keep their homes in good condition. The inhabitants are the owners of the houses since the state established the Law of Urban Reform and granted the houses to its inhabitants during the first years of the Revolution.

At present day, the main problems are the lack of quality services, the absence of public spaces, the maintenance and reparation of the exterior areas. In addition to the lack of resources to maintain the image of these houses of high historical value.



**Figure 4.3** Current image of the hotel. Just remaining outer walls and some interior division.

**Figure 4.4** Hershey railway station. Located in the north edge of the *batey*.

Source: Pictures taken by the author on July 2017



**Figure 4.5** The coal house and the boilers house state before demolition.

**Figure 4.6** Tandems and warehouse of miscellaneous before demolition.

Source: Pictures taken by the author on April 2015

The figure 4.7 shows a plan of the industrial area, it is possible to see which buildings are conserved and those demolished, meanwhile figure 4.8 gives a panorama of the current technical and constructive stage of the Hershey Sugar Company Town. It has been highlighted the area were demolished buildings were located.

With the demolition of the boilers house, the coal house and the mills, the most significant productive buildings that conformed the industrial heritage of the Hershey Sugar Company Town were lost, this situation seriously affected the cultural value of the settlement.



**MAP KEY**

- |  |                                   |
|--|-----------------------------------|
| <b>1a</b> Vehicle and pedestrian access to the central | <b>13</b> Electric power plant    |
| <b>1b</b> Railway access                               | <b>14</b> Treatment water pools   |
| <b>2</b> Coal house *                                  | <b>15</b> Cooling pool            |
| <b>3</b> Boilers house *                               | <b>16</b> Fitter workshop         |
| <b>4, 5</b> Sugar warehouses                           | <b>17</b> Dining room for workers |
| <b>6</b> Warehouse of miscellaneous *                  | <b>18</b> Winding workshop        |
| <b>7, 8</b> Mills. Tandems A and B *                   | <b>19</b> Offices                 |
| <b>9</b> Chemicals warehouse                           | <b>20</b> Casting workshop        |
| <b>10</b> Offices                                      | <b>21</b> Machinery workshop      |
| <b>11</b> Bagasse house                                | <b>22</b> Locomotive workshop     |
| <b>12</b> Shredder *                                   |                                   |
- \* Demolished buildings**

**Figure 4.7** Hershey Sugar Mill. Map of the industrial complex. Existing and demolished buildings.

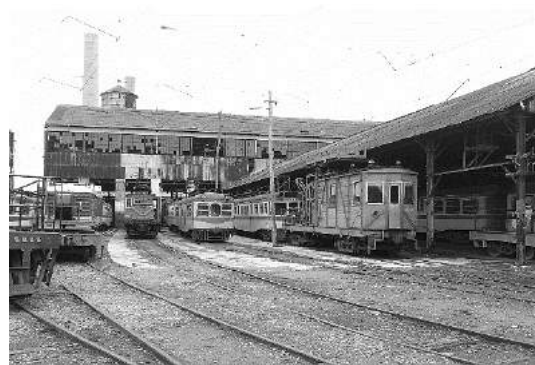
Today the exponents of greater value are now those that were reused like the ceramic factory, those of the railway and its technical infrastructure and especially the urban area where workers houses are located.



**MAP KEY**

- Good technical and constructive stage
- Good-regular technical constructive stage
- Regular-Bad technical constructive stage
- Bad technical constructive stage
- Demolished structures

**Figure 4.8** Hershey Sugar company Town. Map of buildings conservation stage.



**Figure 4.9** Ancient sugar warehouse reconverted into a ceramic factory.

**Figure 4.10** Railways workshop

Source: Pictures taken by the author on July 2017

### **4.3 Application of the methodology to the study case: Hershey Sugar Company Town.**

The aim of the methodology’s creation is to outline a series of strategies for the reuse and enhancement of company towns. In our study case, The Hershey Sugar Company Town, it is intended to establish and verify through the application of the methodology which

are the available elements and which are necessary to develop in order to continue working on the protection and reuse of the industrial settlement. The application of the methodology is achieved below.

#### **4.3.1 First stage: Data recovery and value declaration.**

##### **1 Identification of involved and interested actors and creation of agreements.**

In the study case, the Hershey Sugar Company Town, it should be mentioned that one of the first actions carried out after the end of the industrial activity was the coordination between national institutions interested in the conservation of sugar industrial heritage. The National Commission of Monuments, responding to the requests of the National Council for Heritage, allied with the architecture department began to carry out actions aimed to face the postindustrial phenomenon. The former Sugar Ministry also cooperated in this task.

Although these tasks were achieved under a general framework for the protection of sugar industrial heritage, an opportunity surged to begin working in Hershey. Municipal and provincial governments were involved in the process. One component that has not been linked to the actions is the local population and private sector, which must be considered essential for the future development and success of projects.

##### **2 Realization of a scientific-historical research.**

After the deactivation of the industry, numerous tasks have been carried out with the objective of identifying the set of values that conform the sugar industrial heritage and, above all, the Hershey Sugar Company Town. In response to the call of the National Council of Heritage, the Faculty of Architecture has incorporated to its academic activities since 2005 actions in this field, which has been organized in coordination with the Patrimony Commission of Havana and the disappeared Center of Conservation, Restoration and Museology.

Hershey Sugar Company Town has already been the center of attention for the realization of different studies, from undergraduate academic activities to thesis, international



workshops and proposals for research PhDs. The historical content and importance of this industrial complex has been well defined. An example of this is the analysis carried out on the company town in the third chapter of this work, which has been carried out following a procedure based on the scientific analysis of the company towns characteristics.

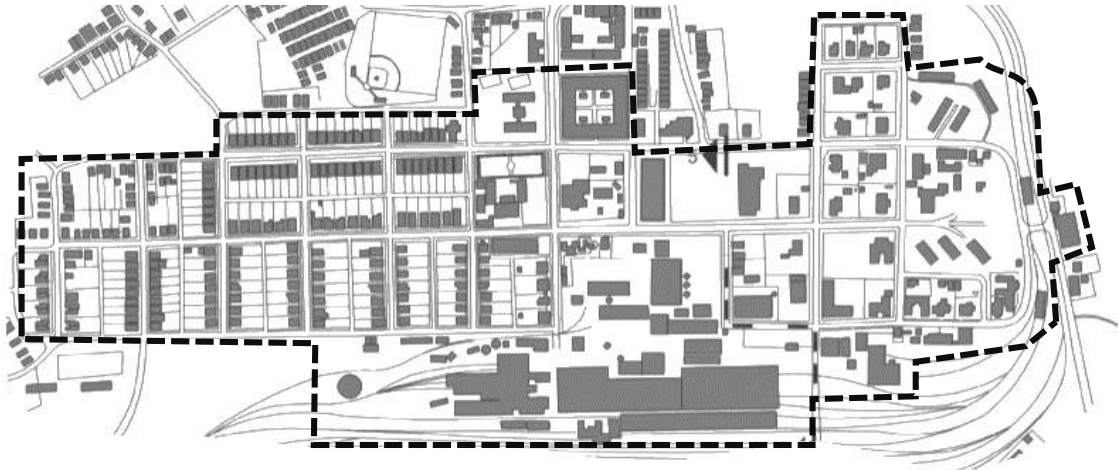
### **3 Recovery, restoration, conservation and publication of the historical sources.**

The process of the industry deactivation has happened very fast. Considerably valuable information has been lost, destroyed or its location is not exactly identified. It is known that part of the information is in the hands of inhabitants and former workers who had the sensitivity of keeping them before an eminent lost.

The work to recover the files of the company is a priority, if it is intended to carry out a suitable appropriation process. It is necessary to enable a responsible commission for the location and management of all available documents. This commission will be in charge of their restoration, conservation and publication. Although many documents are part of the daily operation of the company, other materials collected over the years may be available in the archives of the former Sugar Ministry, the National Archive of Cuba and the José Martí National Library. The commission need to have the legal force to deal and demand to these institutions the management of this information.

### **4 Definition of the working area.**

The working area concerning the recuperation of the Hershey company town is shown in the figure 4.11. Other isolated elements are historically linked to the company town, and must be also considered. Between them we can find, the former terrains of the golf fields, the Hershey Gardens, and the *Casablanca* train station beside Havana Bay and *Versalles* station in Mantanzas.



**Figure 4.11** Hershey Sugar company Town. Definition of the interest area.

## 5 Definition, registration and cataloguing of cultural interest goods belonging to the company town.

At this point it is suitable the identification of those objects that will be under the attention of the redevelopment strategy. It is important to defining according their characteristics, which kind of solution they are able to assume and also analyze new function's sustainability. It must be defined functions for those goods that doesn't require big interventions.

The work with the faculty of architecture has been very rich from the point of view of methodical and systematic study. The continuous process of work by groups of students, led by the professor and architect Tania Gutiérrez and the architect Renán Rodríguez allowed the achievement of scientific results of great value. In this context, several works were created to define the elements of value present in the industrial complex.

As a result, a catalog to identify the cultural values of the Hershey Sugar Company Town was carried out in 2008, taking into account parameters such as landscape, industry, habitat and urban image. In 2007 a thesis was made on the vulnerability of the sugar industrial complexes in front of natural disasters, the case of study was Hershey, here it was given advices on the actions to preserve the integrity of structures of housing and industrial buildings. In 2009 there was achieved two more works, one of them was a

catalog of values on the elements associated to the railway's landscape. And another work was a methodology for the diagnosis of deactivated sugar mills.

## **6 Industrial archeology research.**

It is necessary the accomplishment of a detailed study of industrial archeology on the elements that conform the industrial heritage of this company town. The study must be carried out on the goods that are preserved today and mainly in the spaces where demolished buildings were located, since it is necessary to protect these areas and define how future interventions should be performed. This task is very important. Because no registration was made during the deactivation process.

### **4.3.2 Second stage: Protection actions.**

**7** Assignment of responsible people or institutions in charge of industrial heritage goods in the company town.

All institutions that work actively in the settlement should assume responsibilities with respect to the protection of the components of the industrial heritage. Those institutions must have the legal power to take decisions about the objects, as well as to intervene in any action in detriment of the goods of cultural interest.

**8** Work with the community.

Among the first tasks aimed to protect the heritage in the company town should be the population's awareness in the need to protect and preserve the industrial heritage, its cultural and technical essence, and later as a promoter element in the economic redevelopment of the settlement.

**9** Protection of sites and structures.

It is necessary to declare those goods that because of their values as industrial heritage will integrate the Nation's Cultural Heritage, and appropriate regulations to protect them must be established. As stipulated in the Law No. 1. Protection of Cultural Heritage on chapter III about the protection of cultural property, different regulations are established.

For example, cultural heritage components can't be destroyed, remodeled, modified or restored, without previous authorization of the Ministry of Culture. The transmission or possession of any property of the Nation's Cultural Heritage can be done just by the authorization from the Ministry of Culture.

The Law No.2 Law of National and local Monuments must be applied, and adopt the measures established in the articles. The Law No 2 in article 1 states objects that can be considered as a national monument, and in article 8 is declared that this law has the duty to protect and establish measures for the conservation of monuments.

Among the actions directed towards the conservation and protection of the housing area, there are urban regulations, established by the Physical Planning Department to regulate the constructive integrity of the urbanizations. In the company town, the housing area has been divided into several typological sectors, considering the construction period and typologies of the houses. The *Batey* has been classified as a regulatory area. Among the regulations established by the Municipal Housing Authority and the Provincial Direction of Planning for the regulatory area we can find different regulations:

Art. 40: Construction actions are prohibited, which implies the alteration of the typology and architectural style of the typical house of the settlement.

Art. 41: Extensions and divisions will be allowed just if complies with the previous article.

Art. 42: The construction of stairs in portals and gardens is forbidden.

In the productive zone these regulation are established:

Art. 47: Construction of houses in this area is prohibited.

Art. 48: The free areas will be used for the construction of storage and allotment gardens.

Art. 49: Changes of use will be approved to industrial buildings with productive objectives.

**10** Adoption of appropriate measures for the preventive protection and risk reduction of endangered structures.

It is necessary to execute immediate actions to stop the deterioration of important structures while designing and implementing plans for the reuse of these structures. The

buildings and infrastructure of higher priority are: the old electrical plant, which is one of the few emblematic buildings that wasn't demolished, cooling and water treatment pools, the ancient barracks for single workers and the golf club house. A structured maintenance plan should be required for the maintenance of the railway workshops.

**11** Design of local and regional plans that integrate the industrial heritage as a promoter for development.

Investigate the existence of plans of development at local or regional level that consider the industrial heritage as an element for the economic and cultural revitalization of the territory. These plans should be evaluated, and a proposal to include industrial heritage as an important element should be presented. In case there is no plan, it is necessary to create it to demonstrate the potential of industrial heritage for cultural, economic and social development. Attending to the economic reality of Cuba, this program should be designed with gradual intervention actions, protecting and recovering objects and creating competitions for more general projects and connect them with existing development programs.

The Institute of Physical Planning has worked intensively in the Framework of Territorial Ordering. The model of territorial ordering was proposed until 2030, in which territorial policies related to the use of land are defined; the location of productive and non-productive activities, the territorial organization of the human settlements system, the settlements' physical-spatial structure and their links with their areas of influence (Bermúdez, 2016, p. 53).

As Bermúdez (2016) portrays, this framework identifies the fundamental participation of the organisms related to the process, the programs and subprograms that allow to implement territorial policies established in the economic plans through the investment process; where financial and material resources required by specified actions are disposed.

Among the programs that require greater attention by the Institute of Physical Planning, it is possible to find five programs that can be related to the project of reuse and enhancement of the Hershey Sugar Company Town. The programs are mentioned below.

- Program of integral development of the municipalities.
- Program of improvement of the territorial ordering and urbanism.
- Program of linking the university in the problems of the territory.
- Program for the development of human settlements.
- Program for protected areas.

**12** Realization of guides and manuals about the modification and intervention on the components of industrial heritage.

The studies of industrial archeology in the company town must produce a report that rules the interventions in each specific object. The case of housing is very particular since the property belongs to the inhabitants, this represents a danger if it is not managed correctly. The realization of a manual that controls the levels of transformation as well as the materials, colors and decorative elements to use is necessary. This work is extremely important, it is essential to be aware on the needs, limitations and resources of the owners. The population must be educated about the advantages of carrying out a project based on scientific study and settlement values.

#### **4.3.3 Third Stage: Management and continuity.**

**13** Start the implementation of the actions established in the local and regional plans.

At this stage it is necessary to start looking for potential partners. The link with state enterprises related to the company town is favorable. It is possible to involve them with responsibilities established in the regional plan on the conservation and reuse of industrial heritage. Taking into account the economic situation of the country the search for foreign capital is imperative, it is necessary to contact with organizations interested in the conservation of industrial heritage. It would be very convenient to have the support of the Hershey Chocolate World that handles the management and heritage of the Hershey enterprises.

Taking into consideration the Cuban economic situation that doesn't allow the realization of big interventions. It is essential to promote the public and private collaboration, and the cooperation between various actors in order to begin acting on goods, with solutions

that doesn't require huge investment. These solutions should be strategically thought and they should be part of the regional plan.

**14** Start the search for capital to carry out the necessary actions.

Start the execution of projects that have been programmed in the Regional Plan. It must be performed the specific tasks on each object. Responsible for each object must be declared and the object's exploitation plan must be programmed according to the different stages of the Regional Plan.

**15** Development of local initiatives, according to the principles of the regional plan.

A favorable and essential action is to link the local population, their initiatives and capacities in the reappropriation process of industrial heritage. It is important to carry out tasks for the training of people by promoting their entrepreneurial and creative spirit, by the proposition of business proposals based on the sustainable development of the company town.

**16** Create programs for the continuous divulgation of the company town's industrial heritage.

Design a strategy for the continuous promotion of the industrial heritage and the activities that it involves. The project must consider a constant process of education and training of people based on the values present in the industrial heritage of the Hershey Sugar Company Town.

#### **4.4 Results of the application of the methodology.**

The application of the methodology to the Hershey Sugar Company Town has confirmed that the aspects that compose its analytical core are precise and coherent. Its division in three stages result very convenient to strategically organize the actions to accomplish.

Although this is a first proposal and its application to the study case was performed as a report, it has allowed to define, the main needs and problems for the reuse and enhancement of this company town. It has also been possible to define the fundamental elements to be developed and the aspects to be completed of those that are available.

It has been proven that there is enough information about the historical context, the results of academic works with a scientific basis have produced great results. All this information needs to be organized. It is imperative and urgent to search and locate all documents related to the company archives, pictures, audios, videos and all kind of testimonial material a commission must be created and endowed with legal authority to manage all those documents. The catalogs on the components of industrial heritage carried out by architectural students during thesis work must be published and made available.

Hershey Sugar Company Town has not been declared a site of cultural interest. As not being considered a site of cultural interest, the National Monuments Commission hasn't put into practice the existing regulations for the protection of this type of sites. No preventive maintenance work has been carried out on the buildings and infrastructures that conform the industrial heritage of the settlement that are in danger. The National Monuments Commission doesn't count with specialists working on industrial archeology, which is a weakness for the project.

The advantages of industrial heritage in local development are ignored by the population. There is no widespread interest in the population for the conservation of industrial heritage. The existence of a local development plan is unknown together with local development initiatives.



## *Conclusions and recommendations*

## Conclusions and recommendations

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The thesis stated the conception of a methodology for the reuse and enhancement of Company Towns. This methodology's particularity is that it was created from a previous study on the characteristics of the company towns, obtaining a relation of essential variables for the analysis of this type of industrial settlements.

After analyzing three Italian examples; *Nuova Schio, Crespi d'Adda and Torviscosa*. It was possible to identify a series of good practices, this was an essential step for the creation of the methodology, in addition there were also considered other international documents on the protection and conservation of industrial heritage, like: the *Nizhny Tagil Charter for the Industrial Heritage*, *The Dublin Principles for the Conservation of Industrial Heritage*, and *The International Charter on the Conservation and Restoration of Monuments and Sites*.

The result of the methodology's application on the Hershey Sugar Company Town was very encouraging as it allowed to define the stages already achieved and the available resources. Ideas on how to carry out the next steps were also presented. All this proved this work main objective's fulfillment.

After proving that company towns gather a set of characteristics that make then maximum exponents of industrial heritage, it was defined the following variables: nature of the enterprise, territorial implantation, industrial evidence, architectural components, landscape singularity, owner influence and current state and prospective

In the second chapter, the previously defined variables, gave space to design a practice to perform the comparative analysis of the three Italian company towns examples; *Nuova Schio, Crespi d'Adda and Torviscosa*. The comparative analysis took into account a vast set of elements, analyzing company towns from different perspectives like: enterprise, paternalism, architecture, landscape, protection actions and others. The comparison's result between the examples gave place to the identification of good practices adopted in the processes of reuse and valorization of industrial heritage.

The presentation of the characteristics of the *Central Hershey* was made after defining the rich set of elements that conform the sugar industrial heritage of the country. Later, an analysis of the characteristics of sugar production settlements was made in order to understand and define these settlements as company towns. Along with this relevant result, the actions for the conservation and protection of industrial heritage in Cuba were also analyzed. It was concluded that there are legal and regulatory mechanisms for the success of important actions on the basis of the reuse and enhancement of sugar company towns.

The thesis also allows to verify that the sugar industrial heritage of the island has not been treated according to the importance that it represents for the Cuban culture. There is no specialized entity capable of manage the sugar industrial heritage. This situation has represented a great loss of values along the territory. It is manifested the need to consider previous works' results in next stages, managed by an organization focused only on the attention of industrial heritage.

The country counts with various institutions such as the Institute of Physical Planning, National Council of Cultural Heritage, National Commission of Monuments, which establish mechanisms and regulations for the proper management of industrial heritage. The serious situation in the country and the centrality in decision making constitute a limitation for the creation of local initiatives in function of the reuse of the industrial heritage as local development promoter.

The thesis presented contributes to the development of the debate of the company towns and the sugar industrial heritage. Although the case study is a sugar company town, the methodology could be applied in other contexts.

Based on the results achieved in this work, the space to offer the following recommendations is opened:

Promote the methodology, and strengthen its theoretical and analytical content in order to continue the consolidation of its effectiveness in the Cuban sugar context and the interaction with the regional programs plans established by the Institute of Physical Planning.

It is recommended to request to the National Commission of Monument to recognize the Hershey Sugar Industry as a monument of cultural interest for nation with the purpose of having the protection and attention that this institution provides.

To carry out an analysis of the regional programs plans present in the Framework of Territorial Ordering, in order to distribute the different stages of the methodology in the plans that most adapt to the study case.

It is recommended the creation of a commission that manage the sugar industrial heritage as an individual branch of cultural heritage due to the importance and quantity of endangered goods throughout the country.

To take into account the possibility of presenting a candidacy for UNESCO. This candidacy could be based on the rich cultural heritage that sugar represents to Cuba, composed of innumerable material and immaterial components along the country, that are linked to Cuban culture since its earliest formation.

As the company town is a settlement of high values that represents the transculturation of architecture and urbanism under the paternalistic currents of the beginning of the 20th century, the creation of a manual which regulates constructive actions on houses and industrial elements is recommended.

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The following group of annexes are selected considering their importance as a complement for the development of this work. The study of the laws and application of the recommendations will constitute essential steps in the process of protecting and enhancement of the Hershey Sugar Company Town.

## Annex 1

### **Giovanni Luigi Fontana. *Case of Good Practices “Nuova Schio”*. Extracted from the Diploma in conservation and sustainable valuation of hydraulic, industrial, architectural and urban heritage.**

1. Questa lezione riguarda l’esperienza avviata a partire dagli inizi degli anni ’90 per la salvaguardia e la valorizzazione di “Nuova Schio”; cercherò di mettere in evidenza, attraverso una sintetica descrizione delle caratteristiche del Quartiere e delle modalità di intervento adottate, quali sono state le ragioni del successo dell’iniziativa messa in atto dalla Municipalità.

Schio è nell’Alto Vicentino, a 25 km dal capoluogo provinciale, e ospita circa 36.000 abitanti. Costituisce ancor oggi uno dei poli produttivi più importanti del Veneto, e testimonia nelle trame della propria configurazione urbanistica i segni di un passato industriale di prim’ordine, da quando Francesco, e soprattutto Alessandro Rossi, vi avviarono quel processo di modernizzazione produttiva che ne fece, intorno agli anni ottanta dell’800, la più importante realtà industriale del Paese.

Fra le testimonianze più rilevanti di tale passato vi è, oltre alla celebre Fabbrica Alta, il “Nuovo Quartiere”, o “Nuova Schio”, realizzato per iniziativa di Alessandro Rossi fra il 1872 e il 1888 secondo un progetto dell’architetto vicentino Antonio Caregaro Negrin.

Il nuovo Quartiere è legato storicamente alle esperienze più innovative condotte in Europa nel corso del XIX secolo nel settore delle abitazioni operaie. Ma, al contrario di molti altri interventi, è stato concepito come una vera estensione della città esistente, con alloggi diversificati per operai, tecnici e quadri, ed una consistente presenza di attrezzature e di

servizi pubblici (nel 1890 il Quartiere ospitava più di 1500 abitanti, pari al 10% della popolazione del Comune).

Si tratta, dunque, di un'area di notevole interesse storico e urbanistico, una delle testimonianze più cospicue delle realizzazioni ottocentesche legate alla crescita e allo sviluppo dell'industria. Un'area oggi assai integrata nel contesto urbano di Schio, che conserva ancora nel suo insieme un'immagine riconoscibile della propria vicenda storica.

Proprio per la vicinanza con il centro urbano e la vitalità che la caratterizza, il Quartiere ha rischiato tuttavia di perdere rapidamente queste sue peculiarità: sia per molti maldestri interventi condotti negli anni '80 sugli edifici esistenti, e sia per i nuovi edifici che in quegli stessi anni si venivano costruendo sulle aree ancora libere (o liberabili), e che in genere non avevano tenuto conto dei problemi di inserimento in un contesto urbanistico così ben caratterizzato.

Il riconoscimento del forte valore storico e culturale del Quartiere, e insieme la preoccupazione per le condizioni di precarietà nelle quali si era man mano venuto a trovare, hanno indotto nel 1987 l'Amministrazione comunale a varare un Piano finalizzato al recupero urbanistico ed edilizio di Nuova Schio e delle sue più immediate propaggini edificate, concepito in maniera da assumere la veste di un vero e proprio "manuale" (redatto da Franco Mancuso, con la collaborazione di un'equipe di architetti di Schio). Un Piano strutturato in modo da orientare gli interventi, anche alla scala edilizia, nella direzione di una vera e propria riqualificazione ambientale dell'insediamento, rispettando le caratteristiche storiche e morfologiche degli edifici e dell'insieme urbanistico.

2. Il progetto, che istituzionalmente ha preso la forma di un "Piano Particolareggiato di Iniziativa Pubblica", interessa un'area di circa due ettari, comprendente nel suo insieme 436 "unità edilizie", individuate attraverso un'analisi minuziosa del tessuto edificato per la presenza di diversi caratteri tipologici e architettonici.

- Il Piano è stato concepito in modo tale da contenere tutte le principali indicazioni urbanistiche ed edilizie, anche di dettaglio, per ottenere l'obiettivo della riqualificazione del Quartiere, basandosi in particolare su alcuni principi essenziali: la razionalizzazione

e l'adeguamento degli edifici esistenti alle esigenze contemporanee, ma nel rispetto dei caratteri originali dei singoli manufatti e dell'insieme urbanistico;

- l'utilizzazione degli spazi vuoti, o facilmente liberabili, con edifici dalle caratteristiche tipologiche e architettoniche tali da inserirsi correttamente nel quartiere, rispondendo nel contempo ad alcune esigenze di base che in questi ultimi anni si sono manifestate (parcheggi, servizi, verde, etc.);

- la riqualificazione degli spazi pubblici (strade, giardini, percorsi), attraverso adeguati interventi di arredo, nella prospettiva di un miglioramento complessivo dell'immagine, e mediante una ridefinizione dei tracciati della circolazione automobilistica e della rete delle soste veicolari.

- Nel Piano, che come si è detto assume il valore di un vero e proprio "Manuale di Progettazione", è possibile trovare dunque tutto quanto serve per gli interventi che il Comune e i privati sono intenzionati ad effettuare nel tempo all'interno del Quartiere. Esso fornisce infatti indicazioni assai diversificate, seppure coerenti tra loro, in relazione alle diverse situazioni che caratterizzano l'area, e che sono emerse dalle indagini e dalle valutazioni sullo stato di fatto avviate nel corso della elaborazione del Piano. In particolare il manuale contiene

- le principali indicazioni per gli interventi di recupero degli edifici, differenziate a seconda dell'importanza storico-architettonica, e articolate in modo da interessare, per ciascuna delle 436 unità edilizie, tutti i principali elementi architettonici (intonaci e dipinture esterne, forature e tipi di serramenti, coperture, grondaie e pluviali, etc.);

- le indicazioni per la sistemazione degli spazi liberi antistanti gli edifici, ivi comprese le recinzioni e cancelli d'ingresso, in modo da rispondere, ove necessario, ad accertate nuove esigenze, ma senza snaturare il rapporto fra edificio, spazio privato e strada; e salvaguardando gli elementi del verde meritevoli di considerazione;

- le indicazioni per la ristrutturazione degli spazi retrostanti gli edifici, occupati negli anni più recenti da superfetazioni spesso maldestre e poco razionali;

- le indicazioni relative alla configurazione volumetrica e tipologica dei nuovi edifici che è possibile realizzare (in aree libere o di ristrutturazione) in modo che si armonizzino (per profili, allineamenti, rapporti con le strade, materiali, coperture, etc.) con i caratteri complessivi del quartiere;

- le indicazioni relative alla sistemazione di strade, piazze e percorsi, con particolare rilievo per i tipi di pavimentazione da adottarsi, le soluzioni per la differenziazione delle aree di sosta per le autovetture, la collocazione di insegne e l'arredo, i tipi di illuminazione, le alberature e le aiuole, le recinzioni, etc.

Il Manuale fornisce inoltre alcune esemplificazioni relative alla riorganizzazione interna degli alloggi, in modo da suggerire le soluzioni ritenute più adatte per un adeguamento delle abitazioni alle esigenze attuali. E infine comprende le indicazioni operative per il ripristino delle decorazioni esterne degli edifici, nei casi in cui ciò sia ancora possibile, sia partendo dalle tracce di tali decorazioni ancora esistenti, sia dai documenti storici (disegni, progetti, etc.) relativi alla prima realizzazione del Quartiere.

Il progetto dedica molta attenzione agli elementi che concorrono a definire l'immagine urbana del quartiere. Le norme e le indicazioni progettuali insistono sugli elementi di contatto fra gli edifici e lo spazio pubblico (recinzioni, attacchi a terra, spazi antistanti gli edifici, pavimentazioni, etc.), oltre che riferirsi agli involucri degli edifici veri e propri (prospetti, coperture, sagome, allineamenti, tinteggiature, accessi, finestrate, etc.). Esse tendono quindi, in generale, alla riqualificazione degli spazi pubblici in questa parte della città.

3. Le indicazioni del Manuale sono riferite, attraverso un apposito repertorio di "Schede Normative", a ciascuna delle 436 unità edilizie, definendo di volta in volta il carattere più o meno vincolante delle soluzioni progettuali proposte: a queste occorre dunque riferirsi nell'utilizzazione corrente delle indicazioni progettuali.

Per quanto riguarda il primo argomento – il trattamento degli spazi antistanti gli edifici – il manuale, oltre ai criteri di carattere generale cui attenersi, fornisce le esemplificazioni tratte dall'osservazione di alcuni giardini esistenti all'interno del Quartiere che mantengono ancora molti dei caratteri originali.

La possibilità in inserire negli spazi scoperti eventuali strutture di copertura per il ricovero degli automezzi viene trattata nel punto successivo, con la messa a fuoco delle diverse soluzioni architettoniche compatibili con le preesistenze.

Per la definizione delle recinzioni vengono fornite le principali indicazioni (materiali, altezze, tipi, etc.) nel caso di sostituzione integrale, mettendo in evidenza le soluzioni cui attenersi quando le Schede Normative – di cui parleremo fra poco – prescrivono il mantenimento di alcuni elementi preesistenti (cancellotti, pilastrini, etc.), o quando le recinzioni debbano inglobare strutture di copertura per il ricovero di automezzi.

Per quanto riguarda i prospetti degli edifici, le indicazioni si riferiscono dettagliatamente ai diversi elementi che li compongono: cornicioni e grondaie, davanzali, cornici di porte e finestre, pensiline sulle porte d'ingresso, poggiali, aperture. Per ciascuno di tali elementi vengono fornite varie alternative progettuali, desunte in generale dai prototipi esistenti all'interno del Quartiere. Le indicazioni relative agli infissi seguono gli stessi criteri adottati per gli elementi dei prospetti, e si riferiscono in particolare alle porte di ingresso, agli scuri esterni, alle controfinestre e all'installazione di doppi vetri.

Per quanto riguarda infine le tinteggiature e gli intonaci, vengono fornite le indicazioni principali per il trattamento delle facciate, corredate dalle informazioni essenziali relative ai tipi di intonaci e tinteggiature suggeriti per gli edifici del Quartiere, desunte dalle tracce delle coloriture originarie ancora esistenti in alcuni degli edifici storici.

4. Le indicazioni progettuali del Manuale si rapportano in modo differenziato a ciascuna delle 436 unità edilizie, sulla base di cinque categorie di intervento stabilite dal Piano:

- la categoria del restauro edilizio (cat. A), che si applica a tutti gli edifici di particolare pregio architettonico, o che hanno conservato le caratteristiche architettoniche originarie;
- la categoria del ripristino architettonico ed ambientale (cat. B), che si applica agli edifici prevalentemente a schiera, ancora caratterizzati dalla presenza di elementi architettonici originari (forature, cornici, tinteggiature, coperture, recinzioni, etc.);

- la categoria della ricomposizione edilizia (cat. C), che si applica ai molti edifici antichi di minor pregio architettonico, ma che conservano ancora nell'andamento volumetrico e nell'assemblaggio tipologico alcuni caratteri originari dell'insediamento;

- la categoria della sostituzione edilizia (o nuova edificazione, cat. D), che si applica sia alle aree attualmente

libere e nelle quali il Piano prevede una nuova edificazione, sia a quelle interessate da edifici obsoleti per i quali è prevista la sostituzione, integrale o parziale;

- la categoria della riqualificazione edilizia (cat. E), che si applica infine agli edifici esistenti senza valore storico-culturale, ma per i quali è improbabile che avvenga una sostituzione integrale.

Le Schede Normative costituiscono il tramite attraverso cui si esplicitano le principali indicazioni relative alle singole unità edilizie individuate dal Piano. Le aree interessate dalle diverse categorie di intervento sono perimetrare, e contrassegnate da una lettera (corrispondente alla specifica categoria di intervento), e da un numero progressivo.

Nella planimetria che le correda sono specificamente indicate le singole unità edilizie elementari, distinguendovi gli edifici di antico sedime, gli spazi antistanti e retrostanti con gli eventuali ampliamenti volumetrici ammessi e, ove presenti, i nuovi edifici previsti.

A ciascuna delle aree corrisponde quindi un'apposita Scheda Normativa, composta nella prima parte da una planimetria, e nella seconda da un repertorio di voci che consente di volta in volta il rimando alle indicazioni del manuale, e quindi alle Norme di Attuazione.

Si ottiene in tal modo un incrocio fra ciascuna delle 436 unità edilizie e le 12 voci del manuale riferite alle diverse componenti di ciascun edificio (e di ciascuno spazio di pertinenza), a loro volta articolate sulla base delle molte soluzioni progettuali proposte. Con il risultato che, come si diceva all'inizio, per ogni componente dell'insieme vi è una specifica indicazione di progetto, esplicitamente contestualizzata, e direttamente praticabile.



5. Entrato in vigore nel 1990, il Piano ha dimostrato fin dall'inizio di essere in grado di orientare gli interventi condotti dai

diversi proprietari. Visitare oggi il Quartiere, soprattutto muovendosi lungo le sue strade interne, consente di incontrare moltissime abitazioni riqualificate, con le loro facciate ridipinte secondo i moduli originali, diversificati caso per caso, suggeriti dal Manuale, i cancelli restaurati, o sostituiti su altri di foggia appropriata, i giardini riproposti con disegni e materiali misurati rispetto ai caratteri originari. E ciò senza aver fatto ricorso a particolari procedure di tutela degli edifici, se non quelle emanate a livello municipale attraverso lo strumento del Piano Urbanistico, e contando unicamente sulle risorse economiche investite dagli abitanti nella riqualificazione delle loro abitazioni.

Quali dunque le ragioni del successo dell'iniziativa? Ad esse concorrono più fattori, come sempre accade in situazioni analoghe; ma fra questi, alcuni sembrano aver svolto un ruolo determinante:

- anzitutto, la struttura operativa del Piano, che dandosi la forma di un Manuale, come si è detto, fornisce indicazioni e soluzioni per gli interventi, piuttosto che vincoli; con una buona inteleggibilità delle esemplificazioni, la concretezza delle indicazioni e la loro estrema praticabilità;

- quindi, l'azione di sensibilizzazione condotta presso gli abitanti, nella fase di redazione del Piano, con le numerose riunioni indirizzate a far emergere l'interesse per la memoria e la storia del Quartiere (cui non è stata estranea la distribuzione a tutti gli abitanti di una copia del Manuale);

- infine, l'acquisizione della consapevolezza, negli abitanti, dei valori insiti nel patrimonio abitativo del Quartiere – e dunque nelle loro case – tanto più espliciti quanto più avevano conservato i segni della storia; e tanto più esplicitabili quando apparve chiaro che, con gli interventi suggeriti dal Manuale, potevano essere riproposti.

## **Annex 2**

### **LEY No. 1. LEY DE PROTECCION AL PATRIMONIO CULTURAL**

#### **CAPÍTULO I DISPOSICIONES GENERALES**

**ARTÍCULO 1:** La presente Ley tiene por objeto la determinación de los bienes que, por su especial relevancia en relación con la arqueología, la prehistoria, la historia, la literatura, la educación, el arte, la ciencia y la cultura en general, integran el Patrimonio Cultural de la Nación, y establecer medios idóneos de protección de los mismos.

**ARTÍCULO 2:** El Ministerio de Cultura es el organismo encargado de precisar y declarar los bienes que deben formar parte del Patrimonio Cultural de la Nación. **CAPÍTULO II DEL REGISTRO NACIONAL DE BIENES CULTURALES**

**ARTÍCULO 3:** Se crea el Registro Nacional de Bienes Culturales de la República de Cuba adscripto al Ministerio de Cultura. En el Registro a que se refiere el párrafo anterior se hará constar, además de los datos que permitan identificar el bien, el lugar en que esté situado, la persona natural o jurídica que sea tenedora del mismo por cualquier título y la razón del interés cultural de dicho bien.

**ARTÍCULO 4:** El Registro Nacional de Bienes Culturales, para el mejor cumplimiento de sus funciones y para el establecimiento de las coordinaciones necesarias, cuenta con un cuerpo de delegados asesores, designados por los organismos siguientes: Comité Estatal de Finanzas, Banco Nacional de Cuba, Ministerio de Comunicaciones, Ministerio de Educación, Ministerio de Educación Superior, Ministerio de las Fuerzas Armadas Revolucionarias, Ministerio del Interior, Ministerio de Justicia, Ministerio de Relaciones Exteriores, Academia de Ciencias de Cuba, Instituto Cubano de Radio y Televisión, Instituto Nacional de Turismo, Dirección General de Aduanas del Comité Estatal de Finanzas y el Instituto de Historia del Movimiento Comunista y de la Revolución Socialista de Cuba. A propuesta de dichos delegados, el Ministerio de Cultura puede disponer que integren también el cuerpo de asesores, delegados designados por otros organismos que, por la índole de sus funciones, puedan coadyuvar a la consecución de los objetivos de esta ley.

ARTÍCULO 5: Toda persona natural o jurídica tenedora por cualquier título de bienes que constituyan Patrimonio Cultural de la Nación, viene obligada a declararlos, previo requerimiento, ante el Registro Nacional de Bienes Culturales de la República de Cuba, sin que ello implique modificación de título por el que se posee. Los que faltaren a esta obligación en el término que se les señale serán sancionados conforme a la legislación vigente.

ARTÍCULO 6: Cuando un bien se declare parte del Patrimonio Cultural de la Nación, se inscribe de oficio en el Registro Nacional de Bienes Culturales. Esta inscripción se notifica, dentro de un plazo no mayor de treinta días, al propietario, poseedor, usuario o tenedor por cualquier título o concepto, quien quedará obligado a garantizar su conservación y absoluta integridad.

### CAPÍTULO III DE LA PROTECCION DE LOS BIENES CULTURALES

ARTÍCULO 7: Se declaran de utilidad pública e interés social los bienes culturales a que se refiere la presente ley, los que no podrán ser destruidos, remozados, modificados o restaurados, sin previa autorización del Ministerio de Cultura.

ARTÍCULO 8: Los bienes comprendidos en esta Ley sólo podrán ser extraídos del territorio nacional con expresa autorización del Ministerio de Cultura y por el tiempo que éste determine.

ARTÍCULO 9: No podrá efectuarse la transmisión del dominio o posesión de ningún bien de los protegidos por esta Ley, si no se obtiene previa y expresa autorización del Ministerio de Cultura. Los que infringen esta disposición serán sancionados conforme a la legislación vigente y se dispondrá el comiso del bien correspondiente. Recibida la solicitud de autorización a que se refiere el primer párrafo de este artículo, el Ministerio de Cultura podrá hacer uso del derecho preferente a la adquisición del bien de que se trate, por el precio que corresponda.

ARTÍCULO 10: Cuando la transmisión a que se refiere el artículo anterior pretenda efectuarse a favor de una persona natural o jurídica que resida fuera del territorio nacional, el Estado Cubano podrá hacer uso del citado derecho de preferencia de adquirir el bien

cultural de que se trate por el precio declarado por el vendedor o cedente, y si existieren dudas sobre la veracidad de dicho precio, por el que determinen los peritos designados al efecto.

ARTÍCULO 11: Los funcionarios y agentes de la autoridad encargados de fiscalizar las exportaciones que se hagan por cualquier vía, suspenderán la tramitación de las solicitudes de embarque cuando tengan conocimiento o abriguen racional sospecha de que se trata de la extracción de alguno de los bienes a que se refiere esta Ley, y darán cuenta por la vía reglamentaria al Ministerio de Cultura a fin de que éste, previa comprobación, determine lo procedente.

ARTÍCULO 12: La extracción o el intento de extracción del territorio nacional de bienes culturales protegidos por esta Ley sin haber obtenido previamente la autorización del Ministerio de Cultura, constituirá delito de contrabando y será sancionado conforme establece la Ley Penal. Dichos bienes serán siempre decomisados.

ARTÍCULO 13: Las personas naturales o jurídicas que introduzcan en el país, con carácter temporal, alguno de los bienes a que se refiere la presente ley, lo declararán en la Aduana correspondiente, la que expedirá un documento de admisión temporal que entregará al importador para su presentación en la Aduana en la oportunidad de la reexportación, sin cuyo requisito no podrá llevarla a efecto.

#### DISPOSICIONES TRANSITORIAS

PRIMERA: El Ministro de Cultura, dentro de un plazo no mayor de 180 días a partir de la promulgación de esta Ley, organizará y pondrá en funcionamiento el Registro Nacional de Bienes Culturales de la República.

SEGUNDA: El Ministro de Cultura queda encargado de elaborar y redactar un proyecto de reglamento de la presente Ley y someterlo a la aprobación del Consejo de Ministros en el término no mayor de un año contado a partir de la vigencia de esta Ley, y hasta tanto sea aprobado, queda facultado para dictar las resoluciones y demás disposiciones que considere necesarias para el cumplimiento de lo que se dispone en la presente Ley.

## DISPOSICIONES

PRIMERA: Los Ministros de Cultura, de Relaciones Exteriores y del Transporte, el Director General de Aduanas y demás jefes de los organismos que se mencionan en esta Ley o que tengan relación con las medidas que en ella se establecen, cuidarán de su cumplimiento, en la parte que a cada uno corresponde.

SEGUNDA: Se derogan cuantas disposiciones legales y reglamentarias se opongan al cumplimiento de lo dispuesto en la presente Ley, la cual comenzará a regir a partir de su publicación en la Gaceta Oficial de la República. Ciudad de La Habana, a los cuatro días del mes de agosto de mil novecientos setenta y siete.

### **Annex 3**

## LEY No. 2. LEY DE LOS MONUMENTOS NACIONALES Y LOCALES

### CAPÍTULO I DE LOS MONUMENTOS NACIONALES Y LOCALES

ARTÍCULO 1: Se entiende por Monumento Nacional todo centro histórico urbano y toda construcción, sitio u objeto que, por su carácter excepcional, merezca ser conservado por su significación cultural, histórica o social para el país y que, como tal, sea declarado por la Comisión Nacional de Monumentos. Se entiende por Monumento Local toda construcción, sitio u objeto que, no reuniendo las condiciones necesarias para ser declarado Monumento Nacional, merezca ser conservado por su interés cultural, histórico o social para una localidad determinada y que, como tal, sea declarado por la Comisión Nacional de Monumentos. Se entiende por Centro Histórico Urbano el conjunto formado por las construcciones, espacios públicos y privados, calles, plazas y las particularidades geográficas o topográficas que lo conforman y ambientan y que en determinado momento histórico tuvo una clara fisonomía unitaria, expresión de una comunidad social, individualizada y organizada. Las construcciones abarcan la obra o el conjunto de obras hechas por la mano del hombre desde la prehistoria hasta la época actual, pudiendo ser de carácter civil, conmemorativo, doméstico, industrial militar o religioso. Los sitios comprenden todos los espacios, lugares o áreas donde se haya desarrollado un significativo hecho o proceso de carácter histórico, científico, etnográfico o legendario, o

que posean características de homogeneidad arquitectónica o una singular morfología del trazado urbano, y también aquellos donde la naturaleza presente aspectos que justifiquen su conservación y protección. Pueden ser de carácter arqueológico, histórico, natural o urbano. Los objetos son aquellos elementos que, por su excepcional significado histórico, artístico o científico, merezcan ser conservados y protegidos independientemente de que se encuentren en una institución oficial o en poder de una persona particular.

ARTÍCULO 2: La declaración de Monumento Nacional o Monumento Local puede disponerse: 1. por su valor histórico: aquellas construcciones, sitios y objetos dignos de ser preservados por su relación con un acontecimiento relevante de nuestra historia política, social, científica o cultural; 2. por su valor artístico: aquellas construcciones, esculturas monumentales y objetos que presenten por su estilo o detalles decorativos, valores dignos de ser preservados; 3. por su valor ambiental: aquellos centros históricos urbanos y construcciones que, debido a su forma o carácter arquitectónico, han llegado por el uso y la costumbre a representar un ambiente propio de una época o región; 4. por su valor natural o social: aquellos sitios que presenten características científicas o culturales en sí o que, por sus formaciones geológicas o fisiográficas, constituyan el hábitat de especies animales o vegetales de gran valor o amenazadas de extinción.

## CAPÍTULO II DE LA COMISIÓN NACIONAL DE MONUMENTOS

ARTÍCULO 3: Se crea la Comisión Nacional de Monumentos, adscripta al Ministerio de Cultura.

ARTÍCULO 4: Corresponden a la Comisión Nacional de Monumentos las funciones siguientes: 1. preparar estudios y planes para la localización, conservación y restauración de construcciones, sitios y objetos declarados o que se declaren Monumentos Nacionales o Locales; 2. autorizar, inspeccionar y supervisar toda obra que deba realizarse en una construcción, sitio u objeto declarado Monumento Nacional o Local, así como declarar la necesidad de realizar en ellos cualquier tipo de obra; 3. declarar cuáles construcciones, sitios y objetos son Monumentos Nacionales o Locales de acuerdo con las disposiciones de la presente Ley. La Comisión Nacional será el único órgano facultado para hacer esta declaración; 4. revisar las obras, objetos, instalaciones, edificaciones y construcciones y disponer, cuando fuere necesario, que se les hagan las modificaciones requeridas para

restaurarles su más rigurosa autenticidad y su verdadero sentido histórico en relación con los orígenes y hechos de nuestra nacionalidad; 5. Custodiar los archivos y la documentación correspondientes a los Monumentos Nacionales y Locales; 6. Orientar y supervisar el trabajo de las Comisiones Provinciales de Monumentos; 7. Cumplir cualesquiera otras disposiciones u orientaciones que, sobre esta materia, dicte o trasmita el Ministerio de Cultura.

ARTÍCULO 5: La Comisión Nacional de Monumentos está integrada por un Presidente, un Secretario Ejecutivo y un representante de cada uno de los organismos siguientes: Ministerio de la Construcción, Ministerio de Educación, Ministerio de Educación Superior, Academia de Ciencias de Cuba, Instituto Nacional de Turismo, Instituto de Planificación Física de la Junta Central de Planificación, Instituto Nacional de Desarrollo y Aprovechamiento Forestales, e Instituto de Historia del Movimiento Comunista y de la Revolución Socialista de Cuba. También integrarán la Comisión un representante de la organización que agrupe a los arquitectos de Cuba y representantes de cuantos más organismos estime necesarios el Ministerio de Cultura. ARTÍCULO 6: El Presidente de la Comisión Nacional de Monumentos se designa y es removido por el Ministerio de Cultura; el Secretario ejecutivo lo es quien ostente el cargo de Director de la Dirección de Patrimonio Cultural del Ministerio de Cultura, y los miembros restantes son designados respectivamente por los jefes de los organismos mencionados en el artículo anterior, los que pueden removerlos libremente por propia iniciativa o a solicitud de la Comisión.

### CAPÍTULO III DE LAS COMISIONES PROVINCIALES DE MONUMENTOS

ARTÍCULO 7: Se crean las Comisiones Provinciales de Monumentos, adscriptas a las Direcciones Sectoriales de Cultura de los Comités Ejecutivos de las Asambleas Provinciales del Poder Popular y subordinadas a la dirección técnica y metodológica del Ministerio de Cultura.

ARTÍCULO 8: Corresponden a las Comisiones Provinciales de Monumentos, las atribuciones y funciones siguientes: 1. adoptar las más estrictas medidas para la conservación de los Monumentos Nacionales y Locales de su territorio; 2. velar por la conservación de los Monumentos Nacionales y Locales de su territorio y respecto a ellos

desarrollar trabajos de investigación y divulgación; 3. custodiar y conservar el archivo y la documentación correspondientes a los Monumentos Nacionales y Locales de su territorio; 4. tramitar y elevar a la Comisión Nacional las propuestas para la declaración de Monumento Nacional o Local; 5. controlar el mantenimiento de aquellas construcciones, sitios y objetos, de valor local, que no reúnan las condiciones para ser declarados Monumentos Locales; 6. cumplir las orientaciones de la Comisión Nacional de Monumentos.

ARTÍCULO 9: Las Comisiones Provinciales de Monumentos se integran de forma similar a la señalada en el artículo 5 de la presente Ley, por los representantes de las direcciones administrativas de los Comités Ejecutivos de las Asambleas Provinciales del Poder Popular que desempeñan las funciones de los organismos nacionales señalados en dicho artículo. No es indispensable que todas las actividades desempeñadas por los organismos relacionados en el propio artículo 5 estén representadas en las Comisiones Provinciales. En el caso de que las actividades de los organismos señalados en el artículo 5, no se correspondan con una de las citadas direcciones administrativas del Poder Popular en las provincias, y se estimare indispensable la representación de dicho organismo, su delegado se designa por la instancia nacional correspondiente. El Presidente y Secretario Ejecutivo de las Comisiones Provinciales son designados y removidos por el Comité Ejecutivo de las Asambleas Provinciales del Poder Popular, a propuesta de la Dirección Sectorial correspondiente, y oído el criterio de la Comisión Nacional.

#### CAPÍTULO IV DE LA PROTECCIÓN Y LAS RESTRICCIONES EN LOS MONUMENTOS NACIONALES, MONUMENTOS LOCALES Y ZONAS DE PROTECCIÓN

ARTÍCULO 10: Declarado Monumento Nacional o Monumento Local una construcción, un centro histórico urbano, sitio u objeto, se considerará de interés social y quedará sujeto a la protección y a las restricciones que se establecen por esta Ley. Realizada la declaración a que se refiere el párrafo anterior, la Comisión Nacional deberá comunicarla al propietario o poseedor del mismo. En caso de que el Monumento Nacional o Monumento Local pertenezca a un particular, el Estado se reserva el derecho de adquirirlo



si fuere necesario para su preservación. Si no se llegare a un acuerdo con el propietario o poseedor, la Comisión Nacional iniciará, conforme a la legislación vigente, el correspondiente procedimiento para la expropiación forzosa.

ARTÍCULO 11: La Comisión Nacional, en coordinación con las Comisiones Provinciales, llevará un Registro de los Monumentos Nacionales y Monumentos Locales en el que se hará constar el lugar en que se encuentren situados, los nombres por los que son conocidos y una descripción pormenorizada de cada uno.

ARTÍCULO 12: La Comisión Nacional determina la zona de protección, que es el área contigua a un Monumento Nacional o Local, tanto si la declaración de esta condición ya se ha hecho como si se halla en proceso de investigación para declararla. Una vez fijada una zona de protección, la Comisión Nacional supervisará las construcciones que se realicen dentro de la misma, recomendará medidas, cuando sean necesarias, para eliminar o modificar las existentes y limitar y proscribir, si procediere, la actividad económica.

ARTÍCULO 13: Las direcciones administrativas de los Organos Locales del Poder Popular deben trasladar a la Comisión Provincial de Monumentos correspondiente, toda solicitud de licencia de obra que pretenda realizarse en un Monumento Local o zona de protección para su aprobación o delegación por la Comisión Nacional. También puede la Comisión Nacional, cuando lo estime necesario, requerir y coordinar con los organismos pertinentes, la realización de cualquier obra de restauración o conservación de monumentos.

ARTÍCULO 14: No se permitirá la instalación de ninguna industria o comercio en los inmuebles declarados Monumento Nacional o Monumento Local o en zona de protección, sin la previa autorización de la Comisión correspondiente. La autorización de la Comisión Nacional o Provincial también será necesaria para la instalación de vallas anunciadoras, letreros y adornos, y la celebración de espectáculos públicos en los lugares antes mencionados.

ARTÍCULO 15: Mientras se lleve a cabo un proceso de investigación para determinar si procede declarar Monumento Nacional o Monumento Local a una construcción, centro histórico urbano, sitio u objeto, estos se consideran pendientes de declaración y, en

consecuencia, protegidos contra cualquier destrucción y modificación, hasta tanto se adopte la resolución definitiva correspondiente.

ARTÍCULO 16: La Comisión Nacional orientará a las Comisiones Provinciales en el sentido de que designen delegados para atender especialmente los lugares de sus respectivos territorios que sean excepcionalmente valiosos por la naturaleza o elementos que los componen.

ARTÍCULO 17: Se prohíbe la exportación definitiva de todo bien declarado Monumento Nacional o Monumento Local. Únicamente, con la autorización de la Comisión Nacional después de realizadas las verificaciones necesarias, podrá exportarse, total o parcialmente y por tiempo determinado, un Monumento Nacional o Monumento Local. A tal efecto, será requisito indispensable presentar ante los funcionarios de aduanas el certificado expedido por la Comisión Nacional que acredite que el traslado al extranjero del bien de que se trate, ha sido autorizado, y el tiempo que permanecerá fuera del territorio nacional.

#### CAPÍTULO V DE LAS INVESTIGACIONES ARQUEOLÓGICAS

ARTÍCULO 18: Los organismos y personas que se propongan realizar excavaciones o investigaciones arqueológicas, deben obtener la aprobación de la Comisión Nacional de Monumentos y, en su caso, darle cuenta del resultado de su trabajo. La Comisión, si las autorizare, lo comunicará al Ministerio de la Agricultura, Instituto Nacional de Desarrollo y Aprovechamiento Forestales, Asociación Nacional de Agricultores Pequeños o a cualquier otro organismo o persona que tenga asignado o posea terrenos donde existan o puedan existir sitios arqueológicos, los cuales estarán obligados al estricto cumplimiento de las regulaciones que a continuación se establecen. Los hallazgos arqueológicos casuales deben comunicarse inmediatamente a la Comisión Nacional para que sean investigados por el organismo competente. La obligación de comunicar dichos hallazgos recae en el descubridor y en el organismo o institución al que está asignado el lugar en cuestión, o en la persona que lo posea. No deben modificarse las condiciones existentes en el terreno de que se trate al producirse el hallazgo arqueológico a que se refiere el párrafo anterior, hasta tanto los especialistas enviados por la Comisión se constituyan en el lugar y determinen lo pertinente. Todos los elementos u objetos arqueológicos

resultantes de un hallazgo o investigación arqueológica son propiedad del Estado cubano y quedan sometidos a las regulaciones establecidas en la presente Ley.

## CAPÍTULO VI DE LAS RESTAURACIONES DE OBRAS DE ARTES PLÁSTICAS EN LOS MONUMENTOS

ARTÍCULO 19: La Comisión Nacional de Monumentos es la única que puede autorizar restauraciones de obras de arte plástica en un Monumento Nacional o en un Monumento Local, las que serán realizadas bajo la dirección y supervisión de dicha Comisión. La Comisión correspondiente dará cuenta a las autoridades competentes, cuando sin su previa autorización se efectúe o se haya efectuado una obra en un Monumento Nacional, Monumento Local o zona de protección

### DISPOSICIONES FINALES

PRIMERA: El Ministerio de Cultura queda encargado de redactar un proyecto de Reglamento y someterlo a la aprobación del Consejo de Ministros en término no mayor de un año, contado a partir de la publicación de la presente Ley; y hasta tanto sea aprobado, queda facultado para dictar las resoluciones y demás disposiciones que considere necesarias para el mejor cumplimiento de lo que se dispone en la presente Ley.

SEGUNDA: Se derogan cuantas disposiciones legales y reglamentarias se opongan al cumplimiento de lo dispuesto en la presente ley, la que comenzará a regir a partir de su publicación en la Gaceta Oficial de la República. Ciudad de La Habana, a los cuatro días del mes de agosto de mil novecientos setenta y siete.

***Projet tutoré***

*La pêche à la Morue. Evolution des techniques de pêche*

*Tuteur: Anne-Sophie Rieth*

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## ***Introduction***



### **Définition du projet de la recherche**

Dans le cadre du projet tutoré, le Consortium du Master TPTI nous a assigné la thématique du poisson. Parlé de poisson, c'est en effet se référer à plusieurs espèces dont la diversité ne pourrait pas faciliter la conduite d'un travail qui se veut à mi-parcours entre la recherche et la pratique de la valorisation patrimoniale d'un objet. A cet égard, par soucis de cohérence et de précision, le thème a été recentré sur la morue.

Même recentré autour de la morue, apporter une méthodologie pour la valorisation d'un genre animal n'a pas été chose aisée. Nous sommes ainsi partis de quelques interrogations centrales, pour aboutir à la construction d'une réflexion qui prend en considération les sensibilités de chacun des membres du groupe, donnant ainsi une approche essentiellement multidisciplinaire au travail. Ces questionnements sont notamment: Comment s'articulent les rapports entre l'Homme (les sociétés) et la morue à travers le temps ? Quels sont les traits principaux de l'héritage de ces rapports entre l'Homme et la morue ? Comment ces caractéristiques principales des relations Homme-poisson ont-elles été traitées pour servir de patrimoine culturel et technique? Quel est le niveau de pertinence de l'héritage de la morue, en tant que patrimoine conservé et valorisé?

Pour répondre à ces quelques interrogations, notre démarche a consisté en une répartition des tâches, en fonction du background de chacun. Ainsi, NICHIFOR Mihaela, titulaire d'une licence en Littérature s'est occupée en priorité de développer la partie mythologie et littérature. Narjess Nani, avec une formation dans le domaine du patrimoine s'est focalisée sur la morue dans l'art culinaire, tandis que les architectes DO HOANG RONG Ly et Jan Michel SANCHEZ HOYOS ont accordé une attention particulière aux ports morutiers et aux techniques de pêche. OUSMANOU Zourmba, dans une approche d'historien a centré sa réflexion sur la construction d'un patrimoine morutier.

Ces réflexions, menées de concert et non de manière séparée, ont pour cadre géographique, les trois pays principaux des Universités dans lesquelles séjournent obligatoirement les étudiants du Master Erasmus Mundus, à savoir la France, l'Italie et le

Portugal. La méthodologie utilisée comprend à la fois des consultations en bibliothèque, des séances de travail avec des experts, des participations à des conférences, ainsi que des visites sur des sites et des musées sélectionnés en fonction des disponibilités et de l'accessibilité. Au final, l'expérience de ce travail démontre que la valorisation du patrimoine culturel nécessite une collaboration d'experts de plusieurs domaines.

La création d'un site web pour accueillir le résultat du travail collectif est obligatoire. La plateforme en ligne « Wix » a été sélectionnée. Cette plateforme dispose de fonctionnalités idéales pour un travail comme celui-ci. Il n'est pas nécessaire d'avoir des connaissances de programmation afin de modifier le contenu par les membres de l'équipe. Les outils interactifs permettent de modifier et de configurer le site selon les besoins du projet. Wix est gratuit, cette caractéristique est idéale pour le travail académique. La création de pages et de contenu multimédia est très simple, ce qui a permis d'exploiter d'autres outils tels que des modèles 3D, des cartes interactives et des vidéos.

L'adresse du site Web est <http://patrimoinemorutier.wixsite.com/patrimoinemorutier> Le contenu du site se divise de la manière suivante : Chaque thème a sa propre page où se montrent les résultats du travail individuel. Également, le site dispose d'une carte dynamique pour placer les emplacements plus importants au cours de notre processus de recherche. Un troisième espace a été créé pour placer tout le contenu multimédia créé par le groupe.

### **Définition chronologique et géographique**

Contrairement aux autres projets qui composent ce travail collectif, les techniques de pêche à la morue ont la particularité que la pêche de ce poisson a eu un grand développement en France et au Portugal. En Italie, cela n'a pas eu lieu de la même manière. La position géographique de ce pays conditionne que la activité de pêche se développe dans les eaux de la Méditerranée. La morue est un poisson d'eau froide qui se trouve géographiquement dans l'hémisphère nord. Cette condition géographique et les caractéristiques des bateaux conditionneraient les pêcheurs italiens à naviguer de grandes distances pendant beaucoup de semaines, ce n'était pas une activité faisable. En conséquence ce travail se focalisera dans les cas de la France et Portugal.

Cette recherche est temporellement encadrée à partir du moment des grandes découvertes, bien que des références soient faites aux moments précédents. La bibliographie consultée concentre l'étude des techniques de pêche à la morue jusqu'au milieu du XXème siècle avec l'apparition et le développement de la pêche à chalut.

### **Objective de la partie individuelle de la recherche**

La partie individuelle fait attention particulière aux techniques de pêche. L'objectif principal est de montrer l'évolution des techniques de pêche à la morue en France et au Portugal. Il est nécessaire de mentionner que les techniques de pêche sont étroitement liées aux zones de pêche, au type de bateaux et à la technologie disponible. Pour compléter cet objectif, la recherche a été divisée en 4 chapitres, chacun répond à des objectifs spécifiques.

### **Objectives spécifiques**

Les objectifs spécifiques à développer pour atteindre l'objectif principal sont liés au développement des différents chapitres. Identifier d'abord les zones de pêche, montrer les techniques de pêche à la morue dans les deux pays. Un troisième objectif spécifique est d'identifier les types de bateaux utilisés et la relation avec les zones et les techniques de pêche. Finalement souligner les éléments communs et les différences de la technique de pêche à la morue entre la France et le Portugal.

C'est aussi un autre objectif la réalisation d'un exercice de reconstruction numérique d'un navire utilisé pour la pêche de la morue. La reconstruction numérique du bateau sera placée sur le site. Pour sa réalisation, nous avons travaillé avec le logiciel de modélisation 3D, Sketch up, et la vidéo a été réalisée avec Lumion.

## ***Chapitre 1***

### *Identification des zones de pêche à la morue*

### 1.1 La morue et son localisation géographique

La pêche comme la chasse sont des activités qu'ont accompagnées l'homme toujours. La pêche a été en constante modification en relation avec les besoins de la société. À début s'est réalisée la pêche pour la consommation des pêcheurs et pour leurs familles, mais à mesure que la société évoluait, les familles sont devenues plus nombreuses, et avec l'évolution du commerce, le poisson a devenu un objet d'échange et la pêche s'est transformée progressivement dans une industrie de premier ordre (Bellet, 1901, p. 2).

Un des poissons qui a constitué une source d'alimentation très importante pour L'Europe c'est la morue. Son commerce et consommation ont généré toute une histoire et un développement des matières et techniques concernant la pêche et les types de bateaux.

La morue est un poisson vivant dans les eaux froides de l'hémisphère nord à températures proches à 0°C de qui peut être trouvée dans les côtes de Terre Neuve, Labrador, Groenland, Islande, Norvège et Nouvelle-Écosse. Ce poisson habite près du fond à une profondeur de plus en plus à mesure qu'il devient adulte.



**Figure 1.1** Localisation géographique de la morue dans les eaux de l'hémisphère nord.

Source:

[https://commons.wikimedia.org/wiki/File:Gadus\\_morhua-Atlantic\\_cod.png](https://commons.wikimedia.org/wiki/File:Gadus_morhua-Atlantic_cod.png)

Pour les français la pêche à la morue a

été la plus importante parmi tous les types de pêche qui ont eu lieu. A la fin du XVIIIème siècle la pêche à la morue représentait presque la moitié de la pêche totale de la France, la pêche à la morue avait à cette époque le 60% du tonnage des bateaux et le 45% des hommes dédiés à la pêche. Les français du littoral Nord ont commencé à pêcher la morue proche de ces côtes. Leurs mers avaient une grande richesse de poissons et toutes les variétés de morues, mais peu à peu la morue se fit plus rare, au point qu'elle a disparu des eaux de ces régions pour s'arrêter dans la mer du Nord. Cette cause a provoqué aussi le

début des voyages à autres destinations (Bellet, 1901, p. 14). Parmi les destinations plus proches on trouvait La Mer du Nord, mais les Hollandais avaient le control presque absolue de ces eaux, par conséquent la pêche pour les français dans cette région avait diminué et la morue ne s'est trouvée pas en abondance dans les marchés. Par cette raison l'histoire française de la pêche à la morue s'est développée principalement en deux areas géographiques spécifiques, Terre - Neuve et Islande.

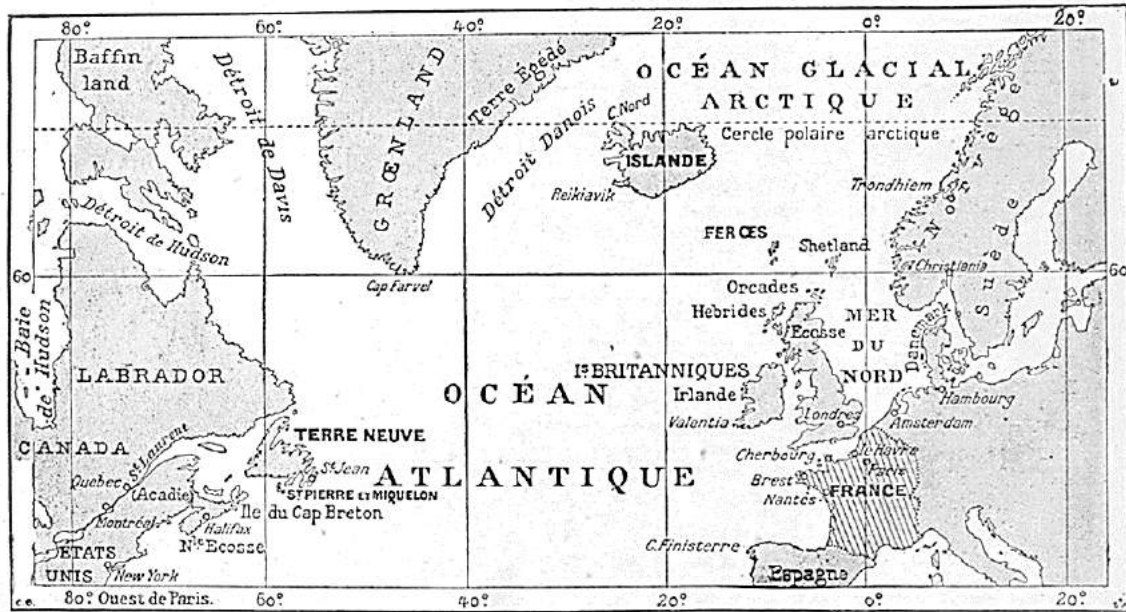
Vers 1412 les Basques sont arrivés en Islande et après les Bretons. Au début du XVIIème siècle les pêcheurs de Dunkerque commençaient à pêcher la morue de ces mers et pendant la première moitié du siècle XIX sont arrivées les navires de Gravelines, Paimpol et Fécamp. L'épisode de la pêche sur le grand banc de Terre-Neuve a commencé au début du XVIème siècle. Les navires des ports normands, bretons et basques pêchaient sur les mers de l'Amérique septentrionale. A la fin du XVIIème siècle le port de Saint Malo envoyait chaque année de 60 à 90 navires.

Ce mouvement de zones de pêche vers des nouvelles areas qui a commencé pendant le XVème siècle et qui a impliqué la découverte et l'exploration des autres eaux a marqué le début de la Grande Pêche.<sup>1</sup> L'abondance de ce poisson dans les nouvelles eaux comme terre-Neuve et Islande a permis d'avoir une alimentation saine et abondante à très bonne marché pour la population. Cette situation a provoqué l'apparition de beaucoup des ports qui vont faire l'armement pour aller pêcher la morue, principalement sur les bancs de Terre-Neuve, où il existait quelques matelots, un endroit sécurisé pour le bateaux et certains bourgeois pouvait surgir un armateur morutier (de la Morandière, 1966, p. 26).

En 1927 les français se sont lancés au découvert des nouvelles zones de pêche et ont réalisé une exploration à la côte occidentale de Groenland et ils ont constaté qu'il y avait des eaux très riches en morues.

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<sup>1</sup> La Grande Pêche c'est la pêche lointaine à la morue dans les eaux de Terre-Neuve, du Labrador, de l'Islande et de Groenland pendant cinq siècles d'aventure humaine, technique et économique. Des milliers de marines sont parti pêcher la morue chaque année depuis XVème siècle dans les conditions difficiles et périlleuses. Au temps de la voile, les campagnes peuvent durer plus de six mois.



**Figure 1.2** Carte de l'Atlantique Nord, régions des Grandes Pêches: Terre-Neuve, Groenland, Islande et Mer du Nord. Source: Alexandre Acloque. Nos Pêcheurs de haute mer. 1911

Dans le cas des Portugais il faut dire qu'il est le quatrième pays consommateur de poisson et le 40% du poisson consommé c'est la morue c'est-à-dire que c'est le premier pays importateur de morue. Ce poisson c'est le centre d'une grande Industrie qui fait le salage et le séchage, représentant à nos jours plus du 50% de la valeur de l'industrie de transformation du poisson en Portugal.

La relation du Portugal avec l'Atlantique nord était mise en évidence dans le siècle X. Les scandinaves sont venus chercher du sel aux côtes de portugais, surtout à Setubal. Des temps de l'occupation romain ce sel était utilisé dans le salage du poisson. Déjà en 1353 on connaissait que les portugais pêchaient la morue dans les mers de la Angleterre dans les eaux froides proches à Norvège, très riches en morues. Un traité entre Pedro I de Portugal et Eduardo II de Angleterre autorisait aux habitantes de Lisbonne et Porto de pêcher dans ces eaux (Ferreira, Cruz, Guia, Menezes, & Guerreiro, 2001, pp. 12-13).

Il y a des auteurs qui assurent la présence des navires portugais à Terre - Neuve, pendant le XVème siècle à cause de l'existence de navigateurs portugais qu'ont fait des voyages transatlantique dans l'époque des découvertes, mais la manque de sources écrites ne permet pas de définir avec exactitude les premières dates de pêche. Par contre il est connu exactement qu'au début de XVIème siècle, en 1504 les portugais ont pêché la morue sur

le Grand Banc. A cette époque-là, la pêche à la morue dans cette zone par les portugais a eu un développement limité.

En 1580 a commencé une étape à Portugal quand ce pays était contrôlé par la Monarchie Hispanique qui a fini en 1640. Cette situation politique a affecté sérieusement la pêche transatlantique du Portugal. Le pays a perdu presque toute sa flotte de pêche à cause de la catastrophe de L'armée Invincible, laquelle a été formée par l'ordre du Philip II de Espagne avec le but de conquérir L'Angleterre, mais cette flotte a fini détruite. Aussi les longues campagnes pendant l'ère des grandes découvertes qu'ont demandées beaucoup de ressources étaient très négatives pour la pêche lointaine. Les invasions françaises au début du XIXème ont ralenti le redéveloppement de la pêche portugaise sur les mères de Terre Neuve (Ferreira J. , 2012, pp. 12-13).

En 1835 Portugal a commencé la reconquête de son activité de pêche par la création de la « Companhia de Pescarias Lisbonense », en 1848 ont été envoyés 19 volières à Terre - Neuve mais Portugal a rentré plus fréquemment au Grand Banc à partir de 1866 avec deux entreprises qui ont monopolisé la pêche de la morue jusqu'en 1901. Entre 1936-1967 Portugal a fait la « Campanha do Bacalhau », les mères de Terre -Neuve étaient insuffisantes pour les besoins des Portugais qui ont commencé à pêcher aussi à Groenland, une pêche très dure mais très profitable (da Silva, 2016, pp. 69-70).

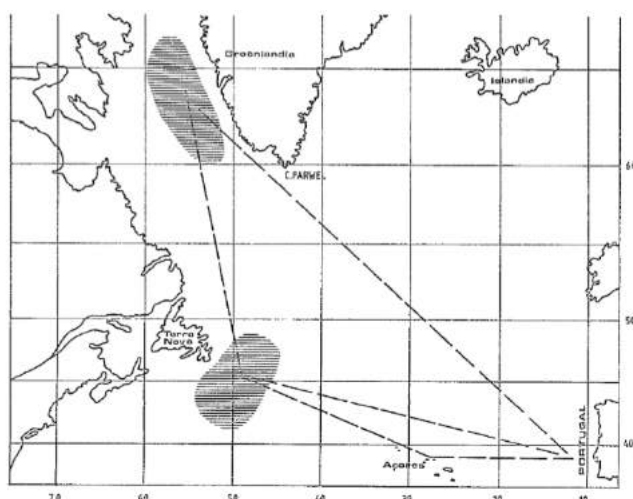
A partir de 1930, motivés par la crise économique de 1929, la manque de poisson à Terre-Neuve, la disparition des petites entreprises et la diminution des navires qu'allaient pêcher aux bancs, les portugais se sont lancés aux mers plus lointaines et dangereuses. João Pereira Cajeira muni d'une carte de l'Atlantique Nord et avec des informations collectées en France part en direction au Groenland dans un simple voilier sans propulsion mécanique et communication radiale et arrive jusqu'à Cap Farvel le point situé le plus au sud de Groenland, à l'extrémité méridionale de cette vaste région, à la rencontre de l'Océan Atlantique du Nord et de la Mer du Labrador. La prochaine année l'entreprise de pêche d'Aveiro a envoyé 3 navires, le résultat de cette campagne allait justifier ces longues campagnes. A partir de ce moment-là, la flotte portugaise allait pêcher au début de la campagne à Terre-Neuve et après au Groenland (Moutinho, 1985, pp. 78-79).



## 1.2 Terre-Neuve

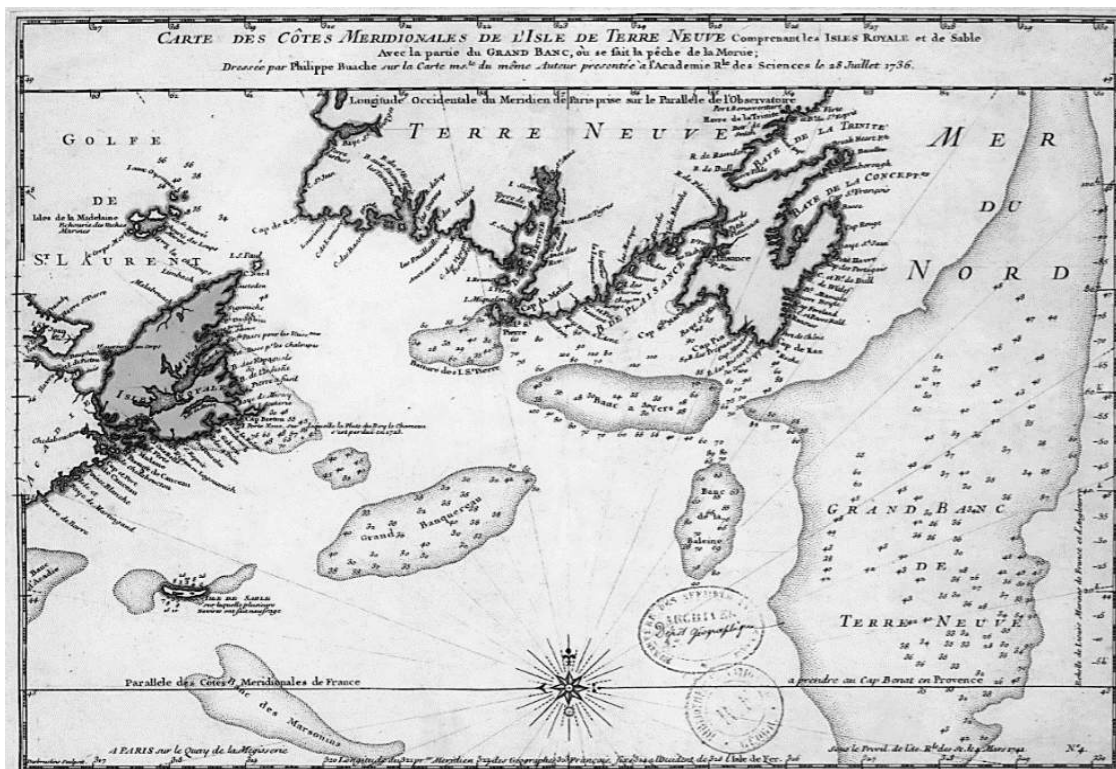
Dans cette partie occidentale de l'Atlantique Nord qui est proche aux cotes des Etats-Unis et Canada, le fond maritime se relève pour former des hauts plateaux sous-marins. Ces plateaux ont été connus comme les Bancs. Ici la profondeur de l'eau ne dépasse pas 100 mètres et les pêcheurs pouvaient facilement capturer les morues qui se trouvaient en grand nombre. Parmi toutes les îles sous-marines qu'on peut trouver dans ces grands plateaux, la plus importante est située au sud-ouest de l'île de Terre-Neuve qui a été connue simplement comme « Le Grand Banc de Terre Neuve » Elle a la forme d'un triangle et sa superficie est pratiquement égale à celle de l'île de Terre-Neuve.

Le Grand Banc était le principal lieu de rendez-vous des Terre-Neuviens<sup>2</sup> français, portugês et des autres nationalités qui faisaient la pêche à la morue. Après le Grand Banc, en direction à l'île Saint-Pierre, on peut trouver le Banc Vert et le Banc de Saint-Pierre, en direction sud-ouest se trouvent les Bancs secondaires de Misaine d'Arlimon, et enfin le Banquereau et le Banc de l'île de Sable au large de la Nouvelle-Écosse. (Bellet, 1901, p. 78)



**Figure 1.3** Les zones de pêche fréquentées par les portugais, on peut regarder l'ordre de la campagne de pêche. Source: Mario Moutinho. *Historia da Pesca do Bacalhau*, 52

<sup>2</sup> Nom donné aux bateaux équipés pour aller pêcher la morue à Terre-Neuve. Un terre-neuvier est connu aussi comme un morutier.



**Figure 1.4** Carte des côtes méridionales de l'île de Terre Neuve, comprenant les Isles Royales et de Sable avec la partie du Grand Banc, où se fait la pêche de la morue. 1736. Par Buache, Philippe (1700-1773). Cartographe. Source gallica.bnf.fr / Bibliothèque nationale de France.

### 1.3 Islande

L'histoire de la pêche en Islande a été très connectée à la morue qui est la ressource marine la plus importante dans les eaux islandaises. On peut trouver cet espèce dans toutes les eaux autour de l'île. Cet Île se trouve dans l'océan Atlantique Nord au bord du Cercle Polar Arctique, située entre le Groenland et la Norvège, au nord-ouest des îles Féroé. Géographiquement elle est plus proche du continent américain par sa proximité avec le Groenland.

Les bancs d'Islande sont un large plateau continental, ses pâturages marins sont parmi les plus féconds du monde. Ce plateau continental épouse la forme de l'île, qui s'incline doucement jusqu'à la profondeur de 200 mètres au-delà de laquelle la pente devient rapide. Le fond sous-marin de ces bancs est couvert des algues où s'accumulent les matières organiques portées par les fleuves qui viennent de l'île. Sur le plateau Islandaise se combinent d'eaux atlantiques qui sont tièdes et d'eaux arctiques qui sont froides, ce

mélange d'eaux avec différentes températures et salinités et la richesse de ces côtes apportent des caractéristiques adéquates pour le développement autour d'Islande d'une abondante faune maritime (Papy, 1933, págs. 391-392).

La pêche à la morue sur le banc d'Islande changeait selon les saisons. De janvier à avril la pêche se réalisait sur la côte Sud-Ouest, pendant l'été l'activité se déplaçait aux côtes Nord et Nord-Est. De juin à la fin de l'année on pêche la morue sur les bancs du large (Papy, 1933) 393. Ce changement était lié avec les différents mouvements des morues pendant les étapes de reproduction et d'émigration selon le rythme des saisons.



**Figure 1.5** Le banc d'Islande et les fluxes d'eaux atlantiques et d'eaux arctiques autour Islande.

Source: Louis Papy La pêche en Islande, 393.

[http://www.persee.fr/doc/geo\\_00034010\\_1933\\_num\\_42\\_238\\_10449](http://www.persee.fr/doc/geo_00034010_1933_num_42_238_10449)

**Figure 1.6** Les mouvements des voiliers français autour de l'île d'Islande pour la pêche à la Morue.

Source: Louis Papy La pêche en Islande, 403.

[http://www.persee.fr/doc/geo\\_00034010\\_1933\\_num\\_42\\_238\\_10449](http://www.persee.fr/doc/geo_00034010_1933_num_42_238_10449)

## ***Chapitre 2***

*Les types de pêche à la morue*

## Chapitre 2: Les types de pêche à la morue

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L'évolution de la pêche à la morue et l'utilisation de différents types de techniques et bateaux ont été conditionnées directement pour la façon d'habiller et de consommer la morue, les lieux de pêche et par les technologies disponibles. Quand on parle de la pêche à la morue c'est très commun d'entendre la pêche à la morue verte et la pêche à la morue séchée, en continuation on va clarifier ces deux terminologies et types de pêches.

La pêche à la morue verte se faisait sur les Bancs, les navires sont arrivés dans les zones de pêche et pêchaient la morue à la ligne, après la salaient « en vert » c'est-à-dire sans autre préparation que le sel. Ce type de pêche est connu aussi comme la pêche errante, parce que les navires se déplaçaient sur les bancs à la recherche d'un fond favorable. Par contraire à la pêche à la morue verte, la pêche à la morue séchée ou pêche sédentaire se faisait le long des côtes poissonneuses, les navires restaient mouillés dans le havre. Les pêcheurs sortaient début dans les chaloupes et pêchaient la morue à la ligne ou à moyen de filets. A la fin de la journée, la morue était décollée, tranchée et salée, postérieurement était mise à sécher sur la grève. La morue était donc amenée à sa destination finale. Une des différences plus importantes entre ces deux types de pêche c'est que dans le cas de la pêche errante les opérations d'habillement se faisaient aussitôt la morue était prise, par contre il fallait attendre plusieurs heures pour habiller la morue qu'était transportée à la côte dans les chaloupes, dans le cas de la pêche sédentaire.

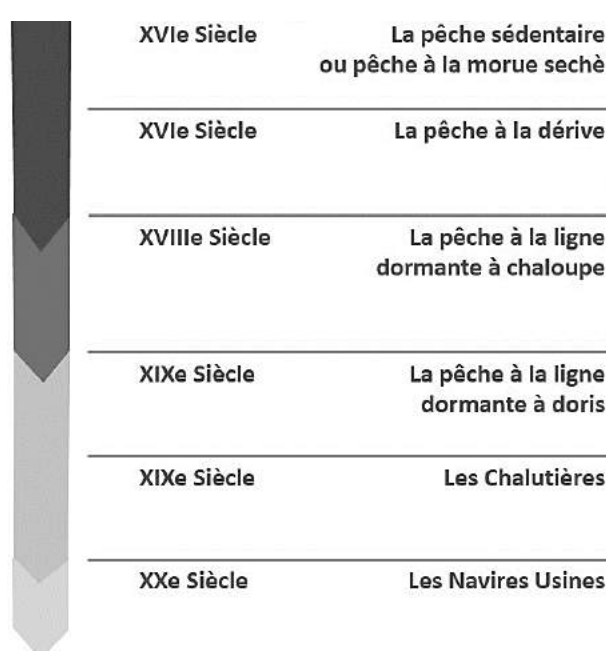
Pendant plusieurs siècles les techniques de pêche à la morue n'ont pas beaucoup évolué. Par exemple à Terre-Neuve on a pratiqué la pêche sédentaire et la pêche errante jusqu'au XX<sup>ème</sup> siècle. « Le remplacement de la ligne à main par les lignes de fond vers 1780, et l'emploi des doris<sup>3</sup>, un siècle plus tard, furent sur le Grand Banc et les autres zones de pêche les seules innovations vraiment importantes » (Cazeils, 1997, pág. 8)

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<sup>3</sup> Petits bateaux en bois à fond plat, de longueur hors-tout 4 à 5 mètres, propulsée à l'aviron ou à la voile, et dans lequel un seul pêcheur réalisait la pêche à la ligne dormante. Ces petits bateaux, avaient des bancs mobiles, pour permettre d'empiler les uns sur les autres.

A la fin du XIXème siècle avec l'essor du chemin de fer et l'accessibilité aux territoires plus éloignés, une majeure demande de la morue était remarquée, par conséquent les techniques de pêche devaient s'industrialiser. La machine à vapeur et les moteurs diesel, indispensables pour la propulsion mécanique, ont eu une grande influence dans ce secteur de la pêche. Les chalutières ont représentés un avantage remarquable, la combinaison du moteur à vapeur dans les bateaux et l'apparition du chalut (filet triangulaire en forme de poche dont la partie basse traine sur le fond) permettait un rendement de pêche cinq fois majeur que les voiliers. Les Navires Usines de haute technologie ont remplacés les chalutiers, mais aussi les matelots et les congélateurs des magasins de sel et des saleurs. Dans les années 1970-1980 ces bateaux ont vite fait surexploité l'océan.

On peut résumer que pendant cinq siècles la morue a été pêchée par ordre chronologique de la façon suivante: la pêche sédentaire ou pêche à la morue séchée, la pêche à la dérive ou pêche à la morue verte, la pêche à la ligne dormante et la pêche au chalut. L'étude plus détaillé de ces techniques sera fait en continuation.



**Figure 2.1** L'évolution des techniques de pêche de XVIème siècle jusqu'à XXème siècle.

## 2.1 La pêche sédentaire ou pêche à la morue séchée

La pêche de la morue séchée ou pêche sédentaire avec séchage à terre, s'est pratiquée le long des côtes de Terre-Neuve, cette activité nécessitait des grandes ressources financières et humaines, un personnel très nombreux et des navires de fort tonnage.

Caractéristique à ce type de pêche c'est le fait que les grands navires cherchaient un havre qui pouvait être une baie ou une anse le plus abrité possible et restaient mouillés dans le même havre pendant la campagne. Une fois dans la destination indiquée, les navires ont

été déchargés et les hommes allaient couper du bois dans les forêts afin de construire les bâtiments de travail ou réparer les installations de la saison précédente. Les chaloupes sont démontées et assemblées sur place, un navire de taille moyenne, de l'ordre de 200 tonneaux peut charrier une dizaine de chaloupes et un gros navire jusqu'à 20 (Josse, 2010, pp. 45-46).

Il y a des informations de navires Français armés pour aller pêcher la morue qui remontait jusqu'au 1508, 70 années après il y avait 150 navires de différents ports Français de la Manche, et sont les pêcheurs de la Baie de Saint-Brieuc, les Basques et les Normands les principaux qui se consacraient à cette pêche sur les côtes de Terre-Neuve et aux rives du Golfe de Saint Laurent (Josse, 2010, p. 21).



**Figure 2.2** La pêche sédentaire ou pêche à la morue séchée le déchargement de la morue, et les activités dans les installations à terre. Source: New Found Land Heritage <http://www.heritage.nf.ca/image>

On connaît qu'en 1504 existait des pêcheurs portugais d'Aveiro, Viana et Minho, et entre 1520 et 1525 il y avait en Terre-Neuve une colonie de pêcheurs de Viana. On pense que ces colonies faisaient principalement la pêche sédentaire. A la moitié du XVIème siècle le port d'Aveiro a envoyé un total de 150 navires en Terre-Neuve. Mais le cadre temporel de la présence de ces pêcheurs Portugais à Terre-Neuve ne permettait pas d'établir une flotte significative (Moutinho, 1985, pp. 20-21).

Cette technique de pêche avait besoin d'une grande infrastructure à cause de la façon d'habiller la morue et la sécherie à terre. Les installations à terre sont composées par

l'échafaud<sup>4</sup>, une grave<sup>5</sup>, le magasin de vivres, la cuisine, les logements et le poste de défense pour défendre l'exploitation contre toute attaque, soit des naturels, soit des corsaires anglo-américains. Le personnel des installations à terre pouvait varier, aux XVII<sup>ème</sup> et XVIII<sup>ème</sup> siècles on pouvait voir des voiliers (des trois mats) avec leurs équipages de 130 et 160 jeunes hommes qui n'étaient pas principalement des pêcheurs, mais une main d'œuvre vaguement préparée (Cazeils, 1997, pág. 18).

La journée de travail commençait très tôt le matin, les pêcheurs quittaient la côte dans les chaloupes montées généralement par 3 hommes. La pêche à la morue s'est réalisée de deux manières, soit à moyen de lignes, soit à moyen de filets. La pêche à la ligne se faisait par les trois pêcheurs sur les chaloupes, un patron plus expérimenté et deux novices appendices, chaque pêcheur restait debout avec une ligne dans chaque main (de la Morandière, 1966, p. 24). Les lignes étaient boëtées avec appâts<sup>6</sup> ramenés par les capelaniers.<sup>7</sup> Quand la morue s'est trouvée en bancs très denses on pêchait aussi à la faux.<sup>8</sup> Les matelots pêchaient le long des côtes et retournés à la fin de la journée pour décharger leurs morues, les ouvriers restés à terre s'occupaient de sa préparation et transformation en morue séchée.

Une fois dans le rivage la morue était déchargée par les travailleurs de terre, ensuite elle était décollée, tranchée et salée dans l'échafaud, postérieurement misait à sécher sur la grève. Avec ce procès le poisson perd trois quarts de son poids et peut être stocké pendant beaucoup de temps et envoyer a climats plus chauds comme les Antilles et La Méditerrané. La pêche à filet plus utilisée était la seine ou senne. C'est un filet flottant,

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<sup>4</sup> Echafaud: Espèce de wharf ou de plate-forme en planches, supportée par des poteaux et s'avancant assez loin dans la mer pour que les embarcations se livant à la pêche puissent y débarquer facilement leur poisson à toute heure de marée.

<sup>5</sup> Grave: Portion de rivage défrichée, nettoyée et couverte de gros cailloux ou galets sur lesquels on étend le poisson pour le faire sécher. Quelquefois, la grave en galets est remplacée par des claies en bois placées horizontalement sur des piquets élevés de deux à trois pieds au-dessus du sol.

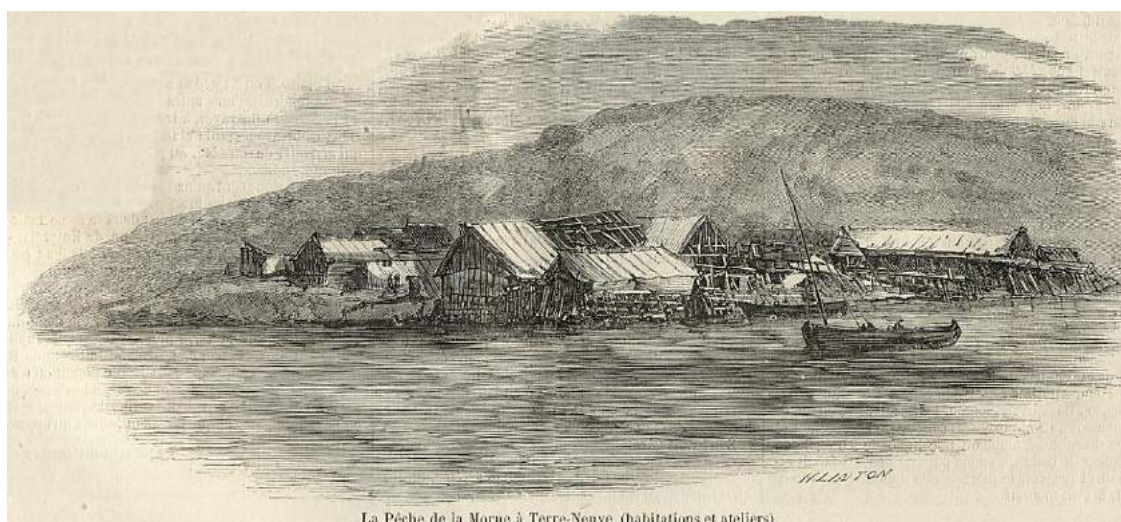
<sup>6</sup> Appâts: Gardons, maquereaux, harengs, sardines, capelans, grenouilles, morceaux d'étoffe rouge ; leurres de plomb ou d'étain, etc.

<sup>7</sup> Capelanier: Pêcheur de capelans. Marin chargé de semer le capelan comme appât, dans la pêche de la morue.

<sup>8</sup> Pêche à la faux: Un hameçon double sans boette.



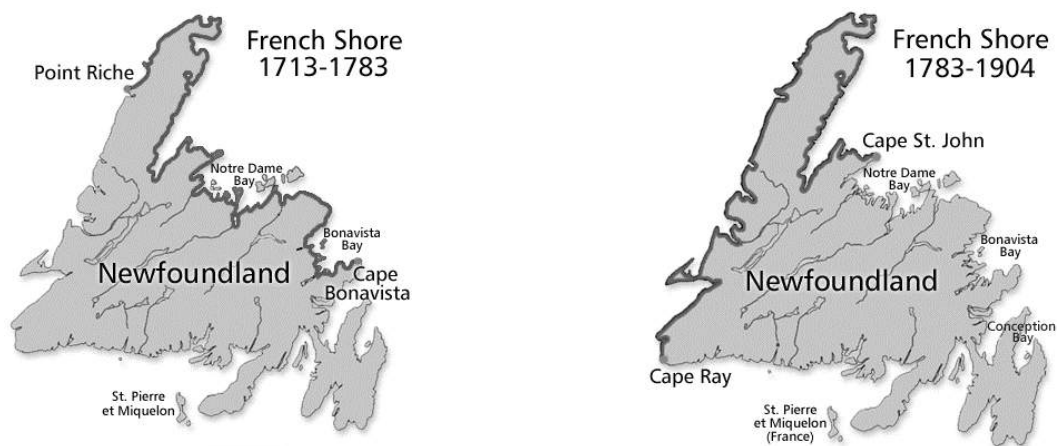
munie de plomb sur la fincille inférieure et de flotteurs en liège à sa partie supérieure. Les dimensions sont laissées à la volonté de l'armateur, les mailles de la seine à morue doivent avoir au moins 48mm entre nœuds au carré, c'est-à-dire quand le filet est tendu (Bellet, 1901, p. 75).



**Figure 2.3** La pêche sédentaire à Terre-Neuve. Dans cet Image on peut regarder les pêcheurs qui faisant la pêche à la ligne proche de la côte montés dans une chaloupe. Au fond les installations à terre.  
Source: [https://commons.wikimedia.org/wiki/File:La\\_p%C3%AAche\\_de\\_la\\_morue\\_%C3%A0\\_Terre-Neuve\\_en\\_1858\\_habitations\\_et\\_ateliers.jpg](https://commons.wikimedia.org/wiki/File:La_p%C3%AAche_de_la_morue_%C3%A0_Terre-Neuve_en_1858_habitations_et_ateliers.jpg)

A la fin du XIX<sup>ème</sup> siècle la pêche sédentaire avait pratiquement disparu, l'Angleterre privait à la France de réaliser la pêche sédentaire dans la plupart des sites. Il restait uniquement une partie disponible à Terre-Neuve accessible aux français qui était connu comme « French Shore » et le petit archipel Saint Pierre et Miquelon (de la Morandière, 1966, p. 31).

A partir de 1830, trouver de la main d'œuvre à bonne compte dans la campagne était de plus en plus difficile, le succès de la pêche à la morue verte a motivé l'apparition des installations de sècherie qui se développaient surtout à Bordeaux et demandaient de la main d'œuvre. En 1904 seulement 6 navires avec 326 hommes sont allés pour faire la pêche sédentaire.



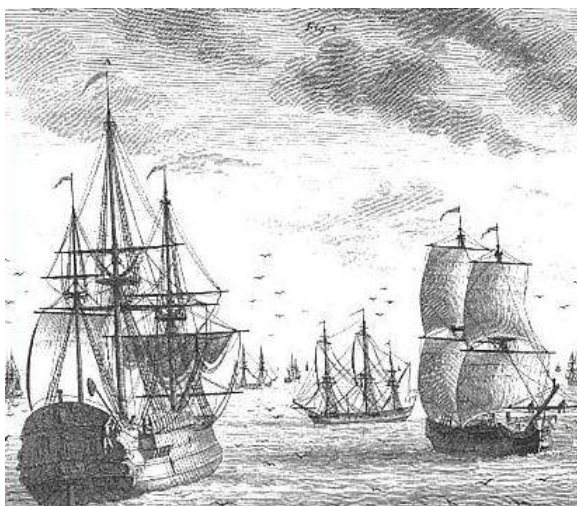
**Figure 2.4** Cartes de L’Ile de Terre-Neuve qui montre la French Shore de 1713 à 1904.  
 Source: New Found Land Heritage <http://www.heritage.nf.ca/articles/exploration/french-shore.php>

## 2.2 La pêche à la dérive ou pêche à la morue verte

La pêche à la dérive s’est développée à partir du XVI<sup>e</sup> siècle. Ce type de pêche n’exigeait pas d’une main d’œuvre spécialisée. Les techniques de pêche et l’habillage du poisson étaient transmis de façon orale et pratique. Les goélettes, principalement à deux-mâts ont été les navires plus utilisés à ce moment, lesquels arrivaient depuis de quatre semaines de voyage sur le grand banc vers février et mars avec ses cales chargées de sel pour l’habillage de la morue salée à bord.

Quand on analyse le cadre temporel de la pêche à la morue verte c’est très difficile de trouver un développement significatif des portugais dans la pratique de ce type de pêche. Il faut rappeler que pendant la domination hispanique sur le territoire portugais, Philip II a sollicité toutes les embarcations qui avaient les conditions pour exécuter les devoirs de guerre. Mais le résultat catastrophique de cette action militaire a affecté considérablement la flotte morutière portugaise, c’est-à-dire que en 1624 n’existait pas aucun bateau de Aveiro ou Viana à Terre-Neuve. La pêche à la morue réalisée par des navires portugais ne s’est récupéré pas jusqu’au XIX<sup>e</sup> siècle (Moutinho, 1985, p. 22). A partir de ce moment les portugais ont commencé à importer ce poisson en grandes quantités de différents pays d’Europe.

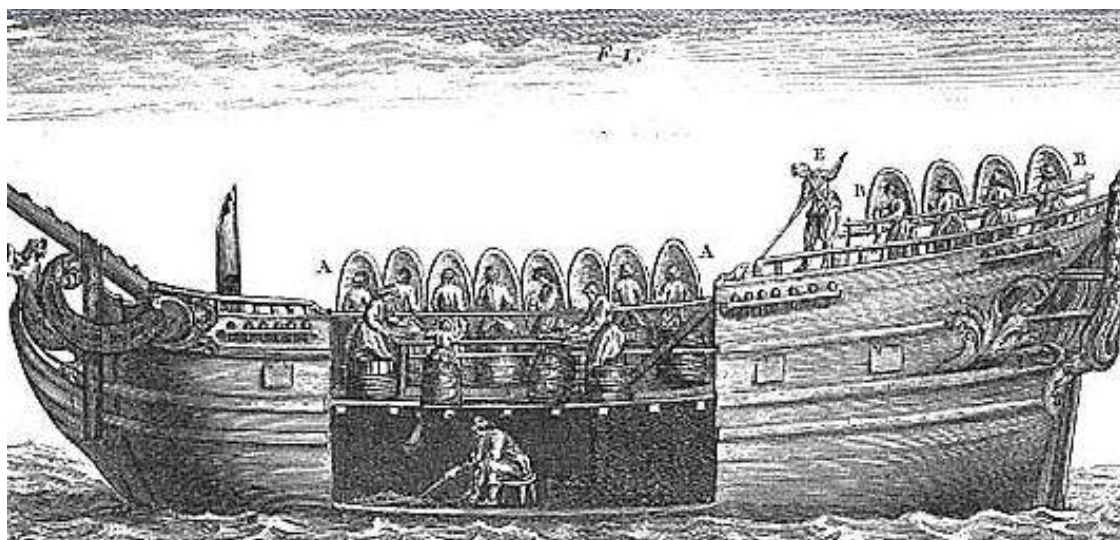
Tandis que l'économie morutière portugaise traversait un moment très dure, les pêcheurs français se consolidaient à cette activité. A la date du déclin de ce type de pêche par l'introduction dans les Grand Banc de Terre-Neuve de la pêche à la ligne dormante à la fin du XVIIIème siècle, la France avait une flotte de pêche à la morue composé par 372 navires, un total de 42000 tonneaux seulement à Terre-Neuve et 3500 tonneaux en 59 navires à Islande (Moutinho, 1985, p. 26).



**Figure 2.5** Navires qui faisaient la pêche à la dérive sur les bancs. Source: Musée Canadien de l'Histoire <http://www.museedelhistoire.ca/cmce/exhibitions/hist/ifelines/licof03f.shtml>

Avant la révolution française la pêche de la morue verte se faisait avec une ligne tenue à la main depuis le bord du navire. Pendant la traverse le capitaine donnait l'ordre d'installer une plate-forme le long du bord du bateau, sur lequel se plaçaient unes demi-barils les unes accoté des autres. Quand les navires sont arrivés aux bancs chaque pêcheur à lingotière s'est introduit dans ses demi-barils, ils se sont recouverts d'un solide tablier de cuir et commençaient pêcher (de la Morandière, 1966, p. 24).

Les matelots identifiaient les zones de pêche par l'utilisation d'une sonde pour mesurer la profondeur et la présence des oiseaux. Sur la zone de pêche les goélettes carguaient ses voiles et se laissaient dériver vent en travers. Les matelots installaient à l'extérieur du bastingage un élément en surplomb avec la fonction d'éviter la friction entre les lignes et le renflement des flancs du voilier. « Sur certains bateaux, un theu, sorte de volet en bois, et sur d'autres, un pavois de toile godronnée, protège les pêcheurs de la pluie et e vent froid » (Cazeils, 1997, pag. 24) La pêche commençait au début de la journée jusqu'à vingt ou vingt-et-une heures.



**Figure 2.6** Dans cet Image on peut regarder les différentes activités dans un navire qui pêche la morue verte, les pêcheurs derrière du volet en bois pour se protéger du vent et de la pluie, et le table de travail au milieu du pont et la cale.

Source: Musée Canadien de l'Histoire,

<http://www.museedelhistoire.ca/cmce/exhibitions/hist/lifelines/licof03f.shtml>

Les pêcheurs lançaient à la mer ses lignes suffisamment longues pour toucher le fond. Les lignes étaient armées d'un fort hameçon et lestée de un plomb de trois ou quatre livres. Quand le pêcheur sentait que la morue était prise, Il relevait sa ligne, décrochait la morue, qui était passée par des mousses au décolleur et au trancheur installés autour d'une table au milieu du pont. La morue était décollée et tranché puis envoyée dans la cale où le saleur la frottait de sel et l'empilait méthodiquement (de la Morandière, 1966, p. 24).

### **2.3 La pêche à la ligne dormante. Une évolution marquante.**

La pêche à la dérive était utilisée pour les français peu près à la Révolution Française, cette technique sera substituée depuis 1770 parce qu'il y a eu une évolution très significative dans les techniques de pêche. Les pêcheurs du port Français de Dieppois ont commencé à utiliser une technique plus effective qui a requis peu de main d'œuvre. Cette technique s'appelait « La pêche à la ligne dormante »

De cette modalité, le navire n'est pas à la dérive sur les bancs, le navire mouillé dans un endroit spécifique, à la moitié du XIXème siècle presque tous les voiliers avaient deux grandes chaloupes et les deux chaloupes se déplaçaient pour faire la pêche à la ligne dormante. Chaque chaloupe avec par un équipage de cinq à huit hommes, se déplaçaient

l'une à bâbord et l'autre à tribord. Chaque chaloupe déposait une ligne de 2 à 3 km de longueur aux alentours du voilier au mouillage. Ces lignes sont armées de centaines d'hameçons, formant un tentis appelé aussi tessure. Celui-ci est généralement tendu au fond en fin de journée et relevé le matin (Cazeils, 1997, pag. 26). Cette opération pouvait durer quatre heures, les lignes étaient colloquées au cours de l'après-midi, et relevées au lendemain. Cette innovation réveillée l'attention des pêcheurs de différents ports Français comme Saint-Malo et Granville, mais aussi des fortes critiques parce qu'on supposé un risque plus élevé pour les pêcheurs, et les questionnements sur la qualité de la morue pourrait être affectée en raison du temps d'exposition après la mort. Mais l'incrément des captures dans les campagnes avec cette technique ont assuré son utilisation et son succès.



**Figure 2.7** Image qui montre les pêcheurs montés dans les chaloupes qui faisaient la pêche à la ligne dormante avec très mauvaises conditions climatiques. Source: <http://leplus.nouvelobs.com/contribution/557813-penurie-de-poissons-francais-arretons-de-vider-les-oceans-sans-reflechir.html>

Dans la seconde moitié du XIX<sup>ème</sup> siècle, ce type de pêche était modifié par la substitution des deux grandes chaloupes par des petits bateaux plus légers. Entre 1880 et 1885, les armateurs de Normandie ont commencé à utiliser ces bateaux montés par deux hommes. Ces petits bateaux d'origine américaine étaient connus comme « doris » et étaient équipés avec deux avirons et une petite voile. Les doris étaient adoptés par beaucoup de pays et ports qui faisaient la pêche à la morue et ses dimensionnes pouvaient varier un peu, chaque doris pouvait charger jusqu'à 300Kg de morues. Les dimensions de

ces bateaux permettait de les empiler les uns sur les autres pour sa transportation. Le grand avantage des doris c'est qu'ils étaient plus petits que les chaloupes et un voilier de trois-mâts qui étaient les navires plus utilisés à cette époque-là, selon sa capacité, pouvait charger entre 6 et une vingtaine de doris.



**Figure 2.8** Doris et voilier dans les brumes de Terre-Neuve. Source: Association Fécamp Terre-Neuve <http://www.fecamp-terre-neuve.fr/Galerie20082010.html>

Fournis de la nourriture et des outils de pêche, les pêcheurs se sont préparés pour la journée de travail. Les doris sont lancés à la mer chaque soir vers 16 heures pour aller mouiller leur lignes qui pouvaient porter plus de 1500 hameçons et former une ensemble continu atteignant jusqu'à trois kilomètres de long, autour du navire. Le lendemain les pêcheurs allaient relever les lignes, et ont réalisé les suivantes opérations : virer l'ancre, haler la ligne à bord, décrocher les prises, lover la ligne dans les mannes, relever l'outre ancre, et retourner au navire avec la pêche pour décharger la morue sur le navire. En rapport avec les chaloupes l'utilisation de ces petits bateaux permettaient une capture supérieure.

Le déchargement des morues des doris aux navires n'était pas une tâche facile, l'accostage du doris le long du navire dépendait beaucoup des conditions de la mer. Le doris se fixe au navire par un système très complexe qui assurerait le travail de déchargement des morues. Les dorissiers, armés du « piquois » un fer pointu au bout d'un manche, piquaient les morues à la tête et les jetaient à bord (Josse, 2010, p. 183).

La pêche avec le doris permettait aussi de pêcher à la faux, cette technique généralise au Groenland à partir du navire, mais était aussi pratiquée sur les bancs de Terre-Neuve à partir des doris quand la morue était trouvée dans les eaux superficielles. Une ligne à main est garnie d'un plomb en forme de poisson, avec deux hameçons dos à dos, que l'on gratte pour le rendre brillant, on jetait l'ensemble à l'eau du bord de doris. La technique de la faux qui était de bon rendement mais très fatigant a été pas beaucoup utilisée, seulement une dizaine de jours au maximum par campagne, lors du passage du capelan (Josse, 2010, p. 182).

Les Portugais, qui depuis deux siècles n'ont pas pêché la morue, étaient en train de relancer de façon organisée leur industrie de pêche, ils ont dû recourir à Angleterre pour obtenir des bateaux et de savoir-faire. Ces anglais réalisés la pêche à la ligne à main avec un seul hameçon, technique que les portugais ont adopté (Moutinho, 1985, p. 30) mais par rapport à la ligne dormante cette technique se réalisait par un seul pêcheur monté dans les doris lesquelles étaient légèrement plus petites.

A partir 1930 avec le début des incursions de la flotte de pêche portugaise à Groenland les Portugais ont commencé à réaliser la pêche à la ligne dormante, technique que les Français utilisaient il y avait presque un siècle (Moutinho, 1985, p. 78). Dans les années quarante et cinquante du XXème siècle était très commun de trouver des navires à moteur armés pour faire la pêche à la ligne, ces navires déjà sans voiles construit en bois ou en acier étaient propulsés par la force mécanique des moteurs à diesel, et qui portaient beaucoup des doris empilés de la même façon qui faisaient les navires à voile (Moutinho, 1985, p. 12). Les Portugais ont utilisé ces techniques de pêche avec des doris jusqu'à 1974 avec la fin de la dictature connue comme « Estado Novo » qui avait gouverné ce pays depuis 1926.

#### **2.4 La pêche à chalut.**

A la fin du XIXème siècle avec l'essor du chemin de fer et l'accessibilité aux territoires plus éloignés, une majeure demande de la morue était remarquée, par conséquent les techniques de pêche devaient s'industrialiser. La machine à vapeur a eu une grande influence dans ce secteur de la pêche. Les chalutières ont représentés un avantage

remarquable, la combinaison du moteur à vapeur dans les bateaux et la réutilisation du chalut (filet triangulaire en forme de poche dont la partie basse traîne sur le fond) en combinaison avec la force mécanique permettait un rendement de pêche majeur que les voiliers qui pêchaient à la ligne dormante.

Au début du XX<sup>ème</sup> siècle avait lieu les premiers essais de pêche à la morue à chalut. Comme les premiers chalutiers n'avaient pas un bon rendement, il faut attendre quelques années pour obtenir des bons résultats avec cette technique (Cazeils, 1997, pag. 116). L'intensité de la pêche à chalut était remarquable pendant ce siècle, bien qu'il existait la connaissance de cette technique par les français dès le Moyen âge, ne s'utilisé pas pour pêcher la morue.

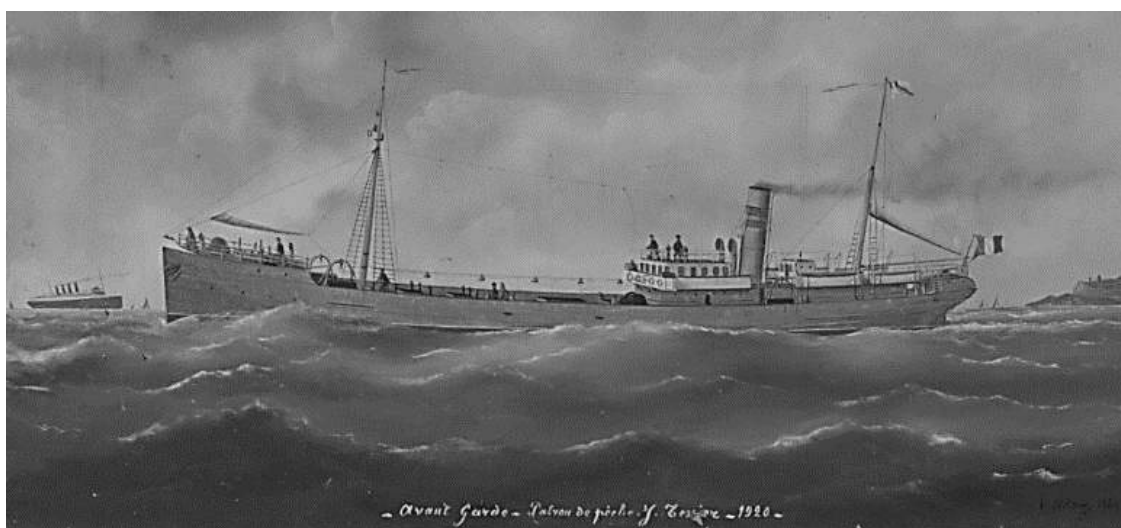
Entant donné que toutes les transitions technologiques prennent du temps pour la mise en œuvre et acceptation conforme, les nouveaux chalutiers et les ancien voiliers ont cohabité ensemble beaucoup des années, peu à peu les voiliers qui faisaient la pêche à la ligne ont commencé se déplacer dans des autres régions, surtout à Groenland, mais ce sont les grands navires de trois et quatre mâts de 800 tonneaux qui faisaient cette pêche. Il faut dire que beaucoup des voiliers ont bénéficié par les avancements techniques comme les moteurs additionnels qu'ont été introduits pour contribuer avec la propulsion et les chambres froides pour geler le poisson (Cazeils, 1997, pag. 118).

En 1906 le port de Fécamp a lancé ces deux premières chalutiers mais encore l'efficiencie de ces navires n'était pas bonne. Trois années plus tard ont été envoyés à Terre-Neuve plus de 20 chalutiers, en 1920 une trentaine de navires à vapeur pêchaient dans ces eaux avec une performance cinq fois supérieur aux voiliers. Maintenant avec une technologie plus solidifié les bateaux de grand tonnage pouvaient avoir des équipages de entre 40 et 60 hommes qui encore préparaient la morue de façon classique, mais déjà n'existait pas le danger qui présentait être dans les doris pour capturer la morue.

Pendant le parcours du XX<sup>ème</sup> siècle l'introduction des autres technologies de support ont contribué au développement du chalutage et au succès des campagnes de pêche. Les dispositifs de navigation, sondeurs de profondeur entre autres, permettaient de capturer



la morue avec plus d'exactitude et faire une navigation moins dangereuse. Après la Seconde Guerre le tonnage des bateaux a augmenté considérablement, les moteurs diesel avec une autonomie de deux à trois mois substituent les moteurs à vapeur et pouvaient aller aux bancs jusqu'à 3 fois par année. Et les chalutiers modernes à rampe arrière ont été introduits.



**Figure 2.9** Chalutière Avant Garde. Source: <http://modelisme-naval-bois.lebonforum.com/t2649-le-chalutier-a-vapeur-avantgarde>.

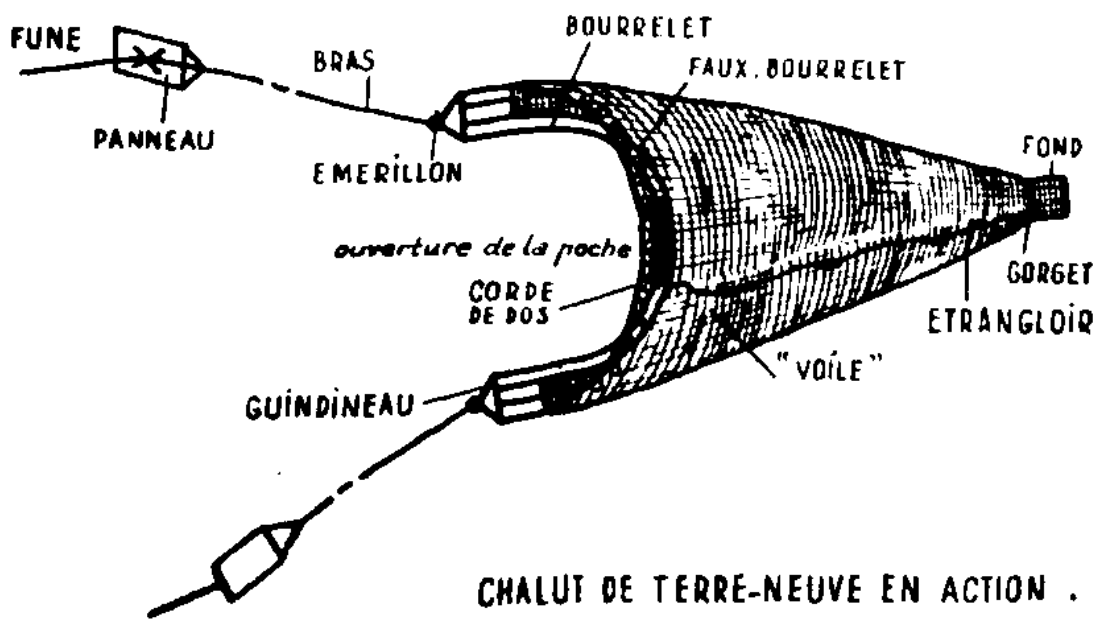
Les manœuvres de chalutage sont très compliquées, les chalutiers classiques c'est-à-dire les chalutiers qui remontaient le chalut par la côte à l'aide de moteurs supplémentaires pêchent la morue de la façon suivante:

**Le filage :** le chalut est mis à l'eau, puis le navire avance lentement. Lorsque le chalut est au fond de l'eau, les câbles sont enserrés dans une forte mâchoire, le « chien », situé à l'arrière du navire, qui les maintient éloignés de l'hélice. Le navire peut alors manœuvrer librement et commencer son « trait de chalut » d'une durée moyenne de deux heures.

**Le virage :** pour effectuer les opérations de remontée du chalut, les câbles sont libérés du « chien ». Ils sont ensuite enroulés pour remonter la gueule du chalut à bord du navire. Le « cul de chalut » est amené le long de la coque par un cordage.

**La lâche:** seul le « cul de chalut » est monté à bord. Un marin, le « largueur de cul », se glisse sous la poche suspendue à 80 cm du pont et dénoue le nœud situé à la base du cul.

La masse de poissons ainsi libérée se déverse immédiatement dans le parc. Le contenu du cul que les pêcheurs nomment « palanquée » ou « pal » pèse 2 à 3 tonnes. Ainsi vidé, le cul est refermé et rejeté à l'eau pour remonter le reste de la pêche. Le poisson qui était maintenu dans la partie centrale du chalut, toujours à l'eau, remplit alors le cul pour former une seconde palanquée. Celle-ci sera hissée à bord et vidée sur le pont. L'opération se poursuivant jusqu'au dernier « pal ». Longues et délicates sur les chalutiers classiques, les manœuvres de chalutage sont beaucoup plus rapides sur les chalutiers modernes, qui filent et virent le chalut par leur rampe arrière (Desjardins, 2008).



**Figure 2.10** Image schématique d'un chalut et ses composants. Source: Robert de Loture. *Histoire de la grande pêche de Terre-Neuve*. (Gallimard), 161.



### ***Chapitre 3***

*Les Types de bateaux utilisés pour la pêche à la morue*

### **Chapitre 3: Les types de bateaux utilisés pour la pêche à la morue.**

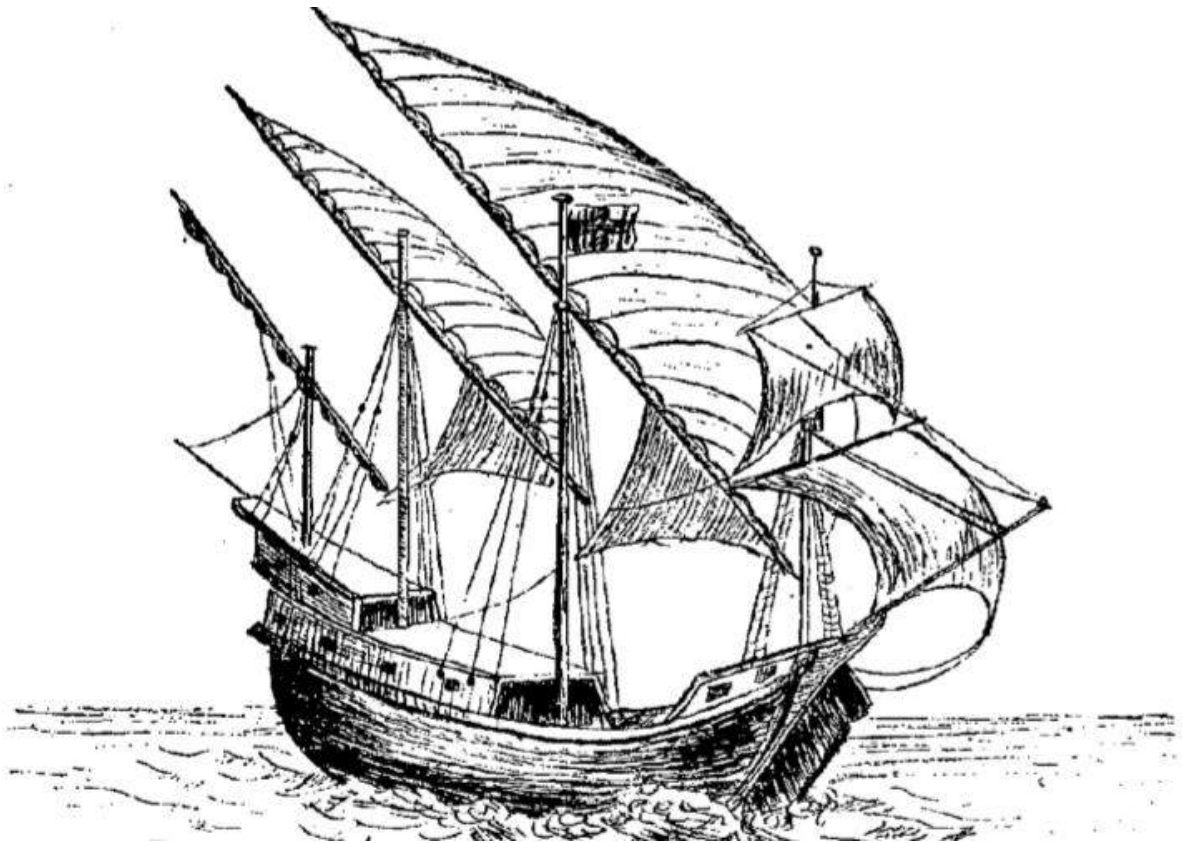
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A l'origine des premiers voyages sur le grand banc pour faire la pêche à la morue, il n'existait pas à proprement parler, un type de navire destiné exclusivement à la pêche morutière. Ainsi que les bateaux qui s'utilisaient pour pêcher, étaient les bateaux communs de l'époque destinés à différents types de pêche, transportation du personnel et autres activités. Le changement se fait sentir au XIX<sup>ème</sup> siècle avec le développement de navires, adaptés et spécialisés, dont le trois-mâts goélette qui s'impose. Puis viendront, dès 1904, les premiers chalutiers à vapeur coexistant pour un temps avec les voiliers. En fin après la seconde guerre mondiale, les bateaux usines sont lancés.

#### **3.1 Les voilières**

En analysant le cadre temporel, l'environnement technique et le savoir-faire des premières années de la pêche à la morue, on trouve que les embarcations étaient de faible tonnage entre 30 et 60 tonneaux, il n'avait pas des bateaux de gros tonnage, ces navires sont donc très variés : caravelles, frégates, flûtes entre autres. Par exemple les Caravelles de Christophe Colomb avaient un tonnage approximatif de 40 tonneaux. Ces bateaux étaient généralement montés par un équipage entre 10 et 12 hommes. Comme c'est logique la plus part des armateurs qui se consacraient aux premières années à construire de bateaux de pêche n'avaient pas beaucoup de ressources et savoir-faire pour armer des bateaux de gros tonnage (de la Morandière, 1966, p. 26).

A partir du développement de la pêche sédentaire, en tenant compte des ressources matérielles et humaines que cette activité demandait, les armateurs ont commencé peu à peu à mettre en mer des navires plus forts et mieux équipés. C'est-à-dire : les travaux de construction pour les bâtiments comme l'échafaud, le magasin de vivres, la cuisine, les logements et autres demandait un numéro grande des outils. Le travail du grave, le séchage de la morue et sa manipulation avait besoin aussi des nombreux hommes.



**Figure 3.1** Image d'une caravelle du XV<sup>ème</sup> siècle. Source: Adolphe Bellet, *La grande pêche de la morue à Terre-Neuve : depuis la découverte du Nouveau Monde par les Basques au XIV<sup>e</sup> siècle*, 28.

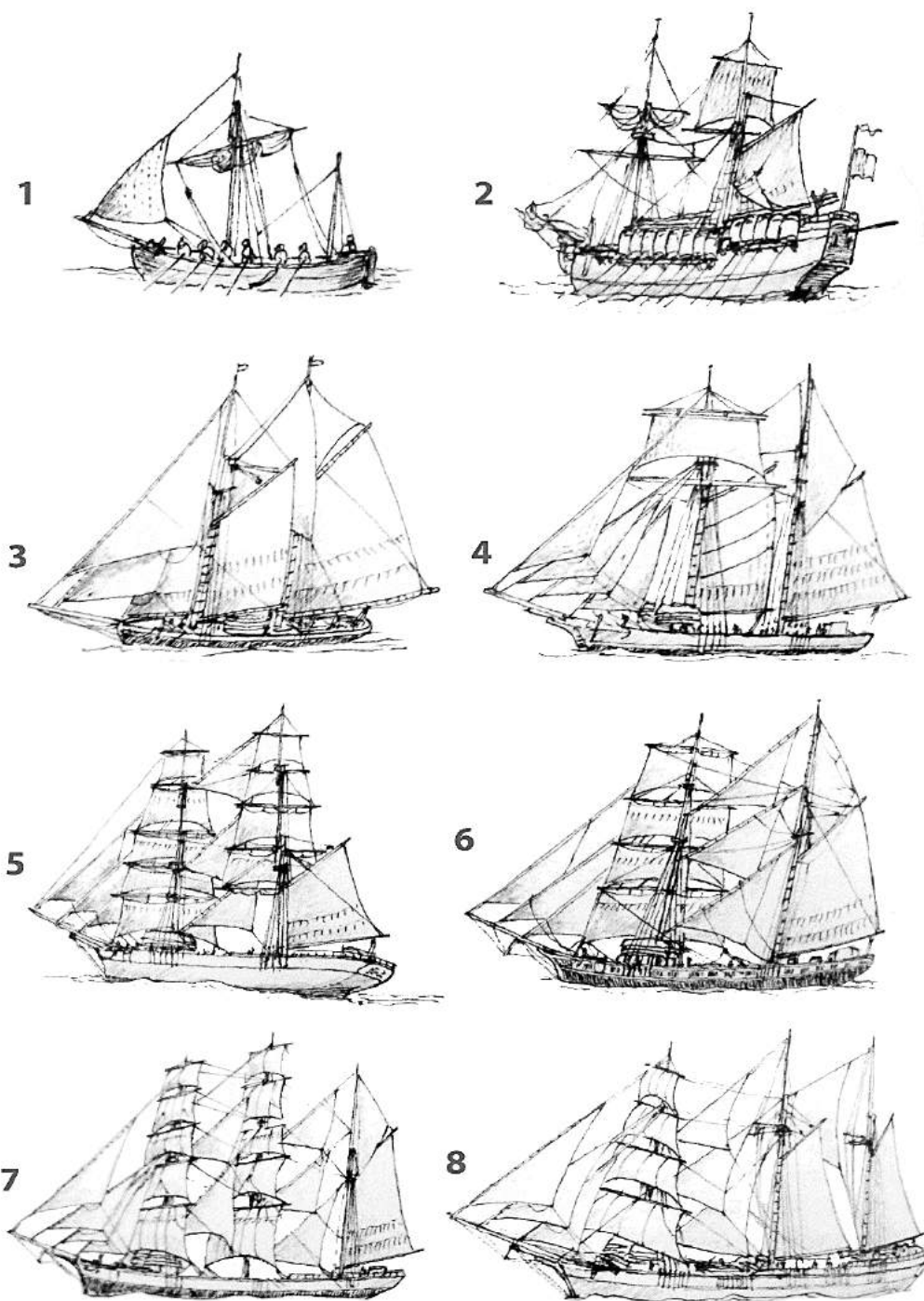
Il est un peu difficile d'établir une date précise de la création des navires proprement Terre-Neuviens, c'est-à-dire des navires armés pour aller pêcher sur le grand banc et rester là toute la campagne. Vers 1550 il y avait déjà un incrément dans le tonnage des navires armés pour les armateurs français, on connaît des navires entre 100 et 200 tonneaux avec équipages de 50 et 60 hommes. Dans un inventaire réalisé en France, ordonné par Jean Baptiste Colbert dans les années 60s du XVII<sup>ème</sup> siècle, on pouvait déjà apprécier qu'y existaient 252 navires Terre-Neuviens, 132 pour la pêche sédentaire et 120 pour la pêche errante qui faisaient un total de 7000 hommes, si nous considérons une moyenne des équipages de 40 hommes pour la pêche sédentaire et 10 hommes pour la pêche errante par bateaux (de la Morandière, 1966, p. 28).

Vers le XVIII<sup>ème</sup> siècle les caravelles furent remplacées par les dogres qu'ont été unes espèces de goélettes et les brigantins un type de navires de bas bord qui permettaient avoir des équipages de 20 à 24 matelots (Bellet, 1901, p. 164). Presque à la même fois les

goélettes de deux mâts et de petit tonnage qui portaient une vingtaine d'homme sont apparues.

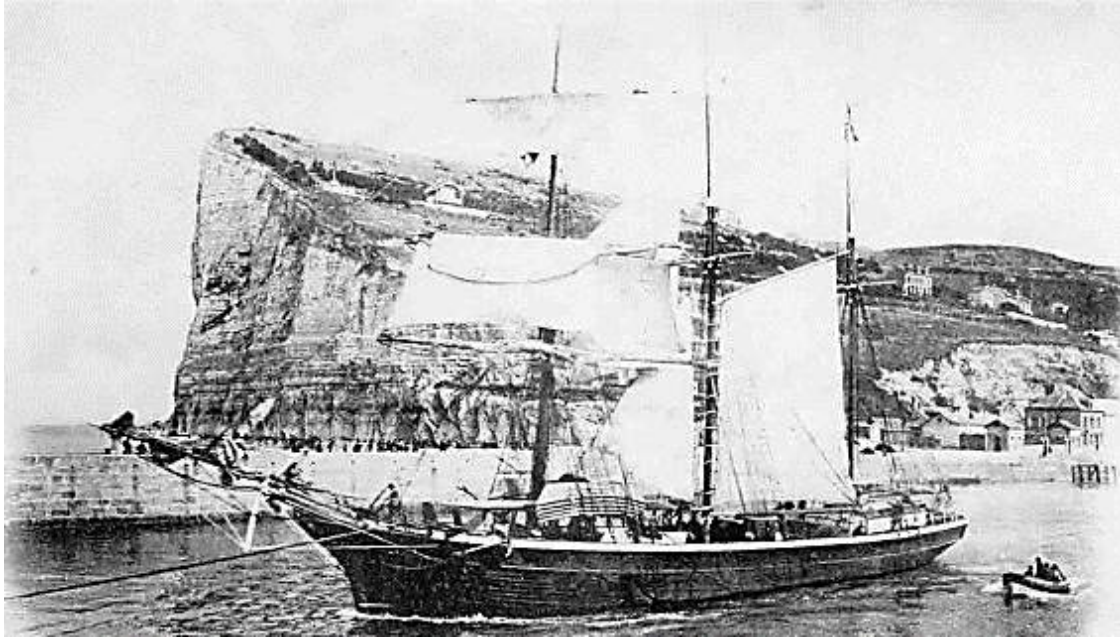
Au fil des ans les petits ports morutiers ont peu à peu disparu, jusqu'à rester seulement les ports avec une solide base morutières, lesquels ont continué l'armement des navires et ont assuré le succès de l'industrie française de la morue comme sont les ports de Granville, Saint-Malo, Saint Brieuc et Pays Basque qui avaient au XVIIIème siècle 400 navires et 12000 hommes. Pendant cette époque le tonnage de navires qui allaient pêcher sur les bancs était de 80 à 120 tonneaux et pour les navires qui faisaient la pêche sédentaire était supérieure, de 250 à 350 tonneaux avec équipages de 100 à 140 hommes.

Au XIXème siècle les bateaux étaient principalement des trois-mâts carrés et des bricks. Vers 1900 les français ont commencés à envoyer sur le Grand Banc les grands navires comme les trois-mâts goélettes qui pouvaient porter une grande quantité des Doris. Ce type de voilier de 300 à 400 tonneaux paraissant mieux adapté à la grande pêche et au long cours. Il faut souligner qu'il y a eu d'autres types de bateaux qu'ont été conditionnés pour la pêche à la morue et aussi les bateaux déjà mentionné pouvaient avoir des variations selon l'époque, et les ports d'origine. Par exemple après la première guerre mondiale a été nécessaire d'acheter au Portugal et Canada le trois-mâts et le quatre-mâts latin pour reconstituer la flotte (Josse, 2010, p. 88).



**Figure 3.2** Voiliers utilisés par les Français: 1 chaloupe 2 Navire XVIIIème siècle 3 goélette américaine 4 goélette à hunier 5 brick 6 brick goélette 7 trois-mâts barque 8 trois-mâts goélette. Source: Loïc Josse. Terre-neuvas. *A l'époque des derniers voiliers de grande pêche de Saint-Malo- Cancale.* (Chasse-Marée/Glénat, 2010), 86.



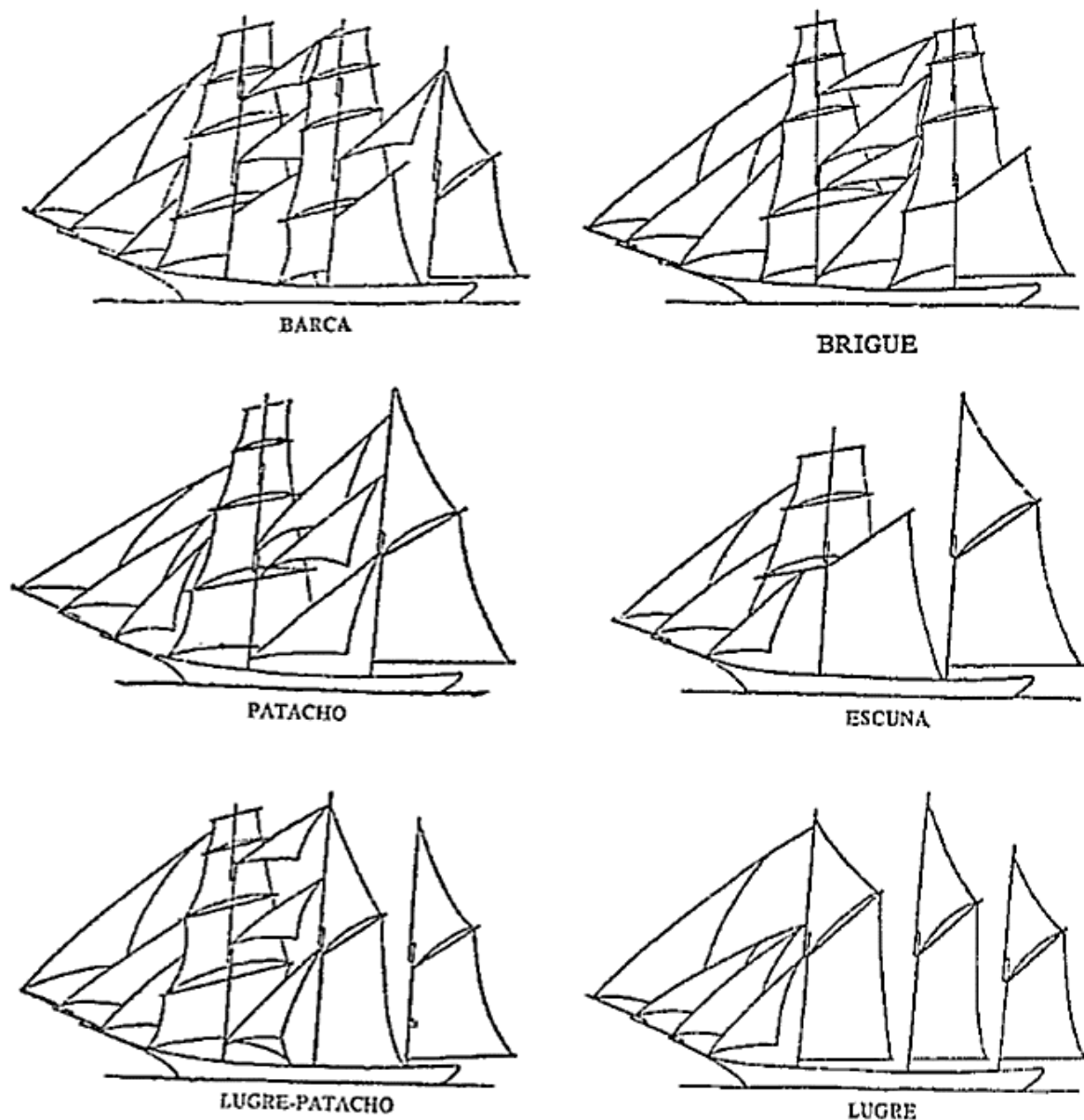


**Figur 3.3** De 1886 à 1903, le trois-mâts goélette Bretagne est armé pour dix-huit campagnes successives à Terre-Neuve, avec un équipage de 29 à 31 hommes.  
Source: Association Fécamp Terre-Neuve, <http://www.fecamp-terre-neuve.fr/Navires/Bretagne.html>

Quand on parle des bateaux de pêche à la morue utilisé par les portugaises il faut rappeler le lapse de temps pendant lequel Portugal était séparé de la pêche qui a commencé pendant le XVIIème siècle et qui ne se récupéré pas jusqu'au XIXème siècle- quand ce pays a relancé son industrie de pêche. En 1835 la flotte de pêche portugaise était composé par 19 navires dans lesquels 5 étaient goélettes, 12 patachos (Pataches), un brick et une barca. Avec un tonnage environs de 80 tonneaux pour les goélettes et 130 tonneaux le brigue.

En 1866 ont apparu deux nouveaux armateurs qui ont armé quatre voiliers cet année, avec un tonnage entre 98 et 217 tonneaux, cet incrément dans le tonnage répondait à l'intention de rentabiliser des campagnes de pêche. Deux de ces navires étaient lugre-Patacho. De 1886 à 1903 ces deux entreprises avaient l'exclusivité de la pêche, ils sont augmenté la capacité des navires, quelques de ces navires avaient 300 tonneaux.

Ces deux entreprises avaient l'exclusivité de l'industrie. La fin de ce monopole de l'industrie de la morue a provoqué un incrément dans la flotte portugaise de 12 navires en 1901 à 65 navires en 1924. Dans l'année 1902 la flotte était composée par 2 goelettes, 8 lugre-patachos, 2 patachos, un lugre et 2 iates (Moutinho, 1985, p. 28).



**Figure 3.4** Types de voilières utilisés par les portugais pour la pêche à la morue. Source: Mario Moutinho. *Historia da Pesca do Bacalhau* (Editorial Estampa, Lisboa, 1985), 28.

### 3.2 Les chalutiers

Vers 1901 on a réalisé la première expérience de chalutage sans succès, en 1902 un chalutière a été envoyé pour première fois aux bancs avec le but de réaliser la pêche à chalut, et aussi en 1904 ; mais ces deux expériences n'étaient pas d'un grand succès. Il fallait attendre quatre années pour obtenir du succès dans cette activité. A fil des années ces premiers navires d'une performance supérieure que les anciens voiliers étaient construits en acier et avaient un tonnage entre 150 et 500 tonnes, ont commencé être très communs dans le grand banc.



**Figure 3.5** Chalutière Classique La Jeune Française.  
Source: Association Fécamp Terre-Neuve,  
<http://www.fecamp-terre-neuve.fr/Navires/Bretagne.html>

En 1939 La France avait une grande flotte de chalutières, la plus moderne et la plus équipée d'Europe, il y existait déjà 38 chalutières modernes d'une jauge totale de 37000 tonnes, quelques de ces navires avaient plus de 70 mètres de longueur et un tonnage de 1000 tonnes. (Viking I) Pendant la Seconde Guerre plusieurs de ces bateaux sont mis au service de l'armée et beaucoup sont détruits par des actions militaires. A la fin de la guerre, il restait seulement 40% de la flotte qui était dans un état pénible, la reconstruction de la flotte a signifié une accélération de la modernisation, quelques voiliers sont réparés mais les chalutières à vapeur ont eu un grand impulse.

En 1945 Saint-Malo, qui conservait encore une flotte de voiliers qui pêchaient avec doris, envoie un à Terre-Neuve. En 1948 c'est le dernier voyage d'un voilier qui pêchait à la ligne dormante. La reconstruction de la flotte après la guerre a eu lieu lentement, le tonnage des nouveaux navires a été augmenté considérablement. Deux modèles de chalutière classiques ont été désignés, un à vapeur et l'autre à diesel, ces navires entre 63 et 68 mètres de longueur pouvaient aller aux bancs plusieurs fois par années. A la

moitié du XXème siècle il y avait 6 de ces navires, 5 étaient propulsés par moteurs à diesel.

Les chalutières modernes à rampe à l'arrière ont été conçues avec un design très différent aux chalutières classiques, ils se caractérisent par un plan incliné à l'arrière, pour la mise à l'eau et la remontée du chalut. Ils disposent sous le pont d'une véritable usine qui travaille le poisson en filets et le surgèle en plaques. L'un des premiers chalutiers français de ce type fut le « Vikings III », armé en 1965 par les Pêcheries de Fécamp (Desjardins, 2008). Ces Navires Usines de haute technologie ont remplacés les chalutiers, mais aussi les matelots et les congélateurs des magasins de sel et des saleurs. Dans les années 1970-1980 ces bateaux ont vite fait surexploité l'océan.



**Figure 3.6** Chalutière usine à rampe à la arrière Colonel Pleven. Source: Bateaux de Saint Malo <http://www.bateaux-de-saint-malo.com/fr/fiche%20Colonel%20Pleven%20II.htm>

Les expériences avec le chalutage à Portugal étaient différentes qu'en France, la situation politique de ce pays a marqué toujours le développement de la pêche à la morue. Entre 1910 et 1911 les portugais réalisaient une expérience de chalutage, mais c'est en 1936 que la flotte de pêche a reçu le premier chalutier classique propulsé par un moteur diesel construit en Danemark. En 1941 on a armé le premier chalutier classique portugais. (Alvaro Martins Homens) Dix années plus tard la flotte acquiert le chalutier classique le

plus grand du monde (David Malqueiro) armé en Hollande. En 1964 Il Maria Teixeira Vilarinho est devenu le premier chalutier moderne à rampe à l'arrière armé en Portugal.

## *Conclusions*

En tant que conclusions de ce travail, nous pouvons commencer par dire d'abord que les zones de pêche ont été liées aux grandes découvertes. Le cas le plus important a été la découverte de la grande banque de Terra Nova, une zone de grande richesse en morue. La découverte de Terra Nova a marqué l'histoire de la pêche à la morue, connue comme « La Grande Pêche ».

Entre les deux pays analysés, la France et le Portugal ont une longue tradition de pêche à la morue, cette activité a été plus stable en France. L'assimilation et la recherche de nouvelles techniques de pêche ont été plus rapides, les français ont construit plus de bateaux et plus de ports. Contrairement à la France, les situations politiques au Portugal a toujours frappé le développement de l'industrie de la pêche en différents moments historiques.

Bien que les techniques de pêche aient été les mêmes dans les deux pays, la discontinuité dans l'activité de pêche de la morue par les Portugais a provoqué un ralentissement de l'assimilation et de l'adaptation aux nouvelles technologies de pêche. Dès le milieu du XXème siècle, les Français utilisaient les bateaux diesel aussi connus comme les chalutiers, plus pour aller pêcher la morue. La France avait la flotte la plus moderne et la plus avancée de l'époque, tandis que les Portugais continuaient à pêcher avec doris. Au milieu du siècle XX, les portugais ne comptent qu'avec deux chalutières modernes.

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**A methodology for the enhancement and reuse of company towns.  
The case of Hershey in Santa Cruz del Norte, Cuba**

**Une méthodologie pour la réutilisation et la valorisation des cités ouvrières.  
Le cas de Hershey, à Santa Cruz del Norte, Cuba**

**Abstract**

This work focuses on the enhancement and reuse of company towns through the study of the Hershey Sugar Company Town in Santa Cruz del Norte, Cuba. The thesis responds to the current need to rescue and protect the abandoned and deteriorated heritage of the sugar industry in Cuba. After the economic restructuring of the sugar sector carried out in 2002, many sugar mills were abandoned or demolished and the cultural consequences were devastating. Each sugar mill is attached to a human settlement in a codependent and indissoluble unit. Following the abandonment and demolition of the sugar factories, the surrounding local population has faced the severe consequences of social, economic and urban dysfunctionality.

The productive, urban, and socio-economic configuration of these sugar settlements responds to archetypal models of company towns. In Cuba, this phenomenon is mainly linked to the American capital that invaded the country in the first half of the 20<sup>th</sup> century. In order to achieve a proposal that solves the problems of the Hershey Sugar Company Town, a research on the specific characteristics of such productive settlements was carried out. The study of three examples of Italian company towns allowed the identification of good practices for revalorization processes. The final result was the conception of a methodology for the possible enhancement and reuse of the Hershey Sugar Company Town.

**Key words:** Company towns, reuse and enhancement, methodology, Italian experiences, Sugar industrial heritage, Hershey Sugar Company Town.

**Résumé**

Ce travail aborde la question de l'amélioration et de la réutilisation des cités ouvrières au travers du cas de la Cité Ouvrière Hershey à Santa Cruz del Norte, sur l'île de Cuba. Ce mémoire se préoccupe du besoin actuel de sauver et de protéger le patrimoine abandonné et détérioré de l'industrie du sucre à Cuba. Après une restructuration économique de l'industrie sucrière en 2002, de nombreux moulins à sucre ont été abandonnés ou démolis. Les conséquences culturelles ont été dévastatrices. À côté de chaque moulin à sucre se trouvait un établissement humain si dépendant du lieu de production qu'il en était devenu indissociable. Suite à l'abandon et à la démolition des usines de sucre, cette population locale a souffert des répercussions du dysfonctionnement social, économique et urbain.

La configuration productive, urbaine, économique et sociale de ces établissements industriels fait écho aux modèles des cités ouvrières. À Cuba, ce phénomène est principalement lié au capital américain qui a envahi le pays pendant la première moitié du XX<sup>ème</sup> siècle. Afin d'apporter une solution aux problèmes présentés par le cas d'étude, une recherche a été réalisée sur les caractéristiques spécifiques de ce fonctionnement productif. L'étude de trois exemples de cités ouvrières italiennes a permis d'identifier les bonnes démarches à suivre lors des processus de requalification. Le résultat final se présente sous la forme d'une méthodologie pour améliorer et réutiliser la cité ouvrière Hershey.

**Mots clés:** Cités ouvrières, réutilisation et valorisation, méthodologie, expériences italiennes, patrimoine industriel du sucre, Cité Ouvrière Hershey.